The 1993 WEDI Report and recommendations represent the consensus of the Steering Committee but do not necessarily represent the policy of any particular member organization participating in the WEDI process.

Workgroup for Electronic Data Interchange
(WEDI)

WEDI Co-Chairs

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Past President                          President
The Travelers Insurance                 Blue Cross and Blue
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American Dental Association          Health Insurance Association
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WEDI Steering Committee (Cont'd)
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(WEDI)

October 1993

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EXECUTIVE SUMMARY

Workgroup for Electronic Data Interchange

October 1993

In November 1991, the Workgroup for Electronic Data Interchange (WEDI) was established in response to the challenge to reduce administrative costs in the nation's health care system. A voluntary, public-private task force, WEDI developed an action plan to streamline health care administration by standardizing electronic communications across the industry.

In July 1992, WEDI published a report that outlined the steps necessary to make electronic data interchange (EDI) routine for the health care industry by 1996 (refer to Addendum 1, "1992 WEDI Recommendations"). The Workgroup envisioned a health care industry transacting business electronically, using one set of electronic standards and interconnecting networks. Since that publication, the health care industry independently pushed forward and made substantial gains with EDI implementation:

- ASC X12 [an accredited American National Standards Institute (ANSI) Committee] approved the claim and eligibility standards for trial use.
- The Insurance Subcommittee of ASC X12 formed new workgroups to develop other standards required by the health care industry.
- HCFA initiated the use of Health Care Claim and Health Care Claim Payment/Advice standards and developed EDI implementation guides for Medicare Part A Intermediaries and Part B Carriers consistent with the ASC X12 standards.
- The private sector began developing EDI implementation guides.
- Efforts toward standardizing data content increased.
- EDI awareness and participation heightened.

WEDI reconvened in 1993 to resolve remaining implementation obstacles and to:

- Strengthen the understanding of and commitment to EDI among the health care industry, policymakers, and consumers by: developing a targeted plan for using industry resources to educate key audiences on EDI, encouraging participation in demonstration projects that prove EDI benefits and cost savings, and expanding membership to reflect more broadly the key constituencies affected by EDI.

- Work for enactment of preemptive federal confidentiality protection for individually identifiable health care information in an electronic environment.
o Develop a strategy to facilitate quick, industry-wide transition to EDI, including universal identifiers for patients, providers, and payors; health identification cards; coordination of benefits in electronic environments; and implementation guidance for data standards.

o Work with appropriate parties to ensure the health care industry can meet WEDI's target of universal adherence to uniform data content by 1996.

o Provide additional data to the industry on the cost benefits of EDI, using WEDI demonstration projects as a primary source (refer to Addendum 2, "1992 Findings" and Appendix 7, "Short-Term Strategies").

o Monitor the industry's progress toward the use of data standards and EDI.

o Provide basic telecommunications requirements and promote WEDI's goal of clearinghouse accreditation by 1994.

o Serve as a resource to work cooperatively with the National Association of Insurance Commissioners and state governments to coordinate state and national efforts on administrative simplification.

WEDI expanded its financial analysis to encompass eleven health care transactions. Newly available data were added to estimate the potential savings for providers and to update the estimated savings for payors and employers. Additionally, the cost of implementing EDI was added to achieve a more comprehensive picture of EDI's financial impact on the health care industry. WEDI's 1993 financial analysis concludes that combining the estimated implementation costs and the gross administrative savings potential, the cumulative net savings over the next six years (to the year 2000) is estimated to total over $42 billion. Although the estimated net savings may not translate directly to hard dollar savings for the nation's health care system, EDI savings will allow health care enterprises to reallocate resources from administrative activities to enhance quality, patient care, and customer service.

To achieve this large cost savings, WEDI's eleven Technical Advisory Groups developed the following major recommendations. These recommendations, along with additional "key" supporting recommendations, are provided, in full, in the "Report" section of this publication. They are summarized below according to the Technical Advisory Group that developed the recommendation:

1. Require specific and defined instructions through implementation guides to support uniform data content and coding structures (Standards Implementation and Uniform Data Content).

2. Develop a network architecture to support a broad array of applications, communications, access methods, protocols, and line speeds (Network Architecture and Accreditation).
3. Enact the model federal preemptive legislation drafted by WEDI to preserve confidentiality and privacy rights of individually identifiable health care information (Confidentiality and Legal Issues).

4. Identify unique, standard identification numbers to promote industry standardization and uniformity of health care data (Unique Identifiers for the Health Care Industry).

5. Develop and promote a comprehensive education and publicity work plan designed to provide standardized, economically affordable and geographically accessible education opportunities for all EDI constituents (Education and Publicity).

6. Develop an ASC X12 standard for data content and format for health identification cards (Health Identification Cards).

7. Continue demonstration projects that are ecumenical, identifiable to the public, demonstrate industry cooperation, leverage existing infrastructures, add something new, measure results, and meet aggressive time frames to demonstrate that technology is currently available to implement WEDI recommendations (Short-Term Strategies).

8. Clearly delineate state and federal roles for EDI implementation (State/Federal Role).


10. Automate the Coordination of Benefits process (Coordination of Benefits).

11. Use electronic environments and standardized data to improve fraud detection (Health Care Fraud Prevention and Detection).

These recommendations represent the consensus of the Steering Committee but do not necessarily represent the policy of any particular member organization participating in the WEDI process.

Significant progress has been made over the last year in the development of ASC X12 standards, increased volume of business conducted electronically, and new awareness and acceptance of WEDI's vision. However, much still remains to be accomplished. WEDI is committed to the aggressive goals outlined in the 1993 WEDI Report and to working in partnership with the Administration on Health Care Reform.

WEDI applauds recognition, by the Administration and a growing number of members of Congress, of the critical role that EDI must play in the nation's health care system. Many of their proposals build on WEDI's work and recommendations.
INTRODUCTION

The Workgroup for Electronic Data Interchange was established in late 1991, following a forum convened by the Secretary of Health and Human Services to address administrative costs in the nation's health care system. WEDI is a voluntary, public-private task force created to streamline health care administration by standardizing electronic communications across the industry.

Co-chaired by Bernard R. Tresnowski, President of the Blue Cross and Blue Shield Association, and Joseph T. Brophy, Past President of The Travelers Insurance Company, WEDI envisions a health care industry that conducts all business electronically, using one set of standards and interconnecting networks.

RECOMMENDATIONS FROM THE 1992 WEDI REPORT

In early 1992, WEDI convened a Steering Committee of 15 health care leaders, representing private payors, government, providers, and business to outline the steps necessary to promote EDI as a routine means of conducting business between payors and providers by 1994, and to extend the full benefits of automation across the health care industry by 1996. The Steering Committee was supported by 50 technical experts, known as the WEDI Technical Advisory Group (TAG).

In July 1992, WEDI presented a report to the Secretary of Health and Human Services that outlined aggressive but achievable goals to propel the health care industry toward the use of EDI.
WEDI committed to realizing these goals through a public-private partnership and industry initiative. A summary of the recommendations for the 1992 WEDI Report is included as Addendum 1.

WHAT HAS OCCURRED SINCE THE 1992 WEDI REPORT?

Since July 1992, many significant events have occurred that are influencing the health care industry's implementation of EDI. A new President was elected, in large part based on a promise of health care reform. President Clinton charged his Health Care Reform Task Force with developing health care reform legislation, which may have a profound impact on the electronic health care administration and financing environment envisioned by WEDI.

WEDI applauds recognition, by the Administration and a growing number of members of Congress, of the critical role that EDI must play in the nation's health care system. Many of their proposals build on WEDI's work and recommendations.

Over the past year, as these events were occurring, the health care industry independently pushed forward and made substantial gains with EDI implementation:

1. ASC X12 [an accredited American National Standards Institute (ANSI) Committee] approved the claim and eligibility standards for trial use. This completes the standards development for the "four" core electronic transactions:
   - Health Care Claim (837)
   - Health Care Claim Payment/Advice (835)
   - Health Care Eligibility/Benefit Inquiry (270) and Health Care Eligibility/Benefit Information (271)
   - Benefit Enrollment and Maintenance (834)

2. The Insurance Subcommittee of ASC X12 formed new workgroups to develop other standards required by the health care industry:
   - Patient Information Transaction (274/275)
   - Claim Status (276/277)
   - Health Care Service Review (279/278)
   - Coordination of Benefits
   - Health Maintenance Organization Reporting

3. HCFA initiated the use of the Health Care Claim and Health Care Claim Payment/Advice standards, and developed EDI implementation guides for Medicare Part A Intermediaries and Medicare Part B Carriers consistent with the ASC X12
standards.

4. The private sector began developing EDI implementation guides:

   - The Health Industry Business Communications Council (HIBCC) developed implementation guides for the Health Care Claim (837) and Health Care Claim Payment/Advice (835).
   - The Healthcare Financial Management Association (HFMA) developed an implementation guide for the Health Care Claim Payment/Advice (835).
   - The American Dental Association (ADA) developed an implementation guide for the Health Care Claim (837).

5. Efforts toward standardizing data content have increased:

   - Use of ASC X12 codes (e.g., Adjustment Reason Codes and Pended Reason Codes)
   - Development of standardized institutional and professional data sets (UB92 and HCFA-1500)

6. Awareness of and participation in EDI initiatives heightened:

   - WEDI participation increased 500% from 1992 to 1993.
   - Over 5000 copies of the 1992 WEDI Report were distributed to various parties, including the federal government, health care providers, trade associations, consumer groups, employers, vendors, state governments, and payors. All current members of the United States Senate and House of Representatives received a copy of the report.
   - WEDI representatives met with members of President Clinton’s Health Care Reform Task Force to discuss WEDI's plan for achieving the aggressive goals outlined in the 1992 WEDI Report.
   - WEDI representatives met with key Congressional staff working on health care reform issues, to educate them on the WEDI work plan and industry EDI initiatives.
   - ASC X12 Insurance Subcommittee membership increased at least 50%.

1993 WEDI OBJECTIVES

WEDI reconvened in 1993 to resolve remaining implementation obstacles and work toward engaging all health care trading partners in standardized automation and electronic communication. The Workgroup was divided into 11 Technical Advisory Groups: Standards Implementation and Uniform Data Content, Network
Architecture and Accreditation, Confidentiality and Legal Issues, Unique Identifiers for the Health Care Industry, Education and Publicity, Health Identification Cards, Short-Term Strategies, State/Federal Role, Financial Implications, Coordination of Benefits, and Health Care Fraud Prevention and Detection.

To guarantee broad representation from groups with key perspectives on the issues, the Steering Committee expanded its membership to include 26 national organizations representing payors, providers, consumers, federal and state health care governmental agencies, and business.

The 1993 charge of the Workgroup was to:

1. Strengthen the understanding of and commitment to EDI among the health care industry, policymakers, and consumers by:
   o Developing a targeted plan for using industry resources to educate key audiences on EDI and the steps needed for implementation;
   o Encouraging participation in demonstration projects that prove the benefits and cost savings of EDI and that support industry cooperation and accelerate EDI use.
   o Expanding membership in the WEDI Steering Committee to reflect more broadly the key constituencies affected by EDI;
   o Soliciting participation in the WEDI Technical Advisory Group from as many interested parties as possible;

2. Work for enactment of preemptive federal confidentiality protection for individually identifiable health care information in an electronic environment.

3. Develop a strategy to facilitate a quick industry-wide transition to EDI:
   o Universal identifiers for patients, providers, and payors,
   o Health identification cards,
   o Coordination of benefits in electronic environments,
   o Implementation guidance for data standards.

4. Work with appropriate parties to ensure the health care industry can meet WEDI's target of universal adherence to uniform data content by 1996.

5. Provide additional data to the industry on cost/benefits of EDI, using the WEDI demonstration projects as a primary source.

6. Monitor the industry's progress toward the use of data
standards and EDI, and report to the Secretary of Health and Human Services by 4th Qtr 93.

7. Provide basic telecommunications requirements and promote WEDI's goal of clearinghouse accreditation by 1994.

8. Serve as a resource to and work cooperatively with the National Association of Insurance Commissioners and state governments to coordinate state and national efforts on administrative simplification.

RECOMMENDATIONS FROM THE 1993 WEDI REPORT

The following recommendations, calling for actions by the public and private sectors working cooperatively, represent the consensus of the Steering Committee but do not necessarily represent the policy of any particular member organization participating in the WEDI process. The WEDI Steering Committee, in its final deliberations, adopted the recommendations of the TAGs in most, but not all, cases.

1. Standards Implementation and Uniform Data Content

Specific and defined instructions supporting uniform data content and coding structures are necessary for the health care industry to achieve significant administrative cost reductions.

Recommendations

1. Mandate, by federal law, that all health care participants use ASC X12 standards, beginning with the core transaction sets: Enrollment, Eligibility, Claims Submission, and Claim Payment/Advice. Where appropriate ASC X12 standards do not currently exist [e.g., the National Council of Prescription Drug Program's (NCPDP) interactive standards], the Secretary of Health and Human Services, or other appropriate body, will approve use of other widely recognized standards for a transitional period to permit development of equivalent ASC X12 standards.

2. Require Category I payors (50,000 or more claims or encounters per year), providers (group practices of 20 or more physicians, hospitals, and nursing homes), and employers (with 100 or more employees) to adopt and implement approved ASC X12 standards by 4th Qtr 94. Require Category II participants (which includes all remaining payors, providers, and employers) to implement approved ASC X12 standards by 4th Qtr 96.

3. Develop implementation guides that standardize data and coding structures supporting the ASC X12 standards. Industry groups, such as the National Uniform Billing Committee (NUBC) and the Uniform Claim Form Task Force (UCFTF), should be consulted.

4. Establish a health care action group to coordinate the development of implementation guides, perform other
industry supportive functions, and evaluate and report on implementation progress every six months.

5. Develop a program of incentives (such as, higher tax credits and accelerated depreciation) to encourage timely implementation of the ASC X12 transactions sets by Category I and Category II participants.

6. Designate WEDI to coordinate a study to identify the need for claims attachments to eliminate capturing and transmitting unnecessary information. A report of the findings, along with data analysis and recommendations, will be submitted to the Secretary of Health and Human Services or other appropriate body.

2. Network Architecture and Accreditation

To facilitate a rapid, industry-wide transition to EDI, an effective network architecture is required to support a broad array of applications, communications, access methods, protocols, and line speeds. Only through available connectivity methods and the development of EDI standards can the industry achieve the effective electronic flow of information and the resultant cost savings prevalent in other industries.

Recommendations

1. Use an International Standardization Organization Open Systems Interconnection (ISO OSI) structure to facilitate "any-to-any" connectivity and promote open access to the network for all participants.

2. Endorse ASC X12 security guidelines and support the development of industry security standards to ensure confidentiality and security of health care data.

3. Establish performance standards and standard trading partner agreements for all network participants as a cost-effective alternative to a formalized clearinghouse accreditation program.

3. Confidentiality and Legal Issues

To facilitate and ensure the uniform, confidential treatment of individually identifiable health care information in electronic environments, WEDI's 1992 report urged Congress to enact preemptive legislation governing confidentiality by 4th Qtr 93. This year, WEDI drafted a model bill for the consideration of federal lawmakers.

WEDI believes that applying the Act to media that are not electronic (e.g., paper) will be counter-productive to the universal use of EDI for key health care transactions. Because uniform requirements for privacy protection in health care transactions are important to providers, payors, vendors, and consumers, establishing a uniform regulatory environment for
health care information in a form that is not electronic would remove an important incentive for migrating to EDI.

Recommendations

Enact the model legislation drafted by WEDI, which is designed to:

- Preserve confidentiality and privacy rights in individually identifiable health care information that is collected, stored, processed, or transmitted in electronic form;
- Preempt applicable state laws, except public health reporting laws;
- Establish a mechanism for securing information when collected, stored, processed, or transmitted in electronic form;
- Require publication of the existence of health care data banks;
- Encourage the use of alternative dispute resolution mechanisms;
- Establish penalties.

4. Unique Identifiers for the Health Care Industry

Unique, standard identification numbers will also serve to promote greater industry standardization and uniformity of health care data. Assigning unique, standard identification numbers will simplify administrative tasks, encourage faster automation of health care transactions, reduce administrative functions, and improve accuracy.

Recommendations

1. Use the Social Security Number as a patient identification number. A check digit should be appended to the patient identification number to minimize transposition. To minimize unauthorized access to data bases that contain sensitive clinical and financial data, storage of and access to patient data in computer systems should be based on the Social Security Number combined with a check digit and one or more keys that are specific to the system.

   Existing system security requirements should be strengthened, and federal legislation enacted, to ensure that only appropriate entities, including the patient or their authorized representative, are permitted access to data bases containing patient-specific clinical or financial information, and to prevent unauthorized compilation, use or disclosure of identifiable patient data.

2. Use the Social Security Number to identify individual
providers and the Tax Identification Number (which may be a Social Security Number) to identify provider organizations (physician group practices, hospitals, etc.). If, for privacy reasons, the Social Security Number cannot be used to identify individual providers, then HCFA's Unique Physician Identification Number should be used. A check digit should be appended to the provider identification number to minimize transposition. A four-character numeric route suffix should be used in conjunction with the Tax Identification Number to identify subcomponents or multiple locations of a provider organization.

Legislation should be enacted to safeguard the privacy of provider records. A group of electronic auditing and security experts should be convened to recommend technological barriers to prevent unauthorized access to and use of provider-related data.

3. Use a two-part code, consisting of eleven characters and modeled after the National Association of Insurance Commissioners Company Code, to identify all payors (including self-funded) and other EDI entities (e.g., vendors). The six-digit core code should contain CompanyCode values, followed by a five-digit routing code suffix assigned by the payor. A government agency should identify a central authority to administer the payor identification number.

5. Education and Publicity

WEDI believes that the health care industry must take responsibility for educating its own constituents. This, however, is a very complex undertaking because WEDI must respond to the educational and informational needs of all potential EDI users in the health care industry, as well as the general public. Therefore, WEDI has developed a comprehensive education and publicity work plan that is intended to provide standardized, economically affordable and geographically accessible educational opportunities to all EDI constituents.

Recommendations

Identify existing organizations to implement the education and publicity work plan. These organizations should develop the following products and services:

- Health care EDI education curriculum,
- Educational delivery program (train-the-trainer),
- EDI health care overview video,
- Communications strategy to publicize EDI education activities,
Data base of individuals and organizations to be kept informed of WEDI developments,

Directory of educational resources,

Electronic bulletin board service to distribute WEDI information to members,

Information pamphlets, providing basic information to potential EDI users and consumers,

WEDI newsletter, providing basic information on WEDI activities, legislative updates, and educational resources and events.

6. Health Identification Cards

Today, many health care services delivery organizations issue health identification cards that vary significantly in data content, media, technology, and format. This creates confusion and hinders more widespread use of existing EDI capabilities within the health care industry.

Recommendations

1. Develop an ASC X12 standard for data content and format for health identification cards by the end of 1993.

2. Where cards are issued, whether machine-readable or human-readable, conform to approved ASC X12 standards by January 1, 1995.

3. Cards should serve as a vehicle to identify entitlement to benefits; they should not contain individual health care data.

7. Short-Term Strategies

In 1992, WEDI sponsored three EDI demonstration projects to promote cooperative industry efforts, develop awareness of industry EDI activities, and demonstrate that technology is currently available to implement the WEDI recommendations.

Demonstration projects were selected based on whether they: were ecumenical, were identifiable to the public, demonstrated industry cooperation, leveraged existing infrastructures, added something new, measured results, and met an aggressive time frame.

The demonstration projects were:

- AT&T - Implemented the ASC X12 Benefit Enrollment and Maintenance (834) transaction to exchange eligibility information between AT & T and their insurance carriers: Empire Blue Cross and Blue Shield, The Travelers Insurance Company, and Prudential Insurance Company.
Virginia Project - Demonstrated that a broad-based, sophisticated infrastructure could facilitate the rapid implementation of eight new health care EDI transactions.

Twin Cities (Minnesota) Project - Combined two distinct EDI systems and increased EDI activity in an 11-county region surrounding Minneapolis and St. Paul.

The success of the 1992 projects provided a basis for continuing the momentum for health care EDI and sponsoring new demonstration projects in 1993 (refer to Addendum 2, "1992 Findings"). WEDI identified six 1993 projects to demonstrate the industry's movement toward EDI and the achievement of WEDI goals:

- Connecticut - Demonstrate the use of ASC X12 standards and a public-private coalition to move toward 100% electronic submission of claims.
- Nebraska - Move health care trading partners toward achieving the targeted WEDI implementation goals.
- New Jersey Claim - Demonstrate the use of the ASC X12 Health Care Claim (837) in both indemnity and managed care environments.
- Managed Care Transaction Set - Focus on implementation of managed care transactions.
- Vision and Flexible Spending - Highlight the use of EDI for Vision and employee-based Flexible Spending Accounts.
- New Jersey Health Care Information Network - Create a model health care information network that utilizes ASC X12 transactions.

Recommendations

1. Continue ongoing demonstration projects and report progress to WEDI monthly for purposes of publicity and education.

2. Encourage other projects that demonstrate:
   - Transition to or development of ANSI transactions;
   - Use of EDI in a managed care environment;
   - Involvement of physicians, hospitals, and other providers and vendors;
   - Involvement of community organizations, government, and business;
   - Incorporation of other WEDI objectives.

8. State/Federal Role

It is apparent that the degree to which EDI is being
implemented in the states and nationally varies tremendously. WEDI encourages greater coordination between state and national efforts toward administrative simplification.

Recommendations

Clearly delineate the state and federal roles and responsibilities for EDI implementation.

State Role

1. Facilitate the implementation of EDI. States may require assistance in understanding the concept of EDI and in discerning their role relative to the role of the federal government. States will be provided with information kits that explain how to carry out their EDI responsibilities.

Federal Role

1. Define the transmission vehicle for EDI;
2. Establish and enforce uniform, preemptive confidentiality standards;
3. Designate federal agencies that can provide states with additional information on EDI implementation;
4. Help states and territories resolve public health policy issues encountered in the implementation of EDI.

9. Financial Implications

In 1992, WEDI estimated that EDI implementation for a core set of health care transactions could yield gross administrative savings of $4 - $10 billion. WEDI's analysis was performed largely without data from the provider community.

Based on data collected from the 1992 demonstration projects, all participants experienced savings when migrating from manual transactions to EDI. These data were factored into the expanded analysis of the 1993 WEDI Report.

This year, WEDI has expanded the cost benefit analysis to encompass eleven health care transactions. Additionally, WEDI has been able to incorporate newly available data to estimate the potential savings for providers, and to update the savings estimates for payors and employers. Finally, WEDI has examined the costs of implementing EDI to achieve a more comprehensive picture of EDI's financial impact on the health care industry.

WEDI's analysis concludes:

- The estimated gross administrative savings for the core transactions has been revised upward to $8 - $20 billion annually. Gross administrative savings estimated for all eleven transactions is $13 - $26 billion annually. Of this amount, the potential savings estimated is $9 - $15.5
billion for providers, $2 - $4 billion for employers, and $2 - $6 billion for payors.

- The estimated one-time implementation costs to establish and maintain the EDI capability to achieve these savings is $5 - $17 billion. These costs are distributed across the industry as follows: $4 - $11 billion for providers, $.9 - $2.6 billion for employers, and $.7 - $3.5 billion for payors.

- Combining the estimated implementation costs and the gross administrative savings potential, the cumulative net savings over the next six years (to the year 2000) is estimated to total over $42 billion.

Although the estimated net savings identified may not translate directly to hard-dollar savings for the nation's health care bill, EDI savings will allow health care enterprises to improve their efficiency and reallocate their resources from administrative activities to enhance quality, patient care, and customer service.

Recommendations

1. Perform ongoing analysis and study of savings

2. Perform a continuing analysis of how the potential savings might be used

10. Coordination of Benefits

WEDI envisions a streamlined Coordination of Benefits (COB) process, shifting activities from a paper-intensive manual environment to a highly automated electronic environment. Without automating coordination of benefits processing, as many as 30% of all claims may have to be submitted on paper. By implementing WEDI’s recommendations, payors and providers will realize administrative and benefit dollar savings from fewer resubmitted claims, decreased duplicate claim payments, and reduced fraudulent claims.

Recommendations

1. Use ASC X12 transactions for COB information exchange.

2. Develop and implement a uniform and easily-interpreted set of COB rules.

3. Require payors to crossover, electronically, claims to secondary and subsequent payors.

4. Encourage providers to submit bills to payors on behalf of their patients.

11. Health Care Fraud Prevention and Detection
Electronic environments improve fraud detection because fraudulent patterns are more readily detected with automated, comprehensive, standardized data.

Recommendations

1. Develop improved audit trails and profiles capable of identifying fraudulent behavior.

2. Employ tools that identify suspicious activities, trends, or patterns.

ACTION PLAN FOR THE FUTURE

The industry is faced with two major tasks in its push for administrative simplification. The first challenge is to build on the momentum started in 1992 and that continued to grow in 1993. Several of the TAGs identified the need for an organizational structure (e.g., action group, WEDI Institute). While WEDI is supported by several national organizations with key perspectives on health care EDI issues, WEDI must continue to work diligently to solicit the backing of all industry players, including consumers.

WEDI remains committed to the aggressive implementation goals outlined in the 1992 WEDI Report. Moreover, WEDI continues to expect that voluntary effort, public-private partnerships, and tangible incentives will continue to drive industry-wide implementation.

Significant progress has been made in the past year with regard to developing standards, increasing the volume of business conducted electronically, and fostering awareness and acceptance of WEDI's vision. However, much still remains to be accomplished to expedite full implementation.

WEDI must focus 1994 efforts toward implementing the specific recommendations contained in this report and in the accompanying White Papers. WEDI must ensure that the specific recommendations contained in this report and the accompanying White Papers are implemented. A "Summary/Schedule of Recommendations" follows.

SUMMARY/SCHEDULE OF RECOMMENDATIONS

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>TAG</th>
<th>Implementation Date</th>
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<tr>
<td>Identify Social Security Number as patient identification number</td>
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<td>Identify Social Security Number to identify individual providers and the Tax Identification Number to identify provider organizations</td>
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<td>Identify two-part code,, consisting of eleven characters and modeled after the National</td>
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<td>Association of Insurance Commissioners</td>
<td>Company Code to identify payors and other EDI entities</td>
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<td>Use International Standardization Organization Open Systems Interconnection (ISO OSI) Structure</td>
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<td>Develop ASC X12 standards for health identification cards</td>
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<td>Develop Claim Attachments Report</td>
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<td>Develop EDI Implementation Guides for the core transaction sets:</td>
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<td>o Eligibility (270/271)</td>
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<td>Enact legislation to mandate use of ASC X12 transaction sets</td>
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* Refers to the numbers assigned to each Technical Advisory Group (refer to "Recommendations From the 1993 WEDI Report"). Recommendation Implementation Date

Develop financial incentive programs (e.g., tax credits and small business loans) for EDI implementation for health care participants | 1 | 2nd Qtr 94 |

Enact federal preemptive legislation establishing uniform privacy and confidentiality standards | 3 | 2nd Qtr 94 |

Determine a federal definition of EDI | 8 | 2nd Qtr 94 |

Identify federal agencies that can provide states with additional information on EDI implementation | 8 | 2nd Qtr 94 |

Establish performance standards and standard
trading partner agreements for all network participants 2 3rd Qtr 94

Develop state plan to resolve public health policy issues 8 3rd Qtr 94

Implement regulations for the use of ASC X12 transaction sets 1 4th Qtr 94

Implement standards for all Category I participants 1 4th Qtr 94

Provide states with information kits that explain how to carry out EDI responsibilities 8 4th Qtr 94

Conform to ASC X12 standards for voluntary issuance of health identification cards 6 1st Qtr 95
Use ASC X12 transactions for Coordination of Benefits information exchange 10 1st Qtr 95
Develop uniform order of benefit determination rules 10 4th Qtr 95

Implement standards for all Category II participants 1 4th Qtr 96

Require payors to crossover, electronically, claims to secondary and subsequent payors 10 4th Qtr 96

Recommendation TAG * Implementation Date

Identify the organization to implement the education work plan which includes:

- EDI curriculum, including a train-the-trainer program, EDI video, directory of educational resources, and pamphlets containing basic information
- Communications strategy to publicize EDI education
- Development of a data base of individuals and organizations
- Use of electronic bulletin board service to disseminate WEDI information to members
- Development of a WEDI newsletter containing information on WEDI activities, legislative updates, and educational resources and events

Perform ongoing analysis and study of savings 9 Ongoing

Perform a continuing analysis of how the potential savings might be used 9 Ongoing
Continue to improve audit trails and monitor fraudulent behavior 11 Ongoing

Employ tools to detect fraud 11 Ongoing

ADDENDA

Addendum 1: 1992 WEDI Recommendations

1. "The industry shall define and publish standard formats for the four core financial transactions (Enrollment, Eligibility, Claims submission, Remittance Advice) by fourth quarter 1993, through the American National Standards Institute (ANSI) Accredited Standards Committee (ASC) X12 Insurance Subcommittee."

2. "By fourth quarter 1994, 95% of Category I industry participants should implement EDI, directly or through a clearinghouse, for those core transactions listed above, offering the ASC X12 standard formats. By fourth quarter 1996, 85% of Category II participants should implement EDI for the core transactions."

3. "WEDI shall submit periodic reports to the Secretary regarding progress in achieving implementation goals."

4. "Public and private payors should create incentives for increased use of EDI."

5. "Congress should consider tax incentives to facilitate necessary initial investment by small or rural Category II providers and small employers."

6. "By 1995, all participants should be committed to full use of standardized billing content for claims submission (including data elements and codes), as developed/revised by the National Uniform Billing Committee (for institutional providers) and the Uniform Claim Form Task Force (for professional and community-based providers)."

7. "A WEDI task force should be created and will consult with other appropriate industry organizations to determine the feasibility of a unique identifier system that covers all participants in the health care system and a process for implementation by fourth quarter 1993."

8. "Congress should enact federal preemptive legislation governing confidentiality by fourth quarter 1993 to facilitate and ensure the uniform, confidential treatment of identifiable information in electronic environments."

9. "WEDI shall create a task force to develop a clear process for application of model COB rules in electronic environments by fourth quarter 1993. The health care industry should work with ASC X12 to create a standard crossover format no later than fourth quarter 1994."
Participants should utilize a unique identifier system to facilitate instructional routing of information to support COB."

10. "A WEDI task force should be established to develop recommendations regarding the use of electronic card technology by second quarter 1993."

11. "Clearinghouses should meet minimum performance standards to protect the business, confidentiality, and security of EDI customers."

12. "Participants should stimulate demonstration projects wherever possible, to highlight new approaches and publicize the uses of EDI in the health care industry."

13. "WEDI will sponsor and fund continuing analysis of the benefits and costs of EDI as they relate to reduction in administrative costs."

14. "To oversee the industry's progress toward EDI, and to assist in the fulfillment of these recommendations, WEDI shall continue in existence as a collaborative effort among health care industry participants and shall report to the Secretary of the Department of Health and Human Services each year on industry progress."

15. "To support critical educational activities and to generate industry support for implementation, WEDI shall develop a work plan on publicity and education to facilitate dissemination of material and resources for all major participants."

Addendum 2: 1992 Findings

During 1992, WEDI sponsored three EDI demonstration projects to promote cooperative industry efforts, develop awareness of industry EDI activities, and demonstrate technology that is currently available to implement the WEDI recommendations:

1. AT&T. Implemented the ASC X12 Benefit Enrollment and Maintenance (834) transaction to exchange eligibility information between AT&T and their insurance carriers: Empire Blue Cross and Blue Shield, Travelers Insurance Company, and Prudential Insurance Company.

   o Connectivity was established in three tests.

   o A 100-record test was transmitted via public value-added network to establish data accuracy and integrity.

   o A 10,000 record test verified ANSI 834's ability to accommodate complex eligibility situations.

   o 235,000 records were sent by tape to stress-test the operating system.
2. Virginia Project. Demonstrated that a broad-based, sophisticated infrastructure could facilitate the rapid implementation of eight new health care EDI transactions. The project was a collaboration among several governments, 30 insurance companies, 165 hospitals, and thousands of physicians.

- 80 additional providers added electronic claim submission.
- Electronic claims volume increased by 12%.
- Six hospitals successfully piloted electronic funds transfer to Medicare Part A and the ANSI 835 standards remittance advices.
- Blue Cross and Blue Shield Virginia transmitted similar remittance advices to over 200 providers.
- A physician referral system was installed in 32 sites in the 4th Qtr, and reached a volume of 4,000 transactions per month.


- Sixty physician offices, ten hospitals and/or hospital systems, and eight payors participated.
- A high degree of cooperation with health care reform initiative was exhibited.
- Medica and Blue Cross and Blue Shield of Minnesota (BCBSM) agreed to "directly connect" their networks so that each could accept and forward the other's claims.
- Installations of EDI technology in providers offices increased by 40%.
- The integrated network between Medica and BCBSM carried 83,105 claims transactions - 5,885 of which were EDI network technology-based transactions, and the remainder were telecommunications-technology based. These claims were submitted to Medica, BCBSM, Mutual of Omaha, and other indemnity insurance carriers.
- Fifty-two physicians using BCBSM technology sent electronic claims to Medica for the first time.
- Twenty-six physicians using Medica technology sent electronic claims to BCBSM for the first time.

The 1992 demonstration projects provided hands-on experience with health care EDI.

Based on data collected from the demonstration projects, all participants experienced savings when migrating from manual
transactions to EDI. These data were factored into the expanded analysis of the financial implications of EDI conducted by the TAGs.

During 1993, six new demonstration projects were initiated:

- Connecticut Project. To demonstrate the use of ASC X12 standards and a public-private coalition to move toward 100% electronic submission of claims.

- Nebraska Project. To move health care trading partners towards achieving the targeted WEDI implementation goals.

- New Jersey Claim Project. To demonstrate the use of the ASC X12 Health Care Claim (837) in both indemnity and managed care environments.

- Managed Care Transaction Set Project. To focus on managed care transactions, including eligibility, benefits, claim status, encounters, check guarantee, credit card authorizations, referrals, and laboratory results using a Systems Plus solution.

- Vision and Flexible Spending Project. To focus on use of EDI for Vision and employee-based Flexible Spending Accounts.

- New Jersey Health Care Information Network Project. To support the creation and establishment of a model health care information network and technology entity using standardized EDI. The initial transaction to be demonstrated is enrollment using ANSI 834.
Appendix 1

Standards Implementation and Uniform Data Content

Technical Advisory Group

White Paper

October 1993

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EXECUTIVE SUMMARY

The Standards Implementation and Uniform Data Content Technical
Advisory Group (TAG) reviewed the Workgroup For Electronic Data Interchange (WEDI) Report dated July, 1992 and identified strategies to implement the recommendations made in Appendix 3, EDI Health Care Transaction Formats, of the original 1992 WEDI Report.

The TAG continues to believe that to achieve significant administrative cost reductions, the health care community must adopt Electronic Data Interchange (EDI) technologies. The business and operational efficiencies achieved using EDI will produce significant savings for the public and private sectors. Participants of the health care community are reluctant to migrate to EDI because implementation manuals defining the specific data requirements have not been developed. Additionally, there has not been full acceptance by all health care participants to implement standardized EDI.

To assure aggressive industry-wide EDI implementation, the TAG recommends an orderly phased-in migration of health care EDI, using uniform data standards in all segments of the health care industry. The Secretary of Health and Human Services, or another appropriate body, should be given authority to designate the specific standards to be used and grant participants, from various segments of the industry, exceptions to implementation requirements in extenuating circumstances.

The major recommendations from this TAG include:

- Mandate, by federal law, that all health care participants use ASC X12 (an accredited ANSI committee) standards, beginning with the core transaction sets which are Enrollment, Eligibility, Claims Submission, and Claim Payment/Advice. Where appropriate ASC X12 standards do not currently exist [e.g., the National Council of Prescription Drug Programs (NCPDP) interactive standards], the Secretary of Health and Human Services or other appropriate body will approve use of other widely recognized standards for a transitional period to permit development of equivalent ASC X12 standards.

- Require Category I payors (volume of 50,000 claims or encounters per year), providers (group practices of 20 or more physicians), and employers (with greater than 100 employees) to adopt and implement approved ASC X12 standards by 4th Qtr of 94. Require Category II participants, (which includes all remaining payors and providers), to implement approved ASC X12 standards by 4th Qtr 95.

- Establish a health care action group to coordinate the development of implementation guides.

- Support extensive administrative and technical (translation software and network capabilities) education programs at the national and state levels, as specified in the Education and Publicity TAG White Paper. A core EDI curriculum must be developed to serve as a framework for the education programs coordinated by health care associations.
Develop implementation guides that standardized data and coding structures supporting the ASC X12 standards. Industry groups, such as the National Uniform Billing Committee (NUBC) and the Uniform Claim Task Force (UCTF) should be consulted.

Develop a program of incentives (such as, higher tax credits and accelerated depreciation) to encourage the timely implementation of the ASC X12 transaction sets by Category I and Category II participants.

Standardize claims settlement provisions and require payors to make payments on electronic claims on an accelerated basis.

Designate WEDI to coordinate a study to identify the need for claims attachments to eliminate capturing and transmitting unnecessary information. A report of the findings, along with the data analysis and recommendations, will be submitted to the Secretary of Health and Human Services or other appropriate body.

Empower a health care action group to work with ASC X12 to develop criteria for voluntarily certifying that health care participants meet minimum requirements necessary to conduct business in an EDI environment.

INTRODUCTION

The Standards Implementation and Uniform Data Content Technical Advisory Group originated from the EDI Health Care Transaction Formats Workgroup (1992 WEDI Technical Advisory Group) and has 53 representatives from 19 provider organizations, 14 payors/insurance companies, 3 government agencies, and 17 vendors and consultants. The TAG, with its diverse representation from all segments of the health care industry, was able to identify issues and develop an implementation strategy to facilitate timely movement toward an EDI environment in conjunction with the incorporation of the core ASC X12 transaction sets.

The Standards Implementation and Uniform Data Content TAG is one of the eleven WEDI TAGs charged with resolving implementation obstacles identified in the 1992 WEDI Report and ensuring that the 1992 WEDI implementation goals are implemented by the health care industry.

The vision of the Standards Implementation and Uniform Data Content TAG is to ensure the timely and orderly transition to an EDI environment by all health care participants through the implementation of the ASC X12 transaction sets. To facilitate this transition, codes which define the data will require standardization, and implementation guides will be developed to define how the ASC X12 transaction sets are to be used by all health care participants.

The objective of the Standards Implementation and Uniform Data
Content TAG is to facilitate a timely, industry-wide transition to EDI through the development of recommended strategy for the implementation of standard formats which adhere to the rules of uniform data content (data elements and codes). The goal is to have the core transaction sets (Enrollment, Eligibility, Claim Submission, and Claim Payment/Advice) implemented by Category I participants by 4th Qtr 94, or earlier and by Category II participants by 4th Qtr 95 (refer to Addendum 1).

The scope of the Standards Implementation and Uniform Data Content TAG focused on the current health care environment and the requirements of the health care participants to move to EDI. The multiple steps to bridge the transition from the current environment to that of EDI will require specific and defined instructions which support uniform data content and coding structures. This information will be developed and maintained within the implementation guides.

The Standards Implementation and Uniform Data Content TAG is pleased to submit the following issues and recommendations for the timely and orderly transition to an EDI environment.

RECOMMENDATIONS FROM THE 1992 WEDI REPORT

The following recommendations were made by the EDI Health Care Transaction Formats Technical Advisory Group in the Workgroup For Electronic Data Interchange Report, dated July, 1992 (refer to Addendum 2).

- Identify ASC X12 as the national body for developing electronic formats for health care transactions,
- Incorporate into the ASC X12 process a requirement for standardized tutorials to be developed concurrently with the transaction standards,
- Identify appropriate coding panels to review and evaluate all code sets requiring consolidation or maintenance,
- Institute programs that provide incentives (i.e., quicker payment, discounts, accelerated depreciation, loan of hardware and software, tax credits) and disincentives (i.e., aging payments, fees for payor claims and remittance advises, payment floor differentials) to encourage the adoption of ASC X12 in health care administration, and
- Reduce transition costs wherever possible.

ANALYSIS OF THE CURRENT ENVIRONMENT

Movement Toward an EDI Environment

Implementation of EDI across the health care industry is dependent on general acceptance and use of common data sets. As identified in the 1992 WEDI Report, the ASC X12 organization has
brought together providers, payors and vendors in a consensus process to develop standard health care transaction sets. Initially, the core transactions that were identified included Enrollment, Eligibility, Claim Submission, and Claim Payment/Advice. Ambitious efforts within ASC X12 have resulted in all core transactions being approved and available for use.

In other industries, the development of universal EDI formats and networks has taken many years. For example, the Automated Teller Machine (ATM) networks in the banking industry required almost 20 years to progress from experimental ATM networks in the 1960’s to the use of standard formats allowing for interconnection of networks in the 1980’s.

The TAG believes that implementation in a short time frame can best be achieved through legislative mandate for the use of ASC X12 transaction sets. This mandate will allow the Secretary of Health and Human Services or other body to approve the use of other widely recognized standards for a transitional period to permit development of equivalent ASC X12 standards, where appropriate ASC X12 standards do not currently exist. (See Recommendation 1)

To obtain the greatest savings, implementation of EDI must be industry-wide. Transition to an EDI environment based upon the WEDI recommendation for Category I and II participants will require a phased migration strategy. The TAG reviewed the 1992 recommendations and has further defined the participants and time frames as follows. (See Recommendation 2):

- Category I payors and providers include major public and private payors; hospitals; employers with greater than 100 employees and self insured plans; clinics laboratories; and durable medical equipment (DME) suppliers with a volume of at least 50,000 claims or encounters per year; and group practices of 20 or more physicians.

- Targeted implementation for Category I participants is 4th Qtr of 94.

- Category II includes all remaining health care payors, providers, employers and self insured plans, and pharmacies.

- Accelerate the time frame for implementation of Category II participation to 4th Qtr of 95.

- Establish annual milestones over a five-year period to measure the progress of EDI implementation as a percentage of transaction volume (refer to Addendum 3).

A significant barrier to the implementation of EDI is the fact that implementation guides have not been developed that incorporate standard data requirements and content across large segments of the health care industry. It is critical that private payors and government programs, including Medicare and Medicaid, use a common set of formats to achieve the highest
level of administrative cost savings and accelerate the implementation of EDI. Implementation guides for claim submission must be developed by business transaction type.

Potential health care associations which could assume responsibility for development of implementation guides are identified in Addendum 4.

In an effort to have implementation guides available to support the implementation time frames called for by WEDI over the next year and a half, the TAG recommends that a Subcommittee with appropriate ASC X12 and business knowledge be formed to develop the initial implementation guides. The WEDI Implementation Guide Development Subcommittee began meeting in June 1993 to develop these implementation guides. The scope of the WEDI Implementation Guide Development Subcommittee is to develop a mechanism to expand use of ASC X12 transactions in the health care marketplace. The group will accomplish this by developing industry-wide implementation guides initially for the core transaction sets. These guides will allow providers and payors of any size and complexity to implement EDI transactions. The purpose of the guides is to determine uniform data content within the ASC X12 standard formats. This group will focus on planning and implementing the process of how implementation guides will be coordinated, created, maintained, and distributed. This Subcommittee has developed the following:

- WEDI EDI Implementation Guide Task Plan (refer to Addendum 4b).
- Examples of Implementation Guides Progress (refer to Addendum 4c).

Implementation guides should provide detail definition to the ASC X12 standards by defining uniform data content for variations in transaction types. These guides should define data content and identify valid code tables and code table values applicable to particular billing types or other transaction variations. We recommend that these implementation guides contain the following components:

- Guide to ASC X12 EDI in health care,
- Instructions on guide use (e.g., "How to Use This Guide"),
- Purpose and scope of the transaction,
- Transaction table showing segments and looping structure,
- Detail listing of data elements, including mandatory segments and code values,
- Control and enveloping structure and definitions,
- Explanation of interaction to related transactions,
- Data dictionary,
- Functional acknowledgments,
- Business use examples,
- Code sources for external lists,
o Ordering information for other implementation guides, and
o Glossary.

The production of implementation guides will require coordination and resources. Development of each implementation guide will require representation from all sectors of the industry, including payors, providers, and vendors. Consultant and EDI services may be needed. Meeting facilities will be required. Dissemination of the guides will incur costs for reproduction and mailing. Educational material will need to be developed in addition to the production of the implementation guides. Government and/or private funding may be needed to provide impetus to foster the creation of the implementation guides and to keep the cost of the resulting product at a minimum. The members of the WEDI Implementation Guide Planning Subcommittee have determined that the implementation guides for the core transaction set will be developed with "in-kind" funds from the entities which each member represents. No funding is requested for 1993; however, potential funding needs for future transactions are outlined in Addendum 5. (See Recommendation 3)

Rapid implementation of ASC X12 standards is dependent on cooperation and coordination of the many organizations in the health care industry. A central entity is needed to coordinate implementation and foster education efforts. Other functions of this coordinating entity should include communicating with state and federal governments, advising ASC X12 on industry needs, and ensuring participation in EDI. This coordinating entity should be broadly based and include representation from payors, providers and vendors. It also might include representation for consumer and employer communities.

Other industries have created action groups to fulfill the need for EDI development, coordination, and education, including the automobile industry through the Automobile Industry Action Group (AIAG), the banking industry through the National Automated Clearing House Association (NACHA), and the utilities industry through the Utility Industry Group. Currently, there is no action group for the health care industry.

The TAG members discussed several alternatives to fulfill the need for an action group. These alternatives include WEDI, ASC X12, the National Health Insurance Board (as outlined under the Jackson Hole proposal), a new private/public sector entity, and a private sector entity coordinating with the public sector and others.

In the short-term, WEDI, in coordination with ASC X12, could assume many of the functions of an action group. WEDI is well positioned to assume a leadership role and contains many of the functions of an action group. However, WEDI, by design, is not an ongoing entity. ASC X12 is a volunteer organization, and is limited by its charter to the development and maintenance of transaction sets. However, ASC X12 may be able to supplement some of the needs for the coordination and education in the health care industry. (See Recommendation 4)
To promote implementation of EDI, the lack of awareness and understanding of EDI capabilities and benefits needs to be eliminated. The TAG supports the recommendations made in the Education and Publicity TAG White Paper.

Meeting the WEDI implementation goals will require an extensive education effort. Specifically, resources must be used to promote the dissemination of the WEDI educational materials and implementation guides in a short time frame (refer to Addendum 6). (See Recommendation 5)

Standardized coding structures will be required to support the mandated ASC X12 standards. The National Uniform Billing Committee and the Uniform Claim Task Force, if reestablished, as well as other professional associations should be consulted in standardizing code lists and values (refer Addendum 7). (See Recommendation 6)

Acceleration of EDI implementation and meeting implementation goals can be accomplished by establishing incentives for the use of EDI and the ASC X12 transaction sets. (See Recommendation 7)

There is substantial agreement among payors that claims attachments add to the complexity and cost of administering health insurance programs. Furthermore, while many agree that it is desirable to eliminate such documentation, they also agree that it is unlikely that the need for claims attachments can be completely avoided. The following factors contribute to this issue:

- Contractual requirements and government mandates. Many insurance plan sponsors require unique administrative procedures and data collection requirements in their contracts. Additionally, government statutes and regulations often mandate collection and use of non-standard information and administrative processes.

- Payor concerns over fraudulent claims. Many payors are concerned over the growth of fraudulent claims. These concerns range from unbundling, upcoding and related practices to more serious matters such as billing for services not received.

- Defensive reaction of administrators in audits. Many plan administrators impose attachment requirements in defense of the increasing volume of audits on their performance as carried out by third parties on behalf of the administrator's clients.

- Lack of cost/benefits awareness. The failure of some claims administrators to develop carefully constructed cost/benefit protocols to guide their claims adjudicators' judgment when requesting supplemental data.

Several of the ASC X12 Health Care Workgroups are developing new transaction standards that will address at least some of these issues. They include the work underway on standards for: patient information, certification and utilization management,
expanded claims formats, coordination of benefits, and claims status.

WEDI is well positioned to guide a national study of the claims attachment issue. WEDI should be empowered to coordinate a study and include data collected by the Health Care Financing Administration and private health insurance payors. The Attachments Subcommittee, composed of payors and providers, was established in August 1993. The study is expected to be delivered 1st Qtr 94. The Attachments Subcommittee will address the following issues:

- Determine the definition and categories of claims attachments,
- Costs, benefits and rational of current claims attachment practices so that those matters that demonstrate a clear need for claims attachments can be identified,
- Extent to which the data content of ASC X12 health insurance EDI transaction data sets can be expanded to meet the information needs that underlie the requirements for supplemental claims attachments, and
- Development of automated editing procedures that should be adopted by payors and EDI vendors to minimize the use of claims attachments.

This study would be conducted jointly with industry associations representing both providers and payors. The study, along with its full data analysis and recommendations, would be submitted to the Secretary of Health and Human Services. (See Recommendation 8)

WEDI participants identified and discussed the business transactions in the managed care/HMO environment. The purpose of this discussion was to identify needs for additional ASC X12 activity to provide full EDI capabilities for this environment. Listed below are the general managed care functions that were identified. WEDI is requesting that ASC X12 assign the open issues and additional development to the appropriate workgroups within the Health Care Task Group.

1. Encounters - Reporting of capitated services from provider to HMO/payor.
2. Claims - Reporting of fee for service services from provider to HMO/payor.
3. Capitated Payment - Per enrollee payment from HMO/payor to provider, including the following functions:
   - Funds transfer instructions to bank.
   - Notice to provider of funds transfer and appropriate detail for posting to provider accounts receivable system.
• List of enrollees supporting payment, including capitation payment per enrollee.

• Retroactive additions, including months to be covered and capitation amounts for those months.

• Retroactive terminations, including months and amounts.

4. Risk Settlement - Transaction from HMO/payor to capitated provider addressing settlement for actual utilization.

5. Referral Process/Treatment Plan - Transaction from primary care provider to the payor (which could be the primary care provider) recording approval for additional services. Also, pre-certification and pre-admission requests and approvals are included in this function.

6. Eligibility Lists/Rosters - Periodic listing of enrollees sent from HMO/payor to primary care provider.

7. Clinical Outcome Reporting - Follow-up reporting of treatment outcomes from primary care provider to the HMO/payor.

8. Report Card - Reporting of cost, care and satisfaction information from the HMO/payor to the employer/plan sponsor and provider summarizing actual utilization and experience. (See Recommendation 9)

State insurance laws for claims settlement provisions vary by jurisdiction. Changes in these laws could provide a savings incentive to implement EDI technology and remove a barrier to EDI implementation (refer to Addendum 8). (See Recommendation 10)

The TAG calls for health care participants to be voluntarily certified to meet minimum requirements to conduct EDI business in an electronic environment. (See Recommendation 11)

1993 RECOMMENDATIONS FOR EDI IMPLEMENTATION

After a careful analysis of the 1992 WEDI Report and the current health care environment, the Standards Implementation and Uniform Data Content TAG has identified the following key recommendations as necessary for the transition to an EDI environment.

Issue 1 - EDI Standards

Health care participants must implement the ASC X12 transaction sets together in a timely, organized way to achieve full benefits and administrative cost savings.

Recommendation 1

Federal regulation will mandate the use of the ASC X12 standards, beginning with the core transaction sets. The core
transaction sets are Enrollment, Eligibility, Claim Submission and Claim Payment/Advice. The TAG recommends that members of WEDI, as well as members of this TAG, work with legislative writers to ensure the language reflects the intentions of this TAG.

Where appropriate ASC X12 standards do not currently exist (e.g., the National Council of Prescription Drug Programs interactive standards), the Secretary of Health and Human Services or other appropriate body will approve use of other widely recognized standards for a transitional period to permit development of equivalent ASC X12 standards. The Secretary or other appropriate body will designate which new standards will be mandatory as they are developed. The scope includes the Medicare, Medicaid and CHAMPUS programs, as well as other privately and publicly funded health care programs including Workers Compensation.

Category I, which includes major public and private payors, hospitals, employers with greater than 100 employees, self-insured plans, clinics, laboratories, DME suppliers, and group practices of 20 physicians or more or volume of 50,000 claims/encounters per year must implement approved ASC X12 standards by 4th Qtr of 94. Category II, which includes all remaining health care payors, providers, employers, self-insured plans and pharmacies, must implement approved ASC X12 standards by 4th Qtr 95. The objective is to convert all transactions to one common set of EDI formats.

Issue 2 - Implementation Goals

To reduce administrative expenses, the health care industry needs to accelerate the implementation of EDI to increase the percentage of business conducted electronically through the entire health care industry. To gain the desired administrative savings, all state programs, including Medicaid, Workers Compensation, and other state level programs must follow national uniform implementation standards.

Recommendation 2

Support the attainment of industry-wide implementation goals and minimum implementation requirements by 2nd Qtr 94 (refer to Addendum 3).

Issue 3 - Implementation Guides

For the Health Care Industry to achieve all potential administrative cost savings with EDI, it will need to implement the EDI standards consistently among all organizations.

Recommendation 3

Empower an industry action group(s) to coordinate with health care entities in developing EDI implementation guides for the core health care transactions by 4th Qtr 93 (refer to Addendum 4).
Issue 4 - Industry Groups To Coordinate ANSI Implementation

To speed the development of EDI implementation, a coordinating action group is needed.

Recommendation 4

Promote the development of a private/public sector health care action group composed of providers, payors, employers, and other major health care entities by 1st Qtr 94. WEDI will serve as the health care action group during the initial development of the implementation guides for the core health care transactions until the action group is identified. Functions of the action group include:

- Coordinate the development of implementation guides by business transaction type,
- Coordinate efforts of existing health care organizations,
- Promote EDI evaluation programs and education materials,
- Communicate with federal and state governments for the health care industry on matters relating to EDI, and
- Promote the continued use of ASC X12 formats and advise ASC X12 on new transaction development, and promote the use of uniform definitions and data elements.

Issue 5 - Education

Barriers have developed from the lack of awareness and understanding of how to implement EDI and its capabilities and benefits.

Recommendation 5

Support extensive administrative (trading partner agreements) and technical (translation software and network capabilities) education programs at the national and state levels, as specified in the Education and Publicity TAG White Paper, by 2nd Qtr 94.

Issue 6 - Coding Standards

Coding standards must define data content. In the current environment, different code lists exist for the same data element.

Recommendation 6

Empower the Secretary of Health and Human Services, or other appropriate body, to identify an organization(s) to develop a standard set of definitions for health care industry data elements by 4th Qtr 93. They must consult with existing industry groups to resolve inconsistencies and duplication.
Issue 7 - Transition Costs

The transition to an electronic business environment requires the health care industry to invest in systems that will support an EDI infrastructure.

Recommendation 7

Develop incentives (such as change tax credits for EDI capital expenditures to $30,000, accelerated depreciation for investments over $30,000) to offset the costs for Category I participants to develop the EDI infrastructure. Small business loans should be made available to Category II participants and small software vendors as an incentive. This should take place by 2nd Qtr 94. The accumulated savings from EDI should offset the additional federal expenses.

Issue 8 - Attachments

Current requirements for paper and electronic attachments by payors, such as those mandated for Medicare and Medicaid, impede the transition and create inefficiencies and added cost in an EDI environment.

Recommendation 8

A study must be coordinated by WEDI to identify the need for claims attachments, and eliminate the need for providing unnecessary information. A report with the data analysis and recommendations will be submitted to the Secretary of Health and Human Services for possible legislation or regulation. This study will be accomplished by 1st Qtr 94.

Issue 9 - Managed Care Transactions

To ensure that EDI technology keeps pace with the current trend toward managed care.

Recommendation 9

ASC X12 should review the business requirements of the managed care environment and modify or create transactions as needed to accommodate business needs. ASC X12 and WEDI should promote the participation of managed care organizations in electronic standards setting organizations. Begin development of initial set of managed care transactions by 4th Qtr 93.

Issue 10 - Claims Settlement Provisions

Need to assure that on a national basis all electronic transactions are processed within nationally established time frames.

Recommendation 10
Standardize claims settlement provisions and require payors to make payments on electronic claims on an accelerated basis by 2nd Qtr 94. The provisions should relate only to "clean" claims which require no manual intervention. Payors, which include Medicaid and Workers Compensation programs, as well as other privately and publicly funded health care programs, must have a payment differential between electronic and non-electronic claims as an incentive to submit claims electronically, as Medicare has in place now. Furthermore, all Medicaid, Workers Compensation and other state and local payment programs must comply with the standards established by the Secretary of Health and Human Services and provided for in the implementation guides (refer to Addendum 8).

Issue 11 - Health Care EDI Certification

Health care participants must be certified to meet minimum requirements necessary to conduct business in an EDI environment.

Recommendation 11

Empower a health care action group to work with ASC X12 to develop criteria for voluntarily certifying that health care participants meet minimum requirements necessary to conduct business in an EDI environment.

CONCLUSION

In the 1992 WEDI Report, the WEDI Health Care Transaction Formats Technical Advisory Group (TAG), "sought to identify the key issues surrounding acceptance of national electronic formats design and implementation," and had the stated vision "to enable all participants in the health care community to benefit from the administrative cost savings that can be achieved from the adoption of national, non-proprietary EDI formats and uniform informational reporting criteria." The TAG further identified ASC X12 as the national body to develop health care business electronic formats.

Currently, the core transaction sets identified in the 1992 WEDI Report with an implementation time frame of 4th Qtr 94, are approved transaction sets ready for implementation. Vendors have developed and tested translation software which can be customized to a payor's or provider's environment and the telecommunications network is in place with telephone lines or satellite transmission capabilities. In short, the technology exists and the ASC X12 standard formats are available today for use by the health care industry. All of the necessary components are in place for a transition to an EDI environment. However, there is reluctance by many health care participants to migrate to an EDI environment because of the changes required to implement this technology and the lack of implementation guides which specify the data element detail necessary for uniform implementation.

To facilitate a smooth transition to an EDI environment, the Standards Implementation and Uniform Data Content TAG recommends the following steps to implement the ASC X12 transaction sets and
support uniform data content and coding structures.

- Mandate the use of ASC X12 transaction sets for Category I and Category II health care participants. Develop a program of incentives and disincentives to ensure timely implementation.

- Establish an action group to coordinate with the appropriate health care entities in development of implementation guides and other industry supportive functions.

- Develop implementation guides which standardize data elements and coding structures to support the uniform implementation of the ASC X12 transaction sets.

- Support extensive administrative and technical education programs at national and state levels.

- Minimize the requirement for paper attachments.

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ADDENDA

Addendum 1: List of ASC X12 Health Care Transaction Sets

Enrollment (834) - For transmitting enrollment and/or benefit information from the employer to the payor for the purpose of enrolling in a benefit plan. Approved for implementation 2/92.

Uniform Health ID Card (Not a transaction set) - Focusing on eligibility, minimum machine-readable data and required printed data. Estimate completion 6/94.

Eligibility (270/271) - Used by providers to request and receive coverage information on the member/insured. Approved for implementation 2/93.

Crossover COB (TBD) - Used to transmit coordination of benefit claim information to other organizations that may have insurance liability. Expected to be approved for implementation 10/94.

Healthcare Service Review (278/279) - Used to transmit utilization and certification information. Expected to be approved for implementation 6/94.

Healthcare Informatics Standards Planning Panel (HISPP) Message Standards Developers Subcommittee (MSDS) - Created by ANSI to coordinate standards setting groups.

Patient Information Record (274/275) - Developing a request and response for computerized medical record. Expected to be approved for implementation 6/94.

Claim Submission (837) - Used to submit all health care claims.
Approved for implementation 10/92.

Claims Status (276/277) - Used to determine the status of a submitted claim. Expected to be approved for implementation 6/94.

Claim Payment (835) - Used for the electronic remittance advice and the electronic funds transfer. Approved for implementation 10/91.

HMO Reporting (TBD) - Covers periodic reporting between HMOs and HCFA. Expected to be approved for implementation 6/94.

Addendum 2: Recommendations From the 1992 WEDI Report

Issue 1: Standard Setting Bodies

The potential exists for multiple national standard-setting organizations to develop redundant and/or conflicting electronic standards.

Recommendation 1

Identify ASC X12 as the national body to develop health care business (financial) electronic formats. Multiple national standard-setting organizations are needed as they represent different constituencies, business needs and areas of focus; however, one organization should be designated for the proactive coordination of all EDI-related standard-setting bodies. The recently organized ANSI Healthcare Informatics Standards Planning Panel (HISPP) would be appropriate or some other body may be created.

Issue 2: Implementation of EDI Standards

ASC X12 standard formats are designed to meet the needs of a broad community of users. The ANSI transaction implementation guides address general issues on data segments; however, they lack the detail needed to successfully guide users on the reporting requirements for specific categories of providers and payors. As an example, the Health Care Claim (837) transaction set is identical for hospitals and physicians, but not identical in the way it is implemented. For instance, hospitals utilize procedure codes from the ICD-9-CM code list while physician offices use procedure codes from the CPT code list.

Recommendation 2

Assign ASC X12 to oversee the creation of implementation guides to explain the logic and intent of data segments and to give insight into the correct application of the standards for certain reporting requirements as well as address provider-specific (i.e., hospitals, physicians, dentists), and payor-specific (i.e., Medicare, Medicaid, commercial carriers) applications. Form subcommittees which include representation from payors and providers (i.e., National Uniform Billing Committee for institutional billing and Uniform Claim Form Task
Force for professional billing), to write these implementation
guides and to provide sufficient detail for the proper
application of ASC X12 standards to individual areas of
jurisdiction. Representatives from other areas, including
dental, vision, and pharmaceutical, will also be encouraged to
participate. To facilitate production of quality
implementation guides at a fast pace, Data Interchange
Standards Association, Inc. (DISA), the secretariat for ASC
X12, will support the sub-task groups through a representative
who will coordinate the development of the implementation
guides and will contract with consultants having expertise in
specific areas addressed by a transaction set, when needed.
When a consultant is hired, it will be the consultant's
responsibility to coordinate the specialty areas and draft the
implementation guide. DISA will coordinate the development and
distribution of implementation guides as it does now with
transactions sets. Parties are strongly encouraged to work
within these implementation guides unless there are compelling
business reasons to deviate. Such deviations should be
addressed by trading partner agreements.

Issue 3: Coding Standards

Coding standards must define data content. In the current
environment, certain data segments use many different code values
within the data element. For example, there are many payment
adjustment or rejection (EOB, EOP, or EOMB) codes, and depending
on the payor, each code may have the same or a similar
definition. A second example is the many provider numbers
assigned to the same physician by the many payors with whom the
physician conducts business.

Recommendation 3

Identify appropriate coding panels to review and evaluate
all code sets requiring consolidation or maintenance. Coding
panels should abide by ASC X12 protocols to meet the
requirements of all trading partners.

Issue 4: Use of ANSI EDI Standards

All trading partners must be committed to employ ANSI EDI
standards by 1995.

Recommendation 4

Institute programs that provide incentives (e.g., quicker
payment, discounts, accelerated depreciation, loan of hardware
and software, tax credits) and disincentives (e.g., aging
payments, fees for paper claims and remittance advices, payment
floor differentials) to encourage the adoption of ASC X12 in
health care. If WEDI's implementation goals are not met by
1995, perhaps stronger measures, such as legislative
initiatives, should be considered.

Issue 5: Costs
Transition costs may impede acceptance and use of ASC X12 standards, especially by those already using proprietary technology. Many trading partners who have made significant investments may be reluctant to adopt ASC X12 standards. These costs include:

- Design/development
- Conversion from proprietary system to ANSI
- Implementation which includes training, hardware, and EDI translators

Recommendation 5

Reduce transition costs, whenever possible. Trading partners are encouraged to join into "informational partnerships" in which development, transitional, and operational costs are shared and duplication of efforts is avoided. Low-volume entities should consider using pooling arrangements which capture economies of scale, such as value-added networks, clearinghouses and service bureaus.

Addendum 3: Implementation Goals as a Percentage of Transaction Volume

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</table>

Addendum 4: Potential Organizations to Coordinate Implementation Guide Development

| Professional Associations As Coordinating Groups | ANSI Format |
| Institutional Claim | American Hospital Association through National Uniform | 837 |
Billing Committee

Professional Claim  American Medical Association through Uniform Claim Task Force  837
Dental Claim  American Dental Association  837
Pharmacy Claim  National Council of Prescription Drug Programs, American Society for Automation in Pharmacy, and Pharmaceutical Manufacturers Association  837
Claim Payment  WEDI (Action Group)  835
Enrollment  WEDI (Action Group)  834
Eligibility  WEDI (Action Group)  270/271

Addendum 4a: Flow Chart of the Implementation Guide Development Process

(Flowchart)

Addendum 4b: WEDI EDI Implementation Guide Task Plan

1. Hold planning meeting to identify key components that would define the implementation guides.

2. Identify workgroups, committees, associations, and consultants (if needed) to serve on the development of the guides. Define each group's role and responsibility. Consult with them on potential time frames that would be needed. Write RFP for consultant (if needed).

3. Begin crafting the guides. Identify business events. Lay out specific data elements to define a document and data requirements needed to facilitate electronic reporting and transmission of data.

4. Distribute draft for initial health care industry review of the sections.

5. Coordinate the guides earmarked for the different sectors of health care industry for consistent interpretation and approach.

6. Identify the parties responsible for supplying certain information (e.g., employer, insurer, provider, and IRS). Identify the transaction set containing this information. Analyze the flow of transactions and whether the guides address the responsibilities appropriately.

7. Modify drafts and hold committee review(s) among the different participants.
8. Establish demonstration criteria for application of guides and process being implemented.

9. Identify location(s) for testing.

10. Review findings of the demonstration.

11. Improve/modify implementation guides.

12. Convene another meeting to identify changes made to the draft guide and plans for a final guide and disseminate final implementation materials to users as well as education of end-users.

Addendum 4c: Examples of Implementation Guide Progress

Dental Providers

The American Dental Association (ADA) is in the process of developing an Implementation Guide for the ASC X12 837 transaction set which is specifically designed to describe the transmission of dental claims data. The ADA's Dental Implementation Guide identifies the blueprint and all the details necessary to communicate in a standardized electronic format.

The projected release date for the first version of the ADA's Dental Implementation Guide is 4th Qtr 93. As with all standards, the Dental Implementation Guide will require continuous maintenance to stay current with ASC X12 transaction sets.

Institutional Providers

The American Hospital Association, working with the members of the National Uniform Billing Committee, has made significant progress with regard to electronic billing. The institutional provider community has already approved an electronic "flat file" record layout of the UB-92 data set. This would achieve alignment of each participant's internal systems for handling the billing data. Most recently, the NUBC has undertaken the review and development of an institutional billing implementation guide for the ASC X12 837 transaction set.

In developing the EDI implementation guide, NUBC efforts will focus on clearly defining how the NUBC's UB-92 data set can be universally enveloped within the 837 transaction set. Steps have already been taken to identify the Medicare billing requirements.

Efforts are now underway to define other major payor needs. It is anticipated that the implementation guide should be completed by October 1, 1993. The NUBC will need to approve the guide prior to distribution. Distribution of the implementation guide can then begin in the 4th Qtr of 93.

It is anticipated that many larger institutional providers will take advantage of the EDI capabilities in early 1994. Other institutional providers will likely move toward the ASC X12
standards within the next two years, with a significant number of institutional providers adopting EDI by early 1995.

Addendum 5: Proposed Financial Projections for Implementation Guide Development

Purpose

1. Provide the resources to assure the implementation time frame recommended by WEDI.

2. Assure industry-wide participation in the development of the Implementation Guides.

3. Promote industry-wide participation in EDI.

Project Scope

1. Develop and publish industry implementation guides.

2. Print and widely disseminate the implementation guides.

3. Develop and disseminate education materials supporting the use of EDI.

Budget and Time Frames

1. Six-month time period.

2. Estimate $244,000 per implementation guide.

3. Items covered include:
   - Consultants
   - WEDI advisors (payor, provider, and ANSI knowledgeable participants) travel
   - Consultant travel
   - Secretary and administrative staff
   - WEDI coordinator travel
   - Telephone, postage and supplies
   - Editor
   - Printing - 10,000 copies of each guide
   - Education (brochures and materials)

Addendum 6: Representative Industry Groups Developing Implementation Guides for ASC X12 Transaction Sets

<table>
<thead>
<tr>
<th>ANSI Format</th>
<th>Organization</th>
</tr>
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Other organizations have also developed implementation guides for ASC X12 standards for use among their trading partners.

**Addendum 7: Sources of Standardized Code Lists**

<table>
<thead>
<tr>
<th>Code</th>
<th>Industry Group(s)</th>
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<td>CDT Codes</td>
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<td>HCPCS Codes</td>
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<td>ICD-9-CM Codes</td>
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<td>Pended Reason Codes</td>
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**Addendum 8: Proposed Claim Settlement Provisions**

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</table>
Maximum days to settle clean claim  14 12 10 8 6
Maximum days to settle other claims  28 26 24 22 20
Number of days allowed to request additional information  20 15 10 5 5

Definitions

Clean Claim - those claims containing all data required for payor adjudication and that do not require further investigation.

Settlement - occurs when adjudication has taken place and final remittance sent to the provider.
Over 1.3 million health care providers, including hospitals, medical centers, clinics, laboratories, nursing homes, physicians, dentists, and other health care professionals, participate in the electronic exchange of data. Each of these entities participates differently according to its segment of the
industry. Many large providers support their own data networks or maintain links to insurers, other health care payors, and other providers; others connect to information sources through a processor acting as an intermediary. Many software vendors support these providers, payors, and processors.

It is the belief of this TAG that considerable cost savings can be realized in the health care community with the implementation of EDI. The recommendations in this paper are intended to speed implementation within the industry, reduce implementation costs, and ensure the integrity of the participants providing the telecommunications network. The Network Architecture and Accreditation TAG concur with, and endorse, the open systems interconnection philosophy widely held in the telecommunications industry. Regardless of computer type or size, the industry, as it exists today, can achieve effective electronic flow of information and the resulting cost savings prevalent in other industries using available connectivity methods.

An effective network architecture must provide the foundation for support of a broad array of applications, communications, access methods, protocols, and line speeds. Recognizing that a vast infrastructure already exists in the marketplace is crucial to building an effective network architecture.

Dramatic changes in network requirements would only delay implementation and increase costs—results that are in direct contrast to WEDI's goals. The first two of this TAG's six recommendations concern establishment of an EDI Network Architecture. The first recommendation sets the foundation for a health care EDI Network that uses established telecommunications industry standards; the second identifies key considerations in architecture development. Due to limitations of time and resources, this paper does not represent an exhaustive discussion or a complete implementation plan of the health care EDI Network Architecture; additional research and discussion are required. This paper merely establishes a base from which to build.

This paper lists five areas that must be addressed for the timely development of EDI in the health care industry; recommendations from several of these areas need to be implemented simultaneously as the network architecture evolves. These areas are further clarified in this paper.

Active industry promotion of true open access for all participants in the health care community will increase the number of participants in EDI, enhance acceptance of EDI in health care, and fulfill the industry's cost savings goals. Based on these facts, the TAG's third recommendation is to promote open access to the network for all participants in the health care community.

The fourth recommendation provides guidelines and parameters that ensure the confidentiality and security of health care data. Any comprehensive structure for a data network must provide mechanisms that ensure confidentiality and security of data; however, such mechanisms cannot create roadblocks to full participation in EDI. For a national network to evolve
Establishing performance standards increases health care industry participation in EDI and assists in achieving network integrity. The standards addressed in this paper apply to EDI transaction networks that offer claims clearing and EDI transaction transmission, editing, storing and forwarding, tracking, and other related services in either interactive or batch mode. Although these standards focus predominately on EDI transaction processors, they should apply also to health care administrators (HCAD), Value Added Networks, and other participants connected to the health care EDI network.

The fifth recommendation establishes performance standards for all network participants, including standards for data content and telecommunications methods, ethics, support, timing of transactions, and availability.

WEDI's recommendations for legislation on the issues of privacy and confidentiality, uniform data content, use of ASC X12 (an accredited ANSI Committee) standards, and use of standard ID numbers lessen the need for a costly alternative to government legislation. However, independent standards that allow an "apples-to-apples" comparison of trading partners does not fall under the proposed legislation. To encourage widespread implementation of EDI, it is necessary to provide purchasers with additional guidance and assistance to foster confidence with what they are buying and whom they are buying it from.

The sixth recommendation calls for the development and dissemination of industry guidelines and a standard trading partner agreement, as opposed to full accreditation.

A number of Value Added Network services exist that can provide the open interconnect and connectivity necessary for a health care EDI network to be successful. Numerous members of the health care industry have already undertaken the task of implementing EDI; however, no large-scale cost savings can be achieved until standards have been established. The members of this TAG believe the technology and telecommunications standards that currently exist will facilitate a full-scale implementation of electronic health care communications. Sufficient motivation for industry cooperation and coordination must now be provided.

In summary, the Network Architecture and Accreditation TAG recommends that the health care EDI Network Architecture be developed on top of existing and available telecommunications technology, and implemented in a competitive, privately funded environment where industry cooperation, integrity, and coordination is encouraged.

INTRODUCTION

The Network Architecture and Accreditation TAG was developed as a result of specific recommendations outlined in the initial 1992 WEDI Report. The TAG consists of 35 members representing Value Added Networks (VANs), EDI Network Processors, HMOs, large and small data processing organizations, large and small
Our WEDI charter is:

To define a common framework to enable efficient electronic exchange of information among health care trading partners.

The TAG addressed the technical implications of this framework and surfaced several other areas that will impact the efficient exchange of information. Listed below are the five specific areas that are fundamental to the successful implementation of the electronic exchange of information:

- Network Architecture
- Open Access
- Security and Confidentiality
- Performance Standards
- Accreditation

This paper provides each of these areas with one recommendation, with the exception of Network Architecture, which has two.

This TAG has attempted to address only the technical issues involved in the creation of an effective EDI Network Architecture to avoid overlap with the topics of other TAGs. For example, the technical issues concerning security and confidentiality are discussed, but the policy issues are left to be addressed by the TAG assigned to investigate policy issues.

This paper does not represent an exhaustive discussion of any of these topics, nor does it serve as a complete implementation plan for the health care EDI Network Architecture; additional research and discussion is required. This paper merely establishes a base from which to build.

RECOMMENDATIONS FROM THE 1992 WEDI REPORT

Clearinghouses should meet minimum performance standards to protect the business, confidentiality and security of EDI customers. The industry should create a voluntary accreditation program for clearinghouse entities by 4th Qtr 94. WEDI shall include in its 1995 report an update on whether an effective accreditation program has been created. If not, the Secretary may wish to recommend legislative intervention or other appropriate action.

NETWORK ARCHITECTURE

There are over 1.3 million health care providers, including hospitals, medical centers, clinics, laboratories, nursing homes, physicians, dentists, and other health care professionals. In
addition, there are approximately 4,000 Health Care Administrators, including insurance companies, managed care companies, Health Maintenance Organizations, Third Party Administrators (TPAs), Independent Practitioner Associations, Preferred Provider Organizations (PPOs), Utilization Review Organizations (UROs), and combinations thereof. Many large providers support their own data networks, or maintain links to insurers or other health care payors and providers. Some providers connect to these payors through a processor acting as an intermediary between the provider and the payor. Both providers and processors are supported by a software vendor(s) that offers Hospital Information Systems (HIS) or Practice Management Systems (PMS).

The processor's network supports terminals or software at the provider's location, and links the provider and the payors using telecommunications company facilities. Public packet networks or Value Added Networks are often used to switch the transactions from the provider's location to the appropriate payor's host computer; a processor may or may not have a clearinghouse facility. A number of business arrangements are emerging between providers, processors, telecommunications companies, clearinghouses, and insurers that are resulting in extensive local and national networks. There are over 200 processors that provide some form of a network.

Some insurers, such as some local Blue Cross and Blue and Shield Plans, also assume the role of processor and provide software and hardware, in some cases, to facilitate the transmission of data. For the payor, there are a number of insurance companies, employee group policyholders, and financial institutions that have the potential to form a network. They include Medicare intermediaries (e.g., Blue Cross and Blue Shield Plans), third party administrators and service organizations.

ISO OSI Reference Model

The network participants listed above acquire data processing and telecommunications systems from a variety of manufacturers. Interconnecting these systems presents a problem, but the problem has been addressed by the Open Systems Interconnection (OSI) architecture. The OSI reference model and the associated standard peer protocols, developed under the auspices of the International Standards Organization (ISO), facilitate computer communications in a heterogeneous environment by using gateways to the OSI environment.

This TAG envisions a network architecture that facilitates connectivity among health care trading partners through a policy of open systems interconnection. Trading partners on the same or different networks may exchange data, even though they do not use the same software vendors, communications vendors, transmission technologies, or transmission speed. (Refer to Figure 2: ISO OSI Model.)

The ISO OSI structure consists of seven layers, each of which assumes the existence of its lower layer. In some cases, the
lower layer may, in fact, be null. Layer 1 defines the physical characteristics and the hardware used in the network. Layer 2 provides data link control to support network connectivity. Layer 3 facilitates multipath network routing and traffic congestion control. Layer 4 oversees communications across multiple underlying transport facilities. Layers 5 and 6 are data exchange facilities, with Layer 5 controlling the synchronization of data exchange, and Layer 6 handling data syntax and conversion for presentation to the application services in Layer 7. Layer 7 communicates with the user's application software.

This TAG recognizes at least two implementations that are similar to the OSI structure: a Systems Network Architecture (SNA) model and a TCP/IP model. Figures 3 and 4 display these models.

Figure 3 shows the IBM System Network Architecture (SNA) structure. In this implementation, the seven layers are very similar to the OSI model. Details of the functions of each layer differ slightly from the OSI model, as does the distribution of the functions among layers. This type of model supports both user terminal and host-to-host communications using asynchronous, bisynchronous, or SDLC protocols via dial or leased-line connections.

Figure 4 shows the TCP/IP model. In this structure, the application interfaces span Layers 5 through 7. The host-to-host (TCP) equates to Layer 4 of the OSI model; the Internet (IP) equates to the inter-network portion of Layer 3 in the OSI model.

The network interface spans the inter-network portion of Layers 2 and 3 of the OSI model. Variations in implementation occur, depending on the installation and the network interfaces required by each user.

This TAG believes that interconnecting the systems at the lower layers (Layers 1 through 4), which will provide switching and transport capabilities, is feasible with existing networks that support international standards, such as X.25 packet switching, and de facto industry standards, such as IBM's System Network Architecture networks. However, interconnection of systems at Layers 5 through 7 will require customized implementation efforts. For some applications, such as electronic mail or file transfer and directory service, there exist gateway products based on OSI standards that reduce implementation efforts.

Network Support of Broad Applications

This TAG recommends that the Network Architecture support all transaction types. This includes all of the EDI standards, including:

- Transaction Routing. The network should be capable of accepting and routing transactions generated through direct terminal input, computer applications or other applications that support patient health cards, clearinghouses, Medicare
intermediaries, etc.

- Online Communications. The network needs to be able to handle "request-response" types of messaging in an online, interactive session with response times consistent with industry norms. While no de facto standard envelope exists for this type of communications, ANSI is currently working on standard implementations.

- File Transfer. The network should be capable of accepting and transporting data files, as needed, between trading partners. As future needs arise for data exchange of binary and image files, the network should be positioned to support these data transport needs.

- X.400 Message Handling. At another level, the network architecture should support the handling of messages using the newer X.400 standards, and the movement of EDI data using X.435 within X.400. Industry-specific OSI enveloping standards, such as the Government OSI Protocol (GOSIP), should be supported to facilitate communication between trading partners.

- Electronic Mail. All EDI trading partners should participate in electronic mail access for unformatted transactions, inquiries, and miscellaneous communications. The Network Architecture should provide the capability to transport this data and, if necessary, transform and reformat dissimilar electronic mail messages to facilitate communication between disparate systems.

- Directory Services. The network should be positioned to support the evolving X.500 global directory standards to enable trading partners to ascertain other users' locations and addresses to facilitate electronic data exchange.

Since few companies can develop and provide all of these functions to the multitude of trading partners in their markets, the use of a Value Added Network plays an integral role in increasing the use of these multiple methods of electronic data exchange between trading partners. A VAN manages the data communications network facilities that interconnect locations, and provides services that increase network security, reliability, and availability while helping to simplify day-to-day operations.

This TAG fully endorses the need for open communications and "any-to-any" data transport and exchange. An ideal network or VAN will use de facto industry standard architectures, such as IBM System Network Architecture or X.25 packet switching, as the backbone for its data communications network. These architectures provide for any-to-any connectivity, and will allow networks to support the full spectrum of communications protocols to promote open interconnection. Figure 5 depicts the wide range of communications options available in today's environment, and illustrates the following sub-networks:

- De facto Industry Standard Private Networks. The provider
terminals connect to a host, using 3270, 2780, or 3780 terminal protocols for an IBM environment. The link level protocols used are bisync and SDLC. Other industry standard protocols may also be used with vendor equipment from computer manufacturers, such as Unisys, DEC, and HP.

- Value Added Networks Using X.25 Packet Switches. The provider terminals use asynchronous, bisync or synchronous protocols at the link level to connect to a Packet Assembler/Disassembler (PAD) in the packet network. This is done using dial-up connections from the Public Switched Telephone Network (PSTN). Terminals that generate high volumes may use a leased-line connection. The PAD converts the asynchronous or synchronous data stream into X.25 packets, and forwards it to the packet switching node. The host is attached to a node on the VAN's X.25 packet network. The PADS support X.3, X.28, and X.32 protocols to communicate with the health care provider's terminals.

- Value-Added Networks Using SNA. The provider terminals use dial or leased lines to connect to a node site (network connection point) which incorporates a communications controller and a network control program (NCP). The network normally incorporates one or more processors dedicated to providing a communication management function that separates network management and operation functions from application functions. The processor(s) is connected to the NCPs and control network access, monitor network management functions, and manage access to its own and/or a customer's application processor. A qualified VAN usually incorporates backup network control and application processors; it also incorporates a level or redundancy backup to its remote communication controllers, both through cross-connected intelligent switches and optional dial back-up capabilities. This type of network design not only provides the efficiencies for network backup and recovery, but also allows for multiple concurrent paths (routing) to a processor site or gateway node, when required. In addition, the cross connections and redundancy architecture delivers speed and efficient transport by virtue of defining the most desirable path to move the data from point to point, thus no backup or queuing of data is experienced within the network structure. Back-up and recovery procedures are key to continued availability of a network, and the delivery of high quality service to network customers.

- Local Telephone Companies' Public Packet Switched Networks. This network service platform is similar to the VAN, except that the provider's terminals are connected to the local telephone company's Public Packet Switched Network (PPSN). The PPSN is interconnected to the VAN for carrying the traffic across Local Access and Transport Areas (LATAs). Where Integrated Services Digital Network (ISDN) switches are deployed, the provider terminal could be connected through an ISDN line to the PPSN. In this case, a single access line is used for both voice and data at the provider location.
The Network Architecture should support communication with equipment ranging from health card swipe terminals and "dumb" terminals in the doctor's office, to the most sophisticated mainframe computer at a health care provider or in a government data center. Communication must include both dial and dedicated line connectivity at a wide range of transmission speeds and protocols.

Communications Access Methods

There are a number of communications access methods in use today. They include dial access, private or dedicated line access, Transaction Switching and Transport Service (TSTS), and wireless access. WEDI recommends that a wide range of access methods be supported by the Network Architecture.

Dial Access

Most trading partners will access networks for electronic data exchange through a dial-up mode. There are two major methods of dial access: asynchronous dial using de facto standard protocols such as KERMIT, XMODEM, YMODEM, and ZMODEM; and bisync dial for batch transmission of data. In addition, there are several communications applications that enable terminal (e.g., VT100, 3270 emulation) dial access to a trading partner host directly or via a VAN. Several proprietary online interactive protocols are in use today, but no industry standard has yet emerged.

In the case of dial access to public packet networks, the provider terminals dial into a Packet Assembler/Disassembler (PAD) attached to the packet switching network node. The protocols used for the interface with the PAD include X.3, X.28, and X.32. Also, a new asynchronous protocol designed for transaction processing application called T3POS1 could be used with provider terminals, including health card swipe terminals, to increase cost-efficiency.

In the dial environment, providers are conscious of the measured rate for local and toll charges for accessing data networks. They also require features, such as help desk support, mailbox, delivery verification, content validation, and authentication of content. The Network Architecture should allow one or more of the following: local dial, toll-free 800 and 950 dial (Feature Group B) access. The network should support communications speeds from 1200bps to at least 9600bps.

Leased or Dedicated Line Access

For larger providers with high volumes and higher bandwidth requirements, leasing a dedicated circuit from the telephone company to connect the provider's terminal to the network may be practical. The speeds supported on these circuits range from 4.8kbps to 56kbps. The EDI environment does not typically use higher bandwidths such as T1 and T3. The network should employ diagnostics to facilitate proactive network management, problem identification, and resolution.
T3POS stands for Transaction Processing Protocol for Point of Sale. It is based on an existing de facto standard protocol, VISA90, used in the credit card industry.

Evolving Technologies

Some providers find that performance using dial access is unacceptable and leased line is not cost-effective. New access methods using Transaction Switching and Transport Services (TSTS) provided by the telephone companies should be supported to accommodate these providers. TSTS provides virtual private line access using Data Over Voice or ISDN technology. The virtual private line connects the provider terminal to the host via a Public Packet Switched Network. Also, the Network Architecture should take into consideration support of new technologies, such as wireless access methods, as they become available.

OPEN ACCESS

Overall, open access will minimize the cost of processing health care transactions and reduce the overall administrative cost of health care.

- Promotes cost savings by increasing competition,
- Requires full disclosure in the form of standard trading partner agreements,
- Minimizes the "aggravation factor" for health care providers,
- Increases network participation,
- Prevents restraint of trade.

To facilitate open access to the EDI network, trading partner agreement standards and guidelines should be established to promote full disclosure between trading partners. These agreement standards and guidelines should include:

- Transaction format specifications,
- Definition of transmission method(s) used,
- Definition of transmission mode(s) used (e.g., VAN, proprietary network, leased line, dial),
- Schedules of events, such as transmission cutoffs, acknowledgment requirements, reporting requirements, scheduled outages, etc.,
- Editing requirements and schedules for changes or enhancements,
- Processing charges and terms of payment,
- Transmission charges and terms of payment,
System access security requirements.

Open access requires all entities involved in the electronic transmission and processing of health care transactions to avoid activities that would prevent the lowest cost or best value-added approach of transmitting or processing health care transactions. These activities include, but are not limited to:

- Limiting access for data submission or data access to or from any entity with sufficient volumes to justify direct transmission,
- Adhering to proprietary formats once industry standards (ASC X12) are adopted,
- Restricting the availability of editing requirements,
- Limiting methods and modes of transaction transmission to proprietary networks when public access approaches would be more cost effective,
- Not recognizing sound economic models and potential cost savings.

The active industry promotion of true open access for all participants in the health care community will increase the number of participants in EDI and fulfill the industry's cost saving goals.

SECURITY AND CONFIDENTIALITY

Any comprehensive structure for a data network must provide mechanisms to ensure the confidentiality and security of data; however, creating such mechanisms must avoid the creation of roadblocks to full participation in EDI. For a national network to effectively form, entry should be obtainable for all.

Adoption of the security measures recommended by the ASC X12 Committee (provisions for data security and the development of audit trail standards) will provide a secure environment for the flow of electronic information. Compliance with current and future legislation regarding the fraudulent use of transmitted data, as well as the ownership of data, will promote confidence in the confidentiality of data on the network and lead to greater use of EDI in the health care industry.

EDI Security Checkpoints Model

A primary objective of EDI is the electronic flow data that requires little or no human intervention. Such a system must include processes that ensure the confidentiality and incorruptibility of data. Figure 6 shows a generic EDI network model. The points of the model, labeled A through D, represent locations on the network that should perform uniform, standardized security functions. The ANSI X12N Security Handbook
recommends inclusion of the following security functions to ensure:

- Certain sensitive data may be protected, if required;
- Only authorized entities can submit transactions, including queries;
- Authorization(s) provided is to the level of the business functional view, and that additional authorization(s) is provided when required;
- Duplicate or missing transmissions are identified; Receipts, acknowledgments, and replies all have the same security considerations as the initial transactions;
- Message as received is complete;
- Audit trail of the electronic transaction is accurate and complete;
- Every patient/member/subscriber is who they say they are;
- Back-up copies for Disaster Recovery or records-retention purposes are protected from unauthorized disclosure similar to the transaction sets themselves;
- Assurance of origin is provided, when required;
- Assurance of receipt is provided, when required.

Adoption of the ASC X12 recommendations for security measures provides an accessible level of security for all participants in health care EDI. It assures the patient of confidentiality, while offering the trading partners' security in the origin and integrity of their data.

Data Security Methods

Authentication

The verification of the source, uniqueness, and integrity of a message by attaching a code to the beginning of the transaction set provides trading partners with a cost-effective method to secure information. When used in conjunction with the encryption of primary data, authentication provides a suitable security measure. Once the receiving parties verify the authenticity code, they should provide an acknowledgment to the sender within 24 hours.

Data Encryption

Data encryption converts plain-text transmissions into non-legible or cipher-text transmissions. The ANSI-supported cryptographic algorithm (Data Encryption Standard) widely used in EDI applications provides 107 different character sets. As with any code, quick decryption of transmissions requires the
knowledge of the exact character set used to encrypt the transmission. "Even a supercomputer would not be likely to discover the specific key used for encryption in any reasonable time.2 The high costs associated with data encryption relegates its use to highly confidential or primary data. Careful study should precede the extended use of data encryption. Employing highly sophisticated encryption technology could present costs and complexities that might inhibit the spread of EDI in the health care industry. Excessive encryption could hinder gateways, which provide greater access to more trading partners.


Audit Trails
The development of standards for audit trails helps assure security in the EDI environment. In a non-EDI environment, paper trails provide the mechanism to audit the flow of information; however, EDI transmissions require the development of new audit methods. Similar to a return receipt used by traditional mail services, functional acknowledgments, verifying the receipt of the transmission but not the contents, could be used to trace the receipt of an EDI transmission. The control numbers located on the envelopes of EDI transmissions provide a valuable contribution to the audit trail. In addition, control totals can ensure that complete transmissions are sent and received. Reports created by Value Added Networks could provide the necessary audit trails for senders and receivers.

Ownership Protection
Information exchanged for the purpose of adjudicating claims, determining eligibility, authorizing care, etc., also provides the basis for managing current business activities, planning future programs, judging the quality of care and other internal uses. These uses add additional value to health industry data, making ownership of the data an important issue in the EDI environment. While detailed claim data containing names and diagnoses are confidential, the tabulated or summarized data for the claims may not be confidential. However, this compiled claims data have value to the owner; not only in terms of its use as the basis for future planning or analysis, but also the expense necessary to compile the data. If an unauthorized entity gained possession of confidential data, additional costs could result from the damage. The rights of ownership can be protected through trading partners' agreements and state and federal laws.

PERFORMANCE STANDARDS
To increase health care industry participation in EDI and to ensure the integrity of the network, performance standards must be set. These standards apply to EDI transaction networks that offer claims clearing and EDI transaction transmission, editing, storing and forwarding, tracking, and other related services in either interactive or batch mode. Although predominantly
focusing on EDI transaction processors, these standards should apply to health care administrators, Value Added Networks, and software vendors who perform these functions.

Performance Criteria and Service Levels

All EDI transaction networks should make provisions for contractual arrangements, directly or indirectly, that obligate network participants to performance standards that include compliance with the network's current transaction specifications (refer to discussion under "Industry Self-Regulation"). The viability of EDI relies on the trading partners' strict adherence to specific data content, table values, telecommunications methods, timing of transactions, ethics, and other rules that have been developed by representative groups of participants on the same electronic network. Contractual agreements ensure that all trading partners adhere to the same rules, assuring that all transactions are instantly understood and usable. Industry-standard contractual agreements will eliminate the high costs of individual contracts between all participants exchanging transactions on the network.

EDI transaction networks should develop and maintain unique transaction specifications, based on the ASC X12 Standards available for its customer base, in concert with representative groups of network participants, to ensure the viability of all transactions exchanged on the network. The networks should also develop and maintain gateway conversion specifications, based on the available ASC X12 standards for the applicable transactions, in concert with the respective networks across each gateway. To reduce health care provider distrust of EDI, networks should provide product use coordination and customer support. A help desk, employing a structured methodology for problem identification, escalation, and resolution, should be available 24 hours per day, 7 days per week.

Standards should require 24 hours per day, 7 days per week network availability, except for scheduled maintenance activities. Network availability must be in the 99% range for scheduled hours of operation. Exceptions are recognized for local telephone exchange problems outside the scope of the network's services or control.

Performance criteria for the delivery of batch transactions should include a requirement to deliver batch response transactions, when requested by a reasonably significant number of network participants for transactions directed to entities not capable of EDI transactions, to their destinations (e.g., electronic gateways or print/distribution facilities) within one (1) business day of receipt of such transactions on its network. Receipt acknowledgments should be delivered to respective senders in less than 24 hours.

An interactive transaction's round-trip response time (excluding line acquisition and modem synchronization for dial-up) to a requester should not exceed 30 seconds. WEDI should pursue detailed analysis of interactive transaction
response time requirements to develop more complete service levels by components, such as switch transit time, telecommunications transit time and potentially, local exchange line acquisition times, and throughput performance. Networks should provide monitoring to ensure timely transport of trading partners' data. Optionally, the provision of editing to verify compliance with transaction specifications using standardized error codes (where available) should be required.

INDUSTRY SELF-REGULATION

Short of governmental regulation, other methods exist to encourage widespread adoption of industry practices and standards in health care EDI. Voluntary options, including accreditation, standard trading partner agreements, and non-binding industry guidelines, offer more flexibility to encourage innovation and facilitate network upgrading to reflect improved industry capabilities.

Accreditation, trading partner agreements, and guidelines are voluntary methods that can motivate partners to meet standards and protect patient privacy and confidentiality using sound business practices. These methods offer potential payor and provider customers an alternate method for product and service evaluation, and give the end user more confidence in the products they purchase. Greater consumer confidence will ease the implementation process and encourage the spread of integrated health care EDI which, in turn, will reduce health care costs, increase network quality and integration, and enhance protection of sensitive data.

Benefits of Industry Self-Regulation

Providers and Payors

Industry regulation is one objective way to measure a minimum level of performance. A standardized measurement and standardized method of reporting this measurement will result in reduced costs for reviewing and evaluating new health care EDI trading partners. In a marketplace dominated by rapidly developing technologies and approaches, and many emerging, young companies, providing standards to the evaluation process will reduce costs and increase confidence in choices for new trading partners. Also, such standards will help the market move more quickly toward cost-effective methods and producers, and soon, to a wider array of high value services and products.

The complexity of the issues that must be explored can be daunting to new trading partners. New purchasers' lack understanding of the technical issues and thus lack confidence in their own ability to evaluate health care EDI products and services. These factors have contributed to slow adoption of cost-effective EDI by payors and providers. It is not expected that voluntary methods will substitute fully for other methods of collecting information for decision-making on health care EDI.
services and products; however, they will offer the consumer an important new tool to supplement their existing decision-making process.

EDI Trading Partners

The use of voluntary methods for evaluation and reporting should raise the standards of the industry and increase confidence among the EDI partners, such as processors, clearinghouses, VANs, and repositories.

By promoting the value of meeting standards and industry performance norms, the industry will achieve credibility. Accreditation, trading partner agreements, and industry guidelines recognize good performance and motivate EDI trading partners to meet an established baseline of performance. Once a baseline of standard performance has been achieved, the industry can strive to improve performance. A successful voluntary program alleviates the need for detailed, costly governmental regulation.

Health Care Costs

Ultimately, the implementation of widespread EDI reduces health care costs to the end user: the patient. Automated eligibility verification, claims payment, and adjudication provide patients with point-of-care knowledge of their benefits and alert them to their financial responsibility. The WEDI Financial Implications TAG has been assigned to address this topic.

Health care EDI will lower health care costs by eliminating costly, confusing and duplicative paperwork associated with third party service payment. Health care EDI can also reduce delays associated with ordering tests, lab services, prescriptions, and delays in receiving lab and test results. These time savings reduce hospital stays, but more importantly, reduce frustration levels of providers and patients who are awaiting receipt of necessary information before proceeding with a plan of treatment. Overall, time savings result in decreased costs of health care.

Participants in EDI Network Architecture

In health care EDI, technology is changing rapidly. New technologies bring new companies into the EDI field. Many of these entities do not fall neatly into a single category. Some entities perform a wide array of EDI activities. Some specialize in one or two EDI activities, while others are not generally considered health care EDI companies, but perform some health care EDI activities as a small portion of their business.

Health care EDI trading partners (HEDITPs) include telephone companies and other telecommunication firms, data repositories and analysts, VANs, managed care and indemnity payors, clearinghouses, utilization review firms, claims processing firms, and other key EDI players. HEDITPs are involved in many related EDI functions, including data translation (formatting), transport, routing, information consolidation, data transmission,
data receipt, conversion of information, and data storing. While some firms perform all of these functions, others perform one or a subset of these functions. Industry performance standards must take into consideration all of these functions and establish a baseline of performance for each category that the majority of participants can meet. By embracing the diversity of participants in the EDI field, the industry will keep renewing itself and provide better, more efficient service to its customers.

Options to Promote Widespread Adoption of EDI Architecture

The options include:

- **Option 1: Industry Guidelines.** Involves developing and maintaining a set of "best practice" standards for health care EDI.

- **Option 2: Standardized Trading Partner Agreements.** Entails developing and maintaining a detailed health care EDI trading partner agreement, in addition to a handbook for using the agreement. Such an agreement would not preclude the use of non-standard, customized agreements that are mutually accepted by trading partners.

- **Option 3: Accreditation Based on Standardized Reporting of Security, Open Access and Performance Measures.** Requires the EDI entity seeking accreditation to report its capabilities. The accrediting body would review these reports to ensure that entities seeking accreditation meet promised performance levels and service capabilities.

- **Option 4: Accreditation Based on Detailed Industry Security, Open Access, and Performance Standards.** Entails an inspection (i.e., on-site or electronic testing) performed by an independent accrediting body to verify performance levels and service capabilities.

Whichever option is pursued, it must be viewed as fair, effective, and reliable by customers of the health care EDI and the public to achieve and maintain credibility.

**Similarities**

Each option requires an industry group to represent and develop the guidelines, trading partner agreements, and performance levels, or service capabilities. Administration and maintenance of these standards requires that a permanent group be established to represent all facets of the industry. All four options address the same areas - security, open access, and performance levels. Discussion and recommendations for each of these areas are discussed earlier in the beginning of the paper.

**Differences**

The major difference between the four options is their respective costs. **Option 1, "Developing and Maintaining Guidelines,"** is the least costly proposal. Guidelines for this option could be developed under the auspices of an existing body,
such as WEDI or ANSI, or under the guidance of an industry trade group, such as AFEHCT. Option 2, "Developing Voluntary, Standardized Trading Partner Agreements," increases the costs associated with industry guidelines by adding additional legal fees when facilitating discussions updating the agreements. Costs associated with Options 3 and 4 are increased due to the establishment of an independent accrediting body, although these costs can be offset by fees charged to companies seeking accreditation. As costs increase with each option, so do the assurances and benefits to health care EDI trading partners.

Detailed Review of Options

Option 1: Industry Guidelines

Under Option 1, a broad, representative industry body would develop and disseminate specific performance, security, and open access standards, i.e., a "best practice" standard and a second "industry norm" standard. The group developing the guidelines would be drawn upon resources from the health care industry, including payors, providers, HEDITPs, employers, and government representatives. Industry guidelines would be similar to detailed accreditation standards. The difference is that the entity developing and maintaining the guidelines would widely disseminate the guidelines, rather than base accreditation on them, and might even be responsible for developing a contractual model by which trading partners could enforce the guidelines. This is the least costly option, as there is little need for activity beyond developing, maintaining, and disseminating the guidelines.

Option 2: Standardized Trading Partner Agreements

Standardized trading partner agreements leave compliance monitoring in the hands of the trading partners. A broad, representative industry group would decide on the areas to be covered by standard trading partner agreements, describe the appropriate performance, security and open access measurements relevant to those areas, and develop manuals listing the steps necessary to complete such a trading partner agreement. The agreement would be extensive, and cover the various functional areas of health care EDI. In the event that some areas do not apply or are not relevant to a particular contracting arrangement between two entities, those specific areas could be eliminated from the contract. These standard agreements would be voluntary, allowing partners to mutually agree on modifications or other customized agreements. The development of the standard agreement would be consistent with any legal principles that apply.

Under Option 2, there is no need for costly inspection programs. The ongoing costs to individual HEDITPs would be considerably lower than costs associated with an accreditation process. We recommend that the representative industry body maintain a help desk to assist HEDITPs in crafting these trading partner agreements. While modest fees could be assessed to those seeking such help to offset costs, it is clear that broader
industry funding would be necessary to ensure that the trading partner agreements are current.

Options 3 and 4: Accreditation Processes

Establishing accreditation processes require the development and maintenance of standards in the functional areas to be accredited, the submission of applications and fees from the bodies to be accredited, and reviews (on-site and off-site) to promote compliance with the standards.

The accreditation process represents the most costly of all the options reviewed in this paper. Not only do standards have to be developed, maintained, and disseminated (as in Options 1 and 2), but all entities seeking accreditation must also be reviewed.

We have reviewed the operations of three existing accrediting bodies in the attached addendum. They are: the Joint Commission on the Accreditation of Health Organizations (JCAHO); the Utilization Review Accreditation Commission (URAC), and; the National Committee for Quality Assurance (NCQA). While the standard setting activities and inspection processes vary slightly, fees associated with these accrediting organizations vary widely. URAC's fees start at $6,500 for the simplest review, and increase as review complexity increases. NCQA's fees start at $23,500, and also increase based on review complexity. (URAC's program provides an example of a program requiring no site inspections.)

Recommendation

WEDI's recommendation for legislation covering privacy and confidentiality, uniform data content, and the use of ASC X12 standards and standard ID numbers lessens the need for a costly alternative to governmental legislation. However, independent standards that allow an apples-to-apples comparison of trading partners does not fall under the proposed legislation. To encourage widespread implementation of EDI, many purchasers need additional guidance, assistance, and confidence with what they buy and who they buy it from. For these reasons, the WEDI Network Architecture and Accreditation TAG recommends that Options 1 and 2 be developed in concert with each other.

CONCLUSION

This TAG believes that considerable cost savings can be realized in the health care community with the implementation of EDI. The recommendations provided in this paper are intended to speed implementation within the industry, reduce implementation costs, and ensure the integrity of industry participants. A sound network architecture is critical to the successful development of EDI within the health care industry.

The Network Architecture and Accreditation TAG We concurs with the "open systems interconnection" philosophy widely held in the telecommunications industry. Only through available connectivity methods, regardless of computer type or size, and with the
development and support of EDI standards in the health care industry, will the industry achieve effective data flow of health care transactions and the resulting cost savings.

A number of Value Added Network services exist that can provide the open interconnect, multiple access type and multiple transmission speed facilities. These networks also support the EDI standards and non-EDI messaging requirements that satisfy the health care industry's data transmission requirements. Numerous privately funded members of the health care industry have already undertaken the task of implementing EDI. However, until standards have been established, large-scale cost savings cannot be achieved. We believe that the technology and standards currently exist to facilitate a full-scale implementation of electronic health care communications; we now need to provide the industry with sufficient motivation to cooperate and coordinate with these standards.

We recommend that the health care EDI network architecture be developed on top of existing, readily available telecommunications technology, and implemented in a competitive, privately funded environment where industry cooperation, integrity, and coordination is encouraged.

1993 WEDI REPORT RECOMMENDATIONS

1. More fully define a network architecture that facilitates connectivity between health care trading partners through a policy of open systems interconnection. Recognizing that a significant investment has already been made in technology, the health care network architecture should take full advantage of existing standards in telecommunications. We recommend:
   - Utilization of the ISO OSI structure as a basis for the architecture;
   - Interconnection of systems at the lower layers of the ISO OSI structure (Layers 1 through 4), using existing networks that support international standards (i.e., X.25 packet switching), and de facto industry standards (i.e., IBM's SNA);
   - Further analysis of existing industry trends that will establish standards for the upper layers of the ISO OSI structure (Layers 5 through 7).

2. In order to minimize costs and maximize deployment of the health care EDI network, consider the following factors to develop a network architecture that allows for "any-to-any" data transport and exchange. These include:
   - Support for communications equipment, ranging from health card swipe terminals in doctors' offices to the most sophisticated mainframe computer at a health care payor or provider facility,
o Support for a wide range of access methods using varying speeds and protocols,

o Flexibility to support new technologies as they become available.

3. Establish and promote open access to the network for all participants in the health care community.

4. Establish guidelines and parameters to ensure confidentiality and security of health care data, including:
   o Endorsement of The ANSI X12N Security Handbook,
   o Employment of the best technology available to protect all parties in the network from breaches in security, including authentication,
   o Establishment of industry standards to ensure security at all network checkpoints.

5. Establish performance standards for all network participants, including: adherence to data content standards, telecommunication methods, ethics, support, timing of transactions, and availability.

6. Implement industry guidelines and standard trading Partner agreements as opposed to full accreditation.

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Addendum 1: Three Models of Accreditation

A review of three existing programs in the health care services field provides insight into the mechanics of accreditation programs. The accreditation programs illustrated in this paper are: The Joint Commission on the Accreditation of Health Organizations, the Utilization Review Accreditation Commission, and the National Committee for Quality Assurance.
JCAHO awards accreditation to hospitals, home care agencies, long-term care, ambulatory care, and mental health facilities. Representatives from the American Medical Association, the American College of Physicians, the American College of Surgeons, the American Dental Associations, and representatives from major consumer groups comprise the JCAHO Board.

Standards

JCAHO task forces are comprised of expert clinicians responsible for updating existing standards or developing new ones. There is no formal standards committee. Each task force recommends new standards to the Board; the Board is responsible for approving all new standards.

Process

Institutions requesting accreditation must file a 20-page application to initiate the accreditation process. The application queries the structure of the organization (e.g., governing body and ownership), and its demographics (e.g., types of services provided and the volume of care given).

Based on the information provided by the applicant, JCAHO selects a survey team and calculates the length of the survey. Survey team members are JCAHO employees. For hospital surveys, a physician, a nurse, and an administrator comprise the team. If the hospital provides laboratory services, and the laboratory does not hold a JCAHO-recognized certification, the team will include a lab technician. Six and nine months can elapse between receipt of the application and the first day of the survey.

Joint Commission staff review the results of the survey. JCAHO analysts review the survey results and forward recommendation for or against accreditation to the Accreditation Committee, of which board members and JCAHO staff are members. The vote to award or deny accreditation must be unanimous.

Fees

Fees are calculated on an individual basis, using the application information as a guide. A $1,000 deposit must accompany the application form for first time candidates. Fees consist of a base survey fee of $6,000, and an encounter fee developed from information on the application form. The accreditation fee for an average hospital runs between $15,000 - $16,000.

Pass Ratios

The goal of the Joint Commission on the Accreditation of Health Organizations is to bring institutions into compliance with its standards. Almost 97% of all organizations receive accreditation on the first attempt. JCAHO awards conditional accreditation for six months to institutions requiring additional time to comply with JCAHO standards. The institution must send a plan of correction to JCAHO within one month of receipt of conditional
accreditation. At the end of the six-month period, JCAHO deploys another survey team to the site, and charges the institution an additional base survey fee to cover repeat survey costs.

Renewal

Institutions hold their JCAHO accreditation for three years. JCAHO staff sends a new application form to the institution nine months prior to the expiration of its accreditation. The process and fees for accreditation renewal are the same as those for the initial accreditation process.

Utilization Review Accreditation Commission (URAC)

In 1990, members of the Association for Managed Care Review (AMCR) met to discuss different state requirements for utilization review organizations. The state-by-state requirements that govern access hours, appeals procedures, etc., were disparate and sometimes contradictory, making conducting business on a national basis difficult. AMCR members felt that developing an accreditation program that provided national standards for utilization review companies to follow would supplant state-by-state requirements.

AMCR members founded the Utilization Review Accreditation Commission whose task was to develop an accreditation program. The Board is composed of representatives from the American Medical Association, the American Hospital Association, the American Psychiatric Association, the American Nurses Association, the National Association of Manufacturers, various unions, AMPR, the Health Insurance Institute of America, and the Blue Cross and Blue Shield Association.

Standards

AMCR standards address prospective and concurrent review, while focusing on interface issues: access hours, denials, appeals, notification, etc. Initially, a task force representing the industry developed the standards, and URAC distributed these standards over a period of one year to all participants in the utilization review process for comment. A Standards Committee composed of industry representatives continually refines the standards. New standards addressing retrospective review issues will come from the committee this year.

Process

A narrative questionnaire, accompanied by copies of internal policies and procedures, form the basis of the review. There are no site inspections for URAC accreditation. The average review process takes approximately four months.

URAC nurse employees conduct an initial blind review. One staff person, who is familiar with the organization under review, conducts a phone interview to verify the responses on the application.
Upon completion of the initial review, the paperwork proceeds to a committee composed of technical members appointed by the Board. This committee makes their recommendations, and passes the paperwork to the Executive Committee and Granting Body, the final step in the process. This Committee has one provider representative, one consumer representative, two utilization review industry representatives, and one at-large position. It is responsible for reviewing the recommendations of the previous committees, and either grants or denies accreditation. The vote from this committee must be unanimous.

Fees

URAC calculates fees based on the information submitted by the utilization review company requesting accreditation. Factors such as complexity of organizational structure, number of sites, etc., are taken into account. For an independent utilization review organization operating from one site, an average fee would be $6,500.

Pass Ratios

Seventy-three percent of utilization review organizations seeking URAC accreditation must make some type of modification before receiving accreditation. Sixty utilization review organizations have received accreditation since the program began in 1991. There is no provisional accreditation. Organizations that fail to receive accreditation enter a 90-day correction phase to allow them to correct deficiencies. The phase can be extended to 180 days.

Renewal

Utilization review organizations hold URAC accreditation for two years. To remain accredited, a utilization review organization must submit itself to the same application and paper review processes it underwent initially. URAC calculates re-examination fees based on information contained in the new application.

The National Committee for Quality Assurance (NCQA)

Established in 1979 by the Group Health Association of America and the American Managed Care and Review Association, the National Committee for Quality Assurance offers an accreditation program for managed care systems. The accreditation program reviews a managed care plan's commitment to quality improvement in the following areas: member rights and responsibilities, credentialing, medical records, quality assurance, utilization management, and preventative health services.

The NCQA accreditation program uses standards developed by the customers of managed care systems. The Board consists of three corporate purchasers of managed care, five or six representatives from managed care companies, a consumer representative, and a union representative.
Standards

A users group, comprised of two representatives from managed care companies, corporate purchasers of managed care, and consumer representatives offer general guidance as to which areas require standards. A Standards Committee comprised of representatives from managed care companies develops the actual standards.

Process

An organization seeking accreditation completes and submits a preliminary application form, accompanied by an application fee of $1,500. NCQA credits the fee toward the survey fee.

Upon receipt of the application form, NCQA sets a survey date and requests additional information to conduct a pre-assessment survey. This detailed, 20-page questionnaire covers demographic information about the plan, organizational structure, compensation agreements, member grievance procedures, current quality improvement plans, utilization management plans, medical record review procedures, credentialing programs, etc. NCQA staff must receive the pre-assessment survey a minimum of six weeks prior to the site visit.

A survey team reviews procedures and records on-site over a period of two to four days. The site visit consists of a review and documentation of the plan's current quality-related systems. The survey team interviews key clinical and administrative staff. NCQA staff, in conjunction with staff from the managed care plan, agree upon requests for records and interviews prior to the visit; however, the survey team may request additional information or change the agenda of the review while on-site. The survey team randomly samples patient records.

When the survey is completed, the team verbally presents their findings to plan staff and indicates how the plan's systems fared against the NCQA standards. This meeting provides an opportunity for the plan and the survey team to verify information and clarify any inconsistencies before the final report is submitted.

The survey team writes an inspection report, indicating an organization's level of compliance with each NCQA standard. NCQA staff reviews this report and forwards it to the Review Oversight Committee. This committee, which includes five volunteer physicians, determines if a managed care system complies with the NCQA standards, and awards or denies accreditation.

Fees

NCQA calculates fees based on the complexity of the managed care plan under review. A base fee of $23,500 applies to organizations having less than 50,000 members. Organizations with greater than 50,000 members pay a base fee of $24,500, and an additional $.10 for each member in excess of the 50,000. More complex reviews requiring additional reviewers necessitate higher fees. NCQA determines final fees based on the information supplied on the application form.
Pass Ratios

Seventy percent of the managed care plans that applied for accreditation received a provisional accreditation on their first review. Eight percent of the first plans to enter the review process received denials. Only two plans received full accreditation on their first try. Forty plans currently await final determination, and, to date, 80 reviews are scheduled for 1994.

The Review Oversight Committee awards accreditation in three categories: full, with recommendation, and provisional. The committee awards accreditation with recommendation if the plan makes the changes necessary to comply with NCQA standards within 90 days. The committee awards provisional accreditation to plans requiring one year to come into compliance with NCQA standards. A managed care plan can receive provisional accreditation twice before final denial of accreditation. A survey team revisits the site and writes a report before upgrading a plan's status from provisional to full accreditation. This site visit costs approximately $13,000.

Renewal

A managed care plan's accreditation from the National Committee for Quality Assurance runs for three full years. Six months prior to the expiration of accreditation, association staff send a new preliminary survey form to begin the review process again. NCQA calculates fees for the re-examination from the information contained in the preliminary information survey.

Figure 1: Health Care Trading Partners and Networks
Figure 2: ISO OSI Model
Figure 3: SNA Model
Figure 4: TCP/IP Model
Figure 5: Communications Options in Today's Environment
Figure 6: EDI Security Checkpoints Model
INTRODUCTION

This White Paper responds to Recommendation Number 8 in the 1992 WEDI Report to the Secretary of the Department of Health and Human Services (HHS). The White Paper offers, for consideration by the Administration and Congress, a proposed federal bill designed to facilitate achieving the goal of reducing total administrative costs associated with health care claims processing and payment, including appropriate utilization review, through the use of electronic data interchange between providers and third party payors, while observing applicable requirements regarding confidentiality of health care information.

This paper summarizes the proposed bill, noting the Confidentiality and Legal Issues Technical Advisory Group's (TAG) intent, where appropriate, in order to provide a "legislative history" that will facilitate its interpretation and foster a common understanding of its provisions.

RECOMMENDATION AND CHARGE FROM THE JULY 1992 WEDI REPORT

Recommendation Number 8 in the 1992 WEDI Report urged Congress to enact preemptive legislation governing confidentiality by the 4th Qtr 93 "to facilitate and ensure the uniform, confidential treatment of identifiable information in electronic environments."

The recommendation noted that WEDI would create a task force to coordinate with other relevant groups, and to assist in the timely technical drafting of this legislation, which should:
Establish uniform requirements for the preservation of confidentiality and privacy rights in electronic health care claims processing and payment;

Address the collection, storage, handling and transmission of individually identifiable health care data, including initial and subsequent disclosures, in electronic transactions by all public and private payors, providers of health care, and all other entities involved in the transactions;

Exempt state public health reporting laws;

Delineate protocols for secure electronic storage and transmission of health care data;

Specify fair information practices that ensure a proper balance between required disclosures, use of data, and patient privacy;

Require publication of the existence of health care data banks;

Encourage use of alternate dispute resolution mechanisms, where appropriate;

Establish that compliance with the Act's requirements would serve as a defense to legal actions, based on charges of improper disclosure;

Impose penalties for violation of the Act, including civil damages, equitable remedies, and attorney's fees, where appropriate; and

Provide enforcement by government officials and private, aggrieved parties.

SUMMARY OF "HEALTH INFORMATION CONFIDENTIALITY AND PRIVACY ACT OF 1993"

As indicated in the preamble, the Act is designed to:

Preserve confidentiality and privacy rights in individually identifiable health care information that is collected, stored, processed, or transmitted in electronic form;

Preempt state laws that relate thereto, except public health reporting laws;

Establish a mechanism for promulgating regulations that delineate protocols for securing such information when collected, stored, processed or transmitted in electronic form, and that set forth fair information practices;

Require publication of the existence of health care data banks;
Encourage the use of alternative dispute resolution mechanisms to resolve certain disputes under the Act; and

Establish penalties for violating the Act.

To these ends, the Confidentiality and Legal Issues TAG intends that the Act be construed so as to broadly protect individually identifiable health care information from improper and unauthorized disclosures in an electronic environment, while facilitating the prompt and universal implementation of electronic data interchange for legitimate and necessary health care transactions.

The Act is not intended to relate to the privacy and confidentiality of identifiable health care provider information as it was considered beyond the scope of the TAG's charge.

Scope (Section 2)

In order to afford appropriate protection from unauthorized disclosures of individually identifiable health care information, the Act's requirements are intended to apply to all entities, including public and private third party payors and providers, that collect, store, process, or transmit such information in electronic form. The Act protects individually identifiable health care information, as defined in Section 3, but does not affect federal and state laws that require reporting of identifiable information to public health authorities (i.e., laws that require reporting of sexually transmitted diseases).

The TAG believes that applying the Act to non-electronic media may be counter-productive to WEDI's goal to use EDI universally for key health care transactions. The Act fulfills the TAG's charge and accomplishes WEDI's objective by facilitating and ensuring the uniform, confidential treatment of identifiable health care information in electronic environments. Because uniform requirements for privacy protection in health care transactions are important to providers, payors, vendors, and consumers, establishing a uniform regulatory environment for health care information in a form that is not electronic could remove an important incentive for migrating to EDI.

Definitions (Section 3)

The TAG has not designated the Secretary who will promulgate regulations and administer the Act. Although the Secretary of the Department of Health and Human Services may be the logical choice, concerns were expressed over the fact that HHS would be subject to the Act's requirements as an entity that collects, stores, processes, and transmits health care information in electronic form, and that the dual roles of the regulator and the regulated would appear to be a conflict of interest. Accordingly, the TAG recommends that responsibility for implementing the Act be assigned either to an existing or new administrative officer or agency not otherwise responsible for
administering or providing health care programs. The Act defines "disclosure" to include "redisclosure," and the TAG intends the provisions regarding disclosure to be strictly construed as to afford maximum protection to the individual. The TAG intends that the remaining definitions be construed as to broadly apply the Act's protections.

Preemption (Section 4)

The 1992 WEDI Report noted that "existing laws and regulations present a barrier to promoting electronic data interchange (EDI) in the health care marketplace," and that "current state laws may not recognize the transfer of key information in electronic form, or may prohibit the exchange of claim payment data without the written consent of the patient." The Report recognized that the many state and federal laws and regulations defining obligations regarding confidentiality of health care data require that payors and providers research each state's law in order to ensure compliance with the variety of potentially conflicting rules. WEDI found this not in the best interests of patients, providers, or payors because it is burdensome and costly, and creates a system where confidentiality rights vary widely from state-to-state.

In order to effectively, efficiently, and promptly achieve the objectives of facilitating the use of electronic data interchange in health care while affording appropriate and universal privacy and confidentiality protections, the TAG intends that federal law occupy the field and completely preempt the application of state law to the collection, storage, processing, and transmission of individually identifiable health care information in electronic form. Thus, the Act preempts state "quill pen" laws (laws requiring that certain medical records be in writing) and other state laws to the extent that they relate to matters regulated under the Act. However, in order to ensure that there are no gaps in protection, the federal preemption does not take effect until regulations implementing the Act are effective.

Standards for Information Practices (Section 5)

The Act requires the Secretary to promulgate regulations that establish appropriate levels of security, standards, and controls to ensure privacy and confidentiality, while considering the nature of the information and the relative risks of disclosure.

Accordingly, the security, standards and control levels established by the Secretary should vary with the nature of the information, the degree of risk to the individual, and the particular functions being performed by the entities involved.

The Act sets forth five principles to be incorporated in the regulations:

1. Guarantee the individual's right to know that identifiable health care information is collected, stored, or processed, and for what purpose it is used;
2. Assure that the information is collected, processed, stored, and transmitted only as required for a legitimate purpose;

3. Require that persons collecting information notify individuals of their rights under the Act;

4. Guarantee an individual's right of access to information from the person collecting the information; and

5. Require persons collecting, processing, storing, or transmitting identifiable information to implement the standards and controls promulgated by the Secretary.

To ensure that individuals are efficiently informed of their rights under the Act (while minimizing the amount of paper), the Act requires only that the entity collecting identifiable health care information from the individual provide the required statement, which must be in a form prescribed by the Secretary. The TAG intends that the prescribed form and the information provided the individual be easy to read and understandable, with codified values explained, and where appropriate, bilingual.

Disclosure (Section 6)

Generally, the Act requires that disclosures of individually identifiable health care information be authorized, and that persons collecting or storing the information maintain a record of all external disclosures. The TAG strongly recommends that no exceptions be made for the record-keeping requirement for those entities making external disclosures of individually identifiable health care information. The TAG recognizes that added costs and burdens may be associated with maintaining such a record. There was an overriding sentiment, however, in favor of an individual's right to know, and the opportunity to make any necessary corrections outweighed the added burden of maintaining a record of all external disclosures.

Disclosures without authorization are permitted, however, in certain, specified circumstances. For example, disclosures to agents and employees obligated to maintain confidentiality are permitted to the extent necessary to enable the disclosing person to carry out lawful activities, as are certain disclosures to government authorities, disclosures to a successor in interest, disclosures for qualified research projects, disclosures by family members (unless expressly limited or prohibited), and disclosures pursuant to compulsory process or court order.

Publication (Section 7)

The Act requires that, pursuant to regulations, persons collecting identifiable health care information periodically publicize its existence and provide information regarding procedures for obtaining and correcting the information.
The TAG intends that the requirement of publication apply only to persons collecting the information from the individual, and not to those merely storing, processing, or transmitting the information. Accordingly, the individual's initial request to obtain or correct the information would normally be directed to the collector, who would then be responsible for forwarding the request to those entities that stored or processed the information, as shown on the record of disclosures that are maintained as required by persons collecting or storing information under Section 6.

In formulating the publication requirement, the TAG was mindful of the potential cost and administrative burdens that might be placed on persons collecting identifiable health care information (including employers, providers, and third party payors), and to the possibility that it might give rise to an increased number of requests for health records. Accordingly, the TAG intends that the publication requirement be detailed in regulations and developed with significant contributions from all interested and affected parties, as required by Section 10 of the Act. It will also take into account the cost and other concerns, and not unduly burden collectors of identifiable health care information. Such regulations could, for example, specify the language for the disclosure, and set forth acceptable means such as brochures, signs, statements in bills, and explanations of benefits.

Furthermore, Section 8 of the Act, which provides detailed procedures for amending individually identifiable health care information, contains sufficient safeguards, including the requirement that amendment requests be in writing, to deter abuse of the right to amend. In any case, the TAG believes that the publication requirement is necessary and appropriate to provide individuals with sufficient information to permit them to exercise their rights under the Act.

Amendment of Individually Identifiable Health Care Information
(Section 8)

This Section specifies the procedures for requesting amendment of individually identifiable health care information, and outlines the requirements necessary for responding to and handling requests for persons collecting, storing or processing such information. If the amendment is not made within 30 business days from receipt of the request, the person possessing the information must so notify the individual, indicating the reasons for refusal and the right to file a statement of correction, which must be included in any subsequent disclosure. If the amendment is made, notices must be sent to specified persons who had provided or received the information that has been amended.

The detailed procedures are intended to provide an orderly method for assuring the accuracy of identifiable health care information. The TAG believes that the Act establishes an appropriate balance between the rights of individuals and the obligations of entities possessing the information.
Alternative Dispute Resolution (Section 9)

Responding to WEDI's July 1992 recommendation that alternative dispute resolution mechanisms be encouraged, the Act requires the Secretary to promulgate regulations promoting, but not necessarily requiring, resolution of disputes arising under the Act through such mechanisms.

Promulgation of Regulations (Section 10)

The Act requires the Secretary to follow the procedures specified in the Negotiated Rulemaking Act of 1990 in promulgating regulations. That Act is permissive, however, in that it allows an administrative agency to establish a negotiated rulemaking committee to develop a proposed regulation if the agency head determines that use of the procedure is in the public interest. If the decision to establish a rulemaking committee is made, notice must be published in the Federal Register indicating the intention to establish the committee; the description of the subject and scope of the rule to be developed; a list of interests likely to be significantly affected; a list of persons to represent these interests and the agency on the committee; a proposed agenda and schedule; a solicitation for comments on the proposal to establish the committee and its proposed membership; and an explanation of how to apply for or nominate a person for committee membership.

The agency must consider the comments. If a committee is formed, it must attempt to reach a consensus on a proposed rule. No further responsibilities are assigned to the committee, and the agency is not required to adopt the committee's recommendations.

The proposed Act provides, however, that if a negotiated rulemaking committee is not named, the Secretary shall nevertheless appoint and consult with an advisory group of between seven and twelve individuals representing specified areas, including providers, payors, administrators, and consumers of health care. The TAG believes that the complex and rapid technological advancements characteristic of electronic data interchange, in addition to the serious issues surrounding the need to protect the privacy and confidentiality of individually identifiable health care information (in electronic form, in particular), dictates the need for reliance on such an advisory group in developing regulations for implementing the Act.

Civil Remedies (Section 11)

The Act affords aggrieved individuals a private right of action for civil relief, and grants exclusive jurisdiction to United States District Courts. In addition to injunctive relief, the individual may recover actual damages, attorneys' fees and other costs, and, if the violation resulted from willful or grossly negligent conduct, up to $10,000 exclusive of actual loss.
Civil Money Penalties (Section 12)

The Act also subjects persons who knowingly disclose information in violation of the Act to civil monetary penalties as specified for single and multiple violations, and to a money penalty of up to $100,000 if the Secretary finds that the violations constitute a general business practice.

The TAG believes that penalties for violations must be sufficient in order to foster compliance, yet not so high as to inhibit their imposition. The penalties suggested should achieve the necessary balance.

Immunity (Section 13)

The Act specifies that if an allegedly improper disclosure was made in accordance with the requirements of the Act and regulations, it constitutes an affirmative defense. The TAG intends that persons able to show compliance with the security and other requirements specified in the Act and regulations have an affirmative defense to actions charging improper disclosure.

Criminal Penalties for Obtaining Individually Identifiable Health Care Information Through False Pretenses or Theft (Section 14)

The Act establishes criminal penalties (fines of up to $50,000, or up to six months imprisonment, or both, for each offense) for persons requesting or obtaining individually identifiable health care information under false or fraudulent pretenses. In addition, persons who request or obtain such information under false or fraudulent pretenses, or who unlawfully take such information and who intentionally use, sell or transfer it for profit, may be fined up to $100,000 or imprisoned for up to two years, or both, for each offense.

The TAG believes that meaningful criminal penalties are necessary to discourage persons from stealing or fraudulently requesting or obtaining information protected by the Act.

Severability (Section 15)

This Section provides that if any portion of the Act is held invalid, it shall not affect any other provisions that can be given effect without the invalid provision.

Effective Date (Section 16)

With the exception of Section 4, which delays the preemption of state laws until regulations implementing the Act are effective, the Act shall become effective upon enactment.
ANTITRUST REVIEW

As part of its charge, counsel reviewed the white papers prepared by each of the Technical Advisory Groups to monitor compliance with applicable antitrust principles. In addition, counsel addressed Technical Advisory Group members regarding antitrust compliance issues at their February 22, 1993 meeting, and copies of the Antitrust Compliance Guide for the WEDI project were distributed to the Chairs of each Technical Advisory Group in March 1993 for review with members.

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ADDENDA

Addendum 1: Text of Proposed "Health Information Confidentiality and Privacy Act of 1993"
A BILL

To provide for the preservation of confidentiality and privacy rights in the collection, storage, processing and transmission of individually identifiable health care information (including initial and subsequent disclosure) in electronic form; to preempt state laws relating thereto, except public health reporting laws; to establish a regulatory mechanism for delineating protocols for securing electronic collection, storage, processing, and transmission of such health care information, and for fair information practices; to require publication of the existence of health care data banks; to encourage the use of alternative dispute resolution mechanisms, where appropriate, for resolving disputes arising under this Act; and to establish penalties for violation.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1 - SHORT TITLE

This Act may be cited as the "Health Information Confidentiality and Privacy Act of 1993."

SECTION 2 - SCOPE

A. Applicability. This Act shall apply to the collection, storage, processing, and transmission of individually identifiable health care information (including initial and subsequent disclosures) in electronic form by all persons, including but not limited to public and private third-party payors and providers of health care.

B. Protection. The protections of this Act shall extend to individuals who are the subject of individually identifiable health care information that is collected, stored, processed or transmitted in electronic form.

C. Exemptions. This Act shall not apply to federal or state laws or regulations that require reporting of individually identifiable health care information to public health authorities.

SECTION 3 - DEFINITIONS

For purposes of this Act:

A. "Disclosure" includes the initial release and any subsequent redisclosures of individually identifiable health care information.

B. "Electronic form" means all mechanical, non-paper formats, including fiberoptic transmission and laser disc storage.

C. "External Disclosure(s)" means:
(1) All disclosures of individually identifiable health care information to person(s) who are not employed or credentialed by, or who do not have an independent contractor relationship with a payor or provider; and

(2) Which are made on behalf of the individual and are directly related to either the adjudication of a claim, coordination of benefits, or to the medical treatment of an individual.

D. "Health care" means:

(1) Any preventive, diagnostic, therapeutic, rehabilitative, maintenance, or palliative care, counseling, service or procedure provided by a provider:

(a) with respect to an individual's physical or mental condition; or

(b) affecting the structure or function of the human body or any part thereof, including, but not limited to, banking of blood, sperm, organs, or any other tissue; and

(2) The prescription, sale or dispensing of any drug, substance, device, equipment, or other item to an individual or for an individual's use for health care.

E. "Individual" means a natural person who is the subject of individually identifiable health care information, and includes the individual's legal representative.

F. "Individually identifiable health care information" means any data or information that identifies or can reasonably be associated with the identity of an individual, either directly or by reference to other publicly available information, and:

(1) Relates to the individual's health history, health status, health benefits, or application therefor; or

(2) Is obtained in the course of an individual's health care from a provider, from the individual, from a member of the individual's family, or from a person with whom the individual has a close personal relationship.

G. "Person" means a government, governmental subdivision, agency or authority, natural person, corporation, estate, trust, partnership, association, joint venture, and any other legal entity.

H. "Provider" means a person that is duly authorized, or that represents itself as being duly authorized to provide health care.

I. "Secretary" means . . .
SECTION 4 - PREEMPTION

Unless otherwise provided in Section 2 C, upon the effective date of regulations implementing this Act, no effect shall be given to any provision of state law that requires individually identifiable health care information to be maintained exclusively in written rather than electronic form or to any provision of state law to the extent it relates to the matters covered in this Act, including the preservation of confidentiality and privacy rights in the collection, storage, processing, and transmission of individually identifiable health care information (including initial and subsequent disclosures) in electronic form by all involved in such transactions.

SECTION 5 - STANDARDS FOR INFORMATION PRACTICES

A. The Secretary shall, by regulation, establish appropriate levels of security, standards, and controls including but not limited to passwords, access codes, restrictions on access, limitations on networking and electronic data sharing, and protocols and procedures for preventing computer sabotage, for collecting, storing, processing and transmitting individually identifiable health care information in electronic form so as to ensure the privacy and confidentiality of such information, taking into consideration the nature of the information and relative risks of disclosure.

B. The regulations promulgated pursuant to Section 5 A shall incorporate the following principles:

(1) The individual shall have the right to know that individually identifiable health care information concerning the individual is collected, stored, processed or transmitted by any person, and to know for what purpose such information is used.

(2) Individually identifiable health care information shall be collected, processed, stored and transmitted only to the extent necessary to carry out a legitimate purpose for which the individual has granted consent.

(3) Each person collecting individually identifiable health care information from an individual shall notify the individual of his or her right to receive a statement, in the style and form prescribed by the Secretary, summarizing the individual's rights pursuant to this Act.

(4) The individual shall have a right of access to individually identifiable health care information concerning the individual from the person collecting such information, the right to have a copy of such information after payment of a reasonable charge, and the right to have a notation made with or in such information of any amendment or correction requested by
the individual.

(5) Persons collecting, processing, storing or transmitting individually identifiable health care information shall implement or cause to be implemented as the case may be, the appropriate security standards and controls promulgated by the Secretary to assure the accuracy, reliability, relevance, completeness, timeliness and security of such information.

SECTION 6 - DISCLOSURE

A. Disclosure. Except as authorized in Section 6 D, no person other than an individual shall disclose individually identifiable health care information to any other person without the individual's valid authorization as provided in Section 6 C. No person shall disclose such information except in accordance with the terms of such authorization, unless otherwise authorized under Section 6 D.

B. Record of Disclosures. Each person collecting or storing individually identifiable health care information shall maintain a record of all external disclosures made on behalf of a provider, payor or individual, of such information.

C. Individual Authorization: Requirements for Validity.

(1) To be valid, an authorization to disclose individually identifiable health care information must

(a) Identify the individual;

(b) Describe the health care information to be disclosed;

(c) Identify the person to whom the information is to be disclosed;

(d) Describe the purpose of the disclosure;

(e) Indicate the length of time for which the individual's authorization will remain valid;

(f) Be either,

(i) In writing, dated and signed by the individual; or

(ii) In electronic form, dated and authenticated by the individual using a unique identifier; and

(g) Not have been revoked under Section 6 C (2).

(2) Revocation of Individual's Authorization. An individual may revoke the individual's authorization
at any time, unless disclosure is required to effectuate payment for health care that has been provided to the individual, or other action has been taken in reliance on the individual's authorization. An individual may not maintain an action against a person for disclosure of individually identifiable health care information made in good faith reliance on the individual's authorization, provided the disclosing person had no notice of the revocation of the individual's authorization at the time disclosure was made.

(3) Record of Individual's Authorizations and Revocations. Each person collecting or storing individually identifiable health care information shall maintain a record of each individual's authorization and revocation thereof, and such record shall become part of the individually identifiable health care information concerning such individual.

(4) No Waiver. Except as provided by this Act, an authorization to disclose individually identifiable health care information by an individual is not a waiver of any rights an individual has under other federal or state statutes, the rules of evidence, or common law.

D. Disclosure Without An Individual's Authorization. A person may disclose individually identifiable health care information without the individual's authorization required in Section C if:

(1) The disclosure is by a family member or by any other person with whom the individual has a close personal relationship, unless such disclosure is expressly limited or prohibited by the individual;

(2) The disclosure is only to the extent necessary for the disclosing person to carry out its lawful activities and is to the disclosing person's agent, employee, or independent contractor who is under an obligation to hold the individually identifiable health care information in confidence and not to use such information for any purpose other than the lawful purpose for which the information was obtained by the disclosing person;

(3) The disclosure is to a provider who is providing health care to the individual except as such disclosure is limited or prohibited by the individual;

(4) The disclosing person reasonably believes that disclosure is necessary to avoid or minimize imminent danger to the health or safety of any individual, but only to the extent necessary to avoid or minimize such danger or emergency;
(5) The disclosure is to a member of the individual's immediate family, or to any other individual with whom the patient is known to have a close personal relationship, if such disclosure is made in accordance with good medical or other professional practice, unless such disclosure is expressly limited or prohibited by the individual;

(6) The disclosure is to a successor in interest to the person maintaining the individually identifiable health care information, provided, however, that no person other than a provider or the estate of a deceased provider shall be considered a successor in interest to a provider;

(7) The disclosure is to federal, state, or local government authorities, to the extent the person holding the individually identifiable health care information is required by law to report specific individually identifiable health care information:

(a) when needed to determine compliance with state or federal licensure, certification, or registration rules or laws; or

(b) when needed to protect the public health;

(8) The disclosure is to a person solely for purposes of conducting an audit, if that person agrees in writing:

(a) to remove or destroy, at the earliest opportunity consistent with the purpose of the audit, information that would enable identification of the individual;

(b) not to disclose in any report any individually identifiable health care information; and

(c) not to further disclose the information, except to accomplish the audit or to report unlawful or improper conduct involving health care fraud by a provider or the individual or other unlawful conduct by a provider;

(9) The disclosure is for use in a research project that:

(a) is of sufficient importance to outweigh any potential harm to the individual that would result from the disclosure;

(b) is reasonably impracticable without the use of the individually identifiable health care information;

(c) contains reasonable safeguards to protect the information from redisclosure;
(d) contains reasonable safeguards to protect against identifying, directly or indirectly, any individual in any report of the research project;

(e) contains procedures to remove or destroy at the earliest opportunity, consistent with the purposes of the project, information that would enable identification of the individual, unless retention of identifying information is required for purposes of another research project that also satisfies the requirements of this Section; and

(f) the person agrees in writing:

(i) to remove or destroy, at the earliest opportunity consistent with the purpose of the research information that would enable identification of the individual;

(ii) to not disclose individually identifiable health care information, except as necessary to conduct the research project;

(10) The disclosure is in accordance with a discovery request:

(a) Before service of a discovery request on a person maintaining individually identifiable health care information, an attorney shall provide advance notice to the person and to the individual involved or the individual's representative or attorney through service of process or first class mail, indicating what information is sought, and the date by which a protective order must be obtained to prevent the person from complying. Such date shall give the individual and the person adequate time to seek a protective order, but in no event be less than fourteen days after the date of service of such notice;

(b) Without the individual's authorization, a person may not disclose the information sought under paragraph (a) if the requestor has not complied with the requirements of paragraph (a). In the absence of a protective order issued by a court of competent jurisdiction forbidding compliance, the person shall disclose the information in accordance with this section. In the case of compliance, the request for discovery or compulsory process shall be maintained by the holder thereof with the individual's health care information;

(c) Production of individually identifiable health care information under this section, in and of
itself, does not constitute a waiver of any privilege, objection, or defense existing under other law or rule of evidence or procedure;

(11) The disclosure is to federal, state or local law enforcement authorities to the extent required or permitted by law;

(12) The disclosure is directed by a court in connection with a court-ordered examination of an individual; or

The disclosure is based on reasonable grounds to believe that the information is needed to assist in the identification of a deceased individual.

E. Obligations of Legal Representatives.

(1) A person authorized to act as an individual's legal representative may exercise the rights of the individual under this Act to the extent necessary to effectuate the terms or purposes of the grant of authority; but an individual who is a minor and who is authorized to consent to health care without the consent of a parent or legal guardian under State law may exclusively exercise the rights of an individual under this Act as to information pertaining to health care to which the minor lawfully consented.

(2) An individual's legal representative shall act in good faith to represent the best interests of the individual with respect to individually identifiable health care information.

SECTION 7 - PUBLICATION

Persons collecting individually identifiable health care information shall, pursuant to regulations, periodically publicize the existence of the information and provide information regarding procedures for obtaining and correcting the information.

SECTION 8 - AMENDMENT OF INDIVIDUALLY IDENTIFIABLE HEALTH CARE INFORMATION

A. Within thirty (30) business days from the date of receipt of a written request from an individual to amend any individually identifiable health care information about the individual within its possession, a person collecting, storing or processing such information shall either:

(1) Amend the portion of the recorded individually identifiable health care information identified by the individual, or

(2) Notify the individual of:

(a) Its refusal to make such, amendment;
(b) The reasons for the refusal, and (c) The individual's right to file a statement as provided in Subsection 8C.

B. If the person amends information in accordance with Subsection 8A above, the person shall provide the amendment to:

(1) The individual;

(2) Any person specifically designated by the individual who may have, within the preceding two (2) years, received such information;

(3) Other persons who have systematically been provided such information within the preceding seven (7) years; provided, however, that the amendment or fact of deletion need not be furnished if the other person no longer maintains such information about the individual; and

(4) Any person that provided the information that has been amended.

C. Whenever an individual disagrees with a person's refusal to amend individually identifiable health care information, the individual shall be permitted to file with such person:

(1) A concise statement setting forth what the individual believes to be correct, relevant or fair information; and

(2) A concise statement of the reasons why the individual disagrees with the refusal to amend such information.

D. If an individual files either statement as described in Subsection C above, the person shall:

(1) Include the statement with the disputed individually identifiable health care information and provide a means by which anyone reviewing such information will be made aware of the individual's statement and have access to it;

(2) With any subsequent disclosure of the information that is the subject of disagreement, clearly identify the matter or matters in dispute and provide the individual's statement along with the information being disclosed; and

(3) Provide the statement to the persons and in the manner specified in Subsection 8B above. E. The rights granted in this section shall not apply to individually identifiable health care information that relates to and is collected in connection with or in reasonable anticipation of a claim or civil or criminal proceeding involving the individual.
SECTION 9 - ALTERNATIVE DISPUTE RESOLUTION

The Secretary shall promulgate regulations that will promote the resolution of disputes arising under this Act through alternative dispute resolution mechanisms.

SECTION 10 - PROMULGATION OF REGULATIONS

A. In promulgating regulations under this Act, the Secretary shall follow the procedures authorized under the "Negotiated Rulemaking Act of 1990," 5 U.S.C. §§ 581-590.

B. If the Secretary determines that a negotiated rulemaking committee shall not be established as permitted by 5 U.S.C. § 583, the Secretary shall appoint and consult with an advisory group of knowledgeable individuals. The advisory group shall consist of at least seven (7) but no more than twelve (12) individuals from the following areas: (1) health care financing and reimbursement; (2) health care delivery, including representatives of health care professionals and health care entities; (3) third party payors/administrators, network administrators; and (4) health care consumers.

C. The advisory group shall review all proposed rules and regulations and submit recommendations to the Secretary. The advisory group shall also assist the Secretary: (1) in establishing the standards for compliance with rules and regulations; and (2) in developing an annual report to the Congress on the status of the requirements set forth in this Act, their cost impact, and any recommendations for modifications in order to ensure efficient and confidential electronic data interchange of individually identifiable health care information.

SECTION 11 - CIVIL REMEDIES

A. An individual aggrieved by a violation of this Act may maintain an action for relief as provided in this section.

B. The district courts of the United States shall have exclusive jurisdiction in any action brought under the provisions of this section. C. The court may order a person maintaining individually identifiable health care information to comply with this Act and may order any other appropriate relief.

D. If the court determines that there has been a violation of this Act, the aggrieved individual shall be entitled to recover damages for any losses sustained as a result of the violation; and, in addition, if the violation results from willful or grossly negligent conduct, the aggrieved individual may recover not in excess of $10,000, exclusive of any loss.

E. If an aggrieved individual prevails in an action brought
under this section, the court, in addition to any other
relief granted under this section, may award reasonable
attorneys' fees and all other expenses incurred by the
aggrieved individual in the litigation.

F. Any action under this Act must be brought within two years
from the date on which the alleged violation is discovered.

SECTION 12 - CIVIL MONEY PENALTIES

Any person that knowingly discloses health care information in
violation of this Act shall be subject, in addition to any other
penalties that may be prescribed by law --

A. to a civil money penalty of not more than $10,000 for each
violation, but not to exceed $50,000 in the aggregate for
multiple violations; and, in addition -

B. to a civil money penalty of not more than $100,000 if the
Secretary finds that violations of this Act have occurred
with such frequency as to constitute a general business
practice.

SECTION 13 - IMMUNITY

It shall be an affirmative defense in actions brought for
improper disclosure of individually identifiable health care
information that such disclosure was in accordance with the
requirements of this Act and regulations promulgated pursuant to
this Act.

SECTION 14 - CRIMINAL PENALTIES FOR OBTAINING INDIVIDUALLY
IDENTIFIABLE HEALTH CARE INFORMATION THROUGH FALSE PRETENSES OR
THEFT

A. Any person who, under false or fraudulent pretenses,
requests or obtains individually identifiable health care
information shall be fined not more than $50,000 or
imprisoned not more than six months, or both, for each
offense.

B. Any person who unlawfully takes, or under false or
fraudulent pretenses, requests or obtains individually
identifiable health care information and who intentionally
uses, sells or transfers such information for remuneration,
for profit or for monetary gain shall be fined not more
than $100,000, or imprisoned for not more than two years,
or both, for each offense.

SECTION 15 - SEVERABILITY

If any provision of this Act or its application to any person
or circumstance is held invalid, it shall not affect other
provisions or applications of this Act that can be given effect
without the invalid provision or application, and to this end the
provisions of this Act are severable.

SECTION 16 - EFFECTIVE DATE
Except as provided in Section 4, this Act shall become effective upon enactment.
The WEDI Steering Committee and the Unique Identifiers for the Health Care Industry Technical Advisory Group (TAG) agree on the importance of a unique provider identification number, and have identified three viable alternatives. The TAG recommends a numbering system built upon existing numbering capabilities at
professional associations and the Health Care Financing Administration (HCFA). The Steering Committee's preference is to use the Social Security Number and Tax Identification Number. Recognizing the importance of implementing a unique provider identifier, the TAG acknowledges the Steering Committee's decision, and has prepared a description of the Steering Committee's recommendation and guidelines for implementation in Addendum 2.

One area of health care reform on which there is widespread agreement is the need to reduce administrative complexity and lessen the paperwork burden. The Workgroup for Electronic Data Interchange believes the health care industry can realize this objective through standardized electronic communications. WEDI envisions a health care industry transacting all of its business electronically, using one set of electronic standards and interconnecting networks.

Administrative simplification requires not only industry-wide agreement on standardized formats, but also a willingness to provide greater uniformity in the actual content of information exchanged between providers, patients, payors, and employers. The lack of uniform data exchange, and in particular, the lack of uniformity among the identifiers used for providers, patients, payors and employers diminish many of the efficiencies gained by implementing standard formats.

The Need for Unique Identifiers

Participants in the health care industry (providers, patients, payors, and employers) are identified in many different ways. For example, an individual may have a different identification number for each health insurance plan in which the individual is enrolled. Likewise, a patient may have a different patient identification number for each provider the patient uses for health care.

Similarly, a provider may be assigned a different identification number by each payor with whom a health care claim is filed. Payors, are identified differently by the employers that remit premium to them, as well as the providers that receive claim payments from them.

The proliferation of identification numbers increases the administrative complexity for all participants who must remember which number to use in which situation. The lack of unique identifiers also poses significant problems for locating participants electronically.

Benefits of Unique Identification Numbers

Assigning unique identification numbers to providers, patients, payors, and employers will simplify administrative tasks, encourage speedier automation of health care transactions, reduce administrative hassles, and improve accuracy. Unique
identification numbers will promote greater industry standardization and uniformity of health care data. Unique identification numbers will enhance the ability to detect health care fraud, streamline system access and security procedures, as well as aid identification and recovery of savings from coordination of benefits activities. Moreover, unique identifiers will facilitate the linkage and transfer of clinical information, thereby enhancing the overall quality of care.

Mission of the WEDI Unique Identifiers for the Health Care Industry Technical Advisory Group

The 1992 WEDI Report recommends that the health care industry determine the feasibility of a unique identifier system that covers all participants. The Report further recommends that the industry establish a process for implementation by 4th Qtr 93, and adopt unique identifiers by 4th Qtr 95. The charge of the Unique Identifiers for the Health Care Industry TAG is to fulfill these recommendations.

Methodology

In response to these challenges, the Unique Identifiers for the Health Care Industry TAG initially defined the purpose of unique identifiers and established criteria for unique numbering systems. These criteria included the cost to implement and maintain a numbering system, ease of implementation, capacity for protection of confidentiality and privacy, and the potential for improved fraud detection. Then, the TAG identified and evaluated alternative systems for enumerating patients, providers, and payors. Next, the TAG developed recommendations based on evaluations of numbering systems. Finally, the TAG identified steps for implementing recommendations.

Recommendations

The following recommendations were developed after a lengthy and critical examination of unique identifier requirements and alternatives by the TAG. The TAG membership consists of providers, payors, vendors, and government health care agencies. While the recommendations in this paper represent the majority opinion of the Unique Identifiers for the Health Care Industry TAG, all of the recommendations are not unanimously supported by all of the TAG members.

Patient Identification Number

The TAG recommends a patient identification number based on the Social Security Number.

Provider Identification Number

The TAG recommends the establishment of a universal provider identification number that uniquely identifies all health care providers (individuals and organizations). The numbering system
should be built on existing numbering capabilities at professional associations and government agencies, through the voluntary and cooperative efforts of the public and private sectors. An umbrella organization, comprised of professional associations, Health Care Financing Administration, payors, and other users of the number, should be established to develop, design, implement, and maintain the numbering system.

This recommendation was presented to the WEDI Steering Committee for their consideration to be included in the 1993 WEDI Report to the Secretary of Health and Human Services. The Steering Committee requested that the TAG provide further description of this recommendation, and a discussion of two alternative provider identification strategies (e.g., use of HCFA's Unique Physician Identification Number, and use of the Social Security Number and Federal Tax Identification Number). This document was presented to the Steering Committee and is attached as Addendum 1, "Issues for WEDI Steering Committee - Additional Information on the Provider Identification Number."

Following a thorough deliberation of this issue, the WEDI Steering Committee recommends use of the Social Security Number to identify individual providers and the Tax Identification Number to identify provider organizations. The Steering Committee further recommends that if, for reasons of sensitivity, the Social Security Number cannot be used, the Steering Committee supports the use of the Unique Physician Identification Number for individual providers and the Tax Identification Number for provider organizations. The TAG acknowledges the Steering Committee's decision and has prepared guidelines for implementing the Steering Committee's recommendation (refer to Addendum 2, "Implementation of the Social Security Number/Tax Identification Number as a Provider Identification Number").

Payor Identification Number

The TAG recommends leveraging the National Association of Insurance Commissioners (NAIC) Company Code model and expanding the coding methodology to include all payors. An entity to administer the payor identification number should be selected by using the federal procurement process.

Employer Identification Number

The TAG recommends that employer coding systems, including the federal Tax Identification Number, unemployment account number, and systems used by state labor and commerce departments, be evaluated to determine if any one or combination of them could serve as an employer identification numbering system.

INTRODUCTION

This paper provides a comprehensive examination of the issues surrounding unique identifier systems for all participants in the health care industry, and offers recommendations for the
implementation of unique identifiers for patients, providers, payors, and employers.

RECOMMENDATIONS FROM THE 1992 WEDI REPORT

A WEDI task force should be created and will consult with other appropriate industry organizations to determine the feasibility of a unique identifier system that covers all participants in the health care system and a process for implementation by 4th Qtr 93. All participants should adopt the identifiers by 4th Qtr 95.

PATIENT IDENTIFICATION NUMBER

This section of the White Paper discusses the TAG's evaluation of alternative numbering systems, and recommends the implementation of the Social Security Number as the patient identification number.

Purpose of a Patient Identification Number

The purpose of a patient identification number is to identify every patient in the health care system with a single, unique identification number. Any individual who accesses the United States health care system should receive a patient identification number including, but not limited to, United States citizens, foreign dignitaries, temporary foreign employees, foreign exchange students, un-naturalized dependents of naturalized citizens, and illegal aliens.

Requirements for a Patient Identification Numbering System

The TAG established the following baseline requirements for a patient identification number:

- The numbering system must be capable of uniquely identifying every patient. No individual should have more than one number, and no two individuals should have the same number.

- The number must be compatible with ASC X12 (an accredited ANSI Committee) transactions for enrollment, eligibility inquiry, eligibility response, claim submission, claim payment and remittance, and managed care. Future transactions must be developed and approved by ANSI.

- The number should be random or sequential, and should not contain any embedded logic.

- Access to and storage of patient data should not be based solely on the identification number.

- The numbering system should be designed with safeguards to prevent inappropriate access to or use of patient data.

- Implementation of a numbering system must be achievable by
the 4th Qtr 95, as recommended in the 1992 WEDI Report.

- The cost to implement and maintain a patient numbering system must be realistic, given federal funding constraints and spiraling health care costs.
- An entity must be designated to assign numbers and manage the number database.

**Alternative Numbering Systems**

The TAG principally evaluated three options for a patient identifier: use of biometric technology, the Social Security Number, and development of a new numbering system.

1. **Biometric Technology**

   Biometric technology measures a unique physical trait, such as the ridges of the fingerprint or the retina of the eye. A biometric scan creates and stores a digitized description of this feature. The scanned image can be converted by a computer program into a unique identification number for the individual.

   If desired, the information can be stored on a smart card. Each time the card is used, the individual's thumb, hand, or retina is scanned and compared to the data stored on the card. The scanning device confirms the identity of the card user, the data on the card, and the scan match.

   - The implementation costs for a patient numbering system based on biometric scanning are significant. Scanners would be required locally to create identifiers for all individuals, and would be required at every point of health care service to confirm an individual's identification.

   - Scanning equipment costs currently range from $2,500 to $8,000. The TAG estimates the cost of scanners for registration locations and providers to exceed $1.3 billion (refer to population assumptions in Addendum 3). At a cost of $10 to $50 per smart card, it could cost as much as $12.5 billion to supply the current population with smart cards to store the identifier data. If digitized information was stored on less costly magnetic stripe cards, averaging $2.50 per card, card costs could be lowered to $625 million.

   - A biometric-based patient identification system would require an umbrella organization to control the database, monitor its quality and accuracy, and assign numbers to those individuals (disabled or visually impaired) who could not be scanned. This would result in additional costs.

   - In its favor, a biometric-based identifier, in most cases,
is permanent for an individual's life span. Biometric technology eliminates the possibility of duplicate numbers for more than one individual, or multiple identifiers for a single individual.

- Initial registration of patients, however, would be cumbersome. Biometric scanning would require that either an individual appear at a scanning site or necessitate the use of mobile scanning units.

- Biometric scanning is a secure numbering system because it is nearly impossible to forge or alter either the card or the scan data. Because biometric technology measures inimitable physical traits, a biometric-based numbering system provides for a high degree of uniqueness and security.

2. Social Security Number

The Social Security Number (SSN) was developed in 1935 to identify individuals entitled to benefits under the Social Security Administration (SSA) programs. The SSA is solely responsible for assignment and control of SSNs. The SSA maintains that any other use of the number is contrary to the original intent of the Social Security Act. Nevertheless, the SSN is used by the Internal Revenue Service to identify individuals and some employers. The Department of Agriculture uses the SSN to distribute food stamps. With minor variations, the SSN is used as the basis for Medicare and Medicaid program identification numbers. Most disturbingly, a number of private entities are cross-referencing, compiling, and selling SSN-based information without restriction.

- Use of the SSN as a health care numbering system would present significant cost economies because most of the United States population already has an SSN. Also, an existing government agency is responsible for the assignment, control, and quality of the SSN. The SSA's cost to maintain the SSN for fiscal year 1992 was $153 million, or approximately 61¢ per individual.

- The SSA continues to make substantial improvements in the technology used to detect and correct cases where a single SSN is assigned to or used by more than one individual. In fiscal year 1992, SSA detected and corrected 86,285 duplicate numbers, 28% fewer corrections than the previous year.

- The prevalence of the SSN in the existing health care system would significantly speed implementation (refer to Addendum 4, "Results of Survey to Payors Regarding Identification Numbers for Covered Individuals").

- The format of a SSN-based patient identification number would be dictated by the existing SSN format of nine numeric characters. Were it desirable to differentiate
between the two numbers, the patient identification number could be displayed differently, such as 99 999 9999, without affecting electronic processing.

- If desired, online verification of a SSN-based patient identification number could be performed by employers, providers, and payors via electronic access to the agency or entity administering the number.

3. New Numbering System

The creation of a new numbering system for patient identification has the attractive potential of eliminating some of the problems with the different systems used by providers and payors today.

As a basis for their evaluation, the TAG reviewed the Province of Ontario’s (Canada) recent experience in implementing a unique health identification number for all residents of that province. Ontario implemented their system in 1990 with the objective of improving the process for delivering, planning, and monitoring health care services. The new system features a permanent health service number for every resident, a durable plastic card issued to each individual, and a new registration system and enriched data base.

Ontario's recent analysis of the project indicates that the project was successful, overall. The accuracy of information in the data base requires improvement, which officials believe can be achieved best through improved data exchange with other government agencies. All in all, the analysis concludes that the implementation of unique health identification numbers is a major step towards tracking health care data for improved quality and analysis.

While Ontario's experience offers a useful model for comparison, it must be noted that the project involved a population of approximately 10 million individuals and one major payor, compared to more than 250 million individuals and 3,000 payors in the United States.

- A new numbering system requires the establishment of a new agency or the empowerment of an existing agency to organize, administer, and control a new patient identification number data base. Using a conservative estimate of $5 per individual, it would cost approximately $1.25 billion to create and distribute identification cards. The cost of registering and administering a new patient identification system could cost $1.25 billion.

- A new numbering system would be difficult to implement and maintain. A national registration program would face greater challenges than the Census Bureau in contacting and enrolling all eligible citizens, as well as newborns, aliens, and foreign nationals requiring access to the health care system.
Refer to Addendum 5 for a summary of the TAG's analysis of numbering systems.

Recommendation for a Patient Identification Number

In an ideal environment, with sufficient time for planning and implementation and without the burden of a struggling economy, the TAG would recommend a biometric-based numbering system. This unique identifier would account for future demands on the health care system, and would support data security and integrity in electronic environments. However, biometric technology is a costly and untested solution at this time.

Given the current circumstances, the TAG recommends a patient identification number based on the SSN. The SSN, while it poses its share of problems, is the most realistic option for a patient identification number because of the relatively sophisticated processes. Systems are already in place to issue, maintain, and control the access to the number.

Implementation

The TAG makes the following recommendations for implementing a SSN-based patient identification number:

- The SSN should be used as the patient identification number in all ASC X12 electronic health care financing transactions.

  Storage of and access to patient data in provider, payor, and employer systems should be based on the SSN-based patient identification number combined with a check digit and one or more keys that are specific to that data processing system. Storage of patient data in this manner would minimize unauthorized access to data bases that contain patient clinical and financial data.

  Providers, payors, and employers should develop cross-reference indices so that incoming records can be matched with their system records. Use of such a crosswalk would minimize the changes required to existing systems, and would allow each entity to retain their existing numbering systems for internal use.

- A transposition check digit should be appended to the identifier. Consideration should also be given to appending encryption elements to the number.

- Existing system security requirements must be strengthened to ensure that only appropriate entities, including the patient or an authorized representative, are permitted access to employer, provider, or payor data bases containing patient-specific clinical or financial information. Aside from minor exceptions, a patient should not be restricted from accessing their clinical or health care financing information. (Refer to Addendum 6 and Addendum 7 for
further discussion regarding patient access to medical records information.)

- Congress should enact legislation requiring an individual's disclosure of the SSN for the purpose of health plan enrollment and access to health care services.

- Congress should enact legislation prohibiting the compilation, use, or disclosure of the SSN without the patient's written consent. The TAG recommends criminal penalties, including severe fines and prison terms, for the unauthorized use or disclosure of confidential patient financial and clinical records.

- A major public education program should be initiated to inform consumers about the SSN-based patient identification number. Education efforts should address, at a minimum, the reasons for implementing a nationwide patient identification number system, safeguards to ensure the security and confidentiality of patient records, and steps to prevent unauthorized use of patient data and cross-referencing of patient information to other data bases.

- To ensure the quality of the SSN as a patient identification number, the General Accounting Office (GAO) should audit the SSA's numbering system, make recommendations to resolve any discrepancies and determine the cost to implement the GAO's recommendations. The TAG further recommends that any GAO recommendations be implemented within a reasonable time frame.

- Providers should be required to apply for a SSN simultaneously with filing a birth certificate to ensure that infants are issued a number as soon as possible.

  Taxpayers claiming a dependent of one year or older must have a SSN for that dependent, as required by 26 USC 6109.

  The SSA sponsors an Enumeration at Birth program with the Vital Statistics Bureaus in a number of states. This program enables hospitals to apply for a newborn's SSN at the same time the birth certificate is filed. As of 1993, approximately 50% of new SSNs are assigned via the Enumeration at Birth process, and the SSA expects this percentage to increase as more states participate in the program.

- A task group of payors, providers, consumers, and government agencies should develop procedures to ensure that individuals who would not otherwise receive a SSN be issued a patient identification number. The TAG estimates the cost to issue temporary patient identification numbers to these individuals to be from $7.50 to $8.50 per number.

- An electronic SSN application process should be developed to expedite the issuance of SSNs, and electronic connections should be used to link appropriate entities to the Social
Security Administration for this purpose. The SSA already has an interactive system in place for some SSA functions. The TAG estimates that an electronic application and issuance function could be added at a cost under $1 million. An alternative would be to allow the issuing process to occur at a SSA district or regional office, rather than the process being centralized in Baltimore, Maryland.

PROVIDER IDENTIFICATION NUMBER

This section of the white paper outlines the findings of the TAG and a recommendation to establish an umbrella organization of professional associations, HCFA, payors, and other users of the number data bases to design, develop, implement, and maintain the system for the unique identification of health care providers. It is expected that the system will be built on existing capabilities through the voluntary and cooperative efforts of the private and public sectors.

Purpose of a Provider Identification Number

The purpose of a unique provider identification number is to identify and validate individuals and organizations that are eligible to provide health care services. Identification is necessary to identify who performed the service and whom to pay for the service.

Unique identification is required for effective and efficient electronic data interchange. Each individual provider should be assigned a single, unique identifier, regardless of the practice setting. Organizations should be assigned a unique identification number for each entity within the organization separately defined to deliver health care.

Providers fall into two categories: individuals and organizations. Individual providers include, but are not limited to, medical doctors, osteopathic doctors, dentists, chiropractors, nursing professionals, optometrists, pharmacists, podiatrists, psychologists, and therapists. Provider organizations include, but are not limited to, hospitals, long-term care facilities, freestanding outpatient health care facilities, pharmacies, staff model health maintenance organizations, public health clinics, military health care facilities, medical suppliers, and home health care organizations.

Requirements for a Provider Identification Numbering System

The TAG outlined the following requirements for a provider number and numbering system:

- The provider identification number should accurately and uniquely identify all providers.
- The provider identification number should be used in ASC X12
transactions for enrollment, eligibility inquiry, eligibility response, claim submission, claim payment and remittance, managed care, and future transactions developed and approved by ASC X12. The provider number also should be used in performing other activities, such as outcomes management, quality measurement, utilization review, fraud detection, and coordination of benefits.

- Access to the provider numbering system should be open to authorized users and be based on their need for the number and its related data. Likely users of the data base might include providers, payors, utilization and quality management organizations, software vendors, provider billing services, and government agencies. Electronic access to the data base should be available.

Alternative Numbering Systems

The TAG evaluated the strengths and weaknesses of various numbering systems in use today:

- Social Security Number (SSN)
  
  The SSN is assigned by the Social Security Administration and identifies individuals entitled to Social Security program benefits. The number also is used by the Internal Revenue Service to identify taxpayers. The SSN does not identify aliens on temporary work permits, persons using a visa, or organizations.

- Federal Tax Identification Number (TIN)
  
  The TIN is assigned by the Internal Revenue Service and identifies all businesses for tax reporting purposes. The TIN does not always identify the individual components of a business that may require unique identification, such as multiple locations or departments.

- Unique Physician Identification Number (UPIN)
  
  The UPIN is assigned by the Health Care Financing Administration (HCFA). Physicians and other health care practitioners participating in the Medicare program and some state Medicaid programs are required to obtain a UPIN. Medicaid program providers and other providers have voluntarily obtained UPINs as well. While the UPIN currently covers 700,000 providers, HCFA plans to expand the UPIN registry to include other providers participating in the Medicare program.

- HCFA Certification Number
  
  The Certification Number is assigned by HCFA to identify health care organizations certified to participate in the Medicare and Medicaid programs. Approximately 202,000 provider organizations have a Certification Number, which is required for participation in HCFA's programs.
- **State License Number**

  State license numbers are assigned by states to identify providers licensed to operate in the state. Among states, there are vast differences in the format and technical compatibility of the number.

- **Medical Education Number**

  The Medical Education Number is assigned by the American Medical Association (AMA) when a physician enters medical school. International Medical Graduates (IMGs) are assigned a medical education number as soon as they test to become eligible to practice medicine in the United States. Approximately 700,000 physicians are included in this numbering system. The American Osteopathic Association (AOA) and the American Dental Association (ADA) also assign numbers to individuals at the time they enter osteopathic or dental school.

- **Health Industry Number (HIN)**

  The HIN is assigned and administered by the Health Industry Business Communications Council (HIBCC), an umbrella organization of health industry trade associations that develops and maintains electronic data interchange standards. HIBCC assigns, maintains, updates, and distributes the HIN data base, which identifies the universe of provider institutions, such as hospitals, nursing homes, retail pharmacies, and managed care facilities. The HIN data base currently contains approximately 130,000 records.

- **National Association of Boards of Pharmacy (NABP) Number**

  The NABP Number is assigned by the National Council for Prescription Drug Programs (NCPDP) to pharmacies licensed by state boards of pharmacies. Its primary function is to identify pharmacies as payees, and is used by virtually all payors in the third party drug industry. The NABP Number is assigned to approximately 65,500 pharmacies.

- **Standard Prescriber Identification Number (SPIN)**

  The SPIN, which is developed from numbers assigned by professional associations, is used by the prescription drug industry to identify the prescriber of prescription drugs. The SPIN includes participation from the AMA, AOA, and ADA, and is assigned to approximately 900,000 providers.

- **Drug Enforcement Agency (DEA) Number**

  The DEA assigns this number to identify entities (organizations, manufacturers, provider locations, and individuals) approved to prescribe and dispense controlled substance drugs. There are approximately 850,000 DEA Numbers assigned to individuals and institutions. The DEA does not approve the use of this number for other purposes.
The TAG concluded that none of these alternatives, in their current state, completely satisfies the criteria of being unique, sufficiently accurate, technologically viable, or applicable to the entire community of 1.3 million providers.

**Recommendation for a Provider Identification Number**

The TAG makes the following recommendations for a provider identification number:

- An identification system will be developed for all health care providers (individuals and organizations) based on data from existing professional associations about both members and non-members.

- Professional associations will be the source of provider identifiers for their constituents. HCFA will assign an identifier to providers for whom there is no representative body.

- The provider identification system will be administered by an umbrella organization consisting of professional associations, payors, data users, and HCFA.

- The umbrella organization will: make certain that all health care segments are included in the numbering system; ensure that the numbering system is self-funding; make information from the system available to those who subscribe to the provider numbering service; and regulate access to information from the provider identification system.

**Implementation**

The TAG makes the following recommendations for implementing the provider identification number:

- A consensus must be obtained from a critical mass of the trading partners and, following a feasibility study, commitment must be made to complete a detailed business plan. The umbrella organization will develop detailed system requirements, and will establish procedures for assigning numbers and updating the system.

- The umbrella organization will develop a detailed implementation plan and conversion schedule. A qualified entity will be selected to develop and test the system in conjunction with members of the umbrella organization.

- The first step of the implementation will be establishing the umbrella organization and distributing provider numbers for those professions that have numbering systems in place. Following the successful implementation of this phase, the umbrella organization will develop future phases to expand the population to include all providers.

- A commitment to use the new system is the key to
successfully implementing a unique provider identification number. The TAG proposes voluntary use of the provider number. However, it may be necessary to propose legislation requiring use of the number if a consensus to use the system cannot be reached.

- Conversion to the unique identifier for both the providers and users will be a major undertaking, and could slow the transition to the new number. The data file of unique identification numbers will have to be integrated into users' systems before the number becomes fully accepted and useful.

- The cost of developing the system has not been completed. The TAG agrees that, while the establishment of a unique number will eliminate the duplication of effort currently expended to produce valid identification of a provider, a definitive cost of the system is required to attract users to the system.

- The TAG recognizes that it will be necessary to implement the numbering system in phases. The length of time for both the initial and subsequent phases may limit the number of users to the system.

- A critical mass of professional associations will be required to achieve the population objectives of the initial phase.

- The cooperation of all members of the umbrella organization will be required to make this effort a success.

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**PAYOR IDENTIFICATION NUMBER**

The TAG recommends the implementation of a payor identification number based on the National Association of Insurance Commissioner's (NAIC) Company Code. This section of the White Paper discusses the requirements for a payor identification number, makes a recommendation, and outlines implementation criteria.

**Purpose of a Payor Identification Number**

The primary purpose of a payor identification number is to facilitate the electronic exchange of health care financing and the delivery of information by uniquely identifying all public or private entities that are a destination for health care data. Any payor or electronic data interchange entity that receives health care transactions should have a payor identification number, including insurers, Blue Cross and Blue Shield Plans, Medicare and Medicaid contractors, health maintenance organizations, third party administrators, and self-insured plans.

**Requirements for a Payor Identification Numbering System**
The TAG established the following baseline requirements for a payor identification number:

- The number should be compatible with ASC X12 transactions for enrollment, eligibility inquiry, eligibility response, claim submission, claim payment and remittance, managed care, and future transactions developed and approved by ASC X12.

- The number should be compatible with any health care data base.

- Each payor-public EDI combination destination should have one payor identification number. For example, if Payor A accepts all electronic transactions at one public EDI destination, it should have one payor identification number. If, on the other hand, Insurer B accepts group claims at one public EDI destination and government contract claims at another EDI destination, it should have two payor identification numbers.

Alternative Numbering Systems

The TAG considered two options for a payor identifier: the federal Tax Identification Number (TIN) and the National Association of Insurance Commissioners (NAIC) Company Code.

The TIN was eliminated from consideration for the following reasons:

- The TIN was developed by the Internal Revenue Service (IRS) to specifically meet revenue reporting needs.
- A single tax entity may require multiple payor identification numbers for electronic health care transactions.

The NAIC Company Code, or Co-Code, is a five-digit identifier assigned to insurance companies and some health maintenance organizations by the NAIC. The Co-Code is used by insurers to file financial reports with state insurance departments. The NAIC maintains the Co-Code data base, which contains financial, product, premium, and volume data for insurers. Currently, there are approximately 6,000 Co-Code records.

The Co-Code provides an attractive model for a payor identification numbering scheme. First, it was specifically developed for the purpose of identifying insurers. Second, it is compatible with health care EDI requirements. Third, it is already being used by a majority of payors.

Recommendation for a Payor Identification Number

The TAG recommends leveraging the NAIC Co-Code model to develop an expanded coding methodology that will include all payors and
health care EDI entities.

Specifically, the TAG recommends a two-part code consisting of eleven characters. The first part, a core code, should consist of six numeric characters. The core code should store existing NAIC Co-Code values, as well as new values assigned to payors that do not receive a Co-Code.

The second part, a suffix code, should consist of five numeric characters. The suffix, which is optional, enables payors to further route transactions in their internal systems following receipt at the primary EDI destination. The TAG recognizes that a one-character prefix may eventually be required to comply with future public policy or standards requirements.

Implementation

The TAG makes the following recommendations for implementing the payor identification number:

- A central authority should be designated to develop and maintain a payor registration system and data base. The central authority will, at a minimum, register payors and EDI entities, maintain the integrity of the data base, define data base access methods, control access to payor identification information, and oversee security of the data base.
  - The central authority may be a private organization (e.g., NAIC, Data Interchange Standards Association), an existing public agency (e.g., Department of Health and Human Services, Federal Trade Commission), or a newly-created public or private entity.

- A government agency should conduct a procurement to select a central authority for the payor identification system. The selection should be made by the end of the 1st Qtr 94, and the implementation of the system should begin by the end of 1994. The system should be operational on an industry-wide basis by the end of 1995.

  - As part of the procurement process, consideration should be given to the usage or acquisition of applicable portions of the NAIC data base for the payor identification system.

- The payor identification number should be used in all ASC X12 electronic health care financing transactions.

- All payors and EDI entities should be required by law to register with the central authority.

- Industry-wide use of the payor identification number should be required by law.

- Additions or changes to the data base should be the sole responsibility of the central authority. All authorized users should be able to inquire into the data base.
The TAG estimates the cost to implement the numbering system will be from $150,000 to $500,000, and the cost to maintain the number data base will be $100,000 to $200,000, annually.

These costs will depend on the scope of services provided by the central authority, including the data management and access tasks undertaken. The TAG recommends that the central authority charge a reasonable user access fee to cover costs.

Congress should enact legislation to prevent misuse and fraudulent manipulation of the data base. Severe civil penalties should apply in the event of fraud or misuse.

The payor identification number should be a two-part code. The core code, consisting of six numeric characters, will identify the payor and EDI destination. Core code values should not employ embedded logic. In other words, specific numbers or number ranges should not be reserved or restricted for any purpose. Payors should not be permitted to request a specific core code value. The suffix code, consisting of five numeric characters, will be determined by the payor. The TAG recognizes, however, that public policy may dictate some high-level standardization of suffix code values. The suffix code can be used to define additional routing of electronic transactions after they are received by the payor. The suffix code default value will be zeroes. ANSI-compliant applications should set the suffix code to zeroes if no suffix value is provided.

Payors should be registered in the data base with one occurrence of the core code and the default suffix code. If desired, payors can optionally have additional core code occurrences with non-zero suffix codes. The core code plus suffix code will be the key to the data base. Attempts to access the data base will first try to match the core code and suffix code. If unsuccessful, a match will be attempted on data base records with the default suffix code. If again unsuccessful, a match will be attempted on the core code value only.

Each occurrence of payor data will identify, among other items, the name of the payor or EDI entity, the type of payor or EDI entity, and the electronic routing address.

The payor identification number (core code and suffix code, if applicable) should be displayed on health identification cards, and should be returned to users who inquire on patient eligibility information.

EMPLOYER IDENTIFICATION NUMBER

The TAG concludes that any employer or entity that provides health care coverage and receives health care transactions should
have a unique employer identification number. However, the issue of unique employer identification numbers requires further analysis. To this end, the TAG recommends that a task force representing employers, payors, government agencies, labor, consumers, and providers be convened to address the following issues:

- Evaluate current employer coding systems, including the federal Tax Identification Number, unemployment account number, and systems used by state labor and commerce departments, to determine if any one or combination of them could serve as an employer identification numbering system.
- Determine the costs and benefits of alternative employer identification numbering systems.
- Develop an implementation plan and schedule for the employer identification number. The plan should include, at a minimum, required use of the number, maintenance of the number data base(s), registration of employers, data base access methods, data base security, and funding for the numbering system.

CONCLUSION

There is no question that the implementation of unique identification numbers for health care will help to standardize processes across the health care industry and facilitate more efficient and effective electronic communication. These benefits extend to patients, providers, payors, and employers, alike, in the form of simplified administration, improved accuracy, decreased fraud, and reduced hassle.

While the task of implementing unique identifiers is an overwhelming one, it is a necessary one, because the industry will not only realize the administrative benefits; but, unique numbering systems will provide a foundation for future improvements in the cost and quality of health care.

TECHNICAL ADVISORY GROUP

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Health Care Financing Administration

Ann Behling
Blue Cross and Blue Shield Association

Members
Provider Identification Number Subcommittee

David Miller (Subcommittee Leader) Mary Ann Eiler
The Travelers Insurance Company American Medical Association

James Balija Robert Hankin
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<tr>
<th>Organization</th>
<th>Name</th>
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<td>American Osteopathic Association</td>
<td>Health Industry Business Communications Council</td>
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<td>Kate Hicks</td>
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<td>Humana, Inc.</td>
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<td>Bruce Horn</td>
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<td>American Dental Association</td>
<td>Blue Cross and Blue Shield of Indiana</td>
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<td>Norbert Budde</td>
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<td>Kevin Kenward</td>
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<td>Patient Identification Number Subcommittee</td>
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<tr>
<td>Dale Gaffaney</td>
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<td>American Health Information Management Association</td>
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<td>Fairview Hospital</td>
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<td>Chuck Baumer</td>
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<td>Electronic Data Systems</td>
<td>Health Care Financing Administration</td>
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<td>Laura Feste</td>
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<td>American Health Information Management Association</td>
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Payor and Employer Identification Numbers Subcommittee

Lee Barrett                        Randy Falkenrath
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ASC X12                            Roy Foltz
Frank Ammerman                     Health Care Financing
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Blue Cross and Blue Shield
Association                        Jean Kral
Richard Bath                       Health Care Financing
Mutual of Omaha                    Administration
Christina Carpenter                John Lynch
Health Care Financing              Connecticut Hospital
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ADDENDA

Addendum 1: Issues for WEDI Steering Committee
Additional Information on the Provider Identification Number

The TAG recommends a Professional Association/HCFA/Umbrella Organization Model.

The TAG proposes the use of a number developed from files currently maintained by professional associations and HCFA, which will be administered by an umbrella organization consisting of professional associations, payors, HCFA, and other users of the number. This system is modeled after the Standard Prescriber Identification Number.

The TAG agrees that the health care industry must be able to identify a provider as the renderer of a service (to track utilization and outcomes, for example), as well as a billing entity and recipient of payment. In order to facilitate a meaningful discussion of this issue by the Steering Committee, the TAG has attempted to develop a realistic comparison and discussion of our recommendation and the two alternatives on the following documents. The TAG believes that, given the time frame in which we had to complete our work, it was not possible to develop responsible, accurate, and comparable cost and time estimates for each of the three alternatives.

Comparison of Alternative Provider Numbering Systems

Criteria: Tasks Required For Industry To Implement Number

Professional Association/HCFA/Umbrella Organization Model
- Inform providers of number.
Inform payors of number.
- Umbrella organization develops security procedures.
- Umbrella organization establishes limited electronic access to master data base for users.
- Providers, payors, and vendors (software vendors, billing services, etc.) convert to number in their systems. Vendors will assist providers somewhat in this activity. Also, professional associations will provide cross-referencing data (e.g., UPIN) to payors and providers to facilitate conversion. Some payors and providers may already store the professional association or HCFA number in their systems, which will facilitate conversion.

Expanded UPIN Model

- Inform new providers of number.
- Inform non-Medicare payors of number.
- HCFA modifies security procedures.
- HCFA establishes limited electronic access to HCFA data bases for new users.
- Providers, payors, and vendors convert to number in their systems. Medicare payors, Medicare providers, and system vendors already store these numbers which, will facilitate conversion.

TIN/SSN Model

- Inform payors, providers, and vendors of numbering system.
- Strengthen security and confidentiality laws.
- Legislation may be required to enable use of the SSN/TIN for this purpose. It may be possible to incorporate this into WEDI's proposed enabling legislation.
- Providers, payors, and vendors convert to number in their systems. All payors and providers currently store the SSN and TIN in their systems, which will facilitate conversion.
- Addition of a suffix to the TIN will require some conversion activity.
- Payors will continue to verify the credentials of all new providers added to their systems.

Criteria: Tasks Required To Develop Number

Professional Association/HCFA/Umbrella Organization Model

- Establish umbrella organization.
- Umbrella organization creates number format, using the SPIN as a possible model.
- Umbrella organization identifies providers not enumerated by professional associations, including institutions, and verifies the credentials of these providers.
- HCFA assigns number to those providers not enumerated by a professional association.
- Umbrella organization contracts for development of master data base of provider numbers.
- Records from professional associations and HCFA are loaded into master database.
- Umbrella organization identifies and corrects duplicates.

Expanded UPIN Model

- HCFA, with assistance from payors, identifies those providers without a UPIN, Certification Number, or National Supplier Clearinghouse number.
- HCFA assigns number to all un-numbered providers.
- HCFA cross-references the Certification Numbers and National Supplier Clearinghouse Numbers to the UPIN data base.
- HCFA continues to identify and correct duplicates for all new providers.

TIN/SSN Model

- Establish suffix format for TIN (to identify sub-units of provider organizations).
- This option does not call for the development of a national data base of provider numbers. This could be a future option if determined to be cost-effective.

Criteria: Tasks required to maintain number

Professional Association/HCFA/Umbrella Organization Model

- Payors would continue to maintain SSN/TIN information in their systems.
- Professional associations and HCFA report adds, changes, and deletes to the data base manager.
- Data base manager makes adds, changes, and deletes to the master data base.

Expanded UPIN Model

- Payors would continue to maintain SSN/TIN information in their systems.
- HCFA makes adds, changes, and deletes to UPIN, Certification Number, and National Supplier Clearinghouse data bases.

TIN/SSN Model

- None

Criteria: Security Of Number And Related Data

Professional Association/HCFA/Umbrella Organization Model

- Security and access procedures to be established by providers, HCFA, and other users. The HCFA data would be protected by Federal Privacy and Computer Data Matching Acts.
Expanded UPIN Model

- Protected by Federal Privacy and Computer Data Matching Acts.

TIN/SSN Model

- SSA and IRS data is protected by Federal Privacy and Computer Data Matching Acts. This option may require stricter laws and penalties for unauthorized access and use. Legislation may be required to enable use of SSN/TIN as the identifier.

Criteria: Quality

Professional Association/HCFA/Umbrella Organization Model

- 60+ year quality history by professional associations.
- Professional associations perform primary source verification for providers.

Expanded UPIN Model

- HCFA systems are supported by state licensing and Joint Commission credentialing.

TIN/SSN Model

- The SSA continues to make substantial improvements in the detection and correction of duplicate SSNs. The current rate of duplicates (3 per 10,000) is comparable or less than other numbering systems.
- As is, the TIN does not always identify provider sub-units or locations.

Criteria: How many health care providers currently have number?

Professional Association/HCFA/Umbrella Organization Model

- Institutions and organizations are not enumerated. 100% of MDs, dentists, and DOs are enumerated. Other professional associations are expected to assign numbers.

Expanded UPIN Model

- 1.3 million (includes physician group practices and 700,000 physicians, including podiatrists and chiropractors).

TIN/SSN Model

- 100%.

Professional Association/HCFA/Umbrella Organization Model

- The Standard Prescriber Identification Number is a unique numbering system that is currently under development by the professional associations to uniquely identify prescription
drug prescribers. The TAG's recommendation is to use the SPIN as a model, and expand it to include all providers in the health care industry.

- The TAG agreed that the development and implementation of the unique identifier system would be a phased approach. In Phase I, the American Medical Association (AMA), the American Dental Association (ADA), the American Osteopathic Association (AOA), the National Council of Prescription Drug Programs (NCPDP), and the American Academy of Physician Assistants (AAPA) would use the SPIN to create a data base limited to individuals in these professional associations. In Phase II and subsequent phases, organizations and other individual providers would be added to the data base.

- The SPIN model builds upon existing quality data base systems that professional associations like the AMA, ADA, and AOA have maintained for decades, and relies on HCFA, partially through its payment records, to complete the data base for those providers not enumerated by a representative body. The AMA, ADA, AOA, NCPDP, and AAPA currently enumerate and verify the credentials of all physicians, dentists, pharmacies, and physician assistants.

- An umbrella organization will be established to administer the identification system. It will consist of professional associations, HCFA, other payors, and data users. At issue is the exact representative make-up of the umbrella organization. A possible option is that the Unique Identifiers for the Health Care Industry TAG serve as the umbrella organization, and determine if criteria for participation should exist and what these criteria should be. Ideally, the umbrella organization should be comprised of all associations and entities capable of identifying their constituents, together with HCFA, other payors, and data users.

- The TAG concluded that participation in the numbering system and the umbrella organization will be voluntary. However, legislation may be required to enforce the use of the number if industry-wide use does not occur by the 4th Qtr 1995.

- The format of the SPIN is ten digits, including a check digit.

- The SPIN data base includes name, address, phone number, and other data to identify providers.

- The members of the TAG are aware that the critical issue of costs was not addressed; the issue is complex and time did not allow for a responsible analysis. If the Steering Committee requires a cost analysis and a detailed plan, the TAG should be reconvened to address these issues through the consensus process.

Unique Physician Identification Number (UPIN) Model
Use HCFA's Unique Physician Identification Number to enumerate individual and group practice providers. Use other HCFA provider data bases (e.g., Certification and National Supplier Clearinghouse) to enumerate organizations (e.g., hospitals, durable medical equipment suppliers).

HCFA would assign and administer the unique provider numbers, with assistance from other payors, in identifying providers not currently billing Medicare and Medicaid.

All numbering systems would be formatted for a ten-digit number. The number would uniquely identify not only the individual or organization, but also claims processing information, such as billing address. Payors would support the data base by adding providers not already known to HCFA, and would have limited online access to read data base records. Directories would be supplied to other users at cost.

The provider identification numbering system should be a public utility that can be accurately relied upon in the future. This proposal requires extensive work-planning for implementation.

Pros:

- The HCFA provider files are in existence and are used by providers, their representatives, and payors. These numbering systems are periodically validated (generally annually) and are verified as part of claims processing.

- Significant public resources have already been spent to develop and implement these systems. The proposal is limited to an expansion of these systems to identify and enumerate providers not already known to HCFA. Medicare currently enumerates over 1.3 million providers (700,000 are physicians).

- Payors have an ongoing responsibility to verify providers' credentials (i.e., with state licensing agencies).

- The significant costs associated with this proposal should be limited to conversion activities.

Cons:

- Use of the provider identification number should be mandatory for the health care industry. If the industry does not comply with this mandate, legislation would be required. Federal privacy and data match notices would need to be amended.

Social Security Number/Tax Identification Number Model

- Use the Social Security Number to identify individual providers, and the Tax Identification Number to identify provider organizations.
A national electronic directory of provider identification numbers would be developed only if it could be cost-justified. There is a perception that there are numerous instances in which more than one individual is using a single SSN. According to the SSA, however, the magnitude of this situation is decreasing substantially each year, primarily because more employers are transmitting records on magnetic media, and the SSA is using improved technology to detect duplicates. In fiscal year 1992, the SSA detected and corrected duplicates at a rate of 3 per 10,000 numbers.

Pros:

- The SSN and TIN are existing, federally assigned and maintained numbers, which are validated annually. The low cost for the Social Security Administration (SSA) and Internal Revenue Service (IRS) to maintain the SSN and TIN (approximately $.60 per number per year) becomes an avoided cost for the health care industry.

- The numbers are both unique and universal. Nearly every individual provider has an SSN, and all provider organizations have a TIN.

- The SSN and TIN contain no encoded health care data. This simplifies maintenance processing and reduces maintenance costs.

- These numbers are currently stored in payor and provider systems, often as a cross-reference number, which would facilitate conversion. Payors and providers would continue to store these numbers in their systems, regardless of the numbering system selected.

- The use of the SSN/TIN as the provider identification number is consistent with the white paper's recommendations for using the SSN as the patient identification number and consideration of the TIN as the employer identification number. An individual or organization would use the same unique identification number, regardless of the role being performed.

Cons:

- Legislation, as well as criminal penalties, may be required to safeguard the privacy of a provider's SSN and TIN, and to prevent fraud. Additional legislation may be required to enable the use of the SSN and TIN for this purpose. (The white paper recommends similar legislation if the SSN is used as the patient identification number.)

- The TIN can identify provider organizations, but not organizational components that require unique identification, such as multiple locations or departments.
Components and locations could be identified by adding a suffix to the TIN. Each provider would have the authority to assign the suffix, within established guidelines. The suffix would, therefore, be controlled by the provider, rather than by payors or a central agency.

Addendum 2: Implementation of the Security Number/Tax Identification Number as a Provider Identification Number

Recommendation for a Provider Identification Number

- The Social Security Number should be used to identify an individual provider. Individual providers include, but are not limited to, medical doctors, osteopathic doctors, dentists, chiropractors, nursing professionals, optometrists, pharmacists, podiatrists, psychologists, and therapists.

  The Tax Identification Number (which may be an SSN) should be used to identify provider organizations. Provider organizations include, but are not limited to, hospitals, long-term care facilities, freestanding outpatient health care facilities, pharmacies, military health care facilities, medical suppliers, and home health care organizations.

  If, for reasons of sensitivity, the SSN cannot be used as the unique identifier for individual providers, then HCFA's Unique Physician Identification Number will be used.

- Providers must be enumerated for the purpose of identifying who rendered a service and who to pay for a service. The provider identification number will uniquely identify providers in electronic transactions.

Implementation

The TAG makes the following recommendations for implementing the provider identification number:

- A transposition check digit should be appended to the SSN and TIN when it is used as a provider identification number. The health care industry should agree upon a standard check digit algorithm for this purpose.

- The SSN and TIN are both nine digits in length. The SSN is assigned and maintained by the Social Security Administration, and the TIN is assigned and maintained by the Internal Revenue Service. It is possible for an individual's SSN to be the same number as an organization's TIN. The TAG recommends that a one-position alphanumeric prefix be used to identify if a provider identification number is a SSN or a TIN.

- The TAG recognizes that some provider organizations will
require additional identification by subcomponent or location, especially when the provider number is used to identify who to pay for a service (the "pay-to" provider). The TAG recommends that a route suffix be used in conjunction with the provider number when it identifies the pay-to provider. The TAG makes the following recommendations for the route suffix:

- The route suffix should be four numeric characters.
- Providers should establish their own route suffixes, according to simple, industry-wide guidelines. Providers should inform their trading partners of their route suffixes.
- Payors should maintain information about their providers' route suffixes.
- The TAG recommends that the following steps be taken to safeguard confidentiality of the SSN and TIN as a provider identification number:
  - The TAG supports the enactment of the confidentiality legislation drafted by the Confidentiality and Legal Issues TAG.
  - A group of electronic auditing and security experts should be convened to examine and recommend technological methods to prevent unauthorized access to and use of the provider identification number and any related data.
  - The Confidentiality and Legal Issues TAG should prepare draft legislation required to enable the use of the SSN and TIN for the provider number.
  - Initiate a major public education program to inform providers about the SSN- and TIN-based provider identification numbers. Education efforts should address, at a minimum, the reasons for implementing a nationwide provider identification number, safeguards to ensure the security and confidentiality of provider records, and steps to prevent unauthorized use and cross-referencing of data associated with the provider number.
  - A federal agency or industry group should be charged with overseeing the implementation and ongoing monitoring of this recommendation to ensure that the recommendation is implemented uniformly across states.
  - The provider number should be implemented in phases, to accommodate the need for legislative and technological integration.
  - The provider identification number provides a platform on which additional functions can be built. For example, provider credentialing data could be linked to the number, or a directory of provider identification numbers could be
developed. The TAG does not recommend these added functions at this time, and strongly believes that before WEDI endorses any added functionality, the cost and benefit must be thoroughly researched and substantiated.

Addendum 3: United States Population Assumptions

1993 United States Population Assumptions

Population 250 Million
Providers 1.3 Million
Payors 3,000

Addendum 4: Results of Survey to Payors Regarding Identification Numbers for Covered Individuals

May 1993

Response Rate: 24% (83 out of 342 payors surveyed)

1. Does your company use one or more numbering systems to provide a unique identifier for insured individuals?

Yes 82
No 1

If yes, how many numbering systems?

One 41 (49%)
Two 27 (33%)
Three 6 (7%)
Four or more 8 (10%)

2. On which of the following is the identifier generally based?

Random number 4 (5%)
Insured’s Social Security Number 59 (71%)
Number with embedded logic 3 (4%)
Number with partially embedded logic 2 (2%)
Sequential number 31 (37%)
Number with partial sequential number 6 (7%)
Other: when no SSN is available, will use a dummy number 1 (1)

3. Is a unique identifier assigned to:

Insured only 38 (46%)
Insured and covered dependents 42 (51%)
Each covered individual 11 (13%)
(i.e., insured and covered dependents have separate, unique identification numbers)

4. Indicate whether your company uses different identification numbering systems for:

Individual policies 25 (30%)
Group policies 50 (60%)
5. Indicate whether your company requests the insured's Social Security Number for the following purposes:

- Insurance application: 74 (89%)
- Coordination of benefits: 52 (63%)
- Other: 15 (18%)

If yes, is the number maintained in an automated file?

Yes 78 (94%)

6. Indicate whether your company requests the dependent's Social Security Number for the following purposes:

- Insurance application: 30 (36%)
- Coordination of benefits: 25 (30%)
- Other: full-time student status indicator, tax reporting, correspondence: 5 (6%)

If yes, is the number maintained in an automated file?

Yes 25 (30%)

**Addendum 5: Analysis of Patient Numbering Systems**

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<th>Biometric</th>
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**Addendum 6: Code of Fair Patient Information**

The code contains five principles:
Addendum 7: State Survey of Legal Provisions on Access to Patient Clinical Records

The following chart presents an overview of the existing laws on patient access to medical records in each of the fifty states and the District of Columbia. Details about the content of each statute, regulation, or court decision are provided, in full, in the text referenced below.

The chart has three columns, covering state provisions on access to doctor, hospital, and mental health records. "Yes" indicates that the patient is permitted virtually unrestricted access to his records. It should be noted that the health care provider is permitted to withhold the record if the person believes that access to the record would be detrimental to the patient. "No" indicates that the patient is restricted from accessing their records. In some cases, the patient may obtain the record through an attorney, or may obtain a summary of the record.

State Survey of Legal Provisions on Access to Patient Clinical Records

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<th>State</th>
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<th>Hospital Records</th>
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EXECUTIVE SUMMARY

The WEDI Steering Committee and the Unique Identifiers for the Health Care Industry Technical Advisory Group (TAG) agree on the importance of a unique provider identification number, and have identified three viable alternatives. The TAG recommends a numbering system built upon existing numbering capabilities at
professional associations and the Health Care Financing Administration (HCFA). The Steering Committee's preference is to use the Social Security Number and Tax Identification Number. Recognizing the importance of implementing a unique provider identifier, the TAG acknowledges the Steering Committee's decision, and has prepared a description of the Steering Committee's recommendation and guidelines for implementation in Addendum 2.

One area of health care reform on which there is widespread agreement is the need to reduce administrative complexity and lessen the paperwork burden. The Workgroup for Electronic Data Interchange believes the health care industry can realize this objective through standardized electronic communications. WEDI envisions a health care industry transacting all of its business electronically, using one set of electronic standards and interconnecting networks.

Administrative simplification requires not only industry-wide agreement on standardized formats, but also a willingness to provide greater uniformity in the actual content of information exchanged between providers, patients, payors, and employers. The lack of uniform data exchange, and in particular, the lack of uniformity among the identifiers used for providers, patients, payors and employers diminish many of the efficiencies gained by implementing standard formats.

The Need for Unique Identifiers

Participants in the health care industry (providers, patients, payors, and employers) are identified in many different ways. For example, an individual may have a different identification number for each health insurance plan in which the individual is enrolled. Likewise, a patient may have a different patient identification number for each provider the patient uses for health care.

Similarly, a provider may be assigned a different identification number by each payor with whom a health care claim is filed. Payors, are identified differently by the employers that remit premium to them, as well as the providers that receive claim payments from them.

The proliferation of identification numbers increases the administrative complexity for all participants who must remember which number to use in which situation. The lack of unique identifiers also poses significant problems for locating participants electronically.

Benefits of Unique Identification Numbers

Assigning unique identification numbers to providers, patients, payors, and employers will simplify administrative tasks, encourage speedier automation of health care transactions, reduce administrative hassles, and improve accuracy. Unique
identification numbers will promote greater industry standardization and uniformity of health care data. Unique identification numbers will enhance the ability to detect health care fraud, streamline system access and security procedures, as well as aid identification and recovery of savings from coordination of benefits activities. Moreover, unique identifiers will facilitate the linkage and transfer of clinical information, thereby enhancing the overall quality of care.

Mission of the WEDI Unique Identifiers for the Health Care Industry Technical Advisory Group

The 1992 WEDI Report recommends that the health care industry determine the feasibility of a unique identifier system that covers all participants. The Report further recommends that the industry establish a process for implementation by 4th Qtr 93, and adopt unique identifiers by 4th Qtr 95. The charge of the Unique Identifiers for the Health Care Industry TAG is to fulfill these recommendations.

Methodology

In response to these challenges, the Unique Identifiers for the Health Care Industry TAG initially defined the purpose of unique identifiers and established criteria for unique numbering systems. These criteria included the cost to implement and maintain a numbering system, ease of implementation, capacity for protection of confidentiality and privacy, and the potential for improved fraud detection. Then, the TAG identified and evaluated alternative systems for enumerating patients, providers, and payors. Next, the TAG developed recommendations based on evaluations of numbering systems. Finally, the TAG identified steps for implementing recommendations.

Recommendations

The following recommendations were developed after a lengthy and critical examination of unique identifier requirements and alternatives by the TAG. The TAG membership consists of providers, payors, vendors, and government health care agencies. While the recommendations in this paper represent the majority opinion of the Unique Identifiers for the Health Care Industry TAG, all of the recommendations are not unanimously supported by all of the TAG members.

Patient Identification Number

The TAG recommends a patient identification number based on the Social Security Number.

Provider Identification Number

The TAG recommends the establishment of a universal provider identification number that uniquely identifies all health care providers (individuals and organizations). The numbering system
should be built on existing numbering capabilities at professional associations and government agencies, through the voluntary and cooperative efforts of the public and private sectors. An umbrella organization, comprised of professional associations, Health Care Financing Administration, payors, and other users of the number, should be established to develop, design, implement, and maintain the numbering system.

This recommendation was presented to the WEDI Steering Committee for their consideration to be included in the 1993 WEDI Report to the Secretary of Health and Human Services. The Steering Committee requested that the TAG provide further description of this recommendation, and a discussion of two alternative provider identification strategies (e.g., use of HCFA's Unique Physician Identification Number, and use of the Social Security Number and Federal Tax Identification Number). This document was presented to the Steering Committee and is attached as Addendum 1, "Issues for WEDI Steering Committee - Additional Information on the Provider Identification Number."

Following a thorough deliberation of this issue, the WEDI Steering Committee recommends use of the Social Security Number to identify individual providers and the Tax Identification Number to identify provider organizations. The Steering Committee further recommends that if, for reasons of sensitivity, the Social Security Number cannot be used, the Steering Committee supports the use of the Unique Physician Identification Number for individual providers and the Tax Identification Number for provider organizations. The TAG acknowledges the Steering Committee's decision and has prepared guidelines for implementing the Steering Committee's recommendation (refer to Addendum 2, "Implementation of the Social Security Number/Tax Identification Number as a Provider Identification Number").

Payor Identification Number

The TAG recommends leveraging the National Association of Insurance Commissioners (NAIC) Company Code model and expanding the coding methodology to include all payors. An entity to administer the payor identification number should be selected by using the federal procurement process.

Employer Identification Number

The TAG recommends that employer coding systems, including the federal Tax Identification Number, unemployment account number, and systems used by state labor and commerce departments, be evaluated to determine if any one or combination of them could serve as an employer identification numbering system.

INTRODUCTION

This paper provides a comprehensive examination of the issues surrounding unique identifier systems for all participants in the health care industry, and offers recommendations for the
RECOMMENDATIONS FROM THE 1992 WEDI REPORT

A WEDI task force should be created and will consult with other appropriate industry organizations to determine the feasibility of a unique identifier system that covers all participants in the health care system and a process for implementation by 4th Qtr 93. All participants should adopt the identifiers by 4th Qtr 95.

PATIENT IDENTIFICATION NUMBER

This section of the White Paper discusses the TAG's evaluation of alternative numbering systems, and recommends the implementation of the Social Security Number as the patient identification number.

Purpose of a Patient Identification Number

The purpose of a patient identification number is to identify every patient in the health care system with a single, unique identification number. Any individual who accesses the United States health care system should receive a patient identification number including, but not limited to, United States citizens, foreign dignitaries, temporary foreign employees, foreign exchange students, un-naturalized dependents of naturalized citizens, and illegal aliens.

Requirements for a Patient Identification Numbering System

The TAG established the following baseline requirements for a patient identification number:

- The numbering system must be capable of uniquely identifying every patient. No individual should have more than one number, and no two individuals should have the same number.
- The number must be compatible with ASC X12 (an accredited ANSI Committee) transactions for enrollment, eligibility inquiry, eligibility response, claim submission, claim payment and remittance, and managed care. Future transactions must be developed and approved by ANSI.
- The number should be random or sequential, and should not contain any embedded logic.
- Access to and storage of patient data should not be based solely on the identification number.
- The numbering system should be designed with safeguards to prevent inappropriate access to or use of patient data.
- Implementation of a numbering system must be achievable by
the 4th Qtr 95, as recommended in the 1992 WEDI Report.

- The cost to implement and maintain a patient numbering system must be realistic, given federal funding constraints and spiraling health care costs.
- An entity must be designated to assign numbers and manage the number data base.

Alternative Numbering Systems

The TAG principally evaluated three options for a patient identifier: use of biometric technology, the Social Security Number, and development of a new numbering system.

1. Biometric Technology

Biometric technology measures a unique physical trait, such as the ridges of the fingerprint or the retina of the eye. A biometric scan creates and stores a digitized description of this feature. The scanned image can be converted by a computer program into a unique identification number for the individual.

If desired, the information can be stored on a smart card. Each time the card is used, the individual's thumb, hand or retina is scanned and compared to the data stored on the card. The scanning device confirms the identity of the card user, the data on the card, and the scan match.

- The implementation costs for a patient numbering system based on biometric scanning are significant. Scanners would be required locally to create identifiers for all individuals, and would be required at every point of health care service to confirm an individual's identification.

- Scanning equipment costs currently range from $2,500 to $8,000. The TAG estimates the cost of scanners for registration locations and providers to exceed $1.3 billion (refer to population assumptions in Addendum 3). At a cost of $10 to $50 per smart card, it could cost as much as $12.5 billion to supply the current population with smart cards to store the identifier data. If digitized information was stored on less costly magnetic stripe cards, averaging $2.50 per card, card costs could be lowered to $625 million.

- A biometric-based patient identification system would require an umbrella organization to control the data base, monitor its quality and accuracy, and assign numbers to those individuals (disabled or visually impaired) who could not be scanned. This would result in additional costs.

- In its favor, a biometric-based identifier, in most cases,
is permanent for an individual's life span. Biometric technology eliminates the possibility of duplicate numbers for more than one individual, or multiple identifiers for a single individual.

- Initial registration of patients, however, would be cumbersome. Biometric scanning would require that either an individual appear at a scanning site or necessitate the use of mobile scanning units.

- Biometric scanning is a secure numbering system because it is nearly impossible to forge or alter either the card or the scan data. Because biometric technology measures inimitable physical traits, a biometric-based numbering system provides for a high degree of uniqueness and security.

2. Social Security Number

The Social Security Number (SSN) was developed in 1935 to identify individuals entitled to benefits under the Social Security Administration (SSA) programs. The SSA is solely responsible for assignment and control of SSNs. The SSA maintains that any other use of the number is contrary to the original intent of the Social Security Act. Nevertheless, the SSN is used by the Internal Revenue Service to identify individuals and some employers. The Department of Agriculture uses the SSN to distribute food stamps. With minor variations, the SSN is used as the basis for Medicare and Medicaid program identification numbers. Most disturbingly, a number of private entities are cross-referencing, compiling, and selling SSN-based information without restriction.

- Use of the SSN as a health care numbering system would present significant cost economies because most of the United States population already has an SSN. Also, an existing government agency is responsible for the assignment, control, and quality of the SSN. The SSA's cost to maintain the SSN for fiscal year 1992 was $153 million, or approximately 61¢ per individual.

- The SSA continues to make substantial improvements in the technology used to detect and correct cases where a single SSN is assigned to or used by more than one individual. In fiscal year 1992, SSA detected and corrected 86,285 duplicate numbers, 28% fewer corrections than the previous year.

- The prevalence of the SSN in the existing health care system would significantly speed implementation (refer to Addendum 4, "Results of Survey to Payors Regarding Identification Numbers for Covered Individuals").

- The format of a SSN-based patient identification number would be dictated by the existing SSN format of nine numeric characters. Were it desirable to differentiate
between the two numbers, the patient identification number could be displayed differently, such as 99 999 9999, without affecting electronic processing.

- If desired, online verification of a SSN-based patient identification number could be performed by employers, providers, and payors via electronic access to the agency or entity administering the number.

3. New Numbering System

The creation of a new numbering system for patient identification has the attractive potential of eliminating some of the problems with the different systems used by providers and payors today.

As a basis for their evaluation, the TAG reviewed the Province of Ontario’s (Canada) recent experience in implementing a unique health identification number for all residents of that province. Ontario implemented their system in 1990 with the objective of improving the process for delivering, planning, and monitoring health care services. The new system features a permanent health service number for every resident, a durable plastic card issued to each individual, and a new registration system and enriched data base.

Ontario's recent analysis of the project indicates that the project was successful, overall. The accuracy of information in the data base requires improvement, which officials believe can be achieved best through improved data exchange with other government agencies. All in all, the analysis concludes that the implementation of unique health identification numbers is a major step towards tracking health care data for improved quality and analysis.

While Ontario's experience offers a useful model for comparison, it must be noted that the project involved a population of approximately 10 million individuals and one major payor, compared to more than 250 million individuals and 3,000 payors in the United States.

- A new numbering system requires the establishment of a new agency or the empowerment of an existing agency to organize, administer, and control a new patient identification number data base. Using a conservative estimate of $5 per individual, it would cost approximately $1.25 billion to create and distribute identification cards. The cost of registering and administering a new patient identification system could cost $1.25 billion.

- A new numbering system would be difficult to implement and maintain. A national registration program would face greater challenges than the Census Bureau in contacting and enrolling all eligible citizens, as well as newborns, aliens, and foreign nationals requiring access to the health care system.
Refer to Addendum 5 for a summary of the TAG’s analysis of numbering systems.

**Recommendation for a Patient Identification Number**

In an ideal environment, with sufficient time for planning and implementation and without the burden of a struggling economy, the TAG would recommend a biometric-based numbering system. This unique identifier would account for future demands on the health care system, and would support data security and integrity in electronic environments. However, biometric technology is a costly and untested solution at this time.

Given the current circumstances, the TAG recommends a patient identification number based on the SSN. The SSN, while it poses its share of problems, is the most realistic option for a patient identification number because of the relatively sophisticated processes. Systems are already in place to issue, maintain, and control the access to the number.

**Implementation**

The TAG makes the following recommendations for implementing a SSN-based patient identification number:

- The SSN should be used as the patient identification number in all ASC X12 electronic health care financing transactions.

  Storage of and access to patient data in provider, payor, and employer systems should be based on the SSN-based patient identification number combined with a check digit and one or more keys that are specific to that data processing system. Storage of patient data in this manner would minimize unauthorized access to data bases that contain patient clinical and financial data.

  Providers, payors, and employers should develop cross-reference indices so that incoming records can be matched with their system records. Use of such a crosswalk would minimize the changes required to existing systems, and would allow each entity to retain their existing numbering systems for internal use.

- A transposition check digit should be appended to the identifier. Consideration should also be given to appending encryption elements to the number.

- Existing system security requirements must be strengthened to ensure that only appropriate entities, including the patient or an authorized representative, are permitted access to employer, provider, or payor data bases containing patient-specific clinical or financial information. Aside from minor exceptions, a patient should not be restricted from accessing their clinical or health care financing information. (Refer to Addendum 6 and Addendum 7 for
further discussion regarding patient access to medical records information.)

- Congress should enact legislation requiring an individual's disclosure of the SSN for the purpose of health plan enrollment and access to health care services.

- Congress should enact legislation prohibiting the compilation, use, or disclosure of the SSN without the patient's written consent. The TAG recommends criminal penalties, including severe fines and prison terms, for the unauthorized use or disclosure of confidential patient financial and clinical records.

- A major public education program should be initiated to inform consumers about the SSN-based patient identification number. Education efforts should address, at a minimum, the reasons for implementing a nationwide patient identification number system, safeguards to ensure the security and confidentiality of patient records, and steps to prevent unauthorized use of patient data and cross-referencing of patient information to other data bases.

- To ensure the quality of the SSN as a patient identification number, the General Accounting Office (GAO) should audit the SSA's numbering system, make recommendations to resolve any discrepancies and determine the cost to implement the GAO's recommendations. The TAG further recommends that any GAO recommendations be implemented within a reasonable time frame.

- Providers should be required to apply for a SSN simultaneously with filing a birth certificate to ensure that infants are issued a number as soon as possible.

  Taxpayers claiming a dependent of one year or older must have a SSN for that dependent, as required by 26 USC 6109.

  The SSA sponsors an Enumeration at Birth program with the Vital Statistics Bureaus in a number of states. This program enables hospitals to apply for a newborn's SSN at the same time the birth certificate is filed. As of 1993, approximately 50% of new SSNs are assigned via the Enumeration at Birth process, and the SSA expects this percentage to increase as more states participate in the program.

- A task group of payors, providers, consumers, and government agencies should develop procedures to ensure that individuals who would not otherwise receive a SSN be issued a patient identification number. The TAG estimates the cost to issue temporary patient identification numbers to these individuals to be from $7.50 to $8.50 per number.

- An electronic SSN application process should be developed to expedite the issuance of SSNs, and electronic connections should be used to link appropriate entities to the Social
Security Administration for this purpose. The SSA already has an interactive system in place for some SSA functions. The TAG estimates that an electronic application and issuance function could be added at a cost under $1 million. An alternative would be to allow the issuing process to occur at a SSA district or regional office, rather than the process being centralized in Baltimore, Maryland.

PROVIDER IDENTIFICATION NUMBER

This section of the white paper outlines the findings of the TAG and a recommendation to establish an umbrella organization of professional associations, HCFA, payors, and other users of the number data bases to design, develop, implement, and maintain the system for the unique identification of health care providers. It is expected that the system will be built on existing capabilities through the voluntary and cooperative efforts of the private and public sectors.

Purpose of a Provider Identification Number

The purpose of a unique provider identification number is to identify and validate individuals and organizations that are eligible to provide health care services. Identification is necessary to identify who performed the service and whom to pay for the service.

Unique identification is required for effective and efficient electronic data interchange. Each individual provider should be assigned a single, unique identifier, regardless of the practice setting. Organizations should be assigned a unique identification number for each entity within the organization separately defined to deliver health care.

Providers fall into two categories: individuals and organizations. Individual providers include, but are not limited to, medical doctors, osteopathic doctors, dentists, chiropractors, nursing professionals, optometrists, pharmacists, podiatrists, psychologists, and therapists. Provider organizations include, but are not limited to, hospitals, long-term care facilities, freestanding outpatient health care facilities, pharmacies, staff model health maintenance organizations, public health clinics, military health care facilities, medical suppliers, and home health care organizations.

Requirements for a Provider Identification Numbering System

The TAG outlined the following requirements for a provider number and numbering system:

- The provider identification number should accurately and uniquely identify all providers.
- The provider identification number should be used in ASC X12
transactions for enrollment, eligibility inquiry, eligibility response, claim submission, claim payment and remittance, managed care, and future transactions developed and approved by ASC X12. The provider number also should be used in performing other activities, such as outcomes management, quality measurement, utilization review, fraud detection, and coordination of benefits.

- Access to the provider numbering system should be open to authorized users and be based on their need for the number and its related data. Likely users of the data base might include providers, payors, utilization and quality management organizations, software vendors, provider billing services, and government agencies. Electronic access to the data base should be available.

Alternative Numbering Systems

The TAG evaluated the strengths and weaknesses of various numbering systems in use today:

- Social Security Number (SSN)

  The SSN is assigned by the Social Security Administration and identifies individuals entitled to Social Security program benefits. The number also is used by the Internal Revenue Service to identify taxpayers. The SSN does not identify aliens on temporary work permits, persons using a visa, or organizations.

- Federal Tax Identification Number (TIN)

  The TIN is assigned by the Internal Revenue Service and identifies all businesses for tax reporting purposes. The TIN does not always identify the individual components of a business that may require unique identification, such as multiple locations or departments.

- Unique Physician Identification Number (UPIN)

  The UPIN is assigned by the Health Care Financing Administration (HCFA). Physicians and other health care practitioners participating in the Medicare program and some state Medicaid programs are required to obtain a UPIN. Medicaid program providers and other providers have voluntarily obtained UPINs as well. While the UPIN currently covers 700,000 providers, HCFA plans to expand the UPIN registry to include other providers participating in the Medicare program.

- HCFA Certification Number

  The Certification Number is assigned by HCFA to identify health care organizations certified to participate in the Medicare and Medicaid programs. Approximately 202,000 provider organizations have a Certification Number, which is required for participation in HCFA's programs.
o State License Number

State license numbers are assigned by states to identify providers licensed to operate in the state. Among states, there are vast differences in the format and technical compatibility of the number.

o Medical Education Number

The Medical Education Number is assigned by the American Medical Association (AMA) when a physician enters medical school. International Medical Graduates (IMGs) are assigned a medical education number as soon as they test to become eligible to practice medicine in the United States. Approximately 700,000 physicians are included in this numbering system. The American Osteopathic Association (AOA) and the American Dental Association (ADA) also assign numbers to individuals at the time they enter osteopathic or dental school.

o Health Industry Number (HIN)

The HIN is assigned and administered by the Health Industry Business Communications Council (HIBCC), an umbrella organization of health industry trade associations that develops and maintains electronic data interchange standards. HIBCC assigns, maintains, updates, and distributes the HIN data base, which identifies the universe of provider institutions, such as hospitals, nursing homes, retail pharmacies, and managed care facilities. The HIN data base currently contains approximately 130,000 records.

o National Association of Boards of Pharmacy (NABP) Number

The NABP Number is assigned by the National Council for Prescription Drug Programs (NCPDP) to pharmacies licensed by state boards of pharmacies. Its primary function is to identify pharmacies as payees, and is used by virtually all payors in the third party drug industry. The NABP Number is assigned to approximately 65,500 pharmacies.

o Standard Prescriber Identification Number (SPIN)

The SPIN, which is developed from numbers assigned by professional associations, is used by the prescription drug industry to identify the prescriber of prescription drugs. The SPIN includes participation from the AMA, AOA, and ADA, and is assigned to approximately 900,000 providers.

o Drug Enforcement Agency (DEA) Number

The DEA assigns this number to identify entities (organizations, manufacturers, provider locations, and individuals) approved to prescribe and dispense controlled substance drugs. There are approximately 850,000 DEA Numbers assigned to individuals and institutions. The DEA does not approve the use of this number for other purposes.
The TAG concluded that none of these alternatives, in their current state, completely satisfies the criteria of being unique, sufficiently accurate, technologically viable, or applicable to the entire community of 1.3 million providers.

Recommendation for a Provider Identification Number

The TAG makes the following recommendations for a provider identification number:

- An identification system will be developed for all health care providers (individuals and organizations) based on data from existing professional associations about both members and non-members.

- Professional associations will be the source of provider identifiers for their constituents. HCFA will assign an identifier to providers for whom there is no representative body.

- The provider identification system will be administered by an umbrella organization consisting of professional associations, payors, data users, and HCFA.

- The umbrella organization will: make certain that all health care segments are included in the numbering system; ensure that the numbering system is self-funding; make information from the system available to those who subscribe to the provider numbering service; and regulate access to information from the provider identification system.

Implementation

The TAG makes the following recommendations for implementing the provider identification number:

- A consensus must be obtained from a critical mass of the trading partners and, following a feasibility study, commitment must be made to complete a detailed business plan. The umbrella organization will develop detailed system requirements, and will establish procedures for assigning numbers and updating the system.

- The umbrella organization will develop a detailed implementation plan and conversion schedule. A qualified entity will be selected to develop and test the system in conjunction with members of the umbrella organization.

- The first step of the implementation will be establishing the umbrella organization and distributing provider numbers for those professions that have numbering systems in place. Following the successful implementation of this phase, the umbrella organization will develop future phases to expand the population to include all providers.

- A commitment to use the new system is the key to
successfully implementing a unique provider identification number. The TAG proposes voluntary use of the provider number. However, it may be necessary to propose legislation requiring use of the number if a consensus to use the system cannot be reached.

- Conversion to the unique identifier for both the providers and users will be a major undertaking, and could slow the transition to the new number. The data file of unique identification numbers will have to be integrated into users' systems before the number becomes fully accepted and useful.

- The cost of developing the system has not been completed. The TAG agrees that, while the establishment of a unique number will eliminate the duplication of effort currently expended to produce valid identification of a provider, a definitive cost of the system is required to attract users to the system.

- The TAG recognizes that it will be necessary to implement the numbering system in phases. The length of time for both the initial and subsequent phases may limit the number of users to the system.

- A critical mass of professional associations will be required to achieve the population objectives of the initial phase.

- The cooperation of all members of the umbrella organization will be required to make this effort a success.

PAYOR IDENTIFICATION NUMBER

The TAG recommends the implementation of a payor identification number based on the National Association of Insurance Commissioner's (NAIC) Company Code. This section of the White Paper discusses the requirements for a payor identification number, makes a recommendation, and outlines implementation criteria.

Purpose of a Payor Identification Number

The primary purpose of a payor identification number is to facilitate the electronic exchange of health care financing and the delivery of information by uniquely identifying all public or private entities that are a destination for health care data. Any payor or electronic data interchange entity that receives health care transactions should have a payor identification number, including insurers, Blue Cross and Blue Shield Plans, Medicare and Medicaid contractors, health maintenance organizations, third party administrators, and self-insured plans.

Requirements for a Payor Identification Numbering System
The TAG established the following baseline requirements for a payor identification number:

- The number should be compatible with ASC X12 transactions for enrollment, eligibility inquiry, eligibility response, claim submission, claim payment and remittance, managed care, and future transactions developed and approved by ASC X12.
- The number should be compatible with any health care data base.
- Each payor-public EDI combination destination should have one payor identification number. For example, if Payor A accepts all electronic transactions at one public EDI destination, it should have one payor identification number. If, on the other hand, Insurer B accepts group claims at one public EDI destination and government contract claims at another EDI destination, it should have two payor identification numbers.

### Alternative Numbering Systems

The TAG considered two options for a payor identifier: the federal Tax Identification Number (TIN) and the National Association of Insurance Commissioners (NAIC) Company Code.

The TIN was eliminated from consideration for the following reasons:

- The TIN was developed by the Internal Revenue Service (IRS) to specifically meet revenue reporting needs.
- A single tax entity may require multiple payor identification numbers for electronic health care transactions.

The NAIC Company Code, or Co-Code, is a five-digit identifier assigned to insurance companies and some health maintenance organizations by the NAIC. The Co-Code is used by insurers to file financial reports with state insurance departments. The NAIC maintains the Co-Code data base, which contains financial, product, premium, and volume data for insurers. Currently, there are approximately 6,000 Co-Code records.

The Co-Code provides an attractive model for a payor identification numbering scheme. First, it was specifically developed for the purpose of identifying insurers. Second, it is compatible with health care EDI requirements. Third, it is already being used by a majority of payors.

### Recommendation for a Payor Identification Number

The TAG recommends leveraging the NAIC Co-Code model to develop an expanded coding methodology that will include all payors and
health care EDI entities.

Specifically, the TAG recommends a two-part code consisting of eleven characters. The first part, a core code, should consist of six numeric characters. The core code should store existing NAIC Co-Code values, as well as new values assigned to payors that do not receive a Co-Code.

The second part, a suffix code, should consist of five numeric characters. The suffix, which is optional, enables payors to further route transactions in their internal systems following receipt at the primary EDI destination. The TAG recognizes that a one-character prefix may eventually be required to comply with future public policy or standards requirements.

**Implementation**

The TAG makes the following recommendations for implementing the payor identification number:

- A central authority should be designated to develop and maintain a payor registration system and data base. The central authority will, at a minimum, register payors and EDI entities, maintain the integrity of the data base, define data base access methods, control access to payor identification information, and oversee security of the data base.
  The central authority may be a private organization (e.g., NAIC, Data Interchange Standards Association), an existing public agency (e.g., Department of Health and Human Services, Federal Trade Commission), or a newly-created public or private entity.

- A government agency should conduct a procurement to select a central authority for the payor identification system. The selection should be made by the end of the 1st Qtr 94, and the implementation of the system should begin by the end of 1994. The system should be operational on an industry-wide basis by the end of 1995.
  As part of the procurement process, consideration should be given to the usage or acquisition of applicable portions of the NAIC data base for the payor identification system.

- The payor identification number should be used in all ASC X12 electronic health care financing transactions.

- All payors and EDI entities should be required by law to register with the central authority.

- Industry-wide use of the payor identification number should be required by law.

- Additions or changes to the data base should be the sole responsibility of the central authority. All authorized users should be able to inquire into the data base.
The TAG estimates the cost to implement the numbering system will be from $150,000 to $500,000, and the cost to maintain the number data base will be $100,000 to $200,000, annually. These costs will depend on the scope of services provided by the central authority, including the data management and access tasks undertaken. The TAG recommends that the central authority charge a reasonable user access fee to cover costs.

Congress should enact legislation to prevent misuse and fraudulent manipulation of the data base. Severe civil penalties should apply in the event of fraud or misuse.

The payor identification number should be a two-part code. The core code, consisting of six numeric characters, will identify the payor and EDI destination. Core code values should not employ embedded logic. In other words, specific numbers or number ranges should not be reserved or restricted for any purpose. Payors should not be permitted to request a specific core code value. The suffix code, consisting of five numeric characters, will be determined by the payor. The TAG recognizes, however, that public policy may dictate some high-level standardization of suffix code values. The suffix code can be used to define additional routing of electronic transactions after they are received by the payor. The suffix code default value will be zeroes. ANSI-compliant applications should set the suffix code to zeroes if no suffix value is provided.

Payors should be registered in the data base with one occurrence of the core code and the default suffix code. If desired, payors can optionally have additional core code occurrences with non-zero suffix codes. The core code plus suffix code will be the key to the data base. Attempts to access the data base will first try to match the core code and suffix code. If unsuccessful, a match will be attempted on data base records with the default suffix code. If again unsuccessful, a match will be attempted on the core code value only.

Each occurrence of payor data will identify, among other items, the name of the payor or EDI entity, the type of payor or EDI entity, and the electronic routing address.

The payor identification number (core code and suffix code, if applicable) should be displayed on health identification cards, and should be returned to users who inquire on patient eligibility information.

EMPLOYER IDENTIFICATION NUMBER

The TAG concludes that any employer or entity that provides health care coverage and receives health care transactions should...
have a unique employer identification number. However, the issue of unique employer identification numbers requires further analysis. To this end, the TAG recommends that a task force representing employers, payors, government agencies, labor, consumers, and providers be convened to address the following issues:

- Evaluate current employer coding systems, including the federal Tax Identification Number, unemployment account number, and systems used by state labor and commerce departments, to determine if any one or combination of them could serve as an employer identification numbering system.
- Determine the costs and benefits of alternative employer identification numbering systems.
- Develop an implementation plan and schedule for the employer identification number. The plan should include, at a minimum, required use of the number, maintenance of the number data base(s), registration of employers, data base access methods, data base security, and funding for the numbering system.

CONCLUSION

There is no question that the implementation of unique identification numbers for health care will help to standardize processes across the health care industry and facilitate more efficient and effective electronic communication. These benefits extend to patients, providers, payors, and employers, alike, in the form of simplified administration, improved accuracy, decreased fraud, and reduced hassle.

While the task of implementing unique identifiers is an overwhelming one, it is a necessary one, because the industry will not only realize the administrative benefits; but, unique numbering systems will provide a foundation for future improvements in the cost and quality of health care.

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ADDENDA

Addendum 1: Issues for WEDI Steering Committee
Additional Information on the Provider Identification Number

The TAG recommends a Professional Association/HCFA/Umbrella Organization Model.

The TAG proposes the use of a number developed from files currently maintained by professional associations and HCFA, which will be administered by an umbrella organization consisting of professional associations, payors, HCFA, and other users of the number. This system is modeled after the Standard Prescriber Identification Number.

The TAG agrees that the health care industry must be able to identify a provider as the renderer of a service (to track utilization and outcomes, for example), as well as a billing entity and recipient of payment. In order to facilitate a meaningful discussion of this issue by the Steering Committee, the TAG has attempted to develop a realistic comparison and discussion of our recommendation and the two alternatives on the following documents. The TAG believes that, given the time frame in which we had to complete our work, it was not possible to develop responsible, accurate, and comparable cost and time estimates for each of the three alternatives.

Comparison of Alternative Provider Numbering Systems

Criteria: Tasks Required For Industry To Implement Number

Professional Association/HCFA/Umbrella Organization Model

- Inform providers of number.
Inform payors of number.
- Umbrella organization develops security procedures.
- Umbrella organization establishes limited electronic access to master data base for users.
- Providers, payors, and vendors (software vendors, billing services, etc.) convert to number in their systems. Vendors will assist providers somewhat in this activity. Also, professional associations will provide cross-referencing data (e.g., UPIN) to payors and providers to facilitate conversion. Some payors and providers may already store the professional association or HCFA number in their systems, which will facilitate conversion.

Expanded UPIN Model

- Inform new providers of number.
- Inform non-Medicare payors of number.
- HCFA modifies security procedures.
- HCFA establishes limited electronic access to HCFA data bases for new users.
- Providers, payors, and vendors convert to number in their systems. Medicare payors, Medicare providers, and system vendors already store these numbers which, will facilitate conversion.

TIN/SSN Model

- Inform payors, providers, and vendors of numbering system.
- Strengthen security and confidentiality laws.
- Legislation may be required to enable use of the SSN/TIN for this purpose. It may be possible to incorporate this into WEDI's proposed enabling legislation.
- Providers, payors, and vendors convert to number in their systems. All payors and providers currently store the SSN and TIN in their systems, which will facilitate conversion. Addition of a suffix to the TIN will require some conversion activity.
- Payors will continue to verify the credentials of all new providers added to their systems.

Criteria: Tasks Required To Develop Number

Professional Association/HCFA/Umbrella Organization Model

- Establish umbrella organization.
- Umbrella organization creates number format, using the SPIN as a possible model.
- Umbrella organization identifies providers not enumerated by professional associations, including institutions, and verifies the credentials of these providers.
- HCFA assigns number to those providers not enumerated by a professional association.
- Umbrella organization contracts for development of master data base of provider numbers.
- Records from professional associations and HCFA are loaded into master data base.
- Umbrella organization identifies and corrects duplicates.

Expanded UPIN Model

- HCFA, with assistance from payors, identifies those providers without a UPIN, Certification Number, or National Supplier Clearinghouse number.
- HCFA assigns number to all un-numbered providers.
- HCFA cross-references the Certification Numbers and National Supplier Clearinghouse Numbers to the UPIN data base.
- HCFA continues to identify and correct duplicates for all new providers.

TIN/SSN Model

- Establish suffix format for TIN (to identify sub-units of provider organizations).
- This option does not call for the development of a national data base of provider numbers. This could be a future option if determined to be cost-effective.

Criteria: Tasks required to maintain number

Professional Association/HCFA/Umbrella Organization Model

- Payors would continue to maintain SSN/TIN information in their systems.
- Professional associations and HCFA report adds, changes, and deletes to the data base manager.
- Data base manager makes adds, changes, and deletes to the master data base.

Expanded UPIN Model

- Payors would continue to maintain SSN/TIN information in their systems.
- HCFA makes adds, changes, and deletes to UPIN, Certification Number, and National Supplier Clearinghouse data bases.

TIN/SSN Model

- None

Criteria: Security Of Number And Related Data

Professional Association/HCFA/Umbrella Organization Model

- Security and access procedures to be established by providers, HCFA, and other users. The HCFA data would be protected by Federal Privacy and Computer Data Matching Acts.
Expanded UPIN Model

- Protected by Federal Privacy and Computer Data Matching Acts.

TIN/SSN Model

- SSA and IRS data is protected by Federal Privacy and Computer Data Matching Acts. This option may require stricter laws and penalties for unauthorized access and use. Legislation may be required to enable use of SSN/TIN as the identifier.

Criteria: Quality

Professional Association/HCFA/Umbrella Organization Model

- 60+ year quality history by professional associations.
- Professional associations perform primary source verification for providers.

Expanded UPIN Model

- HCFA systems are supported by state licensing and Joint Commission credentialing.

TIN/SSN Model

- The SSA continues to make substantial improvements in the detection and correction of duplicate SSNs. The current rate of duplicates (3 per 10,000) is comparable or less than other numbering systems.

- As is, the TIN does not always identify provider sub-units or locations.

Criteria: How many health care providers currently have number?

Professional Association/HCFA/Umbrella Organization Model

- Institutions and organizations are not enumerated. 100% of MDs, dentists, and DOs are enumerated. Other professional associations are expected to assign numbers.

Expanded UPIN Model

- 1.3 million (includes physician group practices and 700,000 physicians, including podiatrists and chiropractors).

TIN/SSN Model

- 100%.

Professional Association/HCFA/Umbrella Organization Model

- The Standard Prescriber Identification Number is a unique numbering system that is currently under development by the professional associations to uniquely identify prescription
drug prescribers. The TAG’s recommendation is to use the SPIN as a model, and expand it to include all providers in the health care industry.

- The TAG agreed that the development and implementation of the unique identifier system would be a phased approach. In Phase I, the American Medical Association (AMA), the American Dental Association (ADA), the American Osteopathic Association (AOA), the National Council of Prescription Drug Programs (NCPDP), and the American Academy of Physician Assistants (AAPA) would use the SPIN to create a data base limited to individuals in these professional associations. In Phase II and subsequent phases, organizations and other individual providers would be added to the data base.

- The SPIN model builds upon existing quality data base systems that professional associations like the AMA, ADA, and AOA have maintained for decades, and relies on HCFA, partially through its payment records, to complete the data base for those providers not enumerated by a representative body. The AMA, ADA, AOA, NCPDP, and AAPA currently enumerate and verify the credentials of all physicians, dentists, pharmacies, and physician assistants.

- An umbrella organization will be established to administer the identification system. It will consist of professional associations, HCFA, other payors, and data users. At issue is the exact representative make-up of the umbrella organization. A possible option is that the Unique Identifiers for the Health Care Industry TAG serve as the umbrella organization, and determine if criteria for participation should exist and what these criteria should be. Ideally, the umbrella organization should be comprised of all associations and entities capable of identifying their constituents, together with HCFA, other payors, and data users.

- The TAG concluded that participation in the numbering system and the umbrella organization will be voluntary. However, legislation may be required to enforce the use of the number if industry-wide use does not occur by the 4th Qtr 1995.

- The format of the SPIN is ten digits, including a check digit.

- The SPIN data base includes name, address, phone number, and other data to identify providers.

- The members of the TAG are aware that the critical issue of costs was not addressed; the issue is complex and time did not allow for a responsible analysis. If the Steering Committee requires a cost analysis and a detailed plan, the TAG should be reconvened to address these issues through the consensus process.

Unique Physician Identification Number (UPIN) Model
Use HCFA's Unique Physician Identification Number to enumerate individual and group practice providers. Use other HCFA provider data bases (e.g., Certification and National Supplier Clearinghouse) to enumerate organizations (e.g., hospitals, durable medical equipment suppliers).

HCFA would assign and administer the unique provider numbers, with assistance from other payors, in identifying providers not currently billing Medicare and Medicaid.

All numbering systems would be formatted for a ten-digit number. The number would uniquely identify not only the individual or organization, but also claims processing information, such as billing address. Payors would support the data base by adding providers not already known to HCFA, and would have limited online access to read data base records. Directories would be supplied to other users at cost.

The provider identification numbering system should be a public utility that can be accurately relied upon in the future. This proposal requires extensive work-planning for implementation.

Pros:

- The HCFA provider files are in existence and are used by providers, their representatives, and payors. These numbering systems are periodically validated (generally annually) and are verified as part of claims processing.

- Significant public resources have already been spent to develop and implement these systems. The proposal is limited to an expansion of these systems to identify and enumerate providers not already known to HCFA. Medicare currently enumerates over 1.3 million providers (700,000 are physicians).

- Payors have an ongoing responsibility to verify providers' credentials (i.e., with state licensing agencies).

- The significant costs associated with this proposal should be limited to conversion activities.

Cons:

- Use of the provider identification number should be mandatory for the health care industry. If the industry does not comply with this mandate, legislation would be required. Federal privacy and data match notices would need to be amended.

Social Security Number/Tax Identification Number Model

- Use the Social Security Number to identify individual providers, and the Tax Identification Number to identify provider organizations.
o A national electronic directory of provider identification numbers would be developed only if it could be cost-justified.

o There is a perception that there are numerous instances in which more than one individual is using a single SSN. According to the SSA, however, the magnitude of this situation is decreasing substantially each year, primarily because more employers are transmitting records on magnetic media, and the SSA is using improved technology to detect duplicates. In fiscal year 1992, the SSA detected and corrected duplicates at a rate of 3 per 10,000 numbers.

Pros:

o The SSN and TIN are existing, federally assigned and maintained numbers, which are validated annually. The low cost for the Social Security Administration (SSA) and Internal Revenue Service (IRS) to maintain the SSN and TIN (approximately $.60 per number per year) becomes an avoided cost for the health care industry.

o The numbers are both unique and universal. Nearly every individual provider has an SSN, and all provider organizations have a TIN.

o The SSN and TIN contain no encoded health care data. This simplifies maintenance processing and reduces maintenance costs.

o These numbers are currently stored in payor and provider systems, often as a cross-reference number, which would facilitate conversion. Payors and providers would continue to store these numbers in their systems, regardless of the numbering system selected.

o The use of the SSN/TIN as the provider identification number is consistent with the white paper’s recommendations for using the SSN as the patient identification number and consideration of the TIN as the employer identification number. An individual or organization would use the same unique identification number, regardless of the role being performed.

Cons:

o Legislation, as well as criminal penalties, may be required to safeguard the privacy of a provider's SSN and TIN, and to prevent fraud. Additional legislation may be required to enable the use of the SSN and TIN for this purpose. (The white paper recommends similar legislation if the SSN is used as the patient identification number.)

o The TIN can identify provider organizations, but not organizational components that require unique identification, such as multiple locations or departments.
Addendum 2: Implementation of the Security Number/Tax Identification Number as a Provider Identification Number

Recommendation for a Provider Identification Number

- The Social Security Number should be used to identify an individual provider. Individual providers include, but are not limited to, medical doctors, osteopathic doctors, dentists, chiropractors, nursing professionals, optometrists, pharmacists, podiatrists, psychologists, and therapists.

The Tax Identification Number (which may be an SSN) should be used to identify provider organizations. Provider organizations include, but are not limited to, hospitals, long-term care facilities, freestanding outpatient health care facilities, pharmacies, military health care facilities, medical suppliers, and home health care organizations.

If, for reasons of sensitivity, the SSN cannot be used as the unique identifier for individual providers, then HCFA's Unique Physician Identification Number will be used.

- Providers must be enumerated for the purpose of identifying who rendered a service and who to pay for a service. The provider identification number will uniquely identify providers in electronic transactions.

Implementation

The TAG makes the following recommendations for implementing the provider identification number:

- A transposition check digit should be appended to the SSN and TIN when it is used as a provider identification number. The health care industry should agree upon a standard check digit algorithm for this purpose.

- The SSN and TIN are both nine digits in length. The SSN is assigned and maintained by the Social Security Administration, and the TIN is assigned and maintained by the Internal Revenue Service. It is possible for an individual's SSN to be the same number as an organization's TIN. The TAG recommends that a one-position alphanumeric prefix be used to identify if a provider identification number is a SSN or a TIN.

- The TAG recognizes that some provider organizations will
require additional identification by subcomponent or location, especially when the provider number is used to identify who to pay for a service (the "pay-to" provider). The TAG recommends that a route suffix be used in conjunction with the provider number when it identifies the pay-to provider. The TAG makes the following recommendations for the route suffix:

- The route suffix should be four numeric characters.
- Providers should establish their own route suffixes, according to simple, industry-wide guidelines. Providers should inform their trading partners of their route suffixes.
- Payors should maintain information about their providers' route suffixes.
- The TAG recommends that the following steps be taken to safeguard confidentiality of the SSN and TIN as a provider identification number:
  - The TAG supports the enactment of the confidentiality legislation drafted by the Confidentiality and Legal Issues TAG.
  - A group of electronic auditing and security experts should be convened to examine and recommend technological methods to prevent unauthorized access to and use of the provider identification number and any related data.
  - The Confidentiality and Legal Issues TAG should prepare draft legislation required to enable the use of the SSN and TIN for the provider number.
  - Initiate a major public education program to inform providers about the SSN- and TIN-based provider identification numbers. Education efforts should address, at a minimum, the reasons for implementing a nationwide provider identification number, safeguards to ensure the security and confidentiality of provider records, and steps to prevent unauthorized use and cross-referencing of data associated with the provider number.
  - A federal agency or industry group should be charged with overseeing the implementation and ongoing monitoring of this recommendation to ensure that the recommendation is implemented uniformly across states.
  - The provider number should be implemented in phases, to accommodate the need for legislative and technological integration.
  - The provider identification number provides a platform on which additional functions can be built. For example, provider credentialing data could be linked to the number, or a directory of provider identification numbers could be
developed. The TAG does not recommend these added functions at this time, and strongly believes that before WEDI endorses any added functionality, the cost and benefit must be thoroughly researched and substantiated.

Addendum 3: United States Population Assumptions

1993 United States Population Assumptions

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<td>Payors</td>
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</table>

Addendum 4: Results of Survey to Payors Regarding Identification Numbers for Covered Individuals

May 1993

Response Rate: 24% (83 out of 342 payors surveyed)

1. Does your company use one or more numbering systems to provide a unique identifier for insured individuals?

Yes: 82
No: 1

If yes, how many numbering systems?

One: 41 (49%)
Two: 27 (33%)
Three: 6 (7%)
Four or more: 8 (10%)

2. On which of the following is the identifier generally based?

- Random number: 4 (5%)
- Insured’s Social Security Number: 59 (71%)
- Number with embedded logic: 3 (4%)
- Number with partially embedded logic: 2 (2%)
- Sequential number: 31 (37%)
- Number with partial sequential number: 6 (7%)
- Other: when no SSN is available, will use a dummy number: 1 (1)

3. Is a unique identifier assigned to:

- Insured only: 38 (46%)
- Insured and covered dependents: 42 (51%)
- Each covered individual: 11 (13%)
  (i.e., insured and covered dependents have separate, unique identification numbers)

4. Indicate whether your company uses different identification numbering systems for:

- Individual policies: 25 (30%)
- Group policies: 50 (60%)
5. Indicate whether your company requests the insured's Social Security Number for the following purposes:

- Insurance application: 74 (89%)
- Coordination of benefits: 52 (63%)
- Other: 15 (18%)

If yes, is the number maintained in an automated file?

- Yes: 78 (94%)

6. Indicate whether your company requests the dependent's Social Security Number for the following purposes:

- Insurance application: 30 (36%)
- Coordination of benefits: 25 (30%)
- Other: full-time student status indicator, tax reporting, correspondence: 5 (6%)

If yes, is the number maintained in an automated file?

- Yes: 25 (30%)

Addendum 5: Analysis of Patient Numbering Systems

<table>
<thead>
<tr>
<th>Numbering System</th>
<th>Biometric</th>
<th>SSN</th>
<th>New System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation Cost</td>
<td>High</td>
<td>Moderate</td>
<td>High</td>
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<tr>
<td>Ease of Implementation</td>
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<td>Low</td>
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<td>Ease of Maintenance</td>
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<td>Low-Moderate</td>
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<tr>
<td>Internal Logic</td>
<td>None</td>
<td>Some</td>
<td>None</td>
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<td>Security</td>
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<td>Moderate</td>
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<tr>
<td>Quality</td>
<td>High</td>
<td>Low-Moderate</td>
<td>High</td>
</tr>
<tr>
<td>Time to Implement</td>
<td>4-5 Years</td>
<td>2 Years</td>
<td>3-4 Years</td>
</tr>
<tr>
<td>Administrative Entity</td>
<td>New</td>
<td>Existing</td>
<td>New</td>
</tr>
<tr>
<td>% of Population Currently Covered</td>
<td>0%</td>
<td>80%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Addendum 6: Code of Fair Patient Information

The code contains five principles:
1. There must be no personal data record-keeping that secretly exists.

2. There must be a way for a person to review the content and use of the information on his record.

3. There must be a way for a person to correct or amend a record of identifiable information about himself.

4. There must be a way for a person to prevent information about himself that was obtained for one purpose from being used or made available for other purposes without his consent.

5. Any organization creating, maintaining, using, or disseminating records of identifiable personal data must assure the reliability of the data for their intended use and must take precautions to prevent misuses of the data.


Addendum 7: State Survey of Legal Provisions on Access to Patient Clinical Records

The following chart presents an overview of the existing laws on patient access to medical records in each of the fifty states and the District of Columbia. Details about the content of each statute, regulation, or court decision are provided, in full, in the text referenced below.

The chart has three columns, covering state provisions on access to doctor, hospital, and mental health records. "Yes" indicates that the patient is permitted virtually unrestricted access to his records. It should be noted that the health care provider is permitted to withhold the record if the person believes that access to the record would be detrimental to the patient. "No" indicates that the patient is restricted from accessing their records. In some cases, the patient may obtain the record through an attorney, or may obtain a summary of the record.

State Survey of Legal Provisions on Access to Patient Clinical Records

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<thead>
<tr>
<th></th>
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<th>Hospital Records</th>
<th>Mental Health Records</th>
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</table>

EXECUTIVE SUMMARY

The purpose of this work plan is to identify the educational products and communication services needed to support the widespread implementation of EDI in the health care industry by the 4th Qtr 94 for Category I payors, providers, and employers, and by the 4th Qtr 95 for all remaining participants (or, for whatever goals are established by the Clinton Task Force). The objective is to facilitate, but not over control, the dissemination of information. To execute this work plan, the Education and Publicity Technical Advisory Group (TAG) strongly recommends that a formal organization be established to oversee the development, production, and delivery of the products and services being recommended.

The need for high quality, in-depth education and extensive publicity about EDI is important, not only to meet the time frames desired, but to assure that the full cost benefits of EDI
are realized by the entire industry through an appropriate implementation process. There is also a sense of urgency in getting the educational and communications work plan implemented because the TAG estimates that from the time a health care organization starts preparing for EDI, it takes 6 to 8 months to get things started, and 6 to 18 months to have EDI in substantial use. Every month's delay in getting this work plan started substantially delays the time when full benefits of EDI can be realized.

The universal implementation of EDI in the health care industry within 12 to 18 months is unlike any challenge the industry has experienced. Thus, the scope and complexity of the educational effort required must not be underestimated. Administrative, technical, and support staff in every provider, payor, and vendor organization in the country will need to learn how to effectively implement and manage EDI systems in the health care environment, recognizing the profound implications for the business processes in those organizations.

The proposed work plan describes the organization, and nine products and services that should be established. They are not presented in order of priority because they should be developed concurrently and established at the earliest possible date.

1. Health Care EDI Education and Communications Organization (The WEDI Institute)
2. Health Care EDI Education Curriculum
3. Education Delivery Program
4. Marketing/Communication (Publicity) Function
5. EDI Health Care Overview Video
6. Health Care Constituents Data Base
8. Health Care Communications Network - Electronic Bulletin Board
9. Information Pamphlets - External Publicity
10. WEDI Newsletter - Internal Communications

The TAG has developed a proposed work plan with initial rough estimates of the cost of implementation. When this work plan is approved, in whole or in part, the TAG recommends that a detailed business plan for implementation be developed.

INTRODUCTION

The Education and Publicity Technical Advisory Group was established in February 1993 because WEDI believes that the industry must take responsibility for self-education. The members of the TAG agree upon the following goals to:
o Create a ground swell of national support for WEDI's vision through education and publicity,

o Identify educational needs and resources relative to EDI,

o Collaborate with other WEDI TAGs to disseminate information,

o Coordinate educational and publicity efforts of TAGs.

The resulting work plan addresses the educational and informational needs of all potential EDI users in the health care industry, as well as the general public. Four categories of education and publicity are addressed:

o Basic EDI awareness, including background and objectives of EDI and resources for additional information;

o Implementation guidelines, including costs, benefits, impact on business processes, and what is optional and what is not for successful EDI;

o Business issues, including legislative, legal, and confidentiality requirements;

o Technical knowledge related to standards, hardware/software requirements, telecommunications, etc.

The TAG respectfully recommends that the WEDI Steering Committee endorse and facilitate the development of nine Education/Publicity products and the formation of an organization to oversee delivery.

This plan to advance the use of health care EDI, linked with WEDI's overall strategy, is necessary to meet the anticipated administrative reform goals sought by the National Task Force on Health Care Reform and the general industry. Although the political debate and proposed reform structures (managed competition, single payor, multi-payor, etc.) vary, each will require a sound information technology infrastructure and its use to be carried out effectively to realize real cost containment. This will require the use of standard data structures in an effective and consistent manner by all participants in the health care delivery system. WEDI's work, along with industry standard-setting organizations like ASC X12 (an accredited Committee), is critical to developing the standards, procedures, identifiers, data content, legal issues (confidentiality), legislative recommendations, and other key areas that will facilitate the standard use of health care data. With all areas being addressed concurrently, the information technology infrastructure can become a reality.

All health care constituents must learn how the movement to electronic information exchange will affect their organization. With the number of health care constituents that require training measured in the hundreds of thousands, we must develop a sound and aggressive educational plan. After investigating other
industries active in EDI (automotive, grocery, retail, etc.), we have found a unanimous result that education is the key to industry success. Education leads to involvement, involvement to activity, and activity (in volume) to major benefits and success.

The health care industry is faced with unique challenges, one of which is to provide a large number of participants in several sub-industry areas with the knowledge level necessary to beneficially use EDI in an aggressive time frame. It is critical to target the decision-makers and the implementers. The TAG recognizes that several professional organizations and many consultants have been conducting educational activities. However, these efforts, to date, have been somewhat fragmented, and for the most part, limited to a first level of education that focuses mainly on awareness and getting commitment to EDI from participants in various segments of the industry.

The vision of this TAG is to develop and implement an integrated educational effort that will put forth a stream of education from basic awareness to in-depth implementation strategies and guidelines for staff at all levels throughout the industry. We believe that to lead this effort, one coordinating organization is needed whose constituency is from all segments of the health care industry, because unlike other industries that have implemented EDI, health care is comprised of many complementary industries with no single professional group representing the totality of the industry. The TAG recommends that the proposed EDI Education Organization would offer national and state organizations the opportunity to sponsor or co-sponsor educational programs developed and presented by WEDI, leveraging the marketing capabilities of those organizations that are expected to provide education to their constituencies.

With an appreciation for the accomplishments of the past, we believe WEDI must create a new model for our industry:

- An extensive, cohesive Health Care EDI Education Training Curriculum be developed (refer to Addendum 3).
- A Health Care EDI Institute be formed as a funded organization to manage the development and delivery of the educational curriculum.
- A Communication, Marketing, and Administration Program be developed in connection with the educational delivery, and serve as a way to keep the entire health care industry current on successes using EDI and related business strategies.

This organization should be a part of a more broadly focused industry action group, as has been recommended by other WEDI TAGs. There are a significant number of other areas (e.g., standards development, VAN/network certification and legal/regulatory issues) that require representation and management. However, education and communication are critical functions and should take priority, because it is through widespread, aggressive educational efforts that the commitment of a critical mass needed to move the industry forward will be
achieved.

WEDI has a very broad audience to reach (refer to Addendum 3, "WEDI/Minnesota Health Care EDI Education/Training Matrix"). Several of these constituents' involvement in EDI will supply significant assistance to the industry in general. For example, the vendors of clinic/hospital systems can greatly assist their users by preparing their software to use EDI standards. Obviously, payors of all types must be prepared to receive and send EDI transactions. Special effort should be put forth to reach all sizes of physician groups, individual practitioners, and other small provider organizations, along with the large providers and payors. In short, we must raise all types of organizations' capabilities simultaneously. This recommendation establishes the plan to make this happen.

Additionally, we have a responsibility to raise the awareness of several other constituencies: state/federal legislators, employers, universities/educational institutions, and the public. This is a huge undertaking. Leveraging all available resources will be required: health care professional schools, associations, societies, EDI/health care vendors, and others. This work plan is the catalyst.

The products and services proposed in the work plan are:

1. Health Care EDI Education and Communications Organization (The WEDI Institute)
2. Health Care EDI Education Curriculum
3. Education Delivery Program
4. Marketing/Communication (Publicity) Function
5. EDI Health Care Overview Video
6. Health Care Constituents Data Base
8. Health Care Communications Network - Electronic Bulletin Board
9. Information Pamphlets - External Publicity
10. WEDI Newsletter - Internal Communications

For each recommended product or service listed above, the TAG provides the following detailed information in the "Proposed Plan to Facilitate the Implementation of EDI Nationwide" section of this report:

1. Product/service description,
2. Rationale for the product or service,
3. A tactical plan for implementation,

4. Issues/barriers that must be addressed,

5. Estimated resources required, including approximations of costs, staffing needs, and expertise.

RECOMMENDATION FROM THE 1992 WEDI REPORT

To support critical educational activities and to generate industry support for implementation, WEDI shall develop a work plan on publicity and education to facilitate dissemination of materials and resources for all major participants. WEDI, serving as a national resource on EDI implementation, shall use its work plan to promote awareness of other industry organizations and activities.

PROPOSED PLAN TO FACILITATE THE IMPLEMENTATION OF EDI NATIONWIDE

The WEDI Institute

Product/Service Description

1. A funded organization should be in place as soon as possible to provide education and information on EDI to those in the health care industry who will be responsible for implementing EDI. This organization should be funded by the health care industry constituents who will gain from the broad use of EDI and other appropriate sources (e.g., university grants). A list should be developed.

2. The organization should be responsible for management of the educational curriculum development and delivery. It is further recommended that this organization seek and set-up a centralized base of operations. It should use a train-the-trainer approach at a controllable delivery site. This facility may be an interim site until the Education and Communications programs of WEDI are developed and running fully, or the industry action group also is funded and functioning.

3. This organization's charge would be national in scope; however, it is expected that it would collaborate with state and local initiatives as appropriate.

Note: While the location of office for this organization could be anywhere in the United States, most logically it should be in a central, convenient-to-reach site, such as Chicago or Minneapolis. One possible location to consider for the site initially is Minneapolis. By locating there, it would help facilitate the collaboration needed to develop the curriculum the MinnesotaCare-Administrative Uniformity Committee (AUC)-EDI Technical Advisory Group developed, and we have endorsed. The MinnesotaCare AUC is
making recommendations to work together with WEDI (or its successor) to develop the curriculum and seek funding. They are also interested in being a pilot location to roll out the training program. In the long-term, however, other sites more centrally located should be considered.

Rationale

1. Act as a central site to establish the programs.

2. House the staff and equipment needed for program development and delivery.


4. Provide an administrative base to support all the educational and communications functions that will be required.

Tactical Plan

1. The organization established to oversee the development and delivery of the educational curriculum and facilitate communications for EDI in the health care industry should be lead by a Director. The Director would have direct responsibility for two areas and the personnel in each:

   o Carry out the Communications/Marketing (Publicity) function,
   
   o Carry out the Education Curriculum Development and Delivery function.

   The Director would have overall planning responsibility and coordination with the two areas listed above. Another key function would be to act as the liaison to an Oversight Board of Directors (BOD). The Oversight BOD would consist of representatives from the organizations on the WEDI Steering Committee and organizations that provide a broad cross-section of health care industries representation (associations, etc.). Because this organization must mobilize and move quickly, we recommend that the responsibility of the Oversight BOD would be to help speed the process and to prevent it from being slowed down by the bureaucracy.

2. Recommended areas of funding to pursue: associations, payors, and federal government (i.e., all those who stand to gain the most from a broad, expedient implementation of EDI in the industry), as well as universities and other organizations offering grants.

3. Once this organization is established and materials developed, the educational functions can be self-funding through attendee revenues.

Issues and Barriers
The time it takes to establish a new nonprofit organization representative of the industry that would assume responsibility for health care EDI education and communication could substantially delay the implementation of the program to develop and deliver products.

Estimated Resource Requirements

A rough funding estimation for startup and overhead costs is $125,000 in the first year, which includes office space, utilities, furniture, office equipment, insurance, legal and accounting services. Personnel costs are estimated at $200,000 in the first year for a director, a marketing/communications manager, and two support staff.

Health Care EDI Education Curriculum

Product/Service Description

An extensive, cohesive set of educational materials consisting of modules and sessions designed to meet the requirements of many audiences is needed. A base of materials will be used (refer to Addendum 3, "WEDI/Minnesota EDI Health Care Education/Training Matrix") to deliver a high-quality education, in a timely and cohesive manner. The objectives of the curriculum are to:

- Provide EDI education to all health care constituents: 150,000 to 300,000 organizations,
- Be of immediate value (usable) to constituents,
- Be widely available geographically,
- Be affordable,
- Be quality education, providing a consistent flow of communication about EDI and other related health care issues.

Rationale

1. To effectively use EDI, organizations move through a sequence of events: learn, prepare, plan, pilot, and grow through experience. There is a natural maturation process that has been observed in many other industries. Organizations proceed through several levels of EDI implementation: tactical, strategical, and cultural. This sequencing of levels is usually the reason for lack of success. Rather, the sequence should be: strategical, tactical, and cultural. It is this more appropriate sequence that the proposed curriculum will emphasize.

2. At each of these levels, requirements for EDI training and implementation tools will differ. The curriculum and delivery are designed to take this into account.

Tactical Plan
1. Base Materials include 10 modules, consisting of approximately 78 sessions (refer to Addendum 3, "WEDI/Minnesota EDI Health Care Education/Training Matrix").

2. Development Process considers content development as the first step. We recommend three-person teams be assembled to propose and review the various subject matter (content) for each module area to be addressed in the curriculum, and work with those individuals/organizations currently providing this type of training to determine what, if any, synergy exists. Include experts with backgrounds in EDI, health care, and education development (subject matter expert volunteers would be sought). Once content is determined, an iterative development process to prototype and review the materials should be used. Materials can be further refined in the pilot process.

Issues and Barriers

1. It may be easier to teach health care professionals about EDI than to teach EDI professionals about health care.

2. There are existing training materials that can be modified, instead of being developed from scratch.

3. Face-to-face education is the recommended method of delivery for the majority of the curriculum. Video, computer-based, audio, and other media should be considered, where appropriate. Classroom training appears to be the method that works best in other industries. It is proven to be the most effective in conveying a topic such as EDI, and it is the most widely used method.

4. The first set of trained trainers [refer to "Education Delivery Program (Train-the-Trainer)"] could be functional and delivering basic modules by 1st Qtr 94 in pilot mode, if started by October 1993.

5. Competition from other private initiatives of varying quality and expense should be reviewed.

6. Legal concerns regarding copyrights, distribution rights, and appropriate disclaimers should be addressed.

7. Funding mechanism for development, production of materials, presentation, marketing, and distribution should be investigated.

8. Affordability to potential attendees should be identified.

Estimated Cost Resource Requirements

1. Content Development: It is anticipated that two person-days of effort will be required for each one-hour session. This involves one person from the Institute staff and the hiring of subject matter experts.
Assume fees of approximately $64,000 - $80,000
$800 - 1000 per day/subject matter expert x 80 sessions

Development would be done on a weekly basis with direct expenses expected to be $1,000 per week/subject matter expert, for a total of 16 weeks. Additionally, volunteer sources would be sought for involvement and review. Sessions can be developed concurrently.

Content Development Estimate Cost: $80,000 - $96,000

2. Material Production (Note: These costs are for the first set of masters, not mass production for delivery.)

Material Production is the process of committing the content into delivery materials. Create media (e.g., slides, overheads, multimedia) as appropriate. Also, develop support materials, attendee handouts, props, planning tools, (e.g., spreadsheets, paper forms, train-the-trainer notes).

Costs vary based on the number and sophistication of slides (e.g., graphics, and charts). Outside resources (expertise) should be sought; it should be knowledgeable of presentation software, educational curriculum development, spreadsheets, graphics development, etc. The anticipated effort needed to produce one hour of presentation is eight hours.

8 hours x $50/hour = $400 $32,000
$400 x 80 (1-hour sessions) $32,000
Plus incidentals and other expenses plus expenses

Slide Production Costs (first set of masters)

Assume 25 slides per presentation $10,000
x 80 sessions = 2,000 total slides.
Production costs are $5/slide.

Overheads $200
Assume 5 overheads per presentation,
used for planning tools, etc.
x 80 sessions = 400. Production costs,
assuming conventional black and white are $.50 each.

Material Production Estimate Cost: $42,200

3. Participants Guides: The base of these can be set-up, however, the production expenses should be allocated at the time of delivery [refer to "Education Delivery Program (Train-the-Trainer)" section].

Participants Guides Estimate Cost: $7.00/participant
4. Implementation Guides: (coordinate with the Standards Implementation and Uniform Data Content TAG)

Coordinate educational material development with work performed on implementation guides. This should become a workbook for the advanced classes in the curriculum. The transaction set implementation guides should be maintained along with the educational material.

Development costs are estimated for one full-time person to maintain one guide for each draft ASC X12 health care standard, and their use together in related business processes. This person would act as liaison to ASC X12 and other industry standards-setting organizations, such as HCFA. Knowledge of desktop publishing tools is required to maintain the document in an easily modifiable format.

Implementation Guides Estimate Cost: $50,000 annually.

5. Total Curriculum Development Costs $172,000 - $186,000

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</table>

Estimated Personnel Resource Requirements

1. Subject matter experts in health care, EDI, and education development.

2. Freelance experts in presentation software, spreadsheets, desktop publishing, graphic development, and educational curriculum development.

Education Delivery Program (Train-the-Trainer)

Product/Service Description

A program is needed that will deliver EDI training to a large, geographically-dispersed audience in an effective manner. This program will have a group of trainers (faculty) knowledgeable in the health care EDI education curriculum to prepare a larger group of trainers to deliver the constituent training program, curriculum, etc.

Rationale

1. To deliver the EDI training to a large, geographically-dispersed audience, a group of qualified and motivated trainers is needed. By having a large number of qualified trainers disbursed over a wide geographic area, training can be delivered effectively to the health care constituents without relying on just a few large metropolitan locations. Travel time and expense are high cost areas for attendees and trainers. Also, the sheer magnitude of potential health care constituents needing
training requires a large number of trainers. An initial goal of 100 trainers in the field should ensure there is at least one trainer per state.

2. The trainers would be educated at three levels: Basic, Intermediate, Advanced. Trainers with special knowledge, especially in the advanced issues (such as specific transaction set experience (e.g.,: 837/claim and coding requirements), should be developed.

Tactical Plan

1. Groups of 20 instructors would go through three, one-week training programs conducted at the Institute. Each instructor must demonstrate subject-matter understanding and ability to effectively teach the curriculum minimum requirements. Trainers will be evaluated continuously during the field delivery sessions by attendees. Evaluation forms included with the attendee handout materials could be returned directly to the Institute.

2. The Director would recruit likely candidates to serve as the trainer-trainers as part of a faculty. Several members with complementary expertise should be sought.

3. The trainers will be taken through an extensive one-week program to learn the curriculum at each level: Basic, Intermediate, Advanced. The source of trainers will not be limited. Large organizations may want to bring the training in-house or supply it to key EDI trading partners. Existing health care or EDI training organizations may want to provide the training. The only recommendation is for classes not to be delivered by any party where tuition is charged above the $150-$200 target established by this plan. Recruiting qualified trainers should be pursued.

4. When the trainers complete the program, they are given all the materials needed to present the modules and sessions in which they have been trained. Instructors with Basics experience can accelerate into Intermediate by demonstrating subject matter expertise. Recruitment should be from known educational organizations, EDI, and health care.

5. All marketing and administration of the events will be handled by The WEDI Institute. The Institute's marketing and communications function will have primary responsibility to distribute information about classes and activities. It is expected that the funding organizations, especially associations with extensive geographic reach, will assist in encouraging organizations to attend.

Issues and Barriers

1. Recruiting the trainers and trainer-trainers;

2. Minimizing expenses for the time they are trained, or after
successful delivery of training;

3. Having materials developed and ready for delivery;

4. Monitoring the trainers, keeping quality and availability high;

5. Keeping the trainers' materials up-to-date;

6. Scheduling trainers and education according to need and availability;

7. Determining salaries for trainers.

Estimated Resource Requirements

1. The trainer-trainers would receive $1,000 per day, plus expenses.

2. Facilities: Room, AV equipment.

3. Materials: train-the-trainer manuals, slides/overheads, planning tools, and instructor notes. These would be an extension of the curriculum development effort, with several extra tools (e.g., videotaping) to enhance the training process.

4. The trainers would not have to be burdened with administration functions. The Administrative personnel of the Institute would handle logistics: facility, registration, administration, certificates, etc. Curriculum scheduling and marketing would be handled by the Institute. Communicating with major health care constituents and the other marketing/communications products mentioned earlier should be sufficient to direct scheduled activities in a geographic area.

5. Costs: Train-the-trainer instructors (2) per session, plus Institute staff = $12,000/week.

6. Ten weeks of training to train the first 100 trainers through the Intermediate level = $120,000.

7. Instructor receives $1,000 per day, plus per diem expenses. Having sufficient instructors can reduce travel expenses. Instructors probably would not be paid for travel time. Each are independent contractors to the Institute.

8. Objective: Cost to attendee not to exceed $150 - $200 per day.

   Average attendee going through the 5-day curriculum $750 - $1,000

   Estimated expenses per day: $500
   Facility (includes room, AV equipment, refreshments)
Instructor (includes expenses) $1,500

Material per attendee (binder, session notes, name tags) $25

Administration (telephone, mailing, overhead, certificates, marketing) $500
goes back to the Institute

Total $3,000

Assume minimum class size of 20 people, at $150/day = $3,000 revenues collected. Excess collected can be put toward Institute and curriculum development expenses.

In-house programs conducted by larger organizations could be purchased at approximately $2,000/day.

Marketing/Communication (Publicity) Function

Product/Service Description

The TAG recommends a marketing and public relations department be created to develop and implement a marketing communications plan to publicize EDI education activities, and the products and services available to support the implementation of EDI in the health care industry, including the products and services provided by WEDI Institute. The staff in this department should provide overall marketing/communications for WEDI activities. The staff should be located at the Institute for continuity, coordination, and centralization of resources.

Rationale

1. Relying on volunteers to perform all of the marketing and communications functions necessary to disseminate the EDI message to constituents is a significant challenge. To deliver the products recommended in a timely, quality controlled manner requires a dedicated group to be most effective.

2. Communications is key to keeping the industry informed and motivated. If the development is not centrally coordinated, the cost and quality of producing the products recommended may be unacceptable.

Tactical Plan

The following activities should be under the direction of a Marketing/ Communications Manager.

1. Develop, maintain, and distribute EDI Health Care Overview Video, Information Pamphlets (series of one-page documents), and WEDI Newsletter—Internal Communications.

2. Maintain the Health Care Constituents Data Base as contacts for: mailing, media contacts, WEDI members, demonstration
3. Set-up and maintain the Health Care Communications - Electronic Bulletin Board.

4. Serve as liaison to ASC X12 and other health care related standard setting groups to keep training current.

5. Assist the Training Group to keep the Implementation Guides current.

6. Manage promotion activity responsibilities: press releases, article publication, speaking events, speakers bureau coordination, base materials inventory, media interviews coordination, public relations, media relations, press conference coordination, education schedule publication, event calendars, and others as needed.

7. Distribution Planning: getting materials to their destinations.

Note: The Marketing/Communications manager would report to the Director of Education/Communication.

Issues and Barriers

Funding

Resources Required

1. Personnel - (1) manager, (1) freelance person, (1) administration/clerical;

2. Equipment - (2) personal computers with modems, software, printers, FAX, copier;

3. Software - Presentation software, word processing, spreadsheet (budget management), data base, desktop publishing;

4. Projected annual budget for on-going function:

   Personnel                          $100,000
   Software                             $2,500
   Equipment                           $10,000

Interim Publicity Function

As an option, an interim publicity function can be defined to meet short-term needs until such time as a WEDI Institute or comparable organization is established to house a marketing/communications function as described. The interim publicity services option could be a professional publicity and public relations support service that communicates WEDI and EDI news effectively.

Rationale
To provide a means of handling press releases, public relations, and general communication to support the rapid dissemination of information to any targeted audience.

Tactical Plan

1. Develop a short-term strategy to meet the immediate needs for press releases (i.e., contract with a professional writer/editor/publicist to prepare press releases for the WEDI staff).

2. Establish approval and develop procedure for issuing press releases:
   - TAG chairs obtain initial go-ahead from Steering Committee or WEDI staff,
   - TAG chair submits information to press release writer/publicist,
   - Writer submits final copy to Steering Committee or WEDI staff for approval,
   - Publicist distributes to the prior approved media list.

3. Solicit media-contact list from broad-based industry organizations; e.g., AMA, AHA, AHIMA, DISA, and HIAA.

Issues/Barriers

Funding

Estimated Resource Requirements

Budget for initial phase:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Freelance writer/publicist</td>
<td>$40 per hour</td>
</tr>
<tr>
<td>Clerical staff</td>
<td>$15 per hour</td>
</tr>
</tbody>
</table>

Approximate total cost for a single news release to 100 publications, excluding postage or FAX fees

$150

EDI Health Care Overview Video

Product/Service Description

A 30-minute video presentation consisting of two parts:

- Part 1: Not to exceed 12 minutes. Includes the following: Introduction of one to two minutes by a high ranking official (President Clinton, Mr. Brophy, others). Hard hitting overview looking at the challenges and solutions of today's health care delivery system. The vision of WEDI. EDI successes in other industries. The business case. All constituents working together. EDI as an enabler.
Identification of the government's, payor's, and provider's position. Determination of what the audience needs to do. Identification of what WEDI has made available (e.g., education and resources).

- Part 2: 15-18 minutes. EDI primer: Brief, high level, what is it, how does it work. Technical discussion appropriate for all levels of audience using analogies from other industries (e.g., bank cards and bar-coded consumer products). Will include next steps to take and education information.

The first part can be shown by itself, with discussion before viewing the second half. A break is required to help the viewer in comprehension and attention. The video would be broadly distributed with instructions to the recipients, recommended discussion points, viewer-response cards for feedback, and registration for other resources/education.

Rationale

1. A method for getting the initial EDI message out with high impact is needed. A strong videotape message is a relatively cost-effective manner to reach the hundreds of thousands of health care constituents. The objectives of the video are to:

   - Provide a consistent message regarding EDI to motivate viewers to action.
   - Inform viewers of resources (next steps) and provide a primer about what EDI is; i.e., impact, benefits and changes.

2. This will be the first exposure and best opportunity to get people excited and motivated regarding EDI and health care. The video will be done with quality in mind, not flash or wastefulness.

3. To be most cost-effective, the TAG recommend using the video for two purposes. By splitting the video into two parts and providing instructions for viewing part two, both motivation and education can be provided.

Tactical Plan

1. Development will be done through a professional video production organization with personnel from The WEDI Institute to oversee.

2. Distribution would be made to the health care constituents data base. This will allow the message to be distributed to large organizations/ associations and seen by vast audiences.

Issues and Barriers

1. Writing an acceptable script.
2. Gaining participation of high ranking officials, assuming no additional cost.

3. Cost to produce.

4. Promoting this correctly to the audience.

5. Connecting it to the other activities, effectively using it as the first point of contact.

Estimated Resource Requirements

1. Video (approximate total cost) $90,000 - $97,000

2. Part 1 - Video production professionals $50 - $60,000 (director/producer), script-writing, editing, narration talent, multi-media, travel

3. Part 2 - Same resources, multi-media replacing video $30,000

4. Reproduction of 1,000 copies at $8/each $8,000

5. Shipping and Packaging $2,500

Assume tapes are distributed at no charge to major organizations in the health care industry.

Health Care Constituents Data Base (Communications Network)

Product/Service Description

A data base of organizations and individuals who are kept informed by WEDI (includes WEDI members and major organizations in the health care industry).

Rationale

To produce a single data base that can be consistently and easily updated by the WEDI Steering Committee staff.

Tactical Plan

1. Solicit lists,

2. Collect lists,

3. Design data base,

4. Load data base (initial load),

5. Develop data maintenance mechanism and turn over to WEDI staff to update and maintain.

Issues and Barriers
1. Maintaining a "living" data base,

2. Need for policy and mechanism for determining who should be included in the data base,

3. Responsibility/use of those in the data base,

4. Providing access to or publishing the data base.

Estimated Resource Requirements

WEDI staff

Health Care Directory-Resource Library

Product/Services Description

An up-to-date directory of educational resources, including products, services, publications, consultants, and speakers that potential EDI users can consult to identify resources available for assisting in preparation for EDI implementation.

Rationale

To be able to provide a single source listing and/or access to resources to ensure a broad array of options are known to potential users.

Tactical Plan

1. Work with existing directory publishers to ensure a comprehensive health care industry EDI resource guide is included in existing publications, or is established as a separate publication.

2. Recommend specific health care industry sections in directories.

3. Publicize and create awareness in the industry of these directories as health care resource guides.

4. Use directories as part of EDI education programs.

5. Identify speakers and topics for a WEDI Speakers Bureau with the proper disclaimers.

6. Steering Committee to designate staff or group to update and maintain lists started by the Education and Publicity TAG.

7. Identify materials to keep in the library (e.g., publications, videos, reports and case studies).

Issues and Barriers

1. Publicize the existence of the list and the collection of
2. Ongoing maintenance.

3. Willingness of directory publisher(s) to create distinct lists for health care.

Estimated Resource Requirements

Staff

Health Care Communications Network - Electronic Bulletin Board of WEDI information

Product/Service Description

WEDI would establish a bulletin board service for purposes of distributing internal documents, such as minutes, to WEDI members. WEDI would assume responsibility for vendor selection and awarding the business. There are numerous vendors who provide this type of service, for example, MCI-Mail (used by ASC X12 Secretariat organization) and Compuserve (used by American College of Physicians or ACP). WEDI would also be responsible for ongoing maintenance and support of this bulletin board, as well as devising a strategy to get WEDI participants to sign up for the service.

Rationale

1. A bulletin board would improve the communications, as well as reduce the cost of communications. Another advantage associated with bulletin boards would be the elimination of costs associated with mailing information that is ultimately never read, in that no cost is incurred for a WEDI member who chooses not to download information from a bulletin board.

2. Since WEDI is an organization fostering the use of electronics in our industry, it would make sense, whenever possible, to serve as an example of how costs associated with paper-based information can be reduced or eliminated with computer-based information.

Tactical Plan

Develop an RFI/RFP to send to the various vendors of E-mail/bulletin board services. Once the responses are in, finalize selection and begin to implement. Initially, it will be important to dedicate time to sign up WEDI members to use the service.

Note: Bob Spena of the American College of Physicians (ACP) has offered to allow WEDI to use the ACP Compuserve Bulletin Board. All that would be required is for individuals to get a Compuserve account. However, if WEDI does this without some type of bid process, it may seem somewhat unfair to those electronic service vendors who currently attend WEDI and who offer bulletin board services.
Also, using the same bulletin board as ASC X12, MCI-Mail may offer WEDI members the opportunity to stay current with ASC X12 happenings and vice versa.

Issues and Barriers

There exists a need for WEDI or some organization to take ownership of this project. The processes of getting members signed on to the service, loading minutes, resolving technical issues, and basically, just managing the effort will take some manpower.

The following are some estimated costs associated with maintaining and accessing a bulletin board.

Cost of uploading - $.15/page $600.00 (monthly estimate)

Cost to individuals:
Annual fee $40.00

BB access charge $.30/minute $12.00 monthly estimate

Note: All services price differently. For example, some services price for connect time and some have storage charges. However, the above numbers are probably reasonable estimates of costs associated with using this type of service.

Estimated Resource Requirements

1. Funding,
2. Authorization to go ahead,
3. An individual to get this going, and someone to take responsibility for uploading the minutes,
4. Funding.

Information Pamphlets - External Publicity

Product/Service Description

A series of one-page, two-sided, tri-folded pamphlets providing basic information to potential EDI users and consumers.

Rationale

To provide low cost, wide distribution of basic information on EDI in health care; promote WEDI's vision of EDI; create awareness of issues for EDI implementation; and, provide WEDI staff with rapid response materials for inquiries about WEDI and EDI.

Tactical Plan
1. Subgroup of Education and Publicity TAG to develop content and design of two initial brochures; one to distribute general information regarding WEDI and EDI, and a second to distribute a suggested implementation plan for users of EDI (e.g., a blueprint to get started).

2. Establish liaison with the Short-Term Strategies TAG and other TAGs, as appropriate, for input.

3. Determine scope and means of distribution (e.g., mass distribution through other organizations and associations, distribution through the WEDI participants).

4. Print quantities needed for initial distribution; recommend quantities for future printings.

Issues and Barriers

1. Cost

2. Legal concerns regarding copyrights, distribution rights, disclaimers, etc.

Estimated Resource Requirements

Estimated cost to produce 100,000 brochures, 2 sides, 2 colors on 60# offset stock from camera ready art, cut, and 2 folds to fit # 10 envelopes, packed in convenient cartons, local delivery

Estimated shipping costs via UPS of 10,000 each or 10 organizations for distribution to members

Total costs for two brochures

$5,200.00

WEDI Newsletter - Internal Communications

Product/Service Description

This newsletter would provide information on WEDI activities, updates on Federal legislation, educational resources, dates of educational events, and updates on WEDI demonstration projects.

Initially, if there is an abundance of topics to report on, the newsletter could be enlarged to six pages or distributed on a monthly basis. This newsletter will be distributed to member organizations, as well as those organizations listed in the Health Care Constituents Data Base but who choose not to participate. It is hoped that all organizations receiving this data will distribute a copy to their employees and/or members, as well as all subsidiary-type organizations.

Rationale
The purpose of this newsletter is to keep key individuals and organizations up-to-date on all significant activities. This will be a high-quality newsletter that will be professionally produced to further enhance WEDI's image. For those individuals who do not have access to the bulletin board, this will be an effective, low-cost method for distributing EDI information.

Tactical Plan

1. Contract with a newsletter write/editor/producer. WEDI members will supply rough drafts of articles to this person who will make the necessary changes to convert the rough drafts to publishable articles.

2. Appoint an executive editor from the Steering Committee. This person will be responsible for ensuring the accuracy of all data contained in the newsletter.

3. Establish an Editorial Advisory Board consisting of the TAG chairs and co-chairs. This board will determine guidelines for the newsletter and content for the newsletter (e.g., which stories appear in which issue).

4. Publish monthly, starting January 1994. After the first three issues have been published, evaluate how frequently the newsletter should be published.

5. Develop guidelines beyond those established by the Editorial Advisory Board. For example, length of articles and length of feature articles.

Issues and Barriers

1. Legal concerns regarding copyright, distribution rights, disclaimers, etc.

2. Funding sources.

3. Timeliness: As volunteers, the sending of data on a timely basis could become a fairly time-consuming process, and not necessarily one that gets completed on a timely basis.

Estimated Resource Requirements

1. Estimated costs to produce the newsletter are as follows:

   4 pages - 1 color, 2 sides 500 pcs - $198  
   1,000 pcs - $238 
   4 pages - 2 color, 2 sides 500 pcs - $288  
   1,000 pcs - $365 
   6 pages - 1 color, 2 sides 500 pcs - $337  
   1,000 pcs - $384 
   6 pages - 2 color, 2 sides 500 pcs - $495  
   1,000 pcs - $583

Postage:

   Bulk rate      500  @ .198/pc  $ 99.00
   Bulk rate      1000 @ .198/pc  $198.00
   Not-for-profit 500  @ .125/pc  $ 62.50
   Not-for-profit 1000 @ .125/pc  $128.00
Estimated cost of professional services for each issue would be $500. Start-up costs would be approximately $350.

2. To get the newsletter produced on a timely basis, the services of a professional newsletter writer/editor/producer is required.

3. A coordinator will be needed to provide material, contacts, and editorial functions to the professional writer/producer.

4. Funding would be a large issue since the overall cost of a newsletter would be $1,200 to $1,400 per issue, assuming 1,000 copies.

CONCLUSION

The Technical Advisory Group on Education and Publicity has developed a comprehensive work plan that describes the educational products and communication services required to enable the health care industry to implement EDI within the time frames sought by the WEDI Steering Committee. Included in the work plan is the description of a formal nonprofit organization that would be needed to manage and implement the work plan.

The TAG members are most concerned about the following issues and barriers:

1. Obtaining funding from as many sources as possible (not special interest); e.g., major associations and constituents.

2. The short time frame desired for widespread conversion to EDI necessitates a very rapid start-up for developing the comprehensive curriculum, producing training materials, and scheduling educational events.

There are many potential funding sources that can be approached for grants, including groups such as The Hartford Foundation, The Robert Woods Johnson Foundation, The Kellogg Foundation, The Pugh Charitable Trust, etc. In addition, universities, WEDI's constituent organizations, as well as the federal and state governments are potential sources of money to establish The WEDI Institute and launch the educational services and products. Ultimately, revenues from educational activities may support not only education and publicity objectives, but possibly the other functions key to the successful implementation of EDI that should be directed and coordinated by a central, non-aligned, neutral industry group.

The following is a summary of the estimated funding required to implement the entire work plan. These numbers are assuming straight revenue funding. Funding could be offset by donations of equipment, facilities, personnel, etc. Some expenses can be recovered by charging for products and services.
<table>
<thead>
<tr>
<th>The WEDI Institute</th>
<th>First Year</th>
<th>Ongoing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Care EDI Education Curriculum</td>
<td>$325,000</td>
<td>$275,000</td>
</tr>
<tr>
<td>Education Delivery Program</td>
<td>175,000</td>
<td>25,000</td>
</tr>
<tr>
<td>(Train-the Trainer)</td>
<td>150,000</td>
<td>25,000</td>
</tr>
<tr>
<td>EDI Health Care Overview Video</td>
<td>90,000</td>
<td>0</td>
</tr>
<tr>
<td>Marketing/Communications (Publicity)</td>
<td>120,000</td>
<td>120,000</td>
</tr>
<tr>
<td>Function</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Care Constituents Data Base</td>
<td>10,000</td>
<td>7,500</td>
</tr>
<tr>
<td>Health Care Directory - Resource Library</td>
<td>10,000</td>
<td>7,500</td>
</tr>
<tr>
<td>Health Care Communications Network -</td>
<td>7,200</td>
<td>7,200</td>
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<tr>
<td>Electronic Bulletin Board</td>
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</tr>
<tr>
<td>Information Pamphlets - External Publicity</td>
<td>5,200</td>
<td>5,200</td>
</tr>
<tr>
<td>Newsletter - Internal Communications</td>
<td>9,000</td>
<td>9,000</td>
</tr>
<tr>
<td>(6 issues)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>$ 901,400</td>
<td>$481,400</td>
</tr>
</tbody>
</table>

**TECHNICAL ADVISORY GROUP**

**Co-Chairs**

Leslie Ann Fox  
American Health Information Management Association

Brenda Winters  
American Health Information Management Association

**Members**

Mary Rose Jones  
Harris Methodist Health Plan

Pamela W. Postlewaite  
Consultant

Candy Donovan  
Connemare Solutions

Robert A. Wacloff  
Health Technology Management, Inc.

Rachel Foerster  
Consultant

Elizabeth White, RRA, CTR  
Medical Registry Services, Inc.

Deborah Fritz  
Blue Cross and Blue Shield of Michigan

Nadine M. Zabierek  
Blue Cross and Blue Shield of Illinois

Jeff Kessler  
EDI Partners, Ltd.

Ron Snodgrass  
Graystone EDI Tech

John W. Matthews  
Graystone EDI Tech
Addendum 1: Budget Alternative

The creation of a WEDI Industry Action Group (IAG) has the potential of significantly altering the proposed budget for the educational and publicity functions. Listed below is a revised budget based on the prospect that the education and publicity functions would be folded into the IAG.

<table>
<thead>
<tr>
<th></th>
<th>First Year</th>
<th>Ongoing</th>
</tr>
</thead>
<tbody>
<tr>
<td>The WEDI Institute</td>
<td>$100,000</td>
<td>$100,000</td>
</tr>
<tr>
<td>Budget for start-up, overhead and personnel costs ($325,000) would be assumed by the IAG. Therefore, costs specifically related to the education staff would include a director ($60,000), research assistant ($22,000) and clerical staff ($18,000).</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Health Care EDI Education Curriculum</th>
<th>138,200</th>
<th>25,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost for coordinating the educational material development for the Implementation Guides ($50,000) would be undertaken by the IAG. Hence, the revised budget includes content development ($96,000) and material production ($42,200).</td>
<td></td>
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</tr>
</tbody>
</table>

| Education Delivery Program            | 75,000   | 25,000 |
| (Train-the-Trainer)                   |          |        |
| The initial budget ($150,000) was based on the assumption that WEDI would train all train-the-trainer participants. However, various professional associations may send representatives to the training sessions (especially since the professional associations may prefer to assume responsibility for providing EDI education to their membership). Therefore, |
training costs would be covered through the professional associations. It is estimated that approximately half of the train-the-trainer participants would originate from professional associations. Hence, the proposed costs would be reduced by 50%.

| EDI Health Care Overview Video | 90,000 | 0 |
| Marketing/Communications (Publicity) Function | 100,000 | 120,000 |
| The initial budget included personnel, software and equipment. However, it is anticipated that software and equipment costs would be undertaken by the IAG, but personnel costs would remain in the publicity budget. |
| Health Care Constituents Data Base | 0 | 0 |
| Cost deleted, since this activity would be accomplished within the marketing function. |
| Health Care Directory - Resource Library | 0 | 0 |
| Cost deleted since this activity would be accomplished within the marketing function. |
| Health Care Communications Network | 7,200 | 7,200 |
| Electronic Bulletin Board |
| Information Pamphlets - External Publicity | 5,200 | 5,200 |
| Newsletter - Internal Communications | 9,000 | 9,000 |
| TOTAL | $524,600 | $291,400 |

Addendum 2: Alternative to Establishing The WEDI Institute or an Industry Action Group

In the event that the WEDI Institute or a more comprehensive industry action group is not formed, the Education and Publicity TAG suggests that the WEDI Steering Committee approve a Request For Proposal (RFP) process that would invite other organizations or agencies to implement the TAG's proposed plan in cooperation with WEDI under the direction of the Education and Publicity TAG. In return, WEDI would allow the organization or organizations selected to use the statement, "Endorsed by WEDI" in the marketing and sales of those educational products and services developed in cooperation with WEDI.
**Addendum 3: WEDI/Minnesota Health Care EDI Education/Training Matrix**

<table>
<thead>
<tr>
<th>Type of Organization</th>
<th>Management and Administration</th>
<th>Levels Within Organization</th>
<th>Users Functional Area and Information Systems</th>
<th>Executive and EDI Implementation Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payors</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Commercial Carriers</td>
<td>F,A,G,H</td>
<td>B, C, D, E (pp,up), F, H</td>
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<td></td>
</tr>
<tr>
<td>HMO/Managed Care</td>
<td>F,A,G,H</td>
<td>B, C, D, E (pp,up), F, H</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gov. (HCFA, State MA)</td>
<td>F,A,G,H</td>
<td>B, C, D, E (pp,up), F, H</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blues Self-Insured</td>
<td>F,A,G,H</td>
<td>B, C, D, E (pp,up), F, H</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groups</td>
<td></td>
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<td>A Management Overview</td>
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1. Intro to EDI in HC: Event and Directions
2. How it works: Other Industry Examples
3. The Advantages: HC EDI Vision
4. Barriers/Challenges
5. Investment/Return: The Business Case
6. Planning/Implementation
7. Industry Resources Identification
8. Practitioner's Presentation
9. Needs Assessment Survey

B1 EDI Fundamentals
One Day Basic
1. Introduction to EDI: EDI Components
2. Introduction to ASC X12
3. Value Added Networks Data Communications
4. Translation Software EDI "Ready" Software
5. Business Issues/Activity

B2 EDI Intermediate Issues
One Day Intermediate
1. Transaction Flows: Claims, Payment, Material Mgmt, Eligibility, etc.
2. Planning and Implementation
3. Trading Partner Select
4. User Profiles/Trends
5. EDI Component Selection
6. EDI Program Expansion
7. Legal/Audit Issues
8. Financial EDI

C EDI Standards
One Day Intermediate
1. Overview of ASC X12
2. Translating to ASC 12
3. ASC 12 Envelopes
4. ASC 12 Acknowledgment
5. Mapping Exercises: ASC 12 Documentation

D1 Transaction Sets
Advanced
Care Delivery
2 - 8 Hours Each
1. Claim Payment - 835
2. Claim - 837
3. Enrollment - 834
4. Eligibility Inquiry - 270
5. Eligibility Responsibility - 271
6. Claim Status Inquiry
7. HMO Reporting
8. Coordination of Benefits
9. Managed Care
D2  Contract Administration/Logistics Materials Management
2 - 8 Hours Each

1. RFQ/Resp. - 840/843
2. Price Catalog - 832
3. Purchase Order - 850
4. Invoice - 810
5. Advance Ship. Notice - 856
6. Remittance Advice
7. Contract Award - 836
8. Price Authorization - 845
9. PO Acknowledgment - 855
10. Shmnt./Bill Notice - 857
11. Prod. Xfer/Resale - 867

E  Integration
Advanced

User Perspective (up)
Half to Full Day

1. Business Process Change
2. Insurance Coding Req. Data Quality Planning
3. Application Interface
4. EDI Pilot Planning

Vendor Perspective (vp)
Half to Full Day

1. Business Process Change
2. Insurance Coding Req. Data Quality Planning
3. Application Interface
4. EDI Pilot Planning

Payor Perspective (pp)
Half to Full Day

1. Business Process Change
2. Insurance Coding Req. Data Quality Planning
3. Application Interface
4. EDI Pilot Planning

F  Promoting EDI
One Hour

1. Introduction to EDI in HC
2. HC EC Vision
3. Resources
4. Organization Fit
5. Next Steps
6. Needs Assessment Survey

G  EDI Management Issues
Half Day

1. Organization Issues
2. Planning  
3. EDI Project Teams  
4. Change Management  
5. Messaging Strategy  
6. Service Criteria  

H Related Topics  
One Day  
1. Confidentiality  
2. Health Care ID Cards  
3. Enrollment  
4. Eligibility  
5. Standard Data Content  
6. Clearinghouses  
7. Legislation - Incentives/Barriers  
8. Electronic Media Records  
9. Coordination of Benefits  
10. WEDI Activities/ Demonstration Projects
Curriculum - Design Characteristics

The education model set forth is new, borrowing from the best of others, and is recommended as the national education model by WEDI.

Modular

Several different training tracks are identified, each directed toward a specific audience. Design of the sessions is modular to accommodate restructuring to optimize program impact.

Professionally prepared reference materials should accompany all sessions. Additional support materials, such as relevant articles, health care/EDI industry publications, product information, etc., should be used liberally to complement the topic. Alternative delivery approaches for programs (e.g., video, computer-based, audio, and multimedia) will be explored.

Customizable

The latest in presentation software technology should be used for design and presentation. This allows for efficient modification of session content to address specific organization, industry, or technical issues, and incorporate feedback. Additionally, this approach provides efficient means to provide train-the-trainer materials.

Planning Tools - Feedback Loop

Sessions should include worksheets to complement the content of the sessions and assist in information gathering for planning purposes. Designed to accommodate tailoring, these worksheets stimulate active discussion and information gathering. Electronic worksheets support their objectives. Evaluation of programs is solicited to modify and improve delivery.

Audience

There are four primary audiences to whom these programs should be delivered:

- Management/Administration/Executive
- Users/Functional Areas (Claims, AP, Billing, Purchasing, etc.)
- Information Systems
- EDI Implementation Staff

The programs are adjusted to address the EDI role of the audience (payer, provider, vendors, associations). A typical approach for a participating organization is to start with the basics. However, more advanced topics can be delivered at any time. The EDI/technical maturity level of an organization should be considered. Organizations should, whenever practical, include multiple people in a cross-functional representation. EDI requires integration of processes and information.
Delivery Organization(s)

An overseeing body should be established to coordinate educational development and delivery, and monitor feedback. A list of potential organizations that can develop and deliver these programs should be assembled. Cross training on expertise may be required (e.g., EDI knowledge, health care knowledge, purchasing knowledge and claims/insurance knowledge). Overall, quality management of the delivery process must be closely monitored, including the leverage of health care, education, and EDI expertise and experience. A train-the-trainer concept should be developed to prevent a bottleneck with delivery. Assisting in the organization for in-house delivery is advantageous for larger organizations.

Continuing Education Credit

As incentive to attendees, all curriculum sessions should be certified and accredited for continuing professional and medical education credits from appropriate health care associations and organizations.

Affordability/Accessibility

Through funding for development and an efficient delivery program, quality education can be made available to all health care constituents, regardless of their size or location.

Curriculum - Session Descriptions

All sessions are 45 - 60 minutes, unless otherwise stated.

Session A: Management Overview

Duration: Half-day
Level: Executive/Management

1. Introduction to EDI in Health Care: (20 min.) Reviews the events and challenges shaping the rise in EDI use. Discusses the directions key health care organizations (commercial and government) are taking. Reviews terminology in relationship to other health care automation.

2. How EDI Works: (20 min.) Reviews the EDI process and components required to exchange EDI transactions, using other industries as examples (grocery, retail, financial, etc.). Shows where EDI can be used in health care operations.

3. The EDI Vision for Health Care: (20 min.) Discusses how EDI, along with other health care automation activities/strategies, will streamline the delivery of care. Reviews the potential magnitude for savings and improvements in quality. Reviews how the fully implemented system will work.
4. Barriers/Challenges: (20 min.) Discusses the keys to success for implementing and developing EDI use within and between organizations. Identifies how to prepare your organization for change as EDI offers new ways to approach challenges. Addresses how to get the most for your investment and avoid the pitfalls.

5. Investment/Return - The Business Case: (20 min.) Discusses what level of commitment is required for a successful EDI program, investment options and expected return on investment. Review health care cost-benefit data available and case studies from other industries.

6. Planning/Implementation: (20 min.) Reviews the typical steps to EDI implementation. Discusses the proper internal structure necessary to support, establish, and develop an EDI program. Evaluates the alternatives and challenges of integrating EDI to applications. Addresses standardization issues of current health care documents. Discusses setting up an EDI task team and establishing management's role. Reviews roles of VANS, clearinghouses, service bureaus, and other third party organizations.

7. Industry Resources Identification: (20 min.) Reviews the list of resources available to continue the process of learning and implementation. Identifies standards organizations, industry associations, industry vendors, training/education sources and curriculums, books and periodicals, and support plans for the industry. Identifies education sources and delivery plans.

8. Practitioners Presentation: (20 min.) Reviews current EDI programs/initiatives that are either in place or under development by an appropriate health care constituent (provider, payor, vendor, etc.). Includes a presentation of an EDI case study (leverage from experience) by a manager from a non-health care organization.

9. Needs Assessment Survey: (20 min.) Discusses and completes a questionnaire regarding the session, along with thoughts on the remainder of the educational curriculum as it relates to their organization. Identifies topics/areas to add, delete, or modify. Solicit involvement/commitment to next session(s).

Session B1: EDI Fundamentals

Duration: One day
Level: Basic

1. Introduction to EDI and EDI Components: Introduces the basic concepts of EDI. This session discusses the definition of EDI, its advantages, its use in common business situations, how it differs from current business practices, its growth worldwide, its major components, and related technologies.
2. Introduction to ASC X12: Introduces the fundamental ideas used in the ASC X12 standards. This session introduces the standards by comparing them to current paper processes, and discusses the basic components that make up the standards. It also covers changes to the standards, the variations that an EDI user can expect to encounter, and the relationship of X12 to other health care standards, such as HL7.

3. Value Added Networks and Data Communications: Introduces the concept and use of a Value Added (VAN) EDI Network. This session introduces the definition of a VAN, and discusses basic services offered. It identifies the value of VANs through a discussion of the various features and services supported. Costs and user requirements are discussed, along with VAN strategies.

4. EDI Software: Introduces the hardware and software options in EDI. This session discusses the various software and hardware options available to EDI users. It covers an introduction to the functionality of translators, mapping tools, application integration tools, quality control, EDI-ready applications, and management issues.

5. Business Issues/Activity: Introduces most of the significant issues and procedures that must address before establishing a successful trading partner relationship. This session covers legal issues (trading partner agreements), customary practices, documentation, start-up, customization, daily operations, audit, controls, and data retention.

Session B2: EDI Intermediate Issues

Duration: One day
Level: Intermediate

1. Transaction Flows - Claims, Payments, Material Management: Discusses X12 transaction usage in common health care business situations. This session covers the flow of standard transactions in the normal course of health care business in the U. S. It is broken into various parts of the usual business cycles.

2. Planning and Implementation: Identifies the major areas of planning for EDI (Preparation, Education, Business Case Development, Systems Review, Strategic Plan, Project Team Selection, Pilot Project, etc.). Discusses realities of time lines based on implementation options and pressures from trading partners. Initiates discussions on implementation strategies and pilot projects.

3. Trading Partner Selection: Identifies major criteria for selecting trading partners and potential benefits. This session identifies who to choose, why to implement, what is required, when to initiate, where to find trading partners, and how to start.
4. **User Profiles/Trends:** Discusses the future needs of EDI users as their programs mature. This session defines users as beginning, growing, or maturing levels. It discusses the differences among them, including their needs, who is in control, and the investment they have made or will make. It also discusses technologies related to or complementing EDI.

5. **Component Selection:** Discusses the main considerations when selecting EDI management software, networks, and data communications for integrating into a systems environment. Also, defines what a third party application provider (e.g., clinic or hospital management system) can provide. This session is a brief high-level discussion of the issues, functionality, architecture, RFPs, product differentiation, and expectations for selecting EDI management software.

6. **EDI Program Expansion:** Discusses the considerations for widely implementing EDI after initial pilot project. Promotes EDI within your organization and externally to trading partners. Creates and enables a plan to develop transactions and trading partners, including goals, measurements, and progress expectations.

7. **Legal/Audit Issues:** Discusses the legal issues surrounding the use of EDI in health care business transactions. Identifies how changes in confidentiality and industry processes will be affected through legislation, and setting up a trading partner agreement for EDI. Discusses how-to and who-should be involved in the procedures for internal auditing, accounting, as well as EDI education, planning, and implementation.

8. **Financial EDI:** Discusses the requirements established by HCFA, other payors, and materials suppliers for electronic payment. Develops an understanding of how EDI and basic Electronic Funds Transfer (EFT) interface in the health care claim payment advice (ASC 835), and how it relates with the health care claim (ANSI 837). Establishes how to plan effectively with other EDI activities.

**Session C: EDI Standards**

**Duration:** One-day
**Level:** Intermediate.

1. **Overview of ASC X12:** Introduces the fundamental ideas used in the ASC X12 standards. This session introduces the standards by comparing them to current paper processes and discussing the basic components that comprise the standards. It also covers changes to the standards and the variety that an EDI user can expect to encounter.

2. **Translating to ASC X12:** Introduces the actual process of mapping (relating) information from a paper form to the ASC X12 format. This session reviews all of the important
3. ASC X12 Envelopes: Introduces the details and use of the ASC X12 enveloping segments through a mapping exercise. This session defines the contents and uses of the various envelope standards in North America. An exercise that is a continuation of the exercise in the "Translating X12 Transactions" session, can be included to demonstrate the completion of the mapping process.

4. ASC X12 Acknowledgments: Introduces the use and detailed contents of the ASC X12 acknowledgment. This session defines the contents of the common ASC X12 acknowledgment transaction (997) and the interchange acknowledgment. It also discusses agreements governing the use of Acknowledgments that must be agreed upon among trading partners.

5. Mapping Exercises, X12 Documentation: This session takes a health care EDI document (ASC 835, 837, 834, etc.) through a detailed mapping process and discusses integration issues. Participants can use actual application file layouts to compare. The ASC standards documentation is used to familiarize participants with the layout and use of the manuals.

Session D1: Transaction Sets - ASC 8XX, 2XX, in Draft Use Care Delivery

Duration: Two to eight hours, each
Level: Advanced

1. Health Care Claim Payment/Advice - 835: Details the analysis and mapping of this transaction. Actual application file layouts should be used in a business transaction setting. Provides an opportunity to address detailed technical questions.

2. Health Care Claim - 837: Details the analysis and mapping of this transaction. Actual application file layouts should be used in a business transaction setting. Provides an opportunity to address detailed technical questions.

3. Benefit Enrollment and Maintenance - 834: Details the analysis and mapping of this transaction. Actual application file layouts should be used in a business transaction setting. Provides an opportunity to address detailed technical questions.

4. Eligibility Inquiry - 270: Details the analysis and mapping of this transaction. Actual application file layouts should be used in a business transaction setting. Provides an opportunity to address detailed technical questions.
5. Eligibility Response - 271: Details the analysis and mapping of this transaction. Actual application file layouts should be used in a business transaction setting. Provides an opportunity to address detailed technical questions.

6. Claim Status Inquiry: This transaction is under development.

7. HMO Reporting: This transaction is under development.

8. Coordination of Benefits: This transaction is under development.

9. Managed Care: This transaction is under development.

Session D2: Transaction Sets (ASC 8XX) in Draft Use Management

Duration: Two to eight hours, each
Level: Advanced

1. Request For Quote/Response - 840/843: Determines the procurement/replenishment/materials management process as it relates to using EDI, replacing paper-based or proprietary systems. Details the analysis and mapping of this transaction. Actual application file layouts should be used in a business transaction setting. Provides opportunity to address detailed technical questions.

2. Price Catalog - 832: Determine procurement/replenishment/materials management process as it relating to using EDI, replacing paper-based or proprietary systems. Detailed analysis and mapping of this transaction. Actual application file layouts should be used in a business transaction setting. Provides opportunity to address detailed technical questions.

3. Purchase Order - 850: Determines the procurement replenishment/ materials management process as it relates to using EDI, replacing paper based or proprietary systems. Details the analysis and mapping of this transaction. Actual application file layouts should be used in a business transaction setting. Provides opportunity to address detailed technical questions.

4. Invoice - 810: Determines the procurement/replenishment/materials management process as it relates to using EDI, replacing paper-based or proprietary systems. Details the analysis and mapping of this transaction. Actual application file layouts should be used in a business transaction setting. Provides opportunity to address detailed technical questions.

5. Advance Ship Notice - 856: Determines the procurement/replenishment/materials management process as it relates to using EDI, replacing paper based or proprietary systems.
Details the analysis and mapping of this transaction. Actual application file layouts should be used in a business transaction setting. Provides opportunity to address detailed technical questions.

6. Remittance Advice - 820: Determines the procurement/replenishment/materials management process as it relates to using EDI, replacing paper-based or proprietary systems. Details the analysis and mapping of this transaction. Actual application file layouts should be used in a business transaction setting. Provides opportunity to address detailed technical questions.

7. Contract Award - 836: Determines the procurement/replenishment/materials management process as it relates to using EDI, replacing paper-based or proprietary systems. Details the analysis and mapping of this transaction. Actual application file layouts should be used in a business transaction setting. Provides opportunity to address detailed technical questions.

8. Price Authorization - 845: Determines the procurement/replenishment/materials management process as it relates to using EDI, replacing paper-based or proprietary systems. Details the analysis and mapping of this transaction. Actual application file layouts should be used in a business transaction setting. Provides an opportunity to address detailed technical questions.

9. Purchase Order Acknowledgment - 855: Determines the procurement/replenishment/materials management process as it relates to using EDI, replacing paper-based or proprietary systems. Details the analysis and mapping of this transaction. Actual application file layouts should be used in a business transaction setting. Provides opportunity to address detailed technical questions.

10. Shipment and Billing Notice - 857: Determines the procurement/replenishment/materials management process as it relates to using EDI, replacing paper-based or proprietary systems. Details the analysis and mapping of this transaction. Actual application file layouts should be used in a business transaction setting. Provides opportunity to address detailed technical questions.

11. Product Transfer and Resale Report - 867: Determines the procurement/replenishment/materials management process as it relates to using EDI, replacing paper-based or proprietary systems. Details the analysis and mapping of this transaction. Actual application file layouts should be used in a business transaction setting. Provides an opportunity to address detailed technical questions.

Session E  Integration   User Perspective (UP)

Duration: Half to Full Day
Level: Advanced

1. **Business Process Change:** Discusses in-depth the characteristics and strategies required to prepare an organization for change. Develops an understanding of the dynamics of change and why it happens. Identifies the threats and opportunities of change as they relate to EDI implementation, leverage of electronic claims submission, eligibility, enrollment and other forms of automation. Develops an understanding of the organizational culture needed for effective change management. Discusses the enabling role EDI plays in facilitating change. Addresses how to prepare personnel for changes in the work process and focus. Discusses external change, establishing trading partner agreements, and third party vendor (networks, clearinghouse) agreements.

2. **Insurance Coding Requirements and Data Quality Planning:** Determines the relationship and use of existing claims information and ASC requirements. Identifies how trading partners expect to receive information. Identifies the best way to use the ASC codes.

3. **Application Interface and Integration:** Discusses the requirements and alternatives to move data into and out of an application environment, which is the next step after mapping. Identifies how to build the interface required for an automated EDI flow of information. Addresses how to determine control, audit trail, archiving, restart, recovery, security, etc. Explains how process flows can standardize documentation and be used as an internal implementation guide, and the connection between EDI management (translation) and data communication software, including resolution of any trading partner conflicts.

4. **EDI Pilot Planning:** Establishes a detailed plan of which EDI transaction(s) will be used. Identifies how the transactions will be exchanged (data communications, networks, etc.). Determines responsibilities, timelines, and expectations. Phases include: Preparation, Set-up, Testing, Parallel, and Production. Determines internal daily operations, process flows, tasks, and responsibilities. Establishes a feedback loop.

**Vendor Perspective (VP)**

**Duration:** Half to Full Day

1. **Business Process Change:** Discusses, in-depth, the characteristics and strategies required to prepare an organization for change. Develops an understanding of the dynamics of change and why it happens. Identifies the threats and opportunities of change as they relate to EDI implementation, leverage of electronic claims submission, eligibility, enrollment, and other forms of automation. Develops an understanding of the organizational culture needed for effective change management. Discusses the enabling role EDI plays in facilitating change. Address how to prepare personnel for changes in the work process and
focus. Discusses external change, establishing trading partner agreements, and third party vendor (networks, clearinghouse) agreements.

2. Insurance Coding Requirements and Data Quality Planning: Determines the relationship and use of existing claims information and ASC requirements. Identifies how trading partners expect to receive information. Identifies the best way to use the ASC codes.

3. Application Interface and Integration: Discusses the requirements and alternatives to moving data into and out of an application environment, which is the next step after mapping. Identifies how to build the interface required for an automated EDI flow of information. Addresses how to determine control, audit trail, archiving, restart, recovery, security, etc. Explains how process flows can standardize documentation and be used as an internal implementation guide, and the connection between EDI management (translation) and data communication software, including resolution of any trading partner conflicts.

4. EDI Pilot Planning: Establishes a detailed plan of which EDI transaction(s) will be used. Identifies how the transactions will be exchanged (data communications, networks, etc.). Determines responsibilities, timelines, and expectations. Phases include: Preparation, Set-up, Testing, Parallel, and Production. Determines internal daily operations, process flows, tasks, and responsibilities. Establishes a feedback loop.

Payor Perspective (PP)

Duration: Half to Full Day

1. Business Process Change: Discusses in-depth the characteristics and strategies required to prepare an organization for change. Develops an understanding of the dynamics of change and why it happens. Identifies the threats and opportunities of change as they relate to EDI implementation, leverage of electronic claims submission, eligibility, enrollment, and other forms of automation. Develops an understanding of the organizational culture needed for effective change management. Discusses the enabling role EDI plays in facilitating change. Addresses how to prepare personnel for changes in the work process and focus. Discusses external change, establishing trading partner agreements, and third party vendor (networks, clearinghouse) agreements.

2. Insurance Coding Requirements and Data Quality Planning: Determines the relationship and use of existing claims information and ASC requirements. Identifies how trading partners expect to receive information. Identifies the best way to use the ASC codes.

3. Application Interface and Integration: Discusses the requirements and alternatives to moving data into and out of
an application environment, which is the next step after mapping. Identifies how to build the interface required for an automated EDI flow of information. Addresses how to determine control, audit trail, archiving, restart, recovery, security, etc. Explains how process flows standardize documentation and be used as an internal implementation guide, and the connection between EDI management (translation) and data communication software, including resolution of any trading partner conflicts.

4. EDI Pilot Planning: Establishes a detailed plan of which EDI transaction(s) will be used. Identifies how the transactions will be exchanged (data communications, networks, etc.). Determines responsibilities, timelines, and expectations. Phases include: Preparation, Set-up, Testing, Parallel, and Production. Determines internal daily operations, process flows, tasks, and responsibilities. Establishes a feedback loop.

Session F: Promoting EDI

Duration: 40 - 60 minutes

This presentation is designed to be used in many settings (e.g., association meetings, organization meetings), and can be presented via multiple media types: 35MM slides/overheads with script, video tape, computer diskette presentation (e.g., Powerpoint and Persuasion), multimedia production (combination).

The message of this presentation is to inform and create a "call to action." (If there is one chance to generate interest, this is it.) Avoid trying to convey too much information in this presentation. Most of the information for this presentation can be extracted from the Management Overview session.

1. Introduction to EDI in Health Care: Briefly explains what EDI is about and where it can be used in health care reform as it relates to the existing electronic activities in health care (EMC) as a point of reference. Explains differences and why it is needed.

2. Health Care EDI Vision: Presents the direction EDI is taking (HCFA, WEDI). Reviews the impact, potential savings, and increased quality of care. Shows how the vision has worked in other industries or other countries. Highlights success stories.

3. Resources: Identifies this curriculum; where it fits, and how to tap into it, sponsoring organizations, and lists other reference information sources.

This topic may change based on the audience (Clinic, Laboratory, Hospital, Payor, etc.).

4. Organization Fit: Identifies how EDI can fit in the business processes.

5. Next Steps: Clearly explains, based upon the resources
presented, where to turn for additional help in planning the next step. Explains realistic time lines and the expectations of some constituents. (i.e., HCFA).

6. Needs Assessment Survey: A hard copy document that requests feedback on the effectiveness of the presentation and proposed curriculum. The audience sends this information into a central coordination point so that follow-up information and communications can be directed to appropriate people. Used to evaluate expected education/training needs.

Session G: EDI Management Issues

Duration: Half-day

1. Organization Issues: Builds a clear understanding of the potential value and functional effects of using EDI. Includes examples of how industries and companies have implemented strategic systems with EDI as a key component. Discusses the challenge of business, and how technology has accommodated change. Reviews how EDI has evolved, and the components of implementation. Examines the typical EDI barriers to success and how to overcome them. Develops an understanding and strategy for managing organizational change/resistance that is inevitable with EDI.

2. Planning: Develops the major areas of current managerial thought (programs) as they relate to one another and EDI. Discusses EDI for strategic and tactical planning, including organizational business objectives and division/unit objectives as they relate to EDI program objectives. Discusses development of "care delivery information management" and trading partner relationships, that should lead into the discussion of various current "schools of thought" (Quality Management, JIT, reengineering, inter-enterprise systems).

3. EDI Project Team Building: Develops an understanding and plan for assembling the right mixture of people within the organization to develop and carry out EDI plans. Discusses how to provide proper sponsorship and participation for upper management.

4. Change Management: Discusses, in-depth, the characteristics and strategies required to prepare an organization for change. Develops an understanding of the dynamics of change, and why it occurs. Identifies the threats and opportunities of change as they relate to implementing EDI. Develops an understanding of the organizational culture needed for effective change management. Discusses the enabling role EDI plays in facilitating change.

5. Messaging Strategy: Discusses how EDI interacts with all the other automation and communication requirements confronting health care organizations: E-mail, Electronic Medical Records, Eligibility, Fax, medical data base connections.
6. Service Criteria: Discusses key needs/considerations for selecting EDI component service partners or implementor. Identifies sources of alternatives and relevant experience.

Session H: Related Health Care Automation Topics

Duration: One-day

An up-to-date presentation should be maintained by each area via communicating with other committees and advisory groups (state and national) in these areas to ensure that their information is being integrated into this session and the entire curriculum. Materials are integrated into the curriculum as required.

1. Confidentiality: Issues: privacy, legal, central data repositories, reporting requirements, etc.


3. Enrollment: Related to the ID card. Starting the EDI process. Employers to payors.


6. Clearinghouses/Networks: What will their role be in the industry vs. Value Added Networks.


8. Coordination of Benefits: All payors on EDI standards, responsibilities, standards development.


10. WEDI Activities and Demonstration Projects: Continually update the success stories. Examples of cost justification.

11. HL7 and Other Standards: How does HL7 relate to EDI standards. Identify other standards.

Addendum 5: Copy for WEDI Pamphlets

The following pages contain sample text that could be included in two pamphlets: Workgroup for Electronic Data Interchange and WEDI - What Does It Take To Get Started?

The material is formatted as a three-fold, double-sided pamphlet.
Workgroup for Electronic Data Interchange

What Is WEDI?

WEDI, the Workgroup for Electronic Data Interchange, is an industry-led task force created to streamline health care administration through standardized electronic communications.

WEDI's Stated Goal

The stated goal of WEDI is to develop a strategy for the implementation of an electronic data interchange (EDI) environment by 1994.

How Was WEDI Formed?

In November 1991, Secretary of Health and Human Services, Dr. Louis Sullivan, convened a forum of national health care leaders to discuss the challenges of reducing administrative costs in the U.S. health care system. At the forum, WEDI was one of three task forces formed.

1993 WEDI Technical Advisory Group (TAG)

The TAG is the foundation for WEDI's activities. The TAG is open to all interested individuals, and will meet collectively three times in 1993, with independent subcommittee work throughout the year. The following are the subcommittees formally organized for the 1993 year.

- Standards Implementation and Uniform Data Content
- Network Architecture and Accreditation
- Confidentiality and Legal Issues
- Unique Identifiers for the Health Care Industry
- Education and Publicity
- Health Identification Cards
- Short-Term Strategies
- State/Federal Role
- Financial Implications
- Coordination of Benefits
- Health Care Fraud Prevention and Detection

Need A WEDI Report?

Call Karen Sallander at Blue Cross and Blue Shield Association (312) 440-5800 to request your copy. Help us spread the word.

What Is EDI?

The application-to-application exchange of business information, and the automated processing of transactions in a standardized format using the ASC X12 standards.

What Is The Purpose Of EDI?

To simplify and improve the quality of claims submission to
payors, reduce costs, and enhance the exchange of information throughout the health care system.

What Are the Benefits of EDI?

- Elimination of re-entry of data from a printed patient bill by an operator, resulting in reduced errors in claims data.
- Faster submission of claims produces quicker payments to providers, reducing days in accounts receivable.
- Elimination of paperwork through the exchange of health care business and administrative information via computers.
- Reduction in the amount of time personnel spend in routine, manual tasks, increasing staff productivity.
- Cost savings from $.50 - $1.25 per claim can be realized.

Need Further Information?

Contact the Workgroup on Electronic Data Interchange (WEDI)
(312) 440-5800

WEDI - What Does It Take To Get Started?

What Is EDI?

The most widely accepted definition of Electronic Data Interchange (EDI) is the application-to-application electronic transmission of a business document in a standard format. EDI is a method of transacting business that can bring efficiency, cost savings, and significant processing improvements to your organization.

What Are The Benefits Of EDI?

Health care facilities have established EDI relationships for the following reasons:

- Reduce the high administrative costs of procurement and payment of health care services.
- Increase the efficiency of a repetitive business process.
- Reduce errors associated with rekeying a high volume of transactions.
- Facilitate "Just-in-Time" inventory management.
- Be assured of full-cycle data integrity from requisitioning of medical supplies to payment, or through the entire claims processing and reimbursement process.

What Is Needed To Do EDI?
Allocate human resources:

- Identify an EDI champion with influence over budget, personnel, business policies, goals, and objectives.
- Deploy technical support for your computer system.
- Assign representatives from functional business groups.

Define your business strategy:

- Evaluate the paper flow of current business processes.
- Focus on potential documents for EDI automation.
- Plan for application software modifications.
- Prioritize and establish implementation time frames.
- Identify external trading partners.

EDI Components

- Hardware - a mainframe, mid-range, or a PC computer can all serve as a possible EDI platform.
- Application Software - the programs that allow you to process data sent to and from your trading partners, for example, requisitioning, purchasing, payables, and claims processing systems.
- Translation Software - also known as EDI software, interfaces with the application programs to translate data to and from ASC X12 format.
- Communications Network - the physical connection that allows computers to "talk" to each other. Typically, a Value Added Network (VAN) helps manage the computer

How Do You Implement An EDI Trading Partnership?

Four general steps must be completed before an electronic trading partnership can be implemented.

1. Fact Finding
   A member of your trading partner implementation team will work with your potential trading partners to determine EDI capability. During this step, you will review the services currently provided to your organization by your trading partner, exchange and compare documentation covering the ASC X12 transactions to be exchanged, and execute a Trading Partner EDI Agreement, if necessary.

2. Data Preparation
   Based on the results of fact finding, you will mutually agree on any necessary document changes to ensure that all required business information can be exchanged
3. Testing
   Typically, a communications link is established through a VAN. Depending on the document being tested, either your trading partner or your company will send a test transmission. Upon receipt of the test transmission, the receiving company will process the data through their EDI translator and application software, reviewing for possible discrepancies.

4. Implementation
   As soon as both companies agree that the business functions are working properly, via EDI, the trading partnership can be fully implemented, and the paper flow turned off.
EXECUTIVE SUMMARY

Today, many health care service delivery organizations issue health identification cards that vary significantly in data content, media, technology, and format. This creates confusion and hinders more widespread use of existing EDI capabilities within the health care industry.

The 1992 WEDI Report suggested that a task force be established to study the use of health identification cards within the health care industry. The task force was asked to determine options for using health identification cards and, if appropriate, to recommend an implementation process. For purposes of the 1993 WEDI Report, the phrase health identification card will be used.
This concept was referred to as the electronic health insurance card in the 1992 report.

The task force recognized an overall operating assumption in order to structure the study: an EDI communications infrastructure network containing clinical and administrative data will be developed as the foundation for health care information; the card will contain only identification data.

In the short-term, a health identification card will serve as an identification vehicle to access the network. Identification may be of an individual, a family, or a specific member of a family. Long-term identification may be only of individuals, if there is a national directory of individuals, and a card may not be required to access the network.

The health care, telecommunications, and computer industries are in a state of change. Recommendations for health identification cards must remain flexible to take advantage of future technological advances that might not be currently available in each of those industries. This workgroup was not able to arrive at specific cost savings associated with utilizing a health identification card.

Four groups within the health care delivery system are affected by the use of health identification cards: patients, providers, employers, and payors. This study analyzed the advantages and disadvantages for each of the four groups.

Recommendations

- Development of ASC X12 (an accredited ANSI Committee) standards for data content (in accordance with recommendations contained herein) and the format for a health identification card by the end of 1993.
- Issuance of health identification cards is recommended. If cards are issued, they must conform to approved ASC X12 standards as of January 1, 1995.
- Health identification cards may be machine-readable or human-readable; however, both types must conform to ASC X12 standards. For machine-readable cards, the recommended primary technology is ISO Standard Magnetic Stripe.
- Development of a directory within the health care network so that card identification data can be routed to correct destinations when accessing information.

INTRODUCTION

Mission

To develop and deliver recommendations to the WEDI Steering Committee regarding the desirability, objectives, requirements, technology, format, content, implementation, benefits, and costs
of a standardized health identification card.

Operating Assumptions

The operating assumption was that the WEDI communications infrastructure vision, as defined in Section "IV, WEDI Health Care Trends and Technologies" in the 1992 WEDI Report (refer to Addendum 8), will be developed and become the foundation for the health care information. The short-term operating assumption is that the health identification card should be viewed only as an identification vehicle to serve as access to the network. The long-term operating assumption is that a health identification card may not be necessary to access the network when other identification technologies (e.g., biometrics) become cost-justifiable.

Subcommittees

The Health Identification Card TAG divided into five subcommittees: Data Content, Directory Services, Technology, Costs/Benefits, and Implementation. The analysis and subsequent recommendations centered around the core segments:

- Employer
- Patient/Employee
- Provider
- Payor

RECOMMENDATIONS FROM THE 1992 WEDI REPORT

A WEDI task force should be established to develop recommendations regarding the use of electronic card technology by 2nd Qtr 93. The objectives of the task force are to:

- Determine the options for using electronic health insurance cards within the health care environment, and the types of electronic card alternatives, such as magnetic stripe cards and smart cards.
- Recommend an implementation process to ensure that standard and current information can be accessed.

ANALYSIS

Because the health care industry is in a state of change, it is imperative that flexible recommendations are developed. The recommendations from this TAG are based on today's operating environment, combined with the overall vision and goals of WEDI. It is the consensus of this group that the recommendations will work for the foreseeable future. However, if the demands of the marketplace and operating environment change, the systems in place must be flexible and easily adaptable.
The core segments have been identified as being impacted by the issue of using a health identification card. These segments are employer, patient/employee, provider, and payor.

To evaluate issues that exist among the core segments, a number of different alternatives has been analyzed by each of the five workgroups (Data Content, Directory Services, Technology, Cost/Benefit, and Implementation). In addition, the development and implementation of standards for a health identification card are impacted by the decisions and recommendations proposed by several other WEDI TAGs (e.g., Unique Identifiers for the Health Care Industry, Coordination of Benefits, and Network Architecture and Accreditation). All recommendations proposed by this TAG must be closely coordinated with the appropriate TAGs within WEDI.

Core Segments

Among the core segments, there are many issues and concerns that are common across all groups. Secondly, there are issues unique to each group. The areas of common concern in today's operating environment are: maintaining accurate information; the lack of a uniform identifier; the use of non-standard information and terminology on health identification cards; the health identification card frequently is not carried by the patient/employee; health identification cards are often lost, misplaced or mistakenly discarded; inconsistent data fields and formats; the cost of manually processing EDI claims when incorrect information is provided; health identification cards are often photocopied for the purpose of submitting claims at some point in the future (which leads to fraud) and; there is an overwhelming need to educate and inform the total population as to the provisions of their benefit plan and utilization management program.

In addition to the common areas of need and concern, each core segment also has its own unique perspective as to how they will be impacted by the issuance of a health identification card. From the employer's perspective, the health identification card may provide perceived marketing benefits between themselves and their employee base. There are also costs associated with reissuing the health identification card as benefit plans change. For the patient/employee, the issues include: an unclear understanding of the purpose of the health identification card; a perception that a health identification card implies guaranteed coverage; confusion resulting from multiple health identification cards being issued for different plans; covered dependents often are not issued their own health identification card nor identified on the employee's health identification card. The provider segment also has issues that pertain to the ability of positively identifying the patient, as well as accessing administrative information easily, quickly, and inexpensively. In addition to the common issues, the payor group is also concerned with the following issues: the cost of producing, distributing, and replacing health identification cards when benefit plan information changes; the cost of maintaining the directory service data base; and the ability to communicate other
The Data Content Subcommittee was faced with the challenges of identifying the key data fields necessary for a health identification card, and those that can be machine-readable versus human-readable. One of the common issues of concern among all core segments is the lack of standardized data fields and definitions. To correct this problem, the Subcommittee has identified and defined a number of mandatory and optional data fields that should be present on a health identification card. Included in the Addenda is a matrix outlining the various data fields, and whether or not they should be machine-readable.

The Directory Service Subcommittee assumed the challenge of analyzing the process to route a health care transaction if the electronic address is unknown. Directory services are a feature of the evolving health care information networks that will help the submitter of electronic health care transactions to route the data to the proper end point. Several assumptions were made to develop the final recommendations: clinical data repositories, if implemented, will have one repository maintaining the information for one patient, thereby facilitating the community-based analysis process and the computerized medical records data base; administrative repositories will continue to be separately maintained, and will probably have multiple repositories per patient; industry evolution will enable patients to carry fewer health identification cards to obtain service and; the use of biometrics is not sufficiently mature to be adopted at this time.

The Technology Subcommittee analyzed the various card technologies available today, those that are in development, and those expected to be available in the near future.

The following are the technologies that were eliminated from consideration as the primary machine-readable (defined as plastic card with magnetic stripe, however, other technologies will not be negated as they become more feasible) technology for health identification cards, and the reasons why they were not selected:

- Embossing: Lettering raised from a surface, as on a credit card, to aid in identification and the transfer of information from the card. Embossing was not selected because it does not lend itself to a cost-effective machine readability.
- OCR: The printing of information in a stylized font that can be read by optical readers, according to standards organization definitions. OCR technology was not selected because of its insufficient data capacity and low industry
penetration.

- **Bar Code**: A read-only technology using a series of vertical bars (lines) of different density and spacing conforming with ASC X12 standards. Bar Code technology was not selected because of its insufficient data capacity.

- **Smart Card**: A card containing a microprocessor chip with sufficient memory to store and process information in conformance with ISO standards. This technology was not selected because of the associated costs, technology, and low market penetration.

- **Laser/Optical Card**: High capacity optical memory data utilizing a laser to create (write) and retrieve (read) stored information in a card form in conformance with ISO standards. Laser/Optical Card technology was not selected because of cost, technology immaturity, and low market penetration.

- **Biometrics**: The use of biological-related methods for the identification of specific individuals was not selected because of the amount of required data and technology immaturity.

The following two technologies were reviewed in great detail by the Health Identification Cards TAG, leading up to a final decision and recommendation. In our analysis of Magnetic Stripe vs. Two Dimensional Symbiology and other graphic symbiology technologies, both the advantages and disadvantages of each respective technology were carefully scrutinized.

The advantages of the two technologies are as follows:

**Magnetic Stripe**: Proven; reliable; widely used and deployed in the existing financial market; the same technology can be used in admissions and payments to access health care and payment information; widespread infrastructure for support and deployment; moderate cost; well documented and proven standard in multiple industries; updatable and sufficient data capacity to meet minimum anticipated requirements.

**Two Dimensional Symbiology**: Not reliant on specific media; high reliability; high data capacity; relatively low production cost, depending upon medium; easily copied for use when card is not available; requires less surface area; can incorporate security features that cannot be copied; can develop industry specific algorithms.

The disadvantages for the respective technologies are as follows:

**Magnetic Stripe**: Requires plastic card that will affect production costs; limited growth potential to accommodate more than 113 characters and requires more surface area.

**Two Dimensional Symbiology**: New technology; unproven or non-existent standards; effort and timeliness associated
with implementation. Issues needing further analysis: costs; reproducibility; reliability; infrastructure; proprietary vs. public domain technology.

A key factor in the analytical process was to support the technology that is already in place today (i.e., the pharmacy market). A card technology matrix is included in the Addenda. This matrix details the various criteria used in selecting the technology that is being recommended by this TAG.

Cost/Benefit Subcommittee

This Cost/Benefit Subcommittee analyzed the costs and benefits associated with a uniform-machine and human-readable health identification card. A qualitative cost/benefit analysis was completed for the core segments: provider, payors, employers, and employee/patient. The cost components included operating expenses, software expenses, and hardware expenses. A cost/benefit matrix and a survey used to validate cost/benefit assumptions is included in the Addenda.

Since the purpose of the health identification card is to serve as an identifier and to facilitate access to the envisioned health care network, it is impossible to attribute savings specifically to the existence of a health identification card. However, a health identification card will promote increased utilization of EDI by clearly identifying all information necessary to initiate EDI transactions. The existence of a health identification card will significantly reduce the cost associated with error handling (for all core segments) by standardizing data content and format. The use of a machine-readable card could further facilitate EDI when the infrastructure for the Health Information Network is in place.

There may be significant cost implications associated with modifying systems and administrative procedures to produce and use a standard health identification card. However, it is an investment necessary to reach the ultimate paperless environment.

Implementation Subcommittee

The Implementation Subcommittee recognized that implementation of a health identification card would have a significant impact on each of the core segments. Therefore, a separate subcommittee was formed to analyze the process that should be followed when implementing a health identification card. Several assumptions were made when developing the recommendations:

They are: ASC X12 health identification card standards will be finalized in 1993; an electronic network will be available; devices to accept electronic health identification cards will be cost effective; unique identifiers for providers, payors, employers and patients/employees will be in place by year-end 1995; all existing health identification cards should be replaced with the standardized health identification card; and compliance with EDI will be voluntary.
Since implementation of a health identification card is assumed to be voluntary, each core segment will be progressing through these steps generally independently from the other segment's progress toward implementation. However, there are certain deliverables that will require close coordination between all core market segments.

RECOMMENDATIONS FOR THE 1993 WEDI REPORT

1. Recommendation: Increase industry support to develop ASC X12 standards for data content and format for a health identification card by the end of 1993. The mandatory human-readable fields should include: individual or subscriber name; individual or subscriber number; payor/issuer name/logo; payor/issuer number; plan/contract number; WEDI logo; claim submission address; and coverage/eligibility phone number. Space should be reserved for an optional clinical processor ID.

Discussion: In today's environment, payors issue health identification cards, which vary significantly in both data content and format. This creates confusion and serves as an obstacle when using existing EDI capabilities in the health care industry. The adoption of standards should promote increased utilization of electronic claim submissions and improve accuracy of those transactions already being submitted.

2. Recommendation: Beginning January 1, 1995, all issuers of health identification cards should produce a standard card that conforms to approved ASC X12 standards for data content and format.

Discussion: The issuance of health identification cards is recommended, but remains optional. However, if a health identification card is produced, it should conform to approved ASC X12 standards. It is our belief that the pressure of the marketplace will be sufficient to cause compliance.

3. Recommendation: ISO Standard Magnetic Stripe was selected as the primary technology for storing machine-readable information on the card. The use of machine-readable technology for health identification cards is optional. If used, the mandatory machine-readable data fields should include: individual or subscriber number; payor/issuer number; and plan/contract number. Space should be reserved for an optional clinical processor ID.

Discussion: The Technical Advisory Group recognizes the need to consider future capabilities that are not required at this time. Upward and downward compatibility will provide the optimal expansion of data and technology to meet basic requirements, while providing for global consistency with more technologies. The choice of this technology is consistent with one of WEDI's major assumptions that the
intelligence necessary to facilitate the exchange of administrative health care transactions be built into Health Care Information Networks, rather than the health identification card. If a card issuer produces a WEDI-compliant machine-readable health identification card, the minimum standards for data content and format must also be human-readable.

4. Recommendation: Development of a directory service function, as part of the evolving health care information process, will assist the submitter of electronic health identification card transactions route the data to the proper destination.

Discussion: It is believed that the directory service function will be built into the Health Care Information Network in several phases. The intelligence necessary to route information will be maintained at the network level, rather than at the health identification card level. This is consistent with WEDI's vision of the Health Care Information Network.

NEXT STEPS

As a result of preparing this recommendation, several additional steps require further analysis:

- Analyze the fraud potential associated with the magnetic card technology solution and the available industry capabilities of controlling the problem.

- Establish a group that will facilitate the implementation of technology and the coordination with all other applicable WEDI TAGs, standards groups, industry associations, etc.

- To facilitate standardization, it is recommended that the WEDI Steering Committee identifies a certification board that will certify issuance of cards.

- If WEDI continues, an assessment of all technology recommendations and alternatives will be evaluated on a yearly basis.

- Two unique WEDI logos will be established indicating compliance with established standards for machine-readable and human-readable cards.

TECHNICAL ADVISORY GROUP

Many groups and professional associations have participated in the efforts of this Technical Advisory Group. Participation in the Health Identification Cards Technical Advisory Group does not imply formal endorsement of the final recommendations on the part of the participants or their respective organizations.

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Peter T. Barry Company

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Medical Records Institute
## ADDENDUM

### Addendum 1: Core Segment Matrix

<table>
<thead>
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<th>Identified Concerns</th>
<th>Employer</th>
<th>Patient/Employee</th>
<th>Provider</th>
<th>Payor</th>
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<td>Lack of Uniform Identifier</td>
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</tr>
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<td>Card is Not Carried</td>
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<td>Marketing Value</td>
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<td>Purpose of Card is Not Well Understood</td>
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<td>Photocopies of Cards Can Result in Fraud</td>
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<td>Need to Positively Identify the Patient</td>
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<tr>
<td>Need to Access Administrative Information Easily, Quickly, and Inexpensively</td>
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<td>Cost of Producing, Distributing,</td>
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and Replacing Cards

\[ \text{X} = \text{area of concern} \]

Addendum 2: Data Content Matrix

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<th>Data Field</th>
<th>Mandatory or Optional</th>
<th>Human-Readable or Optional</th>
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<td>H</td>
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<td>Coverage Type (5)</td>
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<td>Co-Pay Information (6)</td>
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</tr>
<tr>
<td>Other Phone Numbers (7)</td>
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</table>

(1) Unique Identifiers For the Health Care Industry TAG to determine

(2) Directory Services/Repository Committee to determine how routing data would relate to field content

(3) Same as Group or Policy Number

(4) Indicates card conforms to WEDI machine and human-readable standards

(5) Freeform text field used by payor to identify/describe plan coverage (such as, Medical, Dental, Managed Care - HMO; PPO; UR)

(6) Freeform text field to describe plan benefits (co-pays, deductibles, max, benefits)

(7) May include phone numbers for customer service, UR, benefit determination, etc.

(8) Recommended to facilitate easier and acceptable transition; not needed for long-term strategy

Addendum 3: Card Technology Matrix

<table>
<thead>
<tr>
<th>Item</th>
<th>Embossing</th>
<th>OCR Bar</th>
<th>Mag</th>
<th>Graphics</th>
<th>Smart</th>
<th>2</th>
<th>Laser</th>
<th>Code Stripe</th>
<th>Printing</th>
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<tr>
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<td><strong>Reader Technology</strong></td>
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</table>
Paper
  N  Y  Y  Y  Y  Y  N  Y  N
Plastic
    Y  Y  Y  Y  Y  Y  Y  Y

Industry Penetration
Institutions
  H  L  M  M  L  L  L  L
Physicians
    M  L  L  M  L  L  L  L
Pharmacy
  H  L  M  H  L  L  L  L
Other (such as labs)
    H  M  M  H  L  L  L  L

Assuming that imprinter is not considered to be a machine reader.
H = High; M = Medium; L = Low; Y = Yes; N = No

Addendum 4: Biometrics Technology Matrix

<table>
<thead>
<tr>
<th>Item</th>
<th>Signature</th>
<th>Finger/Thumb/ Palm Print</th>
<th>Voice Scan</th>
<th>Retinal DNA</th>
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<td>Cost</td>
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<tr>
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<td>L</td>
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<td>Applicability</td>
<td>Children</td>
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<td>Pharmacy</td>
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<tr>
<td>Other</td>
<td>(such as labs)</td>
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Addendum 5: Cost/Benefits Matrix

**OPERATING COSTS**

<table>
<thead>
<tr>
<th>Type of of Cost</th>
<th>Human-Readable</th>
<th>Machine-Readable</th>
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</thead>
<tbody>
<tr>
<td>Payor</td>
<td>One-time replacement</td>
<td>One-time replacement</td>
</tr>
<tr>
<td>Minimum/no increase to production cost/supplies</td>
<td>Increased production cost: Supplies</td>
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</tr>
<tr>
<td>Cost to acquire additional information (social security number, etc.)</td>
<td>Security cost for stock</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cost of technology</td>
<td>Shipping cost</td>
</tr>
<tr>
<td></td>
<td>2nd mailings - security.</td>
<td>Possible increased replacement cost due to readability</td>
</tr>
<tr>
<td></td>
<td>Some cost to acquire information</td>
<td></td>
</tr>
<tr>
<td>Provider</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Employer</td>
<td>Gathering new information</td>
<td>None</td>
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<td>Subscriber</td>
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**SOFTWARE COSTS**

<table>
<thead>
<tr>
<th>Type of of Cost</th>
<th>Human-Readable</th>
<th>Machine-Readable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payor</td>
<td>ID card production system modifications</td>
<td>More extensive changes to ID production systems to create machine-readable cards</td>
</tr>
<tr>
<td></td>
<td>Systems modifications to change identifiers; such as,, using social security number as key</td>
<td>Possible interface to outside vendors</td>
</tr>
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</table>
Build translation system

<table>
<thead>
<tr>
<th>Role</th>
<th>Provider Action</th>
<th>Additional Description</th>
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<tbody>
<tr>
<td>Provider</td>
<td>Modify existing practice management system</td>
<td>Additional modifications to accept machine-readable input device to practice management systems</td>
</tr>
<tr>
<td></td>
<td>Translator (patient acct. number) to subscriber ID</td>
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</tr>
<tr>
<td>Employer</td>
<td>Modify enrollment process/systems to get additional information</td>
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<td>Subscriber</td>
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### HARDWARE COSTS

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<th>Subscriber</th>
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<tbody>
<tr>
<td>Human-Readable</td>
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<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Machine-Readable</td>
<td>Equipment to produce card</td>
<td>Card Reader: Cardswipe; Bar code, Pen, etc.</td>
<td>None</td>
<td>None</td>
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</table>

### BENEFITS

<table>
<thead>
<tr>
<th>Type of Cost</th>
<th>Payor</th>
<th>Provider</th>
<th>Employer</th>
<th>Subscriber</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human-Readable</td>
<td>Reduction of error handling due to better accuracy: Paper submitted Electronically submitted</td>
<td>Eliminate error handling on electronically submitted claims</td>
<td>Increased use of EDI claim submission</td>
<td>Reduced number of phone calls</td>
</tr>
<tr>
<td>Machine-Readable</td>
<td>Same as above</td>
<td>Possible reduction in billing cost because of quicker payments</td>
<td>Same as above</td>
<td>None</td>
</tr>
</tbody>
</table>

None
Uniform Health ID Card Survey

The WEDI Electronic Card Technical Advisory Group has identified possible tangible and intangible benefits and the costs of producing and using standard ID cards with uniform data. As an involved member of the health care reform efforts, we are very interested in your opinion regarding a uniform health ID card. In this regard, the following survey is divided into three sections: Section I - Benefits; Section II - Costs; Section III - Statistical Data. Please read the following information carefully and complete the question and answer portion of each section. Return in the enclosed envelope by Wednesday, April 7, to Joseph S. Smith, Arkansas Blue Cross and Blue Shield, P.O. Box 1489, Little Rock, Arkansas 72203-1489.

Section I - Benefits

A. Provider

Tangible Benefits:

- By ending confusion with regard to identifying necessary information to generate EDI transaction, the providers will increase reliance on EDI rather than paper.
- Faster payment from payors and improved cash flow by reducing error handling and manual processing.
- The standard presentation of managed care requirements will reduce penalties for not complying with carrier agreements.

Intangible Benefits:

- Ability for provider to make photocopy of ID card for files.
- Less frustrations by dealing with ID cards of all different formats.
- Reduction of need to contact employer for information.
- Higher comfort level that patient is covered.
- Access to information about 800 numbers/claim address.

Questions and Answers:

1. Do you agree that the conceptual provider benefits stated above would be a direct result of using a uniform identification card?
   Yes No (If no, line through the item(s) you do not agree with.)

2. Do you have any provider benefits to add to the above list?
   Yes No If yes, please specify:

B. Payor

Tangible Benefits:

- Reduction of manual processing because of increased
submission of claims electronically.

- Improved quality of electronic claim submission. This will reduce manual effort required to identify proper policy number on electronic claims.
- Reduction of cost in handling COB processing by identifying the primary payor.
- Standardization could reduce requests for customized ID cards.
- Standard format will reduce administrative costs in printing and maintenance of multiple formats.

Intangible Benefits:

- Fewer calls received concerning confusion about managed care requirements.
- Network provider satisfaction.

Questions and Answers:

1. Do you agree that the conceptual payor benefits stated above would be a direct result of using a uniform identification card?
   Yes  No (If no, line through the item(s) you do not agree with.)

2. Do you have any payor benefits to add to the above list?
   Yes  No   If yes, please specify:

Section I - Benefits                              C. Employer

Tangible Benefits:

- Reduction in cost of employee training when employer changes carriers.
- Reduction of administration costs results in lower premiums.

Intangible Benefits:

- Reduction of inquiries to employer by providers and employees.
- Opportunity to give employee some evidence of health care coverage. This gives employer an opportunity to remind employee of the value of benefits provided.

Questions and Answers:

1. Do you agree that the conceptual employer benefits stated above would be a direct result of using a uniform identification card?
   Yes  No (If no, line through the item(s) you do not agree with.)
Questions and Answers:

2. Do you have any employer benefits to add to the above list?  
   Yes  No   If yes, please specify:

Section I - Benefits                              D. Employee

Tangible Benefits:

  o If provider is more confident that coverage exists, employee 
    will not be asked for a big down payment.

  o The standard presentation of managed care requirements will 
    reduce risk of being penalized for not complying with 
    pre-certification requirements.

Intangible Benefits:

  o Less hassle for patient and provider.

  o Less confusion on part of employees.

  o Physical evidence of the value of employee benefits 
    regarding health insurance.

  o Easy access to customer service telephone number.

Questions and Answers:

1. Do you agree that the conceptual employee benefits stated 
   above would be a direct result of using a uniform 
   identification card?  Yes  No  (If no, line through 
   the item(s) you do not agree with.)

2. Do you have any employee benefits to add to the above list?  
   Yes  No   If yes, please specify:

Section II - Costs                                A. Provider

  o No additional costs were identified for utilizing standard 
    paper ID card.

  o If machine readable card becomes standard, cost of device 
    necessary to read card.

Questions and Answers:

1. Do you agree that the conceptual incremental provider costs 
   stated above would be a direct result of using a uniform 
   identification card?  
   Yes  No (If no, line through the item(s) you do not agree 
   with.)

2. Do you have any provider costs to add to the above list?  
   Yes  No   If yes, please specify:

Section II - Costs                                  B. Payor
Companies That Already Produce Cards:
- Cost to design card
- Cost to reissue new cards
- Computer system changes

Companies That Don't Currently Produce Cards:
- Cost of process to design cards
- Cost of production and distribution
- Cost of supplies
- Computer system changes

(Note: In either case, machine readable cards may lead payor to higher System and supply cost to all payors.)

Questions and Answers:

1. Do you agree that the conceptual incremental payor costs stated above would be a direct result of using a uniform identification card?
   Yes  No   (If no, line through the item(s) you do not agree with.)

2. Do you have any payor costs to add to the above list?
   Yes  No   If yes, please specify:

Section II - Costs
C. Employee
- Additional payor administration cost might be passed on to employer. For those who do not presently use ID cards, this cost may be higher than those using ID cards.
- Administration cost of distributing cards to employees; be it first time issue or reissue.

Questions and Answers:

1. Do you agree that the conceptual incremental employee costs stated above would be a direct result of using a uniform identification card?
   Yes  No   If no, line through the item(s) you do not agree with.

2. Do you have any employer costs to add to the above list?
   Yes  No   If yes, please specify:

Section II - Costs
D. Employee
(No recognized direct costs)
Questions and Answers:

1. Do you have any employee costs to add?  
   Yes  No  If yes, please specify:

Questions and Answers:

1. Approximately how many employees does your company have?

2. Your company's current involvement in the health care delivery system is (check one):
   Provider--Professional or Institutional  
   Insurance--Underwriter or Administrator  
   Vendor--Supplier of Products or Services  
   Association--Trade or Professional  
   Financial Institution  
   TPA  
   HMO  
   Other (Please specify):

Questions and Answers:

3. Can we contact you or a designee for follow-up research?  
   Yes  No

   Name of Designee:  
   Phone Number:

   Note: All replies will be aggregated and reported to the committee in summary fashion.

Please return in the enclosed envelope by Wednesday, April 7, to:

Joseph S. Smith  
Arkansas Blue Cross and Blue Shield  
P.O. Box 1489  
Little Rock, AR 72203-1489

Addendum 7: Implementation Matrix

Timeframe*  Providers  Payor  Employer  Patient  Government

A. Start-up Phase
Create card design graphics, incorporating ASC X12 data standards
S

Acquire any missing information to comply with uniform data requirements
M  X  X  X  X

Create data file to prepare ID cards
Produce ID card either internally or via a vendor
Create ID card carrier design graphics, incorporating some educational information
Create packaging of ID card and carriers for distribution
Distribute ID card packaging via mail or employers
Establish or modify existing computer systems data base to accommodate ASC X12 data elements requirements and interface into external EDI networks
- Short-term may be in form of cross-reference conversion interface with external EDI connections
- Long-term may be cost effective to convert to uniform identifier driven systems throughout
Forms redesign to carry uniform identifier (EOBs, billing invoices, claims, application cards, payroll records, etc.)
Practice management and medical data storage/retrieval files redesigned from patient acct #
- Short-term: may add cross reference
- Long-term: may convert entirely to uniform identifier
Acquisition and deployment or adjustment of existing devices, with connection to EDI network
Develop educational guides regarding the value of the electronic health card,, its purpose,, how to use, and what to expect
Establish conversion strategy for parallel systems operation by providers and payors.
- On or before cut off date for payors to issue uniform cards
- Provider to build as they go under the new uniform data requirements
- History retrieval cross-reference (suggest 2 year limit)
B. Ongoing Operations
Establish process and procedure to maintain currency of membership and effective dates
Develop capacity of provider to input employee/patient initiated
updates (e.g., membership address,, COB)
M  X  X  X  X  X

Educate employers to retract ID card at termination and update payor quickly
M  X  X

Develop/update ID card inventory supplies and EOQ
S  X

Establish device maintenance capacity
S  X  X  X  X

Education and training on the use of the ID card, devices and protocols for interaction with all transactions initiated with the ID card (e.g., eligibility,, managed care,, claim submission)
M  X  X  X  X  X

Education employee/patient and the value of carrying ID card
M  X  X  X  X

Establish an EDI health care industry monitoring capability to identify/track EDI upgrade capabilities which are available or required over time. For example:
- Additional routing requirements of service, categories, transactions, or type to administrative or clinical processors
- COB secondary or tertiary
M  X  X  X

Develop and implement capability upgrades, as deemed appropriate by your organization
Ranges  X  X  X
S to E

* (S)  Short-term:  less than three calendar months
(M)  Moderate-term:  between three and six calendar months
(E)  Extensive-term:  greater than six calendar months

1992 WEDI Health Care Trends and Technologies

The vision for information exchange is represented by the diagram below. It indicates patterns of flow between information trading partners within a communication system that enables any player in the health care delivery system to exchange information with any other player electronically.

Information exchanges between trading partners are rigorously defined. At the center of the hub are multiple interactive Value Added Networks (VANS), which allow communications between partners for defined transactions.

System Components

An electronic communications network is comprised of several operational components:

- Point of Service Access: The party who wishes to send an inquiry or transaction needs a device that can send the data
and/or receive a response. The hardware in the provider's office may vary in sophistication from mainframe computer, to mid-range computer, to personal computer, to computerized-telephone, to a simple cardswipe box. Software applications utilized on multi-purpose machines can be stand-alone or integrated with other applications.

- **Value Added Network**: Typically, both network and switch functions are offered. For the data to be transmitted, a vehicle, or vehicles, for carrying the data from the point of service to the point of receipt must be established. Communication between networks may be necessary to connect the full range of trading partners. Switches perform the function of routing information from one network to another, or connecting different network regions for information transfer. Switches may perform other functions, such as validating a translation of data.

- **Applications**: At the destination, the ability to receive and act on the transmitted data is required. An electronic gateway receives the data and may submit the data to various processes, such as security, checking data integrity and systems availability, translation and reformatting, and transaction routing. The application platform houses the applications and data necessary to respond to requests received over the network.

**Implications of Health Care EDI Vision**

The open system of the future allows communication between or among any and all entities in the system. This vision suggests a number of imperatives:

- **The high transaction volume and quick response time inherent in this vision require high capacity, reliable, and secure electronic network and switching capabilities.**

- **The existence of many local and several national networks, both proprietary and open, suggests that any-to-any communication will not occur through a single, newly developed "all-player" network, but through linkages among existing and new networks developed by subsets of the health care industry to serve specific communication needs. Effective all-player connectivity will require these linkages to occur in a manner transparent and cost-effective to the users of the networks.**

- **National standards for health care transactions enabling standard communications between trading partners, independent of their choice of hardware, software, and network vendors, are imperative to allow the electronic communication system to evolve, regardless of the maturity of the vendor marketplace or the number of electronic networks used.**

- **Economic interest will motivate expansion of the network to additional entities as the density of communication grows. Motivation will include both cost savings and competitive**
opportunity. Expansion can occur by adding trading partners
to existing networks or by establishing connections between
networks that have developed separately to meet specific
needs. Both expansion scenarios are likely to occur as local
and national networks evolve.

Full electronic integration will not occur without some
interventionist strategy because economic benefits achieved at a
local provider level do not offset the costs of automation in
smaller practices. Despite the trends towards group practices
and automation, many doctors remain in individual practices that
are largely un-automated. Typically, claims are submitted as
hard copy and are not available in electronic format. It follows
that the staff often lacks the computer/systems skills needed for
office automation. Given this lack of automation and the small
volumes of transactions involved, this segment of the marketplace
has minimal attraction to commercial automation vendors. Initial
automation efforts must focus on low costs and ease of use.

Applications such as eligibility verification, authorization,
and medical review will continue to be dependent on telephone
calls. To move these applications into the EDI arena will
necessitate solutions to be as low in cost and as easy to use
as credit card authorization.

Inventory of Technologies and Applications

The matrix below presents a list of applications used to
support information required in the delivery of health care. For
each application, the technologies that could satisfy the
requirements of a specific application are also identified.

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EXECUTIVE SUMMARY

The mission of the Short-Term Strategies Technical Advisory Group (TAG) is to stimulate the use of EDI in the health care industry. This mission has changed slightly from the 1992 report to reflect an increased interest in EDI as one component in a comprehensive health care data system to support the administration and quality of health care.

In 1992, three WEDI demonstration projects were conducted to promote cooperative industry efforts and accelerate the use of EDI in the near-term. These demonstration projects were identified to highlight the extent to which electronic systems and networks have already developed to automate health care transactions and to show how these systems and networks could be leveraged quickly to extend the use of EDI across a number of participants in the health care system.

The 1992 demonstration projects were:

- AT&T, which used the ANSI 834 Enrollment standard for exchanging eligibility with their carriers; The Travelers, Empire Blue Cross and Blue Shield, and Prudential.

- Virginia, which sought to demonstrate that a broad-based, sophisticated infrastructure could be used quickly to add eight new types of insurance transactions.

- Twin Cities, which set a goal to combine two distinct EDI
solutions and increase the number of participating providers and claims in the 11-county area surrounding Minneapolis and St. Paul.

These demonstrations were also used to collect data to support cost/benefit estimates for health care EDI. Tiber Group, a health care consulting firm based in Chicago, Illinois, was selected to collect the data to predict EDI cost/savings nationwide. While this study was limited due to the low sample size and data availability, all participants were observed to experience savings when migrating from manual transactions to EDI. Tiber Group results are included in Addendum 1 of this report.

The Short-Term Strategies would like to thank the following organizations for their contribution to funding the 1992 cost/benefit study:

- Aetna Life Insurance Company
- Blue Cross of California
- Blue Cross and Blue Shield Association
- Blue Cross and Blue Shield of Virginia
- Health Insurance Association of America
- Mutual of Omaha
- National Association for Home Care
- Praxis
- United Health Care

The success of the 1992 demonstrations provided a basis for selection of six demonstration projects for 1993 to date. The application process will be open throughout the year. The project evaluation criteria are:

Ecumenical: Involve as many constituencies as possible.

Close to the Public: Demonstrate a value to consumers, employers, providers and payors.

Industry Cooperation: Exhibit voluntary industry partnership.

Leveraging of Existing Infrastructures: Build upon an existing solution.

Add Something New: Show obvious expansion of EDI through new or increased transaction volume, new participants, or new technology.

Measurement of Results with Defined Locations and User Populations: Define a manageable demonstration area/group, and provide measurements to WEDI which contribute to the knowledge of EDI in health care.

Aggressive Time Frames: Report measurable results within 6 months of implementation.

In addition, for 1993 projects, the committee is looking for:

- Transition to or development of ANSI transactions,
Use of EDI in a managed care environment,

Involvement of physicians, hospitals and vendors,

Involvement with industry or community organizations (e.g., HL7, CPRI or CHMIS),

Incorporation of other WEDI objectives.

WEDI has identified six projects which demonstrate the industry's movement toward EDI and achievement of the WEDI goals:

Connecticut, which demonstrates the use of ANSI standards and a public/private coalition to start towards total electronic submission. This project was approved at the February 1993 Steering Committee Meeting.

Nebraska, which is structured to move health care constituents in the state toward achieving the WEDI recommendations for targeted transactions.

New Jersey Claim Project, which demonstrates use of the ANSI claim standard (ANSI 837) in both an indemnity and managed care environment.

Managed Care Transaction Set Project, which will focus on managed care transactions, including eligibility, benefits, claim status, encounters, check guarantee, credit card authorizations, referrals, and laboratory results using a Systems Plus solution.

Vision and Flexible Spending Project, which focuses on use of EDI for Vision and employee-based Flexible Spending Accounts.

New Jersey Care Information Network Project, which is sponsored by the state to support the creation and establishment of a model health care information network and technology entity using standardized EDI. The initial transaction to be demonstrated is enrollment using ANSI 834.

Each project will report progress to WEDI monthly for purposes of promotion, publicity, and education. Expansion of EDI can be influenced by better quantification of each constituent's EDI implementation. So, continuing to collect and disseminate empirical data on cost/savings is an important objective of the WEDI demonstration projects.

The TAG has identified other activities around the country which contribute to health care EDI which are highlighted in our report.

In addition to utilizing demonstration projects to create awareness and support of EDI, the TAG recommends:

- Presentations and primers to educate and enable EDI.
- More formal, funded membership for WEDI.
INTRODUCTION

The Workgroup for Electronic Data Interchange is committed to extending the full benefits of EDI to the health care financing system by 1996. The objective of the Short-Term Strategies Technical Advisory Group is to identify expanding EDI installations and to encourage and prepare all constituencies in the use of EDI in health care NOW.

The mission of the Short-Term Strategies TAG is "to stimulate the use of EDI in the health care industry." This mission reflects an increased interest in EDI as one component in a comprehensive health care data system built to support the administration and quality of health care. While EDI can eliminate hassles and reduce administrative costs, the biggest benefit to EDI is improving the quality of care. To carry out this mission, the TAG's goals for 1993 are to:

- Continue to promote awareness by publishing a list of existing initiatives in health care EDI.
- Stimulate additional cooperative EDI efforts through the implementation of a variety of new WEDI Demonstration Projects.
- Develop guidelines which promote EDI readiness and implementation.
- Serve as an industry catalyst for influencing progress of EDI.

In 1992, WEDI supported three EDI demonstration projects to stimulate cooperative effort in the industry and to gain hands-on experience with health care EDI. A summary of the final reports from these projects is included in section "1992 Demonstration Projects" of this document. A more detailed report on the 1992 demonstrations is available by calling Sherry Turner at (402) 978-4715.

- "1993 Demonstration Projects" provides information on the 1993 demonstration projects selected as of May 1, 1993, including the methodology for selection, objectives of the projects and their scope.
- "EDI Initiatives Around the Country" provides information on other initiatives known to WEDI which are underway to advance EDI in health care.
- "Conclusions and Other Short-Term Strategies" provides a summary of lessons learned from the 1992 demonstration
1992 DEMONSTRATION PROJECTS

In 1992, the WEDI Short-Term Strategies TAG sponsored three demonstration projects. In conjunction with these demonstrations, Tiber Group, a health care industry consultant, was retained to do a detailed cost survey.

Based on a very small sample of cost/benefit data, Tiber Group estimates that the health care industry could save $4 billion each year through the use of EDI. Details of this study are shown in Addendum 1. Future demonstration projects will add to the model to strengthen the validity of these numbers.

Virginia's project was a collaboration among several governments, 30 insurance companies, 165, hospitals and thousands of physicians. This project sought to demonstrate that a sophisticated infrastructure could be applied to as many as eight types of insurance transactions. During the project's six month duration:

- 80 additional providers added electronic claims submission,
- Electronic claims volume increased by 12%,
- Six hospitals successfully pilot tested electronic funds transfer to Medicare Part A and the ANSI 835 standard remittance advices,
- Six physician practices agreed to pilot the ANSI 835's from Medicare once their practice software is modified,
- Blue Cross and Blue Shield of Virginia transmitted similar remittance advices to over 200 providers,
- A physician referral system was installed in 32 sites in the 4th Qtr and reached a volume of 4,000 transactions per month, and
- E-mail usage in the health care community was implemented.

The Twin Cities' project sought to increase the number of providers and claims using EDI in the 11 counties surrounding Minneapolis and St. Paul. The site was chosen because two major insurers (Medica and Blue Cross and Blue Shield of Minnesota) and many of the region's hospitals and physicians were already processing the majority of their claims electronically. Also, the Minnesota population historically exhibits a high degree of cooperation with health care reform initiatives. Sixty physicians offices, ten hospitals and/or hospital systems, and eight payors participated in the demonstration. The project's achievements include:

- Medica and Blue Cross and Blue Shield of Minnesota (BCBSM) agreed to "directly connect" their networks so that each could accept and forward the other's claims;
Installations of EDI technology in providers offices increased by 40%;

The integrated network between Medica and BCBSM carried 83,105 claims transactions during the demonstration project. 5,885 of which were EDI network technology-based transactions and the remainder telecommunications-technology based;

Fifty-two physicians using BCBSM technology sent electronic claims to Medica for the first time; and

Twenty-six physicians using Medica technology sent electronic claims to BCBSM for the first time.

Senator Durenburger participated in a press conference on September 2 to help initiate the project. Medica and BCBSM waived their fees for claims submission and eligibility checking as an incentive to use EDI during the project. Project staff organized focus groups, held forums and published a monthly newsletter to gather feedback, encourage dialogue, and disseminate notice of project milestones.

The AT&T project focused on the application of the ANSI 834 Benefit Enrollment and Maintenance Transaction standard to the company's 700,000 employees and three health plan administrators:

The Travelers, Prudential, and Empire Blue Cross and Blue Shield.

Implementation consisted of two phases: connectivity and eligibility re-engineering.

Connectivity was established in three tests. A 100-record test was transmitted via public Value Added Network (VAN) to establish data accuracy and integrity. A 10,000-record test provided a good opportunity to verify the ANSI 834's ability to accommodate complex eligibility situations. Finally, 235,000 records were sent by tape to stress-test the entire operating environment.

Eligibility re-engineering sought to "fine-tune" the efficiency of the entire business operation to take greater advantage of EDI's ability to move data quickly and efficiently. While this is the larger, more complicated part of EDI implementation, it is also the source of the greatest efficiency gains.

Lessons learned from the three projects include:

Education and awareness is still a necessary and important part of any EDI implementation plan.

While providers generally support the concept of ANSI-standard EDI, commitments about timetables and financial incentives and responsibilities need to be put in writing at the beginning of the project to assure smooth implementation.

To expedite issue resolution during the transition to EDI, a
visionary re-engineered process.

- It should be recognized that corporate attitudes toward change will shape EDI strategies and planning tasks.
- Extensive, on-going communication among constituents is critical to the success of EDI implementation.

1993 DEMONSTRATION PROJECTS

Background

As a continuation of the three successful 1992 demonstration projects, the Short-Term Strategies TAG began seeking new demonstration projects early in 1993. On March 9, 1993, a letter regarding new demonstration projects was sent to all WEDI participants. A similar general announcement was made to other industry organizations and was covered in various industry newsletters and conferences. Attempts will continue to be made throughout 1993 to generate project proposals. Organizations will gain the following benefits from participating in an approved WEDI demonstration project:

- Involvement in the health care EDI movement
- Expansion of their knowledge of EDI issues and opportunities
- Advancement of health care EDI
- Enhancement of publicity opportunities

Application Guidelines and Evaluation Criteria

Demonstration projects for 1993 were evaluated by the Short-Term Strategies TAG based on how the project met the following WEDI criteria:

1. Ecumenical

   Demonstrations will include cooperative participants from the public and private sectors. Target ANSI standard transactions include claims, eligibility, benefits, electronic remittance, electronic funds transfer, adjudicated response, enrollment, referrals, utilization management, pre-authorization and integrated E-mail.

2. Close to the Public

   Demonstrations will provide value to consumers, employers, providers and payors.

3. Industry Cooperation

   Demonstrations will exhibit voluntary industry partnerships in lieu of legislated mandates.
4. Leveraging Existing Infrastructures

Expanded usage of existing electronic tools vs. expensive and time-consuming development of new components is required.

5. Add Something New

Demonstrations will show obvious EDI expansion through new or increased transaction volumes, new users, or new electronic connections/technology.

6. Measurement of Results with Defined Locations and User Populations

Demonstrations will have measurable scope with specific areas of cost savings. For each approved project, the Short-Term Strategies TAG will define minimum data requirements for quantitative measurements which must be provided by the demonstration team. The demonstration team will provide a qualitative report on project findings, user satisfaction, and any final EDI implementation guidelines that would be useful to future demonstrations.

7. Aggressive Time Frames

Each demonstration will report initial quantitative and qualitative measurement results within six months of implementation. Follow-up results will be reported within 18 months.

In addition, one or more of the following criteria must be met.

A major emphasis of the 1993 projects was movement toward use of ANSI standards.

- Demonstrate either a transition to or new development of ANSI transactions.
- Demonstrate the use of EDI in a managed care environment and support transaction expansion beyond electronic claim and eligibility (e.g., pre-certification, pre-authorization, referral, provider directory).
- Emphasize the involvement of physicians, Practice Management System vendors, and hospitals.
- Involve other industry or community organizations (e.g., HL7, Computer-based Patient Records Institute, Inc. (CPRI), or Community Health Management Information System (CHMIS)).
- Incorporate other WEDI objectives (e.g., those related to coordination of benefits, universal identifiers or telecommunication protocols).

Each project will be publicized through WEDI publicity programs.
in addition to any other publicity undertaken by the project team.

The following 1993 demonstration projects are recommended for 1993 WEDI demonstrations and are underway.

The Connecticut EDI Project

The Connecticut EDI Project remains open to interested organizations and includes participation from the following organizations:

Aetna Life Insurance Company; Blue Cross and Blue Shield of Connecticut/ PROMED Systems, Inc.; CIGNA; Connecticut Association of HMO's; Connecticut Business and Industry Association; Connecticut Dental Association; Connecticut Home Care Association; Connecticut Hospital Association; Connecticut Medical Group Management Association; Connecticut State Medical Society; Insurance Association of Connecticut; ITT Hartford; John Hancock Mutual Life Insurance Company; Johnson Memorial Hospital; Medicaid; Medicare; Met Life; National Electronic Information Corporation; Self Insured Employers (United Technologies Corporation; General Dynamics/Electric Boat); The Governor's Task Force on Health Care Reform; The Health Care Access Commission; and The Travelers Insurance Company.

The goals of the demonstration project are to:

- Reduce administrative costs,
- Simplify administration,
- Improve the quality of care in the state through more accurate clinical information.

The means to achieving these goals are:

- Integrate and build on the existing electronic highways in the state,
- Increase the volume and type of electronic transactions, and
- Connect, electronically, all payors, providers, employers, Medicare, Medicaid, and financial institutions who participate.

The target transactions of the project are:

- Eligibility verification (ANSI in 1994)
- Coverage determination
- Claim submission (ANSI in 4th Qtr 93)
- Electronic remittance and funds transfer (ANSI in 1993)
- Claim inquiry (ANSI in 1994)
ANSI standard transactions will be used upon approval.

Phase I of the demonstration, which is scheduled to begin during the 1st Qtr 93 will use the existing infrastructures of NEIC and PROMED, a group of Connecticut Hospitals and at least one payor to increase the volume of some or all of the target transactions of the project. In Phase I, Aetna, The Travelers Insurance Company, and Blue Cross and Blue Shield will send electronic Explanation of Benefits for CT Medicare Hospital claims to a small group of hospitals. Phase I will demonstrate the use of ANSI standards and a public/private coalition to start towards total electronic submission in the future. By the end of the year, there is a plan to create an electronic switching system so hospitals would need one computer system to submit claims to different payors.

The benefits of the Connecticut EDI Project are aimed at all constituencies. Patients, providers, employers, and payors will have less confusion, hassle, and paperwork.

The Nebraska EDI Project

The Nebraska EDI Project, which began April 1, 1993, includes participation from the local American Guild of Patient Account Management (AGPAM), Blue Cross and Blue Shield of Nebraska, Continental General, Mutual of Omaha, and the Nebraska Department of Social Services. Participation remains open to all other interested organizations.

The goals of the Nebraska EDI Project are to:

- Simplify health care payment administration and reduce costs
- Provide an all-payor solution for the state
- Have all providers and payors support electronic claims by year-end 1995

The Nebraska EDI Project will focus on the following transactions in 1993:

- Claims submission
- Electronic remittance and funds transfer (using ANSI 835)
- Referrals
- Enrollment (using ANSI 834)
- Part A Medicare crossover (Mutual of Omaha)

The infrastructure will be able to accept ANSI standards for claims within three months of publication of an implementation guide.

New Jersey Claim Project
The New Jersey Claim Project includes involvement with six Practice Management System vendors in the State of New Jersey. In addition, other payors have been invited to join the project. Its overriding objective is to transmit electronic claims from physicians to payors using the ANSI standard 837 transaction. The goal of the project is to raise the rate of electronic claim submissions for physicians from the current 20% level to the 80%-90% level over the next several years. For 1993, the plan is to enable over 1000 physicians, and to expand the EDI components for multiple payors.

This EDI project has two components. The first is to incorporate communications and translation code into existing Practice Management System vendors' software to enable many vendors' systems to transmit claims electronically to payors. This transmission will occur daily. The second component, a personal computer package, has been developed and permits direct input of claim information for electronic submission to payors for providers' offices that do not have a vendor system.

These two components will handle both fee for service indemnity claims and managed care encounter transactions. Two ANSI transactions are employed: the ANSI 837 electronic claim transaction and the ANSI 864 acknowledgment transaction.

Both the vendor specifications and the DOS-based personal computer package have been implemented with some of the target physicians. The early feedback has been very positive. Payors interested in utilizing either of these solutions for their electronic claim submissions are invited to join the project, as it continues to unfold in 1993.

Managed Care Transaction Set Project

Systems Plus, Inc. is the publisher of The Medical Manager Physician Practice Management System. This software was developed by Personalized Programming, Inc. of Gainsville, Florida. The Medical Manager is currently licensed by over 16,000 practices/clinics nationwide, representing 80,000 providers.

The focus of the project is managed care transactions which include eligibility, benefits, claim status, encounter, check guarantee, credit card authorization, referrals, and laboratory requests and results. The transactions will be switched primarily through Envoy Corporation, headquartered in Nashville, TN. The primary player for laboratory transactions will be Med-Path, Inc., headquartered in Teterboro, NJ. The pen-based Med-Pad data transmission system will be provided by Systems Plus as an optional feature of the system. Systems Plus dealers who have committed to participate include Hyperion Business Systems, Oakland, CA, Marshall Medical Systems, Novato, CA, and Medical Management Plus, Mountain View, CA. Other players will be named as the project evolves.

The project site will be San Jose/Bay Area, CA. All transactions will be implemented by October 1, 1993. The goal of the project is to increase usage of electronic communication
between providers and payors.

When they are ready for implementation by the users, ANSI standard transactions 270, 271, 837, 835, 276, and 277 will be used. Systems Plus and Personalized Programming are programming ANSI standard transaction capability, and the ENVOY switch is capable of processing ANSI transactions. Physicians who elect to use the Med-Pad option will be able to load patient-related data into the system and then load patient and provider charge information. Once the data is entered, it is transmitted by FM modem transmission to the physician's main computer. The physician can also enter data while performing hospital visits and send the information through the FM modem upon returning to the office.

Consumers, providers and payors will reap benefits from this project. Consumers will have the benefit of rapid laboratory results. They will also receive authorizations and referrals on a more timely basis. Providers can look forward to lower administrative costs and more accurate and complete information.

In addition to the primary players in the Project, Systems Plus has ties with other organizations which will also be involved. The other partnerships involved are with Blue Cross and Blue Shield organizations in 10 states, Cooperative Healthcare Networks (CHN), United HealthCare Corporation, Damon Clinical Laboratories, and Roche Biomedical Laboratories. Other organizations seeking similar goals are welcome to join the project.

Vision and Flexible Spending Project

The Vision and Flexible Spending Project involves a system developed for electronic verification of health benefits, eligibility and paperless claim submission. Developed by a physician, the project system is dedicated to supporting physicians in their interaction with payors and patients, and is committed to helping physicians manage their practice by reducing the perplexity of managed care and re-establishing harmony among physicians, payors, and patients. The project system is already a successfully functioning network which has proven the theory that multiple competing insurance companies can coexist in the same system for the benefit of all parties involved.

The demonstration project will target two new areas of EDI transactions. These include Vision and Employer-based Flexible Spending Accounts. This demonstration will build on the transactions already operational in the project system. These existing transactions include eligibility verification, co-payment, claims submission, referral, and prior authorization. In processing these existing transactions, the project system is already functioning for a number of players, including Medicaid and several commercial payors. Commitments from several more private insurers, including CIGNA Health Plans and the NEIC-HCIN project are evolving over the next twelve months.

The Vision portion of this project will be conducted with
National Lenscare Program, Inc., doing business as OfficeMate Software Systems of Irvine, California. Foundation Health, a large California HMO, through their vision subsidiary, will begin a pilot program for EDI transactions for vision care. These transaction sets will mirror the sets currently in use through SPOTCHECK in the medical arena. These will include eligibility, patient co-payment responsibility, referral, and claim submission. The target geographical area for the Vision project will be California.

For the Flexible Spending Account portion of the project, the alliance is with MASS ACCESS, Inc., of Salt Lake City, Utah. This aspect of the project will demonstrate a direct link, through EDI transactions, to employers' enrollment files containing Flexible Spending Account election information. The EDI transaction will confirm the employees' enrollment, covered benefits within the plan, out-of-pocket co-payment responsibility for services, file health care claims, and then electronically transfer (via ANSI transaction) those funds from the employer/employee accounts to the health care provider. The ANSI enrollment transaction will be promoted within this framework.

Both the Vision and Flexible Spending Accounts projects will begin in 1993, and additional players will be named as the project evolves this year.

The project system utilizes existing technologies. The EDI transactions themselves are currently using the same infrastructure as the banking industry. The front-end programming for medical and ancillary providers resides in Point-of-Service devices or on personal computer platforms running on operating systems which include DOS, XENIX, UNIX, or NOVELL networks. The project system has integrated its system capabilities with the ATEK Medical system in Northern California.

New Jersey Health Care Information Network Project

This project is being sponsored by the State of New Jersey. The basis of this project is to support the creation and establishment of a model health care information network and technology entity which utilizes standards for EDI. This would be an integrated system of communication networks available to all interested parties, which would form an open data highway. This highway would be operated in a manner identical to the current Internet and would facilitate the movement of information for the health care system.

This is an open system, not associated with any particular vendor or interest group. A private company, Global Enterprise Services, Inc., operator of the John von Neumann Computer Network (one of the Internet networks), will provide the connectivity for the demonstration. While there are different bandwidth requirements for payors (large), hospitals (medium), and physician offices (small), all will operate in a peer-to-peer relationship over the Internet.

The project time frame is 16 months, beginning March 1, 1993.
The target transactions for the demonstration are enrollment (ANSI 834) and E-mail.

Enrollment will be used for birth record transactions with all of the attendant medical information. This is due to be developed by December, 1993. Guidelines for other state record transactions and access to archived records will be proposed for implementation over the network at a future date. The Health Research and Educational Trust of New Jersey is developing this two-way communication between the Department of Health and all New Jersey hospitals. This reengineering will eventually replace a paper record system involving 567 registrars (with just as many typewriters).

Very early in the project (May 1993), an open health care computerized conferencing system (an enhanced E-mail and bulletin board service) will be established to provide current, unbiased information on all issues relevant to EDI implementation. This includes technology advances, the status of standards and protocols, and legal and technical developments related to privacy and security. It is feasible to electronically store the WEDI report in this facility. The audiences addressed would include all current WEDI members, plus interested employers, insurers, HMO's, PPO's, physicians, vendors, consumers and hospital administrators and staff. This system will be open to use by all individuals interested in EDI, regardless of whether or not they are participants in the New Jersey Health Care Information Network Project. There will be no fee for using the system, except for the necessary telephone charges.

Low cost, open interface standards will be used for the entry points to the open communication system. These entry points may reside in the physicians' offices, hospitals, employers, payors, or eventually patients' homes.

The New Jersey Institute of Technology and the Thomas Edison State College are jointly responsible for the implementation of this project.

The following organizations are participating:

- Aetna Life Insurance Company
- AFL-CIO of New Jersey
- Blue Cross and Blue Shield of New Jersey
- Community Health Management Information System (CHMIS)
- Global Enterprise Services, Inc. - The John von Neumann Computer Network
- Healthcare Information Technologies, Inc.
- Health Research and Educational Trust of New Jersey (HRET)
- Medical Society of New Jersey
- New Jersey Business and Industry Association
- Premier Hospital Alliance, Inc.
- Premier PPO of New Jersey, Inc.
- The Prudential Insurance Company of America
- Robert Wood Johnson University Hospital
- SRI, David Sarnoff Research Center
- Systems Plus, Inc. (Medical Office Practice Software)
- The University of Medicine and Dentistry, University
EDI INITIATIVES AROUND THE COUNTRY

In addition to the demonstrations described in this paper, other initiatives which will advance EDI are underway around the country. A brief description of some of these initiatives is useful in understanding how EDI is taking hold nationwide. While none of these initiatives has been endorsed by WEDI, they are representative of the current level of EDI activity within the health insurance industry beyond WEDI-sponsored projects.

In Maryland, EDS has assumed operation of Blue Cross and Blue Shield of Maryland's Lifecard electronic claims processing division and is currently upgrading the existing infrastructure to an advanced electronic data interchange technology. Once the enhancement is completed, the technology will be used in the Maryland Health Information Network, a network operated by EDS that could transmit more than 25 million managed care transactions annually, including claims processing, eligibility verification, and remittance status requests. The Maryland Health Information Network will eventually expand into an all-player, statewide network in which all payors, doctors, hospitals, pharmacies, laboratories and others can file insurance claims and exchange health information. EDS has formed alliances with CIS Technologies and Health Information Technologies to implement the insurer-to-doctor segment of the network.

In Pennsylvania, Prudential Insurance Company of America is working with Pennsylvania Power and Light to convert enrollment processing to ANSI-compliant 834 transaction sets. Installation is expected in late 1993.

Initially sponsored by Aurora Healthcare Systems, Ameritech, Health Network Ventures, and the Wisconsin Health Information Network, a number of insurers, providers and employers in the State of Wisconsin are cooperating in the Wisconsin Health Information Network. The Wisconsin Health Information Network provides a community-wide electronic transaction network for claims submission, eligibility, and status inquiry, combined with clinical information (i.e., demographics, laboratory, radiology, transcriptions, and medical records) and electronic mail/facsimile transmission/image.

Associated Insurance Companies, Inc. and its government business subsidiary, AdminaStar, Inc., are conducting a Medicare Part A and Medicare Part B ANSI 837 pilot project for the Health Care Financing Administration. The purposes of the pilot are to test the transmission and receipt of 837 transactions from a representative mix of Medicare providers and billers, analyze and evaluate test results, summarize test results and make recommendations to HCFA on the draft Medicare Part A and Medicare Part B implementation guides.

The Blue Cross and Blue Shield Association (BCBSA) has launched a major project called EDI-USA. During the pilot project phase, Medical Management Resources, Inc., a subsidiary of Blue Cross and Blue Shield of Kentucky, will batch process all EDI USA...
claims while Advantis Corporation, jointly owned by International Business Machines, Inc. and Sears Technology Services, Inc., will process online health care transactions through its network. EDI USA will collect Blue Cross and Blue Shield and commercial claims for the Blue Cross and Blue Shield plans in Arizona, Connecticut, Georgia, Indiana, Kansas, Kentucky, Maine, Minnesota, Texas and Western Pennsylvania. The Travelers Corporation, Prudential Insurance Company of America and CIGNA Corporation have also agreed to participate in the project. The network will allow providers to file all their claims with the local Blue Cross/Blue Shield Plan which would electronically cull those claims while other claims would be sorted through the Advantis switching system and electronically dispatched to the appropriate insurance carriers. By establishing links to commercial payors, EDI USA will be a Value Added Network to other health care insurers, and not just Blue Cross and Blue Shield plans.

Through a collective endeavor with insurance payors and industry vendors, the National Electronic Information Cooperation (NEIC), has developed an EDI service for real-time, interactive exchange of health care benefit information. Named the Healthcare Information Network (HCIN), this service will enable NEIC network providers and payors to communicate managed care transactions on a 7-day, 24-hour basis. Scheduled for general release during 1993, HCIN's initial transaction capability includes eligibility verification and benefit coverage expanding to referrals, authorizations, encounters, and free-form messaging with future updates. All HCIN transactions will conform with ASC X12 (an accredited ANSI committee) standards for health care business electronic formats. Established in 1981, NEIC streamlines electronic health care transactions for 90 insurance payors and 120,000 providers. These providers access the NEIC vendor partnerships.

CONCLUSIONS AND OTHER SHORT-TERM STRATEGIES

In addition to using demonstration projects to further the implementation of EDI, the Short-Term Strategies TAG recommends launching WEDI-sponsored programs to educate and enable EDI.

Working with existing industry/professional groups, separate programs need to be developed to target each constituency. These constituencies include providers, payors, vendors, and employers.

Specific recommendations for each constituency are included in this section.

Providers

- Presentations on EDI to target the following groups:
  - Hospital, medical and dental associations
  - Lab/supplier associations
  - Medical and dental office assistant associations
  - Health care consultants
  - Other provider-oriented trade groups

- An "EDI-primer" for the provider audience, including
guidelines on selecting a qualified "EDI-capable" software product or vendor based on standards set by the Network Architecture and Accreditation TAG.

Vendors

An EDI-primer for software and systems vendors to include guidelines on selecting a qualified software product or EDI transaction network.

Employers

- Educational programs for employers on the benefits of EDI.
- An EDI-primer for employers, including guidelines on selecting "EDI-capable" payors and software vendors.
- Promotion of the ANSI 834 standard for linking employer and payor networks to exchange enrollment information.

Payors

- An EDI-primer for payors, including guidelines on selecting EDI-capable claims payment software vendors or EDI transaction network services.
- Promotion of standardized data content and standardized use of the data by payors.
- Encouragement to participate in WEDI and implement ANSI standards.
- Emphasis on open access either directly or through a gateway.
- Integration of multiple processing systems to offer a single submission point.
- A higher level of service through EDI as an incentive for providers to participate in the process.

In conclusion, the Short-Term Strategies TAG recommends:

- Presentations and primers to educate and enable EDI.
- More formal, funded membership for WEDI.
- Acceptance of project applications throughout the year to continue momentum.
- Continuation of data collection to strengthen the cost study for health care EDI.

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Addendum 1: Tiber Group Cost Study

Methodology

The WEDI Cost Savings Analysis was commissioned to measure the potential savings which can be experienced by physicians, hospitals, employers, and payors that use EDI to perform claims-related transactions. The hypothesis to be tested was:

On a per transaction basis, the cost to perform claims-related transactions electronically is lower than the cost to perform the same transactions manually.

If proven to be true, the hypothesis, when extrapolated to a national level, represents the potential for significant savings in the health care industry.

The hypothesis was tested at each of the three demonstration sites. The AT&T site tested the enrollment transaction. In Minneapolis, claims submission and eligibility inquiry transactions were measured. In Virginia, claims submission, claims inquiry, eligibility inquiry, benefits inquiry, remittance advice, and funds transfers were measured.

Testing of the hypothesis was conducted through observations of costs using the following steps:

- Identification of cost and saving sources,
- Definition of data elements needed to measure potential costs and savings,
- Collection and accumulation of raw cost data in a data repository,
- Calculation of weighted average costs per transaction,
- Modeling of a national transaction baseline,
- Extrapolation of weighted average costs to a national level,
- Calculation of savings as transaction volumes shift from manual transmission to EDI.

The cost savings analysis began with site visits to demonstration participants. Interviews were conducted to determine the penetration of EDI in locations, the data available for collection, and potential sources of costs and savings.

Surveys to collect data were developed based on site visit input. Survey samples were presented to focus groups of physicians, hospitals, employers, and payors. Based on the insight gained from the focus group sessions, the survey was revised and finalized. The following data elements were included in the survey. Each element was collected by transaction type.
(enrollment, eligibility, claims, etc.), by medium (manual, tape, terminal, EDI), and by constituent (physician, hospital, employer, payor):

- Start-up costs - one time hardware, software, and training costs,

- Transaction volumes, time per transaction, FTEs per transaction, total human resource costs, FTE salaries,

- New costs - EDI-related ongoing costs,

- Non-personnel costs (e.g., office supplies, phone charges, overhead),

- Capital benefits - salvage value of obsolete equipment,

- Days in Accounts Receivable and other financial statistics,

- Estimated FTE savings/re-use.

Data elements were requested for manual, tape, terminal, and EDI media types because participants had already implemented transactions using these media and, had subsequently experienced savings due to these implementations. Since significant savings were experienced simply by automating a manual process, it was important to collect the data for each of these levels.

Table 1 indicates the transaction types and constituents, by demonstration site, which were requested for data collection. Data collection was not as successful as we had hoped. Surveys were distributed to 90 participants, 40 physicians, 24 hospitals, 25 payors, and 1 employer. Surveys were completed and returned by 14 physicians, 9 hospitals, and six payors. The overall response rate was 32%.

Once received, surveys were entered into a data base model. The model was used to determine a weighted average cost per transaction by transaction type, constituency, and medium. Extrapolation factors were calculated by applying a standard cost per common sizing unit to national volumes. The extrapolated transaction totals were then used to calculate national incremental costs or savings.

Savings were calculated by shifting national transaction volumes from manual transmission to EDI. Best, worst, and most likely case scenarios were tested. Savings were calculated over five years. Start-up costs were applied only in year one and were assumed to be sufficient for 100% EDI. Fixed costs were also assumed to be sufficient for 100% EDI and did not vary with the number of transactions beyond the original sample distribution.

Table 1 - Demonstration Site Sample Distribution

<table>
<thead>
<tr>
<th>Group</th>
<th>Solo</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDI Application</td>
<td>Employer Payor</td>
</tr>
</tbody>
</table>
Table 2 presents the national savings that can be experienced by moving from manual transactions to EDI. The shift from manual to EDI includes the tape and terminal experience observed in the demonstration site samples. Savings represent a five-year period and reflect a constant transaction volume. The magnitude of the savings is greatest in the initial shift from manual to any form of electronic transmission. As the volume of transactions becomes more heavily weighted toward EDI, the incremental savings are reduced.

Table 2 - Projected National Savings

<table>
<thead>
<tr>
<th></th>
<th>5 Year Projected Savings</th>
<th>Average Savings Per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most Likely Case</td>
<td>$ 23,708,303,492</td>
<td>$ 4,741,660,698</td>
</tr>
<tr>
<td>(85% shift to EDI)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worst Case</td>
<td>$ 22,202,452,082</td>
<td>$ 4,440,490,416</td>
</tr>
<tr>
<td>(50% shift to EDI)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Best Case</td>
<td>$ 23,923,425,122</td>
<td>$ 4,784,685,024</td>
</tr>
<tr>
<td>(95% shift to EDI)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Tiber Group Analysis

Key Limitations

Results presented in this document are subject to some limitations primarily related to data availability. These limitations are listed below.

- Low sample size due to:
  - Highly detailed survey,
  - November - December data collection period (year-end, holidays),
  - Attempt to collect data in a "new" way - few standard reports,
Lack of available human resources to complete survey,

Unavailable national statistics on EDI penetration and volumes of inquiry transactions,

Incomplete survey responses.

Limited data availability increases the total cost per transaction due to a low volume of transactions to allocate costs across. As additional data is collected and the volume of transactions is increased, it is likely that the overall cost per transaction will decrease.

Key Challenge

The key challenge of the WEDI Cost Savings Analysis was the measurement of incremental costs and savings associated with the implementation of EDI. Every attempt was made to capture only those costs associated with the implementation and ongoing use of a particular electronic medium. It was necessary to collect data in these categories to appropriately measure the incremental costs incurred while moving to electronic transmission, yet the nature of the data required participants to provide informed estimates in response to some questions.

Business Unit Implications

The following section presents tables describing the effects of EDI implementation at the business unit level. Results are based on observations of the demonstration site participants and reflect the costs and savings associated with converting from a fully manual environment to a completely EDI environment. Totals reflect an accumulation of the transaction types measured in the demonstration sites unless otherwise indicated.

Overall results demonstrate significant cost savings when comparing manual to EDI costs at the transaction level. The most significant finding of the per transaction results is that the inquiry functions (benefit, eligibility, and claims inquiry) demonstrate the greatest level of savings when converting from manual to EDI transactions. Inquiry functions, when performed manually, are very time intensive. When moved to electronic means, the time per inquiry transaction is reduced significantly, thus freeing up resources and demonstrating savings.

Prior to this study, claims submission was the focus of overall savings, yet claims submission was observed to be in the lower bracket of cost savings for the demonstration sites. This low result for claims savings is more than likely due to the degree of automation for the sample. Since this transaction was well established in the demonstration sites, it may have been difficult for participants to capture savings which had already been experienced relative to claims submission.

Table 3: WEDI Cost Savings Analysis – Average Annual Savings By Constituent
Physician Practice

<table>
<thead>
<tr>
<th>Physicians</th>
<th>Total Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>$12,770</td>
</tr>
<tr>
<td>5-10</td>
<td>$49,182</td>
</tr>
<tr>
<td>11-35</td>
<td>$183,872</td>
</tr>
</tbody>
</table>

Hospital

<table>
<thead>
<tr>
<th>Discharges/OP Visits</th>
<th>Total Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;100,000</td>
<td>$306,772</td>
</tr>
<tr>
<td>&gt;100,000</td>
<td>$1,391,112</td>
</tr>
</tbody>
</table>

Insurer

<table>
<thead>
<tr>
<th>Covered Lives*</th>
<th>Total Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1,000,000</td>
<td>$1,972,444</td>
</tr>
</tbody>
</table>

*Cost data is incomplete for insurers over 1,000,000 covered lives

Source: Tiber Group Analysis

Table 3 demonstrates the overall savings which can be experienced by physician practices, hospitals, and insurers of various sizes. Based on an accumulation of all costs associated with moving from manual transmission to EDI, physician practices in the demonstration projects were observed to save between $12,000 and $183,000 based on practice size. Hospitals in the demonstration sites were observed to save between $300,000 - $1,400,000 based on total discharges and outpatient visits, and insurers with under 1,000,000 covered lives, were observed to save almost 2 million dollars.

Table IV: WEDI Cost Savings Analysis - Human Resource Costs Per Transaction

<table>
<thead>
<tr>
<th>Transaction</th>
<th>Physician</th>
<th>Hospital</th>
<th>Payor</th>
<th>HMO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefits Inquiry</td>
<td>3.12</td>
<td>0.21</td>
<td>2.91</td>
<td>1.37</td>
</tr>
<tr>
<td>Claims Inquiry</td>
<td>3.93</td>
<td>0.29</td>
<td>3.64</td>
<td>2.57</td>
</tr>
<tr>
<td>Claims Submission</td>
<td>0.41</td>
<td>0.19</td>
<td>0.22</td>
<td>0.48</td>
</tr>
<tr>
<td>Eligibility Inquiry</td>
<td>1.52</td>
<td>0.44</td>
<td>1.08</td>
<td>1.87</td>
</tr>
<tr>
<td>Funds Transfer</td>
<td>0.08</td>
<td>0.08</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Remittance Advice</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Source: Tiber Group Analysis

Table 4 identifies human resource costs and savings on a per transaction basis. Participants were observed to experience considerable savings when migrating from manual transactions to EDI. Savings were experienced at the greatest magnitude in the areas of inquiry primarily due to a decrease in the amount of time spent per transaction.

Table V: WEDI Cost Savings Analysis - Ongoing Operating Savings

<table>
<thead>
<tr>
<th>Transaction</th>
<th>Physician</th>
<th>HMO</th>
<th>Hospital</th>
<th>Insurer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefits Inquiry</td>
<td>$2.09</td>
<td>$0.00</td>
<td>$1.10</td>
<td>$0.64</td>
</tr>
<tr>
<td>Claims Inquiry</td>
<td>$3.88</td>
<td>$1.06</td>
<td>$3.56</td>
<td>$2.72</td>
</tr>
<tr>
<td>Claims Submission</td>
<td>$1.01</td>
<td>$0.99</td>
<td>$1.07</td>
<td>$0.73</td>
</tr>
<tr>
<td>Eligibility</td>
<td>$1.89</td>
<td>$0.00</td>
<td>$2.05</td>
<td>$0.98</td>
</tr>
<tr>
<td>Funds Transfer</td>
<td>$0.15</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>Remittance Advice</td>
<td>$1.66</td>
<td>$0.00</td>
<td>$0.50</td>
<td>$0.19</td>
</tr>
</tbody>
</table>

Source: Tiber Group Analysis

Table 5 outlines the savings on a per transaction basis for years two through five. Ongoing operating savings, when comparing manual to EDI transactions, demonstrate significant savings in the demonstration sites.

Table VI: WEDI Cost Savings Analysis - Average Start-Up Costs - Physicians And Hospitals

| 1-2 Physician Practice     | Average Start-up Cost per Practice | $4,899.29 |
|                            | Average Start-up Cost per Physician | $3,117.73 |
|                            | Median Start-up Cost per Practice   | $1,850.00 |

| 5-8 Physician Practice     | Average Start-up Cost per Practice | $12,700.00 |
|                            | Average Start-up Cost per Physician | $2,005.26 |
|                            | Median Start-up Cost per Practice   | $14,800.00 |

| 12-33 Physician Practice   | Average Start-up Cost per Practice  | $9,050.00  |
|                            | Average Start-up Cost per Physician | $416.09   |
|                            | Median Start-up Cost per Practice   | $7,000.00  |

| Hospitals 20-60K Outpatient Visits/Discharges | Average Start-up cost per Hospital | $12,199.29 |
|                                            | Average Start-up Cost per Outpatient Visit/Discharge | $0.32 |
|                                            | Median Start-up Cost per Hospital | $10,800.00 |

| Hospitals 100-220K Outpatient Visits/Discharges | Average Start-up Cost per Hospital | $11,894.75 |
|                                               | Average Start-up Cost per Outpatient Visit/Discharge | $0.06 |
|                                               | Median Start-up Cost per Hospital | $13,500.00 |
Insurer <1,000,000 Covered Lives

Average Start-up cost per Insurer $ 344,000.00
Average Start-up Cost per Covered Life $ 0.98
Median Start-up Cost per Insurer N/A

Source: Tiber Group Analysis

Table 6 reviews start-up costs for business units based on size. For each category, costs have been calculated as both averages and medians. Average start-up costs for physicians and hospitals range from $4,000 to $12,000 based on practice and hospital size. Overall, start-up costs are fairly reasonable on a per practice and hospital basis and are considered to be incurred in year one only.

Interpretation of Data Analysis

In collecting and preparing cost data for the WEDI study, there were a number of interesting conditions that affected the extrapolation of measured savings to the national level. Every effort was made to capture as much detail as possible, in a format that was consistent and accurate.

Some information was collected redundantly to serve as a reality check for data accuracy. Still, considering the range and complexity of activities to be measured, the varying backgrounds of respondents, and varying ability of sites to access measurement resources, a number of data inconsistencies had to be handled before meaningful calculation could be performed.

In each instance where problems or inconsistencies occurred, the goal was to develop a meaningful, but appropriately conservative approach to minimize the impact of errors when extrapolations were performed. The findings of these assumptions resulted in the following observations:

Transaction activity data was difficult to collect.

The foundation of the cost savings model was transaction activity. For human resource costs, number of transactions and time per transaction were the basis for calculating overall processing costs. Start-up costs and new costs were allocated and broken down to a per transaction level. As questionnaires were returned by demonstration participants, it became apparent that access to these measures was inconsistent across sites, particularly at the transmission medium level. This data access problem presented two challenges. First, many participants chose not to submit responses because they lacked this important data, or did not trust what they had. Second, many of the responses received were questionable, and required significant follow-up and correction. Reasonableness checks indicated that questionable responses were generally conservative. The impact: due to insufficient transactions, human resource costs/savings are understated, and start-up/new costs are overstated.
Respondents reported that more FTEs were required to complete transactions than the calculated equivalent would support.

Participants were asked to provide information about the number of full-time equivalents (FTEs) required to complete each transaction type. This was in addition to the transaction activity measures described above. When transaction activity was converted into FTEs, then compared with reported FTEs, the variance was significant, with some transactions off by as much as 90%. Explanations for this variance range from lack of data, to different definitions of FTEs, and aggressive capacity assumptions. For extrapolation purposes, the calculated FTE was used as a basis for cost savings calculations, contributing to a conservative statement of FTE savings. FTE savings were derived from line personnel salary costs only.

Because of inconsistencies in reported FTE and calculated FTE, the non-linear addition or subtraction of supervisors, and limited insight into the relationship of line-to-supervisory personnel in an EDI world, FTE savings were calculated based on the average labor costs of line personnel. Weighted increases to baseline salary costs could potentially produce additional savings of 5 - 20%.

The definition of transactions varied considerably.

Conversations with demonstration participants indicated that the way in which they aligned tasks with transactions was inconsistent between sites. For example, in claims submission, most sites only reported the time associated with data entry, but did not include mailroom or filing functions that could be potentially averted in an EDI-based transaction. A broader definition of the processing cycle associated with a transaction, combined with realized streamlining in that cycle, is a source of major savings and something we were unable to measure at this time.

Manual counterparts for EDI transactions were not fully measured.

Electronic mail, for example, is a clearly defined EDI transaction. However, the manual components that can be accommodated with E-mail (correspondence, laboratory results, etc.) have not been defined or, if defined, have not yet been implemented. Because of this, data detailing the complete cost potential of performing several manual transactions that could be replaced by a single EDI transaction was not collected. Therefore, the savings associated with moving from manual to EDI transmission are potentially understated.

The allocation of new and start-up costs to EDI applications was left to the discretion of demonstration participants.

In the absence of a better method, survey respondents were asked to allocate new and start-up costs based on their own assessment. When compared to the actual penetration of electronic transactions, the results of this allocation method
indicate that some of the inquiry functions were carrying a disproportionate level of new and start-up costs. Insufficient transaction volumes compounded this error as these values were extrapolated to the national level. Hardware costs dropped significantly over the span of the study.

Due to competition and technological innovation, prices for computer equipment dropped during the six-month span of the study. Some of the sites had been conducting electronic transactions for well over a year, meaning that start-up costs were higher than when the demonstration began. Since these price-performance improvements were not captured as part of the study, EDI start-up costs tend to be overstated. The early state of ANSI EDI standards could have impacted electronic start-up costs.

Technology and process pilots typically cost more than the installation of mature processes. With a relatively incomplete, rapidly evolving ANSI standard transaction set, and the learning curve associated with new standards and technologies, it is conceivable that software development costs for these sites are higher than they will be in future installations. Also, the potential for leveraging software development investments as new transaction sets become available is significant. The net result is that excessive software start-up costs are contributing to a conservative savings measurement.

The inability of demonstration participants to track transactions and financial statistics by transmission medium eliminated a number of potential savings opportunities.

Days in Accounts Receivable, for example, is difficult to calculate because financial information is not tracked by transmission source (manual vs. EDI). Focus sessions with hospitals and physicians indicated that decreased days in A/R was a major advantage of electronic transmission. Even after accounting for decreased interest accrued by claims payors and differences in the costs of borrowing and lending money, responses indicate that there is room for financial savings through EDI - a savings that was unable to be measured at this time.

Recommendations

As the health care industry moves forward with the implementation of EDI and WEDI continues to promote this implementation, it will be important to monitor the effects of the implementation at various stages. Continuing cost benefit analysis is an important component of the monitoring process. Based on the results of this first WEDI Cost Savings Analysis, the following items are recommended for future evaluation:

- Continued collection of data to increase validity/accuracy of results
- Simplification of survey to include only key elements
○ On-site assistance or phone walk-through of survey
○ Longer study periods
○ Expansion to transactions beyond the billing cycle to clinical data
○ Site manager responsibility for sample selection and data collection
  Continued collection of data will provide excellent information as to the costs and benefits associated with the implementation of EDI. Not only will the effects on the industry as a whole be determined, but the effectiveness of various transaction types can be observed.

Conclusion

The WEDI Cost Savings Analysis has demonstrated that for the demonstration site participants, the implementation of EDI for claims-related transactions saved money when compared on a per transaction basis and when extrapolated to mirror national transaction volumes. Continued analysis of the costs associated with the implementation of EDI as compared with manual transactions will further refine the magnitude of savings that can be experienced by the health care industry as EDI implementation increases.

The results of this study indicate that investment in EDI technology by the health care industry can save between 22 and 24 billion dollars over a five-year period. This savings relates solely to claims-related transactions and does not include the potential savings that could be experienced as the number of transaction types expands to include clinical data.

These first results, based on actual data collected at the WEDI demonstration sites, indicate that the implementation of EDI is a worthwhile investment for the health care industry. This investment can serve to reduce the administrative costs of providing health care and lead to the provision of higher quality patient care.
Appendix 8
State/Federal Role
Technical Advisory Group White Paper
October 1993

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EXECUTIVE SUMMARY

The State/Federal Role Technical Advisory Group (TAG) of the Workgroup for Electronic Data Interchange (WEDI) was formed to apprise the state and U.S. territories (hereinafter collectively referred to as states) of the benefits of electronic data interchange (EDI), and serve as a resource for information regarding WEDI and EDI activities of the federal and state governments.

To accomplish these goals, the TAG members selected one or more states to serve as the liaison between the states and WEDI. This arrangement provided an efficient method by which information regarding EDI can be exchanged.

The appropriate office in each state was contacted by a TAG member and informed that WEDI would serve as a resource for the exchange of EDI information. The liaisons then asked the state contact to facilitate WEDI’s goal by responding to a questionnaire regarding the state’s status on EDI.
WEDI's belief that states would be interested in obtaining information about EDI was borne out by the state survey. Seventy percent of respondents stated that they would be interested in receiving a copy of the 1993 WEDI Report. Although the states indicated interest in EDI, their levels of knowledge concerning EDI varied greatly. Moreover, the extent to which they have studied and implemented EDI varied as well.

Further, though most states were interested in EDI, they perceived many barriers to its implementation. The complexities of EDI created confusion, including the appropriate scope of EDI and technology that is available to facilitate EDI implementation.

States, and other entities, need an organization to serve as an information resource for EDI. EDI envisions this organization as both receiving and providing information. Ultimately, this organization could serve to monitor standard uniformity. Uniform standards will free payors and providers from the laborious task of researching the numerous and ambiguous state laws which often dictate conflicting requirements. Additionally, this organization could ensure consistency regarding states' roles and responsibilities with respect to EDI, and the relationship between the federal and state governments. Delineating roles and monitoring their interrelationship will minimize confusion and facilitate an efficient and effective system.

The State/Federal Role TAG has identified specific areas in which states need assistance, and provides recommendations that will satisfy these needs. First and foremost, information kits must be developed that address state concerns, identify states' responsibilities, and provide instructions that will assist them in fulfilling these responsibilities. The EDI information kits should contain information ranging from general in nature (i.e., an explanation of EDI), to the specific (i.e., identify benchmarking and performance standards). Additionally, the kits must address and resolve issues relating to the implementation barriers associated with EDI, including maintaining the confidentiality of data, and costs of implementation.

It is impossible, however, to anticipate and address all of the problems that will inevitably arise with EDI in the EDI kits. Therefore, the kits need to identify departments that can be contacted if states require further information, have questions or incur problems that are not addressed in the EDI kits. The departments identified should be correlated with specific areas of state concern; preferably, the person in charge of each department will be identified.

Finally, states, and territories in particular, need assistance in meeting or overcoming public health policy considerations, including reliability of data, fraud detection and prevention, preventative care, and standards. States share many concerns and problems, and will continue to do so. A coordinated approach to addressing their concerns and resolving their problems will ensure a smooth transition into national implementation of EDI in
INTRODUCTION

In 1992, WEDI acknowledged that state laws must be reviewed for successful implementation of EDI. WEDI recognized that many state laws actually prohibit EDI by requiring written health care records. Additionally, the level of confidentiality afforded health care data varied between states. This variation hampers the administration of health care data across state lines, as payors and providers must research each state's laws to ensure compliance and to avoid potentially conflicting state requirements. The 1992 WEDI Report noted that "[t]his approach does not promote the interests of patients, providers or payors. It is burdensome and costly to the health care community, and creates a system where patients' confidentiality rights vary widely from state to state."

WEDI determined that educating the states to the scope and benefits of EDI would garner state support for EDI implementation and aid the states in implementing EDI. Thus, WEDI formed the State/Federal Role TAG in 1993. Comprised of individuals from both the public and private sector, the TAG resolved to educate states by surveying their current level of knowledge of EDI, and then disseminate information and materials to them based on the survey results.

STATE PERSPECTIVE OF EDI

Why Data Was Collected

The goal of the State/Federal Role TAG is to serve as a resource to and work in cooperation with the National Association of Insurance Commissioners (NAIC) and state governors to coordinate state and national efforts on administrative simplification. To achieve this goal, the State/Federal Role TAG initiated a survey to determine the status of legislation in the states and to measure the state's EDI efforts and needs. A copy of the questionnaire sent to the states is found in Addendum 1.

How Data Was Collected and Verified

Data was obtained from an existing NAIC data base relating to effective, recently enacted, and pending standardized claim form legislation. In addition, the TAG submitted a questionnaire to appropriate offices in all 50 states and the U.S. territories surveying the EDI status in their respective state territory. The TAG received 43 survey responses, and cross checked them with NAIC data. Survey respondents were asked to review their answers and submit any corrections, if appropriate.

Who Responded

The State/Federal Role TAG received answers from 43 states and
territories. Respondents were generally executive management or staff from the state's public health agency. Responses were received also from Medicaid agencies and insurance departments.

The survey findings and summary of responses should not be interpreted as an explanation of the laws of various states. Rather, the collected responses provide useful insights that are suggestive of the experience of the responding organizations or individuals.

Survey Findings

The survey findings relate to five major areas of state interests and concerns. A summary of the survey findings is found in Addendum 2.

1. Diversity of interpretations of EDI. For some states, EDI means telecommunications transfer of electronic data via networks, or mainframe to mainframe; for others, EDI also includes transfer using electronic media, such as tape, disk, and diskettes.

2. Confidentiality protection varies across states. In most states, identifying patient data is confidential. In some states, identifying provider and hospital data is confidential.

3. Respondents want information on EDI. Requests for information include: model legislation, standards and formats, EDI status update, activities in other states, and pilot projects.

4. Strong commitment to collecting health care data on the state level. The overwhelming majority of states (80%) indicated the existence of a health data organization responsible for collecting health care data on a statewide basis.

5. EDI for health care data needed to go beyond the core transactions. In addition to the core transactions targeted by WEDI (enrollment, eligibility, claims and payment), the states expressed the need for EDI to support the communication of all types of health care information, including public health managed care, and outcomes analysis.

Summary of Responses

1. Legislation. Survey responses conveyed a high level of interest by the states, but indicated that current levels of EDI implementation are limited. Over one-third of the states responded to having legislation for standard health insurers' claim forms for either the public or private sector. However, only one in six responded positively to the phase-in of EDI technology. Of those states reporting that they required EDI, 15% indicated that hospitals are
most often required to use EDI.

2. Definition of EDI. Forty-two percent of the states responding either had no definition of EDI, or considered the question not applicable because there was no legislative mandate for EDI implementation. Of the remaining respondents, 40% responded that EDI transferred data online. However, other methods of data transfer, including tape, discs and modem, trailed only slightly.

3. EDI Standards. Current standards cited by most respondents were HCFA (25%) and ASC X12 (an accredited ANSI Committee) (21%). Twenty-five percent of the states reported they had no standards, and 17% reported special state formats.

4. Designated Lead Agency. Interest in EDI was established with 40% of the respondents reporting a designated lead agency and/or participating agencies to administer EDI.

5. EDI Implementation. Forty-nine of the fifty-three respondents reported that EDI was neither implemented nor mandated.

6. EDI Sanctions. Only two of the fifty-three respondents reported the use of sanctions or penalties with respect to EDI.

7. EDI Barriers. Cost was cited most frequently as a barrier to EDI implementation (58%), which was followed by legislative or programmatic policies (49%), confidentiality (43%), concerns of providers (42%), concerns about use of health care data (36%), and concerns of payors (34%).

8. State Health Data Organizations. Concerning state interest in computerized access to better data, 87% of respondents reported that they have established state health data organizations responsible for collecting health care data, and 60% reported that the health data organization also has the responsibility of conducting research on health care delivery, financing, policy, and management. Hospitals were most frequently cited as being required to report data (77%), followed by nursing homes (47%), physicians (26%), and insurers (2%).

Data accessibility for non-confidential data is generally allowed in the public domain; some states mentioned that data could be acquired for a fee.

9. Additional Information Provided. Several states mentioned demonstration projects, and in some cases, attached copies of reports or legislation.

10. Additional Information Requested. Forty-two percent of the respondents expressed an interest in viewing the data formats or draft legislation supplied by WEDI.

11. Report Requested. Interest in WEDI activities appears high; 77% of the respondents would like to receive a copy
of the report.

RECOMMENDATIONS

Division of Responsibilities

National implementation of electronic data interchange will not be successful unless the roles of the state and federal governments are clearly delineated. Responsibility needs to be placed where it will promote and support the overall goal of EDI: to reduce administrative costs in the U.S. health care system.

Federal Role

1. Define EDI. National implementation of EDI can be achieved only if the federal government preempts the definition of EDI to ensure uniformity across state lines. The federal government must establish a universal definition of EDI, and define its strategic concepts, technologic components, and electronic transaction standards. Additionally, the federal government needs to set performance standards and establish implementation methods.

2. Confidentiality Standards. Maintaining the confidentiality of health care data is seen as a barrier to EDI implementation. This barrier crosses state lines, and as such, standards should be set at the national level to ensure the confidentiality of data.

State Role

Facilitate EDI Implementation. States will need assistance in implementing EDI, but they must first understand the concept of EDI and their roles relative to the role of the federal government. States are encouraged to participate at all levels in data content and standards implementation.

States Need Assistance

Resource

An organization should be created to serve as a repository for information about EDI. This organization would both receive information from the states, and provide information to the states, about EDI. This exchange of information would facilitate implementation and use of EDI.

Information Kits

An Information Kit should be developed that will provide states with an understanding of the options available to them for developing and implementing health care EDI. The contents of the kits should include the following information:
1. EDI Definition. Clearly define EDI, and include its major components:

- **Strategic Concepts.** There needs to be basic understanding of the scope and requirements for healthcare EDI for each state:
  - Who needs to exchange information with whom?
  - What kind of data needs to be exchanged (both now and in the near future)?
  - How fast and how reliable does the exchange need to be?

- **Technologic Components.** The technology to accomplish EDI may be provided by one or several potential technology solutions:
  - What devices are needed to enter and send the data?
  - What computer systems (hardware and software) are needed to receive the data?
  - How much of the electronically received data will be processed electronically versus manually?
  - What are electronic highways and Value Added Networks (VANs), and what defines their performance characteristics (transaction time, accuracy of data, availability and down time)?

- **Electronic Transaction Standards.** In 1992, WEDI adopted the use of ANSI transaction standards to ensure that both senders and receivers of data would be speaking a common language across the healthcare industry. There is some confusion at the state level about what the ANSI standards are. The Information Kit needs to highlight:
  - What is ANSI and how does it fit in?
  - What ANSI standards are applicable and available?
  - What indicators exist to designate a so-called standard as proprietary or a valid national standard?

2. Planning for EDI. To gain commitment to EDI from potential participants requires that they understand the issues that exist in the state's healthcare industry environment (i.e., policy, resource, political, and situational), and the benefits and barriers that each constituency perceives.

   Also, planning for EDI should include the benchmarking and performance standards acceptable to each constituency group for their respective EDI transactions. The constituencies for establishing EDI in the healthcare industry may include:
o Payors (public and private),

o Health care providers,

o Vendors of electronic highways and Value Added Networks,

o Agencies (public and private, including HCPCs, state health organizations, managed care administrators, and others) that collect and analyze health care data

3. Implementation Issues. Different types and patterns of EDI implementation are possible. Some examples of implementation patterns for data flow are:

o From provider (directly) to payor,

o From provider to VAN (intermediary) to payor

o From provider to data agency (intermediary) to payor,

o From provider to data agency (intermediary) to VAN (intermediary) to payor.

Implementation policy also needs to validate the existence of:

o Incentives or disincentives for participation,

o Guidelines or requirements for electronic highway or VAN performance, including data reliability and accuracy, and component down time issues.

4. Barriers to Implementation. Successful implementation of EDI requires that states be made aware of and empowered to overcome implementation barriers.

o Market resistance from providers, payors, and other entities.

Market resistance may arise both from those entities needing to make a substantial initial investment in hardware and software to send or receive transactions electronically, and from those entities investing substantial resources in a system that operates in a way that is not compatible with the mandated method. States need to know how other states have confronted and responded to market resistance.

o Issues relating to confidentiality of provider and patient records.

Confidentiality issues differ among states. Although it appears that all states protect confidentiality of patient records, some states also protect the identification of individual providers. States will need to know how to preserve the confidentiality of
health care data.

- Costs to both public and private entities.

State governments may be required to calculate and communicate the public and private costs associated with proposed legislation and regulations. This analysis will depend on the type of transactions covered by the law, and the party responsible for paying for them. States will need help in estimating these potential costs.

5. Cost/Finance Issues. The Information Kits should include suggested methodologies for states to use in the analysis of the public and private sector costs associated with the implementation of EDI. The methodologies should address both start-up costs and ongoing financing.

Start up cost components include:

- Initial investment
- Cost of changeover from paper to an electronic system
- State personnel costs

Ongoing financing components include:

- Payment responsibility
- Method for sending and receiving payment
- Cost per transaction
- Ongoing costs for public and private sectors

6. Contact List. States will need a list of individuals who can provide assistance in implementing statewide electronic data interchange. This list should include persons who have knowledge of all phases of implementation, including planning and technical assistance. For instance, all ASC X12 Insurance subcommittee contacts should be available for state reference. Assistance should be available for defining terminology and interpreting legal and other questions relating to implementation.

7. Federal and State Collaborative Information. States need continued direction with respect to EDI responsibilities.

Public Health Policy Implications

State officials expressed the need for EDI technology to support the communication of all types of health care information, not limited to the business transactions delineated in the 1992 WEDI Report.

1. Comprehensive Pooled Information Required. Local community public health programs that could be responsive to local
health needs are forced to make decisions and allocate resources without adequate information (i.e., what those needs are; which programs work best to satisfy those needs). Typically, the data items that are currently and routinely collected, such as vital statistics, are not available for analysis in a timely manner, and cannot be matched with other data items for comprehensive analyses and monitoring. The pooling of health data across regions, including several states, is not feasible because data definitions and transmission standards are not uniform.

Public health agencies, at both the state and federal level, need timely reporting on a full range of morbidity and outcomes information to fulfill their responsibilities. An EDI information technology infrastructure, one that will support the transactions associated with eligibility determination and claims processing, can support EDI communication of information for:

- Monitoring health conditions in communities,
- Measuring the effectiveness of technological investments,
- Managing preventive health programs,
- The analysis of trends and patterns of care for medical and epidemiological research,
- Other uses.

Comprehensive, pooled information will provide decision makers with the information necessary to make informed choices regarding health policy and allocation of public health resources.

Administrative expenses would be reduced by eliminating ineffective medical procedures and protocols of treatment.

Quality of care would improve, delivery of health services would be more efficient, and earlier fraud detection would result.

The automatic capture, assembly, and pooling of health care information will also benefit non-government providers and payors. Such information is needed to establish the medical practice criteria applied in a variety of private health care settings, including managed care, health maintenance organizations, community care networks, and regional alliances.

Since the investment required to establish an EDI infrastructure will be significant, EDI communication of transaction sets containing health information, in addition to claims-related transaction sets, will amortize the initial infrastructure investment over a much broader base of transactions. Thus, health care costs would be
further reduced, with a concomitant increase in the utility of the investment.

For several decades, the state public health organizations have worked with the federal public health agencies to develop vital statistics and categorical health information reporting. The Department of Health and Human Services has established various systems to collect information, in compliance with legislative mandates, for monitoring public health problems, setting national priorities, allocating resources, and for surveillance to detect epidemics, test hypotheses, evaluate control measures, monitor changes in infectious agents, detect changes in health practices, facilitate health planning, and provide data to state and local public health agencies for further analysis and use. The progress to date needs to be consolidated into one universal system.

2. States and Territories Lack Resources. During the past several decades, state public health organizations have not had the resources to develop automated health data collection and analysis systems to support their programs. Public health departments lack the financial resources to collect and process fundamental information (i.e., population-based needs assessment data; measures of health status; demographics; socioeconomic indicators; costs and benefits of alternative interventions; population-based process indicators; morbidity patterns; outcomes of health services; and expenditures related to specific categories of illnesses). Such resources would enable them to develop and implement a system to monitor and improve their health care.

The information that would enable agencies to monitor and improve the health care in their areas is available from providers. Information to complete health insurance claims is obtained and generated by utilization review and quality assurance for other internal provider purposes; it could be communicated to public health agencies, community care data centers, and regional alliances in various forms of aggregation and classification with full protection of patient confidentiality. It would be very inexpensive to use standard transaction sets and the EDI infrastructure for automatic communication. Without an EDI infrastructure, public health agencies, provider networks, managed care programs, health maintenance organizations, regional alliances and payors would experience fragmented, inefficient, and delayed efforts in collecting appropriate health data to guide program decisions. What is needed now are the EDI standards and information systems support to share this health data electronically in compatible formats and with the requisite confidentiality controls.

The feasibility and reliability of consistently defined data sets are being tested and confirmed in many different institutions by comparing outcomes and practices of different provider institutions. Data sets include
general health status measures, risk factor appraisals, co-morbidity identification, and measures of patient satisfaction with the system of care and with individual provider's care. In addition, some data sets are condition specific, and include the functional status measures reported by patients and determined by providers, diagnostic and therapeutic data from the medical record, and predictors based on clinical data. These data sets enable these institutions to effectively conduct evaluations that include utilization review, small area variation analysis, quality assurance, severity of illness ranking, case mix adjustment, institution marketing analysis, and self-assessment.

Although the data specifications and measures are being defined consistently within these institutional and inter-institutional cooperative data pooling programs (on a project-specific basis), a nationwide definition of these health data items is needed to ensure uniformity of meaning and provide consistent measures for these elements. The experience gained from these project-specific programs can be used to establish a national data pool with uniform definitions and standards.

In addition, some states require more technical support and services than others to both implement EDI and to achieve the same levels of implementation as the more aggressive states. It is in the nation's best interests for states to convert to EDI within the same time frame; demands on the already limited public health resources is such that it will be almost impossible for some states to further reduce basic public health services and shift resources to implementing EDI technology. Technical support and services is needed to ease the transition to EDI technology.

3. Interest is High in Standardized Health Care Data. Standards development organizations responded promptly to WEDI's initial request for EDI standards, and developed transaction format standards for enrollment, eligibility, claims submission, payment and remittance transactions. Standards for communication of EDI health information are now needed to support public health program management and policy formation, and private cost containment efforts by regional alliances, community care networks, managed care organizations, and other initiatives. The framework of WEDI studies (i.e., technical, organizational, social, economic and legal issues, and demonstration projects) supports the adoption of EDI for public health and managed competition purposes. These WEDI methodological initiatives can serve as a blueprint for the joint planning of public and private efforts, and accelerate the evolution of the EDI infrastructure to support a full range of health information communication.

To direct the nation's health care institutions toward the use of EDI technology quickly and effectively, a specific
action plan is required that will translate these goals into reality. By bringing the public and private sectors into partnership to mobilize the nation's state, territory, and federal public health agencies and their data service organizations, and by maximizing the health care industry's use of technology to streamline health care, these goals can be achieved. EDI represents an opportunity for good public policy, good business sense, and good professional practice to converge in the health care industry.

Further Initiatives

Cooperative efforts should be supported by both public and private organizations in order:

1. To define EDI standards that further the initiatives of state public health organizations, regional alliances, community care networks and managed care programs;
2. To pool health care data for conducting health care quality and outcomes analyses; and
3. To ensure uniform meaning in these health care data elements.

These standards should be included as part of a single national electronic process for the exchange of health care information.

CONCLUSION

The survey undertaken by the State Government Liaison TAG clearly indicated that many states recognize the potential benefits of health data EDI. Many states lack an understanding of EDI or the state's role relative to EDI implementation, and do not know how to initiate a health data EDI plan within their state. A resource must be in place to answer questions states have regarding EDI. This resource would be responsible for the coordination of EDI information, and all types of health care data (i.e., public health, managed care, and outcome analysis). Coordination of EDI information will serve to eliminate confusion and expedite the implementation cycle.

TECHNICAL ADVISORY GROUP

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Addendum 1: Questionnaire on State Implementation Issues

State:
Name:
Title:
Organization:
Address:
Date:

1. Has your state enacted legislation to:
   a. Require the use of a standard claim form for health insurers in the:
      o Private sector
      o Public sector
   b. Require phase in of Electronic Data Interchange (EDI)
technology in the:
  o Private sector
  o Public sector

c. Require use of EDI for the following services:
  o Physicians
  o Hospitals
  o Pharmacy
  o Radiology
  o Labs
  o Other

Specify:

2. What is your state's definition of EDI?
  o Tapes
  o Discs
  o On-line
  o Modem
  o Other

Specify:

3. What standards does your state use for EDI?
  o American National Standards Institute X12 (ANSI X12)
  o HCFA Universal Format
  o NEIC
  o None
  o Other

Specify:

4. Does your state have a designated lead agency for EDI?
   Yes
   No

   If yes, what is the agency?

   What other agencies are involved with EDI?

   Specify:

5. If your state has mandated EDI, how many years are allowed for implementation?

6. Does your EDI legislation contain sanctions or penalties?

   If so, please describe them.

7. Identify barriers, if any, to implementing EDI transactions (e.g., claims, electronic funds transfer, electronic remittance advice, eligibility, enrollment, etc.) in your state:
o Legislative and/or programmatic policies
o Cost
o Confidentiality issues
o Concerns about use of health care data
o Concerns of providers
o Concerns of payors

8. While EDI in health care thus far primarily involves financial transactions to pay claims, there is growing interest in computerized access to better data for health care decision-makers.

a. Does your state have legislation requiring a state health data organization or health statistics center:
   o to collect health care data
   o to conduct research on health care delivery, financing, policy and management?

b. If so, please enter:

   Name
   Executive Director
   Address
   Phone
   Fax

c. If so, who is required to report health care data to state health data organizations?
   o Hospitals
   o Nursing homes
   o Physicians
   o Insurers
   o Public payors
   o Workers Comp
   o Labs
   o Pharmacies
   o Other

   Specify:

d. Who has access to this data?
   o Hospitals
   o Nursing homes
   o Physicians
   o Insurers
   o Public payors
   o Workers Comp
   o Labs
   o Pharmacies
   o Other

   Specify:

9. Is there anything that we have not asked that we should know about EDI in your state?
Please specify:

10. Is there any EDI information which you would like from WEDI?
    Please specify:

11. Thank you for completing this survey. Please return it as instructed:
    Name
    Address
    Fax Number
    Phone

12. Check here if you would like a copy of the report.

Addendum 2: Summary of Survey Findings

Observations Based on Survey:

1. Legislation

   Over one-third of the states responding have legislation for standard health insurers' claim forms for either the public or private sector. However, only one in six responded positively as requiring phase in of EDI technology.

   Of those states which reported they required EDI, the largest component was hospital with 15%.

2. Definition of EDI

   Concerning the definition of EDI, 42% of the states responding had no definition or considered the question not applicable because of no legislative mandate. Of the remaining respondents, 40% reported that EDI was defined as on-line, however other methods of data transfer including tape, discs, modem trailed only slightly.

3. EDI Standards

   Current standards most cited by respondents are HCFA (25%) and ANSI X12 (21%), however 25% of the states reported that they had no standards and 17% reported special state formats.

4. Designated Lead Agency

   Interest in EDI is established with 40% of the respondents reporting a designated lead agency and/or participating agencies.

5. EDI Implementation

   Forty-nine of the fifty-three respondents reported that EDI was neither implemented nor mandated.
6. EDI Sanctions

Ninety-four percent of respondents reported no incentives or sanctions.

7. EDI Barriers

Cost was cited most frequently as a barrier (58%), followed by legislative or programmatic policies (49%), confidentiality, (43%), concerns of providers (42%), concerns about use of health care data (36%), and concerns of payors (34%).

8. State Health Data Organizations

Concerning growing interest in computerized access to better data, 87% reported state health data organizations responsible for collecting health care data and 60% reported that the health data organization also has the responsibility to conduct research on health care delivery, financing, policy and management.

Hospitals were most frequently cited as required to report data (77%), followed by nursing homes (47%), physicians (26%) and insurers (21%). Access to data is generally in the public domain for non-confidential data and some states mentioned availability for a fee. Several states mentioned that provider data is treated confidentially within their state.

9. Additional Information Added

Several states mentioned demonstration projects and/or attached copies of reports or legislation.

10. Additional Information Requested

42% of the respondents would like to see data formats, or draft legislation from WEDI.

11. Report Requested

Interest appears high in WEDI activities, since 77% would like to receive a copy or the report.

<table>
<thead>
<tr>
<th>WEDI State Questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey Questions:</td>
</tr>
</tbody>
</table>

1. a. Legislation for std claim form
   - Private Percent Yes 34%
   - Public Percent Yes 32%

b. Phase in EDI
   - Private Percent Yes 13%
   - Public Percent Yes 15%

c. Require EDI
   - Physicians Percent Yes 11%
<table>
<thead>
<tr>
<th>Service</th>
<th>Percent Yes</th>
<th>15%</th>
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<tbody>
<tr>
<td>Pharmacy</td>
<td>Percent Yes</td>
<td>8%</td>
</tr>
<tr>
<td>Radiology</td>
<td>Percent Yes</td>
<td>11%</td>
</tr>
<tr>
<td>Labs</td>
<td>Percent Yes</td>
<td>11%</td>
</tr>
<tr>
<td>Other</td>
<td>Percent Yes</td>
<td>8%</td>
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2. Definition of EDI

<table>
<thead>
<tr>
<th>Type</th>
<th>Percent</th>
<th>42%</th>
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<tbody>
<tr>
<td>NONE or N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tapes</td>
<td>Percent</td>
<td>36%</td>
</tr>
<tr>
<td>Discs</td>
<td>Percent</td>
<td>32%</td>
</tr>
<tr>
<td>On-Line</td>
<td>Percent</td>
<td>40%</td>
</tr>
<tr>
<td>Modem</td>
<td>Percent</td>
<td>36%</td>
</tr>
<tr>
<td>Other</td>
<td>Percent</td>
<td>8%</td>
</tr>
</tbody>
</table>

3. EDI standards

<table>
<thead>
<tr>
<th>Standard</th>
<th>Percent</th>
<th>21%</th>
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<tbody>
<tr>
<td>ANSI X12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HCFA</td>
<td>Percent</td>
<td>25%</td>
</tr>
<tr>
<td>NEIC</td>
<td>Percent</td>
<td>2%</td>
</tr>
<tr>
<td>None</td>
<td>Percent</td>
<td>25%</td>
</tr>
<tr>
<td>Other</td>
<td>Percent</td>
<td>17%</td>
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</table>

4. Designated lead agency

<table>
<thead>
<tr>
<th>Type</th>
<th>Percent Yes</th>
<th>40%</th>
</tr>
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<tbody>
<tr>
<td>Y/N</td>
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5. Years mandated EDI implementation

<table>
<thead>
<tr>
<th>Percent Implemented</th>
<th>4%</th>
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6. EDI sanctions

<table>
<thead>
<tr>
<th>Percent</th>
<th>94%</th>
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<tbody>
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<td>No or N/A</td>
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* Includes the 50 states, Washington DC, US Virgin Islands and the Republic of Paulau

WEDI State Questionnaire (Cont'd)

Survey Questions: # Responding* 53

7. EDI barriers

<table>
<thead>
<tr>
<th>Type</th>
<th>Percent</th>
<th>49%</th>
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<tr>
<td>Legislative or programmatic</td>
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</tr>
<tr>
<td>Cost</td>
<td>Percent</td>
<td>58%</td>
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<tr>
<td>Confidentiality</td>
<td>Percent</td>
<td>43%</td>
</tr>
<tr>
<td>Use of health care data</td>
<td>Percent</td>
<td>36%</td>
</tr>
<tr>
<td>Concerns of providers</td>
<td>Percent</td>
<td>42%</td>
</tr>
<tr>
<td>Concerns of payors</td>
<td>Percent</td>
<td>34%</td>
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</tbody>
</table>

8 a. State health data organization

<table>
<thead>
<tr>
<th>Type</th>
<th>Percent Yes</th>
<th>87%</th>
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<tr>
<td>Collect health care data</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research delivery, financing,</td>
<td>Percent Yes</td>
<td>60%</td>
</tr>
<tr>
<td>policy, mgt.</td>
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<td></td>
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b. Enter agency

c. Who reports

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<th>Type</th>
<th>Percent</th>
<th>77%</th>
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<td>Hospitals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursing Homes</td>
<td>Percent</td>
<td>47%</td>
</tr>
<tr>
<td>Physicians</td>
<td>Percent</td>
<td>26%</td>
</tr>
<tr>
<td>Insurers</td>
<td>Percent</td>
<td>21%</td>
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<tr>
<td>Category</td>
<td>Percent</td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td>----------</td>
<td></td>
</tr>
<tr>
<td>Public payors</td>
<td>13%</td>
<td></td>
</tr>
<tr>
<td>Workers Comp.</td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>Labs</td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>Pharmacies</td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td><strong>d. Access</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NONE</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>Hospitals</td>
<td>43%</td>
<td></td>
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<tr>
<td>Nursing Homes</td>
<td>34%</td>
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<td>Physicians</td>
<td>34%</td>
<td></td>
</tr>
<tr>
<td>Insurers</td>
<td>36%</td>
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<tr>
<td>Public payors</td>
<td>38%</td>
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<td>Workers Comp.</td>
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<td>Pharmacies</td>
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</tr>
<tr>
<td>Other</td>
<td>32%</td>
<td></td>
</tr>
<tr>
<td>PUBLIC DOMAIN for</td>
<td>23%</td>
<td></td>
</tr>
<tr>
<td>non-confidential</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Add'1 info added</td>
<td>34%</td>
<td></td>
</tr>
<tr>
<td>10. Add'1 info</td>
<td>42%</td>
<td></td>
</tr>
<tr>
<td>11. Report Copy</td>
<td>Percent requesting 77%</td>
<td></td>
</tr>
</tbody>
</table>

* Includes the 50 states, Washington DC, US Virgin Islands and the Republic of Paulau
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Addendum 4: State/Federal Role Survey - State Health Data Organizations

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The Financial Implications Technical Advisory Group (TAG) was given a charge to describe and quantify the costs and benefits of implementing standardized electronic data interchange (EDI) throughout the health care system. The goal was to provide a fair representation of the aggregate costs and benefits that can be expected to be incurred by major trading partners in the health care system.

WEDI - 1992

In 1992, WEDI estimated that the implementation of EDI for a core set of health care transactions (enrollment, eligibility verification, claims submission, claims inquiry, and payment and remittance) could provide gross administrative savings of $4-10 billion. This estimate was derived largely without data on providers' estimated savings.

WEDI - 1993

In 1993, the WEDI Financial Implications analysis was significantly expanded. First, the costs of implementing EDI was examined to provide an estimate of the investment required to establish standardized EDI throughout the health care sector. Second, newly available data are used to estimate potential savings for providers and to update the savings estimates for payors and employers for the core transactions evaluated in 1992.
Finally, the analysis of the benefits of EDI was extended to encompass six additional health care transactions that could benefit from the implementation of EDI. This expanded set of EDI transactions reflects the broader vision of WEDI to connect all health care players and to utilize EDI to handle multiple applications.

Note: Not included in this White Paper are the costs or benefits of the specific program recommendations from the other WEDI TAGs. For example, this paper does not include a separate analysis of the cost implications of compliance with the privacy and confidentiality legislation proposed by the Confidentiality and Legal Issues TAG.

### Implementation Costs

The one-time implementation costs necessary to establish or upgrade existing operations to a standardized EDI capability are estimated as follows for each of the major trading partners:

<table>
<thead>
<tr>
<th>Trading Partner</th>
<th>Low-End</th>
<th>High-End</th>
</tr>
</thead>
<tbody>
<tr>
<td>Providers</td>
<td>$3.8</td>
<td>$11.2</td>
</tr>
<tr>
<td>Payors</td>
<td>0.7</td>
<td>3.5</td>
</tr>
<tr>
<td>Employers</td>
<td>0.8</td>
<td>2.6</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$5.3</strong></td>
<td><strong>$17.3</strong></td>
</tr>
</tbody>
</table>

These costs reflect significant investments in basic automation platforms where automation is currently absent, as well as upgrades to existing systems in order to support standardized EDI for a wide range of transactions. The costs for a basic automation platform include hardware, software, communications equipment, installation, and some limited vendor training. The implication is that there will be significant additional savings, especially for previously non-automated entities, due to the fundamental automation of internal operations that are not reflected in the savings below. Based on the experience of provider information system vendors, the benefits of internal automation, independent of EDI, amount to 2%-7% of revenue, or approximately $1.6-5.6 billion for non-automated physician practices alone.

### Gross Administrative Savings for Core Transactions

The estimated gross administrative savings for the core transactions are summarized in the following table. These figures reflect annual ongoing savings, net of transaction costs, assuming full implementation of standardized EDI.

Note: While the costs to implement EDI are rather definitive and will occur up-front, the savings are more speculative in nature and will develop over the long term.
### 1993 WEDI Annual Gross Administrative Savings for Core Transactions

<table>
<thead>
<tr>
<th>Core Transactions</th>
<th>Low-End</th>
<th>High-End</th>
</tr>
</thead>
<tbody>
<tr>
<td>Claims Submission</td>
<td>$4,517</td>
<td>$13,141</td>
</tr>
<tr>
<td>Enrollment</td>
<td>2,157</td>
<td>4,328</td>
</tr>
<tr>
<td>Payment &amp; Remittance</td>
<td>1,084</td>
<td>1,337</td>
</tr>
<tr>
<td>Eligibility</td>
<td>252</td>
<td>489</td>
</tr>
<tr>
<td>Claims Inquiry</td>
<td>277</td>
<td>396</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$8,287</strong></td>
<td><strong>$19,691</strong></td>
</tr>
</tbody>
</table>

Compared with the 1992 WEDI Report, additional data regarding provider and employer savings changed the estimate of $4-10 billion for the core transactions to $8-20 billion.

### Gross Administrative Savings for Additional Transactions

The estimated gross administrative savings for six more transactions that could benefit from the application of EDI are summarized in the following table. These figures also reflect annual ongoing savings, net of transaction costs, assuming full implementation of standardized EDI for these transactions. The same qualifications on the savings for the core transactions apply to these additional transactions.

### 1993 WEDI Annual Gross Administrative Savings for Additional Transactions

<table>
<thead>
<tr>
<th>Additional Transactions</th>
<th>Low-End</th>
<th>High-End</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials Management1</td>
<td>$3,000</td>
<td>$4,500</td>
</tr>
<tr>
<td>Prescription Ordering</td>
<td>664</td>
<td>664</td>
</tr>
<tr>
<td>Coordination of Benefits</td>
<td>477</td>
<td>657</td>
</tr>
<tr>
<td>Test Order/Results</td>
<td>294</td>
<td>294</td>
</tr>
<tr>
<td>Referral/Authorization</td>
<td>167</td>
<td>176</td>
</tr>
<tr>
<td>Appointing/Scheduling</td>
<td>47</td>
<td>47</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$4,649</strong></td>
<td><strong>$6,338</strong></td>
</tr>
</tbody>
</table>

1 Gross administrative savings of $3.2-$4.8 billion were also identified for health care suppliers as part of migrating to standard EDI for materials management. But these savings are not included in the scope of this analysis, as no estimate was made of the corresponding implementation costs for suppliers.

### Total Gross Administrative Savings - 1993 WEDI Estimate

Combining the estimated savings for the core transactions and the additional transactions yield a total estimate of the annual gross administrative savings potential of $13 to $26 billion.
This estimate reflects the annual, ongoing savings that could be achieved over time, assuming the necessary investments are made (as summarized above) to establish a standardized EDI capability to fully implement each of the transactions reviewed.

1993 WEDI Total Gross Administrative Savings

<table>
<thead>
<tr>
<th>Annual Gross Savings ($Billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Core Transactions</td>
</tr>
<tr>
<td>Additional Transactions</td>
</tr>
<tr>
<td>GRAND TOTAL</td>
</tr>
</tbody>
</table>

Looking at the total gross administrative savings potential from the perspective of each of the major trading partners provides the following breakdown in savings:

1993 WEDI Total Gross Administrative Savings by Trading Partner

<table>
<thead>
<tr>
<th>Annual Gross Savings ($Billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Providers</td>
</tr>
<tr>
<td>Payors</td>
</tr>
<tr>
<td>Employers</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>

Combined Cost/Benefit

Combining the estimated implementation costs and the gross administrative savings potential identified, the following table shows how the cost/benefits of EDI would unfold over the next six years (to the year 2000), assuming the investment to implement EDI occurs over the first three years, and the utilization of the EDI capability grows steadily over the six year time frame. (Constant 1993 dollars are used to simplify the illustration.)

1993 WEDI Net Savings Potential

<table>
<thead>
<tr>
<th>Net Savings Potential ($Billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
</tr>
<tr>
<td>Savings</td>
</tr>
<tr>
<td>Costs</td>
</tr>
<tr>
<td>Net Savings</td>
</tr>
</tbody>
</table>

Breaking down the cost/benefit analysis by the major trading partners indicates that each group achieves a positive net savings in each year. Over the six year period, providers accumulate net savings of $26.1 billion, payors accumulate $9.4 billion, and employers accumulate $6.8 billion.
Conclusion and Recommendations

The estimates presented in this report imply an aggregate net savings of $42 billion by the year 2000 for a comprehensive implementation of EDI in health care. While this cost/benefit analysis provides a strong endorsement of the value of EDI, the net savings identified should not be construed as hard-dollar savings that will be translated into a corresponding reduction in the nation's health care bill. The administrative savings identified will result in some bottom-line reduction of labor costs and the costs of handling paper. However, much of the administrative savings will result in health care enterprises improving the quality of their services through the reallocation of resources, from administrative activities to enhanced patient care or customer service.

Beyond the administrative savings potential identified, a comprehensive EDI infrastructure will enable significant improvements in the quality and cost-effectiveness of the health care services delivered in the U.S. These improvements have the potential to far exceed the dollar savings due to streamlined administration, and they also have the potential to impact the quality of the health care Americans receive. For example, the ripple-effect of implementing an EDI infrastructure will be demonstrated in a reduction in duplicate medical procedures and processes as a patient is handled by a continuum of providers during an episode of care. There will also be a reduction in the exposure to fraud as the security controls on electronic transactions prevent unauthorized access to financial transactions, and as the electronic verification and tracking of transactions improves the ability to detect fraud and abuse. The widespread use of EDI will also enable the capture of significant volumes of high quality clinical and financial data which will support the analysis and identification of the most effective health care treatments and procedures.

To encourage the rapid development and implementation of EDI throughout the health care system, with the objective being to tap these potential savings, it is recommended that positive financial incentives be considered for the smaller trading partners within the system. Small business loans and tax incentives based on EDI implementation or investment are two examples of the positive stimuli that could accelerate the move toward a complete EDI infrastructure in health care. Industry training and educational programs should also be developed to support the rapid implementation of EDI.

With the significant net savings of EDI that has been identified, it is time for all of the health care trading partners, supporting vendors, policy makers, legislators, and the administration to focus their efforts on making the full implementation of EDI a reality in health care.

INTRODUCTION
The charge of the WEDI Financial Implications Technical Advisory Group is to describe and quantify the costs and benefits of implementing electronic data interchange throughout the health care system. The TAG's goal is to provide a fair representation of the aggregate costs and benefits that can be expected to be incurred by the major trading partners (providers, payors, and employers) in the health care system.

EDI is the electronic exchange of business information in a standard format. In health care, "business information" can include financial data such as claims, coordination of benefits, supply invoices, and payments; administrative data such as enrollment, eligibility verification, claims status inquiry, provider referrals, managed care pre-authorizations, and provider appointing/scheduling; as well as clinical data, such as prescriptions, medical tests and results, and medical records. Compared with other industries such as financial services, retail, and manufacturing, the "business information" exchanged in health care is widely considered to be more complex and variable. This complexity has inhibited the development and adoption of standards that would enable widespread automation of health care business interactions. For example, it is estimated that only 15% of the 4.8 billion annual health care claims are currently submitted electronically and the percentage of other health care transactions handled electronically is insignificant (i.e., less than 1%).

The relative lack of electronic communication in health care today creates a tremendous opportunity for significant administrative and clinical cost savings if comprehensive, standardized EDI capabilities are adopted throughout the industry. This report attempts to identify and quantify some of the potential savings and costs involved in implementing and operating EDI.

This analysis of costs and benefits assumes that a comprehensive, standardized EDI capability is established throughout the health care system according to an aggressive implementation schedule over the next three years, and a progressive increase in the utilization of EDI over a six-year period. It is critical that the transactions to be automated are implemented with standard formats and data content, otherwise the cost savings potential will be severely diminished by the complexity of the system. Other assumptions behind the cost/benefit analysis include assumptions regarding the number of trading partners, the proportion with EDI capability, the volume of transactions, the costs of transactions, and the savings per transaction. The key assumptions behind each estimate are provided in the analysis.

Note: While the costs to implement EDI are rather definitive and will occur up-front, the savings are more speculative in nature and will be realized over the long term.

Data on the costs and savings of transactions came from multiple sources and reflect the different experiences and perspectives of various sectors of the health care industry. These sources include the previous WEDI financial analysis,
published studies by the Health Care Financing Administration, A.D. Little, and Lewin-VHI, numerous articles in the trade press, as well as the proprietary data, first-hand experience, and judgment of the members of the Financial Implications TAG. Also included as a source of data are the results of the Tiber Group study of the costs and benefits of the three WEDI demonstration projects initiated in 1992. Data sources for key data items are listed in the Addendum 1, "Data Source."

Given the diversity of the sources of data and the legitimate variations in cost/benefit experience, many of the individual cost/benefit figures are presented as a range of potential savings/costs to provide fair representation. To generate a composite cost/benefit analysis over a period of years, the average of the costs and savings ranges are used.

This report begins with a review of the 1992 WEDI Financial Implications analysis, followed by the 1993 analysis. The 1993 analysis begins with an estimate of the broad implementation costs that the major trading partners might incur up-front to establish a comprehensive and standardized EDI information infrastructure. Then, the annual gross administrative cost savings (net of transaction costs) are analyzed for the core transactions, followed by six additional transactions. The estimated benefits of exchanging computer-based patient records are also discussed, but not included in the summary analysis due to the long implementation horizon projected for automated patient records. Finally, the estimated costs and savings are combined in a net cost/benefit analysis that takes into account a phased implementation and transition schedule.

1992 WEDI ANALYSIS OF FINANCIAL IMPLICATIONS


The Technical Advisory Group found that a comprehensive EDI infrastructure supported by national standards for common transaction sets was both necessary and desirable. The technology necessary to implement and support a comprehensive EDI infrastructure is widely available. In fact, this technology is increasingly being used for proprietary EDI applications. The Technical Advisory Group concluded that rapid implementation on a cooperative basis could be facilitated by widespread adoption of standardized transaction sets and further specification concerning the structure and operation of the EDI framework itself.

The White Paper examined five major transaction categories to determine the financial implications of applying EDI. The major transaction categories included:

- Enrollment and certification
In each case, the qualitative and quantitative implications of an EDI infrastructure were described from the perspective of patients, employers (sponsors), providers, and payors.

The 1992 WEDI Technical Advisory Group found that qualitative benefits of EDI in health care would include a near-term reduction of administrative hassle and paperwork, and a longer-term potential to use information technology to improve the quality and cost effectiveness of health care. Quantitative benefits would include gross administrative savings, conservatively estimated at $4-10 billion, with additional administrative savings likely to occur as the availability of information in electronic formats ultimately enables organizations to achieve higher levels of automation. The estimates of gross administrative savings from EDI for the transactions profiled were as follows ($ Millions):

1992 WEDI Analysis - Gross Administrative Savings Estimates
Gross Administrative Savings Estimates ($Millions)

<table>
<thead>
<tr>
<th>Claims</th>
<th>Enrollment &amp; Eligibility Verification</th>
<th>Submission &amp; Claims Certification Verification</th>
<th>Payment &amp; Remittance</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL Providers</td>
<td>$50-100</td>
<td>DNA</td>
<td>$1,120</td>
</tr>
<tr>
<td>Payors</td>
<td>$50</td>
<td>$300</td>
<td>$1,400</td>
</tr>
<tr>
<td>Employers</td>
<td>$70-110</td>
<td>$50</td>
<td>$1,248</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$170-260</td>
<td>$300</td>
<td>$1,638-3,258</td>
</tr>
</tbody>
</table>

DNA = Data Not Available

The difference between the specific estimates in the table and the $4-10 billion overall estimate is attributable to the unavailable data on provider savings for the core transactions, as well as additional savings expected for many other health care transactions that were not profiled in the detailed table. The 1992 WEDI Technical Advisory Group concluded their analysis with two key recommendations for further analysis to support the development of an EDI strategy:

1. The implications for providers, including the expected impact on administrative costs, required further evaluation, especially for eligibility verification, claims submission, and claims inquiry transactions.

2. An analysis of the investment requirements and costs to implement a comprehensive EDI infrastructure was needed.

The 1993 WEDI Financial Implications TAG endeavored to address these recommendations, as well as revisit the original analysis.
of potential cost savings.

1993 WEDI FINANCIAL IMPLICATIONS ANALYSIS

EDI Implementation Costs

The Financial Implications TAG has attempted to estimate the implementation cost of standardized EDI within the provider, payor, and employer community. The approach used was to group the various trading partners and estimate the EDI implementation cost for each group. Several key factors affect this analysis:

- The number of entities within each group can be determined with a fair degree of confidence, although industry estimates have been used to determine the degree to which various entities are already EDI capable.

- The effective use of EDI transaction sets presupposes certain levels of computer automation. In certain cases, it is difficult to separate the cost of providing basic EDI capability and the cost of providing the automated systems which can make full use of the EDI transactions. The TAG's approach to this issue was to estimate a range of costs required to implement a fully capable EDI environment, which included much of the costs required to automate the trading partner's environment.

The TAG's estimate of the EDI implementation costs to achieve a standard EDI environment for the major trading partners is summarized in the table on the following page.

1993 WEDI Implementation Costs Estimate

<table>
<thead>
<tr>
<th>Implementation Costs</th>
<th>Low-End Total</th>
<th>High-End Total</th>
<th>Entities Needing Upgrade</th>
<th>Upgrade Costs, Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAYORS</td>
<td>($Millions)</td>
<td>($Millions)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large Insurers</td>
<td>240 480 276 240</td>
<td>$1,000,000</td>
<td>$2,000,000</td>
<td></td>
</tr>
<tr>
<td>Blues</td>
<td>60 120 72 60</td>
<td>1,000,000</td>
<td>2,000,000</td>
<td></td>
</tr>
<tr>
<td>Other Insurers &amp; TPAs</td>
<td>149 1,490 1,500</td>
<td>1,490 100,000</td>
<td>1,000,000</td>
<td></td>
</tr>
<tr>
<td>HMOs and PPOs</td>
<td>130 1,298 1,398</td>
<td>1,298 100,000</td>
<td>1,000,000</td>
<td></td>
</tr>
<tr>
<td>Medicare/Medicaid</td>
<td>120 120 120</td>
<td>1,000,000</td>
<td>1,000,000</td>
<td></td>
</tr>
<tr>
<td>PROVIDERS</td>
<td>#3,761 $11,213</td>
<td>$50,000</td>
<td>$500,000</td>
<td></td>
</tr>
<tr>
<td>Hospitals</td>
<td>300 3,000 6,475 6,000</td>
<td>$50,000</td>
<td>$500,000</td>
<td></td>
</tr>
</tbody>
</table>
These estimated costs include the expenses for complete information technology solutions, as well as upgrades to existing platforms necessary to effectively participate in a standardized EDI environment. For a complete automation platform, the expenses include hardware, software, telecommunications equipment, installation, and some limited vendor training. This level of investment will provide an internal automation platform for most health care enterprises which will serve many purposes beyond just EDI. The implication is that there are significant additional savings, due to the fundamental automation of internal operations that are not reflected in the EDI savings discussed below. Based on the experience of provider information system vendors, the benefits of internal automation, independent of EDI, amount to 2%-7% of revenue, or approximately $1.6-5.6 billion for non-automated physician practices, alone.

The effective use of EDI transaction sets presumes that computer-readable data is available at the originator's site, and that the recipient can make use of computer-readable data. However, this does not imply that all the basic functions of each trading partner must be automated. In some cases, effective use of a transaction set can be made when only a small portion of the trading partner's operations are automated. For example, the implementation costs to achieve full implementation of claims submission, alone, are estimated to be approximately $1.3 billion. This smaller investment for claims submission capability should be compared against the estimated benefits for claims submission, alone.
EDI Administrative Savings for Core Transactions

Enrollment

Enrollment transactions involve enrolling individuals or groups of individuals into public and private health plans. Today, enrollment is largely a manual process that begins with the individual completing a paper document that is either submitted directly to the health plan administrator/insurer, or to their employer who batches the documents for submission to the administrator/insurer. Enrollment information exchange can also extend to conveying enrollment information from the administrator/insurer to the major health care providers serving the enrolled population.

EDI offers the potential to streamline this process through electronic capture of the source document information on the front-end of the process, and the electronic exchange of the enrollment data from employer to administrator/insurer and from administrator/insurer to providers.

Eliminating the passage of paper forms or massive paper lists from one organization to another is estimated to save employers with 50 employees or more $2.0 to $4.1 billion per year (net of transaction costs), and save payors $110 to $220 million net per year. These savings estimates are based on savings in paper-handling and postage, offset by the transaction costs.

The key assumptions are that the 171,722 employers with more than 50 employees will save .5 to 1.0 FTE (full time equivalent) or $12,000-$24,000 per year, minus annual transaction costs of $78 ($1.50 times 52 transactions). Payors will save $.50-1.00 per enrollee for approximately 220 million enrollees.

Eligibility Verification

Eligibility verification transactions typically involve the confirmation of an individual's eligibility for health care services reimbursement by a third party, as well as determining the extent of the benefit coverage or the status of deductibles and co-payments which are the responsibility of the individual. It is estimated that 150 million of this type of information exchange between providers and payors occurs each year, generally by telephone.

EDI offers the potential to reduce the amount of time providers' office staff and the payors' staff spend dealing with these relatively straight-forward questions. The savings estimated for payors can range from $75 to $150 million based on a savings of $.50-1.00 per inquiry. The savings to providers are larger, given the additional time they spend in queues or redialing for service. However, the provider savings do not eliminate the nominal amount of time required to initiate the eligibility verification transaction.

The ongoing operating savings for providers relative to eligibility or benefit inquiries is estimated to range from $1.10 to $2.09 net per transaction, based on the results of the WEDI
demonstration sites. This yields a total estimated savings of $165 to $314 million. Other savings for providers relate to the elimination of the need for as many as 6,000 large institutions/clinics to maintain enrollment or eligibility lists supplied by payors. Assuming these lists are eliminated, the providers involved would save $2,000 to $4,000 per year in maintenance and handling costs, for a total savings of $12 to $24 million.

Claims Submission

EDI can simplify the claim handling process significantly. In fact, this electronic application has so much potential for administrative efficiency that notable progress has already been made in implementing electronic claims submission. However, the large majority of claim submissions (85%) are still accomplished in a paper environment. Based on an estimated 4.8 billion total claims to be submitted in 1993, this leaves 4.06 billion to be automated.

The information necessary for claim submission generally includes patient and payor identification, and the services rendered to the patient. In a paper environment, this data is gathered from various sources, which include patient insurance information, medical records, and charts. This information is recorded on a claim form or bill at the provider location (or completed by the patient), mailed to the payor, processed through the payor's mail room, sorted, distributed, and eventually keyed into a payor computer system.

Often, additional information is required to process the claim. Medical records, nurses notes, etc., are requested by the payor via written requests or telephone calls. The provider must locate, copy, and FAX or mail the requested information to the payor. Again the payor must enter this information into the claim processing system. Once in the system, the claim information is matched with the patient's benefit information and processed for payment.

EDI can simplify these processes. As in the paper environment, patients and providers remain responsible for assembling the required claims information. However, providers could enter this information into terminals, as opposed to writing it on paper. The completed claim information is then transmitted to the appropriate payor's information system, eliminating duplicate claim entry effort by payors. Additional requests for information can also be exchanged electronically. Assuming electronic medical records are available, providers can retrieve the required information and transmit it to the payor, eliminating physical searches, copying, and mailing activities that characterize the current environment.

Similarly, claims adjustments and corrections can be streamlined by means of EDI. In a paper environment, payors must either resolve incorrect claims with a telephone call to the provider, or actually send the claim back to the provider for correction. In an electronic environment, claims would first pass through a series of edits before being transmitted to the
payor. These edits may even occur online as data is inputted. As a result, few incorrect or incomplete claims will reach payors. The cost associated with claim resolution can, therefore, be greatly reduced, and claim adjudication can be both accelerated and more highly automated.

EDI savings for physicians will include labor savings as a result of standardized information and procedures, and reductions in reprocessing and refiling time due to increased accuracy in initial claim submission. Other savings will result from postage, telephone expenses, and the cost of forms. Savings experience will depend on practice size, specialty, and ultimately, on claim volume. In total, the estimated savings for physicians may range from $1.9 to $3.8 billion per year, net of the transaction cost for electronic claims.

The key assumptions behind this estimate are that 2.2 billion physician claims will be submitted in 1993, 12% of which are already electronically submitted. Based on various studies, including the Tiber Group Study of WEDI demonstration sites, operational savings per transaction varies from $1.01 to $1.96, net of transaction costs (assumed to be up to $.50 per claim).

Unlike physician practices, more hospitals are already submitting claims electronically (70%). Therefore, the additional savings that can be accrued are lower; estimated to be $67 to $111 million, net of the transaction cost. The key assumptions are that 347 million hospital claims will be submitted in 1993, 70% of which are already electronically submitted. Based again on various studies, including the Tiber Group Study of WEDI demonstration sites, operational savings per transaction varies from $.64 to $1.07, net of transaction costs (assumed to be up to $.50 per claim).

Provider savings for the other 1.9 billion claims from pharmacies, labs, nursing homes, home health care agencies, dentists, podiatrists, optometrists, and other health care providers that are not yet electronically submitted are estimated to be at least the minimum amount saved by physicians and hospitals, or $.64 to $1.01 per claim or $1.2 to $3.8 billion, net of transaction costs.

The administrative savings for payors will vary based on the efficiency of their current operations, and how much of their current claim volume is already being received electronically. The estimate of payor savings ranges from $.5 to $1.50, minus a transaction cost of $.17. In total, the savings are estimated to range from $1.35 billion to $5.43 billion.

In addition to the quantified administrative cost savings, payors will receive more accurate claim information because electronic edits can be established to check for accuracy and completeness prior to submission by the provider. For payors, the receipt of a "clean claim" significantly contributes to the efficiencies resulting from electronic submission because errors and re-submission activity is reduced.
Payment and Remittance transactions involve the transfer of funds, generally by check or draft, and the explanation of the benefit payments from a payor organization to providers or individual consumers.

For the payor organizations, the potential savings for electronic remittance is a function of the paper check/draft also being replaced by an electronic funds transfer transaction. The savings result from the elimination of postage and handing. If either piece is mailed out, the savings are diminished significantly. Based on the difference in average costs between handling a paper check and remittance advice versus the cost of handling an electronic remittance and an automated clearinghouse (ACH) payment, the estimated savings for payors would be $32 to $285 million per year. The key assumptions are that there are, on average, 15 claims per remittance advice, or 320 million remittance advices and payments, given 4.8 billion total claims in 1993. The manual costs of processing a remittance and payment range from $.45 to $1.00, while the costs of processing under EDI is $.11 to $.35. The net savings range being $.10 to $.89.

If a physician's practice or a hospital has a computerized accounting package, then automatic remittance posting to the accounts receivable package may be accomplished. Assuming this capability is present, then up to two-thirds of the labor formerly required for account receivable posting and reconciliation could be saved. For hospitals, this savings could amount to $438 million, assuming 6,000 hospitals with an average of four people posting accounts at $27,400 each per year. For physician and dental practices, it is estimated that 7% of an administrative person's time would be saved by electronic remittance receipt and posting for each practice. These savings could amount to $614 million, assuming 320,000 practices (270,000 physician and 50,000 dental practices) and a total cost of $27,400 per person.

Claims Inquiry transactions generally involve a request, either written or over the phone, from providers to payors to determine the processing and payment status of a health care claim that has been submitted. It is estimated that public and private health care payors receive over 60 million claim status inquiries per year.

EDI can be used to reduce the amount of time that providers' office staff and payors' staff spend on the phone or preparing and responding to written inquiries. Based on the WEDI demonstration sites, this time savings is estimated to save payors $1.06 to $2.72 net per inquiry, or $64 to $163 million per year, and save providers $3.56 to $3.88 net per inquiry, or $214 to $233 million.

EDI Administrative Savings for Additional Transactions
Health Care Materials Management

Health care materials management involves the ordering, acknowledgment, invoicing, and payment for supplies and equipment employed in the health care delivery setting. Today, these functions are handled in one of three ways: manual order placement and processing, proprietary order entry systems, and standard EDI interfaces. The majority of acute care hospitals (80%) are handling their 15,000 average annual purchase orders using order-entry systems, while 15% use manual systems, and 5% use standard EDI interfaces.

The administrative cost difference between these different methods of handling purchasing is significant. Manual processing costs the provider $40 to $150 per purchase order, and costs the supplier $30 to $150 per purchase order. An order entry system, which may consist of ASC X12 (an accredited ANSI Committee) standards, but still requires duplicate key entry and does not allow the flexibility contained in a standard EDI translator, will cost the provider $28 and the supplier $24, on average, per purchase order.

If a standard EDI interface with the provider and supplier application system is implemented using a standard EDI translator, the average costs per purchase order will be brought down to $11.20 for the provider and $3.20 for the supplier. Implementing the standard EDI interface provides the flexibility necessary to address the different standard versions and conventions that multiple suppliers may use.

Based on these relative costs, standard EDI implementation has the potential to save 6,138 acute care hospitals between $1.6 billion and $3.1 billion, and save suppliers between $1.9 billion and $3.5 billion. Additional savings for the use of standard EDI by other health care providers and facilities (e.g., 15,324 nursing homes, 9,285 home health care agencies, 6,000 laboratories, 66,000 pharmacies, 320,000 physician and dentist offices), assuming an average of 120 purchase orders per year, are estimated to be $1.4 billion for the providers and $1.3 billion for the suppliers.

Prescription Ordering

The benefits that EDI presents for prescription transactions fall into several areas, both direct and indirect. Generally, prescriptions are ordered over the phone by a provider or are physically carried to a pharmacy by a patient. In addition to the time required by the provider to order a prescription over the phone, and the time required of the patient to wait for a prescription to be filled when delivered personally, there are inefficiencies experienced by pharmacies which result from the manner in which prescription orders are received. Nationally, 1.7 billion prescriptions are ordered per year. Assuming 50% of prescriptions are ordered over the phone, and that both the ordering provider and the pharmacist save 2 minutes at $.22 per minute each for the time on the phone and the re-transcription respectively, then the savings potential, net of a $.17
transaction fee, is estimated to be $604 million.

There are also indirect benefits which could be realized through the use of EDI in the prescription ordering process. There is a liability issue associated with the ordering and fulfilling of prescription drugs. This issue centers not only on the accuracy of the prescription, but also on the pharmacist's ability to interpret a handwritten prescription accurately. Automating this process through EDI would minimize these kinds of errors, as well as facilitate more accurate documentation of prescription transactions to include refill authorizations. This documentation would also support reporting requirements for regulatory compliance. Eliminating 10% of illegible handwritten prescriptions (or 85 million) that must be verified with the prescribing provider could save an additional $60 million in telephone time.

Two other ancillary benefits of EDI in this process relate to improved control over prescription deliveries. In a managed care environment, EDI could facilitate patient referral to a "covered" or "authorized" pharmacy. This presents obvious advantages. These second benefit would be realized in a case where a prescription needed to be transferred to another pharmacy. EDI could facilitate the accurate transfer of the prescription, as well as document the transfer itself.

ASC X12 standards for prescription transactions are scheduled for development in late 1993.

Test Ordering/Results Reporting

When a provider, in either a hospital inpatient setting or an office outpatient setting, needs an analysis of body fluids or tissue, the analysis is generally conducted by a hospital laboratory or a private reference laboratory. In either case, the specimen must be physically delivered to the lab, and the results of the analysis must be reported back to the requesting physician. Although the physical delivery of the specimen to the lab cannot be facilitated through EDI, the communication that takes place between the provider and the lab can be facilitated.

In a manual environment, lab requests are handwritten and delivered to the lab by courier, messenger, or U.S. mail. Lab results will be reported back to the provider in a similar manner. Urgent requests will necessitate a telephone call to the provider with the results. As with any manual process, the lab request is subject to human error, due to misinterpretation of either written instructions or patient information which might accompany the request. The reporting of results back to the physician is limited by the speed of the courier. Utilization of EDI would facilitate accurate, complete requests, and prompt results reporting in this environment. An additional benefit would be the creation of an automated patient history of laboratory tests which could assist in the interpretation of the lab results.

Assuming that half of the 828 million physician office visits
with diagnostic tests involve external laboratories, EDI has the potential to save 2 minutes at $.22 per minute for both the requestor and reporter of test results. Minus a transaction charge of $.17, the total savings would be $294 million. These savings would be shared by both the laboratory and the physician's office.

Currently, in cases where automation is in use for test ordering and results reporting, there is no universal standard utilized. The systems, as well as the data specifications, are proprietary and, as such, restrict usage to a specific lab. ASC X12 standards for test ordering and results reporting are scheduled for development in late 1993.

Coordination of Benefits

Coordination of benefits (COB) is a multi-faceted process that revolves around the determination of financial responsibility for the reimbursement of health care services when more than one payor is involved. Approximately 10% of all claims involve multiple payors and, therefore, require coordination of benefits. Some entities, such as an acute care hospital, will experience COB rates as high as 30%, due to the volume of Medicare patients with secondary Medigap coverage.

The typical COB process entails the submission of a claim to the payor who is assumed to have primary responsibility. The payor adjudicates the claim and returns a remittance advice to the submitter (provider or individual). The submitter must then send the original claim information plus the remittance advice from the primary payor to the secondary payor, thereby incurring additional mailing and paper handling costs. The secondary payor receives the claim and remittance advice, and incurs the redundant administrative cost of keying the claim information into their system to be adjudicated. This cycle is repeated if there is a third payor involved as well.

EDI has the potential to reengineer the coordination of benefits process by allowing payor organizations to electronically exchange claims directly between themselves when secondary or tertiary coverages are known to apply to a given claim. This eliminates the need for the provider or individual to submit the claim multiple times, and it eliminates the redundant keying of claim data by the secondary or tertiary payor. Procedures used to streamline the health care claims process have been implemented by many payors, generally in the context of supplemental coverage for Medicare beneficiaries.

Assuming that 10% of 4.8 billion claims involve COB, and that 15% are already handled electronically, leaves 408 million non-electronic COB claims. The cost savings potential for payors amount to $90 million, based on savings of $.39 per transaction minus a transaction charge of $.17. The savings for providers or consumers in postage alone ($.29) for duplicate submissions amount to $118 million. Additional cost savings of $269 to $449 million are estimated for providers, based on the labor savings (3-5 minutes at $.22 per minute) they would incur by not needing
to identify, extract, copy, and submit remittances from one payor to another.

Referrals and Pre-Authorizations

Generically, a referral is the process in which a provider sends a patient to another provider as part of a course of treatment. In a non-insurance and indemnity environment, a referral is a direct interaction between only two parties: the referring provider, and the provider to whom the patient is referred. In a managed care environment where cost and use of network providers are of concern, a referral needs to be logged and, sometimes, requires approval by the managed care organization.

Precertification is the prior approval by the payor of a certain action to be taken by the provider in the course of treatment. Precertification primarily addresses medical necessity and the appropriateness of the setting for a proposed procedure. The tightness of this process increases with the degree of managed care involved. Within the spectrum of health insurance products, examples of procedures for which precertification may occur include hospital admissions, certain outpatient procedures, procedures above a certain cost, and out-of-network referrals.

For the purpose of estimating cost savings due to EDI, this discussion will focus only on tighter managed care programs, such as HMOs, and point of service products. It is assumed that these programs involve more administrative, verification, and approval procedures than PPO and indemnity products. These procedures can benefit the most from EDI implementation and would generate the greatest cost savings.

EDI offers the potential to reduce the amount of time spent on the telephone by the provider, the provider's staff, and the payor's staff, trying to contact each other or being on hold while various verifications or side consultations take place in their respective offices. Additionally, savings can be realized from eliminating the time it takes the payor to document information already collected from the phone conversation. Given an estimated 30% of 167 million referrals, 34 million admissions and 92 million emergency room visits require review/approval; the payor savings from using EDI for these procedures would be 3.25 to 4.25 minutes at a rate of $.30-.33 per minute. This amounts to a savings of $101 to $106 million for payors. Provider savings are estimated at 80% of the payor savings, since the provider still has to establish the connection and convey the information required. Provider savings are estimated to be $81 to $85 million. Subtracting the electronic transaction costs of $15 million ($.17 per transaction), the combined net savings would be $167 to $176 million. This does not eliminate the time consumed in the current environment for discussing or negotiating treatment protocols between the provider and the payor.

It should be noted that the referral and precertification processes as they currently exist present an opportunity for
reengineering. For example, instead of subjecting all providers to the requirements for pre-treatment review and precertification procedures, payors could establish systems that allow the provider to log or register their activities, then the system would determine retrospectively where treatment patterns show a trend of inappropriateness that requires intervention. This would eliminate much of the day-to-day intervention and hassle imposed on providers by the current managed care approach to referrals and precertifications. EDI can enable this more streamlined mode of operating by automating the logging or registration process, as discussed above.

Provider Appointing/Scheduling

Provider appointing and scheduling generally includes transactions involving both facility and resource scheduling. The effort required for a provider to locate a hospital bed in support of an admission, or a hospital operating room in support of surgery, is a function of the amount of time the physician or his/her support staff spend on the telephone scheduling these activities. With an estimated 34 million hospital admissions per year, the manual efforts, as well as the time requirements for providers, are significant.

EDI has the potential for reducing these costs through the automation of scheduling requests and confirmations. The first step in realizing this potential is the development of an ASC X12 standard for this transaction set. Although not currently on the ASC X12 standards development schedule, its inclusion on that schedule can be anticipated in the future.

Assuming a minimum savings of 3.5 minutes each for both the requesting provider and the scheduling provider at $.22 per minute, minus an electronic transaction fee of $.17, the net savings for scheduling admissions would be approximately $47 million per year.

Medical Records Exchange

Electronic medical records hold great promise for lowering health care costs, curtailing malpractice premiums, improving quality of care, and providing practitioners with better information. However, industry estimates indicate that the widespread implementation of electronic medical records may be 9-15 years away. For this reason, the electronic exchange of electronic medical records is not factored into the cost/benefit analysis in this report, but the following estimates are provided to give an indication of the potential that EDI and electronic medical records can have in the future.

This section deals only with the administrative savings associated with the exchange of medical records between health care entities. The primary areas addressed for the medical record exchange are: consultation, referral, transfer, payor documentation, and service audits.

The savings are derived from the costs associated with copying
and shipment of the patient medical record, as well as the associated delays that cause a duplication in efforts, redundant test ordering, and increased length of inpatient stays. The electronic medical record transfer offers the potential to eliminate the manual intervention, transcription errors, and substantial delays associated with the paper-based record.

The net savings potential is as follows:
- $1.5 billion savings in labor from the copying and shipment of medical records,
- $1.7 billion savings in redundant test procedures where results are unavailable,
- $1.9 billion savings due to reductions in patients' length of stay due to waiting for results of duplicate test procedures.

There is also a potentially large savings (not quantified here) for payors that might receive medical records electronically. Besides reducing request time, copying, and shipment costs, service audit staff productivity would increase from four paper medical records reviewed per hour to 300 per hour electronically. Given the approximately six million hospital service audits conducted per year, the savings could amount to several hundred million dollars.

Combined Cost/Benefit Analysis

Combining the average of the range of administrative savings and implementation costs discussed above (excluding medical records exchange), the following table illustrates the net savings potential that might be incurred over the next six years (to the year 2000) if EDI implementation is phased in on an aggressive schedule during the first three years, and the benefits begin to accrue as a result of the implementation. (Constant 1993 dollars are used to simplify the illustration.)

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This cost/benefit analysis includes the ongoing maintenance and service costs required to sustain the automated capabilities once they are implemented (12% of the implementation cost per year is assumed as the maintenance charge).

The pacing assumptions behind the combined cost/benefit analysis are:

The implementation schedule assumes that the costs are amortized over 3 years.
30% implementation occurs in year 1
70% implementation occurs in year 2
100% implementation occurs in year 3
10% of savings achieved in year 1 (1994)
20% of savings achieved in year 2 (1995)
40% of savings achieved in year 3 (1996)
65% of savings achieved in year 4 (1997)
85% of savings achieved in year 5 (1998)
90% of savings achieved in year 6 (1999)

Breaking down the cost/benefit analysis by the major trading partners indicates that each group achieves a positive net savings in each year. Over the six-year period, providers accumulate net savings of $26.1 billion, payors accumulate $9.4 billion, and employers accumulate $6.8 billion.

Cost/Benefit Analysis by Major Trading Partner - Provider

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<tr>
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Cost/Benefit Analysis by Major Trading Partner - Employer

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RECOMMENDATIONS

Based on the analysis of the gross savings potential, as well as the net cost/benefit for implementing EDI throughout the health care system, the TAG recommends:

1. EDI implementation should be pursued on an aggressive basis, given the significant potential net savings for all major trading partners.

2. To encourage smaller organizations to make the investment in EDI, the TAG recommends the following positive financing incentives be considered:
Small business loans for EDI implementation
- Tax incentives for EDI investments

3. To facilitate a rapid implementation of EDI, the healthcare industry, through WEDI, should sponsor EDI training and education programs, in conjunction with other EDI industry education programs, that would be available on a widespread basis.

CONCLUSION

The application of EDI has great potential for improving the healthcare system through the reduction of administrative costs and the enhancement of the quality of health care. The TAG's review of the healthcare transactions that could benefit from EDI indicates that the annual administrative savings potential exceeds the $4-10 billion range that was originally estimated by WEDI in 1992.

Independent of the implementation costs, the benefits of EDI for the U.S. healthcare system range from $13 to $26 billion per year. Factoring in the implementation and maintenance costs, the net savings for implementing EDI are estimated to total $42 billion by the year 2000. While this cost/benefit analysis provides a strong endorsement of the value of EDI, the net savings identified should not be construed as hard-dollar savings that will be translated into a corresponding reduction in the nation’s healthcare bill. The administrative savings identified will result in some bottom-line reduction of labor costs and the costs of handling paper. However, much of the savings will result in healthcare enterprises improving the quality of their services through the reallocation of resources from administrative activities to enhanced patient care or customer service.

Beyond the administrative savings potential identified, a comprehensive EDI infrastructure will enable significant improvements in the quality and cost-effectiveness of the healthcare services delivered in the U.S. These improvements have the potential to far exceed the dollar savings due to streamlined administration, and they also have the potential to impact the quality of the healthcare Americans receive.

For example, the ripple-effect of implementing an EDI infrastructure will be demonstrated in a reduction in duplicate medical procedures and processes as a patient is handled by a continuum of providers during an episode of care. There will also be a reduction in the exposure to fraud, as the security controls on electronic transactions prevent unauthorized access to financial transactions and as the electronic verification and tracking of transactions improves the ability to detect fraud and abuse. The widespread use of EDI will also enable the capture of significant volumes of high quality clinical and financial data which will support the analysis and identification of the most effective healthcare treatments and procedures.
With the significant benefits that have been identified, the major trading communities in the health care system, as well as supporting vendors, policymakers, legislators, and the administration, should focus their efforts on promoting and enabling the implementation of EDI in health care.

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ADDENDA

Addendum 1: Data Source

The following table lists the key data utilized in the White Paper analysis and identifies the sources. A "WEDI estimate" indicates where the collective experience and judgement of the members of the WEDI Financial Implications TAG was applied to determine a reasonable estimate.

[The following table lists the data item, value, and source(s).]
Total number of claims in 1993
4.8 billion
WEDI estimate based on 1992 estimate of 4.6 billion from Automated Medical Payments News, December 21, 1992

Percent of all claims submitted electronically in 1992
15%
Automated Medical Payments News, December 21, 1992

Total physician claims in 1993
2.2 billion
WEDI estimate based on 1992 estimate from Automated Medical Payments News, December 21, 1992

Percent of physician claims submitted electronically in 1992
12%
Automated Medical Payments News, December 21, 1992

Total hospital claims in 1993
347 million
WEDI estimate based on 1992 estimate from Automated Medical Payments News, December 21, 1992

Percent of hospital claims submitted electronically in 1992
70%
Automated Medical Payments News, December 21, 1992

Number of claims involving coordination of benefits with multiple payors
10%
WEDI estimate based on member company proprietary data

Number of employers with 50 employees or more
177,691
Market Identifier, Online Database. Dun and Bradstreet. June 22, 1990

Number of employers with greater than 50 employees that need EDI upgrades
171,722
WEDI estimate

Number of large commercial health insurers (Accident & Health premiums greater than $25 million)
276
HIAA, A.M. Best

Number of commercial health insurers needing EDI upgrades
240
WEDI estimate

Number of Blue Cross and Blue Shields
72
Blue Cross and Blue Shield Association
Number of Blues needing EDI upgrades
60
WEDI estimate

Number of other commercial insurers (less than $25 million A&H premiums) and third party administrators
1,500
HIAA

Number of other commercial insurers and TPAs needing EDI upgrades
1,488
WEDI estimate

Number of HMOs and PPOs
1,398
GHAA, AMCRA

Number of HMOs and PPOs needing EDI upgrades
1,298
WEDI estimate

Number of Medicare and Medicaid processors
120
NEIC

Number of Medicare and Medicaid processors needing EDI upgrades
120
WEDI estimate

Number of acute care hospitals
6,138
American Hospital Association, AHA Hospital Statistics

Number of acute care hospitals requiring EDI upgrades
6,000
WEDI estimate

Number of physician offices with automation
132,428
American Medical Association based on the following sources:

Anita J. Chawla, "Electronic Billing of Physician Services" in Socioeconomic Characteristics of Medical Practice 1993,

Martin L. Gonzalez, ed. (Chicago: American Medical Association), 1993


Number of physician offices without automation
137,833
American Medical Association: See Above

Number of additional physicians in offices with more than one practitioner
157,733
American Medical Association: See Above

Number of additional physicians in non-automated offices with more than one practitioner
80,444
American Medical Association: See Above

Number of nursing homes
15,324
Marion Merrell Dow, 1992

Number of home health care agencies
9,285
Marion Merrell Dow, 1992
Number of pharmacies
66,000
Marion Merrell Dow, 1992

Number of laboratories
6,000
HCFA, "Savings from the Medical and Health Insurance Information Reform Act of 1992"

Number of optometrists
26,100
HCFA, "Savings from the Medical and Health Insurance Information Reform Act of 1992"

Number of podiatrists
11,500
HCFA, "Savings from the Medical and Health Insurance Information Reform Act of 1992"

Number of dentists
120,000
NEIC

Number of other providers, including ambulatory surgery centers (ASCs), dialysis centers, and hospices
20,000
HCFA, "Savings from the Medical and Health Insurance Information Reform Act of 1992"

Percent of nursing homes, home health care agencies, pharmacies, labs, optometrists, podiatrists, dentists, and other providers needing EDI upgrades
100%
WEDI estimate
Employer savings per year for electronic enrollment
.5 - 1.0 FTE; $12,000 - $24,000
WEDI estimate based on input from employer participant (AT&T) in
WEDI enrollment demonstration pilot

Transaction cost per enrollment transaction
$1.50
WEDI estimate

Payor savings for electronic enrollment
$.50 - $1.00 per enrollee
WEDI estimate based on member company proprietary data

Number of health care enrollees
220 million
WEDI estimate

Eligibility verification and benefit inquiry transactions per year
150 million
WEDI estimate based on member company proprietary data

Payor savings per eligibility/benefit inquiry transaction
$.50 - $1.00
WEDI estimate; consistent with Tiber Group study

Provider savings per eligibility/benefit inquiry transaction
$1.10 - $2.09
Tiber Group study

Number of providers able to eliminate enrollment or eligibility lists
6,000
WEDI estimate

Provider savings per year to eliminate maintenance of eligibility lists
$2,000 - $4,000
WEDI estimate

Number of physician referrals
167 million
WEDI estimate based on percentage of office visits that are referrals from Martin L. Gonzalez and John A. Rizzo, "Physician Referrals and the Medical Market Place" Medical Care October 1991

Number of hospital admissions
34 million

Number of emergency room visits
92 million
American Hospital Association, AHA Hospital Statistics
Number of outpatient visits with diagnostic tests
828 million
A.D. Little, Telecommunications: Can it help solve America's health care Problems? July 1992

Number of prescription orders per year
1.7 billion
WEDI estimate based on input from the national Wholesale Drug Association, Pharmaceutical Manufacturers Association, and the National Council for Prescription Drug Programs

Percent of illegible handwritten prescription orders
10%
WEDI estimate

Percent of admissions, referrals, and emergency room visits covered by aggressive managed care programs
30%
WEDI estimate based on HMO and Point of Service market penetration

Number of claim inquiry transactions per year
60 million
WEDI estimate based on member company proprietary data

Payor savings per transaction for EDI referrals/preauthorizations
3.25 - 4.25 minutes at $ .30 - $ .33 per minute
WEDI estimate based on member company proprietary data

Provider savings per transaction for EDI referrals/preauthorizations
80% of payor savings
WEDI estimate

Transaction cost per EDI transaction
$.17
WEDI estimate

Administration costs in the provider setting
$13.17/hr. $ .22/minute
Computers in Healthcare, January 1992

Time savings for automated appointment and scheduling
3.5 minutes for requestor and scheduler
WEDI estimate

Time savings for ordering provider and receiving pharmacy or laboratory
2.0 minutes each
WEDI estimate

Average annual purchase orders per acute care hospital
15,000
WEDI estimate

Average annual purchase orders for other health care providers
120
WEDI estimate
Percentage of acute care hospitals using order-entry systems
80%
WEDI estimate

Percentage of acute care hospitals using manual systems
15%
WEDI estimate

Percentage of acute care hospitals using standard EDI interfaces
5%
WEDI estimate

Manual order processing costs for providers
$40 - $150
Premier Hospitals Alliance

Manual order processing costs for suppliers
$30 - $150
The Corporate Alliance (3M and Abbott joint venture)

Order entry processing costs for providers
$28
Premier Hospitals Alliance

Order entry processing costs for suppliers
$24
The Corporate Alliance (3M and Abbott joint venture)

Standard EDI order processing costs for providers
$11.20
Premier Hospitals Alliance

Standard EDI order processing costs for suppliers
$3.20
The Corporate Alliance (3M and Abbott joint venture)

Physician office cost savings for electronic claims submission
$1.01 - $1.96 per claim
Tiber Group study and Computers in Healthcare, January 1992

Hospital cost savings for electronic claims submission
$.64 - $1.07 per claim
Tiber Group study and the AHA

Other provider cost savings for electronic claims submission
$.64 - $1.01 per claim
WEDI estimate based on physician and hospital savings

Payor savings for electronic claims submission
$.50 - $1.50
WEDI estimate consistent with the Tiber Group study

Provider savings for automated COB per COB claim
$.29 postage and 3-5 minutes labor
WEDI estimate
Payor savings for automated COB per COB claim
$.39
Provider savings per EDI claim status inquiry
$3.56 - $3.88
Tiber Group study

Payor savings per EDI claim status inquiry
$1.06 - $2.72
Tiber Group study

Average claims per remittance advice
15
WEDI estimate

Payors' manual costs of processing a remittance and payment
$.45 - $1.00
WEDI estimate based on member company proprietary data

Payors' costs of processing an electronic remittance and payment
$.11 - $.35
WEDI estimate based on member company proprietary data

Hospital savings due to automated posting of electronic remittances
2/3 of an average of 4 FTEs
WEDI estimate based on individual case studies

Physician office savings due to automated posting of electronic remittances
7% of one FTE
WEDI estimate based on individual case studies

Implementation time frame for electronic medical records
9 - 15 years
Work Group on the Computerization of Patient Records, April 1993

Number of hospital service audits per year
6 million
WEDI estimate based on member company proprietary data

Labor savings for copying and shipping medical records
$1.5 billion
WEDI estimate

Savings in redundant tests due to availability of results
$1.7 billion
WEDI estimate

Savings due to reduced patient length of stay while waiting for redundant test results
$1.9 billion
WEDI estimate
EXECUTIVE SUMMARY

The Coordination of Benefit (COB) process is used by payors to determine liability for claim payment when more than one coverage exists. In today's environment, this process is generally very people-intensive and paper dependent. Providers, as well as payors, have difficulty determining primacy due to: the lack of knowledge of the number and types of health insurance plans in which an individual is enrolled and the complexity and diversity of individual payor COB rules. This process frequently yields delays in payments, inappropriate payments, duplicate payments, inappropriate payment denials, written requests for additional information, and the resubmission of claims. In many cases, providers have become so frustrated with this process that they refuse to file claims on behalf of their patients. This moves the burden of filing a claim to the patient. Patients then try, as best they can, to work directly with payors by providing the requested information, submitting and resubmitting claims and attempting to collect any discounts that may have been due from the provider. The unfortunate circumstance here is that the patient is the least likely to understand the COB process and its intent. Furthermore, it is a certainty that when patients become involved, the required information exchange will occur using paper.

Payors and providers incur additional administrative expense for claim handling, postage and paper when COB occurs. However, there are also many less obvious costs associated with this process. Additional insurance coverage information obtained by providers from patients has generally proven to be unreliable. As a result, most payors maintain their own data files containing identification of as much other insurance enrollment for each of
their own policyholders as possible. This data is used to try to determine whether their policyholders for whom claims are submitted have other health insurance coverage and, if so, whether they are the primary insurer. Most payors also maintain separate collection units that pursue fraudulent claims. Fraudulent claim payments can occur when an individual submits claims to multiple payors and/or withholds COB information.

Other hidden costs are associated with payor disputes over primacy, and legal fees and court costs associated with claim litigation. Resulting costs of COB is very high, especially in light of the fact that providers have estimated up that to 30% of all claims they submit have COB implications.

Streamlining the COB Process

The WEDI COB Technical Advisory Group (TAG) sees a much different vision for the future. Consistent with the WEDI model for a paperless health care communication network, the COB TAG envisions a streamlined COB process when electronic data exchange and standardized transaction sets are introduced into the process. The TAG feels it is possible to eliminate much of the paper in the near-term by implementing the following recommendations:

1. Encourage Providers To Submit Claims

   The TAG believes that all providers should be incentivized to submit claims on behalf of their patients. This is a task that may be undertaken by federal and state government or by third party payors. Obviously education on the benefits of EDI is essential. Cost-sharing with payors and other financial incentives will be most attractive.

2. Simplify the Rules

   A uniform, simple to interpret set of COB rules establishing levels of primacy must be developed and adopted by all payors. The TAG recommends using the National Association of Insurance Commissioners (NAIC) COB regulation set as the foundation for development of a new national model formed from the current array of individual payor and legislated COB rules. An industry consensus would be the ideal. The TAG believes that modification of existing federal legislation will be necessary to mandate use of the new model. The TAG also recommends specific wording in the rule set requiring each individual third party payor to keep sufficient information in its enrollment data base to determine primacy.

3. Promote the Use of Standard Eligibility Inquiry and Reply Transactions

   The COB TAG recommends the widespread use of standard eligibility inquiry and reply transactions. When the industry is positioned to use these transactions,
providers can inquire of all payors suspected to share payment responsibility for an individual's treatment or hospital stay. When the payors have responded, the provider can apply the standard COB rules using a tool like an expert system or another computerized program can apply the standard COB rules and make the most accurate assessment of payor primacy.

4. Payors Forward Claims to Payors

The TAG believes payors should be encouraged to build trading partner relationships or cooperatives for routing of secondary claims to the appropriate "next-in-line" payor.

The insurance policy information necessary to identify and process secondary claims is obtained by the provider through access to payor/employer files via EDI eligibility inquiry transactions and forwarded with the primary claim.

The primary payor is then the most cost-effective submission source of the secondary claim. Essential primary benefit and adjudication information is forwarded with the claim to complete the information requirements for secondary claim adjudication. The TAG believes this initiative can be implemented in the short-term since it is already occurring in isolated instances.

5. Standard COB Information Exchange

Consistent record formats must be adopted to allow the COB process to transition to an efficient electronic environment. The TAG recommends industry-wide implementation of ANSI standardized transaction sets for all COB-related information exchanges among payors and providers. Transactions specific to coordination of benefits include eligibility inquiry and reply, claim, claim payment, and claim crossover.

A Future Consideration

Elimination of the aggravation factor and significant reduction in administrative costs are goals we believe will take more time to achieve. Barring overriding changes from health care reform, the single most significant obstacle to EDI COB is access to accurate COB information for all individuals. We believe increased accuracy of COB information can be accomplished through widespread adoption of our recommendations.

The COB TAG recommends the creation of a Central Coverage Directory for maintaining accurate COB information for all individuals. This recommendation should be considered in future discussions of COB and the promotion of EDI.

Creation of a Central Coverage Directory

The TAG believes that once uniform identification and
standardized COB rules have been implemented, all health insurance policies under which each individual is enrolled must be identified. To accomplish this, it is necessary to maintain a single, collective file of enrollment information that providers and other payors can access to accurately identify all payors (primary, secondary, etc.) for an individual. The TAG feels providers should be responsible for delivering quality care, not dealing with payor COB issues. Since individuals frequently do not present, or are incapable of presenting, accurate coverage information at the time services are rendered, we do not see any alternative to the Central Coverage Directory approach.

When implemented, The TAG envisions that the directory approach will provide considerable benefit to payors. They will be able to:

- Easily determine other sources of coverage and work with other payors to resolve issues in the most cost-effective manner;
- Eliminate their individual, incomplete insurance coverage files;
- Enhance the ability to pay primary, secondary, etc., claims appropriately; and,
- Eliminate litigation costs of contested primary, secondary, etc. adjudications.

In addition, payors who are quick to adopt this approach will accrue added benefits from the perspective of increased customer/member satisfaction.

The TAG envisions the directory being used by providers at the time of service to determine where to send their claim for payment. Payors would then access the directory to verify primacy and to determine secondary payor sources in order to forward the claim automatically to the "next-in-line" payor. The primary payor would also forward all necessary initial payment information to permit automatic supplementary and/or other payments by the secondary payor. Under this model, providers would submit one claim and receive payment from all appropriate sources, thereby reducing the administrative expense of resubmitting claims. Payors would reduce their expenses by eliminating duplicate "other insurer" data systems, large numbers of rejected claims, and inappropriate, duplicate and fraudulent COB payments. Additionally, since this model fully supports an electronic environment, both payors and providers should enjoy the added savings associated with increasing electronic claims processing.

The COB TAG realizes this approach may be costly in terms of building and maintaining a file of this size. The logistics of keeping a file of this magnitude updated with current information fed from all third party payors may be quite an engineering feat.

Technical roadblocks, such as communication methods for accessing and updating the file, would need resolution and monitoring.
Special handling for non-computerized payors and providers must be built into the system to make it effective. The manpower required to keep the file sound would be substantial.

Despite this, the COB TAG believes the savings will offset the costs and the result will be a good, reliable solution to the problems of coordination of benefits.

INTRODUCTION

The mission of the Coordination of Benefits Technical Advisory Group is to move coordination of benefits activities from a paper-intensive manual environment to a highly automated electronic environment and to quantify the opportunity savings associated with moving to such an environment. Without automating the claims coordination of benefits process, as much as 30% of all claims providers submit may be dropped to paper. Uninterrupted electronic routing and adjudication of claims by third party payors who share coordination of benefit responsibility is a prerequisite for the seamless flow of data in a mature health care EDI environment.

Coordination of benefits is viewed from two perspectives. First, COB is that sizable task of determining who pays first; i.e., what is the order of third party payor primacy. Second, COB is often looked at as the process of submitting/transmitting non-primary claims. Creative use of technology, education and incentives for the players and a spirit of cooperation are required to realize the vision of COB in an EDI environment. If the goals are attained, significant benefits can be realized. Since COB implies claim submission, all movement to EDI COB would increase the overall number of claims submitted electronically. This TAG believes that five to seven percent of the payor's total claim administration expense attributed to COB can be reduced or eliminated by applying the TAG's recommendations. Additional savings will be realized on the provider's side by reducing the number of resubmitted claims and on the payor's side by reducing some data maintenance, and inappropriate, fraudulent and duplicate claim payments.

The Current COB Process

In many households across the country, there are individuals who are covered under multiple health care policies. Working couples who share coverage under separate employer plans and the elderly who buy supplemental coverage to offset the limits of Medicare are just a few of the more obvious examples. Other less obvious examples of secondary insurance coverage are: children's accident insurance at school, displaced worker benefits through COBRA, personal injury coverage on automobile and homeowner policies, and employer coverage by Workers Compensation. These examples indicate many individuals have multiple health care coverage. If the individual insured, or their provider, does not identify all possible payors, benefits may not be paid by the appropriate third party payor. Worse still, providers may be denied payment and/or providers or individuals may collect
fraudulent payments.

To further complicate matters, a patchwork of complex rules exist for coordination of benefits that third party payors, providers and individuals must understand to establish the order in which payment responsibility lies. These rules can vary from state to state and plan to plan. Some payors have developed rules that are peculiar to only themselves. The National Association of Insurance Commissioners (NAIC) model rules of Coordination of Benefits, which serve as a standard to the industry, are used by many third party payors. However, managed care, liability and other third party payors do not necessarily adhere to these model rules. Some, like Medicare and Medicaid, must apply legislated COB rules.

The industry is not waiting for the COB process to be simplified. Many Medicare contractors who enjoy electronic receipt of 90% or more of all Medicare claims are "crossing over" Medicare adjudicated claims to the Medigap insurers and State Medicaid Agencies (SMAs). In most cases, coverage is verified by accessing Medigap insurer and Medicaid enrollment files maintained or obtained on a regular basis by the Medicare contractor. The Medicare explanation of benefits is passed electronically to the Medigap insurer and SMAs, thereby eliminating paper and reducing administrative processing on both ends. Likewise, commercial carriers are building these same relationships through trading partner agreements and clearinghouse networks. This exchange of crossover information is currently done through proprietary formats and networks which often presupposes that the correct third party payors have been identified on the claim.

In many cases today, providers initially direct the claim to the wrong payor. For example, if a Medicare claim arrives and the illness or injury was incurred accidentally, the claim may be denied under the MSP rules. This misdirected claim must be handled and rehandled by payor and provider and the administrative workflow is intensified. Such misdirected paper and electronic claims occur on a regular basis today. Every third party payor system applies situational logic similar to MSP to disprove their primacy. Because these various rules of coordination of benefits are so complex, payors must protect themselves from making inappropriate payments. Likewise, third party payors must guard against payment of fraudulent claims.

To accomplish this task, the payors are committed to maintaining as much "other insurance" information as possible about their members. This information and the intelligent application of their own interpretation of COB policies, litigation and rules serve to keep some of the inappropriate payments in check. In many situations, the individual may not have provided accurate information to determine these primacy rules leaving the payor to correspond with the individual and the provider. This "after-the-fact" administrative work increases the cost of claims processing.

Obtaining the necessary coordination of benefits information is an obstacle to provider claim submission. Even the most diligent provider cannot, in many cases, obtain all insurance coverage
information for each claim. Today, most hospitals and other large-sized providers submit claims electronically. Many small to mid-sized provider groups are working towards electronic claims submission as well. However, the tedious COB process has overwhelmed and disillusioned some of the mid-sized providers and many of the smaller providers. As a result, they defer the billing responsibility to their patients by collecting payment up front and let the insured person work with the insurer for payment of benefits. These claims will undoubtedly be submitted to payors on paper.

Building the Groundwork

The industry today is moving to solve some of the inherent problems in coordination of benefits. Many of the third party payors are readying their information systems for access through EDI standardized eligibility inquiries. Providing verification of insurance can aid the provider in reducing misdirected claims.

Others are building sophisticated payor/provider electronic networks that tie together all the health care players within a region, thereby giving them access to the latest eligibility and even clinical information. Health care transactions are routed efficiently and quickly.

These strides serve to move the industry closer to full EDI implementation and are excellent initiatives upon which to build solutions for COB. To facilitate these methods and ease the transition to full EDI for COB, this TAG recommends the following:

1. Encourage providers to bill on behalf of their patients.
2. Federally mandate uniform rules of COB.
3. Promote use of standard eligibility inquiry and reply transactions.
4. Require broader claim crossover activity by all third party payors.
5. Define and use standardized EDI formats.

RECOMMENDATIONS

Recommendation 1: Encourage Providers to Bill on Behalf of Their Patients

Paramount to the COB process is enabling and providing incentives to providers to bill on behalf of their patients. Without pinpointing some controllable source of claim filing, there is no chance for uniformity of purpose and format. It will be a burden to some providers, but the benefit will outweigh the cost, at least in aggregate. This will serve to bring some consistency to the billing process. Providers are much better
equipped than their patients to send complete claims with the appropriate information. As the source of claims receipt narrows, fewer claims will be misdirected, and the cost of claims administration should begin to decrease.

Providers have an obligation to participate in and further EDI. They play a crucial role in reducing the administrative costs of health care. Since providers are most often the source of health care transactions, they are the best situated to cooperate with the payors and employers in building networks for the exchange of standardized health care information. In turn, third party payors have an obligation to prepare providers to fulfill their role in this process. Payors have the technical expertise to make the process happen. They must educate and enable the providers. Their return will be better information and reduced administrative costs.

Several approaches to providing incentives to providers to bill for their patients can be taken:

1. Providers can be educated on the short-term and long-term benefits of EDI. These benefits include reduced administrative overhead, quicker payment, and satisfied customers.

2. Payors can work in partnership to enable providers to move to EDI by lending technical expertise and reducing EDI transaction fees.

3. Payors can phase out some of the payment agreements that provide disincentives to providers billing before settlement.

4. Payors or proprietary interests could develop and offer integrated practice management systems with "expert system software" for the determination of payor primacy. Coupled with EDI eligibility inquiries, this could be a benefit to the promotion of EDI for COB.

Recommendation 2: Federally Mandate Uniform Rules of COB

A uniform set of coordination of benefits rules is essential to permit and promote the electronic processing of COB claims and payments. The National Association of Insurance Commissioners has created a model COB regulation set to address the COB issue. The TAG feels the NAIC model, with significant modifications, should be used as the foundation for the development of coordinated, comprehensive federal COB legislation. While COB rules arrived at through some consensus of payor/provider community is most desirable, timely modification of existing federal legislation to codify new model COB rules is necessary to ensure uniform rules exist nationwide. This proposed legislation will override existing individual state rules.

Modifications to Federal Legislation and NAIC Model Rules

In addition to standardized identifiers for patients, providers
and payors, standardized COB rules must apply to all health and medical benefit plans. This includes commercial health insurance plans, group health plans, HMO plans, individual or family plans, self-insured plans, government coverage, and school coverage. All health and medical plans must contain consistent COB provisions. This TAG's suggestions for universal COB rules include:

- Modification of the wording in the NAIC Model by removing ambiguous statements such as "permit, but not require," "may include," "may take into consideration," and "may reduce benefits."
- Inclusion in the modified legislation of methodologies for determining the order in which plans will pay benefits. A set of standardized rules, such as the birthday rule, must be adopted.
- Establishment of standardized rules of primacy replacing existing proprietary and legislated policies. In particular, secondary payors must be required to provide benefits in excess of primary payor payments, not to exceed 100% of charges.
- Establishment of definitions describing allowable expenses and usual, customary and reasonable (UCR) expenses. Rules should be established to define how contractual adjustments from one payor affect the allowable expense of another.
- Inclusion of information necessary for effective coordination of benefits on standardized paper claim forms and in EDI claim formats.
- Inclusion of specific language requiring all third party payors to maintain in their enrollment files the basic information required when determining COB according to the standard rule set.

Recommendation 3: Promote the Use of Standard Eligibility Inquiry and Reply

The EDI standard eligibility and inquiry transaction set will enable providers to determine a patient's eligibility for a given payor. The provider electronically sends the inquiry instead of placing a telephone call. The payor, in turn, sends a reply verifying the eligibility. Once the provider has inquired of all payors suspected to cover health care services rendered to an individual, the payor can apply the standard rules of COB and make a reasonable determination of payor primacy.

This ANSI approved transaction set should be adopted and used by all payors in the near-term. Payors should leverage current technology to make eligibility inquiries possible on an immediate or real-time basis for the private practice provider and on an "as needed" or batch basis for institutional providers. As
providers make widespread use of these transactions, the number of misdirected claims should decrease, saving both the payor and provider money and aggravation. Payors and payor-sponsored clearinghouses should provide incentives to providers to use these transactions by providing this service at a nominal fee or free of charge.

Recommendation 4: Require Broader Claim Crossover Activity

Another way to move to the ideal COB EDI process is to build on the claims crossover process being used by third party payors in selected situations, such as the Medicare and commercial Medigap exchange done by Medicare contractors today. The TAG feels appreciable savings can be realized by requiring all third party payors to "crossover" claims to the secondary and tertiary payors named on the original claim. The recommendations made by the COB TAG will further streamline this process for payors.

Standardized record formats and the implementation of eligibility inquiries will facilitate easy access to accurate information and allow routing of claims electronically to the appropriate payor based on information derived through eligibility inquiries. Essential to this process is accessibility to all third party payor membership files so that insurance eligibility can be verified. As the process evolves, the routing of claims can be facilitated by building state or regional networks that tie payors and providers together electronically. All parties would ideally exchange information over the network, increasing not only determination of COB through eligibility inquiries but also the electronic exchange of all health care transactions.

Recommendation 5: Define and Use Standard EDI Formats

The ideal vehicles for communicating all aspects of the proposed information required for coordination of benefits information are ANSI standardized EDI formats. The coordination of benefits process would use eligibility inquiry and reply, claim, claim crossover and claim payment transaction sets. Several of these transactions have been developed through the ANSI development efforts and are approved for use. Transactions such as claim and claim payment are being used by parts of the industry today. The claim COB format is in the early stages of development and will contain elements of both claim and claim payment transaction sets. Sufficient information to determine what was billed and what benefits have been paid will be included. This format is expected to be approved in late 1994.

In addition to recommending adoption of the ANSI claim format, this COB TAG recommends development and use of any transaction sets required to insure uninterrupted flow of information throughout all phases of total electronic claim adjudication. For example, Medicare is preparing to transmit a standardized COB flat file (previously called the Medicare crossover file) format for its Part B contractors. Medicare contractors/standard systems are to begin using this flat file (developed based on the National Standard Format) beginning October 1, 1993, as an
interim format until the ASC X12 COB data set becomes the required standard in late 1994.

Medicare Part B contractors, including the new Durable Medical Equipment Regional Carriers (DMERCs), will make arrangements to have all new and renewed trading partner (e.g., primary, Medigap and supplemental health insurers, and Medicaid) agreements include the acceptance/use of the Medicare COB flat file for all COB transactions.

A flat file also is being developed for the Medicare Part A COB data. The Part A COB flat file is expected to be implemented in 1994.

A FUTURE CONSIDERATION

While the COB TAG believes that its recommendations will make the COB process easier especially in proliferating the use of EDI, this TAG strove to resolve the COB problem as completely as possible. The TAG's final recommendation is submitted in the hopes that it is considered as a viable solution in future discussions of COB and the promotion of EDI. The TAG's vision for the COB process would utilize the most beneficial characteristics of the mature EDI model. The obstacles to be overcome are not trivial; the reduction in administrative workload will offset implementation costs and offer tangible benefits as the model matures. The consumers and deliverers of health care could concentrate more on the quality of care and less on the administrative task of getting paid for the health care.

The ideal process must provide a straightforward, reliable way to determine coverage. When complete enrollment information is available, an intelligent application of simplified coordination of benefits rules would determine payor primacy. This process must be operable before claim submission and at any time during the adjudication process. All information and processing must be attainable within the confines of a fluid EDI environment, and employers, providers, payors, and individuals must share responsibility and benefits in the process.

After considering implementation of uniform identification for individuals, providers and payors, and within the confines of acceptable confidentiality laws, and standard COB rules, and exploring several avenues for full resolution of the last major COB issue (i.e., the need for identification of all of the health insurance policies under which each individual is enrolled in order to effectively and efficiently apply the standardized rules), the TAG consistently arrived at the solution described below.

To achieve the ultimate goal, a central directory of enrollment information must be maintained to determine primacy. Every individual, identified by a unique ID and who has any health care coverage, will be found in this directory along with the unique identities of their third party payors. The directory would
receive enrollment information from insurers, apply the standard rules of primacy of coverage and payment responsibility, and code and array the policies for each insured individual accordingly. While this TAG envisions one centralized directory, it is feasible that non-duplicated state or regional directories accessible through nationwide networks may be sufficient.

Initially, providers would continue to route EDI health insurance claims to the insurer they believe is the primary insurer. With the information obtained from the directory, insurers would know the primacy of health insurance coverage/payment for that individual patient and adjudicate the claim, as appropriate, or deny the claim. Ideally, the insurer would route the claim to the correct primary insurer or the next/appropriate secondary insurer in accordance with standard coordination of benefits rules and transaction sets based on the contents of the directory.

As development progresses, providers with standard EDI capability would also be granted access to the directory information so they would:

- Know the primacy of health insurance coverage/payment for that individual patient;
- Be able to query the proper primary insurer for eligibility and specific coverage information; and,
- Properly route respective health insurance claims to the correct primary insurer.

Providers without standard EDI capability would be granted access to the directory through toll (i.e., 900 number) telephone connections.

The primary insurer would receive and adjudicate the provider's claim, and (knowing if there are any secondary insurers and the primacy of health insurance coverage/payment for that individual patient) route the claim and payment information to the next appropriate insurer in accordance with standard COB rules and transaction sets. Any secondary insurer would adjudicate the claim, and (knowing if there are any subsequent insurers and the primacy of health insurance coverage/payment for that individual patient) route the claim and payment information to the next appropriate insurer in accordance with standard COB rules and transaction sets. This routine would be repeated until all benefits are paid.

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Health Insurance Enrollment (HIE) Directory

As indicated in the 1992 WEDI Report, data used to identify payors is independently developed, stored and maintained in a distributed manner (i.e., individually by providers and payors). This has created a major duplication of effort and costs to maintain such data files, each of which is based on personal information/experience that does not provide the proper
information necessary to determine what insurance is available for a given patient. The result has been multiple claims submissions by providers, delays caused by mis-routing of claims for payment, confusing and costly follow-up communications between payors and patients, and overlapping and/or duplicate payments for the same services by multiple payors (all of which add further time, effort, cost and frustration to all parties).

It is envisioned that the establishment of an "HIE Directory" will effectively change the existing duplication of effort and decrease the inherent problems and related costs. Proprietary interests of providers and insurers must be set aside for the development of the cooperative effort so necessary for the resolution of the problems plaguing the health care delivery system. The following additional issues or elements are, therefore, essential for the establishment and implementation of an effective and meaningful HIE Directory.

- Collective agreement, cooperation and participation of all insurers/payors (e.g., including self-insured, managed care, health maintenance organizations, liability arrangements) to establish and maintain a national HIE Directory (or, lacking such agreement, cooperation and participation, national legislation).

- Insurer/payor timely electronic notification of the health insurance information noted under Operation of the HIE Directory, above, for each insured individual.

- National access via real-time, batch and voice response media through an integrated communications network.

- Collective agreement and cooperation for the elimination of existing incomplete, duplicate individual data files/systems (or, lacking such agreement and cooperation, national legislation).

- Collective agreement and cooperation in funding the HIE Directory operations from savings resulting from the elimination of existing incomplete, duplicate individual data files/systems through the payment of an equitable user's fee or, lacking such agreement and cooperation, national legislation).

- Collective agreement and cooperation in designation or procurement of: a single organization to maintain and implement the HIE Directory; or, a single organization to control, maintain and distribute the HIE Directory for implementation (access) through regional centers, (or, lacking such agreement and cooperation, national legislation and/or government procurement).

Directory Implementation and Funding

The HIE Directory could be maintained and implemented (accessed) under a single entity, or, maintained and distributed by one entity for implementation (access) through regional
centers. It is envisioned that, with complete agreement and cooperation of all insurers, "re-enrolling" all insured individuals in a centralized data base could be done in a timely manner so that a HIE Directory could be established and in operation in time to meet federally mandated claims submission dates for all providers.

The HIE Directory could be funded by an equitable access fee which electronic data interchange providers and insurers could more than afford from the savings realized by the elimination of their existing incomplete, inefficient databases and systems for identifying "other insurers." In addition to an access fee, non-EDI providers/insurers would be required to incur a cost for accessing the HIE Directory through toll (i.e., 900 number) telephone connections. Payment of a fee for accessing the HIE Directory would be considered an added incentive for providers/insurers to obtain EDI capability, and serve as a small, additional source of revenue for funding the registry operation.

Operation of the HIE Directory

Insurers would electronically notify the HIE Directory of their respective enrollees (i.e., the policyholder or subscriber under whose name the policy was issued), along with each enrollee's:

- Effective date of enrollment;
- Date of birth;
- Sex;
- General type of policy under which the individual is enrolled/insured;
- Dependents (i.e., the name and identification number of other individuals covered by the policy);
- Relationship to each dependent;
- General type of coverage for each dependent insured under the enrollee's policy, including whether the policy is a continuation of coverage (COBRA);
- Status of employment (if employed, include date employment began);
- Disability status and, if disabled, the date of on-set of the disability;
- End Stage Renal Disease (ESRD) status and, if ESRD eligible, the date of on-set of the ESRD;
- Enrollment termination date, if applicable;
- Dependents enrollment termination dates, if applicable; and,
- Status of legal decrees dictating primacy of coverage different from the standard rules of primacy.
HIE Directory Data Base

The HIE Directory would contain all information necessary to identify coverage and the "expert" intelligence necessary to apply the standard rules of primacy:

- Unique national identifier (UNID) of each health care provider.
- UNID of each insured individual (i.e., each enrollee and each dependent).
- UNID of each health care insurer for each insured individual.
- Cross reference of enrollees' and dependents' UNIDs.
- Indicators of dependents relationships to enrollees.
- Code identifying general type of each health insurance policy for each insured individual.
- Disability indicator (e.g., yes/no).
- Date of on-set of disability (conditional based on disability indicator).
- ESRD indicator.
- Standard coding identifying primacy of health insurance coverage/payment for each health insurance policy.
- Date of enrollment in each general type of each health insurance policy.
- Date of termination of enrollment in each general type of each health insurance policy.
- Date of birth of each insured individual.
- Sex of each insured individual.
- Code indicating primacy of coverage different from the standard rules of primacy (e.g., a legal decree dictating primacy of payment responsibility) for each affected/applicable health insurance policy for each insured individual.
- Algorithm applying standard rules of primacy.

HIE Directory Reply Data Set

All information in the data base is necessary to determine what insurance a patient has and the primacy of health insurance coverage/payment for that patient. Providers and insurers must accept the determinations of the HIE Directory (i.e., must not maintain duplicate "other insurer" data bases and systems, and duplicate the application of the standard rules of primacy).
Relying on the integrity of the HIE Directory (which can only be assured by total and timely participation by all health care insurers), information within the HIE Directory Reply Data Set should be sufficient to enable providers to query insurers for eligibility and specific coverage information, and route the initial claim to the proper primary insurer; and for insurers to adjudicate the claim according to their respective coverage policies, and route the claim in accordance with standard COB rules and transaction sets to the next HIE Directory designated insurer, if any.

Information in the Reply Data Set includes:

- UNID of inquiring provider.
- UNID of insured patient.
- Insured patient status indicator (i.e., enrollee/dependent).
- If dependent, enrollee's UNID.
- If dependent, indicator of relationship to enrollee.
- Date of birth of the insured patient.
- Sex of each insured patient.
- UNID of each health care insurer for insured patient.
- Code identifying general type of each health insurance policy for each insurer.
- Standard coding identifying primacy of health insurance coverage/ payment for each health insurance policy.
- Code indicating primacy of coverage different than the standard rules of primacy (e.g., a legal decree dictating)
- Primacy of payment responsibility) for each affected/applicable health insurance policy for each insured individual.

**BENEFITS**

Real dollar savings are related to the administrative cost of handling claims both by the provider and the third party payor. Our research has shown that 7% to 30% of all claims have some COB implications. As a result, the higher the Medicare business the higher the percentage.

Based on purported savings of $4 billion to $10 billion for automation of other claim-related activities, this TAG believes that realized savings can reach $200 million to $900 million, annually. Medicare contractors and Medigap insurers are already reaping some of these benefits by "crossing over" secondary
Our research has also shown that there exists a group in almost every third party payor organization that is devoted to determining primacy of coverage and recovery of mispaid funds. It is estimated that the federal government has incurred costs of about $100 million a year to maintain its MSP operation and additional litigation costs of $14 million dollars during the past year to recover mispaid funds. Other insurance companies involved have incurred an equal amount of expense for these same activities.

- Insurers and providers expend time, effort and cost to maintain their own, respective insurer identification data files/systems.

- Providers and insurers expend time, effort, cost and benefit dollars for: submission/processing of multiple claims; delays caused by mis-routing of claims for payment; and, overlapping and/or duplicate payments for the same services by multiple payors.

With the HIE Directory in the equation, these expenses could be eliminated and the following intangible benefits produced:

- Providers would save time, effort and frustration by not having to identify insurance coverage through patient interviews and subsequently determining primacy of health insurance coverage/payment based on such information. (This would eliminate the need to obtain such data on paper claims as well, reducing the aggravation of completing the claim form and allowing current space used for such data to be allocated for other uses.)

- Patients would save time, effort and frustration by not being subjected to the identification of insurance through patient interviews.

If a significant part of COB operational costs and virtually all litigation costs could be eliminated by all health care insurers, substantial benefits would be realized by the health care community.

CONCLUSION

The vision of a mature health care EDI environment which provides an uninterrupted, consistent and standard communication of administrative workflow can be realized if the industry is willing to accept the challenge of building the framework that links providers and payors. The American National Standards Institute's health care transaction sets are overwhelmingly accepted as the standard communication transaction sets for this industry. The task of bringing EDI capability to all providers is as crucial as all others. As long as the providers are partners in this process, the goals will be met.

As the face of health care reform becomes easier to recognize,
perhaps our direction and recommendations may change. Even with managed competition and health insurance purchasing cooperatives, evolution to these methods may never occur without the solid foundation we are proposing today.

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EXECUTIVE SUMMARY

Fraud clearly contributes to the enormous problem of rising health care costs in the United States. According to a May 1992 report to Congress by the General Accounting Office, medical fraud and abuse consume as much as 10% of the money that the nation spends on health care annually - or $70 billion in fiscal year 1992 alone. The GAO estimates by 1995, unless checked, annual losses could approach $100 billion.

Generally criminal in nature, health care fraud has been defined as "an intentional deception or misrepresentation that could result in some unauthorized benefit to the individual, or the entity or to some other party" (refer to Addendum 1). Health care fraud schemes range from those committed by individual providers and/or consumers acting alone, to broad-based operations conceived for the purpose of committing fraud. Health care fraud includes activities such as:

- Billing for services not rendered,
- Falsifying diagnoses or treatment records,
- Undisclosed waiver of co-payments or deductibles in schemes designed to remove the patient from the billing process,
- Falsifying employment records, and
Brand-name billing for generic drugs.

Electronic Data Interchange has the potential to assist and hinder the perpetration of health care fraud. Electronic environments can provide opportunities for us to improve our ability to detect health care fraud by virtue of generating more comprehensive and standardized data in which fraudulent billing patterns might be detected. Faster electronic claims payment systems reduce the opportunity for individuals to detect and prevent the payment of inappropriate claims. Widespread use of EDI can improve and lower the cost of the overall administration of health care information. In addition, EDI reduces the cost of claims processing by reducing the flow of paper, and it increases service by allowing for faster claims payment. However, without proper front-end safeguards, EDI can also increase the private and public systems' exposure to health care fraud, creating the potential for losses far greater than any administrative savings.

Automated tools that can assist in fraud detection range from simple to complex. There are tools that involve simple automatic "red flags" that highlight a suspicious activity in a health care claim. Sophisticated tracking mechanisms can categorize activities so that suspicious trends or patterns can be identified. Computers can assist in performing statistical analyses of health care services. Medical services behavior patterns can be defined so that behavior can be viewed and measured in order to define "normal" or "exceptional" events.

General recommendations for provider and clearinghouse participation and audit, investigative and prosecutorial capabilities in an electronic environment are:

- The establishment of quality criteria for provider and clearinghouse eligibility to participate in EDI systems or networks.
- The application of certain contractual agreements governing medical and claims records, and the provision of payor access thereto, to which participating providers and clearinghouses must adhere (refer to Addendum 2).
- The development and use of a unique provider identification mechanism through which claims submitted electronically may be traced with certainty to their source.
- Edits or "red flags" that highlight unusual or suspicious activity for further review. For example, an edit that highlights illogical combinations of medical services (i.e., medical procedures performed on persons of the inappropriate gender). At a minimum, these edits would include, but are not limited to, those system edits presently required of intermediary carriers by Medicare.
- Definitions of potential fraudulent activities or behaviors by health care specialty to identify high risk suspects.
- Historical tracking of overall behavior and individual
components of behavior for providers over several years.

- Statistical analysis tools to define behavior patterns that are at a high risk of being fraudulent.
- Flexibility to add new red flags in the electronic system as they are developed from statistical analyses.
- System designs that allow for admissibility in legal proceedings of data generated by EDI systems and that allow for single-source expert testimony as to the workings and integrity of the EDI process.
- Discussion, with developing technology in mind, of the most effective point of application of system edits and controls (i.e., in individual payors' systems, and/or at the clearinghouse stage).

INTRODUCTION

Health care fraud is acknowledged as a significant white-collar crime affecting the private and public health care payment systems. According to a May 1992 report to Congress by the General Accounting Office (GAO), health care fraud and abuse costs the nation as much as 10 percent of the money it spends on health care annually, as much as $70 billion in fiscal year 1992 alone. The GAO estimates, unless checked, that loss could run to $100 billion per year by 1995. The GAO report concluded that "only a fraction of the fraud and abuse committed against the health care system is identified," and of those abuses that are discovered, fewer still are prosecuted. Fraud clearly contributes to the enormous problem of rising health care costs in the United States.(1)

Definition of Health Care Fraud

Health care fraud has been defined as "an intentional deception or misrepresentation that the individual or entity makes knowing that the misrepresentation could result in some unauthorized benefit to the individual or the entity or to some other party" (refer to Addendum 1).

Health care fraud is almost invariably criminal in nature, and its perpetrators range from individual providers and/or consumers to individuals who construct broad-based schemes specifically designed to commit fraud. Those schemes include a wide variety of activities such as:

- Deliberately billing for services/supplies that were never provided.
- Routinely and deliberately falsifying claims information to obtain a payment, or a higher payment.
- Telemarketing and door-to-door schemes that prey on senior citizens, the Medicare program, and insurers by obtaining,
under false pretenses, patient information with which to conduct fraudulent billing schemes.

(1) The National Health Care Anti-fraud Association (NHCAA) estimates that the amount lost to outright fraud (excluding abuse) is between a minimum of 3 percent to as much as 10 percent of our total annual health care expenditure.

- "Rolling lab" or clinical laboratory schemes established to systematically commit fraud against all payors by fabricating symptoms and/or diagnoses to submit false claims following the purported performance of "free" physical examinations.

- Falsification of identification and/or employment records to obtain health care coverage.

- The systematic and undisclosed waiver of patient copayments and/or deductibles in schemes designed to omit patient involvement in the billing and payment process and, thus, facilitate false and/or inflated billings.

Health Care Fraud Affects Everyone

Health care fraud affects every citizen, because each of us pays the price for health care in the United States. Taxpayers who pay for public programs such as Medicare and Medicaid, consumers who pay health insurance premiums or their portion of premiums through co-payments and deductibles, and organizations who buy health care coverage for their employees are all affected by health care fraud.

Health Care Fraud is Difficult to Detect

The current environment in which the health care systems must operate contributes to the difficulty in detection fraud. For example:

- Payors are expected, and sometimes mandated by law, to pay claims quickly and to take effective action against fraud. Few, if any, fraud investigations can be conducted and concluded quickly, due to the nature of the activity and the demands of due process.

- Individual claims may not appear fraudulent. Rather, when discerned as part of a pattern, fraudulent claims become apparent.

- Most providers engaged in fraud spread their activity among a number of insurers and/or government programs simultaneously to better avoid detection. Effective detection efforts require the legal sharing of investigative information among payors; while successful prosecution is enhanced by demonstrating the multiple-victim nature and impact of a given fraud.
Statistical Breakdown of Fraudulent Activity

The 1993 Health Insurance Association of America (HIAA) health care fraud survey showed the number of fraud cases investigated by responding companies increased over 75% in two years; from 15,246 in 1990 to 26,755 in 1992. (2)

The composition of fraudulent activity is 65% provider fraud and 35% consumer fraud. Provider fraud breaks down as follows:

- 43% fraudulent diagnoses or dates
- 34% billing for services not rendered
- 21% waiving co-payments or deductibles
- 2% other provider fraud

Consumer fraud breaks down as follows:

- 40% falsifying claims
- 25% false records of employment and eligibility
- 5% fraudulent misrepresentation in applications
- 30% other consumer fraud

Recommendation from the 1992 WEDI Report

The 1992 WEDI Report recognized fraud is a widespread problem within the health care industry. The report suggested that fraud can be reduced within an EDI environment but was not specific as to how this could be accomplished.


1993 WEDI Report

Electronic Data Interchange (EDI) has the potential to both assist and hinder the perpetration of health care fraud. Electronic environments can provide opportunities to improve detection of health care fraud by virtue of generating more comprehensive and standardized data in which fraudulent billing patterns might be detected, assuming consideration has been adequately taken into account during system design. Widespread use of EDI can improve and lower the cost of the overall administration of health care information. In addition, EDI reduces the cost of claims processing by reducing the flow of paper, and it increases service by allowing for faster claims payment. However, faster electronic claims payment systems reduce the opportunity for humans to detect and prevent the payment of inappropriate claims. Without proper front-end safeguards, EDI can also increase the private and public systems' exposure to health care fraud, creating the potential for losses far greater than any administrative savings.
Automated systems can assist humans to review data that cannot otherwise be easily analyzed. There are two general approaches to analyzing health care fraud data: retrospective and prospective. Retrospective data analysis involves reviewing large amounts of historical information to identify patterns of fraudulent behavior. Prospective data analysis involves analyzing data, such as claims submitted but unpaid, and determining if the claim is legitimate and should be paid.

The time required to perform prospective analysis on unpaid claims is inconsistent with business and statutory requirements to pay claims quickly. Often, prospective reviews are conducted on one claim at a time and it is almost impossible to identify patterns of fraudulent behavior. Also, individual claims can appear to be legitimate but include a medical service that was never rendered.

For these reasons, it is necessary to first perform retrospective analyses of claims history to determine patterns of behavior and identify trends that are potentially fraudulent. This analysis can be moved forward to the beginning of a claims adjudication and payment system to delay or prevent payment of suspicious claims. The suspicious claims can be flagged for more careful scrutiny and legitimate claims can continue through processing.

Current Environment

Many health care organizations have fraud detection and investigation departments. Currently, such departments function primarily in a reactive mode by responding to referrals about suspected fraudulent activities. The automated tools that support fraud departments are generally unsophisticated. It is not uncommon for fraud departments to function largely on a manual basis or simply to have access to a collection of computer-generated reports that require labor-intensive review and analysis. Although fraud departments have knowledge of the types of fraudulent activities, they often lack efficient tools to detect and identify the fraud perpetrators. Faced with huge data bases of health care claims and thousands of providers, it is a daunting needle-in-a-haystack problem.

Few health care organizations have developed their own automated tools to assist in fraud detection. There are tools involving simple automatic "red flags" that highlight suspicious activities, entities or individuals in a health care claim. Other systems include more sophisticated tracking mechanisms that categorize activities so that trends or patterns can be reviewed for many claims. University level research and development is currently underway involving massively parallel processing of huge quantities of health claim data. Medical services behavior patterns can be viewed and measured, and then statistical analyses can be performed by health service category to define "normal" and "exceptional" events.

One computer software vendor has recently released an automated fraud detection system that pro-actively identifies high risk
providers within peer groups. This software package uses a combination of fuzzy logic, conventional expert systems, and statistics to reach its conclusions.

The complexity of the fraud detection problem rests upon the diversity of health care services and the dynamics of regional variations. The characteristics of fraud activities can vary by type of health industry service (e.g., laboratory, physician, chiropractor, pharmacist), by organization (e.g., individual, clinic, institution) and by geography. This means that the characteristics of fraudulent behavior for a specialist in Missouri can be different than that of a specialist in New York. In addition, these characteristics can change over time.

1993 WEDI REPORT RECOMMENDATIONS

Because EDI poses certain risks to anti-fraud efforts, its administrative savings notwithstanding, all parties to EDI need to assume certain responsibilities for the integrity and accountability of the system. Thus, our recommendations to WEDI fall into several interrelated categories, all of which are integral to the detection, investigation and prosecution of health care fraud in an all-electronic environment.

Recommendation 1 - Provider/Clearinghouse Requirements

Even more than paper-based systems, EDI systems rest on the assumption of honesty on the part of participants, providers, and clearinghouses seeking to participate in EDI networks. Therefore, EDI systems should be required to meet certain quality criteria (e.g., "clean" records with respect to fraud, basic anti-fraud system safeguards).

Investigation and documentation of fraud require the existence of a clear and accountable audit trail through which claims can be reliably traced to their source documents and medical records.

Typically, these source documents and medical records must be maintained for minimum periods of time. The all-electronic submittal of claims has the potential for compromising the integrity of such audit trails. Therefore, both providers and clearinghouses should sign certain contractual agreements related to the preservation of source documents and medical records and the acceptance of responsibility for fraudulent acts (providers), the archiving of transaction records (clearinghouses), and the provision of access thereto for investigation purposes (both). (Note: Addendum 2 details the agreements to which one payor requires providers submitting claims electronically to adhere.)

Recommendation 2 - Unique Identification of Claim Submitters

For the same reasons of accountability, EDI must be accompanied by the development and universal application of a unique identifier mechanism that will establish, with certainty, the individual and entity responsible for the electronic submittal of a given claim.

Recommendation 3 - Necessary System Edits
In general, all EDI systems should feature the following types of fraud detection capabilities:

- System edits or red flags that highlight unusual or suspicious activity for further review. For example, an edit that highlights illogical combinations of medical services (e.g., medical procedures performed on persons of the inappropriate gender, geographic discrepancies between patient/provider locations, and claims for services rendered on Sundays and legal holidays).

- Definitions of potential fraudulent activities or behaviors by health care specialty, so that high risk suspects can be identified.

- Historical tracking of overall behavior and individual components of behavior for providers over several years.

- Statistical analysis tools to define behavior patterns that are at a high risk of being fraudulent.

- Flexibility to add new red flags in the electronic system as they are developed from statistical analyses.

Recommendations contained in this White Paper cannot define specific audit capabilities for an automated fraud detection system for two reasons. First, specific capabilities are confidential to the organizations which developed them. Secondly, publication of fraud detection characteristics will allow fraud perpetrators to gain knowledge that can enable them to circumvent detection methods and commit further fraud. However, at a minimum, each EDI system should feature the system edits presently required of Medicare intermediary carriers by the Health Care Financing Administration.

Recommendation 4 - Legal Considerations

EDI system designs must take into account the need for admissibility in legal proceedings of the data generated by such systems, and they must allow for single-source expert testimony on the workings and integrity of the systems. The EDI audit trail must be clearly explainable and provable to lay audiences, such as law enforcement officers, prosecutors and juries.

Recommendation 5 - Future Technology and Point of Application

WEDI must also take into account the development of new fraud detection technology (e.g., massively parallel processing computer analysis of pooled claims data) in considering the application of such technology at the clearinghouse stage of EDI transactions. At this stage, claims sent to many payors (and potential fraud targets) are passing through a common channel.

CONCLUSION

Electronic environments can provide opportunities to improve
detection of health care fraud and reduce health care costs. Health care organizations should take advantage of the wide range of automated tools that can assist in fraud detection. Simple tools involving automatic red flags can highlight a suspicious activity in a health care claim. More sophisticated systems involving tracking mechanisms can categorize activities so that suspicious trends or patterns can be identified. Computers can assist in performing statistical analyses of activities of different categories of health care services to define "normal" or "exceptional" medical service behavior patterns.

WEDI's next step in addressing the anti-fraud implications of EDI should be the research and development of the specific measures comprising Recommendations 1 through 5 of the section entitled 1993 WEDI Report Recommendations.

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ADDENDA

Addendum 1: NHCAA Guidelines to Health Care Fraud

GUIDELINES TO HEALTH CARE FRAUD

ADOPTED BY THE NHCAA BOARD OF GOVERNORS
NOVEMBER 19, 1992

Health care fraud is an intentional deception or misrepresentation that the individual or entity makes knowing that the misrepresentation could result in some unauthorized benefit to the individual, or the entity or to some other party.

The most common kind of fraud involves a false statement, misrepresentation or deliberate omission that is critical to the determination of benefits payable. Fraudulent activities are almost invariably criminal, although the specific nature or degree of the criminal acts may vary from state to state.

The variety of fraudulent reimbursement and billing practices in the health care area is potentially infinite. The most common fraudulent acts include, but are not limited to:
1. Billing for services, procedures and/or supplies that were not provided.

2. The intentional misrepresentation of any of the following for purposes of manipulating the benefits payable:
   a. The nature of services, procedures and/or supplies provided;
   b. The dates on which the services and/or treatments were rendered;
   c. The medical record of service and/or treatment provided;
   d. The condition treated or diagnosis made;
   e. The charges or reimbursement for services, procedures, and/or supplies provided;
   f. The identify of the provider or the recipient of services, procedures and/or supplies.

3. The deliberate performance of unwarranted/non-medically necessary services for the purpose of financial gain.

T278
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Addendum 2: Electronic Claims Input Authorization

Return to:

Name Of Physician, Supplier, Or Group
Address
Contact Person Telephone Number (    )
Medicare/Blue Shield ID No. Tax ID No.
If using outside Billing Services, specify name
Software Vendor Name

Electronic Billing Media:
Magnetic Tape Specify BPI: 800 1600 6250
Plan to use Reconciliation Tape Yes No
Dial Up (Telephone Transmission) Specify Protocol
Synchronous Asynchronous
Indicate Preferred BAUD Rate 1200 2400

In Accordance With Specifications Set Forth By
And The Health Care Financing Administration For Submission Of Automated Claims, We Agree To:

- Allow ______________ reasonable access to all source documents and medical records related to any claim.

- Research and correct any and all billing discrepancies caused by submission of automated claims.

- Ensure that every automated claim can be associated and identified with a source document and medical record.

- Maintain all source documents and medical records for a period of six years after the month the bill was submitted. Records may be maintained on microfilm.

- Accept the liability for all claims submitted to ______________ by myself and my agent. Refund any overpayments made to ______________ to Medicare beneficiaries or to me personally as a result of information submitted by me or my agent on automated claims, as determined by ____________ within 30 days of the date of notifications.

- Submit automated claims in accordance with the rules and regulations set forth by ______________ and the Health Care Financing Administration.

- In submitting automated claims, I understand that I am certifying that required patient signatures or appropriate signatures in behalf of patients are on file in accordance with prescribed procedures, and that anyone who misrepresents or falsifies essential Medicare claims information may, upon conviction, be subject to fines and/or imprisonment under Federal law. If assignment is accepted, I agree that the reasonable charge, as determined by the Carrier, shall be the full charge for the services on the claims.

- For anesthesia billers, completion of this form indicates compliance that you have on file each procedure performed and the name of each anesthetist directed for services on their claims.

- Maintain the confidentiality of passwords, preventing unauthorized users from committing data security violations with my logon ID.

Signature of Physician, Supplier or Authorized Representative

Type or Print Name

Title

Date
Appendix 12

WEDI Organization Chart

Workgroup for Electronic Data Interchange

October 1993

(WEDI Organization Charts)

Appendix 13

WEDI Membership

Workgroup for Electronic Data Interchange

October 1993

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WEDI Steering Committee 13-3
WEDI Technical Advisory Group Chairs 13-5
WEDI Staff Members 13-6

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<table>
<thead>
<tr>
<th><strong>DEFINITIONS</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative Processor</td>
<td>The entity that is responsible for deciding which health care services are covered under a health care benefit plan.</td>
</tr>
<tr>
<td>Bar Code</td>
<td>A read-only technology using a series of vertical bars (lines) of different density and spacing conforming with ANSI standards.</td>
</tr>
<tr>
<td>Biometrics</td>
<td>The use of biological-related methods for the identification of specific individuals. Examples are: signature, finger/thumb/palm print, voice, retinal scan, DNA.</td>
</tr>
<tr>
<td>Claims Submission Address</td>
<td>The address where paper claims should be submitted.</td>
</tr>
<tr>
<td>Clean Claim</td>
<td>Claims containing all data required for payor adjudication and that do not require further investigation.</td>
</tr>
<tr>
<td>Clinical Processor</td>
<td>The entity that is responsible for gathering clinical patient information. This processor will grant access to this information to all authorized entities.</td>
</tr>
<tr>
<td>Co-Pay Information</td>
<td>Payors will insert, in freeform, the co-payment requirements for the specified plan.</td>
</tr>
<tr>
<td>Coverage/Eligibility Phone Number</td>
<td>Area on the card that will contain phone numbers for eligibility and coverage information.</td>
</tr>
<tr>
<td>Coverage Type</td>
<td>Freeform text field that the payor or issuer can use to describe the plan. Payors will use their own internal descriptions in this</td>
</tr>
</tbody>
</table>
Data Repository: A place or system that maintains information electronically. This can be a claims administrator with claims history information, a community clinical data base with patient medical records, etc.

Directory Services: A health care telecommunications network value-added feature that helps expedite the delivery of a transaction to the intended destination. The network will look up the destination address by multiple identifiers and route the transaction or return to the requester the routing information.

Embossing: Raised lettering in relief from a surface, as on a credit card, to aid in identification and transfer of information from the card.

Human-Readable: Information stored (carried) on a source, such as identification cards, that is legible but not machine-readable.

Individual/Subscriber Name: Name of the individual cardholder or the name of the subscriber to the plan.

Laser/Optical Cards: High-capacity optical memory data using a laser to create (write) and retrieve (read) stored information as on a laser disk but in a card form in conformance with ISO standards.

Machine-Readable: Using specialized equipment, the ability to read data (information) from a source (such as identification cards) and create electronic transactions for processing or data file access.

Magnetic Stripe: A card technology using a magnetic surface that is encoded with data supporting read-only functionality (some exceptions are read and write) in conformance with ANSI standards.

OCR: The printing of information in a stylized font defined by standards organization which can be read by optical readers.
Online

The communications terminal (or system) is connected via a communications link to the central authorization/transaction computer during the transaction. If the terminal or system holds transaction data in local memory for later transmission to the central computer, it is said to be off-line.

Payor/Issuer Name  Payor No.

This field is designed to carry basic transaction routing information for the purpose of EDI. It is uncertain what the specific definition of the field will be. The Directory Services subcommittee will, most likely, clarify this issue.

Person or Subscriber Number

It is assumed that this field will be the universal health identifier that will be defined by others.

PIN

Personal Identification Number. A number encrypted in the coding on a card, which the cardholder must enter on a keyboard before the card reader system will process the transaction. Equivalent to an electronic signature.

Plan/Contract No.

The group or policy number issued by the payor. This field was inserted to assist payors who currently depend on this number to process claims. In the future, we assume that electronic processing will not require this field.

Primary Technology

A plastic card with magnetic stripe, however, other technologies will not be negated as they become more feasible options.

Processor

Any entity that manipulates information. A processor can handle multiple different functions or be specialized and handle only one. Typically, processors develop systems for specific functions claims, eligibility, utilization management, etc.

Reader

The electromechanical device used to extract data from a previously encoded media.
<table>
<thead>
<tr>
<th><strong>Service Category</strong></th>
<th>A code indicating the type of medical service being delivered by a provider; e.g., medical, dental, drug, and vision.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Settlement</strong></td>
<td>Occurs when adjudication has taken place and final remittance was sent to the provider.</td>
</tr>
<tr>
<td><strong>Smart Card</strong></td>
<td>A card containing a microprocessor chip with sufficient memory to store and process information in conformance with ISO standards.</td>
</tr>
<tr>
<td><strong>Sponsor (Employer)</strong></td>
<td>The sponsor of the subscriber's plan, generally the employer, but could be a union or any other health care purchasing entity.</td>
</tr>
<tr>
<td><strong>Swipe Reader</strong></td>
<td>A manually operated reader with a long narrow channel (slot) through which the edge of the card is pushed, thereby moving the machine-readable portion of one card past a reading station.</td>
</tr>
<tr>
<td><strong>TCP</strong></td>
<td>The Host-to-Host layer of the Open Systems Interconnection model.</td>
</tr>
<tr>
<td><strong>Transaction</strong></td>
<td>An electronic record of the information surrounding a specific business function being performed by the initiator. Types include claims, claim status inquiries, eligibility inquiries, utilization review/management, etc.</td>
</tr>
<tr>
<td><strong>Two Dimensional or Symbiology</strong></td>
<td>Represented by a series of stacked bar codes, binary matrix, or other encoded markings which supports high density, high capacity read-only or read/write capability with no general adopted standards such as ISO or ANSI.</td>
</tr>
<tr>
<td><strong>Value Added Network</strong></td>
<td>The vehicle for carrying data from the point of service to the point of receipt, including both the network and switch functions.</td>
</tr>
<tr>
<td><strong>WEDI Logo</strong></td>
<td>A logo that will be defined in the near future, that indicates the card conforms to the guidelines established by the WEDI committee.</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
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<tr>
<td>AIAG</td>
<td>Automobile Industry Action Group</td>
</tr>
<tr>
<td>ACH</td>
<td>Automated Clearinghouse Payment</td>
</tr>
<tr>
<td>ACP</td>
<td>American College of Physicians</td>
</tr>
<tr>
<td>ADA</td>
<td>American Dental Association</td>
</tr>
<tr>
<td>AGPAM</td>
<td>American Guide of Patient Account Management</td>
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<tr>
<td>AHA</td>
<td>American Hospital Association</td>
</tr>
<tr>
<td>AIAG</td>
<td>Automobile Industry Action Group</td>
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<tr>
<td>AMA</td>
<td>American Medical Association</td>
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<tr>
<td>AMCR</td>
<td>Association for Managed Care Review</td>
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<tr>
<td>ANSI</td>
<td>American National Standards Institute</td>
</tr>
<tr>
<td>AOA</td>
<td>American Osteopathic Association</td>
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<tr>
<td>ASAP</td>
<td>American Society for Automation in Pharmacy</td>
</tr>
<tr>
<td>ATM</td>
<td>Automated Teller Machine</td>
</tr>
<tr>
<td>BCBSA</td>
<td>Blue Cross and Blue Shield Association</td>
</tr>
<tr>
<td>BOD</td>
<td>Board of Directors</td>
</tr>
<tr>
<td>CHMIS</td>
<td>Community Health Management Information Systems</td>
</tr>
<tr>
<td>CHN</td>
<td>Cooperative Healthcare Networks</td>
</tr>
<tr>
<td>COB</td>
<td>Coordination of Benefits</td>
</tr>
<tr>
<td>CPRI</td>
<td>Computer-based Patient Records Institute, Inc.</td>
</tr>
<tr>
<td>DEA</td>
<td>Drug Enforcement Agency Number</td>
</tr>
<tr>
<td>DISA</td>
<td>Data Interchange Standards Association, Inc.</td>
</tr>
<tr>
<td>DMERCs</td>
<td>Durable Medical Equipment Regional Carriers</td>
</tr>
<tr>
<td>EDI</td>
<td>Electronic Data Interchange</td>
</tr>
<tr>
<td>FTE</td>
<td>Full-Time Equivalents</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
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<td>---------</td>
<td>-------------------------------------------------------</td>
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<tr>
<td>GAO</td>
<td>General Accounting Office</td>
</tr>
<tr>
<td>GOISP</td>
<td>Government Open Systems Interconnection Protocol</td>
</tr>
<tr>
<td>HCAD</td>
<td>Health Care Administrators</td>
</tr>
<tr>
<td>HCFA</td>
<td>Health Care Financing</td>
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<tr>
<td>HCIN</td>
<td>Healthcare Information Network</td>
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<tr>
<td>HEDITPs</td>
<td>Health Care EDI Trading Partners</td>
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<tr>
<td>HFMA</td>
<td>Healthcare Financial Management Association</td>
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<tr>
<td>HHS</td>
<td>Department of Health and Human Services</td>
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<tr>
<td>HIAA</td>
<td>Health Insurance Association of America</td>
</tr>
<tr>
<td>HIBCC</td>
<td>Health Industry Business Communications Council</td>
</tr>
<tr>
<td>HIE</td>
<td>Health Insurance Enrollment</td>
</tr>
<tr>
<td>HIN</td>
<td>Health Industry Number</td>
</tr>
<tr>
<td>HIS</td>
<td>Hospital Information System</td>
</tr>
<tr>
<td>HISPP</td>
<td>Healthcare Informatics Standards Planning Panel</td>
</tr>
<tr>
<td>HMO</td>
<td>Health Maintenance Organizations</td>
</tr>
<tr>
<td>IMG</td>
<td>International Medical Graduates</td>
</tr>
<tr>
<td>IP</td>
<td>The Internet; the inter-network portion of the OSI model.</td>
</tr>
<tr>
<td>IRS</td>
<td>Internal Revenue Service</td>
</tr>
<tr>
<td>ISDN</td>
<td>Integrated Services Digital Network</td>
</tr>
<tr>
<td>ISO</td>
<td>International Standards Organization</td>
</tr>
<tr>
<td>JCAHO</td>
<td>Joint Commission on the Accreditation of Health Organizations</td>
</tr>
<tr>
<td>LATAs</td>
<td>Local Access and Transport Areas</td>
</tr>
<tr>
<td>NABP</td>
<td>National Association of Boards of</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<td>--------------</td>
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<tr>
<td>Pharmacy</td>
<td></td>
</tr>
<tr>
<td>NACHA</td>
<td>National Automated Clearing House Association</td>
</tr>
<tr>
<td>NAIC</td>
<td>National Association of Insurance Commissioners</td>
</tr>
<tr>
<td>NCP</td>
<td>Network Control Program</td>
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<tr>
<td>NCPDP</td>
<td>National Council of Prescription Drug Programs</td>
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<tr>
<td>NCQA</td>
<td>National Committee for Quality Assurance</td>
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<tr>
<td>NEIC</td>
<td>National Electronic Information Cooperation</td>
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<tr>
<td>NHCAAA</td>
<td>National Health Care Anti-Fraud Association</td>
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<tr>
<td>NCVHS</td>
<td>National Committee for Vital and Health Statistics</td>
</tr>
<tr>
<td>NUBC</td>
<td>National Uniform Billing Committee</td>
</tr>
<tr>
<td>OSI</td>
<td>Open Systems Interconnection</td>
</tr>
<tr>
<td>PAD</td>
<td>Packet Assembler/Disassembler</td>
</tr>
<tr>
<td>PMA</td>
<td>Pharmaceutical Manufacturers Association</td>
</tr>
<tr>
<td>PMS</td>
<td>Practice Management Systems</td>
</tr>
<tr>
<td>PPO</td>
<td>Preferred Provider Organizations</td>
</tr>
<tr>
<td>PPSN</td>
<td>Public Packet Switched Network</td>
</tr>
<tr>
<td>PSTN</td>
<td>Public Switched Telephone Network</td>
</tr>
<tr>
<td>R &amp; D</td>
<td>Research &amp; Development</td>
</tr>
<tr>
<td>SMA</td>
<td>State Medicaid Agencies</td>
</tr>
<tr>
<td>SNA</td>
<td>System Network Architecture</td>
</tr>
<tr>
<td>SPIN</td>
<td>Standard Prescriber Identification Number</td>
</tr>
<tr>
<td>SSN</td>
<td>Social Security Number</td>
</tr>
<tr>
<td>TAG</td>
<td>Technical Advisory Group</td>
</tr>
<tr>
<td>TIN</td>
<td>Federal Tax Identification Number</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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</tr>
<tr>
<td>TPAs</td>
<td>Third Party Administrators</td>
</tr>
<tr>
<td>TSTS</td>
<td>Transaction Switching and Transport Service</td>
</tr>
<tr>
<td>T3POS</td>
<td>Transaction Processing Protocol for Point of Sale</td>
</tr>
<tr>
<td>UCTF</td>
<td>Uniform Claim Task Force</td>
</tr>
<tr>
<td>UNID</td>
<td>Unique National Identifier</td>
</tr>
<tr>
<td>UPIN</td>
<td>Unique Physician Identification Number</td>
</tr>
<tr>
<td>URAC</td>
<td>Utilization Review Accreditation Commission</td>
</tr>
<tr>
<td>UROs</td>
<td>Utilization Review Organizations</td>
</tr>
<tr>
<td>WEDI</td>
<td>Workgroup for Electronic Data Interchange</td>
</tr>
</tbody>
</table>