Pharmacy Interchange

The EHR and Pharmacy Integration: A Preferred Future

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Quality Health Care

- Empowers patients
- Includes the environment
- Has multiple components:
  - Clinical
  - Cost
  - Functional
  - Satisfaction
- Encompasses the entire experience
- Provides a continuum of care
Future of Quality Health Care

- Reimbursement for Outcomes
- Decisive and Effective Systems for:
  - Efficiency
  - Ethics
  - Resource Utilization
  - Social Accountability
- Innovative health care delivery
- Commitment to *Improving the Quality of Life*
Health Care Delivery

*Common Goals...*

- **Collaborative Practice**
  - Improve patient care
  - Increase communication between and among patients / providers
  - Increase availability of objective measures
  - Reduce total cost for care over time
Pharmacists and Pharmacy have a rich history in the adoption and use of
- Transaction Standards
- Computers
- Automation

Let’s consider some of those in the current context of practice innovation...
Pharmacy Practice Activity Classification (PPAC) - 1998

- Dispensing of Drugs and Devices
  - Processing the Prescription
  - Preparation of the Drug
  - Delivery of Drug or Device
- Prevention/Resolution of Drug Therapy Problems
  - Ensuring Appropriate Pharmacotherapy
  - Ensuring Patients’ Understanding
  - Monitoring Patient Response
- Health Promotion and Disease Prevention
  - Community Based Services
  - Individual Level Services
- Health Systems Management
  - Improving Medication Use Systems
  - Practice Management
PPAC Created by Ten Professional Associations

- Academy of Managed Care Pharmacy
- American Association of Colleges of Pharmacy
- American College of Apothecaries
- American College of Clinical Pharmacy
- American Pharmacists Association
- American Society of Consultant Pharmacists
- American Society of Health-System Pharmacists
- National Association of Boards of Pharmacy
- National Association of Chain Drug Stores
- National Community Pharmacists Association
Advanced Pharmacy Services

- Health Promotion / Disease Prevention
  - Health Risk Assessment
  - Immunizations
  - Wellness Programs

- Disease Management
  - Asthma
  - Cardiovascular Disease (Dyslipidemia, Hypertension)
  - Coagulation Disorders
  - Congestive Heart Failure
  - Diabetes
  - Osteoporosis
Medication Use in U.S.

> 2.5 Billion Prescriptions Annually

(> $80 Billion*)

Complex Process
Prescribing, Administering, Dispensing, Monitoring, and Systems Management

* Scott-Levin’s Source Prescription Audit.
Community Pharmacy Claims Processing

- **Dispensing Process**
  - Profession enjoys virtually complete standardization for claims processing within the community pharmacy domain
    - NCPDP

- **Monitoring Process**
  - Current information void…
Greater Reliance on Drug Therapy: Prescription & OTC Medications

Currently the primary treatment modality and largest expense for illness and disease

- **Strengths**
  - Compatibility with lifestyle
  - All medications are self-administered
  - Doesn’t require linkage to a physical facility or health care provider

- **Challenges**
  - Requires consumers to become educated to “use” them correctly in order to receive “return on investment”
4 times as many Americans die each year from medication related problems as die in automobile accidents

10 of every 100 patients in the hospital at any moment are there because of a medication related problem

For every dollar spent on medications for nursing home patients, an additional $1.33 in health care resources are consumed in treating medication related problems

For every dollar spent on medications for ambulatory patients, an additional two dollars are spent in treating preventable medication related problems
Adverse System Effects

- Problems with society’s perception of safety and value
- Poor Persistence
- Even Poorer Compliance
- Increasing drug spend with less than optimal benefits
Baby Boomer ➔
Graying Boomer

◆ Largest utilizers of drug therapy
◆ Population over the age of 65*
  – 1995 = 12%
  – 2020 = 16%
◆ Existing delivery system does not have the capacity to meet the needs

Pharmacist’s Role is Changing

- Pharmacy … A Profession in Transition
  - All pharmacists now trained at the doctorate level
  - Collaborative Drug Therapy Management (40 States)
  - Pharmacist Immunization Administration (36 States)
  - Waived Laboratory Testing by Pharmacists (44 States - e.g., lipid profiles, diabetes)

Physicians Have an Opportunity to Work More Closely With Pharmacists on Drug Therapy Management
Distribution of U.S. Provider Groups

Providers per 100,000 population

- Primary Care Physicians
- Pharmacists
- Nurse Practitioners
- Physician Assistants


* HPSA: Health Provider Shortage Area
Patient Centric Drug Therapy

- Patient is the:
  - Applier
  - Utilizer
  - Determiner

...of the outcomes associated with medication “technology”

Patients on drug therapy ultimately “manage their own care”.
Enhanced communication between and among all participants
Project ImPACT: Hyperlipidemia

397 patients collaborate with pharmacists & physicians in 12 states from March 1996 through October 1999.

Improve Persistence And Compliance with Therapy

Project ImPACT: Hyperlipidemia
Results for 397 patients, 26 sites, 12 states x 2 yrs

- Persistence: 93.6%
- Compliance: 90.1%
- Treatment to NCEP Goal: 62.5%

Achievement of NCEP LDL-C Goals
L-TAP vs. ImPACT: Hyperlipidemia

The Asheville Project

The Asheville Project at a glance

- Self-insured employers
- Pay pharmacist about $40/patient per visit
- Waive patient copays
- Patient Meets monthly
- Schedules routine visits
- Communicates summary of sessions and makes recommendations
- Physician

Source: Watch interview, 9/10/02.
Clinical Outcomes:
Avg. Glycosylated Hemoglobin

Baseline 8 Months 14 Months 24 Months 42 Months 48 Months 60 months

HbA₁c
Direct Medical Costs in The Asheville Project

Figure 2. Direct Medical Costs Over Time

City of Asheville Diabetes Sick-Leave Usage

<table>
<thead>
<tr>
<th>Baseline</th>
<th>14 Months</th>
<th>2 Years</th>
<th>3 Years</th>
<th>4 Years</th>
<th>5 Years</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>12.60</td>
<td>8.46</td>
<td>5.68</td>
<td>5.81</td>
<td>5.67</td>
</tr>
</tbody>
</table>
Now over 800 patients from 3 employers are enrolled for diabetes, asthma, hypertension and lipid therapy management.

Patients continue to have improved outcomes & increased medication adherence.

50% reduction in sick days.

Zero workers comp claims in the City diabetes group over 6 years.

Average net savings of $1,500 per person with diabetes each year from year 2 on.
Collaborative Practice Model Observations...

- Consistently produces an environment that results in:
  - Increased availability and use of objective clinical measures
  - Sharing treatment data and pertinent lifestyle and clinical information with patients and physicians
  - Periodic evaluation of the patient’s progress toward clinical goals, and, if necessary, consultation and intervention with the patient’s physician
  - Timely adjustments in the patient’s treatment plans
  - Empowered patients who assume a more active role in their own care.
On-line Resources

- **Education**: Highly accessible learning tools for patients and health care providers
- **History**: Secure and confidential Electronic Health Record
- **Security**: Secure channel for patient-pharmacist-physician communication
- **Community**: Web-based support groups
- **Quality**: Ability to access objective measures of health and quality
Creating a Preferred Future

- Requires “out of the box” thinking...
  - New structures for managing information
  - Improved processes for communication
  - Collaborative efforts to achieve improved outcomes

- Parallel Innovation
- System Disruption
Information Domain Integration Challenges

ASTM
- Component Object Model Collaboration
- Minimum Dataset Standards
- Modeling Standards
- Vocabulary Standards

HL7
- Messaging Standards
- Vocabulary Standards

NCPDP
- Prescriber Dispenser Standard
- Patient Profile Standard
- Pharmacy Telecomm Standards

X-12
Privacy and Confidentiality: Real Issues and Real Concerns

- Will private healthcare information be used to deny or affect Employment?
- Will confidential health information be used to deny or affect Healthcare coverage?
- Will the patient have some level of control over their healthcare Records?
Accountability vs. Control

- **Need for a New Model**
  - Facilitate location independent, secured, authenticated access to relevant patient care records by qualified professionals on a need to know basis.

- **Secure, standardized storage structure(s)**
- **Confidential process for authenticated access**
- **Patient-centered privacy controls**

NWDA Patient Privacy Conference Panel; The Pink Sheet. 11/98.
Designing Solutions for Securing Patient Privacy - Meeting the Demands of Health Care in the 21st Century

- Provide a public-domain model for discussion in health care policy and technology forums
- Stimulate technology development activities
- Induce rational policy development efforts
- Ensure ubiquitous opportunities for patients to become more informed, involved, and empowered to be in control of their own health
A Macro Level Model for Global, Distributed Electronic Health Record Management

Location independent, secured, authenticated access to relevant patient care records by qualified health care professionals on a need to know basis...

Each data "silo" record contains an encrypted, anonymous patient identifier...

Each user possesses different levels of access and "silo" linkage capability...

Includes utilization of:
- Advanced Encryption Standards
- Strong Authentication Techniques
- Unique, Anonymous Patient/Provider IDs

Accounting layer insists on a high level of individual and process accountability...

Benjamin M. Blum· March 1999
A Global, Distributed Electronic Health Record Management Model

- Component 1: Electronic Health Record
  - Structure and process model that contains four distinct information silos:
    - Personally Identifiable Data
    - Claims Transaction Data
    - Clinical / Encounter Data
    - Quality Event Data
  - Accounting layer insists on a high level of individual and process accountability
    - Reviewable audit trails that track access to records
    - Transaction histories that provide for the re-creation of views at specific points in time
Component 1: Electronic Health Record

- **Personally Identifiable Data** examples
  - Encrypted, anonymous patient identifiers
  - Administrative data
  - Demographic information
  - Legal agreements
  - Financial information
  - Provider data

- Accessible by patients, payers, providers, and others as authorized by patient agreements
Component 1: Electronic Health Record

- **Claims Transaction Data** examples
  - Encrypted, anonymous patient identifiers
  - UB-92 claim form elements
  - HCFA-1500 claim form elements
  - Other market-specific business transaction datasets
  - Diagnostic classification codes (e.g., ICD)
  - Procedure classification codes (e.g., CPT)

- Accessible by patients, payers, providers, researchers, and others as authorized by patient agreements
Component 1: Electronic Health Record

- **Clinical / Encounter Data** examples
  - Encrypted, anonymous patient identifiers
  - Patient history and assessment data
  - Immunization histories
  - Hazardous stressor exposures
  - Problem lists and diagnostic tests
  - Clinical orders and medications
  - Scheduled appointments and encounter data

- Accessible by patients, providers, researchers, and others as authorized by patient agreements
A Global, Distributed Electronic Health Record Management Model

- **Component 1: Electronic Health Record**
  - **Quality Event Data** examples
    - Encrypted, anonymous patient identifiers (if applicable)
    - Adverse reactions
    - Clinical interventions
    - Therapeutic evaluation
    - System errors
    - Other organizationally defined quality improvement
  - Information remains legally undiscoverable
  - Accessible to providers within their employment entities and others as authorized by patient agreements
Component 2: Health Information Service Providers (HISP)

- Responsible for the technical measures required to ensure that data is:
  - Appropriately stored and secured
  - Continuously available
- Systematically ensures appropriate:
  - Authentication of users
  - Levels of access
  - User status according to current records
  - Monitoring of record linkage operations
Component 3: Health Information Authorities

- Responsible for establishing organizational practice policy related to the global process
- Conducts HISP monitoring to ensure compliance with policies and procedures (Audit Trail Data)
- Establish processes that assign unique, anonymous patient and provider identifiers
- Ongoing evaluation and monitoring of available technologies for authentication and encryption
Component 4: Users

- Each user possesses different levels of access and silo linkage capability:
  - Patient
  - Payer
  - Provider
  - Researcher
  - Others
- Designed to:
  - Empower patients
  - Protect privacy
  - Create delivery efficiencies
A Global, Distributed Electronic Health Record Management Model

- **Patient** users (Component 4)
  - EHR silo linkage capability for viewing:
    - Personally Identifiable Data
    - Claims Transaction Data
    - Clinical / Encounter Data
    - Audit Trail Data
  - Ability to contribute information in collaboration with their health care provider(s)
  - Capability to submit secure requests for factual corrections to the Health Information Authorities
A Global, Distributed Electronic Health Record Management Model

- **Payer** users (Component 4)
  - EHR silo linkage capability for viewing:
    - Personally Identifiable Data
    - Claims Transaction Data
    - Audit Trail Data
  - Authorized agents of the patient
  - Ability to contribute compensation and reimbursement information to the claims transaction dataset
  - Responsible for notifying the patient of any unauthorized audit trail records identified
Provider users (Component 4)

- EHR silo linkage capability for real time viewing and modification of:
  - Personally Identifiable Data
  - Claims Transaction Data
  - Clinical / Encounter Data
  - Quality Event Data (limited to organizational affiliations)
  - Transaction History Data
- Designated within patient relationships and authorized accordingly
- Additional ability to view the EHR in “historical mode” to reconstruct view snapshots in time
A Global, Distributed Electronic Health Record Management Model

- **Researcher** users (Component 4)
  - EHR silo linkage capability for viewing:
    - Claims Transaction Data
    - Clinical / Encounter Data
  - Access to large groups of patient records within Investigational Review Board (IRB) authorizations
  - Ability to conduct clinical, economic, and epidemiological research
    - without knowing the identity of patients,
    - yet having the capability to uniquely identify study subjects across a wide spectrum of care.
A Global, Distributed Electronic Health Record Management Model

- **Other users (Component 4)**
  - Provided with access through legal agreements with the patient that are consistent with Health Information Authority policies and procedures
  - May include a diverse offering based upon individualized patient needs
Information “Asset” Considerations

- Juxtaposition of business, societal, and individual needs
  - Venn diagram with overlapping layers
    - Corporate Entities
      - Clinical, claim transaction, and quality event data
    - Society
      - Clinical, public health, and quality event data
    - Individuals
      - Clinical, claim transaction, public health, and personally identifiable data
  - Users must agree not to re-assemble data from various sources for uses other than those originally specified
“The best way to predict the future is to invent it.”

-- Alan Kay