

# A case for ICD-10 as a bridge to interoperability for clinical information.

At the current time there is no accepted standard for the sharing of clinical information across enterprises. Specifically there are no transactional standards for the sharing of clinical information that might be contained in one EHR in a given enterprise to an EHR in different enterprise.

The following is a clinical case study used to illustrate the potential use of ICD-10 codes to convey complex clinical information between systems.

## Case Study

### Personal History:

A patient who is **Type II diabetic in her third trimester of pregnancy** is involved in **an accident where she was skateboarding and reportedly collided with a moving train**. She was reportedly **unconscious at the scene of the accident for less than 30 minutes**. Her pregnancy has been complicated by **placenta previa with hemorrhage in the third trimester** and **elevated blood pressure with protein in the urine**. She has noticed a **decrease in fetal movement**. She also reports **contact with a case of rubella**

### Further history revealed:

- **Alcohol use**
- **Smoking history**
- **History of contraceptive use**
- **Personal history of thrombophlebitis**
- **Personal history of in-situ cervical cancer**

### Family History:

- **Diabetes**
- **Respiratory Cancer**

### Symptoms:

- **Headache**
- **Shortness of Breath**
- **Pre-cordial Chest Pain**
- **Reported fear of injections**

### Examination:

The patient appeared **restless and agitated** and generally **unhappy**. She showed signs of **irritability and anger**. Her **heart rate and respiratory rate were elevated**. She appeared somewhat **disoriented**. Her **BMI was 25.0**. Her **blood pressure was elevated despite no diagnosis of hypertension**. She had **generalized abdominal tenderness with absent bowel sounds. Reflexes were abnormal**. She had a **bruise on her left anterior chest wall** and a **puncture wound that appeared to enter the chest with no foreign body identified**. She was **coughing up blood**. There was a **scalp laceration without a foreign body**. An open **tibial fracture with a 10 centimeter wound with crushed tissue and contamination was noted**

### Xrays revealed:

- *Traumatic pneumothorax*
- *Fracture of the lateral condyle of the right tibia*

Laboratory Findings:

- *Myoglobin found in the urine suggesting significant muscular trauma*
- *Blood in the urine*
- *Glucose in the urine*
- *Abnormal blood sugar*
- *Bacteria in the urine*
- *Blood Type; AB negative*

Complications:

- *Cerebrospinal fluid leak from spinal puncture*
- *Reaction from blood mismatch*
- *Accidental puncture and laceration of a circulatory system organ or structure during a circulatory system procedure*

All of the italic and bolded elements in the above case history are contained within the following ICD-10 codes

<b>Personal History</b>	
V0512xA	Pedestrian on skateboard injured in collision with railway train or railway vehicle in traffic accident, initial encounter
Z204	Contact with and exposure to rubella
S060x1A	Concussion with loss of consciousness of 30 minutes or less, initial encounter
O24113	Pre-existing diabetes mellitus, type 2, in pregnancy, third trimester
O4413	Placenta previa with hemorrhage, third trimester
O99313	Alcohol use complicating pregnancy, third trimester
O99333	Smoking (tobacco) complicating pregnancy, third trimester
O119	Pre-existing hypertensive disorder with superimposed proteinuria, unspecified trimester
Z920	Personal history of contraception
O368131	Decreased fetal movements, third trimester, fetus 1
Z8672	Personal history of thrombophlebitis
Z86001	Personal history of in-situ neoplasm of cervix uteri
<b>Family History</b>	
Z833	Family history of diabetes mellitus
Z801	Family history of malignant neoplasm of trachea, bronchus and lung
<b>Symptoms</b>	
R51	Headache
R0602	Shortness of breath
R072	Precordial pain
F40231	Fear of injections and transfusions
<b>Findings</b>	
R0682	Tachypnea, not elsewhere classified
R7309	Other abnormal glucose
S270xxA	Traumatic pneumothorax, initial encounter
S0101xA	Laceration without foreign body of scalp, initial encounter
R1911	Absent bowel sounds
R292	Abnormal reflex
R410	Disorientation, unspecified

R454	Irritability and anger
R030	Elevated blood-pressure reading, without diagnosis of hypertension
R821	Myoglobinuria
R10817	Generalized abdominal tenderness
R319	Hematuria, unspecified
R451	Restlessness and agitation
R452	Unhappiness
R7881	Bacteremia
Z6731	Type AB blood, Rh negative
R81	Glycosuria
R000	Tachycardia, unspecified
R042	Hemoptysis
S20212A	Contusion of left front wall of thorax, initial encounter
S21331A	Puncture wound without foreign body of right front wall of thorax with penetration into thoracic cavity, initial encounter
Z6825	Body mass index (BMI) 25.0-25.9, adult
S82121C	Displaced fracture of lateral condyle of right tibia, initial encounter for open fracture type IIIA, IIIB, or IIIC
<b>Complications</b>	
G970	Cerebrospinal fluid leak from spinal puncture
Y650	Mismatched blood in transfusion
I9751	Accidental puncture and laceration of a circulatory system organ or structure during a circulatory system procedure