

## **Case Study #1: The Older Patient**

### **Background**

While the goal of the US health care system is to provide optimal care to every patient, at times it can appear to be more focused on care delivery than the well-being of the patient. This can be particularly problematic when managing the care of older adults. The attached case study reviews the situation of an older patient with multiple diseases that encounters a healthcare system that is at times fragmented, uncoordinated and expensive. While this situations happens at times for all patients, the impact is far greater on the old, ill, and frail. How can the patient's story be represented to allow care to be better coordinated and the unique situation of each patient understood by everyone encountering the patient?

### **Case**

Mary Jones is an eighty-seven year old woman who lives by herself in an older apartment building on the east side of the city. She has to climb forty five stairs to get to her apartment, but had lived there for forty years and had no desire to live anywhere else. While she had several romances in her lifetime, she never married and had no children. Mary had owned her own small business until her declining health forced her to sell it to a friend's son. Most of her friends were also old and not in good health, so she didn't have the opportunity to see them as often as she wished. Mary no longer drove, relying on taxi service to get to the destinations she visited, including her medical appointments.

Over the past year, Mary had made thirty visits to the local medical center. The visits included nine ophthalmology appointments to address glaucoma and macular degeneration; five radiology studies; four appointments with her pulmonologist to manage her asthma; four visits to the incontinence clinic; three appointments with her oncologist to monitor her chronic lymphocytic leukemia; two emergency department visits – one to address an ankle sprain from a fall in her apartment and the other to address a flare up of her asthma when she had been unable to get to the pharmacy to pick up her new inhaler; one appointment with her cardiologist, a nurse visit in the oncology clinic and an appointment with her primary care doctor to change her blood pressure medication and manage her arthritic left help that continued to be very painful. Mary missed appointments at times because the taxi she had scheduled failed to arrive. She currently took seventeen medications prescribed by five different physicians and had begun to see a podiatrist because she was no longer able to cut her own toenails.

Mary was recently hospitalized for pneumonia, after which she was sent to a nursing home for rehabilitation. Her experience at the nursing home made her all the more convinced she didn't want to ever move into a nursing home. Still, she was concerned about the increasing number of times she wasn't able to manage the stairs to get to her apartment. It was not only frustrating to lose the little bit of independence she had managed to retain, it was becoming a financial problem since she had to

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pay \$3 per step to be carried down and later back to her apartment. That was \$270 a trip, which she knew she couldn't afford to do on a regular basis.

Mary's friend Elsa had recently seen a geriatrician who spent time to understand her life and health priorities, helped her function better with her daily activities, reviewed the medications she was taking and coordinated some changes in Elsa's appointments so she didn't have to travel as far and as often. Elsa suggested Mary make an appointment to see the geriatrician. Mary thought this was a good idea and phoned the office to set up a visit. She had so much she wanted to discuss, but was worried she might forget something important in her medical history or her concerns about the future. Not to mention whether the taxi would show up.

### Clinical Data

Name	Jones, Mary
Date of Birth	10/25/1928
SNOMED Code	266919005
SNOMED Concept	Finding
SNOMED Description	Never smoked tobacco
SNOMED Code	429403006
SNOMED Concept	Finding
SNOMED Description	No religious affiliation
SNOMED Code	135852002
SNOMED Concept	Observable entity
SNOMED Description	Independent housing, lives alone
SNOMED Code	300637008
SNOMED Concept	Finding
SNOMED Description	Does not drive a car
SNOMED Code	160898008
SNOMED Concept	Finding
SNOMED Description	Medically retired
SNOMED Code	125725006
SNOMED Concept	Finding
SNOMED Description	Marital status: single, never married
Problem SNOMED Code	312898002
Problem SNOMED Concept	Disorder

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Problem SNOMED Description      Myopic macular degeneration  
Problem Status                      Active  
Problem ICD-10 CODE              H35.31  
Problem ICD-10 Description      Degenerative disorder of macula

Problem SNOMED Code              392300000  
Problem SNOMED Concept          Disorder  
Problem SNOMED Description      Phacomorphic glaucoma  
Problem Status                      Active  
Problem ICD-10 CODE              H40.813  
Problem ICD-10 Description      Glaucoma associated with lens disorder

Problem SNOMED Code              427295004  
Problem SNOMED Concept          Disorder  
Problem SNOMED Description      Moderate persistent asthma  
Problem Status                      Active  
Problem ICD-10 CODE              J45.40  
Problem ICD-10 Description      Uncomplicated moderate persistent asthma

Problem SNOMED Code              165232002  
Problem SNOMED Concept          Finding  
Problem SNOMED Description      Urinary incontinence  
Problem Status                      Active  
Problem ICD-10 CODE              N32.81  
Problem ICD-10 Description      Incontinence

Problem SNOMED Code              277545003  
Problem SNOMED Concept          Disorder  
Problem SNOMED Description      T-cell chronic lymphocytic leukemia  
Problem Status                      Active  
Problem ICD-10 CODE              C91.6  
Problem ICD-10 Description      Chronic lymphoid leukemia

Problem SNOMED Code              699207005  
Problem SNOMED Concept          Disorder  
Problem SNOMED Description      Arthritis of pelvis  
Problem Status                      Active  
Problem ICD-10 CODE              M12.051  
Problem ICD-10 Description      Arthropathy of pelvis

Problem SNOMED Code              209532000  
Problem SNOMED Concept          Disorder  
Problem SNOMED Description      Sprain, ankle joint, lateral

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Problem Status	Resolved
Problem ICD-10 CODE	S93.40
Problem ICD-10 Description	Sprain of ankle

Encounter Date	1/3/2015
Encounter Type	Outpatient
Encounter Location	General Hospital - Eye Clinic
Encounter Provider	Smith MD, Jeffrey

Encounter Date	3/4/2015
Encounter Type	Outpatient
Encounter Location	General Hospital - Eye Clinic
Encounter Provider	Smith MD, Jeffrey

Encounter Date	4/17/2015
Encounter Type	Outpatient
Encounter Location	General Hospital - Eye Clinic
Encounter Provider	Thomas MD, Alan

Encounter Date	5/22/2015
Encounter Type	Outpatient
Encounter Location	General Hospital - Eye Clinic
Encounter Provider	Smith MD, Jeffrey

Encounter Date	6/7/2015
Encounter Type	Outpatient
Encounter Location	General Hospital - Eye Clinic
Encounter Provider	Smith MD, Jeffrey

Encounter Date	7/6/2015
Encounter Type	Outpatient
Encounter Location	General Hospital - Eye Clinic
Encounter Provider	Thomas MD, Alan

Encounter Date	8/28/2015
Encounter Type	Outpatient
Encounter Location	General Hospital - Eye Clinic
Encounter Provider	Thomas MD, Alan

Encounter Date	10/12/2015
Encounter Type	Outpatient
Encounter Location	General Hospital - Eye Clinic

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Encounter Provider	Smith MD, Jeffrey
Encounter Date	12/17/2015
Encounter Type	Outpatient
Encounter Location	General Hospital - Eye Clinic
Encounter Provider	Thomas MD, Alan
Encounter Date	2/19/2015
Encounter Type	Outpatient
Encounter Location	General Hospital - Medical Imaging
Encounter Provider	Jason MD, Janet
Encounter Date	6/19/2015
Encounter Type	Outpatient
Encounter Location	General Hospital - Medical Imaging
Encounter Provider	Johnson MD, James
Encounter Date	9/17/2015
Encounter Type	Outpatient
Encounter Location	General Hospital - Medical Imaging
Encounter Provider	Jason MD, Janet
Encounter Date	10/22/2015
Encounter Type	Outpatient
Encounter Location	General Hospital - Medical Imaging
Encounter Provider	Anthony MD, Michael
Encounter Date	12/7/2015
Encounter Type	Outpatient
Encounter Location	General Hospital - Medical Imaging
Encounter Provider	Jason MD, Janet
Encounter Date	6/19/2015
Encounter Type	Outpatient
Encounter Location	General Hospital - Pulmonary Medicine
Encounter Provider	Abdullah MD, Yusuf
Encounter Date	9/17/2015
Encounter Type	Outpatient
Encounter Location	General Hospital - Pulmonary Medicine
Encounter Provider	Abdullah MD, Yusuf
Encounter Date	10/22/2015

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Encounter Type                      Outpatient  
Encounter Location                General Hospital - Pulmonary Medicine  
Encounter Provider                Abdullah MD, Yusuf

Encounter Date                     12/7/2015  
Encounter Type                     Outpatient  
Encounter Location                General Hospital - Pulmonary Medicine  
Encounter Provider                Abdullah MD, Yusuf

Encounter Date                     3/29/2015  
Encounter Type                     Outpatient  
Encounter Location                General Hospital - Urology  
Encounter Provider                Thomas MD, Terence

Encounter Date                     6/22/2015  
Encounter Type                     Outpatient  
Encounter Location                General Hospital - Urology  
Encounter Provider                Thomas MD, Terence

Encounter Date                     9/13/2015  
Encounter Type                     Outpatient  
Encounter Location                General Hospital - Urology  
Encounter Provider                Thomas MD, Terence

Encounter Date                     12/7/2015  
Encounter Type                     General Hospital - Urology  
Encounter Location                Urology  
Encounter Provider                Thomas MD, Terence

Encounter Date                     4/30/2015  
Encounter Type                     Outpatient  
Encounter Location                General Hospital - Oncology  
Encounter Provider                Bernstein MD, Charles

Encounter Date                     8/6/2015  
Encounter Type                     Outpatient  
Encounter Location                General Hospital - Oncology  
Encounter Provider                Bernstein MD, Charles

Encounter Date                     12/18/2015  
Encounter Type                     Outpatient  
Encounter Location                General Hospital - Oncology  
Encounter Provider                Bernstein MD, Charles

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Encounter Date 3/31/2015  
Encounter Type Emergency  
Encounter Location General Hospital  
Encounter Provider Perlson DO, Mary

Encounter Date 11/19/2015  
Encounter Type Emergency  
Encounter Location General Hospital  
Encounter Provider Marshall MD, Thomas

Encounter Date 5/2/2015  
Encounter Type Outpatient  
Encounter Location General Hospital - Cardiology  
Encounter Provider Parrish MD, Kathryn

Encounter Date 7/19/2015  
Encounter Type Outpatient  
Encounter Location General Hospital - Oncology  
Encounter Provider Jennings RN, Susan

Encounter Date 8/23/2015  
Encounter Type Outpatient  
Encounter Location General Hospital - Family Medicine  
Encounter Provider Bronson MD, Robert

Encounter Date 1/17/2016  
Encounter Type Inpatient  
Encounter Location General Hospital  
Encounter Provider Abdullah MD, Yusuf

RxNorm Name amLODIPine 10 MG / atorvastatin 80 MG [Caduet]  
RxCUI 750209  
Prescriber Bronson MD, Robert

RxNorm Name tofacitinib 5 MG [Xeljanz]  
RxCUI 1357543  
Prescriber Bronson MD, Robert

RxNorm Name iatanoprost 0.05 MG/ML  
RxCUI 323956  
Prescriber Smith MD, Jeffrey

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RxNorm Name	ranibizumab 10 MG/ML
RxCUI	329299
Prescriber	Smith MD, Jeffrey
RxNorm Name	fluticasone furoate 0.2 MG/ACTUAT / vilanterol 0.025 MG/ACTUAT [Breo]
RxCUI	1648784
Prescriber	Abdullah MD, Yusuf
RxNorm Name	Naproxen 250 MG [Naprosyn]
RxCUI	564237
Prescriber	Bronson MD, Robert
RxNorm Name	Spirolactone 50 MG [Aldactone]
RxCUI	565465
Prescriber	Bronson MD, Robert
RxNorm Name	clopidogrel 75 MG [Plavix]
RxCUI	329299
Prescriber	Parrish MD, Kathryn
RxNorm Name	solifenacin succinate 5 MG [Vesicare]
RxCUI	539816
Prescriber	Bronson MD, Robert
RxNorm Name	alemtuzumab 30 MG/ML [Campath]
RxCUI	1656631
Prescriber	Bernstein MD, Charles
RxNorm Name	methylPREDNISolone 2 MG [Medrol]
RxCUI	567927
Prescriber	Bernstein MD, Charles
RxNorm Name	Teriparatide 0.02 MG/ACTUAT [Forteo]
RxCUI	1435116
Prescriber	Bronson MD, Robert
RxNorm Name	Calcium ascorbate 25 MG / Calcium Carbonate 600 MG / Cholecalciferol 600 UNT / Folic Acid 0.5 MG / Pyridoxine Hydrochloride 12.5 MG [Encora PM Tablet]
RxCUI	995861
Prescriber	Bronson MD, Robert
RxNorm Name	Acetaminophen 100 MG/ML [Tylenol]



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RxCUI	570122
Prescriber	Bronson MD, Robert
ClinicalImpression	Concerned about ability to navigate stairs to reach apartment
ClinicalImpression	Concerned about cost of taxi transportation to appointments
ClinicalImpression	The physical examination was normal with no peripheral lymphadenopathy, spleen or liver enlargement being noted.
Observation	white blood cell count
LOINC	6690-2
Value	18000
Unit	per microliter
Observation	hemoglobin
LOINC	718-7
Value	14.2
Unit	grams per Liter
Observation	platelet count
LOINC	777-3
Value	210,000
Unit	per microliter
Observation	Neutrophils/100 leukocytes
LOINC	770-8
Value	20
Unit	%
Observation	Immunophenotype
LOINC	42324-4
Value	Smig-/+, CD5+, CD19+, CD22-/+, CD20+, CD23+, CD79b-/+, FMC7-
Observation	blood pressure diastolic
LOINC	76539-6
Value	100
Unit	mmHg
Observation	blood pressure systolic
LOINC	76538-8
Value	142
Unit	mmHg

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Observation	Pulse - left radial artery
LOINC	8910-2
Value	73
Unit	beats per minute

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## Case Study #2: From ED to ED

### Background

Patients with low socioeconomic status use more acute hospital care and less primary care than patients with high socioeconomic status. This low-value pattern of care use is harmful to these patients' health and costly to the health care system. Current policy initiatives, such as the creation of accountable care organizations, aim to improve both health outcomes and the cost-effectiveness of health services. Achieving those goals will require all care providers to understand and communicate characteristics that drive low value health care use. Major considerations include

- Affordability: relationship of the cost of services to the patients' ability to pay
- Accessibility: relationship of the location of services to the location of the patient
- Accommodation: patients' perceptions of how the health care systems is organized (for example, appointment systems, hours of operation)
- Availability: relationship of the volume and types of existing resources to patients' needs
- Acceptability: relationship of patients' attitudes about what care should be like to actual characteristics of clinicians and facilities
- Attitude: trust in the technical competence of clinical care

Are there aspects of the manner in which information about the patient is organized and communicated that can help care providers better understand and address these issues?

### Case

With the exception of one hospital that was 30 miles away in the western suburbs, Thomas Jefferson had been to the emergency departments of the other four hospitals in town eight times over the past three and a half years. Since his wife passed away five years ago, his health had been on the decline. He ate too much fast food, which he had been told was bad for his high blood pressure and diabetes. And with his daughter now living a thousand miles away, the daily 'checks' she used to do to make sure he was taking his medications had become infrequent.

Making just a bit more than minimum wage, Thomas didn't have health insurance or a primary care physician. During his last ED visit, a social worker named Mary Evans had been able to get him a low cost prescription for his diabetic and blood pressure medications, which he hoped would last for three months. She tried to get him to sign up for Medicaid but Thomas declined, telling her it was for "poor people."

Mary had called yesterday about a free clinic opening a few blocks from Thomas' home and suggested he make an appointment to have his blood pressure and blood sugar checked. Since he didn't have a car, he relied on the free county van service to get from place to place. It always ran late, which was

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one of the reasons he never went to a doctor's office. He wasn't going to be labeled a 'no show'. Besides, his father had never seen much use for the medical profession. "Strong men should be hurting really, really bad to go to the doctor", he told Thomas from the time he was a young boy.

Still, he remembered how he felt before his last hospitalization. He had experienced the blurry vision, dizziness and extreme thirst before, but this time his heart was racing and he could hardly catch his breath. Maybe it was time he saw a doctor before he "had to". Thomas called the clinic and made an appointment for the next week. A nurse at the clinic told him to bring his medications and to arrive 15 minutes early so he could fill out some forms on his medical history. That was the only part that concerned him. He wasn't sure what they would want to know and what he should tell them about the sore on his ankle that didn't seem to heal.

### Clinical Data

Name	Jefferson, Thomas
Date of Birth	6/15/1949
SNOMED Code	162546005
SNOMED Concept	Finding
SNOMED Description	Eats in fast food outlets
SNOMED Code	8517006
SNOMED Concept	Finding
SNOMED Description	Ex-smoker
SNOMED Code	424553001
SNOMED Concept	Finding
SNOMED Description	Uninsured medical expenses
SNOMED Code	135852002
SNOMED Concept	Observable entity
SNOMED Description	Independent housing, lives alone
SNOMED Code	300637008
SNOMED Concept	Finding
SNOMED Description	Does not drive a car
SNOMED Code	224364001
SNOMED Concept	Finding
SNOMED Description	Employed in paid casual work
SNOMED Code	78061006

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SNOMED Concept                      Finding  
SNOMED Description                Widower

Problem SNOMED Code              59621000  
Problem SNOMED Concept          Disorder  
Problem SNOMED Description      Essential hypertension  
Problem Status                      Active  
Problem ICD-10 CODE                I10  
Problem ICD-10 Description        Hypertensive disorder

Problem SNOMED Code              44054006  
Problem SNOMED Concept          Disorder  
Problem SNOMED Description      Diabetes mellitus type 2  
Problem Status                      Active  
Problem ICD-10 CODE                E11.65  
Problem ICD-10 Description        Diabetes mellitus with hyperglycemia

Problem SNOMED Code              1471000119103  
Problem SNOMED Concept          Disorder  
Problem SNOMED Description      Drug abuse in remission  
Problem Status                      Resolved  
Problem ICD-10 CODE                F18.10  
Problem ICD-10 Description        Drug abuse

SNOMED Code                        160357008  
SNOMED Concept                    Situation  
SNOMED Description                Family history of hypertension

SNOMED Code                        240091000000105  
SNOMED Concept                    Finding  
SNOMED Description                Blurred vision

SNOMED Code                        1717307  
SNOMED Concept                    Finding  
SNOMED Description                Excessive thirst

SNOMED Code                        404640003  
SNOMED Concept                    Finding  
SNOMED Description                Dizziness

SNOMED Code                        80313002  
SNOMED Concept                    Finding

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SNOMED Description	Palpitations
SNOMED Code	267036007
SNOMED Concept	Finding
SNOMED Description	Dyspnea
SNOMED Code	427921009
SNOMED Concept	Finding
SNOMED Description	Chronic ulcer of ankle

Encounter Date	12/23/2012
Encounter Type	Emergency
Encounter Location	Western Hospital
Encounter Provider	Johnson MD, Alex

Encounter Date	4/5/2013
Encounter Type	Emergency
Encounter Location	Southern Hospital
Encounter Provider	Thomas MD, Judy

Encounter Date	10/18/2013
Encounter Type	Emergency
Encounter Location	Western Hospital
Encounter Provider	Bermann MD, Jason

Encounter Date	3/9/2014
Encounter Type	Emergency
Encounter Location	Eastern Hospital
Encounter Provider	Campbell MD, Ivan

Encounter Date	7/19/2014
Encounter Type	Emergency
Encounter Location	Southern Hospital
Encounter Provider	Walton MD, Jonathan

Encounter Date	11/4/2014
Encounter Type	Emergency
Encounter Location	Northern Hospital
Encounter Provider	Middleton MD, Lisa

Encounter Date	5/21/2015
Encounter Type	Emergency
Encounter Location	Western Hospital

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Encounter Provider                      Bermann MD, Jason

Encounter Date                          9/17/2015

Encounter Type                         Emergency

Encounter Location                    Northern Hospital

Encounter Provider                    Peterson MD, Marc

RxNorm Name                          Spironolactone 50 MG [Aldactone]

RxCUI                                      565465

Prescriber                                Peterson MD, Marc

RxNorm Name                          24 HR Fortamet 500 MG Extended Release Oral Tablet

RxCUI                                      861002

Prescriber                                Peterson MD, Marc

ClinicalImpression                    Non-compliance with desired medication therapy due to inability to manage therapy schedule

ClinicalImpression                    No primary care provider or health insurance

Observation                            Glucose (fasting)

LOINC                                      1558-6

Value                                      178

Unit                                        mg/dl

Observation                            Creatinine

LOINC                                      2160-0

Value                                      1.0

Unit                                        mg/dl

Observation                            Blood urea nitrogen

LOINC                                      3094-0

Value                                      18

Unit                                        mg/dl

Observation                            Sodium

LOINC                                      2951-2

Value                                      141

Unit                                        mg/dl

Observation                            Potassium

## Case Study #2: From ED to ED

LOINC 2823-3  
Value 4.3  
Unit mg/dl

Observation Total cholesterol  
LOINC 2093-3  
Value 162  
Unit mg/dl

Observation HDL cholesterol  
LOINC 2085-9  
Value 43  
Unit mg/dl

Observation LDL cholesterol (calculated)  
LOINC 13457-7  
Value 84  
Unit mg/dl

Observation Triglycerides  
LOINC 2571-8  
Value 177  
Unit mg/dl

Observation Cholesterol-to-HDL ratio  
LOINC 9830-1  
Value 3.8  
Unit mg/dl

Observation AST  
LOINC 1920-8  
Value 14  
Unit IU/L

Observation ALT  
LOINC 1742-6  
Value 19  
Unit IU/L

Observation Alkaline phosphatase  
LOINC 6768-6  
Value 56  
Unit IU/L



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Observation Hemoglobin A1c  
LOINC 4548-4  
Value 8.1  
Unit %

Observation Urine Microalbumin  
LOINC 14956-7  
Value 45  
Unit Mg

Observation Blood pressure diastolic – lying  
LOINC 8455-8  
Value 96  
Unit mmHg

Observation Blood pressure systolic – lying  
LOINC 8461-6  
Value 154  
Unit mmHg

Observation Blood pressure diastolic – sitting  
LOINC 8453-3  
Value 90  
Unit mmHg

Observation Blood pressure systolic – sitting  
LOINC 8459-0  
Value 140  
Unit mmHg

Observation Pulse - left radial artery  
LOINC 8910-2  
Value 88  
Unit beats per minute

Observation Respiratory rate  
LOINC 9279-1  
Value 20  
Unit per minute

## Case Study #3: Telling the Same Story

### Background

While systems developed for particular venues of care (hospital, physician office, rehabilitation facility, home care, etc.) do a good job of supporting capture of information needed to manage the care of the patient within a given care venue, they often fail to effectively and efficiently support transitions of care between these venues. As a result, the patient, family and paper records are often the 'communication link' needed to ensure important information is not lost during a care 'handoff'. This places a significant burden on patients and families who are often already under stress as a result of the patient's medical condition. How can information be organized to better support these transitions and ensure that critical information is not lost between venues of care?

### Case

Bob Griffin could see the image as clearly as if it had just happened. He had returned home from a trip to the grocery store to find his wife Jane in a heap at the foot of their basement stairs. She had fallen and hit her head on the concrete flooring, was now semi-conscious, with a small pool of blood next to her head. Jane had undergone an emergency craniotomy to relieve the pressure a blood clot was putting on her brain. While the surgery eliminated the pressure, Jane's walking was still unstable and she was having some difficulty speaking and swallowing. The medications for her chronic osteoarthritis and cardiovascular disease had to be crushed so Jane could swallow them.

Jane's primary care physician informed Bob that Jane would need rehabilitative services to regain her ability to walk unassisted, restore her speech and swallow sufficiently to resume her normal diet. Given her current condition, he recommended Jane be transferred to a rehabilitation facility that was near their home. The location would make it easier for Bob to visit Jane and it had a history of being able to help people in Jane's condition return to their former level of daily activities. The transfer occurred the following day and Bob met the physician, nurse and therapists who would be responsible for Jane's care. He was encouraged by their prognosis for Jane, but it was painful to recount the details of her fall and frustrating to have to provide the date of her surgery, her allergies, current medications and other medical problems. He had been through all of this at the hospital – why didn't they have all of this information?

Thankfully, Jane made rapid progress. In three months she was able to walk with a cane, her speech was almost back to normal and her swallowing had progressed to the point where she could return to her typical daily diet. She'd be discharged to home in a week. The home health company would send a therapist to make sure Jane didn't have any issues navigating her home surroundings and was able to manage all of her daily activities, including her exercise plan to eliminate the need for the cane and further strengthen her swallowing muscles. Bob was looking forward to having Jane back home and

### Case Study #3: Telling the Same Story

no longer making the daily trip to the rehab facility. He just hoped he and Jane didn't have to recount the background related to her fall and her medical history to another group of people.

#### Clinical Data

Name	Griffin, Jane
Date of Birth	11/23/1936
SNOMED Code	769211000000103
SNOMED Concept	Situation
SNOMED Description	Suspected cerebrovascular accident
SNOMED Code	266919005
SNOMED Concept	Finding
SNOMED Description	Never smoked tobacco
SNOMED Code	160724009
SNOMED Concept	Finding
SNOMED Description	Independent housing, not alone
SNOMED Code	300636004
SNOMED Concept	Finding
SNOMED Description	Does drive a car
SNOMED Code	105493001
SNOMED Concept	Finding
SNOMED Description	Retired
SNOMED Code	87915002
SNOMED Concept	Finding
SNOMED Description	Married
SNOMED Code	105542008
SNOMED Concept	Finding
SNOMED Description	Current nondrinker of alcohol
Problem SNOMED Code	43829003
Problem SNOMED Concept	Disorder
Problem SNOMED Description	Chronic osteoarthritis
Problem Status	Active
Problem ICD-10 CODE	M19.90
Problem ICD-10 Description	Chronic osteoarthritis

### Case Study #3: Telling the Same Story

Problem SNOMED Code	128292002
Problem SNOMED Concept	Disorder
Problem SNOMED Description	Chronic disease of cardiovascular system
Problem Status	Active
Problem ICD-10 CODE	I25.10
Problem ICD-10 Description	Disease of cardiovascular system
Problem SNOMED Code	1471000119103
Problem SNOMED Concept	Disorder
Problem SNOMED Description	Dysphagia
Problem Status	Resolved
Problem ICD-10 CODE	R13.1
Problem ICD-10 Description	Dysphagia
Problem SNOMED Code	262952002
Problem SNOMED Concept	Disorder
Problem SNOMED Description	Traumatic intracranial subdural hematoma
Problem Status	Resolved
Problem ICD-10 CODE	S06.5X9A
Problem ICD-10 Description	Traumatic intracranial subdural hematoma with loss of consciousness for unspecified duration
Problem SNOMED Code	87486003
Problem SNOMED Concept	Finding
Problem SNOMED Description	Aphasia
Problem Status	Resolved
Problem ICD-10 CODE	R47.01
Problem ICD-10 Description	Aphasia
SNOMED Code	59712006
SNOMED Concept	Procedure
SNOMED Description	Evacuation of subdural hematoma
Procedure Date	9/3/2015
SNOMED Code	438825005
SNOMED Concept	Situation
SNOMED Description	Family history of cardiovascular disease in first degree female relative less than 65 years of age

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Encounter Date	10/18/2013
Encounter Type	Outpatient
Encounter Location	Riverside Hospital - Rheumatology

### Case Study #3: Telling the Same Story

Encounter Provider	Thomas, MD, Arthur
Encounter Date	12/17/2013
Encounter Type	Outpatient
Encounter Location	Riverside Hospital - Cardiology
Encounter Provider	Patterson MD, Lynn
Encounter Date	4/25/2014
Encounter Type	Outpatient
Encounter Location	Riverside Hospital - Rheumatology
Encounter Provider	Thomas, MD, Arthur
Encounter Date	6/23/2014
Encounter Type	Outpatient
Encounter Location	Riverside Hospital - Cardiology
Encounter Provider	Patterson MD, Lynn
Encounter Date	10/28/2014
Encounter Type	Outpatient
Encounter Location	Riverside Hospital - Rheumatology
Encounter Provider	Thomas, MD, Arthur
Encounter Date	12/3/2014
Encounter Type	Outpatient
Encounter Location	Riverside Hospital - Cardiology
Encounter Provider	Patterson MD, Lynn
Encounter Date	5/2/2015
Encounter Type	Outpatient
Encounter Location	Riverside Hospital - Rheumatology
Encounter Provider	Thomas, MD, Arthur
Encounter Date	6/25/2015
Encounter Type	Outpatient
Encounter Location	Riverside Hospital - Cardiology
Encounter Provider	Patterson MD, Lynn
Encounter Date	9/3/2015
Encounter Type	Inpatient
Encounter Location	Riverside Hospital
Encounter Provider	Thomas, MD, Arthur
Encounter Date	10/2/2015

### Case Study #3: Telling the Same Story

Encounter Type	Inpatient
Encounter Location	Riverside Rehabilitation Institute
Encounter Provider	Patterson MD, Lynn

RxNorm Name	Ramipril 10 MG [Altace]
RxCUI	574127
Prescriber	Thomas, MD, Arthur

RxNorm Name	Calcium Citrate 2376 MG [Citracal]
RxCUI	1536919
Prescriber	Thomas, MD, Arthur

Allergy SNOMED Code	91936005
SNOMED Concept	Disorder
SNOMED Description	Allergy to penicillin

Allergy SNOMED Code	9139003
SNOMED Concept	Disorder
SNOMED Description	Allergy to sulfonamides

Allergy SNOMED Code	425525006
SNOMED Concept	Disorder
SNOMED Description	Allergy to dairy product

Allergy SNOMED Code	300916003
SNOMED Concept	Disorder
SNOMED Description	Allergy to latex

Observation	Head CT
LOINC	24725-4
Value	Medium acute subdural hematoma is located at entire right vault, compresses the underlying right cerebral parenchyma, result in some midline shift, but no evidence of herniation.

Observation	White blood cell count
LOINC	6690-2
Value	12,730
Unit	per microliter

Observation	Red blood cell count
LOINC	789-8
Value	3.83

### Case Study #3: Telling the Same Story

Unit per microliter

Observation Hemoglobin

LOINC 718-7

Value 10.9

Unit grams per Liter

Observation HDL cholesterol

LOINC 2085-9

Value 34

Unit mg/dl

Observation LDL cholesterol

LOINC 2089-1

Value 142

Unit mg/dl

Observation Blood pressure diastolic - sitting

LOINC 8453-3

Value 85

Unit mmHg

Observation Blood pressure systolic - sitting

LOINC 8459-0

Value 130

Unit mmHg

## Case Study #3: Telling the Same Story