**eHealth Exchange Content Testing Use Case – DRAFT v1.0**

Helen Tucker Story

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## ONC Demonstration - Disease-Specific Focus Use Case

# Background:

The Clinical use case will address a female patient named "Helen Tucker." Helen Tucker is a Type 2 diabetic patient often requiring multiple episodes of care. Helen Tucker has had a previous diagnosis of diabete and travels for vacation requiring care from multiple facilities spanning multiple health information exchanges/organizations (HIEs/HIOs).

The use case could address:

*Diagnostic Results Reporting:* This use case allows a provider to electronically obtain relevant test results for Helen Tucker that have been performed (across providers) to create a more comprehensive approach to the clinical care of a patient. Results include diagnostic tests, lab tests and diagnostic imaging reports. The initial settings include ambulatory care practices that provide care to diabetics including but not limited to primary care provider offices, community health clinics, specialist offices (e.g., podiatrists), etc. Other initial settings include hospitals (inpatient units and emergency departments).

*Medication Management:* This use case retrieves and aggregates a medication history that includes prescription information from identified sources. It is

assumed that the medication history will be incomplete and will be used to support the patient/provider conversation regarding medications.

*Transitions in Care:* This use case addresses the transitions in care that occur between providers in multiple independent organizations. It does not address transitions in care within a provider setting. The intention is to address providers' need to access clinical information and does not attempt to address the access needs of consumers. The transitions are defined as transfer between one encounter in one setting (e.g., inpatient stay or emergency room visit) to another care setting (e.g., primary care provider office). The patient may be instructed in one encounter to initiate contact with a second provider setting to continue the transition in care. The initial settings include hospitals (inpatient units, emergency rooms) and ambulatory care practices that provide care to diabetics including but not limited to primary care provider offices, community health clinics, public health clinics, specialist offices (e.g., podiatrists, endocrinologists), etc.

## Meaningful Use Objectives

The information highlighted by this use case can focus on the federal government's proposed objectives and criteria for the meaningful use of EHR technologies. Specifically this demonstration of Helen Tucker will show some collection and reporting of the following proposed quality measures:

* + Diabetes Mellitus: Hemoglobin A 1C Poor Control;
  + Diabetes Mellitus: Low Density Lipoprotein ("LDL-C");
  + Diabetes Mellitus: High Blood Pressure Control; and
  + Diabetic Retinopathy: Documentation of presence or absence of macular edema and level of severity of retinopathy.

## Table 1 - Stages and Anticipated Requirements for Meaningful Use

|  |  |
| --- | --- |
| Timeline | Anticipated Requirements |
| Could be across years/or filtered by date | 1. Capturing health information in a coded format   1. Using the information to track key clinical conditions 2. Communicating captured information for care coordination purposes   4. Reporting of clinical quality measures and public health information |

## Table 2 - Use Case – Dignostic Results Reporting

**Diagnostic Results Reporting**

|  |  |  |
| --- | --- | --- |
| **Summary** | Allows a provider to electronically obtain test results for Helen Tucker that have been performed (across all providers) to provide a more comprehensive approach to the clinical care of a patient. | |
| **Assumptions** | Results include diagnostic tests, lab tests, and diagnostic imaging reports. | |
| **Patient/Provider Flow** | I. Provider identifies need for test.   1. Provider (authenticated) queries for past test results to determine which test(s) are appropriate. If multiple test results are available, provider is able to compare the results over time. Provider may choose not to order a test based on results available or may choose to order a complementary test. 2. Test is ordered for the patient through native EHR system. 3. Test is performed. 4. Results are available to the provider and will be available to future providers. | |
| **Settings** | **Easy Focus** | **Stretch Focus** |
|  | * Ambulatory care settings (where Helen Tucker presents for outpatient care) * Emergency room * Inpatient acute care * Retail clinics | * Long-term care * Home health * Community based screenings * Telephone encounters * Telemedicine encounters * Mobile access * Outpatient treatment facilities * Employer-based clinics/occupational health clinics * County correctional facilities * Residential treatment facilities |
| **Minimum Information Needed to Support Use Case** | * Lab values or report results * Date/time labs were resulted * Reference lab standards/ranges * Comments associated with lab values * Performing location * Pending tests/status of tests * Source of sample * Date/time sample collected * Ordering provider | * Performing technician identity * Interpreting clinician * Pathology sanctioned data elements as specified in pathology messaging standards |

## Table 3 - Use Case – Medication Management

|  |  |  |
| --- | --- | --- |
| **Medication Management** | | |
| **Summary** | Retrieves and aggregates a medication history that includes prescription information from identified sources. | |
| **Assumptions** | Medication history will be incomplete and will be used to support the patient/provider conversation regarding medications. It is unlikely that any medication history initially will provide information regarding samples distributed, OTC meds or herbal supplements. | |
| **Patient/Provider Flow** | I. Patient presents for care.   1. As part of the intake process (regardless of setting), provider queries for "medication history." 2. Provider reviews the information and identifies medications prescribed but not filled, potential interactions, medications to continue/discontinue, refills, etc. 3. Provider diagnoses and treats patient in appropriate manner. | |
| r-------------  **Settings Easy Focus Stretch Focus** | | |
|  | * Ambulatory care settings (where Helen Tucker presents for outpatient care) * Emergency room * Inpatient acute care * Retail clinics * Telephone encounters | * Long-term care * Home health * Telemedicine encounters * Emergency medical response |
| **Minimum Information Needed to Support Use Case** | * Dose and form * Instructions * Most recent fill date * Medication allergies and adverse reactions * Quantity dispensed * Prescribing provider * Source of data in medication history * Number of refills remaining | * Linked diagnosis to medication (if available) * Formulary * Standard prescription elements |

## Table 4 - Use Case – Transitions in Care

Transitions in Care

|  |  |  |
| --- | --- | --- |
| Summary | Addresses the transitions in care that occur between providers in multiple independent organizations and how providers use HIE to access clinical information. | |
| Assumptions | Does not address transitions in care within a provider setting. Does not address access needs of consumers. The transitions are defined as transfer between one encounter in one setting (e.g., inpatient stay or ER visit) to another care setting (e.g., primary care provider's office). The patient may be instructed in one encounter to initiate contact with a second provider setting to continue the transition in care. | |
| Patient/ Provider Flow | 1. Patient presents for care in a healthcare setting # 1. 2. Patient requires follow up in another provider setting (healthcare setting #2). 3. Healthcare setting# 1 "notifies" healthcare setting #2 that the patient needs to be seen for follow-up care. The patient may be instructed to contact healthcare setting #2 in lieu of an electronic notification process. 4. Healthcare setting #1 makes the data available (in a secure manner). 5. Healthcare setting #2 (once authenticated) retrieves the data to facilitate the appropriate follow up care. This could involve healthcare setting #2 contacting the patient to ensure the follow up care. 6. Patient presents for care at healthcare setting #2. Clinical data is available to the provider to continue care. | |
| Settings Easy Focus Stretch Focus | | |
|  | * Ambulatory care settings (where Helen Tucker presents for outpatient care) * Emergency room * Inpatient acute care | * Long-term care * Home health * Hospice * Outpatient treatment facilities * Retail clinics * School health * Employer-based health clinics * County correctional facilities * Children's services * Community mental health centers |
| Minimum Information Needed to Support Use Case | * Admission date and time * Discharge date and time * Facility of encounter * Problem list * Medication list and medication allergy list * Diagnostic tests performed and test results * Discharge medications, diagnosis, disposition and instructions * Procedures performed * Pending/follow-up appointments * Patient Demographics * Legal guardian for consent * Prescribed diet being followed * Vital signs including BP, BMI and weight * Provider seen/attending physician * Immunizations | * Consultants seen (including educators) * Presenting problem * Tests scheduled past discharge * Insurance * Demographics relevant to meaningful use * Clinical observations * Identifying info from first treating facility |

# Demonstration of Clinical Encounters and Workflow

Helen Tucker is a 70 year old female Patient that was diagnosed with Type II diabetes in 2000 but has not managed her blood sugar levels well in the past. She currently lives in TN and has planned a vacation to Northern California to visit her sister and family who live in Sacramento, CA for a few months beginning in August 2014. While on vacation she and her sister visit many of the tourist locations in and around San Francisco, CA.

While Helen in on vacation early in August 2014, she gets a cut on the heel of her foot from one of the beaches she visits in San Francisco. She doesn’t think too much about the cut and carries on with her vacation activities for several weeks while visiting her sister and family.

Helen does not check the cut on her foot . Due to her chronically high sugar levels associated with uncontrolled diabetes, she has nerve damage that interferes with the ability to sense pain and does not notice problems with her foot not properly healing. Nearly 10% of people with diabetes develop foot ulcers due to diabetic neuropathy or peripheral vascular disease and nerve damage.

*Peripheral vascular disease - Diabetes is associated with poor circulation (blood flow). Inadequate blood flow increases the healing time for cuts and sores. Peripheral vascular disease refers to compromised blood flow in the arms and legs. Poor blood flow increases the risk that infections will not heal. This, in turn, increases the risk of ulcers and gangrene, which is tissue death that occurs in a localized area when there is an inadequate blood supply.*

*What is diabetic neuropathy?*

*Chronically high sugar levels associated with uncontrolled diabetes can cause nerve damage that interferes with the ability to sense pain and temperature. This so-called "sensory diabetic neuropathy" increases the risk a person with diabetes and they will not notice problems with his or her feet. Nearly 10% of people with diabetes develop foot ulcers due to peripheral vascular disease and nerve damage. People with diabetes may not notice sores or cuts on their feet, which in turn can lead to an infection.*

The cut develops into a sore that requires medical attention. Helen visits an urgent care clinic on August 26, 2014 to seek medical care for the cut on her foot and for her type II diabetes. The clinic diagnosis her with an Abscess with Cellulitis. While in California she also visits an emergency department with other symptoms resulting from her original cut.

She returns to TN from her vacation with the foot ulcer that continues to worsen and becomes infected. Helen has not visited a PCP in sometime, but Helen promised her sister that she would visit her local PCP because the wound on her foot continues to worsen. Helen’s health care provider has access to her historical information when she lived in SC previously and confirms that she was diagnosed with Diabetes in 2000 originally.

In addition, her PCP had access to all of Helen’s encounter information from the Kaiser/CA facilities.

In October 2014, Helen’s health care provider orders blood work to check her glucose levels and x-rays of her foot to make sure the bone has not become infected. Her healthcare provider also performed a procedure called a debridement to remove any dead and infected tissue and prescribed an antibiotic medication.