UTHealth
The University of Texas
Health Science Center at Houston
School of Biomedical Informatics

SHARPC
NCCD

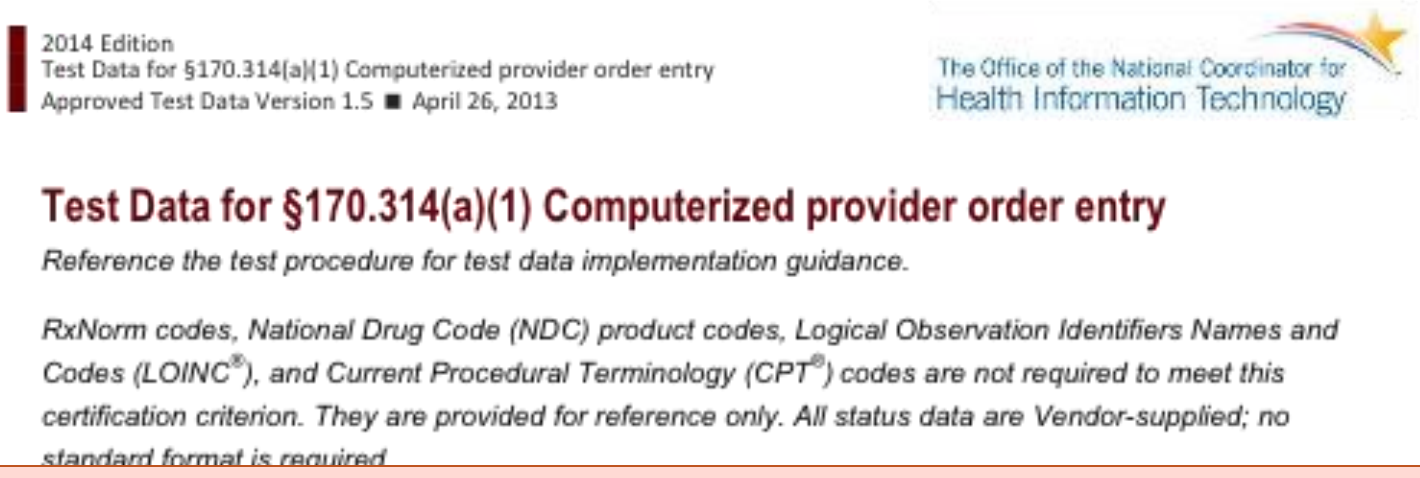
Safety Enhanced Design: Scenario Development

Amy Franklin

Certified Systems: Variation in Scenarios

- View the patient chart and review the reference information. Suppress the alert for the rest of the day.
- After examining Patient, you have decided to put this patient on a Bactrim. Check for any interactions and place an order for this medication.
- Please delete an active drug from the medication list.
- Check a medication's insurance coverage status and choose replacement drug.

ONC Resources



2014 Edition
Test Data for §170.314(a)(1) Computerized provider order entry
Approved Test Data Version 1.5 ■ April 26, 2013

The Office of the National Coordinator for Health Information Technology

Test Data for §170.314(a)(1) Computerized provider order entry

Reference the test procedure for test data implementation guidance.

RxNorm codes, National Drug Code (NDC) product codes, Logical Observation Identifiers Names and Codes (LOINC®), and Current Procedural Terminology (CPT®) codes are not required to meet this certification criterion. They are provided for reference only. All status data are Vendor-supplied; no standard format is required.

http://www.healthit.gov/policy-researchers-implementers/2014-edition-final-test-method

RxNorm code: 312961; sample NDC product code: 52959-989
Status: Vendor-supplied (for example, Active)

- Lorazepam 0.5 mg tablet by mouth three times daily; dispense 20, 1 refill
  RxNorm code: 197900; sample NDC product code: 54868-2145
  Status: Vendor-supplied (for example, Active)
- Insulin Glargine (or similar) 10 units once daily; package of 5, 2 refills

Credible, complex, and compelling use cases and scenarios

Use cases –

- model an interaction between an actor and the system
- captures functional requirements
- are a complete and meaningful flow of events from the perspective of a particular actor

Traceability From Use Cases To Test Cases, Peter Zielczynski, Ph.D., Rational User Conference 2003

Scenarios specify –

- actors, roles, business processes, the goal(s) of the actor(s), and events that can occur in the course of attempting to achieve the goal.

Cem Kaner, 2003

8 SED Based Scenarios

- Computerized Provider Order Entry: Medication, Lab order, Imaging
- Medication List
- Medication Allergy List
- E-prescribing
- Drug-Drug and Drug-Allergy Interactions
- Clinical Information Reconciliation
  - Medication Reconciliation
- Clinical Decision Support
- Electronic Medication Administration Record

SharpC Generation of Scenarios

- Replicating test participant's experience by using most frequent drugs and conditions.
- Based off large patient datasets to improve ecological validity
- Two populations of major metropolitan areas (including 100,000 patients in 1 data set)
- For example, we use 3 medications for SED use case **Medication List** as this is the average number found in our dataset.

§170.314(A)(1) CPOE LAB ORDERS - REVIEW & RECORD (RORY)

Three months ago, Rory is a 48-year old male, came in for a yearly physical exam. His lipid panel indicated severe hyperlipidemia and you prescribed atorvastatin. You have had Rory come in regularly to check up on his hyperlipidemia and review the lipid panel results with him.

One week ago, Rory came back for a check up and presented with diabetes symptoms. Your first task is to review the most recent lipid panel results. After determining that his cholesterol levels were decreasing, you turn your attention to the diabetes symptoms that you suspect to type II diabetes. Your second task is to order a *routine fasting glucose test*, a *routine urine micro albumin*, and a *routine HbA1c*.

1. Navigate to Rory's lab results and verbally state the LDL cholesterol level found on Rory's most recent lipid panel.
2. Navigate to a place where you can order tests, order a *routine fasting glucose test*, a *routine urine micro albumin*, and a *routine HbA1c* by using as much information in Table 1 as possible. Verbally state when you believe you have successfully completed this task.

Table 1. Test Orders

Test Name	Fasting glucose
Urgency	Routine
Reason	Type II Diabetes
Test Name	Urine micro albumin
Urgency	Routine
Reason	Type II Diabetes
Test Name	HbA1c
Urgency	Routine
Reason	Type II Diabetes

Under Development

- Patient Histories
- Advanced Scenarios

Advanced Scenarios

- Ongoing development increasing complexity of patient needs and advanced use of EHR system features
  - For example, alerts in patients with certain renal conditions, pregnancy or other diagnoses that trigger medication warnings.
  - Complex patients with extensive drug or problems lists
  - Cases specifically based around NEVER events (wrong patient, wrong site, wrong dose)

Thank you!

www.sharpc.org

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