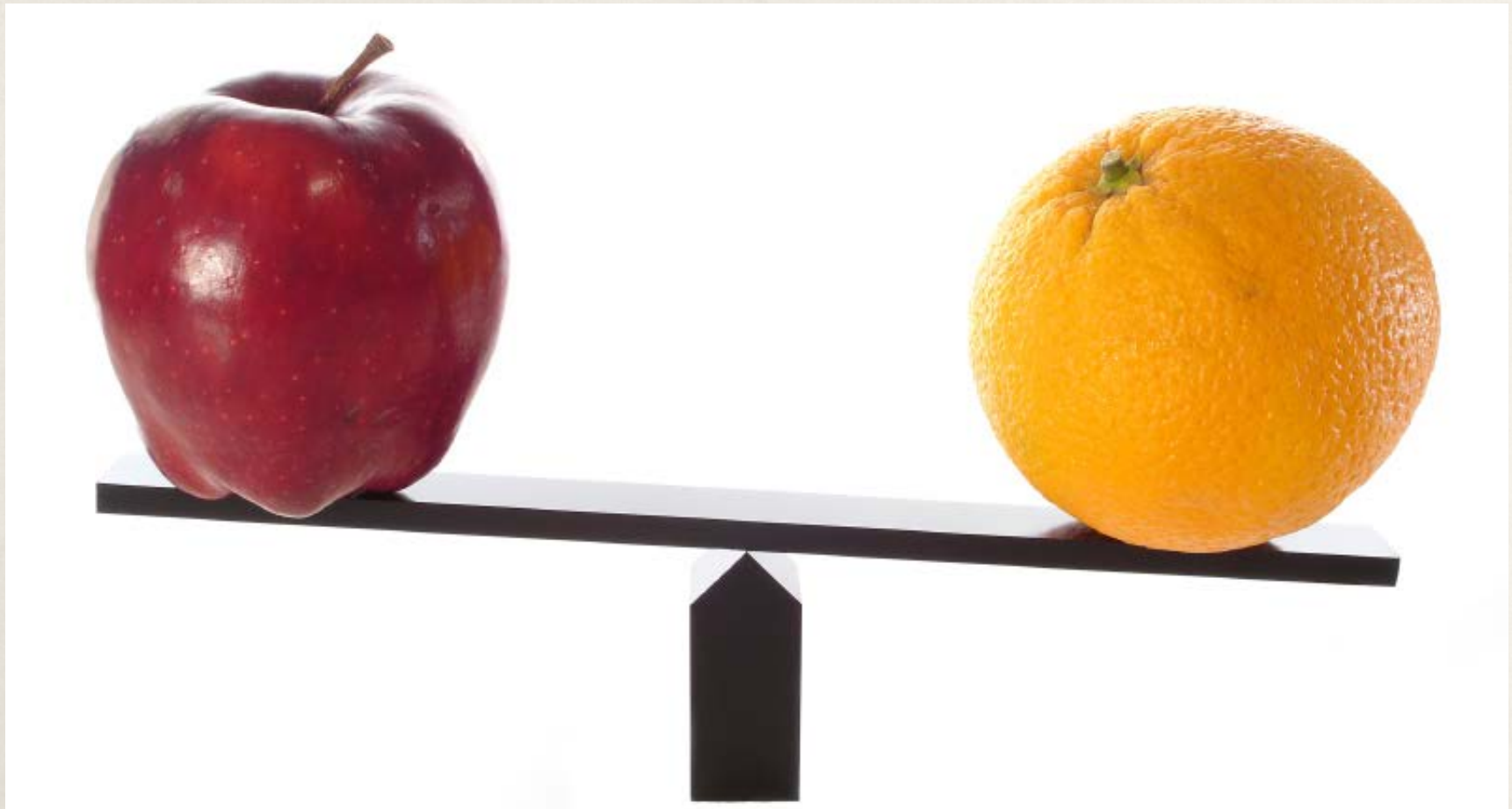


Apples to Oranges: Protocols for SED Testing

Dr. Amy Franklin

Apples to Oranges: Protocols for Safety Enhanced Design

Amy Franklin



Electronic Health Record to Electronic Health Record

Comparing EHR systems?

Compare Electronic Health Records (EHR) Software Sort By [ADVANCED TABLE](#)

REFINE YOUR SEARCH SOFTWARE COMPANY GET A PRICE OR DEMO HOSTING MODEL

[Reset](#) 315 Results

Regional Extension Centers (RECs)

Advising Providers in All Phases of Electronic Health Record Implementation

The ONC's Regional Extension Centers (RECs), located in every region of the country, serve as a support and resource center to assist providers in EHR implementation and HealthIT needs. As trusted advisors, RECs "bridge the technology gap" by helping providers navigate the EHR adoption process from vendor selection and workflow analysis to implementation and meaningful use.



HealthIT.gov
National Learning Consortium
Advancing America's Health Care

Vendor Meaningful Use Compare Tool

Instructions: Score each vendor on a scale from 1 (poor) to 5 (excellent) on each item. Total up your ratings for each vendor to help make your comparison vendors you are comparing in the watermark space provided in vendor columns. Use the blank rows at the end of the worksheet to ask your own questions.

Vendor	Vendor 1	Vendor 2	Vendor 3	etc.
1 Demographics / Care Management				
1.1 The system has the capability to record demographics including: Preferred language, insurance type, gender, race, ethnicity, and date of birth.				
2 Patient History				
2.1 The system has the capability to import patient health history data from an existing system.				
2.2 The system presents a chronological, filterable, and comprehensive review of patient's EHR, which may be summarized and printed, subject to privacy and confidentiality requirements.				
3 Current Health Data, Encounters, Health Risk Appraisal, and Coordination of Care				
3.1 The system can exchange key clinical information among providers of care and patient authorized entities electronically.				
3.2 The system obtains test results via standard HL7 interface from: laboratory.				
3.2.1 The system obtains test results via standard HL7 interface from: radiology/imaging.				



ACCURATE. HONEST. IMPARTIAL.

Initial comparisons

- * Features and Functionalities
- * Hosting Systems
- * Cost

What about usability?

Comparing for safety?

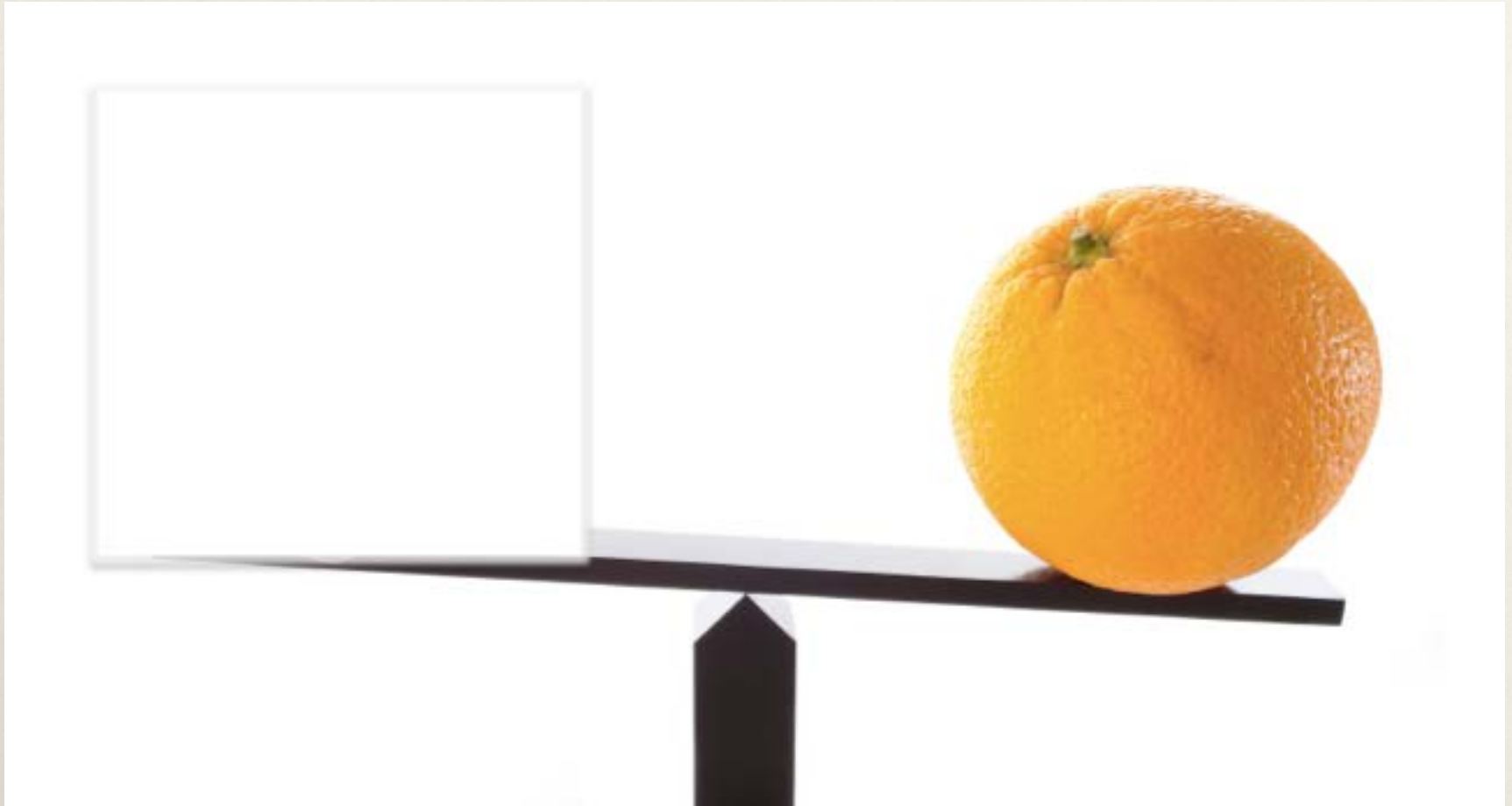
2014 EHR Certification: Safety Enhanced Design

- Required Evidence of User Centered Design (UCD)
- Summative Testing reported using the Customized Common Industry Format Template for EHR Usability (NISTIR 7742)

Applicable to 8 Meaningful Use Objectives:

Computerized Provider Order Entry	Drug-drug/ drug-allergy interaction checks
Medication List	Medication Allergy List
Clinical Decision Support	Clinical information reconciliation
Electronic Prescribing	Electronic Medication Administration Record

Missing Usability Reports



Variation in Procedures

- * Variation in procedures and reporting (secs/minutes, within target time).
- * Total testing session duration varied from 5 minutes to 4 hours (mode 60 minutes)
- * Participants ranged from 2-19
- * Test scenarios include
 - * Modification of drugs and tests to fit with clinical practice
 - * Prescriptive directions
 - * Combined tasks (medication list review, allergy list review, discontinue medication, add medication, send e-prescription and verify changes)
- * Task failures and areas for improvement were reported

NIST Resources



NISTIR 7804

Technical Evaluation, Test
Usability of

NISTIR 7741

**NIST Guide to the
Approach for Improving
Usability of Electronic
Records**

Information
National Institute

NISTIR 7742

**Customized Common Industry Format
Template for Electronic Health Record
Usability Testing**

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ONC Resources

2014 Edition

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

Approved Test Data Version 1.5 ■ April 26, 2013



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.

Ambulatory Setting Test Data

TD170.314(a)(1) – 1: Electronically Record Orders in an Ambulatory Setting

Orders Test Data - Set 1

Medication Orders

- Simvastatin 20 mg tablet by mouth once daily; dispense 30, 1 refill
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 Lantus) 10 units once daily; package of 5, 2 refills
RxNorm code: 217222 (or 217223); sample NDC product code: 0002-2212

Providing protocols for more uniform testing

- * Replicating test participant's experience by using most frequent drugs and conditions
- * Based off large patient dataset to improve ecological validity
- * Two populations of major metropolitan areas (including 100,000 patients in one dataset)
 - * For example, we use three medications for the use cases revolving around medication lists as this is the median number for our dataset

SharpC User Testing Scenarios

TASK 1 – MEDICATION LIST - REVIEW, RECORD, & MODIFY (JULIE)

Julie, a 62-year old female, has come to your clinic today for a follow-up on her hypertension, which you diagnosed six months ago. During that visit, Julie also mentioned taking *20 mg Lipitor*. In that Julie is a relatively new patient to your practice, you are concerned that her medication list is not up-to-date. Your first task is to review the medications that Julie is currently taking to ensure that it is complete and correct.

After locating the medication list and reviewing it, you ask Julie to verify if she is still taking *20 mg Lipitor*. However, this time Julie has the bottle with her and she notices that it states *40 mg*. Your second task is to correct this in her record.

After making the Lipitor correction, you ask Julie if she is taking any other medications. She reports that she is taking *Centrum Silver for Women*, *ibuprofen* for regular aches and pain, and *Claritin* for allergies. Your third task is to enter

2015 Proposed Rules

Whether the scope of “Safety Enhanced Design” should be expanded to include additional certification criteria;

- ★ Whether formative usability tests should be explicitly required, or used as substitutes for summative testing;
- ★ Whether there are explicit usability tests that should be required in addition to summative testing; and
- ★ Whether there should be a minimum number of test subjects explicitly required for usability testing

You compare apples and oranges

- * For success of completed tasks
- * Discussion of safety precautions and remaining risks
- * You can even publish on it!
- * Barone JE. Comparing apples and oranges: a randomised prospective study. *BMJ*. 2000;321:1569-1570. . (23-30 December.)
- * Sandford S. Apples and oranges: a comparison. *Annals of Improbable Research* 1995;1(3).

- * Dean Sittig
- * Adam Wright
- * Todd Johnson
- * Tim McEwen
- * Anu Guraraj
- * Deevakar Rogith
- * Louis Lee
- * Muhammad Walji