MEANINGFUL USE OF ELECTRONIC HEALTH RECORDS: ELECTRONIC PHYSICIAN REPORTING TO STATE CANCER REGISTRIES

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Division of Cancer Prevention and Control
Centers for Disease Control and Prevention
Presentation Outline

- Meaningful Use Stage 3 updates
- Software updates
- Stage 2 experiences with registration, testing and validation
- Lessons learned and recommendations
MEANINGFUL USE STAGE 3 UPDATES
Stage 3 Updates


  - As a DSTU update, this new version did not need to go through the usual HL7 balloting process; it used the DSTU Update process with industry review on the HL7 wiki
  - Contains technical corrections to the 1.0 release; no new content was added

- Produced and developed through collaborative effort of CDC, NAACCR, NCI-SEER, central cancer registries, EHR vendors, IHE, ONC and others
- Includes updates to the previous IG for cancer reporting, *Implementation Guide for Ambulatory Healthcare Provider Reporting to Central Cancer Registries, Release 1.0, August 2012*
- This Implementation Guide is identified in the *2015 Edition Health Information Technology (Health IT) Certification Criteria Notice of Proposed Rulemaking (NPRM)*
- Significant input on updates for the new IG were provided by central cancer registries
Summary of Changes in HL7 Cancer IG Release 1.0: Volume I

- Clarified the triggers for reporting a cancer case (pages 12-13)
  - An encounter/visit is defined as being cancer-related when the diagnosis of cancer is documented in the EHR to be chiefly responsible for the services provided in that encounter
    - Added 2nd use case trigger: Use case begins when one or more of the data elements defined in the Cancer Diagnosis Section in Volume 2 is added to or changed in the patient’s EHR
  - Added scenario 4 (pages 14-15) to provide example of identifying a cancer case through modification to the EHR, without a new encounter

- Provided guidance for populating the cancer event report as it relates to the use of null values

- Added SNOMED CT reportability list to use case
Summary of Changes in HL7 Cancer IG Release 1.0: Volume 2

- **Alignment with Consolidated CDA (C-CDA)**
  - Templates from C-CDA were used as is where possible
  - Templates from C-CDA were further constrained for Cancer-Specific requirements where needed
  - Templates in C-CDA that are not needed are not included in cancer IG

- **New Section Templates**
  - Family History Section
    - Identifies problems of family member(s)
  - Vital Signs Section
    - Includes height, weight, and BMI
Summary of Changes in HL7 Cancer IG Release 1.0: Volume 2 (continued)

- **New Section Templates (continued)**
  - Radiation Oncology Section
    - Includes beginning and ending dates of radiation treatment, Treatment Volume, Number of Treatment Volume, Regional Modality, Regional Dose (cGY), Boost Modality, Boost Dose (cGY), and treatment notes
  - Assessment and Plan Section

- **New Observations, Entries, and Organizers**
  - TNM Pathologic Stage Observation
  - Health Status Observation
  - Indication template
  - Planned Medication Activity
  - Planned Procedure
  - Employment History Observation Organizer
Summary of Changes in HL7 Cancer IG Release 1.0: Volume 2 (continued)

- **New data elements**
  - **Header elements**
    - Set ID, Version # and related document
    - Deceased indicator (yes/no) and deceased date
    - Vendor System Name (authoringDevice)
  - **Cancer Diagnosis Section, Reference Observation**
    - Uses an <id> to link cancer diagnosis observation to the problem observation <id>
  - **Grade**
    - A qualifier to indicate the Grade (or degree of differentiation) of the tumor
  - **Procedure Participant and Service Delivery Location**
    - Indicates the physical location (name and address) of where the procedure was performed
Summary of Changes in HL7 Cancer IG Release 1.0: Volume 2 (continued)

- **New data elements (continued)**
  - Smoking status and tobacco use
    - Smoking status: current smoking status (snapshot in time) of the patient as specified in Meaningful Use (MU) Stage 2 requirements
    - Tobacco use: uses effectiveTime to represent the biologically relevant time of the observation

- **Templates and data elements removed**
  - Progress notes
  - TNM edition

- **Changes to optionality**
  - Changed from SHALL to SHALL, no null flavors allowed: Cancer Diagnosis Section and Cancer Diagnosis Concern Act, Date Case Report Exported, Patient Name – Last, Patient Name – First, Patient Sex/Gender, Patient Date of Birth, Cancer Diagnosis Date, Histologic type, TNM Pathologic and Clinical Observations
Summary of Changes in HL7 Cancer IG Release 1.0: Volume 2 (continued)

- **Changes to optionality (continued)**
  - Changed from SHOULD to SHALL
    - NPI--Inst Referred From
    - RX Date Chemo, hormone, and BRM (Translated from Medications)

- **Changes to Value Sets**
  - Primary Site (targetSite): added ICD-O-3 as one of the possible Value Sets
MU Stage 3 CMS NPRM

- Comment period closed May 29, 2015
- Structural changes in the organization of the objectives:
  - Public Health and Clinical Data Registry Reporting is Objective 8, and within it are 6 measures; EPs must choose 3 of these.
  - Cancer reporting is no longer listed as a separate measure. It is identified as one option available under Measure 4, “Public Health Registry Reporting”.
  - Possibly could also fit under Measure 3, Case Reporting
- Proposes to remove the prior “ongoing submission” requirement and replace it with an “active engagement” requirement
- Proposes to continue to allow states to specify the means of transmission of the data
Comment period closed May 29, 2015

Proposes to establish the capabilities and specify the related standards and implementation specifications that Certified Electronic Health Record (EHR) Technology (CEHRT) would need to include to, at a minimum, support the achievement of MU

Proposes to expand to more types of health IT and health IT that supports various care and practice settings, including laboratories and HIEs

Asks for comments on collecting industry and occupation data
Cites the HL7 Release 1 Cancer IG published in December 2014

Proposes certification criterion for case reporting to public health using a forms-based approach, Structured Data Capture (SDC)

Proposes in-the-field surveillance, an assessment of whether a certified system continues to conform to the certification’s requirements once implemented and in use in the field

Proposes “reactive” surveillance requirement, requiring certification bodies to initiate in-the-field surveillance when there is a question of a system’s continued conformance to the requirements of its certification
ONC Health IT Certification Program 2015 Edition Test Methods

- ONC develops the functional and conformance testing requirements for the testing and certification of Health IT Modules to the certification criteria.
- For the first time, ONC is releasing draft test procedures concurrently with the release of the 2015 Edition ONC NPRM.
SOFTWARE UPDATES
Updates on eMaRC Plus

- **eMaRC Plus Version 5.2**
  - Bug fixes and enhancements
  - Complete list of changes available at download site

- **New release planned for June 2015**
  - Ability to switch between ePath and physician modules
  - Physician:
    - New mapping rules for several cancer diagnosis elements
    - New and updated translation tables
    - Improved user interface for several dialogs
  - ePath:
    - For narrative reports, add logic to auto-code grade based on the information in the pathology report
    - Ability to flag cases as "Completed" without CTR review; will be configurable
    - Add ability in Search window - query the database, then select cases from the Search window to export
Updates on CDA Validation Plus

- New version planned for June 2015
- Currently testing internally
- Summary of major updates
  - Configuration options for file storage
  - Updated tables with missing valid values
  - Bug fixes—error messages for missing elements and null flavors when elements were not missing/null
  - Change error message to indicate clearly whether values validated against code system or value set
  - Check all instances of element for validity (repeating fields)
  - Check for valid date format
  - Add ability to look for translation code if coded value has null flavor
STAGE 2 EXPERIENCES WITH REGISTRATION, TESTING AND VALIDATION
Issues Identified by State Cancer Registries During Onboarding

- Reports that fail NIST validation
- Cancer reports include sections, such as Allergies, that are not required for and should not be included in cancer reporting
- EPs don’t know how to generate test files from their EHR
- Transport challenges
- Common errors not addressed by NIST Validation Tool and not identified during testing/certification
Common Errors

- Reports received by state cancer registries with many key cancer data elements null
  - Users not completing relevant information
  - EHR implementation issues
  - Training issues

- Invalid Code System OIDs
  - Most frequent cause is that Value Set OIDs are used instead of Code System OIDs (programming issue)
  - Correct OIDs are critical for code mapping and translation

- Invalid values
  - Values are selected from incorrect value sets, and do not correctly represent the information they are intended to report
  - Could be a programming or a local configuration issue
  - Critical for code mapping and translation, as well as data use
Key Validation Findings

- Errors (e.g., invalid value, missing element, incorrect formatting) identified other underlying EHR issues
  - Programming bugs
  - Structural errors (content in the wrong place in the CDA)
  - Defaults incorrectly set by EHR developers
    - Example: a default value of “0” was set for an unknown Histology SNOMED code, but “0” is not a valid SNOMED code
  - Incorrectly configured code systems/value sets
  - Customized pick lists set up by users with incorrect values
  - Data element (example: NPI#) being selected from the wrong place in the EHR
Key Validation Findings

- Manual review identified underlying EHR issues
  - Large number of repeats of the same data (authors); probable programming error
  - Multiple cancer diagnosis entries led to identified issue of incorrect mapping of data elements; EHR bug identified and fixed
  - Incorrect setting of defaults
Communication and Collaboration

- **Physician Reporting Work Group**
  - First and third Mondays, 3-4:30pm ET
  - All registries are invited to participate
  - Contact Lindsay Ryan (viu3@cdc.gov) if you would like to join
  - Guidance documents developed for various MU processes; available on CDC MU website
  - Use Case developed for processes to “Evaluate Cancer Event Report from an Ambulatory Healthcare Provider”
  - Requirements gathering and feedback for eMaRC Plus physician module

- **CDA training in development**

- **Participate in PH-EHR Vendor Collaborative Initiative; encourage common issues to be addressed in this forum**
Communication and Collaboration (con’t)

- **Monthly Collaboration Call State Cancer Registries and EHR vendors certified for cancer reporting**
  - Goal is to coordinate efforts with EHR vendors and avoid individual and redundant requests from states
  - CDC Cancer Surveillance Branch Role (CSB): provide coordination and technical assistance

- **Individual calls with EHR vendors**
  - As needed or requested by states and/or vendors
  - Have been very successful in addressing issues seen with reports from specific EHR systems
  - EHR Vendor contacts have been very receptive to fixing issues

- **Individual technical assistance to states**
  - CSB staff will review and provide feedback to registries on CDA reports received from providers or vendors
  - Issues identified summarized for all states
LESSONS LEARNED AND RECOMMENDATIONS
Lessons Learned

- Communication with vendors is key
  - Finding the right person can be a challenge
  - Once the right person is found, vendors have been very receptive to fixing issues

- Communication/coordination with state programs
  - Avoids duplication of effort by states
  - Provides single, coordinated communication with vendors

- Validation and testing by state cancer registries is resource intensive
  - Not all registries have resources needed
  - Significant assistance is needed to understand how to interpret validation findings
  - Very slow, labor intensive process, frequent back and forth between states and providers, providers and vendors, and states and vendors
Lessons Learned/Recommendations to ONC

- Content validation is critical!
- Identifies underlying EHR issues that must be addressed by vendors
- Recommend performing this validation as part of testing/certification process so vendors can address programming issues before roll out to providers
- Recommend more extensive training of testers and clearer instructions for improved manual review
- Better identification of issues during testing and certification will lead to better EHR products and reduced burden on both providers and public health agencies
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