# 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

- ***HL7 Implementation Guide for CDA© Release 2: Reporting to Public Health Cancer Registries from Ambulatory Healthcare Providers, Release 1*, published December 2014**

- ***HL7 Implementation Guide for CDA© Release 2: Reporting to Public Health Cancer Registries from Ambulatory Healthcare Providers, Release 1.1*, published April 2015**
  - 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

# HL7 Implementation Guide for CDA© Release 2: Reporting to Public Health Cancer Registries from Ambulatory Healthcare Providers, Release 1 (US Realm)

- 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 (pages14- 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**

# 2015 Edition ONC NPRM

- 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

# 2015 Edition ONC NPRM (continued)

- 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
- Public comment period for the 2015 Edition Draft Test Procedures is March 20th, 2015 – June 30th, 2015
- https://confluence.oncprojectracking.org/display/CERTTEST2015/ONC+Health+IT+Certification+Program+2015+Edition+Test+Methods+Home

# 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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# Thank you!

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