CMS Quality Conference 2023
Building Resilient Communities:
Having an Equitable Foundation for Quality Healthcare

Enhanced Data Interoperability and Standardization Improve eCQMs and dQMs for Health Equity Access

LEARNING OBJECTIVES

By the end of the session, attendees will be able to:

- Discuss challenges in capturing risk data with clinical systems for electronic clinical quality measures (eCQMs) and digital quality measures (dQMs)

- Describe new standards enabling screening tools to allow eCQMs and dQMs to evaluate clinical outcomes

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AGENDA

- Understanding the issues facing health equity

- Achieving common practice for data capture

- Challenges with data capture

- Impact on measures (eCQM and dQM)

- Future implications – device capture

PRESENTER

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Common Acronyms

- Clinical Quality Information (CQI)
- Digital quality measures (dQMs)
- Electronic clinical quality measures (eCQMs)
- Fast Healthcare Interoperable Resources® (FHIR®)
- Health Level 7® International (HL7®)
- Logical Observation Identifiers Names and Codes (LOINC)
- Office of the National Coordinator for Health Information Technology (ONC)

- Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences (PRAPARE)
- Quality Data Model (QDM)
- Quality Improvement core (QI-Core)
- Social Determinants/Drivers of Health (SDOH)
- Standards Version Advancement Process (SVAP)
- United States Core Data for Interoperability (USCDI)

Issues Facing Health Equity

Issues Facing Health Equity

- Social Factors
- Health Conditions
- Health Behaviors

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Challenges with Data Capture

- Health Equity
- Frailty (functional status, physical activity, cognitive status)
- Disability Status
- Health Concern
- Sexual Orientation and Gender Identity
- Health Status Assessment

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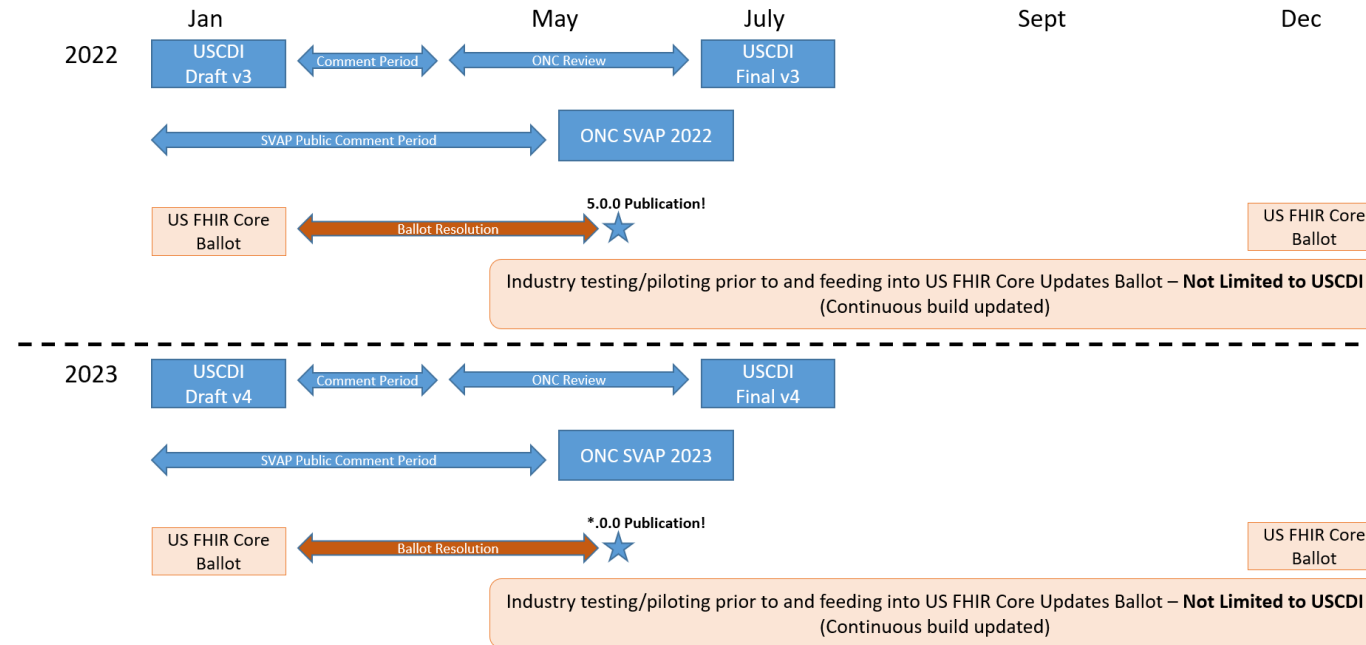
Impact on Measures

Impact on Measures (eCQM and dQM)

- Interoperability Standards Advisory
- USCDI
- US Core – QI-Core

Achieving Common Practice for Data Capture (1 of 2)

- US FHIR Core will ballot every January
- The ballot will reflect HL7 update requests (JIRA) and response to USCDI v+1.
- Connect-a-thons/pilot testing precede US FHIR Core Update Ballot.

HL7 US Core Road Map 2022. Available at:
https://confluence.hl7.org/display/CGP/US+Core+Road+Map+2022. Accessed January 31, 2023.

Achieving Common Practice for Data Capture (2 of 2)

- US FHIR Core will ballot every January
- The ballot will reflect HL7 update requests (JIRA) and response to USCDI v+1.
- Connect-a-thons/pilot testing precede US FHIR Core Update Ballot.

HL7 US Core Road Map 2022. Available at:
https://confluence.hl7.org/display/CGP/US+Core+Road+Map+2022. Accessed January 31, 2023.
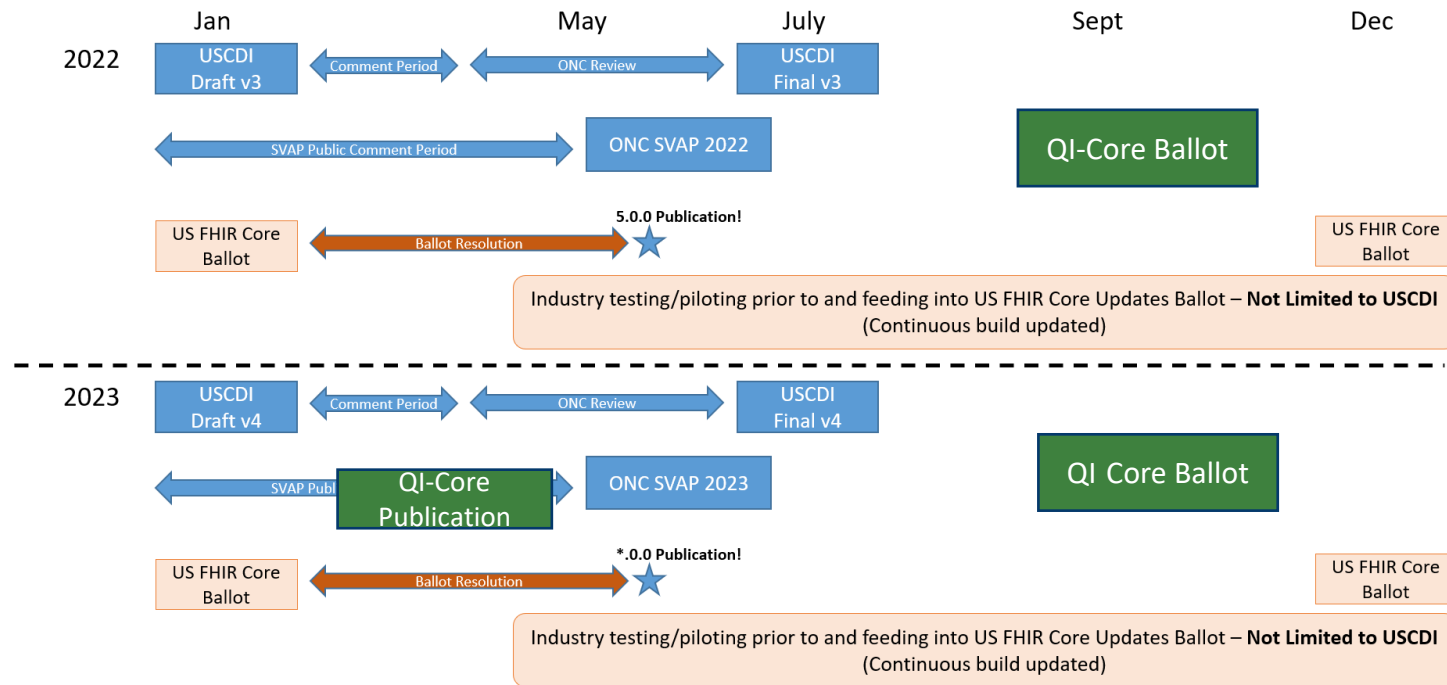
Achieving Common Practice for Data Capture with Standards (Dementia Cognitive Assessment, CMS149)

HL7 US Core/QI-Core Approach v5.0.1:

- Observation Survey individual responses, panels of multi-question surveys, and multi-select responses to "check all that apply" questions
  - US Core Observation SDOH Assessment Profile
- US Core QuestionnaireResponse Profile responses to form/survey and assessment tools such as the PRAPARE adds provenance of author and time for collection (i.e., able to determine patient-entered)

HL7 US Core/QI-Core Approach v6.0:

- US Core Observation Screening Assessment Profile questions and responses to surveys and screening and assessment tools with *starter set* of example SDOH LOINC codes
- US Core Simple Observation Profile observations representing a practitioner's clinical observation or assertion about a patient's health status. These observations may or may not be associated with a formal survey, screening, or assessment tool
- US Core QuestionnaireResponse Profile responses to form/survey and assessment tools such as PRAPARE, and provenance

Achieving Common Practice for Data Capture – Examples (Dementia Cognitive Assessment, CMS149)

- **Cognitive status**
  - QI-Core 4.1.1

    ```
    define "Assessment of Cognition Using Standardized Tools or Alternate Methods":
      ( ["Observation": "Standardized Tools for Assessment of Cognition"]
        union ["Procedure": "Cognitive Assessment"] ) CognitiveAssessment
      with "Dementia Encounter During Measurement Period" EncounterDementia
        such that CQMCommon."ToDateInterval" ( CognitiveAssessment.effective ) starts 12 months or less on or before day of
          end of EncounterDementia.period
      where CognitiveAssessment.partOf is not null
    ```

  - QI-Core 5.0 √
    - change Observation to ObservationSurvey
    - add QuestionnaireResponse

  - QI-Core 6.0 √
    - change Observation to ObservationAssessment
    - add QuestionnaireResponse

  √ - Consistent with how data are shared in the real world (i.e., interoperability)

Achieving Common Practice for Data Capture – Examples (Housing Assessment, CMS149)

- **Frailty**
  - QI-Core 4.1.1

```
define "Is Age 66 or Older Living Long Term in a Nursing Home":
    (AgeInYearsAt(date from end of "Measurement Period") >= 66)
        and ((Last([Observation: "Housing status"] HousingStatus
            where HousingStatus.status = 'final'
                and Global."Normalize Interval"(HousingStatus.effective) ends on or before end of "Measurement Period"
            sort by end of Global."Normalize Interval"(effective) asc
        )) LastHousingStatus
            where LastHousingStatus.value ~ "Lives in a nursing home (finding)"
    ) is not null
```

  - QI-Core 5.0 √
    - change Observation to ObservationSurvey
    - add QuestionnaireResponse (e.g., PRAPARE)

  - QI-Core 6.0 √
    - change Observation to ObservationAssessment
    - add QuestionnaireResponse (e.g., PRAPARE)

  √ - Consistent with how data are shared in the real world (i.e., interoperability)

Example

PRAPARE Example (1 of 2)

1.2 Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences (PRAPARE) Survey Example

is implementation guide includes a partial example of the PRAPARE Survey representation as:

an SDC Questionnaire

an SDC Questionnaire Response

a StructureMap that takes the QuestionnaireResponse and creates the appropriate Observations and Condition resources

multiple Observations used to record the question and answers for a select set of the survey elements (not all questions are provided in these examples)

Employment Status

Housing Status

Child Care Need

Clothing Need

two Condition resources to record the health concerns based on the results of the survey

Unemployed

Homeless

HL7 Social Determinants of Health (SDOH) Implementation Guide, STU 2. Available at: http://hl7.org/fhir/us/sdoh-clinicalcare/survey_instrument_support.html. Accessed January 31, 2023.

PRAPARE Example (2 of 2)

Generated Narrative: Observation

Resource Observation "SDOHCC-ObservationResponsePRAPAREHousingStatusExample" Version "2" Updated "2021-06-07 20:38:38+0000"

Information Source: #4XH9yJYjK6ZjlBLQ!

Profile: SDOHCC Observation Screening Response

status: final

category: Social History (Observation Category Codes ⧉#social-history) , Survey (Observation Category Codes ⧉#survey) , Homelessness (SDOHCC CodeSystem Temporary Codes#homelessness)

code: Housing status (LOINC ⧉#71802-3)

subject: Patient/pat-53234: COLIN ABBAS " ABBAS"

effective: 2021-04-26 13:56:33+0000

issued: Apr 26, 2021, 1:56:33 PM

performer: Patient/pat-53234: COLIN ABBAS " ABBAS"

value: I do not have housing (staying with others, in a hotel, in a shelter, living outside on the street, on a beach, in a car, or in a park) (LOINC ⧉#LA30190-5)

derivedFrom: QuestionnaireResponse/SDOHCC-QuestionnaireResponsePRAPAREExample

HL7 Social Determinants of Health (SDOH) Implementation Guide, STU 2. Available at: http://hl7.org/fhir/us/sdoh-clinicalcare/survey_instrument_support.html. Accessed January 31, 2023.

Hunger Vital Signs Example (1 of 2)

20.53.1 Example QuestionnaireResponse: SDOHCC QuestionnaireResponse Hunger Vital Sign Example

LinkId	Text	Definition	Answer
SDOHCC-QuestionnaireResponseHungerVitalSignExample		QuestionnaireResponse	
/88122-7	(I/We) worried whether (my/our) food would run out before (I/we) got money to buy more.		Logical Observation Identifiers, Names and Codes (LOINC) LA28397-0: Often true
/88123-5	The food that (I/we) bought just didn't last, and (I/we) didn't have money to get more.		Logical Observation Identifiers, Names and Codes (LOINC) LA28397-0: Often true
/88124-3	Food insecurity risk		Logical Observation Identifiers, Names and Codes (LOINC) LA19952-3: At risk

Section 20.53.1 Hunger Vital Sign Survey http://hl7.org/fhir/us/sdoh-clinicalcare/QuestionnaireResponse-SDOHCC-QuestionnaireResponseHungerVitalSignExample.html. Accessed January 31, 2023.

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Hunger Vital Signs Example (2 of 2)

Generated Narrative: Observation

Resource Observation "SDOHCC-ObservationResponseHungerVitalSignQuestion1Example" Version "1" Updated "2021-06-03 01:20:13+0000"
Information Source: #7H39OcdhzK4QcYSi!
Profile: SDOHCC Observation Screening Response

status: final

category: Social History (Observation Category Codes ⧉#social-history) , Survey (Observation Category Codes ⧉#survey) , Food Insecurity (SDOHCC CodeSystem Temporary Codes#food-insecurity)

code: Within the past 12 months we worried whether our food would run out before we got money to buy more [U.S. FSS] (LOINC ⧉#88122-7)

subject: Patient/pat-53234: COLIN ABBAS " ABBAS"

effective: 2020-09-10 21:56:54+0000

issued: Sep 10, 2020, 9:56:54 PM

performer: Patient/pat-53234: COLIN ABBAS " ABBAS"

value: Often true (LOINC ⧉#LA28397-0)

derivedFrom: QuestionnaireResponse/SDOHCC-QuestionnaireResponseHungerVitalSignExample

Section 20.53.1 Hunger Vital Sign Survey http://hl7.org/fhir/us/sdoh-clinicalcare/QuestionnaireResponse-SDOHCC-QuestionnaireResponseHungerVitalSignExample.html. Accessed January 31, 2023.

Future Implications

Future Implications – Device Capture (1 of 2)

- Future FHIR Accelerator
  - Continuous glucose monitor
  - Physical activity devices (Fitbit, Apple Watch)
- Proposal for evaluation
  - Population aggregation
  - New areas of data for evaluation of outcomes and care

Future Implications – Device Capture (2 of 2)

- Example (CMS149) now restricted to QI-Core 4.1.1, 5.0 √

```
define "Has Criteria Indicating Frailty":
  exists ([DeviceRequest: "Frailty Device"] FrailtyDeviceOrder
      where FrailtyDeviceOrder.status in { 'active', 'on-hold', 'completed' }
        and FrailtyDeviceOrder.intent = 'order'
        and Global."Normalize Interval"(FrailtyDeviceOrder.authoredOn) during day of "Measurement Period"
```

√ - Not consistent with how data are shared in the real world (i.e., interoperability), i.e., not yet standardized in US Core, which only handles implantable devices. Also needs standardization of documenting device use

Summary

Summary

- Standards progressing to a common method for capture and sharing structured risk assessment and health equity tools
- Such data become available for measurement and analysis (eCQMs, dQMs)
- How to participate in improving and developing these standards
  - Quality data for interoperability in the QDI User Group
  - CQI Working Group (QI-Core); Cross-Group Projects (US Core)
  - Review the US Core and QI-Core ballots
- Contacts for more information on participation:
  - fhir@icf.com
  - Floyd Eisenberg: feisenberg@iparsimony.com
  - Cara Schlegel: cara.schlegel@icf.com

Resources & Q&A

Resources

- eCQI Resource Center - https://ecqi.healthit.gov/
- United States Core Data for Interoperability (USCDI) - https://www.healthit.gov/isa/united-states-core-data-interoperability-uscdi
- Interoperability Standards Advisory - https://www.healthit.gov/isa/
- QI-Core - https://hl7.org/fhir/us/qicore/
- US Core - https://build.fhir.org/ig/HL7/US-Core/