



U.S. Core Data for Interoperability (USCDI) and USCDI+ Quality What They Are and What's Ahead

Zoom

November 29, 2023

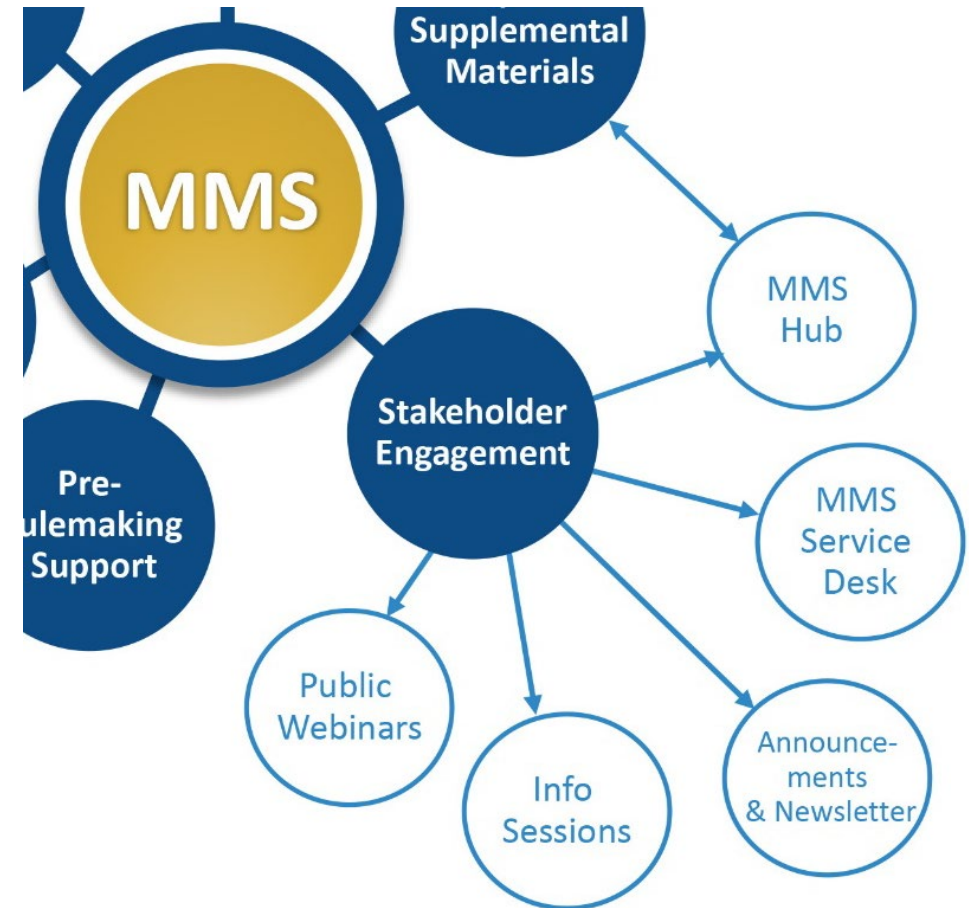
Presented By:



Welcome

The purpose of CMS's Measures Management System (MMS) Information Sessions are to:

- educate about quality measurement
- promote a standard approach to measure development and maintenance
- encourage public involvement throughout the Measure Lifecycle





Office of the National Coordinator
for Health Information Technology

USCDI and USCDI+ Quality: Updates from ONC

Office of the National Coordinator for Health Information Technology

Al Taylor, Medical Informatics Officer, Standards Division, Office of Technology, ONC
Lisa Wagner, Senior Advisor, Office of Policy, ONC



Office of the National Coordinator for Health Information Technology (ONC)

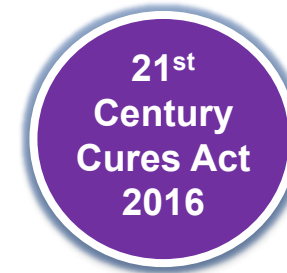
- Founded in 2004 by executive order, established in statute in 2009
- ONC is charged with formulating the **federal government's health information technology (IT) strategy** to advance national goals for better and safer health care through an **interoperable nationwide health IT infrastructure**



Laying the foundation of electronic health records (EHRs) across the industry

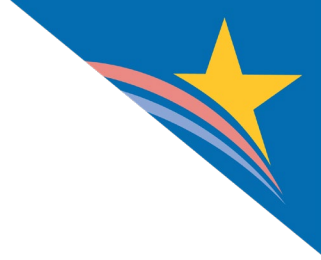
- \$40B CMS investment to subsidize EHRs for hospitals and ambulatory providers
- ONC certification of EHR systems to support HHS programs

*Health Information Technology for Economic and Clinical Health



Leveraging EHRs to drive value

- Information blocking: Prohibits providers, technology developers, and health information networks from interfering with access, exchange, and use of electronic health information
- Standards: Data and application programming interface (API) standards for access "without special effort"
- Trusted Exchange Framework and Common Agreement (TEFCA): Nationwide governance for health information exchange networks
- Health IT Alignment Policy: Leveraging all HHS health IT investments to support health IT standards.



What is United States Core Data for Interoperability (USCDI)?

Core Principles



Comprises a core set of data needed to support patient care and facilitate patient access using health IT

Establishes a consistent baseline of data for other use cases

Expands over time via a predictable, transparent, and collaborative **public** process

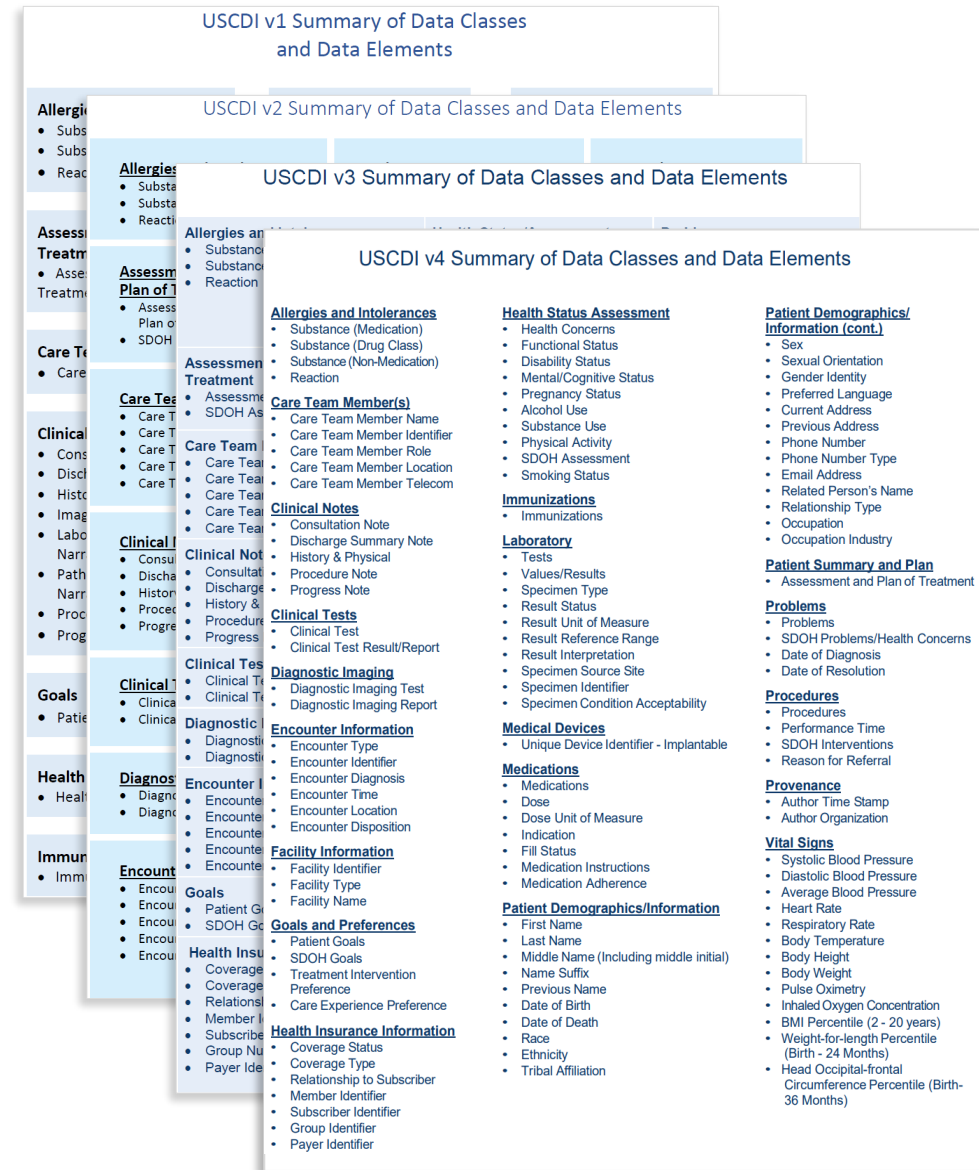
Why USCDI Matters

- Established in the ONC Cures Act Final Rule in 2020
- Required for new Certification Criterion API to access patient data, using Fast Healthcare Interoperability Resources® (FHIR®) US Core
- USCDI v1 replaces the Common Clinical Data Set in existing Certification Criteria, using Health Level Seven International® (HL7®) Consolidated Clinical Data Architecture (C-CDA) or FHIR US Core:
 - Transitions of Care documents (create, send, and receive)
 - Clinical Information reconciliation and incorporation
 - Patient View, Download, and Transmit their health data to a 3rd party
 - Electronic case reporting to public health agencies*
 - Create C-CDA document
 - Access to data via APIs
- USCDI also defines required data for other uses, such as CMS Patient Access and Payer-to-Payer API
- USCDI v3 proposed to be required in Health Data, Technology, and Interoperability (HTI)-1 Notice of Proposed Rule Making (NPRM)



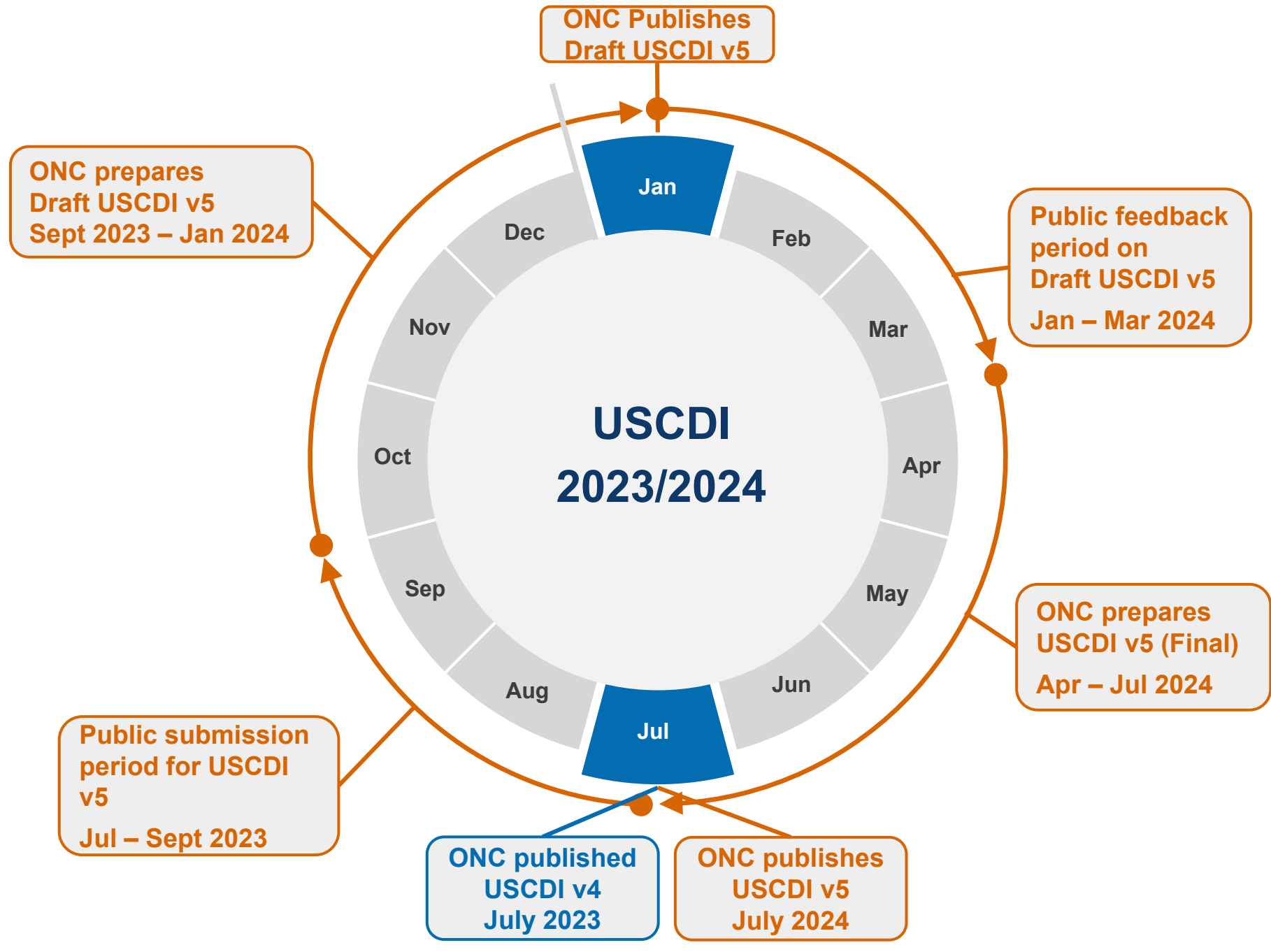
USCDI: Transparent, Predictable, Collaborative

- USCDI v1 is required by Cures Act Final Rule and added data classes clinical notes and provenance, and data elements pediatric vital signs and address
- USCDI v2 added three data classes and 22 data elements in support of advancing health equity (sexual orientation and gender identity [SOGI] and social drivers of health [SDOH])
- USCDI v3 added 24 data elements focused on factors promoting equity, reducing disparities, and supporting public health data interoperability.
 - Proposed as new required version in HTI-1, with an effective date of December 31, 2024
- USCDI v4 added 20 data elements including Alcohol, Substance Use and Physical Activity Assessments, Treatment Intervention and Care Experience Preferences, and Medication Adherence data elements





USCDI Update Process



Prioritization Criteria for New USCDI Data Elements

- Healthcare disparities and inequities
- Underserved communities
- Behavioral health
- Public health
- Key additions over past USCDI versions
- Modest burden for
 - Standards and implementation guide developers
 - Health IT developers
 - Providers and health systems implementing updates
- Aggregate lift for all new data elements



New Data Elements in USCDI v4

Allergies and Intolerances




- Substance (Non-Medication) +

Encounter Information

- Encounter Identifier + 

New Data Class


Facility Information

- Facility Identifier 
- Facility Type + 
- Facility Name + 







Goals and Preferences

- Treatment Intervention Preference =  
- Care Experience Preference =  

Health Status Assessments

- Alcohol Use § 
- Substance Use + 
- Physical Activity § 

Laboratory

- Result Unit of Measure + 
- Result Reference Range + 
- Result Interpretation + 
- Specimen Source Site + 
- Specimen Identifier + 
- Specimen Condition Acceptability + 

Medications

- Medication Instructions +
- Medication Adherence +

Procedures

- Performance Time 

Vital Signs

- Average Blood Pressure +

Allergies and Intolerances

- Substance (Medication)
- Substance (Drug Class)
- Substance (Non-Medication) **+**
- Reaction

Care Team Member(s)

- Care Team Member Name
- Care Team Member Identifier
- Care Team Member Role
- Care Team Member Location
- Care Team Member Telecom

Clinical Notes

- Consultation Note
- Discharge Summary Note
- History & Physical
- Procedure Note
- Progress Note

Clinical Tests

- Clinical Test
- Clinical Test Result/Report

Diagnostic Imaging

- Diagnostic Imaging Test
- Diagnostic Imaging Report

Encounter Information

- Encounter Type
- Encounter Identifier **+**
- Encounter Diagnosis
- Encounter Time
- Encounter Location
- Encounter Disposition

Facility Information **+**

- Facility Identifier **+**
- Facility Type **+**
- Facility Name **+**

Goals and Preferences **△**

- Patient Goals
- SDOH Goals
- Treatment Intervention Preference **+**
- Care Experience Preference **+**

Health Insurance Information

- Coverage Status
- Coverage Type
- Relationship to Subscriber
- Member Identifier
- Subscriber Identifier
- Group Number
- Payer Identifier

Health Status Assessments

- Health Concerns
- Functional Status
- Disability Status
- Mental/Cognitive Status
- Pregnancy Status
- Alcohol Use **+**
- Substance Use **+**
- Physical Activity **+**
- SDOH Assessment **>**
- Smoking Status

Immunizations

- Immunizations

Laboratory

- Tests
- Values/Results
- Specimen Type
- Result Status
- Result Unit of Measure **+**
- Result Reference Range **+**
- Result Interpretation **+**
- Specimen Source Site **+**
- Specimen Identifier **+**
- Specimen Condition Acceptability **+**

Medical Devices **△**

- Unique Device Identifier - Implantable **△**

Medications

- Medications
- Dose
- Dose Unit of Measure
- Indication
- Fill Status
- Medication Instructions **+**
- Medication Adherence **+**

Patient Demographics/ Information

- First Name
- Last Name
- Middle Name (Including middle initial)
- Name Suffix
- Previous Name
- Date of Birth
- Date of Death
- Race
- Ethnicity
- Tribal Affiliation
- Sex
- Sexual Orientation
- Gender Identity
- Preferred Language
- Current Address
- Previous Address
- Phone Number
- Phone Number Type
- Email Address
- Related Person's Name
- Relationship Type
- Occupation
- Occupation Industry

Patient Summary and Plan **△**

- Assessment and Plan of Treatment

Problems

- Problems
- SDOH Problems/Health Concerns
- Date of Diagnosis
- Date of Resolution

Procedures

- Procedures
- Performance Time **+**
- SDOH Interventions
- Reason for Referral

Provenance

- Author Organization
- Author Time Stamp

Vital Signs

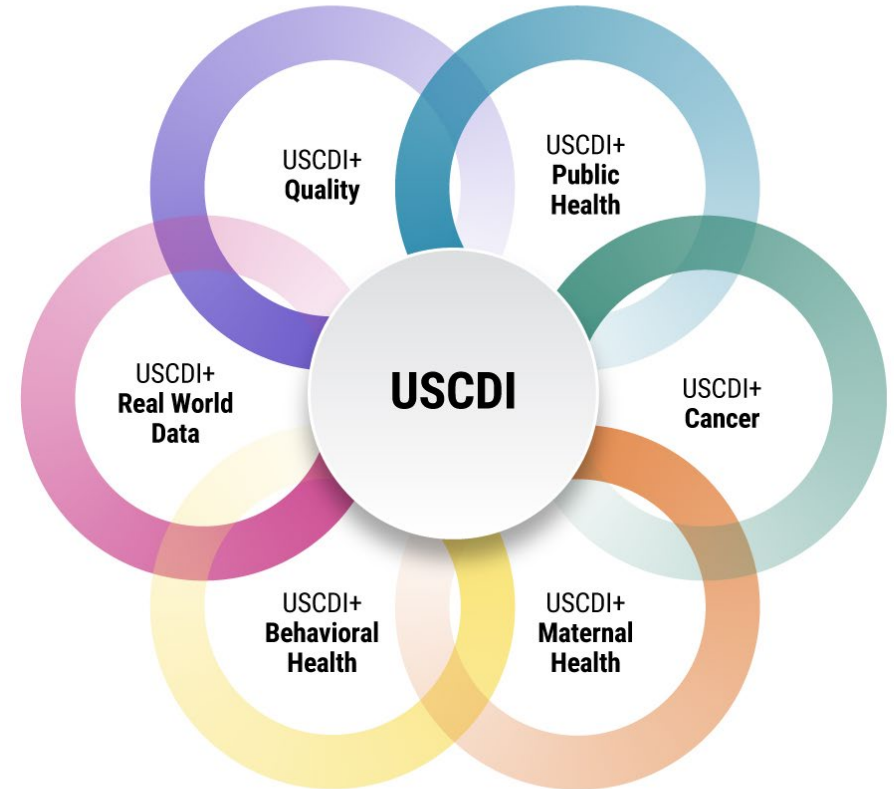
- Systolic Blood Pressure
- Diastolic Blood Pressure
- Average Blood Pressure **+**
- Heart Rate
- Respiratory Rate
- Body Temperature
- Body Height
- Body Weight
- Pulse Oximetry
- Inhaled Oxygen Concentration
- BMI Percentile (2 - 20 years)
- Weight-for-length Percentile (Birth - 24 Months)
- Head Occipital-frontal Circumference Percentile (Birth - 36 Months)



What is USCDI+?

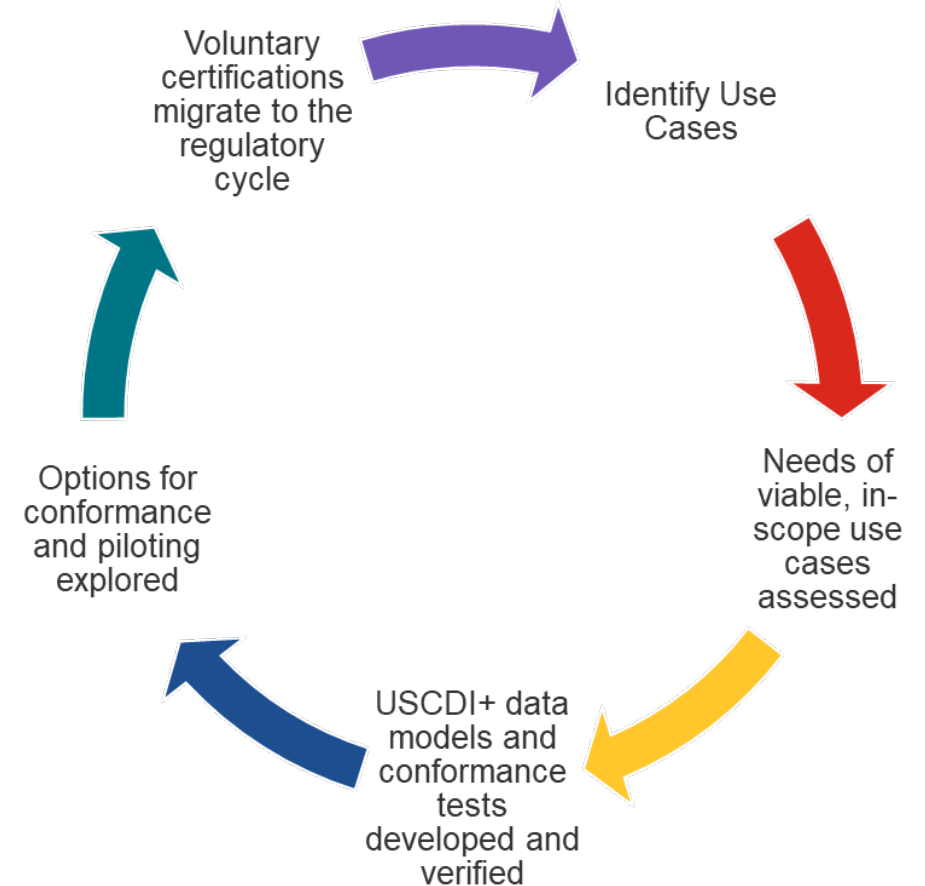
USCDI+: Extending Beyond the USCDI

- Unique program and use case-specific data needs are sometimes not fully met by USCDI.
- ONC's USCDI+ initiative helps government and industry partners build on USCDI to support specific program needs.
- Applies USCDI processes for submission and harmonization while focusing on programmatic priorities.
- Seeks to leverage programs and authorities across HHS to drive adoption.
- USCDI+ for Quality and Public Health kicked off with Centers for Disease Control and Prevention (CDC), CMS & Health Resources and Services Administration (HRSA).



USCDI+: Iterative, Rolling Process

- New use cases build on existing work, but focuses on meeting a need in real-time; coordinated with ONC requirements
- At regular intervals:
 - USCDI+ can be updated with findings shared on public facing platform
 - Pilots help inform both bright spots and barriers to success
 - Data requirements are paired with test kits for conformance (tied to certification)
- Partners across the ecosystem adopt consistent models for data capture and exchange → ensures better treatment, prevention and research for all patients



Core USCDI+ Principles

- Overarching principles
 - Ensure harmonization across ALL data elements in USCDI and USCDI+ domains (e.g. public health, maternal health, quality, cancer)
 - Reuse pre-existing content in USCDI (including submissions) for USCDI+ domains
 - Align naming conventions
 - Strike a balance between clarity and granularity
 - USCDI+ conveys high priority concepts
 - USCDI+ is not a technical implementation guide





USCDI and USCDI+ Alignment

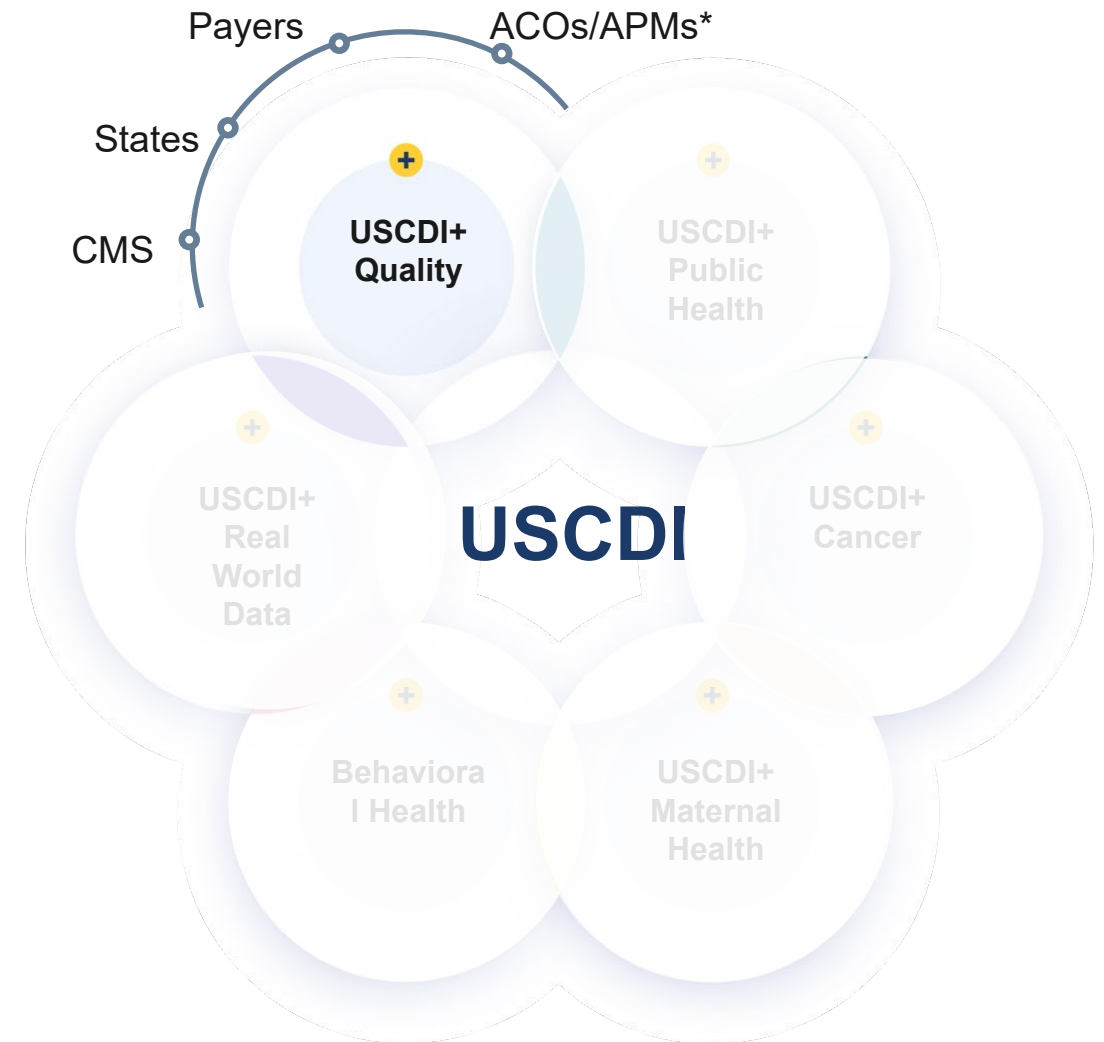
USCDI	USCDI+
<p>USCDI data list</p> <ul style="list-style-type: none"><li>✓ Data element X<li>✓ Data element X<li>[Greyed out]<li>✓ Data element X<li>[Greyed out]<li>✓ Data element X	<p>USCDI+ extended data list</p> <ul style="list-style-type: none"><li>✓ Data element X<li>✓ Data element X<li>+ Data element X USCDI+<li>✓ Data element X<li>+ Data element X USCDI+<li>✓ Data element X



USCDI+ Quality

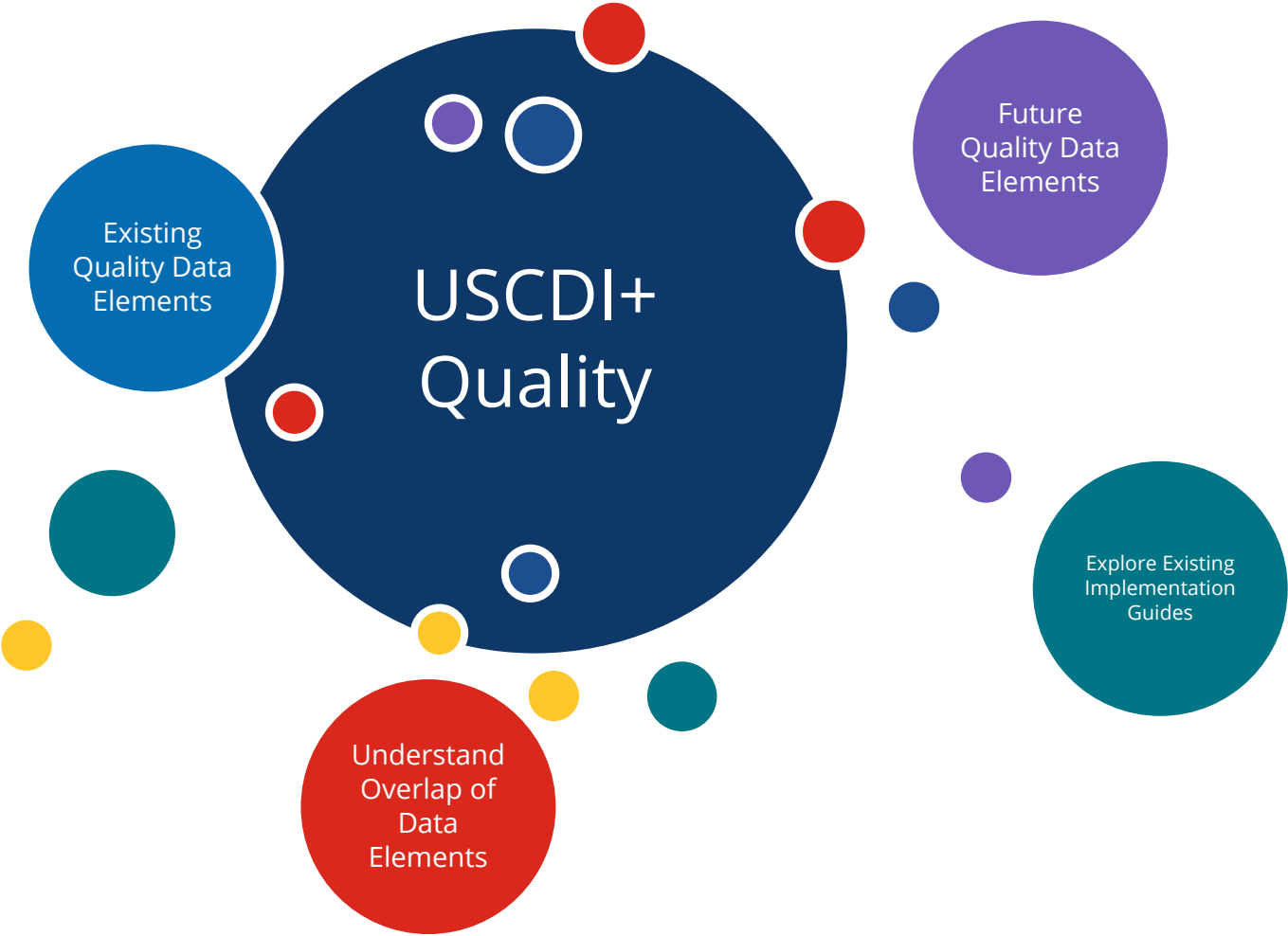
USCDI+ Quality Goals

- Capture the data needs for quality reporting that fall outside the scope of USCDI to support streamlined development and reporting of quality measures.
- Harmonize quality data elements into a common data element list for quality that addresses multiple partner needs.
- Support CMS' Digital Quality Measures (dQM) strategy and development of harmonized data element lists for FHIR-based quality reporting.
- Support HRSA's Uniform Data System (UDS) Modernization Initiative
- Identify opportunities for policy alignment around quality reporting programs under existing authorities across HHS agencies.

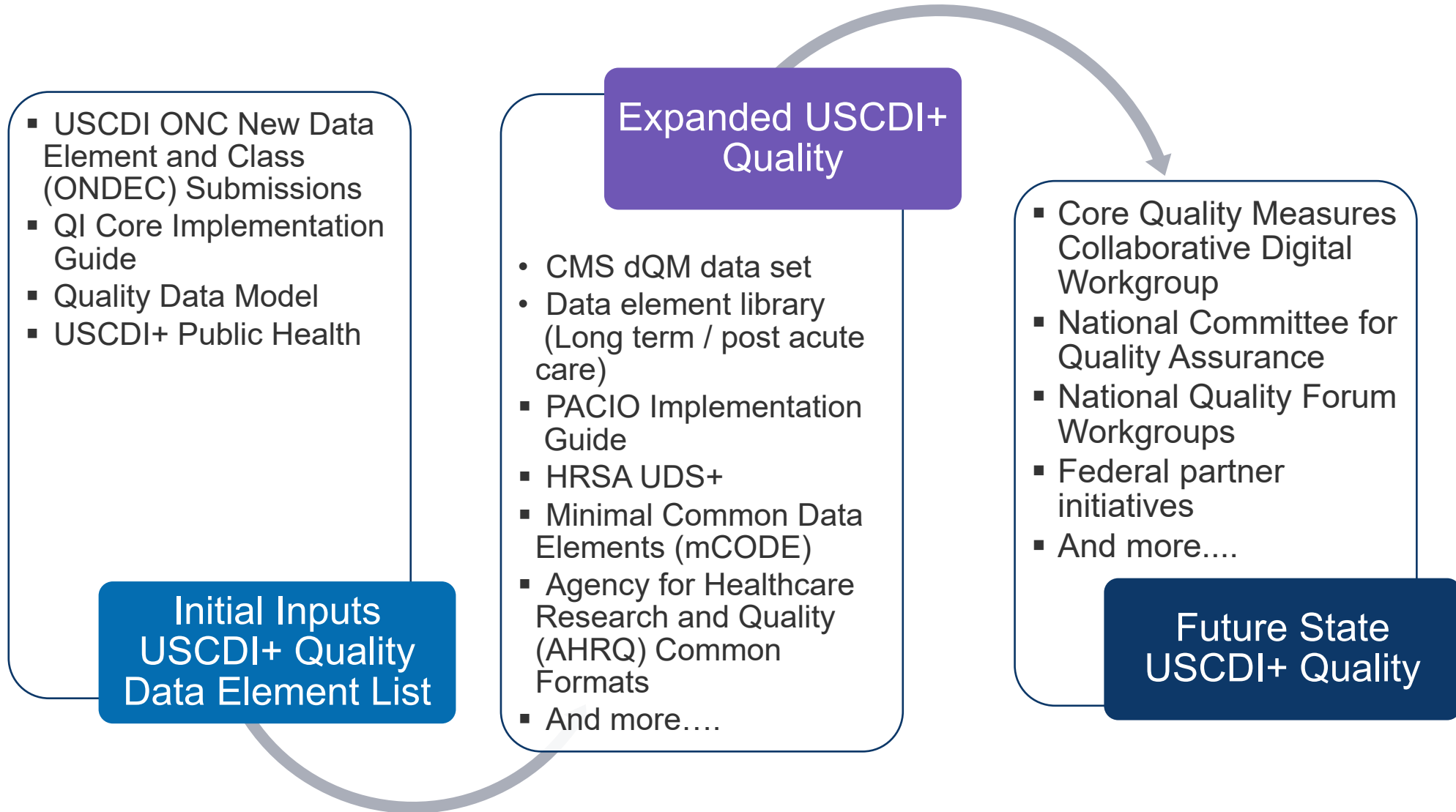


*Accountable Care Organizations / Alternative Payment Model

Making the USCDI+ Quality Data Set



USCDI+ Quality Analysis and Scoping: Sources





Summary of New Data Classes/Data Elements in USCDI+ Quality

- 162 data elements
 - 100 data elements overlap with USCDI
 - 80 data elements shared with Maternal Health Domain
 - 40 data elements shared with Public Health Domain
 - 39 data elements shared with Cancer Domain
- 74 Unique Quality data elements (not in other domains or USCDI)
 - Examples:
 - Advanced Directive – Participants, Provenance
 - Adverse Event Recorded
 - Functional Ability and Goals – Mobility, Self-Care
 - Nutritional - Administration Route and Timing, Reason, Substance / Supplements

CMS Digital Quality Measurement Strategy

ONC is collaborating with CMS to address core data and interoperability needs for CMS' FHIR quality reporting initiatives and health IT certification. This collaborative effort addresses:

- Supporting development of FHIR profiles and implementation guides for use in the ONC health IT certification program.
- Developing a future FHIR regulatory framework/certification model.
- Developing FHIR testing tools, resources, etc. to support quality measures.
- Informing CMS systems development for measure reporting and calculation.





Potential Policy Impact

- The USCDI+ Quality Data Element List supports data completeness across the health care ecosystem and may support the implementation of future program policies.
- Examples could include:
 - ONC Health IT Certification Program
 - CMS Promoting Interoperability program and Inpatient Quality Reporting program
 - CMS Quality Payment Program (Promoting Interoperability/Quality Categories)
 - CMS Center for Medicare and Medicaid Innovation Activities
 - CMS Long-Term and Post-Acute Care Assessments
 - HRSA Uniform Data System and UDS+
 - Substance Abuse and Mental Health Services Administration's (SAMHSA's) Certified Community Behavioral Health Clinics
 - AHRQ Common Formats



Resources

USCDI Web Page



[Home](#) > [USCDI](#)

For data class description and applicable standards supporting data elements, click to view the USCDI Version 1 (July 2020 errata) in PDF format below.



[Click to View USCDI V1](#)



[Click to View USCDI V4](#)



[Click to View USCDI V2](#)



[Click to View USCDI V3](#)

[Previous USCDI Versions](#)

The USCDI ONC New Data Element and Class (ONDEC) Submission System supports a predictable, transparent, and collaborative process, allowing health IT stakeholders to submit new data elements and classes for future versions of USCDI. [Click here](#) for more information and to submit new data elements.

The USCDI standard will follow the [Standards Version Advancement Process](#) described in the Cures rule to allow health IT developers to update their systems to newer version of USCDI and provide these updates to their customers.

United States Core Data for Interoperability (USCDI)

The United States Core Data for Interoperability (USCDI) is a standardized set of health data classes and constituent data elements for nationwide, interoperable health information exchange. Review the [USCDI Fact Sheet](#) to learn more.

A USCDI Data Class is an aggregation of Data Elements by a common theme or use case.

A USCDI Data Element is a piece of data defined in USCDI for access, exchange or use of electronic health information.

[USCDI ONC New Data Element & Class \(ONDEC\) Submission System](#)

With the publication of USCDI v4, ONC is accepting submissions for new data elements. The deadline for USCDI v5 submissions and comments is September 20, 2023 at 11:59 p.m. ET. Submissions received after this date will be considered for USCDI v6.

[USCDI V1](#)

[USCDI V2](#)

[USCDI V3](#)

[USCDI V4](#)

[Level 2](#)

[Level 1](#)

[Level 0](#)

Please reference the [USCDI version 1 document](#) to the left for applicable standards versions associated with USCDI v1.

Allergies and Intolerances

Harmful or undesired physiological responses associated with exposure to a substance.

[Substance \(Medication\)](#)
[Substance \(Drug Class\)](#)
[Reaction](#)

Immunizations

Record of vaccine administration.

[Immunizations](#)

Procedures

Activity performed for or on a patient as part of the provision of care.

[Procedures](#)

Laboratory

Provenance

USCDI+ Web Page

HealthIT.gov

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Investments >

USCDI+

The USCDI+ initiative supports the identification and establishment of domain or program-specific data element lists that operate as extensions to the existing USCDI. USCDI+ is a service ONC provides to federal and industry partners to establish, harmonize, and advance the use of interoperable data element lists that extend beyond the core data in the USCDI in order to meet specific programmatic and/or use case requirements. This approach allows HHS to assure that extensions build from the same core USCDI foundation, align to harmonized data standards and taxonomies, and create the opportunity for aligning similar data needs across programs and use cases.

ONC is advancing USCDI+ efforts for quality measurement and public health with the Centers for Medicare & Medicaid Services, the Centers for Disease Control and Prevention, and the Health Resources and Services Administration, with support and input from other federal and industry partners. The USCDI+ process follows the same basic principles used for the USCDI, but with some additional components including:

- A discovery process and charter
- Identification of use cases, data specifications, and programmatic incentives/requirements for use of any specific USCDI+ data element list
- Evaluation of data classes/elements according to objective criteria, such as industry priority and readiness, level of standards maturity, and identified agency need

Three Pillars of USCDI+

Collaboration: Collaborate across federal partners, health care providers, the health IT community, and other industry partners to inform and support health IT advancement for priority use cases including data element lists, standards, implementation specifications and potential certification criteria.

Harmonization: Achieve greater harmonization across relevant partners, including federal agencies, clinical stakeholders, the health IT community, and users of health IT on adopted data element lists, standards, implementation specifications and certification criteria.

Specification: Specify foundational principals and process for the development of data element lists, value sets, and/or corresponding implementation specifications to ensure that the use and adoption of standards are aligned across federal programs, across specialties and sites of service, and on a national scale.

USCDI+ Domains

Public health: USCDI+ Public Health is intended to capture the data needs of public health that fall outside the scope of USCDI and aims to improve availability and consistency of data necessary to support various aspects of public health. In collaboration with federal partners, including CDC, FDA, ASPR, and NIH, ONC has developed data element lists for the following subdomains supporting Public Health programs: Case-Based Surveillance, Laboratory Data Exchange, Multi-Directional Exchange with Healthcare and Other Partners, Resource Reporting & Situational Awareness, and Risk Behaviors and Drivers of Inequity Data element lists are currently available for review on our ONDEC+ platform. Please email USCDI.Plus@hhs.gov to get access to the website.

Quality: In May of 2023, ONC published the first draft of the USCDI+ data element list for quality measurement (USCDI+ Quality) to serve as a baseline

<https://www.healthit.gov/topic/interoperability/uscdi-plus>

USCDI+ Platform

United States Core Data for Interoperability (USCDI)+

USCDI+ is a service that ONC provides to federal partners who have a need to establish, harmonize, and advance the use of interoperable datasets that extend beyond the core data in the USCDI in order to meet agency-specific programmatic requirements. Learn more about USCDI+ on [HealthIT.gov](#). If you have any questions, technical issues, or need to request access for a colleague, please email USCDI.Plus@hhs.gov.

A USCDI+ "Domain" is a common set of data elements required for interoperability for multiple scenarios and use cases governed by the same set of standards, policies and/or guidelines. (Example: Public Health)

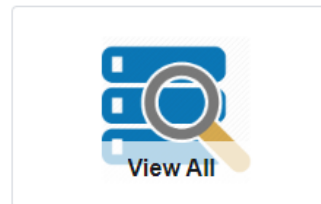
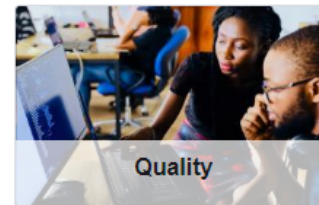
A USCDI+ "Use Case" is a common set of data elements required to support a specific set of functions within a Domain. (Example: Resource Reporting/Situational Awareness)

A USCDI+ "Data Class" is an aggregation of various Data Elements by a common scenario or use case. (Example: Facility Level Data)

A USCDI+ "Data Element" is the most granular level at which a piece of data is exchanged. (Example: Facility Address)

[New Data Element & Class \(ONDEC\) Submission System](#)

USCDI+ Domains



Latest News

[USCDI+ Quick Reference Guide](#)

📅 30d ago

Comments

I thought we had a use case for Situational Awareness (bed count, etc...) I don't see that here?

20d ago • chris.baumgartner@doh.wa.gov

[Test attachment load](#)

23d ago • [example.contributor](#)

[Can you provide more details?](#)

USCDI+ Relationships and Alignment

USCDI data is maintained in ONDEC. This site displays USCDI+ data. USCDI+ will update USCDI references on a regular basis; however, complete information about data classes and data elements in USCDI are located at healthit.gov/uscdi.

Data Type

USCDI+ Data Element

Created

about a month ago

Updated

21d ago

State

New

Care Experience Preference

Details

Relationships

Comments

Associated Relationships

Keyword Search



Data Element ^

Data Class

Use Case

Domain

Care Experience Preference

Goals and Preferences

Maternal Health Overarching

Maternal Health

Care Experience Preference

Advance Directives

Quality Overarching

Quality



Rows 1 - 2 of 2



ONC 2023

ANNUAL MEETING

**Don't Miss the ONC Annual Meeting!
Washington, DC | December 14-15**

www.ONCAnnualMeeting.com



Office of the National Coordinator
for Health Information Technology

Thank you!

USCDI Questions? Email: Albert.Taylor@hhs.gov

USCDI+ Questions? Email: USCDI.Plus@hhs.gov

Stay Informed! Resources

- [Health IT Buzz | The Latest on Health Information Technology from ONC](#)
- [United States Core Data for Interoperability \(USCDI\) | Interoperability Standards Advisory \(ISA\) \(healthit.gov\)](#)
- [Standards Version Advancement Process | Interoperability Standards Advisory \(ISA\) \(healthit.gov\)](#)
- [USCDI+ | HealthIT.gov](#)

HealthIT.gov





Questions?

Announcements

Upcoming MMS Information Session

Interested in learning about the 2024 CMS Pre-Rulemaking Cycle? Join the CMS Measures Management System team 2 p.m. (ET) Wednesday, December 6 for the “Pre-Rulemaking Preview.”

[Register to attend!](#)



Battelle
MMSSupport@battelle.org

CMS
Angela Wright
angela.wright@cms.hhs.gov

Gequincia Polk
gequincia.polk@cms.hhs.gov