USCDI Task Force
Draft Recommendations

April 11, 2018

April 18, 2018

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Dear Dr. Rucker:

The Health Information Technology Advisory Committee (HITAC) asked the U.S. Core Data for Interoperability Task Force (USCDI TF or TF) to provide recommendations around the Draft U.S. Core Data for Interoperability (USCDI) and Proposed Expansion Process. This transmittal offers these recommendations, which are informed by the deliberations among the Task Force subject matter experts.

1. Background

1.1. Charge:

The USCDI Task Force will review and provide feedback on the U.S. Core Data for Interoperability (USCDI) structure and process and make specific recommendations on:

- Mechanisms/approaches to receive stakeholder feedback regarding data class priorities;
- The proposed categories to which data classes would be promoted and objective characteristics for promotion;
- How the USCDI would be expanded and by how much; and
- Any factors associated with the frequency with which it would be published.

1.2 Definitions

- **Data Class:** A data class within the USCDI is an object that carries data about particular health information and usually created to address a specific use case or a series of related use cases. It is made up of specific data items. Examples of data classes include prescription records, lab results, the OASIS and MDS data sets, PHQ-9, the list of social determinants of health, and a problem list. Coding systems such as ICD-9, ICD-10 and SNOMED are not data classes**.**
- **Data Class Work Group (DCWG):** A group of stakeholders organized around a data class with the responsibility to define the data class, apply applicable standards, harmonize data elements that are cited in other data classes and produce a data class that is sufficiently specified to be tested. The DCWG continues as the steward of the data class through cycles of testing and revision until it is ready for nationwide deployment.

- **Data Item:** An object composed of a specific piece of clinical information about a patient. Examples of data items include: pregnancy, insulin, income, and flu vaccine.
- **Data Item Biography:** The provenance of each data item as it moves through the USCDI process including supportive stakeholders, value assessment, modifications, and test results.
- **Net Value:** Equals value minus cost where the scale can be any type of cost or value (time, money, safety, quality, burden, etc.)
- **Stakeholder:** An individual with an interest in advancing data items or data classes through the USCDI process.
- **USCDI Process:** A data class maturation process with the goal to identify data classes with broad applicability to advance the long held goal of extending interoperability beyond traditional healthcare providers to also include a wide variety of use cases and target populations including, but not limited to behavioral health, long-term and post-acute care (LTPAC), individual access, public health, emergency medical services (EMS), and community based services
- **USCDI Structure:** Composed of four main components: (1) a public platform to encourage data classes to emerge from proposed data items to widespread adoption, (2) a work group structure (the Data Class Work Group) which assumes the role of steward and defines the data class, (3) a process to map available standards and oversee the cycles of testing and refinement as well as testing in production settings by industry, and (4) the regulatory authority of HHS to promote adoption.

2. Recommendations

Overview:

The Task Force recommendations seek to address the common causes that prevent data from being shared.

1) Data doesn't exist
2) It exists but is not collected at all or in part
3) It is collected but there are no standards for regularizing it
4) It is collected and there are appropriate standards, but they are not being applied
5) It is collected and standards are mostly applied within the organization but they are not being applied to data shared outside of the organization
6) Detailed and reliable workflows to share the data outside of the organization have not been established

Each barrier to data sharing presents different problems and requires different solutions. In general, item "Data doesn't exit" is the most difficult because a sufficient number of entities must clearly see that the data has value, collect it (at a cost), develop standards to ensure the data consistent, and move industry to adopt the standard. By introducing a process whereby any interested party may propose a data item or data class for consideration, our recommendations are designed to help solve this challenge and better democratize the process of identifying data of value. However, advancement occurs only when there is sufficient perceived value for a large group of stakeholders. "Data that exists but is not collected" requires a similar value proposition to advance.

There is a substantial body of data that is collected, but without standards. It already exists in current systems and could be available for sharing with the development and application of new standards: a process that may require significant cycle time for development, testing and adoption. The proposed USCDI process recognizes the need to advocate for missing high value data that is currently collected and identify where standards are needed. This responsibility rests with the DCWG. The process to develop missing standards rests with the standard development organizations. Examples of data that is currently collected but without the necessary standards include nursing quality measures, some federally mandated assessment instruments, and billing data.

There is data that is currently collected and within electronic systems for which standards exist, but are not consistently applied. One strategy to close this gap is to demonstrate feasibility of applying standards to this data through testing in pilot and production and thereby demonstrate readiness for deployment. Another strategy is to use incentives built into existing regulation and payment models to drive adoption of existing standards. Both strategies are included in the proposed process.

The long cycle times needed to develop and test the standards and workflows needed for interoperable exchange of highly structured data are justified by the value of machine readable data for clinical care, research, public health and quality reporting. The goal of the proposed USCDI process is to achieve this high level interoperability. While the process unfolds to achieve this level of interoperability, there a complementary approach that seeks to improve sharing of data that is currently collected but is unstructured independent of the availability of standards.

The process to share such data requires the adoption of standards that specify what data is in the unstructured payload, to uniquely identify the individual whose data is shared, and to identify the intended recipient. With these minimum standards in place, it is possible to share a wide variety of currently available data which is neither structured nor standards based. Examples include radiology reports, clinical notes, care plans, immunization records, and medication lists. The DCWG has the responsibility to develop the data definitions and apply the available standards to enable this exchange. Although the long range plan is to standardize as much data as possible, the USCDI process will support the sharing of minimally structured data as an achievable short term objective.

2.1. Summary Recommendations Related to Charge

2.1.1 Recommendation 1: Establish a six stage maturation process through which data classes would be promoted, each with objective characteristics for promotion

- Stage 1: Proposed (new)
- Stage 2: In Preparation (new)
- Stage 3: Emerging
- Stage 4: Candidate

- Stage 5: USCDI
- Stage 6: Widespread Deployment (new)

2.1.2 Recommendation 2: Expand the USCDI as each data class completes Stages 1-4 without a predetermined timeline

2.1.3 Recommendation 3: Establish an annual publishing cycle for the USCDI with periodic bulletins as data elements progress from one stage to the next

2.1.4 Recommendation 4: Incorporate public feedback in each stage

2.2 Detailed Recommendations Related to Charge

2.2.1 Stages of the USCDI process

2.2.1.1 Stage 1: Proposed

Stage 1 is designed to identify data items and classes of value to any stakeholder. At the most basic level, it is the end user who assigns value to interoperable data because it contributes to a business need; and it is this value that help drive adoption.

End users (stakeholders) begin the process by adding data items and classes that they value to a shared public resource that catalogs submissions, and provides a searchable database of data elements, the contact information of the proposer, a value statement, and a proposed level of interoperability. Using this resource, it is possible to identify all stakeholders who propose similar data items and thereby identify a community of interest. Such groups may later become Data Class Work Groups.

This shared resource becomes an evolving document that catalogs data items of value and enables draft data classes to be assembled around the needs of a stakeholder community. The resulting "shared value" becomes the justification for advancing the data class through the remaining stages. An example of this process follows:

The capability to share information on Social Determinants of Health (SDOH) has value for many stakeholders including the individual, immediate care givers, home and community based service providers, ambulatory care practices, integrated networks, payers and public health organizations among others.

Each stakeholder submits the following information to the shared resource (with an example in parentheses):

Date submitted: (1/1/2019)
Proposed Data Class: (SDOH)
Priority: (high choices being emergent, urgent, high, medium, low)
Proposed Data Items: (income, education, housing, etc)
Estimate percentage of patients in the system with data on these items: (20%)
Items currently collected as structured information: (none)
Do coding systems exist to represent these items?: (for some)
Cite any applicable data standards: (none known)
Are there message systems in use for delivering them?: (C-CDA text)
Contact Information: (Jane Doe, ABC, jdoe@gmail.com)
Value Statement: ("this information needed to modify interventions")
Proposed Use Case: (screen for high risk patients, establish public health priorities, etc)

Stakeholder submissions are used to gauge the extent of interest in data items, sort them roughly into a data class (such as the SDOH Data Class), and start the process of identifying potential members of the Data Class Work Group. Aggregate data includes:

- A list of all interested stakeholders with contact information
- Range of prioritization
- A list of all data items proposed for this data class
- Applicable standards known to any stakeholder
- Summary of value statements
- Summary of use cases

This resource will also identify instances when a data item is cited by more than one proposed data class, alerting the DCWGs to the need for harmonization early in the process of defining their respective data classes. The data fields used to populate the submission process and the aggregate data derived from them are the first entries in the Data Item Biography.

Initially in order to advance to Stage 2, the proposed data class must receive a "high" or greater priority rating from three or more unrelated stakeholder groups, or be cited as emergent or urgent, or high by stakeholders representing patients, providers or government.

2.2.1.2 Stage 2: Preparation

Stage 2 addresses two related issues: (1) the challenge of creating data classes with broad value and (2) defining and specifying data items sufficiently to support interoperability. Stage 2 is in many ways the most complex of all the stages because it requires data items to retain demonstrated value as they become more specifically defined, a process that may lead to a reduction in value for some stakeholders whose business and use cases are no longer supported by more constrained data sets. This stage supports the development of consensus to achieve the most tightly defined and constrained data class that is supported by value to the stakeholders.

Recommended Process (Draft) :
Invite stakeholders that indicate an interest in specific data items or data class to participate in a "Data Class Work Group" (DCWG). Support each DCWG with a process supported by ONC in which volunteer communities of stakeholders are brought together to define the data class. Data items that are removed from the data class under consideration return to the shared resource with a notation.

Proposed Data Class Work Group process:

1. Establish a work group whose membership is broadly representative of the stakeholders that proposed the data items/data class in Stage 1 or otherwise need to be involved. In particular, each DCWG should include patient advocates to ensure the patient's role in defining and advancing relevant data classes.
2. Create a draft data item list that includes all priority data items proposed by any of the engaged stakeholders
3. Eliminate data items with little support
4. Reach consensus on data items within the data class
5. Identify instances when another DCW cites a similar data item
6. Evaluate definitions for similar data items and harmonize them with the goal of establishing a common definition
7. Provide an explanation when it is not possible to use a previously proposed definition
8. Identify applicable semantic standards for each data item
9. Identify gaps in applicable standards to be filled by standard development organizations (SDO)
10. Establish a definition for what data class content is appropriate for minimally structured data

Continuing with the example of SDOH cited in Stage 1, once the SDOH Data Class Work Group reaches consensus on data items to be included, it will search the public resource for examples of similar items in other proposed data classes, identify and use currently available proposed lists, adopt currently available standards and identify gaps in those standards. The process of harmonization of definitions and standards will involve a collaborative process with other DCWGs and SDOs.

The presence of some standards based taxonomies for SDOH would likely hasten the progress of this data class through Stage 2 depending on the speed with which applicable standards can be identified or developed, tested and released for use. A standards-based data class for testing will not be produced until standards for all items are available. However, the SDOH Data Class Work Group will also establish content definitions of the data items to identify data sources that can be shared using minimally structured data to identify content, patient and receiver. This is an example of moving data that is available even if it is not yet fully structured or standards-based.

Each Data Class Work Group will produce the following products within Stage 2:

1. Definitions for content that is appropriate to be sent as unstructured payload

2. Specific and tightly define data items that make up the data class with associated structure and codes (e.g. LOINC, SNOMED-CT, RxNorm, or subsets thereof), harmonized with other data classes that cite similar data items
3. Associated C-CDA, FHIR and other applicable transport standards as required for specific use cases and proposed for testing
4. Reassessment of the net value of the proposed data class

In order to advance to Stage 3, the data class must receive "high" prioritization from the majority of the work group participants and all data items must be defined, associated with applicable standards (draft or established) and harmonized with other cited data classes. This will require coordination with other SDOs to ensure applicable standards are available. The data class is still a draft with the expectation that it will undergo further refinement based on limited testing in Stage 3. However it is sufficiently developed that there are no deficiencies noted by the DCWG and that it is ready for use in pilot scenarios.

It should be noted that the role each DCWG plays to reconcile value with technical requirements continues through stages 3 and 4 as changes are proposed to the data class as the result of testing. The work group continues its role as the Steward for the data class until it is released to the USCDI. By designating the DCWG as the data class steward, ONC can ensure that each data class has a steward and not have to rely on volunteers to play this role. One of several critical responsibilities that ONC assumes in this process is to support the DCWGs, who are volunteers, with a process analogous to the S&I Framework. This is part of a yet to be described, but essential, governance process.

Well defined data classes that have established standards and that have been satisfactorily tested in pilot and commercial settings will move directly to the USCDI once the definition of the data class is confirmed. Demographics is an example of a well defined and tested data class.

2.2.1.3 Stage 3: Emerging

The purpose of Stage 3 is to test data classes in pilot scenarios as part of specific uses cases to enable end users and developers to identify issues with definitions, standards and workflow prior to broader deployment. This Stage is identical to the original USCDI draft with the additional process details recommended below:

Pilot testing in multiple sites using different use cases is critical in order to avoid the premature release of normative standards and data class definitions before they have demonstrated suitability for use. Experience gained in focused testing enables the DCWG to oversee cycles of testing, refinement and retesting until satisfied that the data class retains value and is ready for broader commercial testing in Stage 4. The DCWG continues to operate on the same consensus model used in Stage 2.

Continuing with the example of SDOH, it is likely that minimally structured SDOH data will be the first product to be released by the SDOH DCWG for testing in Stage 3 is while standards are being identified

for structured data. Testing of the process to share minimally structured data would focus on the following:

1. Are the definitions of SDOH relevant to how this data is currently captured and stored?
2. Are different definitions required?
3. Can those with SDOH data compile it efficiently?
4. Can they share it using TEFCA?
5. Does the data make it to the intended receivers?
6. Is the format useful?
7. Is a different format required?
8. Are further modifications and retesting required before Stage 4?

Once the SDOH Data Class Work Group releases its standards-based data class, testing in Stage 3 would focus on the following:

9. Can detailed SDOH data be collected, stored and retrieved using the definitions developed for each data item?
10. Is each data item clearly defined?
11. Are different definitions required?
12. Are the applicable semantic standards sufficiently constrained to enable semantic interoperability?
13. Are different standards required?
14. Are necessary standards available?
15. Can those with SDOH data compile it efficiently?
16. Can they share it using TEFCA
17. Does the data make it to the intended receivers?
18. Is the format useful?
19. Is a different format required?
20. Are further modifications and retesting required before Stage 4?
21. Are the data machine readable?
22. Is further manipulation required for use?
23. Are further modifications and retesting required before Stage 4?

In Stage 3 a data class is in trial use in pilot scenarios. Before leaving Stage 3 the data class must complete testing and exchange between at least three independently developed systems leveraging at least 80% of the core data elements using data and scenarios based on at least one of the designated use cases. Proposed modifications must be reconciled and retested until there are no further modifications required. Before advancing to Stage 4, the data class must receive a priority designation of “high” from the majority of DCWG participants.

2.2.1.4 Stage 4: Candidate

The purpose of Stage 4 is to rigorously test the data class in several production settings to identify issues that require resolution prior to national deployment and to ensure the vendor community has adequate advanced notice that data classes in this stage are next up in the queue to be released for national adoption. The intent of this stage is to prevent data classes from advancing that do not have clearly defined data elements and mature, tested data standards. It also addresses the vendor community complaint of insufficient time to plan for broader deployment.

Testing at this scale involves the use of standardized testing tool processes required for the roll-out of a commercial application. It is expected that testing will involve multiple sites, multiple levels of clinical and organizational sophistication, and several use cases.

In order to advance to the USCDI in Stage 5, a data class must have completed commercial level testing in at least two sites, identify all issues of deployment, and undergo data class modification if necessary. All modifications require additional testing until there are no further modifications required. At the conclusion of this stage the data class will have been tested across its scope, formally published, and implemented in multiple prototype projects. Before advancing to Stage 5, the data class must receive a priority designation of "high" from the majority of work group participants.

2.2.1.5 Stage 5: USCDI

The purpose of Stage 5 is to put industry officially on notice that a data class has completed rigorous testing and is a priority for nationwide deployment at scale. All available policy levers will be employed to drive adoption including payment, quality reporting and regulation with the expectation that industry make updating its technology to enable interoperable exchange of this data class a priority as well. Progress towards full adoption will be measured by the TEFCA's Recognized Coordinating Entity (RCE) by sampling data traffic through its networks and reported annually. Data classes that achieve widespread adoption will be designated as Stage 6, Fully Deployed.

2.2.1.6 Stage 6: Widespread Adoption

The purpose of Stage 6 is to recognize data classes that have attained nationwide adoption. It is the final measure of the USCDI process to created fully deployed data classes to advance interoperability.

2.2.2 Expansion process

Specific Charge: How the USCDI would be expanded and by how much

- Task Force Recommendations

  - Establish an open process for proposing data items or data classes for consideration without restrictions on what is proposed or who can propose it

  - Add a data class to the USCDI once it has met all criteria and has successfully progressed through all prior stages regardless of timeline

  - Add each data class that meets criteria to the USCDI without imposing a limit on the number of data classes to be added.

  - Establish a process to review the progress of a data class through Stage 5 and establish a timeline for advancement through Stage 5 recognizing that progress through Stage 5 may be impacted by both vendor and stakeholder capacity and business cases

  - Advance a data class to Stage 6 when the RCE determines that adoption is widespread and has exceeded 50%

  - Consider using the ratio of available data classes in Stage 5 to those that have progressed to Stage 6 in the preceding 12 months as a measure to review the processes for prioritization and implementation

2.2.3 USCDI Frequency of Publication

Specific Charge: Any factors associated with the frequency with which it would be published.

Publish USCDI annually (the "Reference Edition"), at the end of the calendar year. Similar to the Interoperability Standards Advisory (ISA) Reference Edition, the USCDI Reference Edition should include the most important and relevant information for each data class in each stage. The Reference Edition should strike a balance between too much and too little information, and could also include summary statistics for the USCDI in general and how it changed over the course of the year. For each stage the published information should include:

- Stage 1: data element, summary definition
- Stage 2: stakeholders, use cases
- Stage 3: technical issues resolved and outstanding
- Stage 4: testing status, technical issues resolved and outstanding, scope and requirements for beta implementation (or reference to where to find implementation materials)
- Stage 5: USCDI: scope and requirements for production implementation (or reference to

where to find implementation materials)

- Stage 6: Measurements on adoption levels and usage

The Reference Edition should be made available at minimum as a downloadable pdf on the ONC website; other options could include a sortable, interactive tool. All relevant resource links should be cross referenced to accommodate easy access to standards bodies, ISA and other resources. These links should be pinpointed to the specific data class of interest in the document.

Given the development expected to occur on data classes over the course of the year, we recommend the release of quarterly update bulletins containing only important new information and changes to the USCDI. With the USCDI Reference Edition release at the end of the calendar year, bulletins can be released every three months thereafter, in March, June, and September. These are intended to highlight and summarize new developments for those who are not participating in the day-to-day work. The bulletins are intended to be community-driven, with the individuals and entities working on data classes submitting updates including a specified range of information one month in advance of the bulletin's release.

2.2.4 Stakeholder/Public Feedback

Specific Charge: Mechanisms/approaches to receive stakeholder feedback regarding data class priorities.

The task force proposes a two-month public comment period following publication of the USCDI Reference Edition. This is intended to provide ample time for stakeholders to review the USCDI and provide feedback.

More regular feedback and interaction will occur in a proposed online collaboration tool, such as a wiki (like the former S&I Framework) or ticket management tool (such as JIRA or Confluence) that fosters collaboration and information sharing. This resource would be the primary location for stakeholders working on data classes at any stage to post results, debate, and share updates. It is intended to be the main repository of information for data classes in development.

2.3 Recommendations on Related Issues

As part of our deliberations, the USCDI TF discussed a number of topics related to interoperability and the USCDI overall in addition to the particular areas of focus that we were asked to address. Given the overarching nature of these topics, we felt it would be helpful as we move forward to provide a set of general recommendations to ONC.

2.3.1 Explicitly Address Barriers to Interoperability

Although not specifically requested in the TF charge, it was the opinion of the TF that the USCDI process should address as many current barriers to interoperability as possible. Some of these barriers include:

- Little value from data classes proposed for interoperability for some stakeholders
- The cost of IT to enable interoperability

- Little value from structured data for some stakeholders
- Failure to enhance sharing of unstructured data
- Failure to link interoperability to a compelling business case for each stakeholder

2.3.2 Highlight the Interdependencies between TEFCA and USCDI

The TF identified four area of interdependency between the TEFCA and USCDI. They are as follows:

- The USCDI process should promote data classes that enable the TEFCA to function. Examples include a data class of items to enable data matching/unique patient identifier and a data class of patient authorizations for permitted uses.
- Shared use cases should be developed for the 6 permitted uses.
- The RCE should promote the voice of the individual and provide that voice to USCDI deliberations.
- The RCE data monitoring capabilities should be leveraged to measure the adoption of USCDI data classes. This is of particular importance and value for measuring Stage 6, Widespread Adoption.

2.3.3 Ensure that the Voice of the Patient is Represented and Heard

Unlike other stakeholders who have national associations to represent their interests, there is no existing body that serves as the voice of the patient. The current regulatory and practice shift towards person centered care, makes it more important than ever that patients are represented in interoperability. In the absence of another group with the explicit responsibility to provide this representation, the TF recommends that ONC designates the RCE as the patient representative with appropriate safeguards to ensure that this obligation is met.

2.3.4 Endorse Two Criteria for Data Class Prioritization and Advancement

The TF recommends two criteria to evaluate data classes for prioritization and advancement - Value and Technical Requirements. The aggregate net value of a proposed data class to all stakeholders should be balanced against implementation costs and other non-technical cost. Something may be highly valuable, easy to transmit, but really painful for providers. For example, a structured documentation form that providers have to fill out for every patient for everything desired in the USCDI. The overall net value determines the data class priority. Advancement is determined by how well the data class meets the technical requirements for interoperability (definitions, standards, testing, etc.).

2.3.5 Establish a Biography for Each USCDI Data Item

The TF recommends storing each data item in the USCDI with the characteristics of that data item relevant to each proposed stage. The purpose of this biography is to assist in the re-use of data items in new data classes, provide context for how the item was developed and to determine how to replace it. (See Appendix A for an example.)

2.3.6 Support the Process of Data Item Harmonization as a condition for Data Class Advancement

2.4 Issues Raised but not Addressed

2.4.1 Data Class Issues

The Task Force identified but did not make specific recommendations for the following issues:

1. Identify and develop high priority data classes to support TEFCA: unique patient identifier data class and authorization for permitted use data class
2. Review currently data classes in the Draft USCDI against the criteria proposed in the TF recommendations
3. Propose tightly specified use cases to guide data class development and testing
4. Develop a process for creating and rapidly progressing data classes in response to a public emergency
5. Develop a process for removing data classes

2.4.2 Governance Structure for USCDI

The TF recommends that ONC acts as the steward for the USCDI to ensure data classes continue to move through the USCDI process. ONC should facilitate work groups when appropriate and help identify and educate stakeholders on how to effectively engage with the USCDI. The TF recommends that ONC works closely with the RCE to measure data classes potential net value, technical readiness and adoption level.

2.4.3 Harmonize USCDI efforts with the cadence of likely participant efforts

Identified examples include:

- If NQF has interest in a quality measure that from inception to mandate takes 3 years, and in that effort e-measures and corresponding data needs are identified, those identified should enter the USCDI process at that time and not at the end of the process. In this way e-measures will be more achievable and less burdensome.
- CMS Data Element Library

Appendix B: Data Item Biography

Stage 1
Start time in Stage 1

Name of the data class

Priority (emergent, urgent, high, medium, low)

Proposed data items

Applicable standards if known

Name/contact information of Proposer

Value statement of the proposer

Proposed use case

Data derived from all related submissions:

Name/contact information of all interested stakeholders

List of proposed data items for this data class

Applicable standards

Value statements of interested stakeholders

Use cases of interested stakeholders

Additional data derived from analysis of submissions

Other data classes that cite a proposed data item

Stage 2
Start time in Stage 2

Members of the Data Class Work Group

Definition of each item in the proposed data class

Specification of each item element

Selection of applicable standards

Identification of gaps in applicable standards

Strategy to eliminate gap|(s)

Required use in regulation or quality measurement

Substitution of like or similar data items

Harmonization with use in other data classes

Definition of content for unstructured payload

Summary of changes made to data class

Net value estimate of each data item by stakeholders

Use cases advanced for testing in Stage 3

Stage 3
Start time in Stage 3

Trial of data class in limited production setting

Site 1 use case

Site 1 duration of testing

Modifications proposed on the basis of Site 1 testing

Site 2 use case

Site 2 duration of testing

Modifications proposed on the basis of Site 2 testing

Site 3 use case

Site 3 duration of testing

Modifications proposed on the basis of Site 3 testing

Modified list of data items to be retested

Retest sites

Retest use cases

Modifications proposed on the basis of retesting

Modified list of data items to be retested

Net value estimate of each data element by stakeholders

Stage 4

Start time in Stage 4

Trials of data class in commercial production

Modifications to data class based on testing

Revised, re-specified data class

Retesting of revisions

Sites and duration of retesting

Net value estimate of each data element by stakeholders (avg score H/M/L)

Stage 5

Start time in Stage 5

Adoption curve at 6 mo

Adoption curve at 12 mo

Adoption curve at 24 mo

Revision required due to lack of progress

Start time in Stage 6
Adoption rate trended annually

Appendix C: Acronyms

C-CDA: Consolidated Clinical Document Architecture
CQMs: Clinical Quality Measures
DCWG: Data Class Work Group
EMS: Emergency Medical Services
HITAC: Health Information Technology Advisory Committee
LTPAC: Long-term Post-acute Care
ONC: Office of the National Coordinator for Health Information Technology
RCE: Recognized Coordinating Entity
SDOH: Social Determinants of Health
SDOs: Standard Development Organizations
TEFCA: Trusted Exchange Framework for Common Agreement
TF: (USCDI) Task Force

USCDI: United States Core Data for Interoperability