Subcommittee: HIE Operations, Compliance, and Efficiency

Chair: Ms. Gayle Hurt

Date: April 18, 2024

Status: Final

District of Columbia Health Information Exchange Policy Board

Recommendation on Transition of Care Data Element Definitions

I. SUMMARY

The recommendation on the *Transition of Care Data Elements* proposes a phased approach for CRISP DC to design, implement and evaluate the content and display of Transition of Care (TOC) Data Elements. This recommendation is intended to build on the initial phases of this work to examine TOC content and interoperability standard alignment. Feedback and guidance from the Operations, Compliance, and Efficiency (OCE) Subcommittee's TOC Technical Expert Panel (TEP) convenings informed recommended amendments to DC HIE data element definitions and their alignment with the updated United States Core Data for Interoperability (USCDI) Version 4 standards.

II. PROBLEM STATEMENT

In order to understand which data element definitions deemed most relevant to exchange via HIE to facilitate a timely transition of care may now align with the updated USCDI Version 4 data standards, the OCE reconvened this TEP. The TEP considered definition modifications to augment its initial discussions, align with updated USCDI Version 4 data standards, and work towards improved data quality, especially during care transitions.

III. SUBCOMMITTEE GOAL AND ACTIVITY

This activity is aligned with Goal #1 under the OCE subcommittee's workplan – *Develop data and documentation benchmarks for accuracy, timeliness, and completeness to improve patient outcomes.*

IV. DISCUSSION

Since its inception by the HIE Policy Board's OCE subcommittee and its Transitions of Care Technical Expert Panel (TEP) have made strides in the modification and amendment of eleven (11) critical data elements that are used to inform discharge planning and care coordination. These efforts include the TEP's advisory role in the Transition of Care

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Contract to Reduce Hospital Readmission and the OCE subcommittee's July 2020 recommendation on transitions of care data elements.

On December 2023, the Office of the National Coordinator for Health Information Technology (ONC) released Version 4 of its USCDI standards. This is a significant update of health data interoperability standards in the United States and is aimed at enhancing the access, exchange, and use of electronic health information. This expansion reflects priorities including improving industry-wide implementation impact, clarifying definitions, uses, and standards of data elements, and enhancing person-centered care.

Upon the recent publication of USCDI Version 4, the OCE subcommittee responded by reconvening the TEP in January 2024 with updated membership including representatives from *both inpatient and outpatient care settings*. This TEP was tasked with: 1) conducting a crosswalk of 2020 TEP's defined elements with the new USCDI version 4 data elements; and 2) recommending whether to update previous data element definitions with USCDI version 4 and whether additional information should be displayed with the data elements for needed context.

This TEP met three times between January and March 2024, to conduct these tasks and develop their recommendations to the OCE and the full HIE Policy Board. These discussions assisted in determining next steps to improve standardization, timeliness, and completeness of information exchanged during transitions of care.

V.   RECOMMENDATION(S) FOR BOARD ACTION:

The DC HIE Policy Board endorses the recommendations from the OCE subcommittee and the Transitions of Care Technical Expert Panel on the Transition of Care Data Elements by either retaining current definitions or aligning with USCDI Version 4 definitions noted in the chart below (with additional context on data element discussions in the Appendix). Furthermore, the Board advises that DHCF make this recommendation document available to the public on its website within a 72-hour timeframe from the day of this, April 18, 2024, HIE Policy Board meeting.

Table 1 below captures the key recommendations and rationales for each data element as per the TEP guidance, focusing on the importance of alignment with USCDI definitions, the inclusion of specific measurements and information for comprehensive care, and the exploration of new elements to support patient-centric approaches. For each data element there are four options that TEP considered: 1) align data element definition with USCDI Version 4; 2) modify the current definition without full USCDI Version 4 alignment; 3) retain the current definition; or 4) explore potential definition details.

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Table 1: Transitions of Care Data Elements – TEP Recommendations and Rationale for Alignment

Data Element	Recommendation	Rationale
Medication Allergies	Align definition with USCDI	To distinguish between allergies, side effects, and understand risks with substances.
Vital Signs	Align definition with USCDI	Include augmentation of raw measurement values to provide direct actionability for healthcare providers. Additional elements like oxygen concentration and BMI percentile for specific ages are crucial for accurate monitoring and growth tracking, especially in infants and children.
Discharge Medications	Modify the current definition	Include more detailed information on units of measure and medication instructions, ensuring comprehensive information is available for continuity of care.
Immunizations	Retain the current definition	Continue the focus incorporating immunization registry connections to align exchange of this information with the broader registry exchange and definitions.
Discharge Diagnosis	Retain the current definition	Provides appropriate context with granular detail. ICD-10 is primarily used by providers, avoiding confusion with LOINC and SNOMED CT codes. TEP also recommended leveraging ICD-10 diagnoses codes with additional emphasis on inclusion of Z codes.
Reason for Visit	Retain current definition	USCDI definition focuses on encounter disposition
Lab Results	Align definition with USCDI	Prioritize inclusion of tests, values/results, specimen type, result status, unit of measure, reference range, interpretation, and condition acceptability for comprehensive assessment.
Procedure and Consult Notes	Retain the current definitions	Important for ensuring all relevant notes are listed and accessible within clinical notes. There may be an opportunity to improve distinctions between note types and their display in the HIE.

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Data Element	Recommendation	Rationale
Point of Contact	Explore potential definition details	Consideration of which care team members and settings should be included for comprehensive care coordination.
Plan of Care	Explore potential definition details	Additional exploration on how to better capture and display treatment plans, reasons for referral, and treatment changes in clinical and progress notes as an industry standard is needed.
New Element Proposed: Treatment Intervention Preference	Explore potential definition details	Supports patient-centric care by considering the capacity to include preferences for care and treatment. Understanding of current data capture is necessary to inform a future recommendation

The HIE Policy Board further recommends that the OCE Subcommittee continue convenings of its TOC TEP to discuss further steps on how these definitions should be displayed in the Designated DC HIE interface at the point of care.

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Committee Members: Ms. Gayle Hurt, Dr. Sonya Burroughs, Dr. Jessica Herstek, Ms. Stephanie Brown, Mr. Ronald Emeni, Ms. Donna Ramos-Johnson, Mr. Jim Costello, Mx. Deniz Soyer, Mr. Nikhil Varma, Mr. Robert Kaplan, Mr. Nathaniel Curry

TEP Members: Dr. Yavar Moghimi, Dr. Manisha Singal, Dr. Marc Rabner, Ms. Stephanie Ayala, Mr. Behyar Ghahramani, Mr. Jerome Schorr, Dr. Rahul Bhat, Dr. Jessica Herstek, Ms. Jamie Hughes

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Appendix

Created by HIE Policy Board Operations, Compliance, and Efficiency (OCE) Subcommittee, the Technical Expert Panel (TEP) for Transitions of Care (ToC) convened between January and March 2024 in response to the Office of the National Coordinator for Health Information Technology (ONC) December 2023 release of Version 4 of its USCDI standards

This TEP was tasked with: 1) conducting a crosswalk of 2020 TEP's defined elements with the new USCDI version 4 data elements; and 2) recommending whether to update previous data element definitions with USCDI version 4 and whether additional information should be displayed with the data elements for needed context.

This TEP met three times between January and March 2024, to conduct these tasks and develop their recommendations to the OCE and the full HIE Policy Board. These discussions assisted in determining next steps to improve standardization, timeliness, and completeness of information exchanged during transitions of care.

Below is a summary of these discussions and suggestions regarding each of the eleven (11) data elements. For each data element, the original 2020 TEP definition, new USCDI Version 4 definition, discussion, and 2024 TEP recommendation is provided.

1. **Medication Allergies**

   Original 2020 TEP Definition:
   Allergies includes adverse reaction to substances including medications previously experienced by the patient and reported to CRISP as any one of the following fields:
   - Allergic Drug Reaction
   - Antibiotic Allergy
   - Allergy Intolerance

   USCDI Version 4 Definition:
   - Substance (Medication) – Pharmacologic agent believed to cause a harmful or undesired physiologic response following exposure. Represented in RxNorm
   - Substance (Drug Class) – Pharmacologic category for an agent believed to cause a harmful or undesired physiologic response following exposure. Represented in SNOMED CT
   - Substance (Non-Medication) – Non-pharmacologic agent believed to cause a harmful or undesired physiologic response following exposure. Examples include latex, peanuts, etc. Represented in SNOMED CT
   - Reaction – Harmful or undesired physiologic response following exposure to a pharmacologic agent or class of agents. Represented in SNOMED CT

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TEP Discussion:
The importance of including this information will be helpful in distinguishing between allergies, side effects and understanding risks associated with a given substance for the individual. The addition of substance drug class and updating substance (medication, non-medication) will be needed to transition to the USCDI definition.

2024 TEP Recommendation:
The TEP recommends alignment of definition with USCDI Version 4.

2. **Vital Signs**

Original 2020 TEP Definition:
The most recent measurements of basic body functions that can include:
- Weight
- Height
- Heart rate
- Heart rhythm
- Respiratory rate and respiratory effort
- Blood pressure
- Temperature
- Oxygen saturation

USCDI Version 4 Definition:
- Body Height
- Body Weight
- Heart Rate
- Respiratory Rate
- Systolic Blood Pressure
- Diastolic Blood Pressure
- Average Blood Pressure
- Body Temperature
- Pulse Oximetry
- Inhaled Oxygen Concentration
- BMI Percentile (2 - 20 years)
- Weight-for-length Percentile (Birth – 36 Months)
- Head Occipital-frontal Circumference Percentile (Birth – 36 Months)

TEP Discussion:
The TEP agreed on the utility of inclusion of additional elements for vital signs, such as inhaled oxygen concentration and BMI percentile for specific age groups. The focus was

on capturing the most recent measurements and emphasizing the relevance of these measurements at the time of discharge. It's recognized that infants and children who cannot yet stand are measured for "length" rather than height. This distinction is crucial for accurate growth tracking in this population. As such, it is recommended that "length" be captured as a separate field to ensure precise measurement data is available for these patients.

While percentiles for various measurements can provide useful context, the raw value of head circumference in centimeters is identified as particularly vital for monitoring infant and child health and development. Therefore, capturing the actual head circumference measurement is recommended alongside percentile data, where applicable, to allow for a more comprehensive assessment of growth patterns. The panel emphasized that, in general, raw values for vital signs are more critical for clinical assessment than percentiles, with the notable exceptions being weight-for-length and Body Mass Index (BMI) percentiles in pediatric patients. These exceptions are acknowledged due to their utility in assessing appropriate growth and nutritional status relative to a child's age and sex.

2024 TEP Recommendation:
The TEP recommends alignment with the USDCI Version 4 definition prioritizing the inclusion of raw measurement values for vital signs to provide healthcare providers with the most direct and action.

3. **Discharge Medications**

Original 2020 TEP Definition:
Routinely scheduled and PRN (new and continued) medications that include the:
- Name
- Dosage
- Indication
- Length of the therapy
- Quantity prescribed for use or that no medications were ordered at discharge

USCDI Version 4 Definition:
- Medications – Pharmacologic agent used in the diagnosis, cure, mitigation, treatment, or prevention of disease
- Dose – Amount of medication for each administration
- Dose Units of Measure – Units of measure of a medication (mg, ml)
- Indication – Sign, symptom, or medical condition that leads to the recommendation of a treatment, test, or procedure

- Fill Status – State of a medication with regards to dispensing or other activity. (e.g., dispensed, partially dispensed, not dispensed)
- Medication Instructions – Directions for administering or taking a medication. Examples include prescription directions for taking a medication. Usage notes may include route, quantity, timing/frequency, and special instructions (PRN, sliding scale, taper).
- Medication Adherence – Statement of whether a medication has been consumed according to instructions. Examples include taking as directed, taking less than directed, and not taking.

TEP Discussion:
The goal is to ensure that this data element provides comprehensive information to support continuity of care.

2024 TEP Recommendation:
The TEP recommended modifying its definition of the discharge medications data element to include more detailed information on units of measure and medication instructions.

4. **Immunizations**

   Original 2020 TEP Definition:
   Describes the event of a patient being administered a vaccine or a record of an immunization including the source.

   USCDI Version 4 Definition:
   Immunizations: Vaccine product administered, planned, or reported. Represented in HL7 Standard Code Set and/or Vaccine National Drug Code (NDC) Directory

   TEP Discussion:
   Continue the focus incorporating immunization registry connections to align exchange of this information with the broader registry exchange and definitions.

   2024 TEP Recommendation:
   The TEP recommended incorporating immunization registry connections to align exchange of this information with the broader registry exchange and definitions.

5. **Discharge Diagnosis**

   Original 2020 TEP Definition:
   Describes the event of a patient being administered a vaccine or a record of an immunization including the source.

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USCDI Version 4 Definition:
Immunizations – Vaccine product administered, planned, or reported. Represented in HL7 Standard Code Set and/or Vaccine National Drug Code (NDC) Directory .

TEP Discussion:
The TEP emphasized that the use of LOINC and SNOMED CT codes could lead to confusion as ICD-10 is the code set providers primarily use for this intended purpose. They recommended that Z-codes indicative of Health Related Social Needs (HRSN) should not be excluded.

2024 TEP Recommendation:
The TEP recommended retaining the current definition leveraging ICD-10 diagnoses as more granular detail is needed to provide appropriate context for the encounter diagnosis element of the USCDI data set.

6. **Reason for Visit**

   Original 2020 TEP Definition:
   The reason for visit is the initial presentation on hospital admission and reported to CRISP as any one of the following fields:

   - Encounter reason
   - Encounter diagnosis (also refers to admitting diagnosis)
   - Encounter condition
   - Chief complaint

   USCDI Version 4 Definition:

   - Encounter Diagnosis – Coded diagnoses associated with an episode of care. Represented by LOINC and SNOMED CT

   Related Elements for Context:

   - Encounter Type – Category of health care service. Examples include but are not limited to office visit, telephone assessment, and home visit.
   - Encounter Identifier – Sequence of characters by which an encounter is known.
   - Encounter Time – Date/times related to an encounter. Examples include but are not limited to scheduled appointment time, check in time, start and stop times.
   - Encounter Location – Place where a patient's care is delivered.
   - Encounter Disposition – Place or setting to which the patient left a hospital or encounter.

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TEP Discussion:
The USCDI definition focuses on encounter disposition rather than the initial reason for the visit. Additional information regarding diagnosis or chief complaint at admission will be needed in the USCDI standards in order to make the transition to USCDI.

2024 TEP Recommendation:
The TEP recommended retaining its current definition.

7. **Lab Results**

   Original 2020 TEP Definition:
   The most recent lab results that were completed on the patient during visit reported to CRISP as the following field:
   - Lab Values and Results

   USCDI Version 4 Definition:
   - Tests – Analysis of specimens derived from humans which provide information for the diagnosis, prevention, treatment of disease, or assessment of health
   - Values/Results – Documented findings of a tested specimen, structured and unstructured components
   - Specimen Type – Substance being sampled or tested. Examples include blood, serum, urine, etc.
   - Result Status – State or condition of a laboratory test
   - Result Unit of Measure – Unit of measurement to report quantitative laboratory results
   - Result Reference Range – Upper and lower limit of quantitative test values
   - Result Interpretation – Categorical assessment of a laboratory value, often in relation to a test's reference range. Examples include high, low, critical high, and normal.
   - Specimen Source Site – Body location from where a specimen was obtained.
   - Specimen Identifier – Sequence of characters assigned by a laboratory for an individual specimen. (Ex. accession number)
   - Specimen Condition Acceptability – Information regarding a specimen, including the container, that does not meet a laboratory's criteria for acceptability. Examples include hemolyzed, clotted, and missing patient name.

   TEP Discussion:
   The TEP emphasized that prioritizing inclusion of tests, values/results, specimen type, result status, unit of measure, reference range, interpretation and condition acceptability

   2024 TEP Recommendation:

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The TEP recommends aligning the definitions for lab results with the USCDI Version 4 definition.

8. **Procedure and Consult Notes**

   Original 2020 TEP Definition:
   - Procedure notes are those documented procedures that occurred during the hospitalization and are reported to CRISP as any one of the following fields:
   - Procedure
   - Summary of major procedures
   - Tests performed during visit
   - Procedure notes including major surgical procedures and secondary procedures
   - Consult notes include evaluation and management information during the hospitalization that are reported to CRISP as any one of the following fields: Consultation Note

   USCDI Version 4 Definition:
   Undefined

   TEP Discussion:
   The TEP noted that there is an opportunity to improve distinctions between note types and display of notes in the HIE in the future.

   2024 TEP Recommendation:
   The TEP recommended retaining procedure and consult notes definitions for exchange ensuring that all relevant notes are clearly listed and accessible within the clinical notes section.

9. **Point of Contact**

   Original 2020 TEP Definition:
   Undefined

   USCDI Version 4 Definition:
   - Care Team Member Name
   - Care Team Member Identifier – Sequence of characters used to uniquely refer to a member of the care team. Examples include NPI, NCSBN ID.
   - Care Team Member Role – Responsibility of an individual within the care team. Examples include PCP and caregiver.

- Care Team Member Location – Place where care is delivered by a care team member. Examples include clinic address and location description.
- Care Team Member Telecom – Phone or email contact information for a care team member.
- Related Person's Name – Name of a person with a legal or familial relationship to a patient.

TEP Discussion:
The TEP determined that there needs to be consideration of which care team members and settings should be included for comprehensive care coordination.

2024 TEP Recommendation:
The TEP recommended further exploration of which care team members and settings should be included in a future phase.

10. **Plan of Care**

Original 2020 TEP Definition:
Undefined

USCDI Version 4 Definition:
- Assessment and Plan of Treatment – Health professional's conclusions and working assumptions that will guide treatment of the patient.
- Reason for Referral – Explanation or justification for a referral or consultation. Represented in SNOMED CT or ICD-10 CM
- Treatment Changes – The reason for changes to the plan of treatment plan. Examples include no change (continue treatment), planned change, no response to treatment, adverse reaction, patient request for alternative treatment.
- Clinical Decision Support Data – Data and reporting used for risk stratification, optimization of patient outcomes, clinical and patient education.

TEP Discussion:
Additional exploration on how to better capture and display treatment plans, reasons for referral, and treatment changes in clinical and progress notes as an industry standard is needed.

2024 TEP Recommendation:
The TEP recommended the exploration of how plan of treatment, reason for referral and treatment changes are recorded in clinical notes and progress notes for capture and display in the HIE in a future phase.

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11. New Element Proposed: Treatment Intervention Preference:

Original 2020 TEP Definition:
Undefined

USCDI Version 4 Definition:
Undefined

2024 TEP Recommendation:
The TEP recommended exploration of the capacity to include preferences for care and treatment, supporting patient-centric care in a future phase. Overlap of this information with existing clinician notes may cause confusion and capacity to exchange may not yet be viable.

These recommendations by the TEP aim to enhance the completeness, timeliness, and interoperability of information exchanged during transitions of care, thereby supporting better patient outcomes and continuity of care.