

Data Class Structure in MMGs

CSTE DSWG Data Element Specific Team
03/15/2024



Council of State and Territorial Epidemiologists

Please mute phone/ headset/ computer audio!

Agenda

- Welcome & Announcements
- Review of 8 March call
- Structure Discussion
- Polling
- Next Steps
- Wrap-Up & Adjourn

DSWG Reminders



- Immunizations and Death drafts out to wider DSWG for comment now!
 - Link in chat (input due by 4/1)
- The Data-element Specific Team (DEST) Interest Sign-Up sheet has been updated to include known future data classes:
 - Identifiers (Case/Event Related/Laboratory)
 - Reporting Source
 - Laboratory
 - Race/Ethnicity/Tribal Affiliation
 - Medication/Treatment
 - Disability
 - Social Determinants of Health

Link to Sign-Up sheet:

<https://app.smartsheet.com/b/form/3da89d48bda94fc7a33c4a8a505fe54a>

If you have signed up previously but feel you are not getting the emails/meeting invites that you expected to get, please reach out directly to LLane@jmmichael-consulting.com.

Meeting ground rules



- Discussion Guidelines
 - "Raise" your hand
 - Use the chat to provide feedback and ask questions
 - When called, state your name and affiliation
 - Stay on point, be brief, and within the context of the discussion in progress
 - 80/20 consensus
 - Co-Chairs/moderators' prerogative to move the discussion forward as needed
 - Post-meeting survey provided for additional input
 - Be courteous and be open to new ideas

Active participation encouraged for all!

- Chats, voting, comments, etc.
- Includes STLT jurisdictions + CDC Programs + CSTE, etc.

In-scope vs Out-of-scope



What this is:

- Collaborative consensus building about the best ways to approach the transmission of public health data in a standardized way
- Today's discussion focuses on the best way to send groups of similar data elements in an HL7 v2 notification message to CDC

What this is not:

- Discussion of individual data elements or classes as "core" (this is being done in separate meetings)
- Discussion of data elements for research studies
- Recommendations for public facing surveys
- Limitations on what can be collected for a data element within a jurisdiction
- Recommendations for how to ask about data elements in a case interview

MMG Structure for ERU and SSCM: March 8 call recap



ERU and SSCM Data Classes



- Each potential **data class** → Many **data elements**
 - **Exposures:**
 - Within an exposure period, did the person get a tattoo?
 - Within an exposure period, did the person consume eggs?
 - **Risk Factors:**
 - Is the person a healthcare worker?
 - Has the person ever used tobacco?
 - **Underlying Conditions:**
 - Does the person have a diagnosis of diabetes?
 - Is the person positive for HIV?
 - **Signs and Symptoms:**
 - Did the case have a fever?
 - Did the case have jaundice?

- Message mapping guides include these **data classes** using three different formats:
 - Individual questions, each representing one **data element**
 - Repeating elements allowing for the selection of multiple **data elements** within one question (one OBX segment)
 - Repeating groups allowing for many **data elements** in the same data class, transmitted as paired "question" and "answer" OBX segments for each data element

8 March Discussion

Takeaway Points – CDC



- Individual Questions
 - Require a full OMB review to clear each new question
 - Very time and resource intensive
- Repeating Element
 - Acknowledge the lack of no/unknown can be less than ideal
 - Allows updating of value sets without OMB clearance process
- Repeating Group
 - Captures Yes, No, and unknown without issue.
 - Allows updating of value sets without OMB clearance process
 - Would allow for potential additional data points, for example a date to pair with each exposure or symptom

8 March Discussion

Takeaway Points - STLTs



- Individual Questions
 - Often the most straightforward to map and easiest to work into the system front-end to back
- Repeating Element
 - Seemed to be preferred by informaticists over repeating blocks.
 - Can be easily set up in surveillance systems and mapped to an HL7 message
- Repeating Group
 - Can be quite an effort to map successfully
 - For some systems, subsequent mappings are easier once the process is figured out.
 - For some system, each mapping is resource intensive even when the initial process is understood.

8 March Poll: Preferred Structure Poll



Preferred Structure	STLT	CDC	Unknown	Total
Individual Questions	5	1	0	6
Repeating Element	4	3	1	8
Repeating Block	9	15	2	26
Total	18	19	3	40

- More variation among STLT votes likely reflects differences in surveillance systems used across the US
- STLT informaticians seemed split among the three structures

Structure Discussion



Data Class Indicator



Data Class Indicator:

Data Element (DE) Name	Data Element Description	Max Repetitions	Value Set Name (VADS Hyperlink)	HL7 Cardinality	HL7 Implementation Note	Repeating Group Element
Did Underlying Condition(s) Exist	Did the subject have any underlying causes or prior illnesses?	N	Yes No Unknown (YNU)	[0..1]		NO
START: Underlying Conditions Repeating Group (Used for ABCs cases and National Surveillance Cases)						
Underlying Condition(s)	Listing of underlying causes or prior illnesses	N	Underlying Condition (RIBD)	[0..1]	OBX-5.9 MAY contain "Other, please specify" text response.	PRIMARY/PARENT
Underlying Conditions Indicator	Underlying Conditions Indicator	N	Yes No Unknown (YNU)	[0..1]		CHILD
END: Underlying Conditions Repeating Group (Used for ABCs cases and National Surveillance Cases)						

- "Symptoms Present" indicator is part of the Minimum Dataset for Case Notification during an Emergency
- Answering "No" may remove the need to send the repeating group or explain why a repeating element is absent.

Data Class Indicator



Would a separate data class indicator make transmission easier or more difficult, or have no effect?

Data Class Indicator:

Data Element (DE) Name	Data Element Description	May Repeat	Value Set Name (VADS Hyperlink)	HL7 Cardinality	HL7 Implementation Note	Repeating Group Element
Did Underlying Condition(s) Exist	Did the subject have any underlying causes or prior illnesses?	N	Yes No Unknown (YNU)	[0..1]		NO
START: Underlying Conditions Repeating Group (Used for ABCs cases and National Surveillance Cases)						
Underlying Condition(s)	Listing of underlying causes or prior illnesses	N	Underlying Condition (RIBD)	[0..1]	OBX-5.9 MAY contain "Other, please specify" text response.	PRIMARY/PARENT
Underlying Conditions Indicator	Underlying Conditions Indicator	N	Yes No Unknown (YNU)	[0..1]		CHILD
END: Underlying Conditions Repeating Group (Used for ABCs cases and National Surveillance Cases)						

Poll 1 – Data Class Indicator

Would presence of a data class indicator have any effect on the ease or complexity of mapping data classes into case notification messages?

- Yes, it would make transmission of these data classes easier.
- No, it would make transmission of these data classes more complicated.
- It doesn't have much effect on data transmission.
- I need to think about it more.

Structure Concerns



If ERU/SSCM data classes are core to send for all conditions (when applicable to the condition) **and** the individual data elements within each class are condition specific.

Would one structure over another assist/speed up:

- Development of MMGs for new/emerging conditions
- Onboarding existing MMGs for conditions within a jurisdiction
 - E.g., Does onboarding an MMG for one condition make it easier to onboard others if these data classes are all structured in a particular way, even if they have different value sets?

Structure Concerns



If ERU/SSCM data classes are core to send for all conditions (when applicable to the condition) **and** the individual data elements within each class are condition specific.

What else should be highlighted in the data class structure recommendations?

- What are the considerations for adding another element in a repeating group?
- Are there concerns about knowing the number of values within potential value sets?
- Does the number of questions in a class change what structure seems more appropriate?
- Anything else?

Poll 2 – Repeating Element Limit



START: Clinical Manifestations Repeating Group							
Clinical Manifestation	INV929	PHINQUESTION	Clinical manifestation of Lyme disease	Coded	1	N	Clinical Manifestations (Lyme)
Clinical Manifestation Indicator	INV930	PHINQUESTION	For each clinical manifestation reported, indicate whether the subject developed the specified manifestation as a result of the illness.	Coded	1	N	Yes No Unknown (YNU)
Clinical Manifestation Start Date			For each clinical manifestation reported, indicate date that it started.	DATE	1	N	N/A
END: Clinical Manifestations Repeating Group							

Does the number of elements/question within a repeating block have any effect on the ease or complexity of mapping data classes into case notification messages?

- Yes, more elements/questions makes things more complicated.
- It doesn't have much effect on data transmission.
- I'm not sure.

Poll 3 – Repeating Value Set Limit



Is there an inflection point in the number of repeated elements/questions that makes a difference in which structure is preferred?

e.g. If there are only 3 exposures of interest, are individual data elements easier as a whole? And if there are more than 3, it is easiest to make it a repeating block/element?

- Yes, there is an inflection point in the number of exposures/symptoms/risk factors/underlying conditions, after which it is always easier to have a repeating element/block.
- No, individual data elements are always less complex.
- No, repeating blocks/elements are always less complex.
- Consistency is key – keep one structure for a data class.
- I'm unsure.

Next Steps



- Upcoming DEST team meetings:
 - 4/12 1-2 pm ET – Exposures, Risks, Underlying Conditions
 - 4/19 1-2 pm ET – Signs, Symptoms, Clinical Manifestations
 - [Link to Sign Up](#)
- The next large DSWG call will be on 26 April 2024.