RCKMS Content Development:
The Life of a Reporting Specification

March 30, 2022

CSTE

Council of State and Territorial Epidemiologists

Introductions

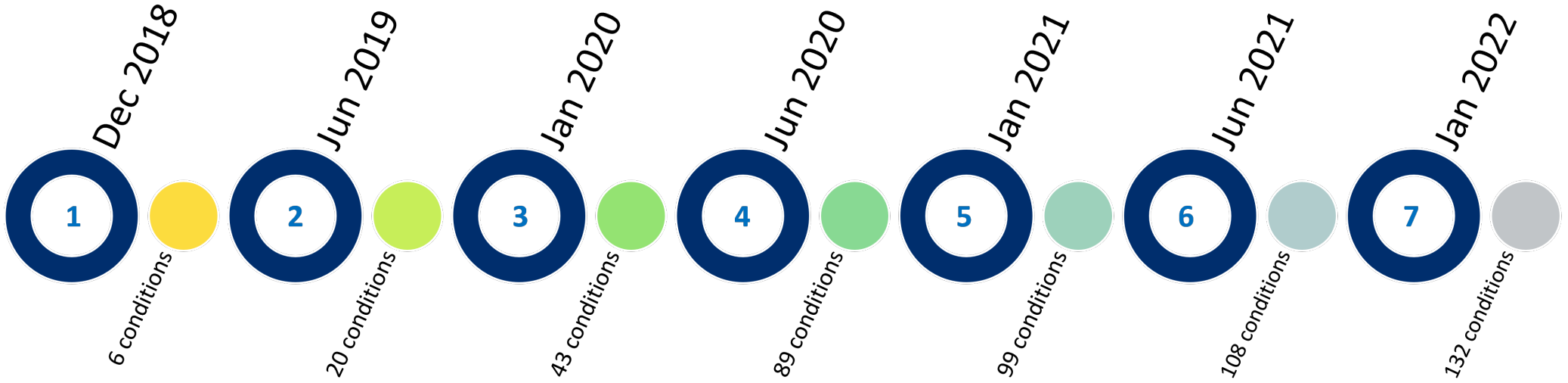
- RCKMS Content Team Lead: Shaily Krishan (CSTE)
- RCKMS Content Team Contractors (J Michael Consulting)
  - Surveillance Epidemiology SMEs
    - Grace Oguntebi
    - Amanda Payne
    - Natalie Raketich

Agenda

- Conditions in RCKMS – Grace Oguntebi
- Creating Content for RCKMS Conditions – Natalie Raketich
- Reporting Specification Documents – Amanda Payne
- Additional Resources

Conditions in RCKMS – Grace Oguntebi

RCKMS Content Release Timeline



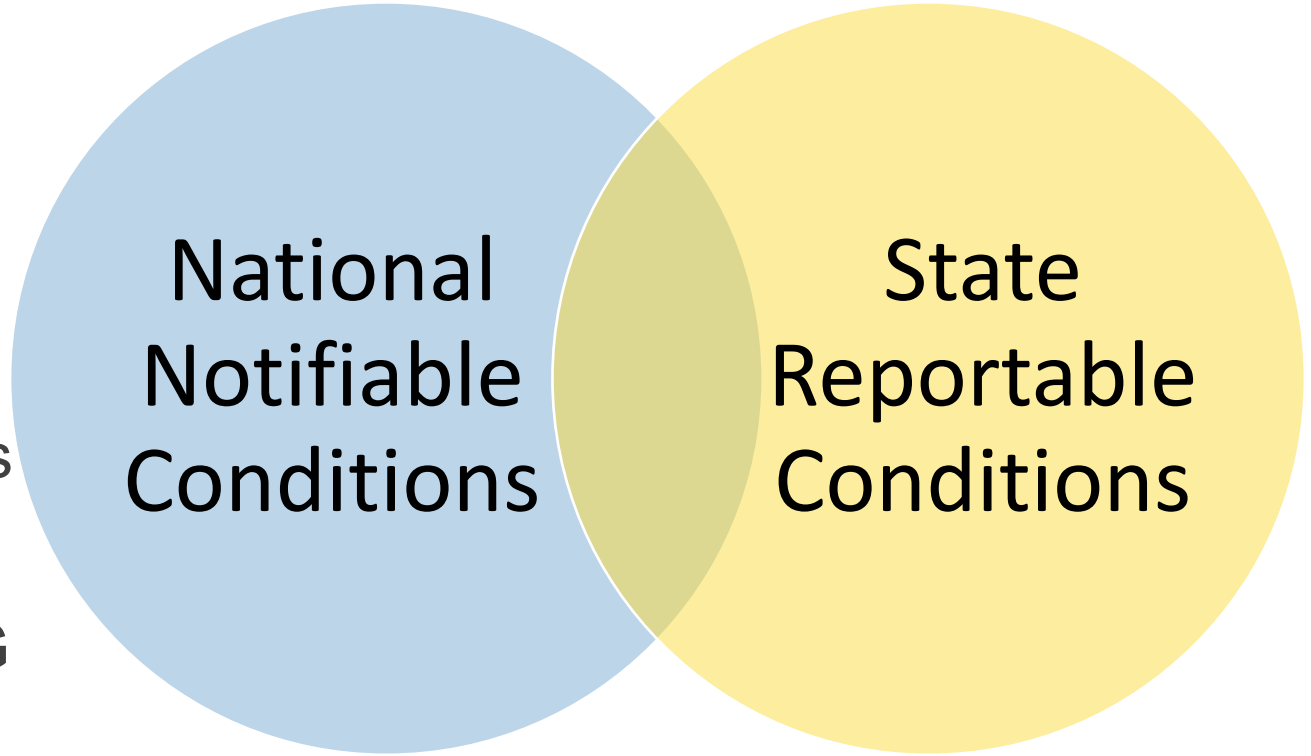
- 7 Scheduled RCKMS Content Releases as of January 2022, usually 6 months apart
  - Off-schedule releases as needed for emergent conditions (COVID-19)

Reportable & Notifiable Conditions

Initial focus for RCKMS content

Utilized CSTE Position Statements

Content Vetting WG for SME input



Current focus for RCKMS content

Utilize CSTE Position Statements when available

User Assessment & SRCA for input

Reportable Conditions

- Condition selection process
  - Reportable conditions with CSTE Position Statements
  - 2018 CSTE State Reportable Condition Assessment (SRCA)
  - 2021 RCKMS User Assessment
  - REDCap ticket requests

- Exclusion criteria have included
  - Conditions without implementable reporting criteria
  - Birth defects and congenital anomalies
  - Reportable in only 1 jurisdiction

Requesting New Conditions

To ensure your jurisdiction's reportable conditions are included in future RCKMS releases:

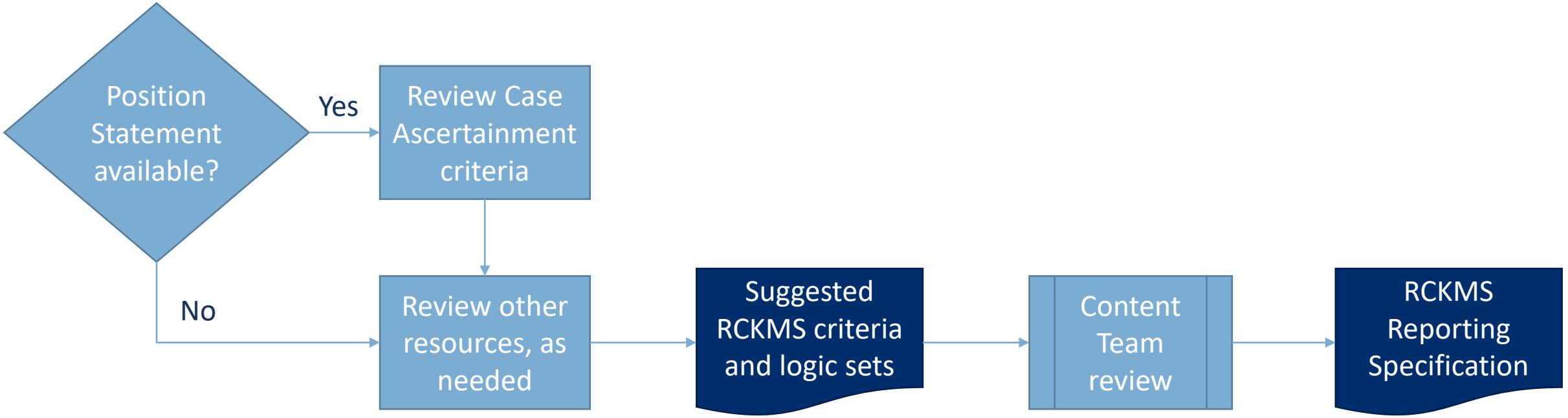
- Accurately complete the State Reportable Condition Assessment (SRCA)
- Submit a REDCap ticket with conditions of interest (should be reportable in your jurisdiction): **RCKMS Ticket**
- Participate in RCKMS Community of Practice and associated Basecamp topics

Creating Content for RCKMS Conditions – Natalie Raketich

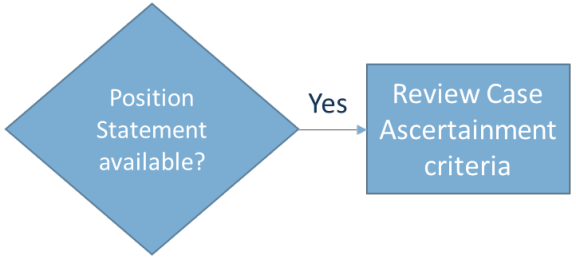
Creating content for each condition

- **Goal**: to define case ascertainment criteria for each condition that can be authored by jurisdictions within RCKMS
  - Case ascertainment describes what should be reported to public health agencies
  - These criteria would trigger the report of a *potential* case
- Case ascertainment differs from case classification
  - There may be overlap between the sections in the CSTE Position Statement, but they serve different purposes
  - Case Definition/Case Classification describes criteria needed to classify a potential case (i.e., confirmed, probable, or suspect) following the initial report

Creating content for each condition



CSTE Position Statement



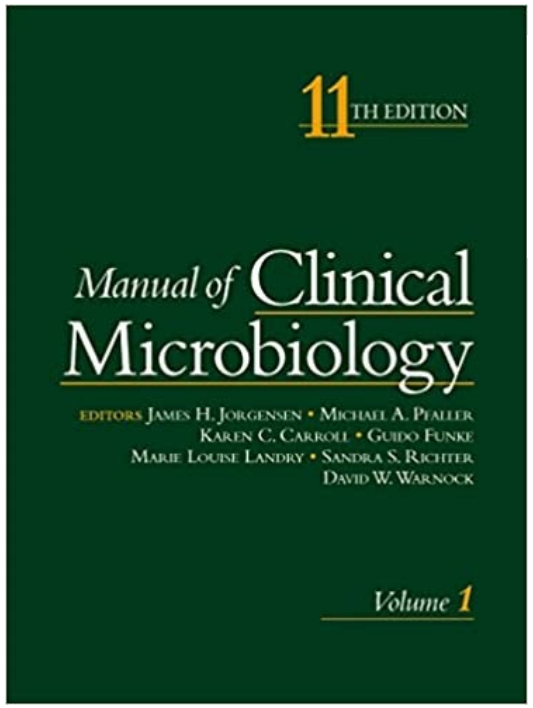
B. Table of criteria to determine whether a case should be reported to public health authorities

Table VI-B. Table of criteria to determine whether a case should be reported to public health authorities.

Criterion	Salmonellosis	
Clinical Evidence		
Clinically compatible illness		N
Healthcare record contains a diagnosis of salmonellosis	S	
Death certificate contains salmonellosis as a contributing or underlying cause of death	S	
Laboratory Evidence		
Isolation of *Salmonella spp*. from a clinical specimen	S	
Detection of *Salmonella spp*.in a clinical specimen using a CIDT	S	
Epidemiological Evidence		
Epidemiologically linked to a salmonellosis case		O
Member of a risk group as defined by public health authorities during an outbreak investigation		O

Notes:
S = This criterion alone is Sufficient to report a case.
N = All "N" criteria in the same column are Necessary to report a case.
O = At least one of these "O" (One or more) criteria in each category (e.g., clinical evidence and laboratory evidence) in the same column—in conjunction with all "N" criteria in the same column—is required to report a case.
* A requisition or order for any of the "S" laboratory tests is sufficient to meet the reporting criteria.

Other Resources



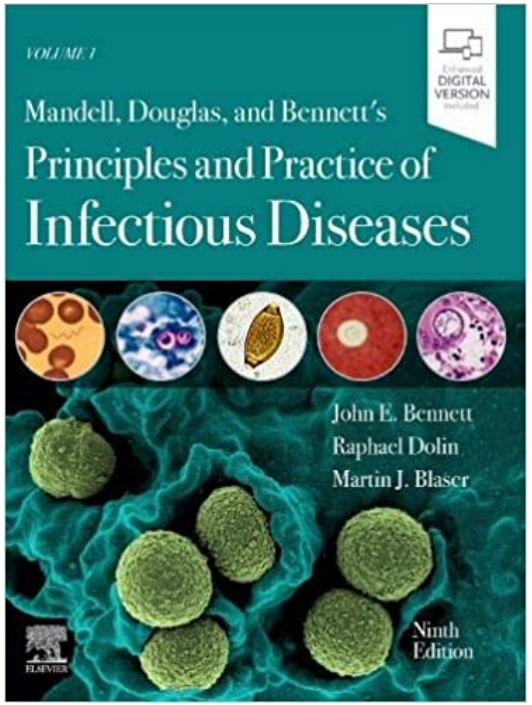
CDC
Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

ARUP Consult

MAYO CLINIC

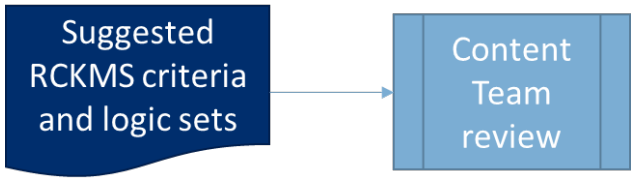
labcorp

VDH VIRGINIA DEPARTMENT OF HEALTH
To protect the health and promote the well-being of all people in Virginia



Review other resources, as needed

Criteria, Logic Sets & Value Sets



- Resource review leads to creation of suggested reporting criteria, logic sets, and value sets
- RCKMS Content Team review includes input from:
  - Content Team SMEs (Epi & Terminology)
  - RCKMS Administrators
  - CSTE
  - As needed
    - eCR Team
    - CSTE Condition SMEs
    - CDC Condition SMEs

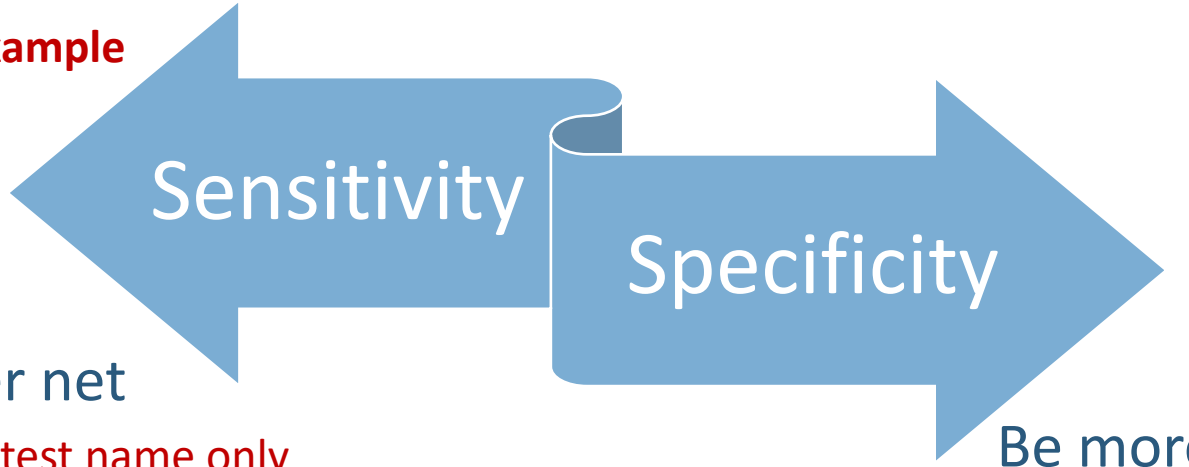
Considerations for Content Creation

- Sensitivity vs. Specificity
- Code system availability to operationalize reporting criteria
- Relevant for RCKMS
- Implementable within RCKMS

Sensitivity vs. Specificity

RCKMS Team adds reporting criteria and codes to value sets to increase the sensitivity or specificity of reporting for certain conditions

Elevated Blood Lead Level example



Cast a wider net

Report all tests using test name only

Be more selective

Report test based on capillary vs. venous specimen type

RCKMS Value Set Constraints

- HL7 Electronic Initial Case Report (eICR) implementation guide (IG) requirements
  - Coded values only available in certain parts of the eICR and EHR
  - eICR IG further constrains which code systems may be used

- Code system limitations
  - Code system availability in VSAC
  - LOINC, SNOMED CT, ICD10CM, RxNorm, and some HL7 value sets available in VSAC
  - Availability of codes (within code systems) needed to operationalize reporting criteria

- RCKMS tool implementation considerations
  - Functionality to support RCKMS reporting criteria and logic rules
  - Criteria and data elements added as tool functionality expands

Code Systems used in RCKMS

- Disorders and Suspect Disorders (ICD10CM and SNOMED CT)
- Symptoms and Clinical Findings (ICD10CM and SNOMED CT)
- Laboratory Orders and Observations (LOINC)
- Organism/Substance & Specimen Type (SNOMED CT)
- Medications & Vaccines (RxNORM and CVX)
- Others:
  - HL7 Discharge Disposition
  - HL7 Observation Interpretation
  - HL7 ActEncounter Code
  - CPT

Reporting Specification (RS)

The result of the RCKMS Content Team review is the creation of a **Reporting Specification (RS)**

RCKMS Reporting Specification

Mumps **Last Update: 2/25/2021**

Summary of specifications, value sets, and rules logic

- Use Mumps for condition name
- Use Mumps virus for organism name

Release History

Release Date	Release	Latest Revision Date
12/12/2018	20181212	9/19/2018
01/10/2020	20200110	12/19/2019
01/29/2021	20210129	12/9/2020
06/09/2021	20210609	2/25/2021

Revision History

Revision Date	Implemented by	Revision and Reason
10/31/2019	Gib Parrish	Criteria and logic sets • LAB: Moved "Lab test ordered for identification of mumps virus in a clinical specimen by culture..." and "Lab test ordered for detection of mumps virus nucleic acid..." from default to optional logic sets. • CLIN+LAB: Added "Swelling of salivary gland(s)" to clinical criteria and removed all other clinical findings except for parotitis; added "O" for "Lab test ordered for identification of mumps virus in a clinical specimen by culture..." criterion; and changed "N" to "O" for "Lab test ordered for detection of mumps virus nucleic acid..." criterion. • CLIN+EPI: Added "Swelling of salivary gland(s)" to clinical criteria. • OPTIONAL: Added new CLIN+LAB logic set with "O" for all clinical findings and "N" for "Lab test ordered for detection of mumps virus IgM or IgG antibody...". • Added "(Not yet implemented)" in red font to those criteria that can't currently be implemented. Value set table • Changed name of Parotitis (SNOMED) value set (OID: 2.16.840.1.113762.1.4.1146.763) to Parotitis [Unspecified Cause] (Disorders) (SNOMED). The current value set contains codes for parotitis due to specific causes, e.g., SNOMED code 26558007 Descriptor: Toxic parotitis. These codes should be removed from the value set. • Added new SNOMED and ICD10CM value sets for "Salivary Gland Swelling" to the "Clinical" section of the

Reporting Specification Documents – Amanda Payne

Reporting Specification Sections

Section	Description
Release History	Lists current and previous releases of the reporting specifications (RS) for the condition, the dates of those releases, and the latest revision date.
Revision History	Lists revisions to the RS, the name of the RCKMS Content Team member making each revision, and the date of each revision.
Snapshot of Logic	Table with the RCKMS reporting criteria and logic sets for the condition, which are based on detailed review of the most recent CSTE position statement for the condition, relevant literature on the condition, and discussions with CSTE and CDC subject matter experts.
Value Sets Required	Table with the value sets that are used by the default and optional logic rules in the “Default Logic” and “Optional Logic” sections.
Default and Optional Logic	Logic rules/statements that operationalize the “sufficient” reporting logic sets that are shown in the “Snapshot of Logic” using one or more value sets listed in the “Value Sets Required”. These logic rules are the basis for the rules used by the RCKMS Decision Support System to determine whether an electronic Initial Case Report (eICR) should be reported to a PHA.

Snapshot of Logic

Snapshot of logic:

	DEFAULT - LOGIC SETS				
	Lab Reporting	Provider / Facility Reporting			Vital Records
		(1)	(2)	(3)	
The patient record being evaluated contains evidence of:		**LAB**	**DX**	**CLIN + Epi**	
Criterion Description					
Clinical					
Salmonellosis (as a diagnosis or active problem)			S		
Diarrhea				N	
Laboratory					
Identification of Salmonella species and serovars (except S. typhi and S. paratyphi) in a clinical specimen by culture method, including identification tests performed on an isolate	S	S			
Salmonella species and serovars nucleic acid (except S. typhi and S. paratyphi nucleic acid) in a clinical specimen by any method	S	S			
Epidemiologic					
Patient has or had contact with a person diagnosed with salmonellosis (Not implemented)				O	
Patient is a member of a risk group defined by public health authorities during an outbreak of salmonellosis (Not implemented)				O	
Vital Records					
Death certificate lists salmonellosis as a cause of death or a significant condition contributing to death					S

Value Sets Required

Snapshot of logic:

	DEFAULT - LOGIC SETS				
	Lab Reporting	Provider / Facility Reporting			Vital Records
		(1)	(2)	(3)	
The patient record being evaluated contains evidence of:		**LAB**	**DX**	**CLIN + Epi**	
Criterion Description					
Clinical					
Salmonellosis (as a diagnosis or active problem)			S		
Diarrhea				N	

Value sets required

Value Set Name	OID	Description (informational for drafting rules, but not as explicit as documented in VSAC)	Include in Trigger set (Yes/No)
Clinical (Diagnosis, Problems, Literals, Symptoms)			
Salmonellosis (Disorders) (SNOMED)	2.16.840.1.113762.1.4.1146.48	**SNOMED CT** Codes for Salmonellosis (except typhoid, paratyphoid, and enteric fevers) as a diagnosis or problem	Yes: Diagnosis_problem
Salmonellosis (Disorders) (ICD10CM)	2.16.840.1.113762.1.4.1146.47	**ICD 10CM** Codes for Salmonellosis (except typhoid, paratyphoid, and enteric fevers) as a diagnosis or problem	Yes: Diagnosis_problem
Diarrhea (SNOMED)	2.16.840.1.113762.1.4.1146.353	SNOMED codes for non-condition-specific symptoms and other nominal—non-quantitative—clinical findings that can be found in multiple conditions	No: Common
Diarrhea (ICD10CM)	2.16.840.1.113762.1.4.1146.56	ICD10CM codes for non-condition-specific symptoms and other nominal—non-quantitative—clinical findings that can be found in multiple conditions	No: Common

Default and Optional Logic

Snapshot of logic:

The patient record being evaluated contains evidence of:
Criterion Description
Clinical
Salmonellosis (as a diagnosis or active problem)

Value sets required

Value Set Name	OID
Clinical (Diagnosis, Problems, Literals, Symptoms)	
Salmonellosis (Disorders) (SNOMED)	2.16.840.1.113762.1.4.1146.48
Salmonellosis (Disorders) (ICD10CM)	2.16.840.1.113762.1.4.1146.47

Default logic:

The patient record being evaluated contains evidence of:

1. **Salmonellosis (as diagnosis or active problem)**

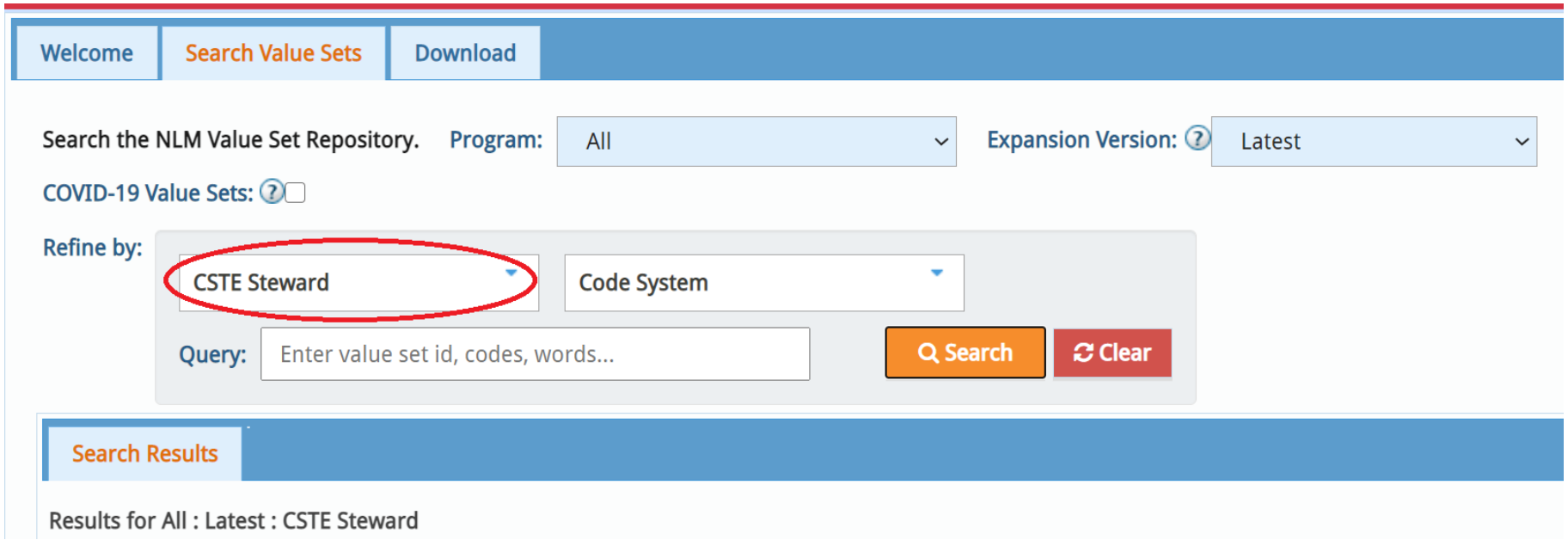
IF

Patient has a diagnosis of [VS: Salmonellosis (Disorders) (SNOMED)] **OR**
Patient has a diagnosis of [VS: Salmonellosis (Disorders) (ICD10CM)] **OR**
(Patient has a problem list entry of [VS: Salmonellosis (Disorders) (SNOMED)] **AND** Problem list entry has status of ACTIVE) **OR**
(Patient has a problem list entry of [VS: Salmonellosis (Disorders) (ICD10CM)] **AND** Problem list entry has status of ACTIVE)

THEN Report

RCKMS Value Sets in VSAC

- The RCKMS Content Team manages value sets in the Value Set Authority Center (VSAC)
- These value sets are publicly available, and can be viewed in the VSAC Browser by filtering to the CSTE Steward



Finding Value Sets in VSAC

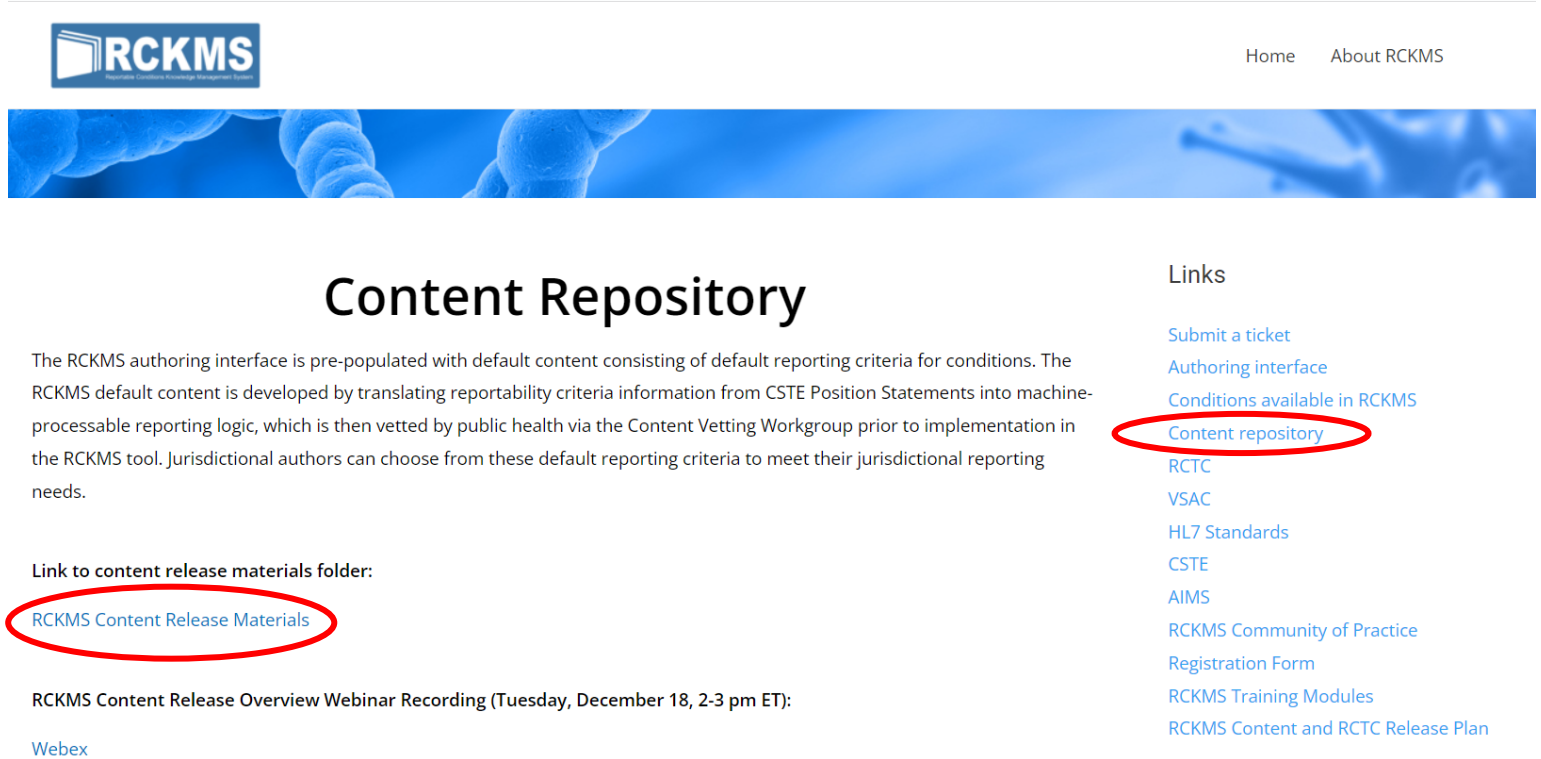
- Users can query a specific value set and member codes using the OIDs from the Reporting Specifications
- Past versions can be viewed in the "Expansion Versions" drop down

Accessing VSAC

- Before using VSAC, users must first request a United Medical Language System (UMLS) License
- A UMLS license is free and can be obtained at https://uts.nlm.nih.gov/uts/signup-login
  - *It may take 1 – 5 business days to obtain a UMLS license*
- For more information, please see RCKMS Value Sets in VSAC in the RCKMS Content Repository

Content Repository

- RCKMS Reporting Specifications and supporting documents are available in the Content Repository on www.RCKMS.org



Reporting Specification Use by Jurisdictions

- Review prior to authoring
- Compare to jurisdiction reporting requirements
- Share with condition SMEs in jurisdiction
- Plan any needed edits to the default logic prior to authoring in system

RCKMS Questions & Feedback

If you have any questions or feedback about the RCKMS content, or if you would like to request changes or additions to RCKMS reporting criteria, RCKMS value sets, or RCTC to meet your jurisdiction's reporting needs, please submit your request here: **RCKMS Ticket**

RCKMS Ticket Tips

- Include justification (e.g., point to jurisdiction reporting requirements)
- Double-check that request is related to case ascertainment and not case classification

Additional Resources

Additional Resources

- RCKMS Trainings on CSTE Learn
- Supplemental materials in Content Repository on RCKMS.org
- Electronic Reporting & Surveillance Distribution (eRSD)
- RCKMS Office Hours
- RCKMS Community of Practice (CoP)

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