



# Overview of the Draft Trichinellosis Message Mapping Guide (MMG)

**Tony Winters, MSPH**

**Shannon Cooney, MPH**

March 12, 2018

# Agenda

- Trichinellosis background
- Message Mapping Guide (MMG) overview
- Importance of sending HL7 data for Trichinellosis
- Changes in data submission from current case report form (CRF)
- Other important data elements
- Example test messages and scenarios
- Objectives of external review
  - Key areas for feedback
  - Process for external review
- Questions

# Background and MMG Overview

# Background on Trichinellosis

- Parasitic infection that is most often associated with consumption of raw or undercooked wild game meat
  - Historically, cases most often associated with *Trichinella*-infected pork
- Became nationally notifiable in 1966
- Currently reportable in 48 states, DC and NYC
- Data are currently collected using a one-page CRF
- During 2006–2015, a median of 14.5 (range: 5–39) cases were reported per year

**TRICHINELLOSIS SURVEILLANCE CASE REPORT**

Form Approved OMB  
NO. 0520-072

Case ID: \_\_\_\_\_

<b>PERSONAL DATA</b>	State Reporting: _____	County: _____	Age: _____	Sex: _____	Date of birth: _____	
	State abbreviation: _____			Male Female	Mo Day Yr	
Race/Ethnicity:	American Indian or Alaska Native		Black or African American		Native Hawaiian or other Pacific Islander	
	Asian		Hispanic or Latino		White	
Classify case based on CDC case definition:	Confirmed Probable		Physician's Name: _____		Physician's Phone: _____	
<b>DIAGNOSTIC DATA</b>	DATE OF ONSET OF ILLNESS: _____		OUTCOME: _____			
	Mo Day Yr		Recovered Died Unknown			
SIGNS AND SYMPTOMS:	Eosinophilia:		Fever:	Periorbital edema:	Myalgia:	
	Yes Not Done No Unknown		Yes Unknown No	Yes Unknown No	Yes Unknown No	
Specify absolute number or percentage: _____		Specify temperature: _____				
MUSCLE BIOPSY:	SEROLOGIC FINDINGS:		Positive Negative Not Done Unknown			
	Positive Negative Not Done	Test type (specify): _____		Date of test: Mo Day Yr		
		Date of test: Mo Day Yr		Test results: Positive Negative Unequivocal Unknown		
		Date of test: Mo Day Yr		Test results: Positive Negative Unequivocal Unknown		
<b>EPIDEMIOLOGIC DATA</b>	SUSPECT FOOD:			DATE CONSUMED: _____		
	Pork (specify type below): Store bought pork Pork from farm-raised pig Wild boar Other (specify): _____ Not specified			Non Pork (specify type below): Bear meat Hamburger (ground meat) Other (specify): _____ Not specified		
			Mo Day Yr		LARVAE IN SUSPECT FOOD: Present Absent Unknown	
WHERE MEAT OBTAINED:		PREPARATION AFTER PURCHASE		METHOD OF COOKING:		
Supermarket/grocery store Butcher shop Restaurant or other public eating establishment Direct from farm Hunted or trapped Other (specify): _____ Unknown		FURTHER PROCESSING: No further processing Ground (i.e., hamburger) Smoked Dried jerky Marinated Other (specify): _____ Unknown		Uncooked Fried Open-fire roasting/BBQ Other cooking method (specify): _____ Unknown		
PATIENT'S OCCUPATION: _____			RELATED CASES: Yes No Unknown			
COMMENTS AND ADDITIONAL DATA						
Investigator name and title: _____				Date form completed: _____		
Public reporting burden of this collection of information is estimated to average 20 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to CDC/ATSDR Reports Clearance Officer, 1600 Clifton Road NE, MS D-24, Atlanta, Georgia 30333; ATTN: PRA (0520-0723).						

CDC 54.7 (E), Revised December 2017, CDC Adobe Acrobat DC, 6508 Electronic Version, December 2017

# Why implement the Trichinellosis MMG?

- MMG reflects current expectations for data on a case
- Prepares for a case
  - Having the questions and value sets in your surveillance system will help guide a case investigation
  - You will be ready to transmit the data electronically
- Leads to the retirement of the CRF
- Consolidates data streams
- Reduces the burden in reporting cases

# MMG overview

- CRF was basis for the Trichinellosis MMG
  - Includes data elements to be used in HL7 case notifications sent to CDC



# Trichinellosis MMG layout

	Data Element (DE) Name	DE Identifier Sent in HL7 Message	DE Code System	Data Element Description	Data Type	CDC Priority	May Repeat	Value Set Name (VADS Hyperlink)	Value Set Code
1	Message Profile Identifier	N/A: MSH-21	N/A	Message Profile Identifiers provide a literal value to use for the references in MSH-21. MSH-21 will always contain a reference to the notification type in the "PHINProfileID" namespace and a reference to the implemented version of the Generic MMG in the "PHINMsgMapID" namespace. For conditions that have a condition-specific MMG, MSH-21 will also contain a reference to that MMG that is also in the "PHINMsgMapID" namespace.	Text	R	Y/3	N/A	N/A
2									
3	<b>START: EPIDEMIOLOGIC INFORMATION SECTION: The observations in this section will be mapped under an "Epidemiologic Information" category OBR segment with an</b>								
4	<b>START: Signs and Symptoms Repeating Group</b>								
5	Signs and Symptoms	56831-1	LN	Signs and symptoms associated with Trichinellosis	Coded	P	N	<a href="#">Signs and Symptoms (Trich)</a>	PHVS_SignsSymptoms_Trich
6	Signs and Symptoms Indicator	INV919	PHINQUESTION	Indicator for associated signs and symptoms	Coded	P	N	<a href="#">Yes No Unknown (YNU)</a>	PHVS_YesNoUnknown_CDC
7	<b>END: Signs and Symptoms Repeating Group</b>								
	Highest Measured Temperature	81265-1	LN	What was the subject's highest measured temperature during this	Numeric	O	N	N/A	N/A

Introduction

MMG Column Descriptions

Data Elements

Test Scenario



New

# Trichinellosis MMG data elements layout

- Data elements tab includes 5 repeating groups
  - Signs and Symptoms
  - Travel History
  - Food Exposure
  - Occupation and Industry
  - Epidemiology Laboratory Repeating Group
- Optional laboratory template is also included

# Sample test scenarios and messages

- Test Scenario in the MMG
- Test Messages
  - <https://wwwn.cdc.gov/nnds/case-notification/message-mapping-guides.html>, click “MMGs in Development” tab

Data Element (DE) Name	DE Identifier Sent in HL7 Message	DE Code System	Data Element Description	Test Case 01
				Description: Sample valid values for 62-year old, Asian, male, hospitalized, public health clinic-reported notifiable non-outbreak associated condition, recovered, confirmed case, travel associated, Trichinellosis (Condition Code – 10270)
Message Profile Identifier	N/A: MSH-21	N/A	Message Profile Identifiers provide a literal value to use for the references in MSH-21. MSH-21 will always contain a reference to the notification type in the "PHINProfileID" namespace and a reference to the implemented version of the Generic MMG in the "PHINMsgMapID" namespace. For conditions that have a condition-specific MMG, MSH-21 will also contain a reference to that MMG that is also in the "PHINMsgMapID" namespace.	'NOTF_ORU_v3.0^PHINProfileID^2.16.840.1.114222.4.10.3^ISO-Generic_MMG_V2.0^PHINMsgMapID^2.16.840.1.114222.4.10.4^ISO-Trichinellosis_MMG_V1.0^PHINMsgMapID^2.16.840.1.114222.4.10.4^ISO'
<b>START: EPIDEMIOLOGIC INFORMATION SECTION: The observations in this section will be mapped under an "Epidemiologic Information Subject Related"</b>				
Local Subject ID	N/A: PID-3	N/A	The local ID of the subject/entity	Trichinellosis_TC01 <use state-assigned value>

Navigation: Introduction | MMG Column Descriptions | Data Elements | **Test Scenario** | +

# Differences between Trichinellosis MMG and current CRF

# What is different in the MMG?

- **New data elements**
  - Travel History (i.e., domestic and international travel during the relevant incubation period)
  - Performing Laboratory Type (where leftover meat sample was tested)
- **Changes to valid values**
  - Additional valid values added to capture more coded data (e.g., for Suspect Meat Type, additional response options of walrus, deer, etc. added)
- **Meat Comments (free text) data element**
  - We prefer that all data be sent coded, but sometimes it is helpful to send a narrative about suspected exposures; this data element can be used to transmit this additional information
- **Two sections with laboratory questions**
  - Testing of meat samples (Food Exposure History Repeating Group)
  - Testing of human samples (Epidemiology Laboratory Repeating Group)

# What is different in the MMG?

- Travel history repeating group—example on next slide

Data Element (DE) Name	Value Set Name (VADS Hyperlink)	HL7 Message Context	HL7 Data Type	Repeating Group Element
<b>START: Travel History Repeating Group</b>				
International Destination(s) of Recent Travel	<a href="#">Country</a>	OBX segment with OBX-3.1=82764-2 OBX-4=obs sub-ID OBX-5=value from value set OBX-5.9=string up to 199 characters	CWE	PRIMARY/PARENT
Travel State	<a href="#">State</a>	OBX segment with OBX-3.1=82754-3 OBX-4=obs sub-ID OBX-5=value from value set	CWE	PRIMARY/PARENT
Date of Arrival to Travel Destination	N/A	OBX segment with OBX-3.1=TRAVEL06 OBX-4=obs sub-ID OBX-5=date	DT	CHILD
Date of Departure from Travel Destination	N/A	OBX segment with OBX-3.1=TRAVEL07 OBX-4=obs sub-ID OBX-5=date	DT	CHILD
<b>END: Travel History Repeating Group</b>				

Two data elements that can be the primary/parent of repeating group

# What is different in the MMG?

- Travel history repeating group example

Travel History Repeating Group	Test Case
International Destination(s) of Recent Travel	<b>COSTA RICA</b>
Date of Arrival to Travel Destination	20171201
Date of Departure from Travel Destination	20171207
Travel State	<b>48=Texas</b>
Date of Arrival to Travel Destination	20171129
Date of Departure from Travel Destination	20171130

← Repeating group 1

← Repeating group 2

- Costa Rica is the primary/parent value for repeating group 1
- Texas is the primary/parent value for repeating group 2
- Only one primary/parent value is sent in each repeating group

**Other important data elements**

# Program's high priority data elements

Data elements that are most essential for guiding Trichinellosis epi investigations

- **Signs and Symptoms section** to assess for clinical compatibility
- **Food Exposure History section** (suspected meat exposure information): Suspect Meat Type, Consumed Date, Where Meat Obtained
- **Epidemiology Laboratory section:** Test Type, Test Result

**Example test scenarios:**

**Food Exposure History Repeating Group**

# Example 1: Two suspect exposures

- Case-patient reportedly consumed walrus meat and seal meat during the relevant incubation period

START: Food Exposure History Repeating Group		Test case
Suspect Meat Type	INV1009	Walrus
Consumed Date	INV967	3/10/2017
Meat Preparation	INV968	No further processing
Where Meat Obtained	INV969	Hunted or trapped
Cooking Method	INV970	Raw
Larva in Suspect Meat	INV971	Present
Where Meat Tested	INV972	CDC Laboratory
Meat Comments	INV973	Hunted walrus regularly; consumed on multiple days (3/10, 3/13, 3/15). Leftover meat that had been stored in freezer was available for testing.
Suspect Meat Type	INV1009	Seal
Consumed Date	INV967	3/17/2017
Meat Preparation	INV968	No further processing
Where Meat Obtained	INV969	Hunted or trapped
Cooking Method	INV970	Boiled
Larva in Suspect Meat	INV971	Not examined
Where Meat Tested	INV972	
Meat Comments	INV973	

← Walrus exposure

← Seal exposure

## Example 2: One suspect exposure with mixed meat

- Case-patient reportedly ate mixed meat that was ground together and included both bear (hunted) and pork (commercial)

START: Food Exposure History Repeating Group		Test case
Suspect Meat Type	INV1009	Other (OBX5.9: Mixed bear and pork meat)
Consumed Date	INV967	8/10/2017
Meat Preparation	INV968	Ground
Where Meat Obtained	INV969	Other (OBX5.9: Bear was hunted, pork was from a supermarket)
Cooking Method	INV970	Baked
Larva in Suspect Meat	INV971	Not examined
Where Meat Tested	INV972	
Meat Comments	INV973	Hunted bear in northern California, pork was purchased from a supermarket in county of residence. The meats were brought to a local butcher who ground and combined them.

← 'Other' should be used for mixed meat types, details specified in OBX5.9

← 'Other' should be used if mixed meat was obtained from multiple places, details specified in OBX5.9

← Additional details such as where the bear was hunted and where the meat was processed would be helpful in this epi investigation

# Objectives of the external review and timeline

# What we expect from the external review

- **Identify data elements that you cannot map with your current system**
  - Especially interested about the Food Exposure History Repeating Group
- **Review value sets and determine if they are adequate**
- **Identify potential implementation issues related to the data elements requested**

# Trichinellosis MMG timeline

- **3/5/2018:** External review for draft MMG began
- **3/12/2018:** Webinar to present draft MMG for feedback
- **3/30/2018:** External review for draft MMG closes
- **Early April 2018:** CDC review of feedback and update of MMG
- **Mid April 2018:** Pilot Test-Ready Trichinellosis MMG

# How to submit feedback

- Please provide feedback by 3/30/2018
- To report your feedback, please use the Trichinellosis MMG feedback document: <https://wwwn.cdc.gov/nndss/case-notification/message-mapping-guides.html>, click “MMGs in Development” tab
- Email feedback to: [edx@cdc.gov](mailto:edx@cdc.gov)
- Subject line: “Draft Trichinellosis MMG Feedback”
- Feedback will be reviewed by CDC; outcome of reconciliation available
  - To submit a request for reconciled feedback, please contact [edx@cdc.gov](mailto:edx@cdc.gov), subject line “Request for Trichinellosis Reconciled Feedback”

**Questions?**

For more information, contact CDC  
1-800-CDC-INFO (232-4636)  
TTY: 1-888-232-6348 [www.cdc.gov](http://www.cdc.gov)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

