



# MDSS Release Notes

## Version 4.2

### April 2015



### Enhancements

#### 1. Improved Patient Deduplication Logic

There are several improvements to the patient matching system that will improve the deduplication logic. The MDSS will be replacing its phonetic algorithm used for patient matching with a new algorithm that is generally more accurate. The patient matching system will match patients whose first and last names are reversed. The weight calculation algorithm, which is used for giving the match ratings, has been updated as well. The threshold for a 100% match has been raised and the confidence measure has a wider range of values. Below are examples of the same matching done in the old and new algorithms.

#### Old Patient Matching Algorithm

Patient Deduplication						
Please select the records to merge with the data entered.						
Merge	Score	First Name	Middle Name	Last Name	Date of Birth	Gender
	Case Status	Investigation Status	Disease	Referral Date	Investigator	Jurisdiction
<input checked="" type="checkbox"/>	100.0%	AXEL F		FOLEY	01/19/1974	UNKNOWN
<input type="checkbox"/>	100.0%	AXEL F		FOLEY		MALE
	Confirmed	New	Chancroid	04/02/2015	REIMINK, BETHANY G	Ingham County
<input type="checkbox"/>	100.0%	AXEL F		FOLEY		UNKNOWN
	Confirmed	New	Chickenpox (Varicella)	04/02/2015	HENDERSON, TIFFANY A	Ingham County
<input type="checkbox"/>	100.0%	AXEL	F	FOLEY	01/19/1974	MALE
	Confirmed	New	Dengue Fever	04/02/2015	HENDERSON, TIFFANY A	Ingham County
<input type="checkbox"/>	100.0%	AXEL		FOLEY	01/19/1974	MALE
	Confirmed	New	Chlamydia (Genital)	04/02/2015	COLLINS, JIM	Ingham County
<input type="checkbox"/>	86.592476%	AXEL F		FOLEY	01/01/1764	MALE
	Confirmed	New	Brucellosis	04/02/2015	COLLINS, JIM	Ingham County

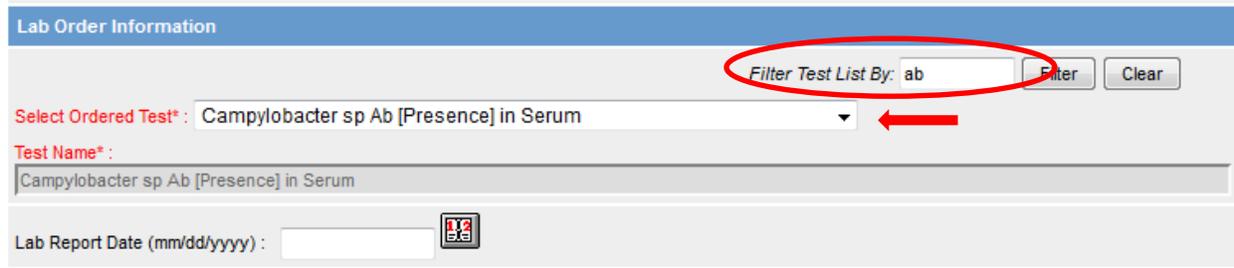
#### New Patient Matching Algorithm

Patient Deduplication						
Please select the records to merge with the data entered.						
Merge	Score	First Name	Middle Name	Last Name	Date of Birth	Gender
	Case Status	Investigation Status	Disease	Referral Date	Investigator	Jurisdiction
<input checked="" type="checkbox"/>	100.0%	AXEL F		FOLEY	01/19/1974	UNKNOWN
<input type="checkbox"/>	99.68555%	AXEL F		FOLEY		UNKNOWN
	Confirmed	New	Chickenpox (Varicella)	04/02/2015	HENDERSON, TIFFANY A	Ingham County
<input type="checkbox"/>	99.68555%	AXEL F		FOLEY		MALE
	Confirmed	New	Chancroid	04/02/2015	REIMINK, BETHANY G	Ingham County
<input type="checkbox"/>	94.683975%	AXEL		FOLEY	01/19/1974	MALE
	Confirmed	New	Chlamydia (Genital)	04/02/2015	COLLINS, JIM	Ingham County
<input type="checkbox"/>	94.683975%	AXEL	F	FOLEY	01/19/1974	MALE
	Confirmed	New	Dengue Fever	04/02/2015	HENDERSON, TIFFANY A	Ingham County
<input type="checkbox"/>	84.90243%	AXEL F		FOLEY	01/01/1764	MALE
	Confirmed	New	Brucellosis	04/02/2015	COLLINS, JIM	Ingham County

## 2. Lab Result Entry Updates

### *Lab Order Information*

When entering a lab result into a case, test name and results can be selected through pulldown lists. The pulldown lists are populated with common test names for the condition that is currently being entered or edited. The tests and results that are specific to the condition are listed first, followed by generic tests that are included on all conditions. The test and result names are not specific to brand names, but should contain most common test types. If the desired test or result name is not available, OTHER can be selected and the test name can be filled in.



Lab Order Information

Filter Test List By: ab Filter Clear

Select Ordered Test\*: Campylobacter sp Ab [Presence] in Serum

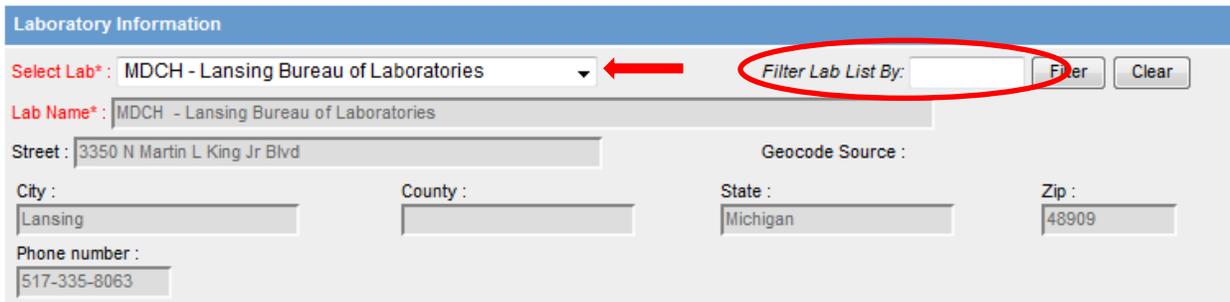
Test Name\*: Campylobacter sp Ab [Presence] in Serum

Lab Report Date (mm/dd/yyyy):

The “Filter Test List By” box can be used to narrow down the items on the pulldown list as well. The filter searches the test names and shows only those containing the text in the filter. The filter is not case sensitive. Please note that common abbreviations are used in the list (e.g. “Ab” for Antibody, “Ag” for Antigen, etc.) The filter can be cleared using the “Clear” button and it will restore the full list.

### *Laboratory Information*

The same pulldown system is now being used to enter the performing laboratory information as well. The pulldown list has been populated with the most commonly entered laboratory information. If the desired laboratory is not listed, OTHER can be selected and the data can be filled in. This list is also available in the User Profiles area for selection as a default lab on a user’s profile. The “Filter Lab List By” box is available to narrow down the list and works in the same manner as the test name filter.



Laboratory Information

Select Lab\*: MDCH - Lansing Bureau of Laboratories Filter Lab List By: Filter Clear

Lab Name\*: MDCH - Lansing Bureau of Laboratories

Street: 3350 N Martin L King Jr Blvd Geocode Source:

City: Lansing County: State: Michigan Zip: 48909

Phone number: 517-335-8063

### *New Results*

The test results area also uses the same pulldown list system, however, the pulldown only replaces the “Coded Entry” area of the results where the Text Results, Numeric Results, and Comments area work the same as they did previously. The filters also work in the same manner as described above.

The Reported Test Name also appears here as well, which is automatically filled with the value chosen on the previous page. It is common for the Reported Test Name to be the same as the Ordered Test that it is being attached to, but the second pulldown is available for times when multiple results may be given from a single test. An example of this would be if the Ordered Test (on the first page) was a “Chlamydia/Gonorrhea Panel,” then the Reported Test Name (when entering the results) could be “Chlamydia” with a Coded Result of “Positive.”

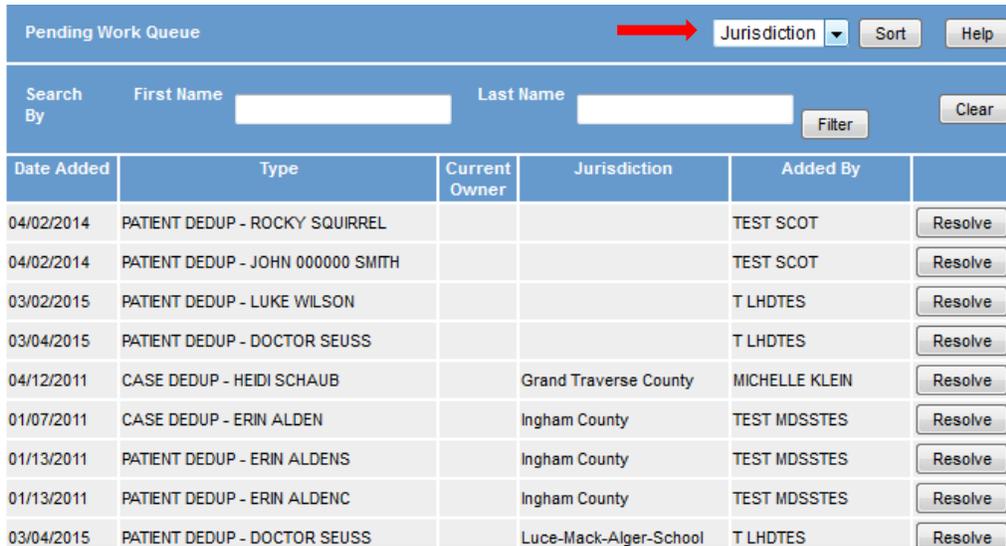
The screenshot shows a 'New Result' form with the following fields and annotations:

- Filter Test List By:** A text input field circled in red.
- Filter:** A button next to the 'Filter Test List By' field.
- Clear:** A button next to the 'Filter' button.
- Reported Test Name:** A dropdown menu showing 'Campylobacter sp Ab [Presence] in Serum' with a red arrow pointing to it.
- Filter Result List By:** A text input field circled in red.
- Filter:** A button next to the 'Filter Result List By' field.
- Clear:** A button next to the 'Filter' button.
- Coded Result:** A dropdown menu showing 'POSITIVE' with a red arrow pointing to it.
- Text Result:** A large text area.
- Numeric Result:** A series of input fields with dropdown menus.
- Comments:** A large text area.
- Buttons:** 'Add Result', 'Cancel', and 'Help' buttons at the bottom.

This new functionality only applies to the results that are entered directly into the MDSS. Those results that come into the system electronically should come in with the test names that are sent from the sending lab.

### 3. Sort Pending Work Queue by Jurisdiction

The MDSS now is able to sort the Pending Work Queue by Jurisdiction. The system sorts by a blank jurisdiction first, then the remainder of the jurisdictions that are available to the user in alphabetical order.

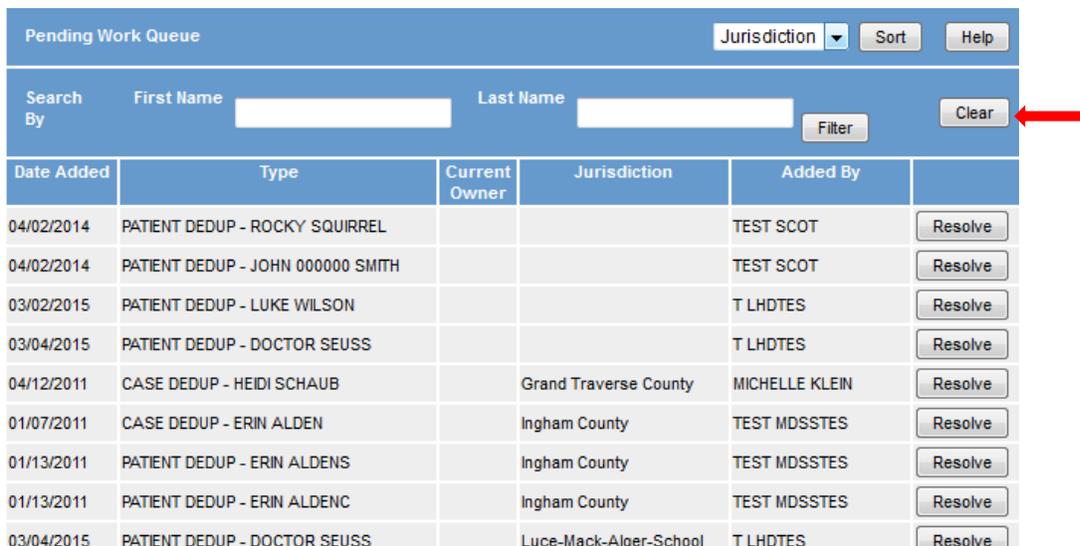


The screenshot shows the 'Pending Work Queue' interface. At the top right, there is a dropdown menu labeled 'Jurisdiction' with a red arrow pointing to it. Next to it are 'Sort' and 'Help' buttons. Below this is a search section with 'Search By' and two input fields for 'First Name' and 'Last Name', along with 'Filter' and 'Clear' buttons. The main table has columns: Date Added, Type, Current Owner, Jurisdiction, Added By, and a Resolve button for each row.

Date Added	Type	Current Owner	Jurisdiction	Added By	
04/02/2014	PATIENT DEDUP - ROCKY SQUIRREL			TEST SCOT	Resolve
04/02/2014	PATIENT DEDUP - JOHN 000000 SMITH			TEST SCOT	Resolve
03/02/2015	PATIENT DEDUP - LUKE WILSON			T LHDTE	Resolve
03/04/2015	PATIENT DEDUP - DOCTOR SEUSS			T LHDTE	Resolve
04/12/2011	CASE DEDUP - HEIDI SCHAUB		Grand Traverse County	MICHELLE KLEIN	Resolve
01/07/2011	CASE DEDUP - ERIN ALDEN		Ingham County	TEST MDSSTES	Resolve
01/13/2011	PATIENT DEDUP - ERIN ALDENS		Ingham County	TEST MDSSTES	Resolve
01/13/2011	PATIENT DEDUP - ERIN ALDENC		Ingham County	TEST MDSSTES	Resolve
03/04/2015	PATIENT DEDUP - DOCTOR SEUSS		Luce-Mack-Alger-School	T LHDTE	Resolve

### 4. Search Pending Work Queue by First/Last Name

First and Last name search functionality was added to the Pending Work Queue. The search functionality works with either first name, last name, or both. The search looks for exactly the name that was typed, but is not case sensitive (typing "fred" will get you "Fred" but not "Frederick"). The clear button will clear the search parameters and restore the full Pending Work Queue.



The screenshot shows the 'Pending Work Queue' interface. At the top right, there is a dropdown menu labeled 'Jurisdiction', 'Sort', and 'Help' buttons. Below this is a search section with 'Search By' and two input fields for 'First Name' and 'Last Name', along with 'Filter' and 'Clear' buttons. A red arrow points to the 'Clear' button. The main table has columns: Date Added, Type, Current Owner, Jurisdiction, Added By, and a Resolve button for each row.

Date Added	Type	Current Owner	Jurisdiction	Added By	
04/02/2014	PATIENT DEDUP - ROCKY SQUIRREL			TEST SCOT	Resolve
04/02/2014	PATIENT DEDUP - JOHN 000000 SMITH			TEST SCOT	Resolve
03/02/2015	PATIENT DEDUP - LUKE WILSON			T LHDTE	Resolve
03/04/2015	PATIENT DEDUP - DOCTOR SEUSS			T LHDTE	Resolve
04/12/2011	CASE DEDUP - HEIDI SCHAUB		Grand Traverse County	MICHELLE KLEIN	Resolve
01/07/2011	CASE DEDUP - ERIN ALDEN		Ingham County	TEST MDSSTES	Resolve
01/13/2011	PATIENT DEDUP - ERIN ALDENS		Ingham County	TEST MDSSTES	Resolve
01/13/2011	PATIENT DEDUP - ERIN ALDENC		Ingham County	TEST MDSSTES	Resolve
03/04/2015	PATIENT DEDUP - DOCTOR SEUSS		Luce-Mack-Alger-School	T LHDTE	Resolve

**5. Addition of TB Reports Section**

A TB Reports section has been added to the Reports area of the MDSS. These reports will allow jurisdictions to evaluate their performance for TB case management. There are two types of reports, Completion of Therapy and Sputum Culture Conversion. The report is run by specifying a time period and county and the report will show the statistic for the county and then compare it to the statewide average.

The screenshot shows the MDSS interface. On the left sidebar, the 'TB Reports' link is highlighted with a red box. The main content area displays the 'Tuberculosis Reports' form. The form includes a 'Select Indicator' dropdown menu set to 'Completion of Therapy Report', a 'Geographic Area' dropdown menu set to 'Alcona', and a 'Time Period' section with 'From Date (mm/dd/yyyy)' and 'To Date (mm/dd/yyyy)' input fields. There are 'Run Report' and 'Reset' buttons at the bottom of the form.

**6. Addition of Chikungunya as a Reportable Condition**

Chikungunya is now listed as its own condition in MDSS. At this time, Chikungunya will use the Basic Case Investigation form.

**Updated Forms**

**1. Updated TB RVCT Form**

There have been several updates to the TB RCVT Form.

- The Clinical Information area has had 2 questions added: place of previous infection and the body site of the previous infection.

The screenshot shows the updated TB RVCT form. The 'Place? (City, State, Country)' field and the 'If Yes, Indicate Previous Disease Site' section are highlighted with a red box. The 'Place?' field is a text input. The 'If Yes, Indicate Previous Disease Site' section contains several checkboxes for different disease sites: Pulmonary, Laryngeal, Bone and/or Joint, Other, Pleural, Lymphatic: Axillary, Genitourinary, Site Not Stated, Lymphatic: Cervical, Lymphatic: Other, Meningeal, Lymphatic: Intrathoracic, Lymphatic: Unknown, and Peritoneal. Below this section are three dropdown menus labeled 'If Yes, Other Sites of TB Disease (1)', 'If Yes, Other Sites of TB Disease (2)', and 'If Yes, Other Sites of TB Disease (3)'.

- In the Laboratory Information area, information on whether a Previously Positive IGRA existed and when the date of the positive result was determined has been added.

Previously Positive TST <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown	Date of Previously Positive TST mm/dd/yyyy <input type="text"/>		
Recent Tuberculin (Mantoux) Skin Test at Diagnosis <input type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Not Done <input type="radio"/> Unknown	TST Placement Date mm/dd/yyyy <input type="text"/>	TST Read Date mm/dd/yyyy <input type="text"/>	Millimeters (mm) of induration <input type="text"/>
Previously Positive IGRA <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown	Date of Previously Positive IGRA mm/dd/yyyy <input type="text"/>		
Recent Interferon Gamma Release Assay for Mycobacterium tuberculosis at Diagnosis <input type="radio"/> Positive <input type="radio"/> Negative <input type="radio"/> Indeterminate <input type="radio"/> Borderline <input type="radio"/> Not Done <input type="radio"/> Unknown	Interferon Gamma Release Assay: Type of Test (Check all that apply) <input type="checkbox"/> QuantiFERON-TB Test <input type="checkbox"/> T-SPOT.TB Test		
Interferon Gamma Release Assay Collection Date mm/dd/yyyy <input type="text"/>			

- In the Epidemiologic Information section, a text box has been added to allow for a reason of why an HIV test was not offered as well as questions on the patient's mental health status. Diabetes Mellitus (DM), Hepatitis B, Hepatitis C, and COPD were added as options for TB Risk Factors.

<i>HIV Information</i>		
HIV Status <input type="radio"/> Negative <input type="radio"/> Positive <input type="radio"/> Indeterminate <input type="radio"/> Refused <input type="radio"/> Not Offered <input type="radio"/> Test Done, Results Unknown <input type="radio"/> Unknown		
If not offered, why not? <input type="text"/>		
If Positive, State HIV/AIDS Patient Number (If AIDS Reported 1993 or Later) <input type="text"/>	If Positive, City/County HIV/AIDS Patient Number (If AIDS Reported 1993 or Later) <input type="text"/>	
Injecting Drug Use Within Past Year <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> Unknown	Non-Injecting Drug Use Within Past Year <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> Unknown	Excess Alcohol Use Within Past Year <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> Unknown
Was Mental Illness Diagnosed by a Health Professional? <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> Unknown	If Yes, Specify Type of Mental Illness: <input type="text"/>	
Occupation Within the Past 24 Months * Other (e.g. child, student, retiree, institutionalized person) <input type="checkbox"/> Employed <input type="checkbox"/> Unemployed <input type="checkbox"/> Unknown <input type="checkbox"/> Other* <input type="text"/>		

Epidemiologic Information cont.	
Additional TB Risk Factors (select all that apply)	
<input type="checkbox"/> Contact of Infectious TB Patient <input type="checkbox"/> Incomplete LTBI Treatment <input type="checkbox"/> TNF- $\alpha$ Antagonist Therapy	<input type="checkbox"/> Contact of MDR-TB Patient <input type="checkbox"/> Diabetes Mellitus (if checked, specify HgA1C level) <input type="checkbox"/> Immunosuppression (not HIV/AIDS)
<input type="checkbox"/> Contact of XDR-TB Patient <input type="checkbox"/> End-Stage Renal Disease <input type="checkbox"/> Other	<input type="checkbox"/> Missed Contact <input type="checkbox"/> Post-organ Transplantation <input type="checkbox"/> Unknown
<input type="checkbox"/> Hepatitis B <input type="checkbox"/> Hepatitis C <input type="checkbox"/> Chronic Obstructive Pulmonary Disease (COPD)	

- Bedaquiline has been added to the Treatment Information area.

CYCLOSERINE			
PARA-AMINO SALICYLIC ACID			
BEDAQUILINE			
OTHER 1			

- Fields for Date of Death, GENType and PCRTType have been added to the Follow Up Report – 2 section.

Date Therapy Stopped mm/dd/yyyy	Reason Therapy Stopped or Never Started <input type="radio"/> Completed Therapy <input type="radio"/> Lost <input type="radio"/> Uncooperative or Refused <input type="radio"/> Adverse Treatment Event <input type="radio"/> Not TB <input type="radio"/> Died <input type="radio"/> Other _____ <input type="radio"/> Unknown
If Died, indicate cause of death <input type="radio"/> Related to TB disease <input type="radio"/> Related to TB therapy <input type="radio"/> Unrelated to TB disease <input type="radio"/> Unknown	Date of Death mm/dd/yyyy

Isolate submitted for genotyping? <input type="radio"/> Yes <input type="radio"/> No	Genotype Accession Number for current episode
GENType	PCRTType

- An additional Contact Information page has been added to reflect the use of IGRA to test TB case contacts.

Contact Information cont.									
Name of Contact	Birthdate	Contact Level	Prior Positive IGRA	Initial IGRA Date	Initial IGRA Result	Final IGRA Date	Final IGRA Result	CT/ X-Ray Date	CT/ X-Ray Result
( )	(mm/dd/yyyy)	(1=Close 2=Casual 3=Remote)	(1=Yes 2=No 9=Unknown)	(mm/dd/yyyy)	(1=pos 2=neg 3=ind 4=bor 5=unk)	(mm/dd/yyyy)	((1=pos 2=neg 3=ind 4=bor 5=unk))	(mm/dd/yyyy)	( )

## 2. Updates to Salmonellosis Form

Three new foods (eggs, melons, and cucumbers) have been added to the High Risk Food Exposure area.

High Risk Food Exposure		
<i>Ask about the following specific food exposures for the 7 days prior to onset. If multiple exposures are identified, list additional details in other food history or comments sections.</i>		
Any eggs? <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown <input type="radio"/> Typically eats	If Yes, Describe (brand, type, etc):	If Yes, Where and when purchased:
Any raw eggs? <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown <input type="radio"/> Typically eats	If Yes, Describe (brand, type, etc):	If Yes, Where and when purchased:

High Risk Food Exposure (Cont.)		
Any melons? <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown <input type="radio"/> Typically eats	If Yes, Describe (brand, type, etc):	If Yes, Where and when purchased:
Any cucumbers? <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown <input type="radio"/> Typically eats	If Yes, Describe (brand, type, etc):	If Yes, Where and when purchased:
Any Frozen Microwave meals (Banquet, Lean Cuisine, etc)? <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown <input type="radio"/> Typically eats	If Yes, Describe (brand, type, etc):	If Yes, Where and when purchased:

The Control Measures section that is seen in several other conditions has now been added to the Salmonellosis form.

Control Measures	
Check the appropriate box(es) for those control measures implemented during the public health follow-up. Multiple selections permitted. Complete the start date field using the earliest date a control measure was initiated.	
Control Measures Start Date <i>mm/dd/yyyy</i>	
<input type="text"/> 	
Control Measures Implemented <i>(Check all that apply)</i>	
<input type="checkbox"/> Recommendation for Control Measures	<input type="checkbox"/> Education (e.g., hand hygiene, handling pets, raw foods)
<input type="checkbox"/> Identification and exclusion of source of infection (e.g., food, animals, food handlers)	<input type="checkbox"/> Decision made not to initiate Control Measures
<input type="checkbox"/> Recommendations for environmental cleaning/disinfection	<input type="checkbox"/> Inability to initiate Control Measures despite efforts to do so
<input type="checkbox"/> Other	
<input type="text"/>	

### 3. First Positive Lab Report Date

A new field for reporting the first positive lab report date has been added to the Hepatitis A, Salmonellosis and STEC forms. This field should be filled with the first positive lab report date, as listed on the report itself, for the case that is being investigated, regardless of how the lab result was reported.

Laboratory Information				
Please insert the first positive lab report date for this illness (for metrics analyses)				
first positive lab report date ( <i>mm/dd/yyyy</i> )				
<input type="text"/> 				
Specimen Collected	Collection Date	Test Result	Test Name	Laboratory Name
()	( <i>mm/dd/yyyy</i> )	()	()	()
Blood	<input type="text"/> 	<input type="text"/>	<input type="text"/>	<input type="text"/>

### Other Updates and Enhancements

- Issue fixed in Reports where the header was repeated later in the report
- System Administration Modifications: WSR Generation, New VADS functionality
- Webserver updated to Apache Tomcat 7
- MDSS native HL7 processing upgraded from 2.3.z to 2.5.1