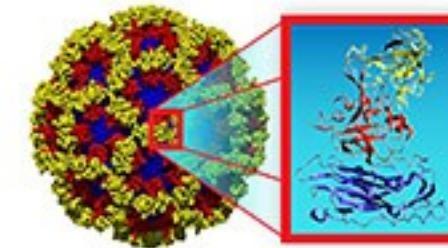


# **National Outbreak Reporting System (NORS)**

## **User Training Document - NORS/CaliciNet Integration**



**CaliciNet**  
National Norovirus  
Outbreak Network

**National Outbreak Reporting System (NORS)**

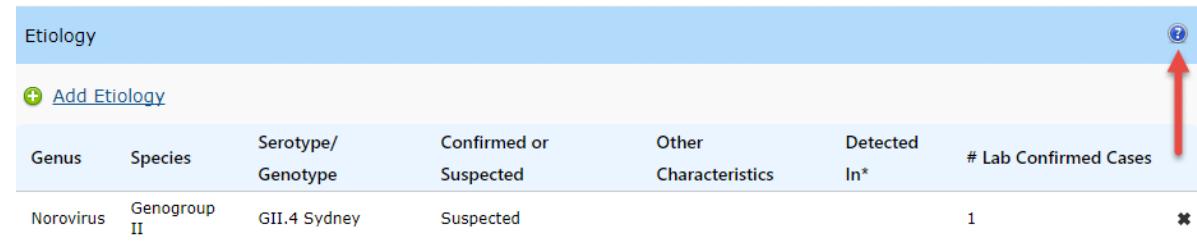
**User Training Document - NORS/CaliciNet Integration**

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## INTRODUCTION

This training document provides instruction on how to import norovirus strain data from CaliciNet. The document assumes you have already read the NORS User Training Document – General Section, Etiology, and Attachments Tabs. Additional information on specific questions can also be found by clicking the blue button with the question mark near the top of each question box within the NORS interface.



The screenshot shows the 'Etiology' tab of the NORS interface. At the top right of the tab, there is a blue button with a white question mark icon. A red arrow points upwards towards this button. Below the tab, there is a table with the following data:

Genus	Species	Serotype/ Genotype	Confirmed or Suspected	Other Characteristics	Detected In*	# Lab Confirmed Cases
Norovirus	Genogroup II	GII.4 Sydney	Suspected		1	*

CaliciNet is a national surveillance network of federal, state, and local public health laboratories that perform norovirus diagnostic testing for outbreaks. CDC launched CaliciNet in 2009 to collect information on norovirus strains associated with gastroenteritis outbreaks in the United States. This network plays an important role in monitoring circulating norovirus strains, identifying newly emerging norovirus strains, and using these data to potentially link norovirus outbreaks to a common source. More information on CaliciNet can be found on the website [www.cdc.gov/norovirus/reporting/calicinet/index.html](http://www.cdc.gov/norovirus/reporting/calicinet/index.html).

The NORS/CaliciNet integration allows users to import norovirus strain data from CaliciNet into a matching NORS record. CaliciNet reports are automatically matched to NORS records in which all of the following apply:

- NORS Reporting Site matches the CaliciNet Outbreak State,
- NORS State ID or CDC ID matches the CaliciNet NORS Number or State Outbreak Code, and
- First ill date in NORS is within 90 days of the Outbreak Date reported to CaliciNet.

## SEARCHING FOR MATCHED RECORDS

Users can search for matched records in NORS and will have the option to import the etiology and norovirus strain data from CaliciNet into an existing NORS record. The “Notifications” section of the NORS homepage will display the number of NORS records that have newly matched or updated CaliciNet data available to import. Clicking on the “View” link in this section will direct users to the Reports page, where new and updated CaliciNet records within the user’s agency will be listed by default.

### NORS Home

The screenshot shows the NORS Home page. On the left, the 'Quick Start' sidebar includes links for 'Open an existing report', 'CDC or State ID', 'Download CDC...', 'Recently Updated', 'Create a new report', and 'Add a user'. The main content area features a 'Message Board' with a recent post from CDC dated 5/26/2015, and a 'Notifications' section with a message indicating 371 new and 0 updated CaliciNet records for the user's agency, with a 'View' link highlighted by a red arrow.

Quick Start

- Open an existing report
- CDC or State ID
- Download CDC...
- Recently Updated
- Create a new report
- Add a user

Message Board

Last updated 5/26/2015  
CDC released some updates to NORS 2.0 on 05/26/2015. Highlights of what has been fixed are listed below. For more detailed information on the report's new technical issues, please email NORSAdmin@cdc.gov...

[View full message](#)

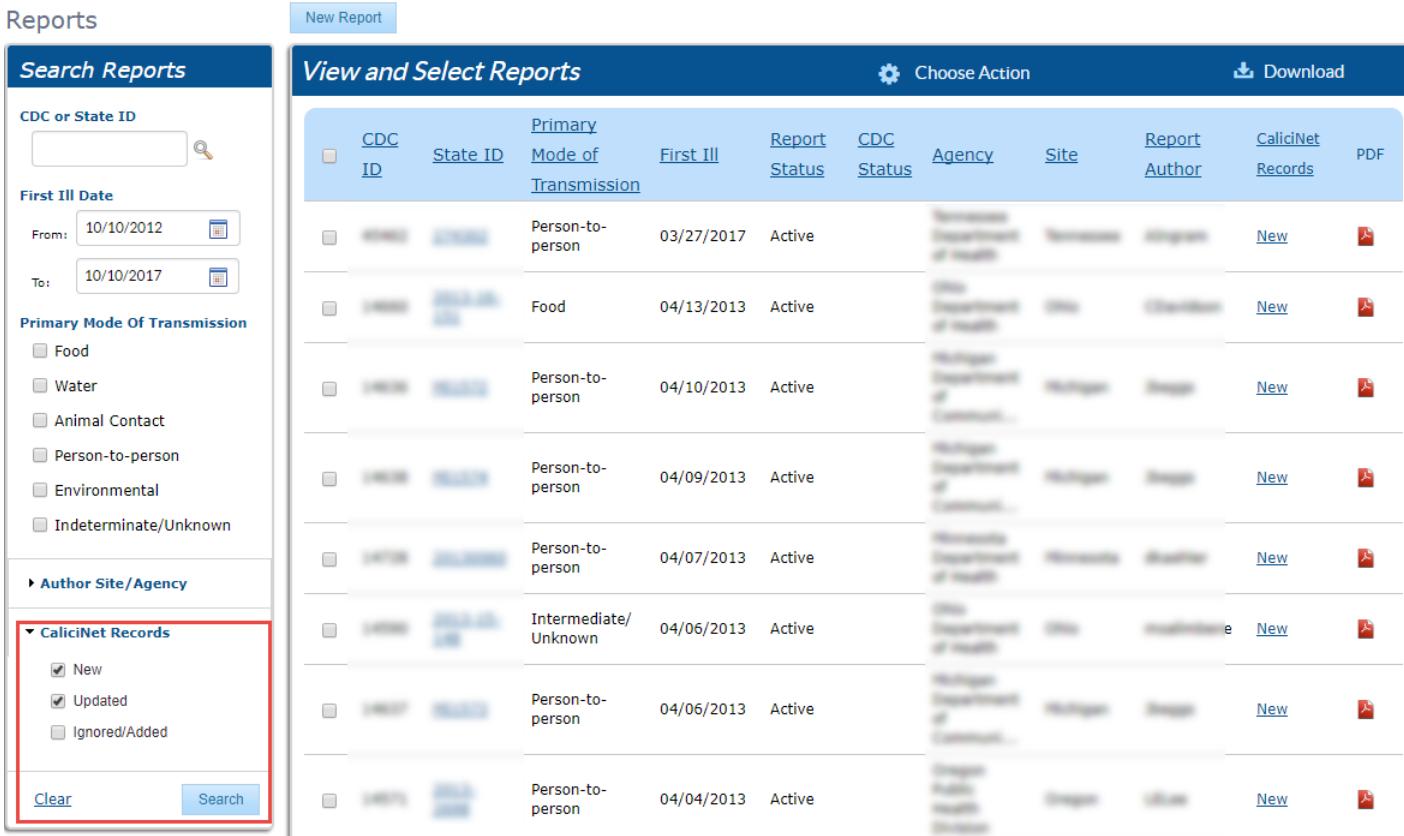
Notifications

There are 371 new and 0 updated CaliciNet records for your agency. [View](#) 

CaliciNet records that match to NORS records fall into three categories:

- *New CaliciNet Records*: NORS reports that have been newly matched to a CaliciNet record, and no action has yet been taken (i.e., the user has not elected to replace, append, or ignore the CaliciNet data).
- *Updated CaliciNet Records*: NORS reports with matched CaliciNet data already added or ignored and with recently updated CaliciNet data (e.g., additional sequences were uploaded to CaliciNet).
- *Ignored/Added CaliciNet Records*: NORS reports that have been matched to a CaliciNet record, and the CaliciNet data have already been added to the NORS record or ignored.

If a user navigates directly to the Reports page or by clicking on the “Advanced search” link in the Quick Start menu on the home page, matching CaliciNet records will not be listed by default. Users must select the checkboxes in the CaliciNet Records section of the Search Reports navigation bar and click “Search.”



The screenshot shows the 'View and Select Reports' page. On the left, the 'Search Reports' sidebar includes fields for 'CDC or State ID', 'First Ill Date' (From: 10/10/2012, To: 10/10/2017), 'Primary Mode Of Transmission' (Food, Water, Animal Contact, Person-to-person, Environmental, Indeterminate/Unknown), 'Author Site/Agency', and a 'CaliciNet Records' section. The 'CaliciNet Records' section is highlighted with a red box and contains checkboxes for 'New' (checked), 'Updated' (checked), and 'Ignored/Added' (unchecked). Below these are 'Clear' and 'Search' buttons. The main area displays a table of reports with columns: CDC ID, State ID, Primary Mode of Transmission, First Ill, Report Status, CDC Status, Agency, Site, Report Author, CaliciNet Records, and PDF. The table lists 10 rows of data, each with a 'New' link and a red download icon.

CDC ID	State ID	Primary Mode of Transmission	First Ill	Report Status	CDC Status	Agency	Site	Report Author	CaliciNet Records	PDF
123456	CA	Person-to-person	03/27/2017	Active	Minnesota Department of Health	Minnesota	Minneapolis	New		
123457	CA	Food	04/13/2013	Active	Ohio Department of Health	Ohio	Cleveland	New		
123458	CA	Person-to-person	04/10/2013	Active	Michigan Department of Community Health	Michigan	Detroit	New		
123459	CA	Person-to-person	04/09/2013	Active	Michigan Department of Community Health	Michigan	Detroit	New		
123460	CA	Person-to-person	04/07/2013	Active	Minnesota Department of Health	Minnesota	Minneapolis	New		
123461	CA	Intermediate/Unknown	04/06/2013	Active	Ohio Department of Health	Ohio	Cleveland	New		
123462	CA	Person-to-person	04/06/2013	Active	Michigan Department of Community Health	Michigan	Detroit	New		
123463	CA	Person-to-person	04/04/2013	Active	Ohio Department of Health	Ohio	Cleveland	New		

The search results will display all records that fit the desired search parameters. In the “CaliciNet Records” column, the search results will indicate whether a NORS record has newly matched CaliciNet data for review (New), updated CaliciNet data for review (Updated), or if matched CaliciNet data have already been added, appended, or ignored (Ignored/Added). Users can click on any of the column headers (e.g., Primary Mode of Transmission, First Ill) in the results box to sort on that column.

**Reports**

**Search Reports**

**CDC or State ID**

**First Ill Date**  
From: 10/10/2012   
To: 10/10/2017

**Primary Mode Of Transmission**

- Food
- Water
- Animal Contact
- Person-to-person
- Environmental
- Indeterminate/Unknown

**Author Site/Agency**

**CaliciNet Records**

- New
- Updated
- Ignored/Added

**Clear** **Search**

**New Report**

**View and Select Reports**

**Choose Action** **Download**

CDC ID	State ID	Primary Mode of Transmission	First Ill	Report Status	CDC Status	Agency	Site	Report Author	CaliciNet Records	PDF
1	State 1	Person-to-person	03/27/2017	Active	Normal	Agency 1	Site 1	Author 1	New	
2	State 2	Food	04/13/2013	Active	Normal	Agency 2	Site 2	Author 2	New	
3	State 3	Person-to-person	04/10/2013	Active	Normal	Agency 3	Site 3	Author 3	New	
4	State 4	Person-to-person	04/09/2013	Active	Normal	Agency 4	Site 4	Author 4	New	
5	State 5	Person-to-person	04/07/2013	Active	Normal	Agency 5	Site 5	Author 5	New	
6	State 6	Intermediate/Unknown	04/06/2013	Active	Normal	Agency 6	Site 6	Author 6	New	
7	State 7	Person-to-person	04/06/2013	Active	Normal	Agency 7	Site 7	Author 7	New	
8	State 8	Person-to-person	04/04/2013	Active	Normal	Agency 8	Site 8	Author 8	New	

To open the NORS record to review matched CaliciNet data, click on the “New”, “Updated”, or “Ignored” link in the CaliciNet Records column corresponding to the NORS report for which you would like to review the data. This will open the report directly to the Etiology section. Alternatively, users may click on the State ID of the desired report; this will open the report to the General section of the report, from which users can navigate to the Etiology section.

## REVIEWING NORS ETIOLOGY DATA

If the NORS record has been matched to data from CaliciNet, the Etiology (from CaliciNet) table will appear below the existing NORS Etiology table for that record. The Etiology (from CaliciNet) table will contain data from CaliciNet that have been formatted to match the NORS Etiology table. All etiology data imported from CaliciNet will include “Imported from CaliciNet” under “Other Characteristics” by default.

The data in the Etiology (from CaliciNet) table cannot be edited or deleted before being added to the NORS record. If there is an error in the CaliciNet data, please contact [NORSAdmin@cdc.gov](mailto:NORSAdmin@cdc.gov). CaliciNet data that have been added or appended to a NORS report become a part of the NORS record and can then be edited, deleted, or downloaded.

Etiology						
<a href="#">+ Add Etiology</a>						
Genus	Species	Serotype/ Genotype	Confirmed or Suspected	Other Characteristics	Detected In*	# Lab Confirmed Cases
Norovirus	Genogroup II		Confirmed		8	*

\*Detected in (choose all that apply): 1 - patient specimen; 2 - food specimen; 3 - environment specimen; 4 - food worker specimen;  
5 - water sample; 6 - animal specimen

Etiology (from CaliciNet)						
<a href="#">+ Replace with CaliciNet Etiologies</a> <a href="#">+ Append CaliciNet Etiologies</a> <a href="#">+ Ignore CaliciNet Etiologies</a>						
Genus	Species	Serotype	Confirmed or Suspected	Other Characteristics	Detected In*	# Lab Confirmed Cases
Norovirus	Genogroup II	GII.P7 - GII.6	Confirmed	Imported from CaliciNet	3	
Norovirus	Genogroup II	GII.6	Suspected	Imported from CaliciNet	1	
Norovirus	Genogroup II	unknown	Confirmed	Imported from CaliciNet	11	

Once the CaliciNet data have been reviewed, users can choose one of three options, listed on top of the Etiology (from CaliciNet) table:

- *Replace with CaliciNet Etiologies* – Clicking this option will replace the data in the NORS Etiology table with the data shown in the Etiology (from CaliciNet) table.
- *Append CaliciNet Etiologies* – Clicking this option will add the data from the Etiology (from CaliciNet) table to the NORS Etiology table without altering the data currently in the NORS Etiology table.
- *Ignore CaliciNet Etiologies* – Clicking this option will hide the Etiology (from CaliciNet) table. No data will be added to or changed in the NORS Etiology table.

Once you have clicked one of the above options, the Etiology (from CaliciNet) table will be hidden, and the sentence “Etiology data from CaliciNet has been added or ignored” will appear, along with a “Show CaliciNet Etiologies” link. Click the “Show CaliciNet Etiologies” link to view the Etiology (from CaliciNet) table again. Clicking on one of the above options will also change the status of the CaliciNet record from “New” or “Updated” to “Ignored/Added” in the Reports page.

The Etiology (from CaliciNet) table will list the etiology as confirmed or suspected based on the number of positive outbreak specimens in CaliciNet that match the listed norovirus genotype. In the example below, the number of lab confirmed cases in the Etiology (from CaliciNet) table is two, so the etiology (GI.6) is listed as “Confirmed.” If the number of lab confirmed cases as reported to CaliciNet is less than two, the etiology will be listed as “Suspected.”

Etiology (from CaliciNet)						
<a href="#">+ Replace with CaliciNet Etiologies</a> <a href="#">+ Append CaliciNet Etiologies</a> <a href="#">+ Ignore CaliciNet Etiologies</a>						
Genus	Species	Serotype	Confirmed or Suspected	Other Characteristics	Detected In*	# Lab Confirmed Cases
Norovirus	Genogroup I	GI.6	Confirmed	Imported from CaliciNet		2

## REPLACE WITH CALICINET ETIOLOGIES

Selecting the option to “Replace with CaliciNet Etiologies” will replace all data previously entered in the NORS Etiology table with all of the data shown in the Etiology (from CaliciNet) table. This cannot be undone. Once imported from the Etiology (from CaliciNet) table into the NORS Etiology table, the imported CaliciNet etiology data can be edited by clicking on the row, as you would with any other NORS etiology data.

Etiology						
<a href="#">+ Add Etiology</a>						
Genus	Species	Serotype/ Genotype	Confirmed or Suspected	Other Characteristics	Detected In*	# Lab Confirmed Cases
Norovirus	Genogroup II		Confirmed		8	*

*\*Detected in (choose all that apply): 1 - patient specimen; 2 - food specimen; 3 - environment specimen; 4 - food worker specimen;  
5 - water sample; 6 - animal specimen*

Etiology (from CaliciNet)						
<a href="#">+ Replace with CaliciNet Etiologies</a> <a href="#">+ Append CaliciNet Etiologies</a> <a href="#">+ Ignore CaliciNet Etiologies</a>						
Genus	Species	Serotype	Confirmed or Suspected	Other Characteristics	Detected In*	# Lab Confirmed Cases
Norovirus	Genogroup II	GII.P7 - GII.6	Confirmed	Imported from CaliciNet	3	
Norovirus	Genogroup II	GII.6	Suspected	Imported from CaliciNet	1	
Norovirus	Genogroup II	unknown	Confirmed	Imported from CaliciNet	11	



Etiology						
<a href="#">+ Add Etiology</a>						
Genus	Species	Serotype/ Genotype	Confirmed or Suspected	Other Characteristics	Detected In*	# Lab Confirmed Cases
Norovirus	Genogroup II	GII.P7 - GII.6	Confirmed	Imported from CaliciNet	3	*
Norovirus	Genogroup II	GII.6	Suspected	Imported from CaliciNet	1	*
Norovirus	Genogroup II	unknown	Confirmed	Imported from CaliciNet	11	*

*\*Detected in (choose all that apply): 1 - patient specimen; 2 - food specimen; 3 - environment specimen; 4 - food worker specimen;  
5 - water sample; 6 - animal specimen*

*Etiology data from CaliciNet has been added or ignored. [Show CaliciNet Etiologies](#)*

Once you have clicked “Replace with CaliciNet Etiologies”, the Etiology (from CaliciNet) table will be hidden and the following text will appear: “Etiology data from CaliciNet has been added or ignored. Show CaliciNet Etiologies”. Click the “Show CaliciNet Etiologies” link to view the Etiology (from CaliciNet) table again.

If the number of real-time positive specimens entered into CaliciNet is greater than the number of sequenced specimens, the Etiology (from CaliciNet) table will display an extra row containing information on positive but not sequenced specimens. In the example below, 15 total specimens were obtained, tested positive by RT-PCR for norovirus GII, and that information entered into CaliciNet. Four of the specimens were sequenced as GII.6 and GII.P7 – GII.6. The remaining 11 specimens were positive for norovirus GII but could not be sequenced. They are represented in the last row of the Etiology (from CaliciNet) table. If additional specimens tested positive for norovirus by RT-PCR but the information was not submitted to CaliciNet, the user may wish to manually add additional rows to note the additional laboratory testing information.

Etiology (from CaliciNet)						
<a href="#">Replace with CaliciNet Etiologies</a> <a href="#">Append CaliciNet Etiologies</a> <a href="#">Ignore CaliciNet Etiologies</a>						
Genus	Species	Serotype	Confirmed or Suspected	Other Characteristics	Detected In*	# Lab Confirmed Cases
Norovirus	Genogroup II	GII.P7 - GII.6	Confirmed	Imported from CaliciNet	3	
Norovirus	Genogroup II	GII.6	Suspected	Imported from CaliciNet	1	
Norovirus	Genogroup II	unknown	Confirmed	Imported from CaliciNet	11	

## APPEND CALICINET ETIOLOGIES

Selecting the option to “Append CaliciNet Etiologies” will append data from the Etiology (from CaliciNet) table to the NORS Etiology table without affecting the existing data in the NORS Etiology table. The CaliciNet data will appear as a new row in the NORS Etiology table. Once appended to the NORS Etiology table, the imported CaliciNet etiology data can be edited by clicking on the row, as you would with any other NORS etiology data.

When appending CaliciNet data to a NORS record, care should be taken to avoid data duplication. In the example shown, the user previously entered Norovirus Genogroup II as an etiology in NORS. The appended CaliciNet data provide further detail, showing that the genotype was GII.4 Sydney.

If these results refer to the same four specimens, the user should consider deleting the previously entered etiology information in order to avoid duplication. However, if four specimens were genotyped as GII.4 Sydney and four additional specimens were RT-PCR positive for Genogroup II but not sequenced, the user should keep both entries.

Once you have clicked “Append CaliciNet Etiologies”, the Etiology (from CaliciNet) table will be hidden and the following text will appear: “Etiology data from CaliciNet has been added or ignored. Show CaliciNet Etiologies”. Click the “Show CaliciNet Etiologies” link to view the Etiology (from CaliciNet) table again.

Etiology						
<span style="color: green;">+</span> <a href="#">Add Etiology</a>						
Genus	Species	Serotype/ Genotype	Confirmed or Suspected	Other Characteristics	Detected In*	# Lab Confirmed Cases
Norovirus	Genogroup II		Confirmed			4

\*Detected in (choose all that apply): 1 - patient specimen; 2 - food specimen; 3 - environment specimen; 4 - food worker specimen;  
5 - water sample; 6 - animal specimen

Etiology (from CaliciNet)						
<span style="color: green;">+</span> <a href="#">Replace with CaliciNet Etiologies</a> <span style="border: 2px solid red; padding: 2px 5px;">+ Append CaliciNet Etiologies</span> <span style="color: green;">+</span> <a href="#">Ignore CaliciNet Etiologies</a>						
Genus	Species	Serotype	Confirmed or Suspected	Other Characteristics	Detected In*	# Lab Confirmed Cases
Norovirus	Genogroup II	GII.4 Sydney	Confirmed	Imported from CaliciNet		4



Etiology						
<span style="color: green;">+</span> <a href="#">Add Etiology</a>						
Genus	Species	Serotype/ Genotype	Confirmed or Suspected	Other Characteristics	Detected In*	# Lab Confirmed Cases
Norovirus	Genogroup II		Confirmed			4
Norovirus	Genogroup II	GII.4 Sydney	Confirmed	Imported from CaliciNet		4

\*Detected in (choose all that apply): 1 - patient specimen; 2 - food specimen; 3 - environment specimen; 4 - food worker specimen;  
5 - water sample; 6 - animal specimen

[Etiology data from CaliciNet has been added or ignored. Show CaliciNet Etiologies](#) ←

## IGNORE CALICINET ETIOLOGIES

After reviewing the matched CaliciNet data, a user may decide not to include this information in the NORS report. In this case, clicking on the “Ignore CaliciNet Etiologies” option will hide the Etiology (from CaliciNet) table from view, and the NORS Etiology table will remain unchanged.

**Etiology**

Genus	Species	Serotype/ Genotype	Confirmed or Suspected	Other Characteristics	Detected In*	# Lab Confirmed Cases
Norovirus	Genogroup I	GI.6	Suspected		1	*

*\*Detected in (choose all that apply): 1 - patient specimen; 2 - food specimen; 3 - environment specimen; 4 - food worker specimen; 5 - water sample; 6 - animal specimen*

**Etiology (from CaliciNet)**

Genus	Species	Serotype	Confirmed or Suspected	Other Characteristics	Detected In*	# Lab Confirmed Cases
Norovirus	Genogroup I	GI.6	Suspected	Imported from CaliciNet	1	

**Etiology**

Genus	Species	Serotype/ Genotype	Confirmed or Suspected	Other Characteristics	Detected In*	# Lab Confirmed Cases
Norovirus	Genogroup I	GI.6	Suspected		1	*

*\*Detected in (choose all that apply): 1 - patient specimen; 2 - food specimen; 3 - environment specimen; 4 - food worker specimen; 5 - water sample; 6 - animal specimen*

Etiology data from CaliciNet has been added or ignored. [Show CaliciNet Etiologies](#)

Once you have clicked “Ignore CaliciNet Etiologies”, the Etiology (from CaliciNet) table will be hidden and the following text will appear: “Etiology data from CaliciNet has been added or ignored. Show CaliciNet Etiologies”. Click the “Show CaliciNet Etiologies” link to view the Etiology (from CaliciNet) table again. The user may again elect to replace, append, or ignore the CaliciNet data shown.

## REVIEWING NORS ISOLATES DATA

Similar to the Etiology table, the Isolates table in the General Etiology section of the NORS report can also be updated with matched CaliciNet data. If the NORS record has been matched to data from CaliciNet, an Isolates (from CaliciNet) table will appear below the existing NORS Isolates table for that record. The additional table will contain norovirus genotype data from CaliciNet that have been formatted to match the NORS Isolates table. The CDC System field will be automatically populated to denote that the data are from CaliciNet.

The data in the Isolates (from CaliciNet) table cannot be edited or deleted before being added to the NORS record. If there is an error in the CaliciNet data, please contact [NORSAdmin@cdc.gov](mailto:NORSAdmin@cdc.gov). CaliciNet data that have been added or appended to a NORS report become a part of the NORS record and can then be edited, deleted, or downloaded.



CDC System	State lab ID/Accession ID/CaliciNet key/PulseNet key	PulseNet Outbreak Code or CaliciNet Outbreak Number	CDC PulseNet Pattern Designation for Enzyme 1	CDC PulseNet Pattern Designation for Enzyme 2	CaliciNet Sequenced Region/Whole Genome Sequencing ID	CaliciNet Genotype/Other Molecular Designation
CaliciNet	12345678901234567890	2020-08-01				GI.6

Users can replace, append, or ignore the data in the Isolates (from CaliciNet) table in the same ways described above for the Etiology (from CaliciNet) table:

- *Replace with CaliciNet Isolates* – Clicking this option will replace the data in the NORS Isolates table with the data shown in the Isolates (from CaliciNet) table.
- *Append CaliciNet Isolates* – Clicking this option will add the CaliciNet Isolates data to the NORS Isolates table without altering the data currently in the NORS Isolates table.
- *Ignore CaliciNet Isolates* – Clicking this option will hide the Isolates (from CaliciNet) table. No data will be added to or changed in the NORS Isolates table

Once you have clicked one of the above options, the Isolates (from CaliciNet) table will be hidden, and the following text will appear: “Isolate data from CaliciNet has been added or ignored. Show CaliciNet Isolates”. Click the “Show CaliciNet Isolates” link to view the Isolates (from CaliciNet) table again.

## **NORSDIRECT USERS**

NORSDirect users should note that any changes made to the NORS Etiology or Isolates tables using the CaliciNet integration tool must also be made in respective state databases. Any changes that are made using the CaliciNet integration tool will be overwritten by any subsequent NORSDirect uploads that do not include the imported CaliciNet data.

## **ADDITIONAL INFORMATION**

If you need assistance in completing other sections of NORS, please refer to the online technical and guidance documents located at [www.cdc.gov/nors/forms.html](http://www.cdc.gov/nors/forms.html).

For further assistance or for questions or comments, please email us at [NORSAAdmin@cdc.gov](mailto:NORSAAdmin@cdc.gov).