



# NHSN Hospital Respiratory Data (HRD) 2025 Annual Training

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# Two topics related to NHSN's Hospital Respiratory Data (HRD) will be covered in today's training

- **Running and Modifying HRD Analysis Reports**
  - Creating, modifying and interpreting analysis reports
  - Using analysis reports to assess completeness of reporting
- **Data Processing and Quality Assurance**
  - HRD submission pathways and front-end business rules
  - Data processing, including reconciliation and aggregation

# **NHSN Hospital Respiratory Data (HRD): Running and Modifying HRD Analysis Reports**

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# A message about the data

All data in this presentation has been created in a testing environment and is for training purposes only. Information seen on images during this presentation do not represent any actual data submitted to NHSN by participating facilities.

# Objectives

- Identify specific NHSN HRD analysis reports found in the HRD Module folder
- Understand how to modify NHSN HRD analysis reports
- Interpret calculated HRD metrics
- Understand how to assess reporting completeness using the NHSN HRD Module

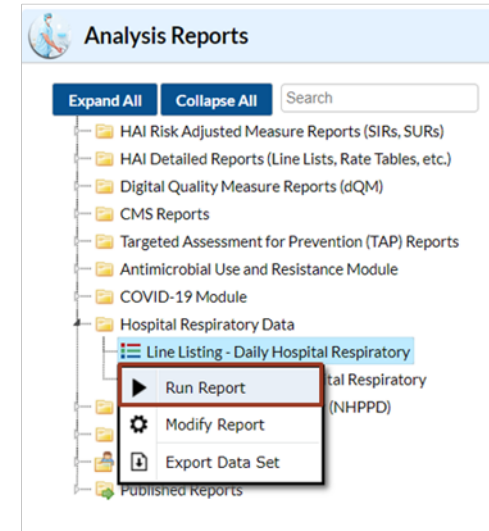
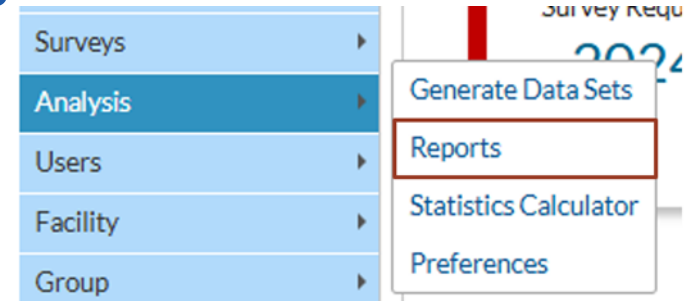
# QUESTIONS!

1. Are you familiar with NHSN's Hospital Respiratory Data (HRD) collection?
2. Have you ever accessed or ran an HRD analysis report in the NHSN application?

# Creating and Modifying Analysis Reports

# NHSN Hospital HRD Data Reports





- NHSN Hospital HRD Data Reports can be found in the “Hospital Respiratory Data” folder on the Analysis Reports page
- Users can run, modify, and export 2 reports of their facilities’ HRD hospital data:
  - Line Listing – Daily Hospital Respiratory
  - Line Listing – Weekly Hospital Respiratory





# Modifying NHSN Hospital Respiratory Data Reports

- The modify report window allows users to customize features of analysis reports

Title/Format	Time Period	Filters	Display Variables	Sort Variables	Display Options
<b>Title:</b> <input type="text" value="Line Listing of Daily Hospital Respiratory"/>					
<b>Format:</b> <div><input checked="" type="radio"/>  <input type="radio"/>  <input type="radio"/>  <input type="radio"/> </div>					

# Modifying reports: Title/Format

**Title/Format** Time Period Filters Display Variables Sort Variables Display Options

**Edit title of report**

**Title:**  
Line Listing of Daily Hospital Respiratory

**Choose file format for exported report**

**Format:**

☒ html ☐ pdf ☐ xls ☐ rtf

The image shows a software interface for modifying reports. At the top, there is a horizontal menu with six tabs: 'Title/Format' (highlighted in green), 'Time Period', 'Filters', 'Display Variables', 'Sort Variables', and 'Display Options'. Below the menu, the 'Title' section has a text input field containing 'Line Listing of Daily Hospital Respiratory'. To the left of this field is a blue callout bubble that says 'Edit title of report'. Below the title field is the 'Format' section, which displays four file format options: 'html' (with a globe icon and a selected radio button), 'pdf' (with a red document icon), 'xls' (with a green spreadsheet icon), and 'rtf' (with a green document icon). A blue callout bubble pointing to the 'xls' option says 'Choose file format for exported report'.

# Modifying reports: Time Period

The screenshot shows a web interface for modifying a report titled "Line Listing - Daily Hospital Respiratory". At the top, there is a blue header bar with the title. Below the header, there is a row of controls: a checked checkbox for "Show descriptive variable names" with a link to "Print List", and text indicating the "Analysis Data Set: DailyHRDGold", "Type: Line Listing", and "Last Generated (UTC): November 18, 2024 4:23 PM". Below this is a tabbed interface with tabs for "Title/Format", "Time Period" (which is highlighted in green), "Filters", "Display Variables", "Sort Variables", and "Display Options". The "Time Period" tab contains a section titled "Time Period:" with three input fields: "Date Variable" (a dropdown menu showing "1c. Reporting For Date"), "Beginning" (a text box with "09/01/2024"), and "Ending" (an empty text box). To the right of these fields is a blue button labeled "Clear Time Period". Below the input fields is a checkbox labeled "Enter Date variable/Time period at the time you click the Run button". A blue callout bubble with white text points to the "Time Period" section, stating "Select a specified time period for your report".

Modify "Line Listing - Daily Hospital Respiratory"

☒ Show descriptive variable names ([Print List](#)) Analysis Data Set: DailyHRDGold Type: Line Listing Last Generated (UTC): November 18, 2024 4:23 PM

Title/Format **Time Period** Filters Display Variables Sort Variables Display Options

Time Period:

Date Variable Beginning Ending

1c. Reporting For Date ▼ 09/01/2024

☐ Enter Date variable/Time period at the time you click the Run button

Select a specified time period for your report

NOTE: If you do not select a time period, your results will include all data reported for the time period included in your analysis datasets

# Modifying reports: Filters

- Specify criteria for filtering the data that will be included in the report

## Modify "Line Listing - Daily Hospital Respiratory"

☒ Show descriptive variable names ([Print List](#))

Analysis Data Set: DailyHRDGold Type: Line List

4:23 PM

Title/Format

Time Period

**Filters**

Display Variables

Sort Variables

Display Options

Additional Filters:

Show

Clear

AND OR

Add group

AND OR

Add rule

Delete

A "Group" refers to a set of rules combined to make one filter

Select variable to filter by and specify desired values of that variable to be included in the report

# Modifying reports: Display Variables

- Add, remove, and/or reorder variables that will display in report
- Note: A subset of all variables will be pre-selected to display by default

Check this box to display descriptive variable names instead of field names (e.g., "Facility Org ID" instead of "orgID")

Modify "Line Listing - Daily Hospital Respiratory"

☒ Show descriptive variable names ([Print List](#)) Analysis Data Set: DailyHRDGold Type: Line Listing Last Generated (UTC): November 12, 2024 2:01 PM

Title/Format Time Period Filters **Display Variables** Sort Variables Display Options

Display Variables:

Available Variables:

- 10a. Adult ICU patients with laboratory-confirmed int
- 12e. Number of new admissions of patients with labor
- 12f. Number of new admissions of patients with labor
- 12g. Number of new admissions of patients with labor
- 13a. Number of new admissions of patients with labor
- 13g. Number of new admissions of patients with labor
- 14a. Number of new admissions of patients with labor
- 14b. Number of new admissions of patients with labor
- 14c. Number of new admissions of patients with labor
- 14d. Number of new admissions of patients with labor
- 14e. Number of new admissions of patients with labor
- 14f. Number of new admissions of patients with labor
- 14g. Number of new admissions of patients with labor
- 15a. On hand supply (DURATION in days) n95 respira
- 15b. On hand supply (DURATION in days) surgical an

Selected Variables:

- Facility Org ID
- Census ID
- Context for which the record applies
- Percent COVID-19 Inpatient Bed Occupancy
- 6a. All hospitalized adult patients with laboratory-cor
- 6b. All hospitalized pediatric patients with laboratory
- 2a. All hospital inpatient beds
- 10b. Pediatric ICU patients with laboratory-confirmed
- 11a. Adult ICU patients with laboratory-confirmed R
- 11b. Pediatric ICU patients with laboratory-confirmed
- 12a. Number of new admissions of patients with labor
- 12b. Number of new admissions of patients with labor
- 12c. Number of new admissions of patients with labor
- 12d. Number of new admissions of patients with labor
- 13b. Number of new admissions of patients with labor

Up Down Undo

Run Save... Export... Close

# Modifying reports: Display Variables

- Add, remove, and/or reorder variables that will display in report
- Note: A subset of all variables will be pre-selected to display by default

Check this box to display descriptive variable names instead of field names (e.g., “Facility Org ID” instead of “orgID”)

The screenshot shows a web-based interface titled "Modify 'Line Listing - Daily Hospital Respiratory'". At the top, there is a header bar with the title and a status bar indicating "Analysis Data Set: DailyHRDGold", "Type: Line Listing", and "Last Generated (UTC): November 12, 2024 2:01 PM". Below the header is a navigation bar with tabs: "Title/Format", "Time Period", "Filters", "Display Variables" (which is highlighted in green), "Sort Variables", and "Display Options".

The "Display Variables" tab contains a section titled "Display Variables:". It is divided into two main columns. The left column, "Available Variables:", lists 15 variables, including "10a. Adult ICU patients with laboratory-confirmed ini", "12e. Number of new admissions of patients with labori", "12f. Number of new admissions of patients with labor", "12g. Number of new admissions of patients with labor", "13a. Number of new admissions of patients with labor", "13g. Number of new admissions of patients with labor", "14a. Number of new admissions of patients with labor", "14b. Number of new admissions of patients with labor", "14c. Number of new admissions of patients with labor", "14d. Number of new admissions of patients with labor", "14e. Number of new admissions of patients with labor", "14f. Number of new admissions of patients with labor", "14g. Number of new admissions of patients with labor", "15a. On hand supply (DURATION in days) n95 respira", and "15b. On hand supply (DURATION in days) surgical ani". There are three buttons ("All", "Selected", "Selected") and a scroll bar next to this list. The right column, "Selected Variables:", lists 13 variables, including "Facility Org ID", "Census ID", "Context for which the record applies", "Percent COVID-19 Inpatient Bed Occupancy", "6a. All hospitalized adult patients with laboratory-cor", "6b. All hospitalized pediatric patients with laboratory", "2a. All hospital inpatient beds", "10b. Pediatric ICU patients with laboratory-confirmei", "11a. Adult ICU patients with laboratory-confirmed RS", "11b. Pediatric ICU patients with laboratory-confirmei", "12a. Number of new admissions of patients with labor", "12b. Number of new admissions of patients with labor", "12c. Number of new admissions of patients with labor", "12d. Number of new admissions of patients with labor", and "13b. Number of new admissions of patients with labor". There are three buttons ("Up", "Down", "Undo") and a scroll bar next to this list.

At the bottom of the interface, there are four buttons: "Run", "Save...", "Export...", and "Close".

# Modifying reports: Sort Variables

- Select which variable(s) by which to sort reports

The screenshot shows a web-based interface for modifying a report titled "Line Listing - Daily Hospital Respiratory". The interface has a top navigation bar with tabs: "Title/Format", "Time Period", "Filters", "Display Variables", "Sort Variables" (which is currently selected and highlighted in green), and "Display Options". Below the tabs, there's a section for "Sort Variables". It contains two main areas: "Available Variables" on the left and "Selected Variables" on the right. The "Available Variables" list includes items like "10a. Adult ICU patients with laboratory-confirmed in...", "10b. Pediatric ICU patients with laboratory-confirmed...", "11a. Adult ICU patients with laboratory-confirmed R...", "11b. Pediatric ICU patients with laboratory-confirmed...", "12a. Number of new admissions of patients with labor...", "12b. Number of new admissions of patients with labor...", "12c. Number of new admissions of patients with labor...", "12d. Number of new admissions of patients with labor...", "12e. Number of new admissions of patients with labor...", "12f. Number of new admissions of patients with labor...", "12g. Number of new admissions of patients with labor...", "13a. Number of new admissions of patients with labor...", "13b. Number of new admissions of patients with labor...", "13c. Number of new admissions of patients with labor...", and "13d. Number of new admissions of patients with labor...". Each item has a status indicator: "All", "Selected", or "Not Selected". The "Selected Variables" area contains a list of variables: "Facility Org ID", "Context for which the record applies", "1c. Reporting For Date", and "Census ID". There are "Up" and "Down" buttons to the right of the "Selected Variables" list to change the sort order. At the bottom of the interface, there are buttons for "Run", "Save...", "Export...", and "Close".

Report will be sorted by the selected variables in the order listed. Use the "Up" and "Down" buttons to change the variable sort order

**NOTE:** Selected variable(s) must be selected on Display Variables tab in order to sort on that variable

# Modifying reports: Display Options

- Specify variable by which to organize the report
- Report will display one table for each value of the selected “Page by variable”

**Modify "Line Listing - Daily Hospital Respiratory"**

☒ Show descriptive variable names ([Print List](#))Analysis Data Set: DailyHRDGold Type: Line Listing Last Generated (UTC): November 18, 2024 4:23 PM

Title/FormatTime PeriodFiltersDisplay VariablesSort VariablesDisplay Options

Line Listing Options:

Page by variable:

Facility Org ID

**NOTE:** “Page by variable” must also be selected on Display Variables tab



# Run customized report

**Modify "Line Listing - Daily Hospital Respiratory"**

☒ Show descriptive variable names ([Print List](#))Analysis Data Set: DailyHRDGoldType: Line ListingLast Generated (UTC): November 18, 2024 4:23 PM

Title/Format

Time Period

Filters

Display Variables


Sort Variables


Display Options


Title:  


Line Listing of Daily Hospital Respiratory

Format:

☒

☐

☐

☐

Run

Save...

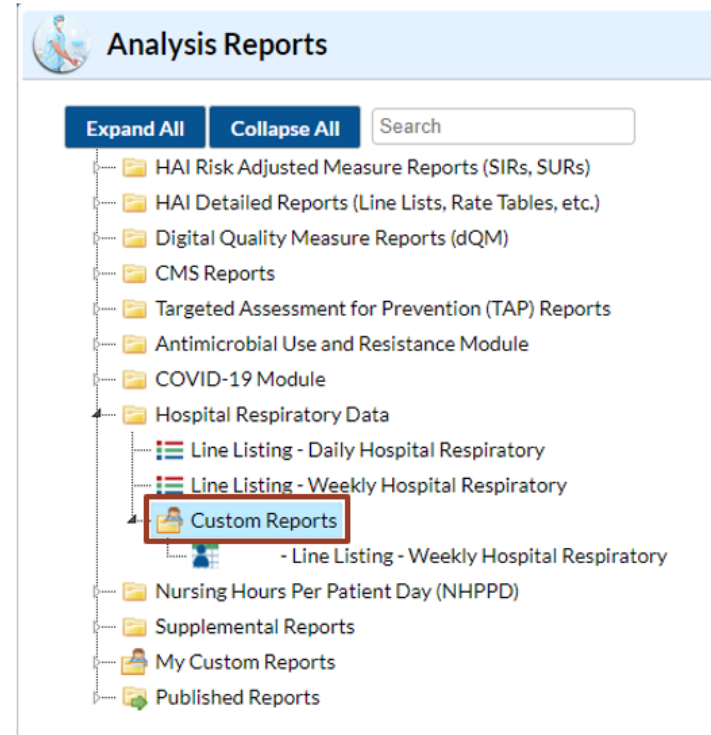
Export...

Close

When finished modifying report settings, user can choose to run, save, or export the report

# Accessing saved reports

Saved reports can be found in the “Custom Reports” folder within the “Hospital Respiratory Data” folder



# Interpreting Analysis Reports

# Features of the HRD Analysis Reports

1. Report title
2. Date/time report created
3. Time period of data included in report
4. “Page by variable”
5. Line listing of hospital data reported by facilities meeting the “Page by variable” criteria listed above
6. Data notes
7. Sort variables

1

# National Healthcare Safety Network

## Line Listing of Daily Hospital Respiratory

As of: December 16, 2024 at 2:17 PM UTC  
Date Range: DAILYHRDGOLD datepart(HRDreportingDate) After and Including 09/01/2024

2

3

4

orgID=15428

5

orgID	context	userTag	HRDsource	HRDreportingDate	createDate	censusID	name	state	county	z
15428	HOSP	Healthcare Facility	UI	10SEP2024:00:00:00.000	19SEP2024:17:40:05.467	441	LA PS Facility	GA	GA123	36
15428	HOSP	Healthcare Facility	UI	11SEP2024:00:00:00.000	19SEP2024:20:28:01.840	444	LA PS Facility	GA	GA123	36
15428	HOSP	Healthcare Facility	CSV	13OCT2024:00:00:00.000	31OCT2024:16:12:33.657	1405	LA PS Facility	GA	GA123	36
15428	HOSP	Healthcare Facility	UI	14OCT2024:00:00:00.000	31OCT2024:16:15:12.973	1407	LA PS Facility	GA	GA123	36
15428	HOSP	Healthcare Facility	CSV	21OCT2024:00:00:00.000	08NOV2024:20:34:20.760	1444	LA PS Facility	GA	GA123	36

6

1. Data provided in this report reflect data submitted directly to the NHSN Hospital Respiratory Data Module Daily Reporting Pathway. Values shown have been evaluated using defined data quality checks.

2. Null values may indicate either missing values or a result of failed data quality checks.

3. A value of 9999 indicates the field was not applicable for the facility (e.g., if a facility does not have any ICU beds, a value of 9999 may be reported for numICUBeds).

7

Sorted by orgID context HRDreportingDate censusID

# Important notes about HRD Analysis Reports

- If multiple records are submitted for a facility within a single day, each record will be displayed with a unique “censusID”
- A value of “0” indicates that the facility reported zero for that field, while a value of “.” indicates that the facility did not report any data for that field
- A value of “9999” indicates that the field is not applicable to the facility

## National Healthcare Safety Network Line Listing of Daily Hospital Respiratory

As of: November 14, 2024 at 4:08 PM UTC

Date Range: DAILYHRDGOLD HRDReportingDate After and Including 09/01/2024

orgID=10018

orgID	censusID	context	HRDpctConfC19InPtBedsOcc	HRDnumConfC19HospPatsAdult	HRDnumConfC19HospPatsPed	HRDnumInPtBeds
10018	132	HOSP	15	10	5	100
10018	189	HOSP	15	10	5	100
10018	191	HOSP	15	10	5	100
10018	210	HOSP	15	10	5	100
10018	170	HOSP	15	10	5	100
10018	408	HOSP	15	10	5	100
10018	130	HOSP	.	.	.	100
10018	4340	HOSP	0	0	0	0
10018	255	IPF	.	.	.	200
10018	4341	IPF	0	0	0	0
10018	342	IRF	15	10	5	100
10018	4342	IRF	0	0	0	0

1. Data provided in this report reflect data submitted directly to the NHSN Hospital Respiratory Data Module Daily Reporting Pathway. Values shown have been evaluated using defined data quality checks.

2. Null values may indicate either missing values or a result of failed data quality checks.

3. A value of 9999 indicates the field was not applicable for the facility (e.g., if a facility does not have any ICU beds, a value of 9999 may be reported for numICUBeds).

Sorted by orgID context HRDReportingDate censusID

## Using analysis reports to validate facilities' data reported to the HRD Module

- Confirm that data is displayed as expected based on submitted data
- Validate Hospital Respiratory metrics against data used in calculations
  - **Tip:** Customize display variables list to include only variables of interest for validation

AS of: November 14, 2023 at 4:39 PM UTC  
Date Range: DAILYHRDGOLD HRDreportingDate After and Including 09/01/2024

orgID=10018

orgID	censusID	context	HRDpctConfC19InPtBedsOcc	HRDnumConfC19HospPatsAdult	HRDnumConfC19HospPatsPed	HRDnumInPtBeds
10018	132	HOSP	15	10	5	100
10018	169	HOSP	15	10	5	100
10018	170	HOSP	15	10	5	100
10018	171	HOSP	15	10	5	100
10018	172	HOSP	15	10	5	100
10018	173	HOSP	15	10	5	100
10018	174	HOSP	15	10	5	100
10018	175	HOSP	15	10	5	100
10018	176	HOSP	15	10	5	100
10018	177	HOSP	15	10	5	100
10018	178	HOSP	15	10	5	100
10018	179	HOSP	15	10	5	100
10018	180	HOSP	15	10	5	100
10018	181	HOSP	15	10	5	100
10018	182	HOSP	15	10	5	100
10018	183	HOSP	15	10	5	100
10018	184	HOSP	15	10	5	100
10018	185	HOSP	15	10	5	100
10018	186	HOSP	15	10	5	100
10018	187	HOSP	15	10	5	100
10018	188	HOSP	15	10	5	100
10018	189	HOSP	15	10	5	100
10018	190	HOSP	15	10	5	100
10018	191	HOSP	15	10	5	100
10018	192	HOSP	15	10	5	100
10018	193	HOSP	15	10	5	100
10018	194	HOSP	15	10	5	100
10018	195	HOSP	15	10	5	100
10018	196	HOSP	15	10	5	100
10018	197	HOSP	15	10	5	100
10018	198	HOSP	15	10	5	100
10018	199	HOSP	15	10	5	100
10018	200	HOSP	15	10	5	100
10018	201	HOSP	15	10	5	100
10018	202	HOSP	15	10	5	100
10018	203	HOSP	15	10	5	100
10018	204	HOSP	15	10	5	100
10018	205	HOSP	15	10	5	100
10018	206	HOSP	15	10	5	100
10018	207	HOSP	15	10	5	100
10018	208	HOSP	15	10	5	100
10018	209	HOSP	15	10	5	100
10018	210	HOSP	15	10	5	100
10018	211	HOSP	15	10	5	100
10018	212	HOSP	15	10	5	100
10018	213	HOSP	15	10	5	100
10018	214	HOSP	15	10	5	100
10018	215	HOSP	15	10	5	100
10018	216	HOSP	15	10	5	100
10018	217	HOSP	15	10	5	100
10018	218	HOSP	15	10	5	100
10018	219	HOSP	15	10	5	100
10018	220	HOSP	15	10	5	100
10018	221	HOSP	15	10	5	100
10018	222	HOSP	15	10	5	100
10018	223	HOSP	15	10	5	100
10018	224	HOSP	15	10	5	100
10018	225	HOSP	15	10	5	100
10018	226	HOSP	15	10	5	100
10018	227	HOSP	15	10	5	100
10018	228	HOSP	15	10	5	100
10018	229	HOSP	15	10	5	100
10018	230	HOSP	15	10	5	100
10018	231	HOSP	15	10	5	100
10018	232	HOSP	15	10	5	100
10018	233	HOSP	15	10	5	100
10018	234	HOSP	15	10	5	100
10018	235	HOSP	15	10	5	100
10018	236	HOSP	15	10	5	100
10018	237	HOSP	15	10	5	100
10018	238	HOSP	15	10	5	100
10018	239	HOSP	15	10	5	100
10018	240	HOSP	15	10	5	100
10018	241	HOSP	15	10	5	100
10018	242	HOSP	15	10	5	100
10018	243	HOSP	15	10	5	100
10018	244	HOSP	15	10	5	100
10018	245	HOSP	15	10	5	100
10018	246	HOSP	15	10	5	100
10018	247	HOSP	15	10	5	100
10018	248	HOSP	15	10	5	100
10018	249	HOSP	15	10	5	100
10018	250	HOSP	15	10	5	100
10018	251	HOSP	15	10	5	100
10018	252	HOSP	15	10	5	100
10018	253	HOSP	15	10	5	100
10018	254	HOSP	15	10	5	100
10018	255	HOSP	15	10	5	100
10018	256	HOSP	15	10	5	100
10018	257	HOSP	15	10	5	100
10018	258	HOSP	15	10	5	100
10018	259	HOSP	15	10	5	100
10018	260	HOSP	15	10	5	100
10018	261	HOSP	15	10	5	100
10018	262	HOSP	15	10	5	100
10018	263	HOSP	15	10	5	100
10018	264	HOSP	15	10	5	100
10018	265	HOSP	15	10	5	100
10018	266	HOSP	15	10	5	100
10018	267	HOSP	15	10	5	100
10018	268	HOSP	15	10	5	100
10018	269	HOSP	15	10	5	100
10018	270	HOSP	15	10	5	100
10018	271	HOSP	15	10	5	100
10018	272	HOSP	15	10	5	100
10018	273	HOSP	15	10	5	100
10018	274	HOSP	15	10	5	100
10018	275	HOSP	15	10	5	100
10018	276	HOSP	15	10	5	100
10018	277	HOSP	15	10	5	100
10018	278	HOSP	15	10	5	100
10018	279	HOSP	15	10	5	100
10018	280	HOSP	15	10	5	100
10018	281	HOSP	15	10	5	100
10018	282	HOSP	15	10	5	100
10018	283	HOSP	15	10	5	100
10018	284	HOSP	15	10	5	100
10018	285	HOSP	15	10	5	100
10018	286	HOSP	15	10	5	100
10018	287	HOSP	15	10	5	100
10018	288	HOSP	15	10	5	100
10018	289	HOSP	15	10	5	100
10018	290	HOSP	15	10	5	100
10018	291	HOSP	15	10	5	100
10018	292	HOSP	15	10	5	100
10018	293	HOSP	15	10	5	100
10018	294	HOSP	15	10	5	100
10018	295	HOSP	15	10	5	100
10018	296	HOSP	15	10	5	100
10018	297	HOSP	15	10	5	100
10018	298	HOSP	15	10	5	100
10018	299	HOSP	15	10	5	100
10018	300	HOSP	15	10	5	100

E.g., the selected variables have been modified to include the calculated metric, “Percent of inpatient beds occupied by COVID-19 patients” (HRDpctConfC19InPtBedsOcc), as well as the variables used to calculate this metric

1. Data provided in this report reflect data submitted directly to the NHSN Hospital Respiratory Data Module Daily Reporting Pathway. Values shown have been evaluated using defined data quality checks.

2. Null values may indicate either missing values or a result of failed data quality checks.

3. A value of 9999 indicates the field was not applicable for the facility (e.g., if a facility does not have any ICU beds, a value of 9999 may be reported for numICUBeds).

☐ Show descriptive variable names [\(Print List\)](#)

Analysis Data Set: DailyHRDGold    Type: Line Listing    Last Generated: [UTC : November 12, 2024 2:01 PM](#)

Title/Format    Time Period    Filters    **Display Variables**    Sort Variables    Display Options

Display Variables:

Available Variables:

HRDnumConfRSVNewAdmPedOto4  
HRDnumConfRSVNewAdmPedSto17  
HRDnumConfRSVNewAdmUnk  
HRDnumCUBeds  
HRDnumCUBedsAdult  
HRDnumCUBedsOcc  
HRDnumCUBedsOccAdult  
HRDnumCUBedsOccPed  
HRDnumCUBedsPed  
HRDnumCUBedsPSSurvey  
HRDnumInPtBedsAdult

All

Selected

Selected

All

Selected Variables:

orgID  
censusID  
context  
HRDpctConfC19InPtBedsOcc  
HRDnumConfC19HospPatsAdult  
HRDnumConfC19HospPatsPed  
HRDnumInPtBeds

Up

Down

Undo

# Assessing Completeness of Reporting

Emily Witt, MPH

# Assessing completeness using HRD Line Listing reports

- The Line Listing – Weekly Hospital Respiratory report can be used to assess weekly completeness of fields required for reporting by CMS
  - The variable *weekCMSStatus* indicates whether a facility has met the requirements for reporting for a given week
    - **“Complete”**: Facility has submitted data for all required fields for the given week
    - **“Incomplete”**: Facility has submitted some data for the given week but has not met the minimum requirement for CMS

## National Healthcare Safety Network Line Listing of Weekly Hospital Respiratory

As of: June 6, 2025 at 3:36 PM UTC

Date Range: WEEKLYHRDGOLD datepart(HRDweekEndingDate) After and Including 09/01/2024

orgID=10000

orgID	context	userTag	HRDsource	HRDweekEndingDate	createDate	censusID	name	state	county	zip	factype	weekCMSStatus
10000	HOSP		CSV	05OCT2024:00:00:00.000	08OCT2024:10:35:16.407	114	DHQP Memorial Hospital	GA	GA121	30329	HOSP-GEN	Complete
10000	HOSP		CSV	02NOV2024:00:00:00.000	11NOV2024:15:18:08.820	22512	DHQP Memorial Hospital	GA	GA121	30329	HOSP-GEN	Complete
10000	HOSP	Healthcare Facility		05APR2025:00:00:00.000	.	.	DHQP Memorial Hospital	GA	GA121	30329	HOSP-GEN	Incomplete
10000	HOSP	Healthcare Facility		12APR2025:00:00:00.000	.	.	DHQP Memorial Hospital	GA	GA121	30329	HOSP-GEN	Incomplete
10000	HOSP	Healthcare Facility		19APR2025:00:00:00.000	.	.	DHQP Memorial Hospital	GA	GA121	30329	HOSP-GEN	Incomplete
10000	HOSP	Healthcare Facility		31MAY2025:00:00:00.000	.	.	DHQP Memorial Hospital	GA	GA121	30329	HOSP-GEN	Incomplete



# Assessing completeness using HRD Line Listing reports (continued)

- Missing values can be identified by generating a report of all required data elements and looking for fields with a value of “.”, meaning no data was reported for that field
  - Use the **Filters** tab to filter to records with a *weekCMSStatus* of “Incomplete” to more easily identify facilities/weeks that have not met the CMS reporting requirements

The screenshot shows the 'Modify Line Listing - Weekly Hospital Respiratory' interface. At the top, there is a title bar and a checkbox for 'Show descriptive variable names (Print List)'. Below this is a navigation bar with tabs: 'Title/Format', 'Time Period', 'Filters' (which is selected), 'Display Variables', 'Sort Variables', and 'Display Options'. Under the 'Filters' tab, there is an 'Additional Filters:' section with 'Show' and 'Clear' buttons. Below this, there are 'AND' and 'OR' logic buttons. A filter rule is applied: 'weekCMSStatus' is set to 'equal' and 'Incomplete'. The filter rule is highlighted with a red box.

The screenshot shows the resulting data table. The table has five columns: 'weekCMSStatus', 'HRDnumConfC19HospPatsAdult', 'HRDnumConfC19HospPatsPed', 'HRDnumConfC19ICUPatsAdult', and 'HRDnumConfC19ICUPatsPed'. The 'weekCMSStatus' column contains five rows of 'Incomplete'. A red box highlights the 'weekCMSStatus' column.

weekCMSStatus	HRDnumConfC19HospPatsAdult	HRDnumConfC19HospPatsPed	HRDnumConfC19ICUPatsAdult	HRDnumConfC19ICUPatsPed
Incomplete	.	.	.	.
Incomplete	.	.	.	.
Incomplete	.	.	.	.
Incomplete	.	.	.	.
Incomplete	.	.	.	.

**Reminder: Chat and Q & A features are limited to only 1000 participants**

# Assessing completeness using HRD Calendar View – Facility Users

- If using the Daily pathway, a green record banner in each day of the reporting week (Sunday-Saturday) indicates complete reporting

03	04	05	06	07	08	09
✓ HOSP	✓ HOSP	✓ HOSP	✓ HOSP	✓ HOSP	✓ HOSP	✓ HOSP

- If using the Weekly pathway, green record banner for reporting week (Sunday-Saturday) indicates complete reporting

05/25/2025 (Sunday) - 05/31/2025 (Saturday)
✓ HOSP

# Assessing completeness using HRD Completeness Viewer – Group Users

- **NHSN Group users can access the Completeness Viewer to identify reporting completeness for facilities within the Group for the reporting week**
  - **Complete:** Green complete record indicator shows complete data submission for a facility for the reporting week
  - **No records available:** No data submitted for the facility for the reporting week
  - **Incomplete:** Incomplete data submitted for the facility for the reporting week. For example, 3 days out of 7 submitted in the daily pathway

Hospital Respiratory Data Reporting Completeness Viewer					
Page 1 of 3			View 1 - 100 of 228		
Facility ID	Facility Name	State	Weekending Date	Reporting Context	Status
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
			05/31/2025	HOSP	Complete
			05/31/2025		No Records available
			05/31/2025	HOSP	Incomplete

# Resources

- **Modifying and Running NHSN Hospital Respiratory Data (HRD) Reports:** [https://www.cdc.gov/nhsn/pdfs/Hospital-Respiratory-Data\\_HRD\\_AR\\_QRG.pdf](https://www.cdc.gov/nhsn/pdfs/Hospital-Respiratory-Data_HRD_AR_QRG.pdf)
- **Patient Safety Analysis Quick Reference Guides:** <https://www.cdc.gov/nhsn/ps-analysis-resources/reference-guides.html>
- **General Tips and Tools for NHSN Analysis:** <https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/General-Tips-NHSN-Analysis.pdf>
- **Generating Data Sets – Guidance for PSC:** <https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/generatedatasets-psc-508.pdf>
- **How to Modify a Report Quick Reference Guide:** <https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/howtomodifyreport.pdf>
- [CDC'S NHSN Hospital Respiratory Data](#)

# NHSN Hospital Respiratory Data Processing and Quality Assurance

Andrea Cool, MPH

# Objectives

- Review HRD submission pathways and front-end business rules
- Review data processing steps, including data reconciliation and aggregation steps

# HRD Data Submission Pathways

- **Hospital Respiratory Data (HRD)** are submitted to CDC via the NHSN HRD module located in the Patient Safety Component (PSC), through either the **HRD Daily** or the **HRD Weekly Pathway**
  - Users may choose which pathway they would like to use to submit their facility's data
  - Users may choose to report their facility's data using either the web form entry, CSV upload, or API direct upload

The screenshot displays the NHSN Hospital Respiratory Data submission interface. On the left is a sidebar with navigation links: NHSN Home, Alerts, Dashboard, Reporting Plan, Patient, Event, Procedure, Summary Data, and Hospital Respiratory Data (highlighted with a red box). The main header area shows 'Hospital Respiratory Data' with a sub-header containing two tabs: 'Daily Hospital Respiratory Data' (highlighted with a red box) and 'Weekly Hospital Respiratory Data'. Below the tabs, a date range '29 June 2025 - 09 August 2025' is shown, along with a 'Record Complete' status indicator. To the right are three buttons: 'Upload CSV', 'CSV Template', and 'Export CSV (Download History)'. The main data entry area is a table with columns for days of the week (Sunday through Saturday) and corresponding dates (29, 30, Jul 01, 02, 03, 04, 05). The table is currently empty.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
29	30	Jul 01	02	03	04	05

# Front-End Specifications & Business Rules

- Each reporting pathway and submission method requires certain NHSN front-end specifications to be met when submitting and saving data
  - specified data element formats
  - valid value ranges and response options
  - business rules
- Business rules are specified checks applied upon submission that flag and/or reject illogical data from being saved
  - e.g., reporting a greater number of adult inpatient beds than total inpatient beds
- HRD Daily and Weekly Reporting Tables of Instructions and Import File Specifications documentation available here:
  - <https://www.cdc.gov/nhsn/psc/hospital-respiratory-reporting.html>



# Submission Rejection and Error Notifications

- **When a record is rejected due to failure to meet submission specifications, the user will receive an error notification detailing the reason(s) for rejection**
  - Notification type depends on submission method (i.e., web form, CSV, API)

# Error Notification: Web Form

Respiratory Data Reporting Form For 05/18/2025 - 05/24/2025

Submit

Reporting Context: \* HOSP - Hospital

## Staffed Bed Capacity, Occupancy, and Prevalent Hospitalizations

Important: Please ensure that the values reported for the Staffed and pediatric inpatient and ICU bed capacity and occupancy and

aggregated to weekly totals. The data should provide a single day snapshot of the overall, adult, specifically for Wednesday of the reporting week.

### Section 1: Staffed Bed Capacity and Occupancy

#### Inpatient Beds

2a. \* All hospital inpatient beds

100

2b. \* All adult inpatient beds

110

2c. \* All pediatric inpatient beds

40

3a. \* All ho

80

3b. \* All adult inpatient occupancy

60

3c. \* All pediatric inpatient occupancy

20

#### Error

All hospital inpatient beds must be greater than or equal to All adult inpatient beds

OK

ICU beds

4b. \* Adult ICU beds

30

4c. \* Pediatric ICU beds

20

5a. \* All ICU bed occupancy

20

5b. \* Adult ICU bed occupancy

15

5c. \* Pediatric ICU bed occupancy

5

# Error Notification: CSV Upload

iratory Data Weekly Hospital Respiratory Data

27 April 2025 - 07 June 2025 Record Complete Upload CSV CSV Template

ry) - 05/03/2025 (Saturday)

Upload Errors/Warnings


Orgid	Context	Reporting Date	Type	Field	Message
10018	HOSP	05/24/2025	Error	numInPtBedsAdult	2b. All adult inpatient beds must be less than or equal to 2a. All hospital inpatient beds.
10018	HOSP	05/24/2025	Error	numInPtBeds	Sum of 2b. All adult inpatient beds and 2c. All pediatric inpatient beds must be less than equal to 2a. All hospital inpatient beds.

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Skip Warnings and Upload Cancel

# Error Notification: API-Email Notification

Errors, no warnings, required fields missing



NHSN (CDC)  
To



failed-records.csv  
2 KB

CDC National Healthcare Safety Network (NHSN)

Dear

Thank you for submitting data to the CDC National Healthcare Safety Network (NHSN) Hospital Respiratory Data (HRD) Weekly Portal.

The file (test\_submission.csv) was received and partially processed with errors on 05/29/2025 13:47:28. Not All records were submitted. Please review the attached document (failed-records.csv). Then, please resolve the error(s) and upload the corrected data. All records without errors were successfully saved.

**Warning** - A possible data quality issue has been detected for the specified data field and collection date, but the record was saved and submitted successfully. Please review and update or correct the reported values if indicated.

**Error** - A confirmed data quality issue has been detected for the specified data field and collection date and must be resolved before the record can be saved and acceptable for submission. Please review and update the reported values where indicated.

Please note your data is incomplete. The file (test\_submission.csv) was received and processed with required fields missing on 05/29/2025 13:47:28.

Please review the attached document (failed-records.csv) for specific missing daily and weekly required fields.

CDC National Healthcare Safety Network (NHSN) Client Support team is available Monday - Friday, 7 AM - 5 PM EDT. Should you have questions about the registration process or the information that needs to be entered, we are here to assist.

E-mail: [nhsn@cdc.gov](mailto:nhsn@cdc.gov)

Thank you again for all that you do.  
CDC National Healthcare Safety Network (NHSN)

# Data Processing Steps

- **Deduplication of Records**

- A single record is retained per facility and reporting date (Daily pathway) or week (Weekly pathway) based on the completeness of the record for CMS enforcement purposes
  - If more than one record is considered equal based on these criteria, then the record submitted most recently will be retained

- **Logic Checks**

- Suppression is applied to the deduplicated data in both the Daily and Weekly data pipelines for values that fail specified logic checks for priority data elements
- Logic checks are intended to remove logically implausible data from final aggregate metrics used for reporting, analytics, and public dissemination
  - E.g., all inpatient bed fields are nulled if the following logic check **fails**:  $(\text{numInPtBedsAdult} + \text{numInPtBedsPed}) \leq \text{numInPtBeds}$

# Reconciliation of Complete and Valid Daily Data to Weekly Pathway

- NHSN users may choose to submit data via either a *weekly reporting pathway* or a *daily reporting pathway* to satisfy CMS requirements
- Data submitted to the weekly pathway represent two types of information:
  - **Single-day snapshots:** the 24 data elements within the reporting form sections for *Bed Capacity and Occupancy* and *Prevalent Hospitalizations* are required to be reported as **single day snapshots (Wed) of the reporting week**
  - **Weekly totals:** the 21 data elements within the reporting form sections for *New Admissions* are required to be reported as aggregated data for the **entire reporting week (Sun-Sat)**

# Reconciliation of Complete and Valid Daily Data to Weekly Pathway

- **Complete** and **valid** daily data (i.e., non-null values reported for all 45 required data elements, passing all logic checks) submitted for a given reporting week (Sun – Sat) to the Daily HRD pathway will be reconciled with data submitted via the Weekly HRD pathway
  - Values reported for the Wednesday during the reporting period will be retained for the 24 *Bed Capacity and Occupancy and Prevalent Hospitalizations* data elements (see example below for data element 3a)
  - Weekly aggregate totals will be calculated for the 21 *New Admissions* data elements by summing the values reported each day of the reporting week (see example below for data element 13c)

**Sample Data Submitted to Daily HRD Pathway**

Reporting Date	Day of Week	3a. All hospital inpatient occupancy	13c. Number of new admissions of patients with COVID-19, 18-49
6/1/2025	Sun	100	1
6/2/2025	Mon	105	0
6/3/2025	Tues	95	2
6/4/2025	Wed	102	2
6/5/2025	Thurs	105	0
6/6/2025	Fri	100	1
6/7/2025	Sat	100	0

**Sample Data Stored in Weekly HRD Pathway**

Reporting Week	3a. All hospital inpatient occupancy	13c. Number of new admissions of patients with COVID-19, 18-49
6/7/2025	102	6

Wednesday single-day snapshot stored

Sum of values reported for entire week (Sun-Sat) stored

# Reconciliation of Complete and Valid Daily Data to Weekly Pathway

- **Complete** and **valid** daily data (i.e., non-null values reported for all 45 required data elements, passing all logic checks) submitted for a given reporting week (Sun – Sat) to the Daily HRD pathway will be reconciled with data submitted via the Weekly HRD pathway
  - Values reported for the Wednesday during the reporting period will be retained for the 24 *Bed Capacity and Occupancy and Prevalent Hospitalizations* data elements (see example below for data element 3a)
  - Weekly aggregate totals will be calculated for the 21 *New Admissions* data elements by summing the values reported each day of the reporting week (see example below for data element 13c)

**Sample Data Submitted to Daily HRD Pathway**

Reporting Date	Day of Week	3a. All hospital inpatient occupancy	13c. Number of new admissions of patients with COVID-19, 18-49
6/1/2025	Sun	100	1
6/2/2025	Mon	105	0
6/3/2025	Tues	95	2
6/4/2025	Wed	102	2
6/5/2025	Thurs	105	0
6/6/2025	Fri	100	1
6/7/2025	Sat	100	0

**Sample Data Stored in Weekly HRD Pathway**

Reporting Week	3a. All hospital inpatient occupancy	13c. Number of new admissions of patients with COVID-19, 18-49
6/7/2025	102	6

*Wednesday single-day snapshot stored*

*Sum of values reported for entire week (Sun-Sat) stored*



# Aggregate Data Pipeline

- **Reconciled, de-duplicated weekly hospital respiratory data with logic checks applied are ingested into the 1 CDC Data Platform (1CDP) for further transformation and aggregation prior to analytics, reporting, and public release**
  - Weekly hospital level data are first aggregated to the NHSN Facility ID level, aggregating data reported across multiple contexts for a single hospital
- **Exclusion criteria are applied to remove inactive hospitals and those that are not required to report weekly hospital respiratory data under the CMS CoP**
- **Weekly hospital data are aggregated to various geographic levels allowing for calculation of aggregate metrics (e.g., admission rates, inpatient/ICU occupancy percentages)**
  - Aggregate data are published to [data.cdc.gov](https://data.cdc.gov) and [CDC's NHSN HRD website](https://www.cdc.gov/nhsn/hrd/) every Friday afternoon.

# Resources

- [CDC'S NHSN Hospital Respiratory Data](#)
- [Hospital Respiratory Data Weekly Reporting Form](#)
- [Hospital Respiratory Data Table of Instructions](#)
- [Hospital Respiratory Data Daily Reporting Form](#)
- [Hospital Respiratory Data Table of Instructions](#)

# For NHSN questions or concerns related to the Annual Training

## Post questions in the Annual Training Community

After June 10<sup>th</sup>, please submit questions to the NHSN Help Desk.

- Access new portal at <https://servicedesk.cdc.gov/nhsncsp> .
- If you do not have a SAMS login, or are unable to access ServiceNow, you can still email the NHSN Help Desk at [nhsn@cdc.gov](mailto:nhsn@cdc.gov).

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.

