

NHSN Connectivity Initiative: Hospital Bed Capacity Project Program Updates and Overview of Key Resources

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July 2025

Objectives

- Identify, locate, and use key components and resources for NHSN Connectivity Initiative: Hospital Bed Capacity Project
- Direct facility reporting option available via API
- Understand use cases related to the Hospital Bed Capacity Project
- Run the Bed Capacity analysis reports and interpret the output
- Explain data quality and validation considerations when submitting Hospital Bed Capacity data

QUESTION

Do you know if your facility or jurisdiction is participating in the NHSN Connectivity Initiative: Hospital Bed Capacity Project?

NHSN Connectivity Initiative: Hospital Bed Capacity Project

Key Components and Resources

Ally Binder, MS

About the Hospital Bed Capacity Project

- **The NHSN Connectivity Initiative:** Hospital Bed Capacity Project is an effort to strengthen the resiliency of healthcare systems and modernize data exchange. Jurisdictions, hospitals, and CDC collaborate to establish near real-time, automated collection and transmission of hospital bed capacity data.
- **The Project aims to:**
 - Establish and sustain ongoing automated collection of bed capacity data from acute care hospitals and critical access hospitals
 - Ensure participants use standardized definitions of healthcare bed capacity

Why it matters

- CDC works closely with hospitals, jurisdictions, and other federal agencies to use reported data to efficiently coordinate and respond to emergencies.
- Automating hospital bed capacity data contributes to cross-agency response goals and supports jurisdictions, hospitals and patients in the following ways:



Situational Awareness

Near real-time data on the bed capacity in hospitals helps stakeholders and decision makers understand how facilities are affected during surges. These data help jurisdictions and federal partners maximize safe and effective patient care by determining how resources might be applied to alleviate stress on a challenged region.

Load Balancing

During disasters, one hospital may receive a disproportionately higher number of patients than nearby facilities. Jurisdictions with near real-time data can move resources or transfer patients from overwhelmed healthcare facilities to ones with more capacity. Near real-time data can help to identify potentially overwhelmed healthcare facilities as well as facilities with the ability to receive more patients.

Capacity Planning

Hospitals, jurisdictions and federal partners can use current data on bed capacity outside of a surge situation to plan for future needs. By analyzing trends in rates of bed occupancy and predicting future demand, stakeholders and decision makers can better plan for how disasters may affect specific regions and how best to mitigate the stress.

Response-Readiness and Resource Allocation

When hospitals and jurisdictions align bed capacity data definitions and share these data with federal partners, we can improve response-readiness and resource allocation with faster, more complete collection of national bed capacity data.

NHSN Connectivity Initiative Webpage

<https://www.cdc.gov/nhsn/bed-capacity/index.html>

- **Data collection instructions and specifications**
 - Data Dictionary
 - Instruction Book
 - Data Quality and Validation guide
 - SAMS/API reference guide
- **Analytic resources**
 - NHSN Analysis Report
 - NHSN Group User Dashboard
- **And more!**



The screenshot shows the NHSN Connectivity Initiative: Hospital Bed Capacity Project page. At the top, there is a navigation bar with the CDC logo, the text "National Healthcare Safety Network (NHSN)", a search bar, and a "Print" link. Below the navigation bar, there is a sidebar with links to "NHSN Home", "NHSN Login", "About NHSN", "Enroll Facility Here", "CMS Requirements", "Change NHSN Facility Admin", "Resources by Facility", "Patient Safety Component", "Long-term Care Facility Component", "Dialysis Component", "Biovigilance Component", "Healthcare Personnel Safety Component (HPS)", and "Neonatal Component". A yellow banner on the right side of the page states: "CDC's website is being modified to comply with President Trump's Executive Orders." The main content area features the title "NHSN Connectivity Initiative: Hospital Bed Capacity Project" and a "Print" link. Below the title, there are two columns of links: "About the Hospital Bed Capacity Project" and "Connectivity Initiative in Action", "Why it Matters" and "Data Collection Tools and Instructions", "How it Works" and "Analytic Resources and Reference Guide", and "Participating Jurisdictions" and "Opportunities To Learn More". At the bottom, there is a "Contact Us!" section with the text: "Email us at NHSN@cdc.gov and use the subject line 'Bed Capacity' for more information."

NHSN Connectivity Initiative Data Collection Instructions and Specifications

- NEW: SAMS/API Guide**
 - Step-by-step guide for establishing SAMS system account
 - Upload and download API commands
 - Troubleshooting and FAQs
- NEW: Data Quality and Validation Reference Guide**
 - Detailed information on file format and front-end validation requirements for successful data transmission

Data Collection Tools and Instructions

- [NHSN Connectivity Initiative Hospital Bed Capacity Project Instruction Book](#) [PDF – 429 KB]
- [NHSN Connectivity Initiative API and SAMS Onboarding Instructions](#) [PDF – 1 MB]
- [NHSN Connectivity Initiative Hospital Bed Capacity Project Data Dictionary](#) [XLS – 34 KB]
- [Bed Capacity – Data Element Tables and Relationships](#) [XLS – 26 KB]

This resource is provided as a supplement to the NHSN Connectivity Initiative: Hospital Bed Capacity Project Data Dictionary and includes a series of tables that display groupings and relationships among the bed capacity data elements grouped by bed category included in the collection.

- [Bed Capacity Data Quality and Validation Reference Guide](#) [PDF – 627 KB]

This resource provides detailed information on file and data type specifications and recommendations for ensuring accuracy for successful transmission of bed capacity data to NHSN.

Analytic Resources and Reference Guide

- [At a Glance: Using Bed Capacity Data](#) [PDF – 660 KB]

This resource provides examples of how jurisdictions, hospitals and federal agencies use bed capacity data to improve patient outcomes and public health response.

- [Bed Capacity Analysis Report Quick Reference Guide](#) [PDF – 1 MB]

This guide provides instructions for modifying and running the Bed Capacity Analysis Report in the NHSN Patient Safety Component for group users.

- [Bed Capacity Group User Dashboard Quick Reference Guide](#) [PDF – 659 KB]

This guide provides instructions for group users for viewing and using the Bed Capacity Dashboard in the NHSN Patient Safety Component.

- [NHSN Hospital Respiratory Data – Bed Capacity Mapping Guide](#) [XLS – 26 KB] [xlsx]

This guide provides specifications for mapping overlapping data elements between the Bed Capacity collection and NHSN's Hospital Respiratory Data collection.

NHSN Connectivity Initiative Analytic Resources

- **Quick Reference Guides now available!**
 - **UPDATED:** NHSN Analysis Report for Group and Facility Users
 - **NEW:** NHSN Bed Capacity Dashboard for Group Users

Data Collection Tools and Instructions

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NHSN Connectivity Initiative: Hospital Bed Capacity Project

Connect directly to NHSN via API

Ally Binder, MS

Hospital Bed Capacity Data – NHSN API Submission

- **Bed capacity data should be transmitted to NHSN's Patient Safety Component via API (CSV upload and UI not available)**
 - *“Application programming interface”*; a set of rules and specifications that allows different software systems to communicate and exchange data.

Hospital Bed Capacity Data – NHSN API Submission

- **Instructions for setting up API submission are now available**
 - NHSN API Reference Guide – chapters available for all NHSN APIs
 - **Version 1** includes chapters re: Bed Capacity and Hospital Respiratory Data
 - The individual responsible for API submission will need a **SAMS system account** – contact options are available in the API Reference Guide



Nation Healthcare Safety Network (NHSN) API Instructions

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SAMS Systems Account Setup

To access any NHSN API, users must have a SAMS Systems account. The below instructions will guide you through the steps needed to request and set up your SAMS Systems Account.

Note: The following instructions assume that the API sponsor completing the steps has requested a SAMS invitation and has the NHSN API activities added to their SAMS account.

If you are the individual responsible for setting up the API and have not registered with SAMS and had API activities added to your account, reach out to nhsn@cdc.gov using the subject line **NHSN API Setup**.

Please indicate if you will need the API activities for submission of Hospital Respiratory Data or the NHSN Connectivity: Bed Capacity Project Data.

SAMS SYSTEM ACCOUNT ACTIVITY AUTHORIZATION

1. When API activities are added to your SAMS account, you will receive the below email noting that you have access to a new system activity: L3NHSN COVID-19 API (see example below) or NHSN Bed Capacity_System.

The screenshot shows an email from the U.S. Centers for Disease Control: SAMS Partner Portal - SAMS System Account. The subject line is "Activity Authorization". The email is from "nhsn-no-reply@cdc.gov" and is addressed to "nhsn-no-reply@cdc.gov". The body of the email says: "You have been authorized for access to a new system activity. L3NHSN COVID-19 API. This activity has been specifically designed to support the use of a system account. For information on how to setup and configure this account once activated please contact your application or reference your application specific documentation. The SAMS Team and SAMS Help Desk are available to assist you in configuring this account." At the bottom, it says: "For existing system account users, no further action is necessary if you have already setup a SAMS system account because it can be used to support this new activity. Within SAMS a single system account can be used across multiple activities." There are also standard email icons for reply, forward, and delete.

May 2025

1

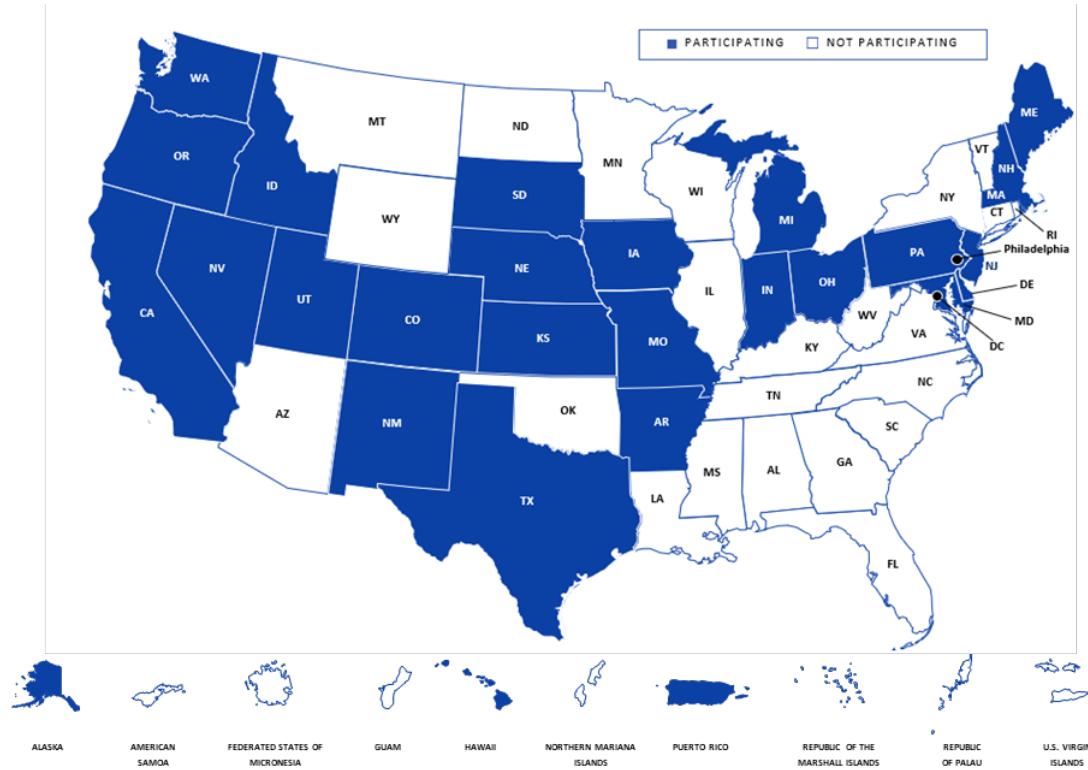
May 2025

2

May 2025

Before setting up your facility's API and data feed, check your jurisdiction's status as a participant

- State health departments in OR, MA, and HI were funded beginning in 2022 via [CDC's Epidemiology and Laboratory Capacity \(ELC\) Cooperative Agreement](#)
- In January 2024, supplemental funding was awarded to 19 recipients of the ELC Cooperative Agreement (CK19-1904) in support of the NHSN Connectivity Initiative: Hospital Bed Capacity Project
- Jurisdictions participate in this work outside of ELC funding
- 31 jurisdictions currently participating



NHSN Connectivity Initiative: Hospital Bed Capacity Project: Use Cases

Joey Sacht, MS

Use Cases

Hospitals

- Streamlined information sharing with outside stakeholders (e.g. EMS, other hospitals, health department) using standardized definitions
 - Patient evacuation due to a natural disaster or other significant event
 - Better coordination with EMS on emergency bed availability
 - Faster patient transfer to or from outside hospital

Health Departments or Hospital Associations

- Assist with load balancing and patient movement over a large geographic area
- Situational awareness of ED bed availability across hospitals

NHSN CONNECTIVITY INITIATIVE: HOSPITAL BED CAPACITY PROJECT

Using digital information on healthcare capacity to
improve patient outcomes and public health response



What?

The CDC's Hospital Bed Capacity Project enhances healthcare system resilience by enabling near real-time, automated data collection on healthcare bed capacity. This initiative aligns with the CDC Data Modernization Initiative (DMI) and the Public Health Data Strategy (PHDS), ensuring improved preparedness, response, and resource allocation during routine operations and in public health emergencies.

Why?

- To establish ongoing, standardized hospital bed capacity data collection
- To support emergency preparedness, response, and recovery efforts
- To enable near real-time data sharing across federal, state, and local levels
- To assist in decision-making for resource allocation, healthcare transfers, and facility evacuations to ensure patient safety

Benefits?

This initiative ensures a robust and responsive healthcare infrastructure through data-driven strategies, ultimately improving patient outcomes and disaster preparedness.

- Strengthens public health emergency response
- Supports data-driven equitable allocation of resources
- Enhances decision-making through data-driven insights
- Supports federal, state, and local level coordination during crises



FOR MORE INFORMATION, VISIT CDC.GOV/NHSN/BED-CAPACITY/

(Continued on back)

How?

Using bed capacity data to
improve patient outcomes and
public health response:



Mass Casualties

Every second counts during a mass casualty event, and immediate access to data that assists in surge capacity management and specialized patient care placement can save lives. Having a lens into current patient tracking and movement ensures timely and appropriate care in emergency situations.

Peak Hospitalizations

In a respiratory virus surge, tracking hospital capacity and coordinating response efforts is essential to caring for sick people that require hospitalization. With fast and reliable data, we can better predict incident severity and healthcare needs so resources like medical supplies and equipment are distributed to those that need it most. Access to hospital capacity data allows us to actively monitor available beds and understand when healthcare systems are stressed.

Reporting Mandates

When reporting requirements are mandated by public health authorities in emergencies, having established automated data feeds reduces the reporting burden. Automated bed capacity data allows for near real-time monitoring for situational awareness and supports routine operations of hospitals. Hospitals can use occupancy trends to inform capacity planning so strategic decisions are made quickly and confidently with readily available, accurate data.

Natural Disasters

When a natural disaster strikes, hospitals need to be informed to safely evacuate and transfer patients. Bed capacity data facilitates patient transfers to prevent hospital overload. When the data is shared with emergency responders, EMS transportation decisions are made quickly to ensure patients arrive at the right hospital and receive immediate care.



LEARN MORE

CDC welcomes jurisdictions and individual facilities to participate in this initiative. If you are interested in joining this work, please email NHSN@cdc.gov and use the subject line "Bed Capacity."



FOR MORE INFORMATION, VISIT CDC.GOV/NHSN/BED-CAPACITY/

NHSN Connectivity Initiative: Hospital Bed Capacity Project

Running and Modifying Analysis Reports

Jeenal Patel, MPH

A message about the data

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

Objectives

- Review how to generate datasets that can be used for the analysis reports
- Understand how to access NHSN Healthcare Bed Capacity analysis reports
- Understand how to modify NHSN Healthcare Bed Capacity analysis reports
- Identify specific details in NHSN Healthcare Bed Capacity analysis reports

Analysis Report and Data Export from NHSN application

Accessing Analysis Reports page

- To access the Analysis Reports for the first time, the user must generate analysis datasets in the Patient Safety Component **at least one time**



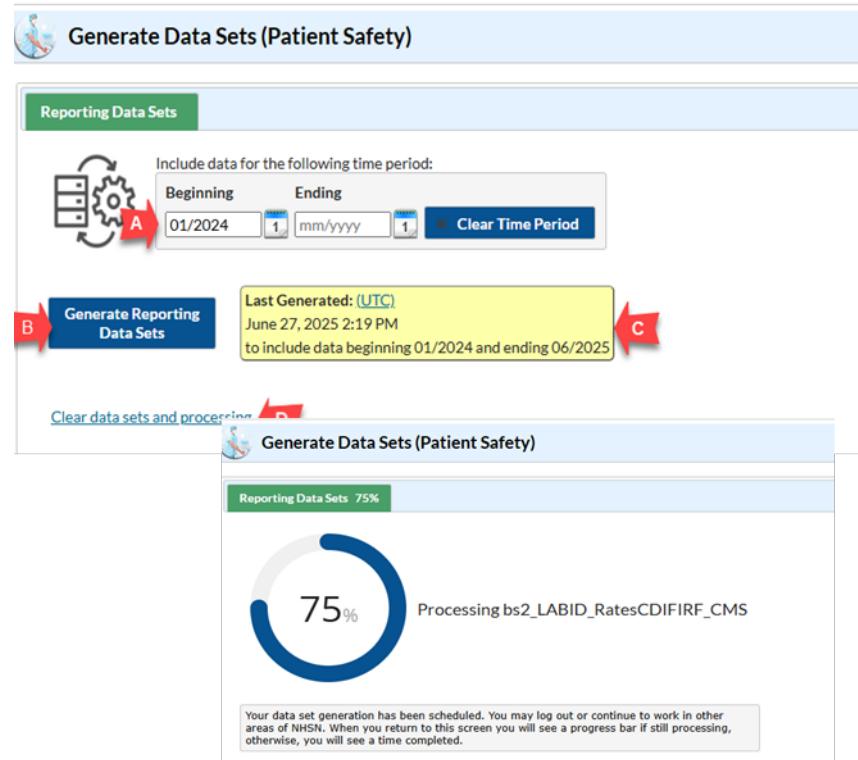
The screenshot shows the NHSN Patient Safety Component Home Page. The left sidebar has a 'NHSN Home' menu with various items like Alerts, Dashboard, Reporting Plan, Patient, Event, Procedure, Summary Data, Hospital Respiratory Data, Infectious Diseases of Public Health Concern, Import/Export, Surveys, Analysis, Users, Facility, Group, and Cheat Sheets. The 'Analysis' item is highlighted with a blue background. To the right is a main content area with a 'NHSN Patient Safety Component Home Page' header. Below it is a list of dashboards: TAP Strategy Dashboard, ARM Dashboard, TAS Dashboard, HAI Pathogen Dashboard, Survey Data Quality Dashboard, and Action Items. The 'Action Items' item is also highlighted with a blue background. At the bottom of the main content area, there is a 'COMPLETE THESE ITEMS' section with a button labeled 'Generate Data Sets' which is also highlighted with a red box. A small tooltip-like box is visible next to the 'Generate Data Sets' button with the text 'Reports Rights Statistics Calculator Preferences'.

Generating datasets

- On the “Generate Data Sets (Patient Safety)” screen, the “Reporting Data Sets” tab will open.

On this tab, you can:

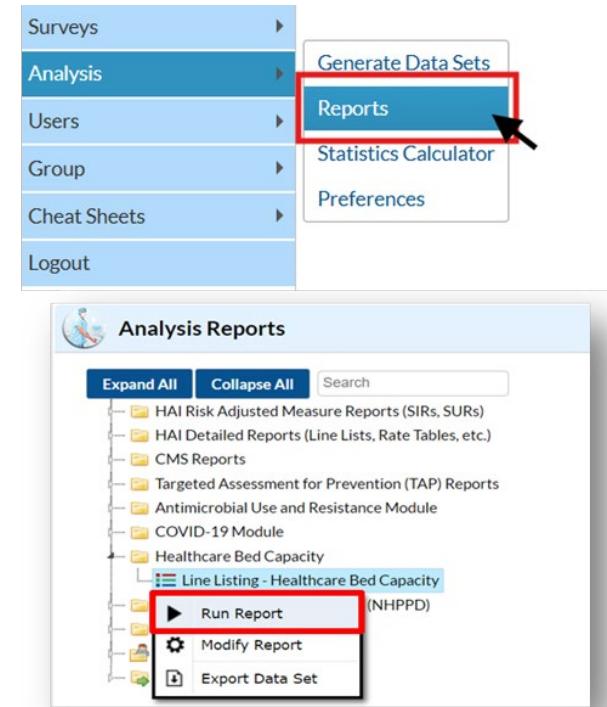
- Specify the time period to apply to all analysis data sets
- Start the data set generation process using the “Generate Reporting Data Sets” button
- View information about when your data sets were last generated, and for which time period
- This will clear all existing data sets and potentially clear any stuck processes



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

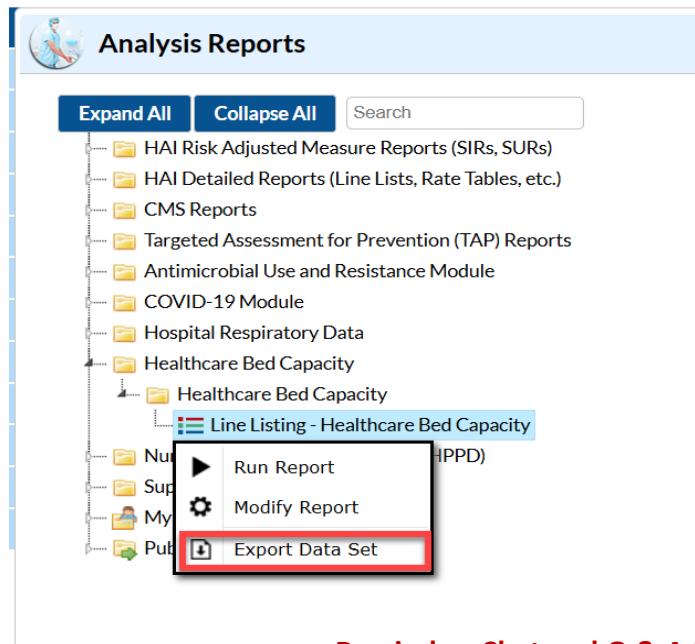
NHSN Healthcare Bed Capacity Data Reports

- NHSN Healthcare Bed Capacity Data Reports can be found in the Healthcare Bed Capacity folder on the Analysis Reports page
- Users can run, modify, and export the following report of their facilities' Healthcare Bed Capacity Data:
 - Line Listing – Healthcare Bed Capacity

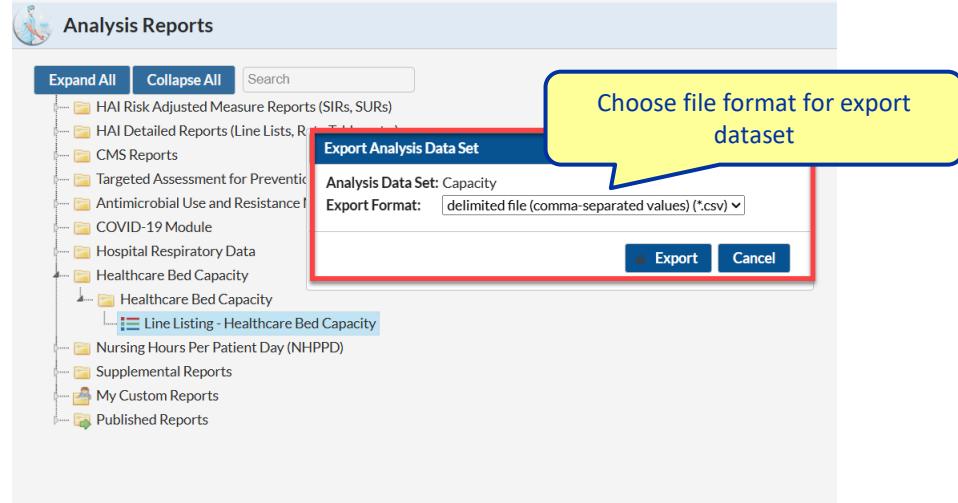


Exporting Healthcare Bed Capacity datasets

- To export dataset, select the desired report and a pop-up box will appear allowing you to “Export Data Set”.
Select “Export Data” to generate the dataset.



The screenshot shows the 'Analysis Reports' interface. At the top, there are 'Expand All' and 'Collapse All' buttons, a search bar, and a navigation icon. The left sidebar lists various report categories. Under 'Healthcare Bed Capacity', the 'Line Listing - Healthcare Bed Capacity' report is selected. A context menu is open for this report, showing options: 'Run Report', 'Modify Report', and 'Export Data Set'. The 'Export Data Set' option is highlighted with a red box.

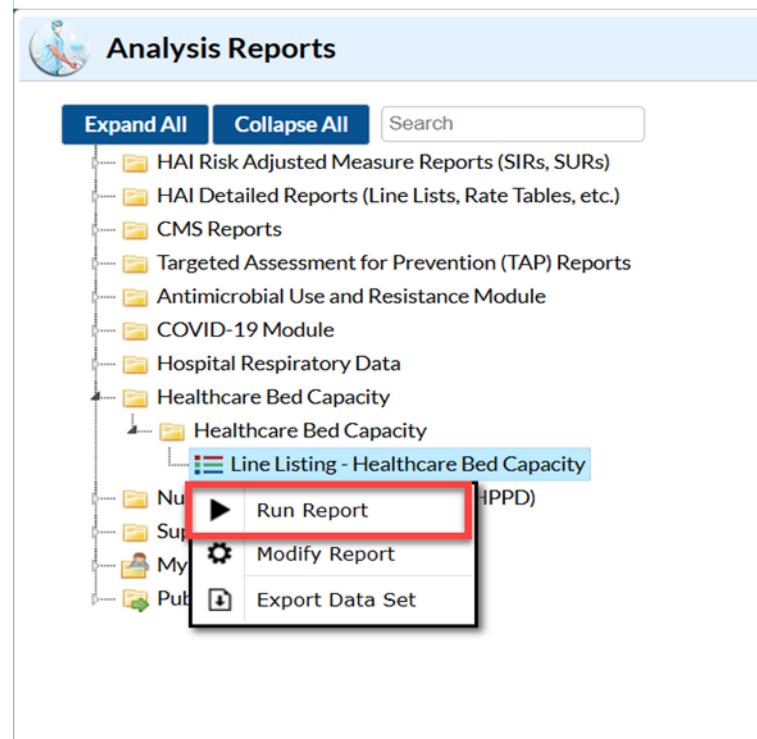


The screenshot shows a 'Export Analysis Data Set' dialog box. It contains fields for 'Analysis Data Set: Capacity' and 'Export Format: delimited file (comma-separated values) (*.csv)'. There are 'Export' and 'Cancel' buttons at the bottom. A yellow callout bubble with the text 'Choose file format for export dataset' points to the 'Export Format' dropdown. The entire dialog box is highlighted with a red box.

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

Running a default report

- To run a report with default settings, select the desired report and a pop-up box will appear allowing you to “Run Report”, “Modify Report”, or “Export Data Set”.
- Select “Run Report” to generate the report using the default display settings. This will produce an HTML report displaying all records included in the underlying dataset for the default variables



Modifying and Accessing Analysis Report

Modifying NHSN Healthcare Bed Capacity Reports

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

Modify "Line Listing - Healthcare Bed Capacity"

Show descriptive variable names ([Print List](#)) Analysis Data Set: Capacity Type: Line Listing

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

Title:
Line Listing of Healthcare Bed Capacity

Format:

 html  pdf  xls  rtf

Modifying reports: Title/Format

Modify "Line Listing - Healthcare Bed Capacity"

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

Analysis Data Set: Capacity Type: Line Listing

Format Time Period Filters Display Variables Sort Variables Display Options

Edit title of report

Title: Line Listing of Healthcare Bed Capacity

Choose file format for exported report

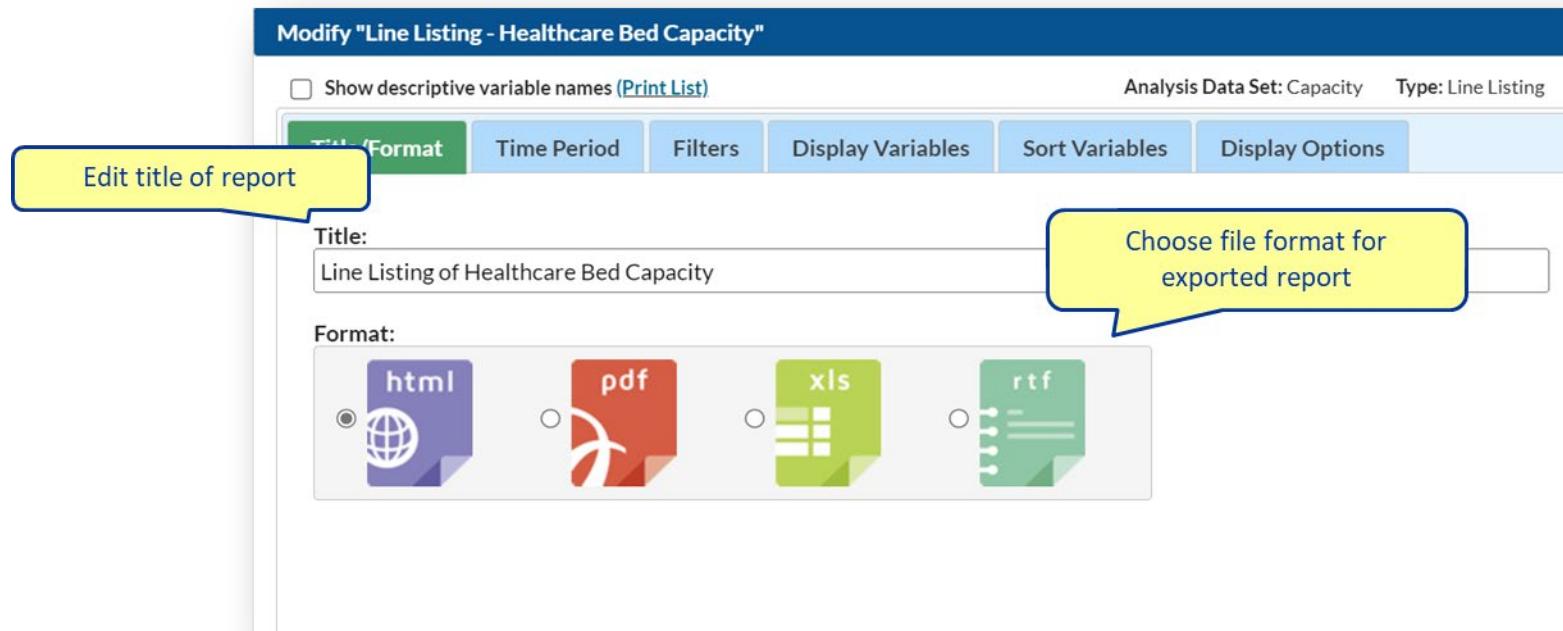
Format:

 html

 pdf

 xls

 rtf



Modifying reports: Time Period

Modify "Line Listing - Healthcare Bed Capacity"

Show descriptive variable names ([Print List](#)) Analysis Data Set: Capacity Type: Line Listing

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

Time Period:

Date Variable Beginning Ending

reportingDate 01/23/2024 **Clear Time Period**

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 your facilities to the Healthcare Bed Capacity project

Modifying reports: Filters

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

Modify "Line Listing - Healthcare Bed Capacity"

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

Analysis Data Set: Capacity Type: Line Listing Last Generated (UTC): September 22, 2024 4:20 PM

[Title/Format](#) [Time Period](#) [Filters](#) [Display Variables](#) [Sort Variables](#) [Display Options](#)

Additional Filters: [Show](#) [Clear](#)

[Add group](#) [Add rule](#) [Delete](#)

AND OR

AND OR

AdultTotalOccupied greater 25

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

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

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 - Healthcare Bed Capacity"

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

Analysis Data Set: Capacity Type: Line Listing Last Generated (UTC): [September 23, 2024 4:39 PM](#)

[Title/Format](#) [Time Period](#) [Filters](#) [Display Variables](#) [Sort Variables](#) [Display Options](#)

Display Variables:

Available Variables:	Selected Variables:
Adult ED Admitted Census	Facility Org ID
Adult ED Bed Census	Record ID
Adult ED Total Census	Context for which the record applies
Adult ICU-LOC Census	Facility Name
Adult MT/MS Census	State
Adult MT/MS Unoccupied	County Name
Adult MTMS Beds	CMS Certification Number
Adult OBS Census	Type of Facility
Adult OBS Unoccupied	Reporting for Date
Adult Observation Beds	All Beds Census
Adult PCU Beds	All Beds Unoccupied
Adult PCU Census	Adult Total Census
Adult PCU Unoccupied	Adult Total Unoccupied
Adult Specialty Beds Occupied	Adult ICU Census
Adult Specialty Beds Unoccupied	Adult ICU Unoccupied

Buttons:

- All
- Selected
- Selected
- All
- Up
- Down
- Undo

Modifying reports: Sort Variables

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

Modify "Line Listing - Healthcare Bed Capacity"

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

Analysis Data Set: Capacity Type: Line Listing Last Generated ([UTC](#)): September 23, 2020

[Title/Format](#) [Time Period](#) [Filters](#) [Display Variables](#) **Sort Variables** [Display Options](#)

Sort Variables:

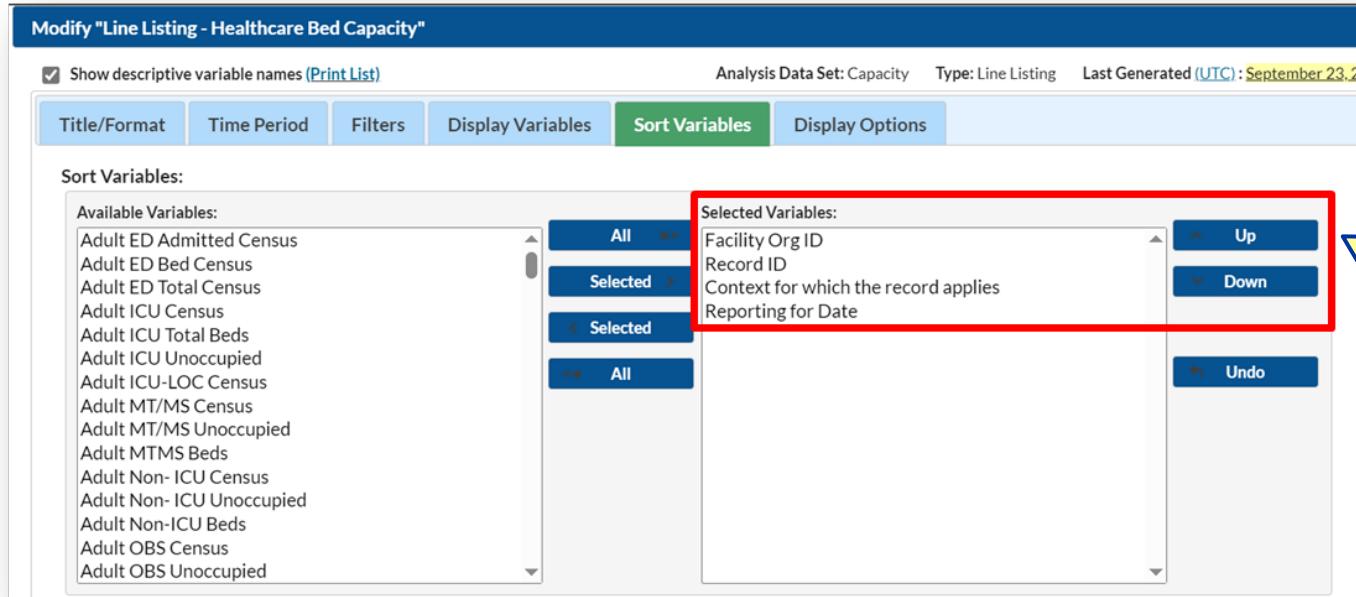
Available Variables:

- Adult ED Admitted Census
- Adult ED Bed Census
- Adult ED Total Census
- Adult ICU Census
- Adult ICU Total Beds
- Adult ICU Unoccupied
- Adult ICU-LOC Census
- Adult MT/MS Census
- Adult MT/MS Unoccupied
- Adult MTMS Beds
- Adult Non- ICU Census
- Adult Non- ICU Unoccupied
- Adult Non-ICU Beds
- Adult OBS Census
- Adult OBS Unoccupied

Selected Variables:

- Facility Org ID
- Record ID
- Context for which the record applies
- Reporting for Date

All **Selected** **Up** **Down** **Undo**



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

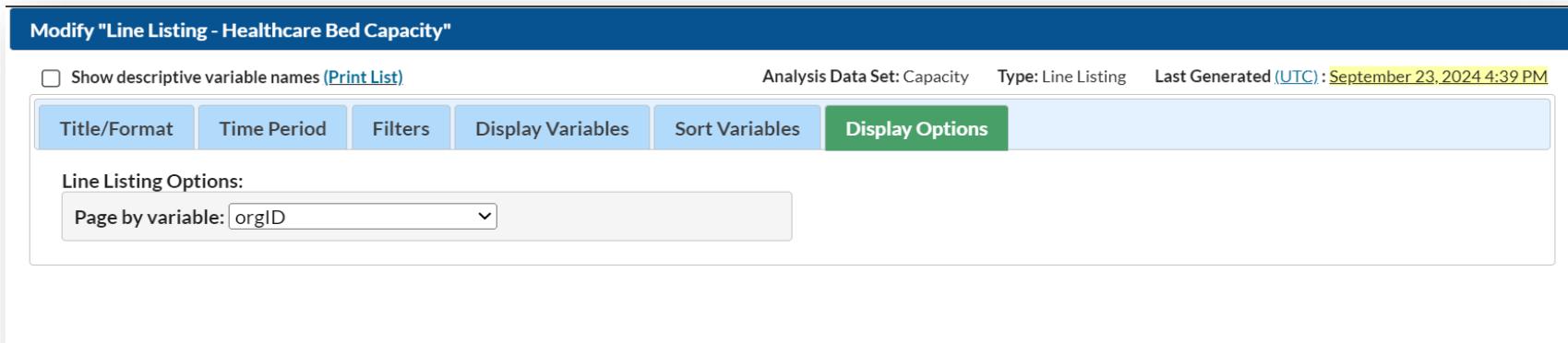
- Specify variable by which to organize the report
 - If no display variable is selected, it will display using the default “orgID”
- Report will display one table for each value of the selected “Page by variable”

Modify "Line Listing - Healthcare Bed Capacity"

Show descriptive variable names ([Print List](#)) Analysis Data Set: Capacity Type: Line Listing Last Generated (UTC): [September 23, 2024 4:39 PM](#)

[Title/Format](#) [Time Period](#) [Filters](#) [Display Variables](#) [Sort Variables](#) **Display Options**

Line Listing Options:
Page by variable: [orgID](#)



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

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

Run customized report

Modify "Line Listing - Healthcare Bed Capacity"

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

Analysis Data Set: Capacity Type: Line Listing Last Generated (UTC): [September 23, 2024 4:39 PM](#)

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

Title:
Line Listing of Healthcare Bed Capacity

Format:

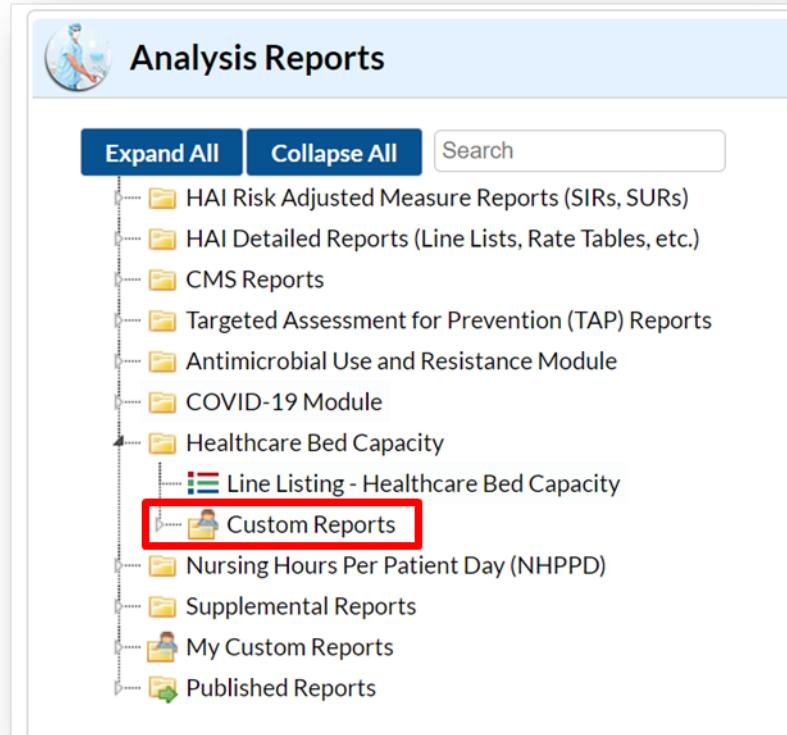
html **pdf** **xls** **rtf**

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

Run **Save...** **Export...** **Close**

Accessing saved reports

- Saved reports can be found in the “Custom Reports” folder within the “Healthcare Bed Capacity” folder



Features of Healthcare Bed Capacity 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. Note on data source
7. Sort variables

1 National Healthcare Safety Network
Line Listing of Healthcare Bed Capacity
As of: June 27, 2025 at 5:14 PM UTC
Date Range: CAPACITY datepart(reportingDate) After and Including 08/01/2024 3
4 orgID=10000
5

orgID	recordID	context	name	state	county	ccn	factype	reportingDate	AllBedsOccupied	AllBedsUnoccupied	AdultTotalOccupied
10000	358	HOSP	DHQP Memorial Hospital	GA	GA121	TOM6	HOSP-GEN	04SEP2024:02:02:00.000	100	100	1
10000	359	HOSP	DHQP Memorial Hospital	GA	GA121	TOM6	HOSP-GEN	11SEP2024:02:02:00.000	100	100	1
10000	360	HOSP	DHQP Memorial Hospital	GA	GA121	TOM6	HOSP-GEN	18SEP2024:02:02:00.000	100	100	1
10000	361	HOSP	DHQP Memorial Hospital	GA	GA121	TOM6	HOSP-GEN	03SEP2024:02:02:00.000	100	100	1
10000	362	HOSP	DHQP Memorial Hospital	GA	GA121	TOM6	HOSP-GEN	10SEP2024:02:02:00.000	100	100	1
10000	363	HOSP	DHQP Memorial Hospital	GA	GA121	TOM6	HOSP-GEN	17SEP2024:02:02:00.000	100	100	1

6 Data provided in this report reflect data submitted directly to the NHSN Connectivity Initiative: Healthcare Bed Capacity project. Values shown have been evaluated using defined data quality checks. Null values may indicate either missing values or a result of failed data quality checks.

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 AdultICUOccupied).

7 Sorted by orgID recordID context reportingDate

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

NHSN Connectivity Initiative: Hospital Bed Capacity Project

Data Quality and Validation Best Practices

Jeenal Patel, MPH

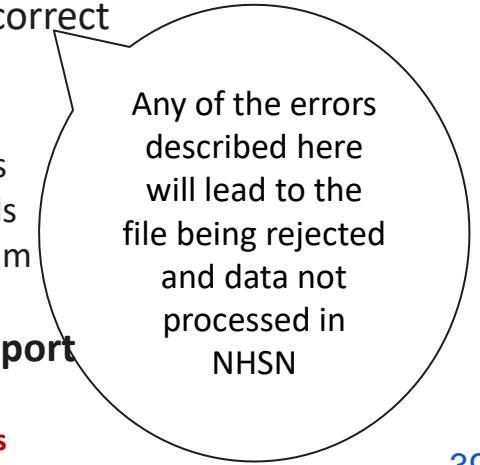
Objectives

- Identify common JSON file structure errors and their impact
- Understand the use of 9999s to differentiate zero, null, and not applicable values
- NHSN Healthcare Bed Capacity data map into NHSN HRD pathway

JSON File Structure Errors

- **Missing ANY columns**
 - ALL columns as specified in the data dictionary and in sample template need to be included on the submission
 - If any integer values are not applicable, please indicate with '9999' rather than omitting the column from the file
 - If column header is incorrectly spelled, it will also flag as a missing column
- **Columns incorrectly formatted**
 - For example, reporting data as an integer when should be a string, incorrect datetime format, etc.
- **Missing values in required fields**
 - Required fields : orgID, context, collectionDate, ExtractionDate, ReportingStatus
 - The file cannot be processed if any records are missing values in the above fields
 - Note: if missing values in certain bed fields, data WILL NOT map into downstream products including Hospital Respiratory Data
- **File requirements are fully detailed in the instruction book and new Import File Specifications guide**

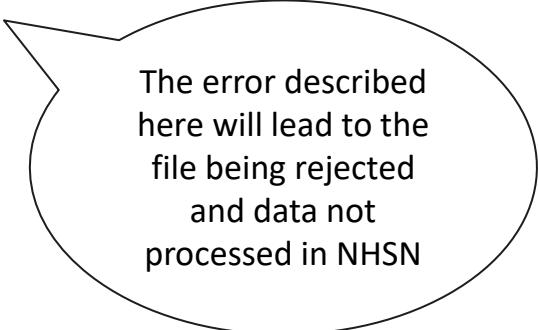
Reminder: Chat and Q & A features are limited to only 1000 participants



Any of the errors described here will lead to the file being rejected and data not processed in NHSN

JSON File Structure Errors

- **Data should be formatted as an array of objects**
 - Submit brackets at the beginning and end of the JSON file, as well as commas in between each object in the file.
 - Example: The JSON submission should be [{A},{B}], as opposed to {A}{B}



The error described here will lead to the file being rejected and data not processed in NHSN

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

Implementation of 999s

- **Guidance for differentiating zero, null, and not applicable bed counts**

Scenario	Value captured
Service/bed type available or offered at hospital, no beds occupied or unoccupied (<i>zero really means zero</i>)	Zero
Service/bed type available or offered at hospital, but no data reported (<i>null/empty value</i>)	Null (field left completely blank or empty); recommend jurisdiction/vendors coordinate with hospitals to ensure resolution as a zero or non-null value is captured if the service/bed type is available.
Service/bed type not available or offered at hospital (<i>not applicable</i>)	9999

- Null values will be flagged as potential data quality issue – all fields should either have a zero, nonzero, or 9999 value captured
- Nulls in any fields that are needed to map to HRD will also prevent successful mapping of the data into the HRD pathway.

How does the NHSN Application identify bed capacity data and map it into the HRD pathways?

- NHSN has finalized mappings of bed capacity data elements to HRD data elements based on the HRD definitions
- **Reporting Status**
 - All records submitted to NHSN must include an indicator of the reporting status for a given hospital on a given day, which serves two primary purposes:
 - Main link between the data reported into the Bed Capacity project and the NHSN Respiratory Hospital Data (HRD) reported per CMS Conditions of Participation
 - Indicate which records are test data, which are submitted as part of the onboarding and validation process
- **It is critical that the bed capacity data are reported correctly and accurately to ensure the values can be mapped to HRD; no additional action needed by reporters in the application!**

For NHSN questions or concerns, contact the NHSN Helpdesk

- **NHSN-ServiceNow** to 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.

For more information, contact CDC

1-800-CDC-INFO (232-4636)

TTY: 1-888-232-6348 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.



Appendix

Non-specialty beds

Pediatric beds		Adult beds	
Non-specialty pediatric bed census	8a	Total pediatric bed census	
	9a	Pediatric ICU census	
	9c	Pediatric ICU-LOC	
	9d	Pediatric non-ICU census	
	10a	Pediatric progressive care, intermediate care, or step-down	
	11a	Pediatric telemetry, general medicine/surgical/acute care	
	12a	Pediatric observation	
Unoccupied non-specialty pediatric beds	8b	Total unoccupied pediatric beds	
	9b	Unoccupied pediatric ICU beds	
	9e	Unoccupied pediatric non-ICU beds	
	10b	Pediatric progressive care, intermediate care, or step-down	
	11b	Pediatric telemetry, general medicine/surgical/acute care	
	12b	Pediatric observation	
Non-specialty adult bed census	3a	Total adult bed census	
	4a	Adult ICU census	
	4c	Adult ICU-LOC	
	4d	Adult non-ICU census	
	5a	Adult progressive care, intermediate care, or step-down	
	6a	Adult telemetry, general medicine/surgical/acute care	
	7a	Adult observation	
Unoccupied non-specialty adult beds	3b	Total unoccupied adult beds	
	4b	Unoccupied adult ICU beds	
	4e	Unoccupied adult non-ICU beds	
	5b	Adult progressive care, intermediate care, or step-down	
	6b	Adult telemetry, general medicine/surgical/acute care	
	7b	Adult observation	

Specialty beds

Specialty census			Specialty unoccupied			
Specialty beds census	13a	Specialty bed total census	Unoccupied specialty beds	13b	Unoccupied specialty bed total	
	14a	Specialty non-crib census		14b	Unoccupied specialty non-crib total	
	15a	Obstetrics		15b	Obstetrics	
	20a	Rehabilitation		20b	Rehabilitation	
	18a	Adult psychiatric		18b	Adult psychiatric	
	19a	Pediatric psychiatric		19b	Pediatric psychiatric	
	Specialty crib census			Unoccupied specialty crib total		
	16a	NICU total census		16b	Unoccupied NICU total beds	
	17a	NICU 1		17b	NICU 1	
	17c	NICU 2		17d	NICU 2	
	17e	NICU 3		17f	NICU 3	
	17g	NICU 3 Plus		17h	NICU 3 Plus	
	17i	NICU 4		17j	NICU 4	
	17k	Nursery census		17l	Unoccupied nursery beds	

Surge beds

Surge census			Surge unoccupied		
Surge beds census (active only)	21a Active surge bed total census 23a Active ICU surge bed census 25a Active non-ICU surge bed census		21b Unoccupied active surge total beds 23b Unoccupied active surge ICU beds 25b Unoccupied active surge non-ICU beds 22a Unoccupied inactive surge total beds 24a Unoccupied inactive surge ICU beds 26a Unoccupied inactive surge non-ICU beds		

Emergency department and Miscellaneous beds

Emergency department		
Total emergency department census	29e	Total ED census
	29f	Total ED admitted census
Pediatric emergency department census	29c	Total pediatric ED census
	29d	Total pediatric ED admitted census
Adult emergency department census	29a	Total adult ED census
	29b	Total adult ED admitted census

Miscellaneous		
Burn beds	27a	Burn beds census
	27b	Unoccupied burn beds
Negative pressure beds	28a	Negative pressure beds census
	28b	Unoccupied negative pressure beds