



Nurse Staffing Indicator

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National Healthcare Safety Network

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Objectives

- By the end of this session, participants will be able to:
 - Describe the nurse staffing indicators.
 - Access the monthly survey for reporting nurse staffing.
 - Report nurse staffing data manually or by uploading a CSV file.
 - Identify analysis options for nurse staffing hours per patient days.



Presentation Agenda



Overview of NSI

- Background
- Measure description and definitions



Reporting

- Requirements
- Process



Analysis

- Generating data sets
- Analysis options

Overview of Nurse Staffing Indicator



“

Appropriate **nurse staffing** contributes to improved patient outcomes, including **reduction of preventable events such as infections**. Identifying and maintaining the appropriate nurse staff numbers and mix is critical to delivery of quality patient care. ”

AMERICAN NURSES ASSOCIATION

Introduction

- Nurses represent the largest sector of the healthcare workforce, with over 4 million nurses nationwide.¹
- Nurses are well positioned to optimize patient care and reduce preventable infections given their role.
- Multiple studies have demonstrated an association between adequate nurse staffing and reduced risk of healthcare associated infections (HAIs).²⁻⁵



Lower nurse staffing is associated with increased HAIs.

References: ¹Health Resources and Services Administration, 2024; ²Shang et al. 2019; ³Cimiotti et al. 2025; ⁴Needleman et al. 2002; ⁵Weinstein et al., 2008

National Healthcare Safety Network (NHSN) Nurse Staffing Indicator

- Provides acute care hospitals and other short-term stay hospitals with a tool to monitor and report nurse staffing data from critical care units
 - Critical care units include all intensive care units and are mapped as an NHSN-designated critical care units, denoted with location type as critical care (location type=CC).
- Based on National Quality Forum's measures^{6,7}, which are collected as one of the National Database of Nursing Quality Indicators⁸:
 - NQF# 0205: Nursing Hours per Patient Day
 - NQF# 0204: Skill mix (Registered Nurse [RN], Licensed Vocational/Practical Nurse [LVN/LPN], Unlicensed assistive personnel [UAP])



Guidance applies to facilities eligible to use the Patient Safety Component

References: ⁶National Quality Forum. Measure #0204; ⁷National Quality Forum. Measure #0205; ⁸Schlachta-Fairchild et al., 2008

NHSN Nurse Staffing Indicator Metrics

- Nursing Hours per Patient Days (NHPPD)

$$\text{ALL Nursing Staff Hours per Patient Days (NHPPD)} = \frac{\text{Total Number of Productive Hours Worked by ALL Nursing Staff}}{\text{Total Number of Patient Days}}$$

$$\text{RNs Hours per Patient Days (RN-HPPD)} = \frac{\text{Total Number of Productive Hours Worked by RNs}}{\text{Total Number of Patient Days}}$$

$$\text{LPNs/LVNs Hours per Patient Days (LPN/LVP-HPPD)} = \frac{\text{Total Number of Productive Hours Worked by LPNs/LVNs}}{\text{Total Number of Patient Days}}$$

$$\text{UAP Hours per Patient Days (UAP-HPPD)} = \frac{\text{Total Number of Productive Hours Worked by UAPs}}{\text{Total Number of Patient Days}}$$

NHSN Nurse Staffing Indicator Metrics

- Skill Mix- Percent of productive hours worked by nursing type

$$\text{Pct of total productive hrs. worked by RNs} = \frac{\text{Total Number of Productive Hours Worked by RNs}}{\text{Total Number of Productive Hours Worked by ALL Nursing Staff}} \times 100$$

$$\text{Pct of total productive hrs. worked by LPNs} = \frac{\text{Total Number of Productive Hours Worked by LPNs/LVNs}}{\text{Total Number of Productive Hours Worked by ALL Nursing Staff}} \times 100$$

$$\text{Pct of total productive hrs. worked by UAPs} = \frac{\text{Total Number of Productive Hours Worked by UAPs}}{\text{Total Number of Productive Hours Worked by ALL Nursing Staff}} \times 100$$



Definitions

NHSN Nurse Staffing Indicator

Nursing Staff

- Includes nursing staff assigned to a critical care unit/location:
 - Registered Nurse (RN)
 - Licensed Practical/Vocational Nurse (LPN/LVN)
 - Unlicensed Assistive Personnel (UAP)
 - Assistive personnel may be licensed or certified (e.g., certified nursing assistant).
 - This includes individuals trained to function in assistive role to nurse in provision of patient care (e.g., taking vital signs; bathing, feeding, or dressing patients; assisting with ambulation), as delegated by an RN.



Includes staff employed by the facility and temporary staff (contracted/agency staff)

Nursing Staff

- Include nursing staff who are:
 - counted in critical care unit's staffing plan for any given day of the reporting month
 - replaced if they call out/sick
 - whose work hours are charged to the critical care unit's cost center
- Hours worked by charge nurses are included in direct patient care hours if they:
 - are part of the unit's staffing plan for any given day of the reporting month
 - provide direct patient care responsibilities for >50% of their shift



Nursing Staff

- Does not include:
 - Advanced Practice RNs (APRN)
 - Performing the role of an institutionally credentialed provider
 - RN or LPN/LVNs:
 - Who are part of specialty team, patient educator, nurse informaticist, nurse researcher, managed care nurse, or case manager not assigned to a specific unit
 - Whose primary responsibilities are administrative
 - Unit Secretaries, clerks, schedulers, monitor technicians, & therapy assistants
 - Staff responsible to assist with transport of stable patients
 - Student nurses
 - Virtual or in-person sitters or patient safety attendants
 - Hospital volunteers

Direct Patient Care

Patient-focused activities performed by nursing staff assigned to patients within a specific unit; any care provided through direct patient interaction and tasks that are patient-related, but may occur away from the patient, such as, but not limited to:

- Admission, transfer, and discharge activities
- Care coordination
- Documentation time
- Medication administration tasks
- Nursing rounds
- Nursing treatments
- Patient communication and teaching
- Patient monitoring during transport
- Patient screening
- Post-discharge communication
- Tele-ICU/Tele-critical care
- Treatment planning
- Triage

Direct Patient Care Hours

- Number of hours worked by nursing staff assigned to critical care unit who have direct patient care responsibilities for >50% of their assigned shift
- Does not include:
 - Budgeted/scheduled hours not worked
 - Vacation, sick, or leave time
 - Orientation, education, or committee time
 - Time in which no patient care was provided due to on-call status or call-offs related to unit closing/low census
 - Administrative duties
 - Research-related activities
 - Development or implementation of quality improvement projects or nurse education training
 - Auditing of medical records or billing data

Total Number of Productive Hours Worked by Nursing Staff

- **Total number of productive hours worked by all nursing staff**
 - Sum of the total direct patient care nursing hours worked by ALL nursing staff with direct patient care responsibilities for each hospital in-patient unit during the calendar month
 - **Total number of productive hours worked by RNs**
 - **Total number of productive hours worked by LPNs/LVNs**
 - **Total number of productive hours worked by UAPs**
 - Used as numerator to calculate all nursing staff hours per patient days
 - Used as denominator to calculate percentage of skill mix

Total Patient Days (Denominator)

- Total patient day counts for a critical care unit/location reporting Nurse Staffing Hours is **the same** as the patient day counts reported for the same location reporting Denominator Summary Data for one of the Device-associated Event Modules.
- Total number of patients in the unit per day during the calendar month
- Patient day count:
 - Record number of patients on the unit each day at a designated time, preferably at midnight.
 - Sum daily counts at the end of the month.
- Count only includes those present at the time the count is conducted and does not include patients admitted and discharge from unit before or after the count is performed



If your facility is reporting in the Patient Safety Component, Total Patient Days is already collected and reported

EXAMPLE

Nursing Hours Per Patient Day

- Day 1:
 - 25 patients in the ICU at midnight
 - **Total patient days = 25**
 - Night shift 12am-7am: 16 RNs, 1 LPN/LVNs, 9 UAPs
Day shift 7a-7p: 16 RNs, 2 LPN/LVNs, 10 UAPs,
Night shift: 7p-12am: 15 RNs, 3 LPN/LVNs, 8 UAPs
 - RN Hours: (16 nurses x 7 hours) + (16 nurses x 12 hours) + (15 nurses x 5 hours) = 379 nursing (RN) hours
 - LPN/LVN Hours: (1 LPN/LVNs x 7 hours) + (2 LPN/LVNs x 12 hours) + (3 LPN/LVNs x 5 hours) = 46 nursing (LPN/LVN) hours
 - UAP Hours: (9 UAPs x 7 hours) + (10 UAPs x 12 hours) + (8 UAPs x 5 hours) = 223 nursing (UAP) hours
 - **Total nursing hours = 379+ 46 + 223 = 648 total nursing hours**
- **Total nursing hours per patient day =**
 - 648 nursing hours/25 patient days = 25.9 nursing hours per patient day
 - 379 RN hours/25 patient days = 15.2 RN hours per patient day
 - 46 LPN or LVN hours/25 patient days = 1.8 LPN/LVN hours per patient day
 - 223 UAP hours/25 patient days = 8.9 UAP hours per patient day

Note: Example is for one day for simplicity; Hours each day and patient days for the whole month would be summed

EXAMPLE

Skill Mix

- RN Hours: 379 nursing (RN) hours
- LPN/LVN Hours: 46 nursing (LPN/LVN) hours
- UAP Hours: 223 nursing (UAP) hours
- Total nursing hours = $379 + 46 + 223 = 648$ hours

- Percent of hours worked by RNs = $(379 \text{ RN hours} / 648 \text{ total nursing hours}) \times 100 = 58.5\%$
- Percent of hours worked by LPNs/LVNs = $(46 \text{ LPN or LVN hours} / 648 \text{ total nursing hours}) \times 100 = 7.1\%$
- Percent of hours worked by UAPs = $(223 \text{ UAP hours} / 648 \text{ total nursing hours}) \times 100 = 34.4\%$

Knowledge Check

1. Direct patient care hours can be counted for which of the following persons?
- A. An RN completing a clinical practicum for an advanced practice degree
 - B. Staff who assist with transport of patients
 - C. An RN assigned to the unit as a patient educator
 - D. An RN who works for the hospital's IV-insertion team



Knowledge Check

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 - B. Staff who assist with transport of patients
 - C. **An RN assigned to the unit as a patient educator**
 - D. An RN who works for the hospital's IV-insertion team



Knowledge Check

2. Which facilities are currently eligible to report nurse staffing to NHSN?

- A. Long term care facilities
- B. Acute care hospitals
- C. Rural emergency hospitals
- D. Ambulatory surgery centers



Knowledge Check

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- A. Long term care facilities
- B. Acute care hospitals**
- C. Rural emergency hospitals
- D. Ambulatory surgery centers



Knowledge Check

3. Total patient days are calculated at the end of the month by:
 - A. Summing daily counts of the number of patients on the unit at a designated consistent time, preferably at midnight
 - B. Summing daily counts of the number of patients admitted to the unit minus the number of patients discharged from the unit
 - C. Summing daily counts of the number of patients on the unit; count can occur anytime of the day on any day
 - D. Summing the length of stay of all the patients who have been in the unit for that month



Knowledge Check

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Reporting Nurse Staffing Indicator

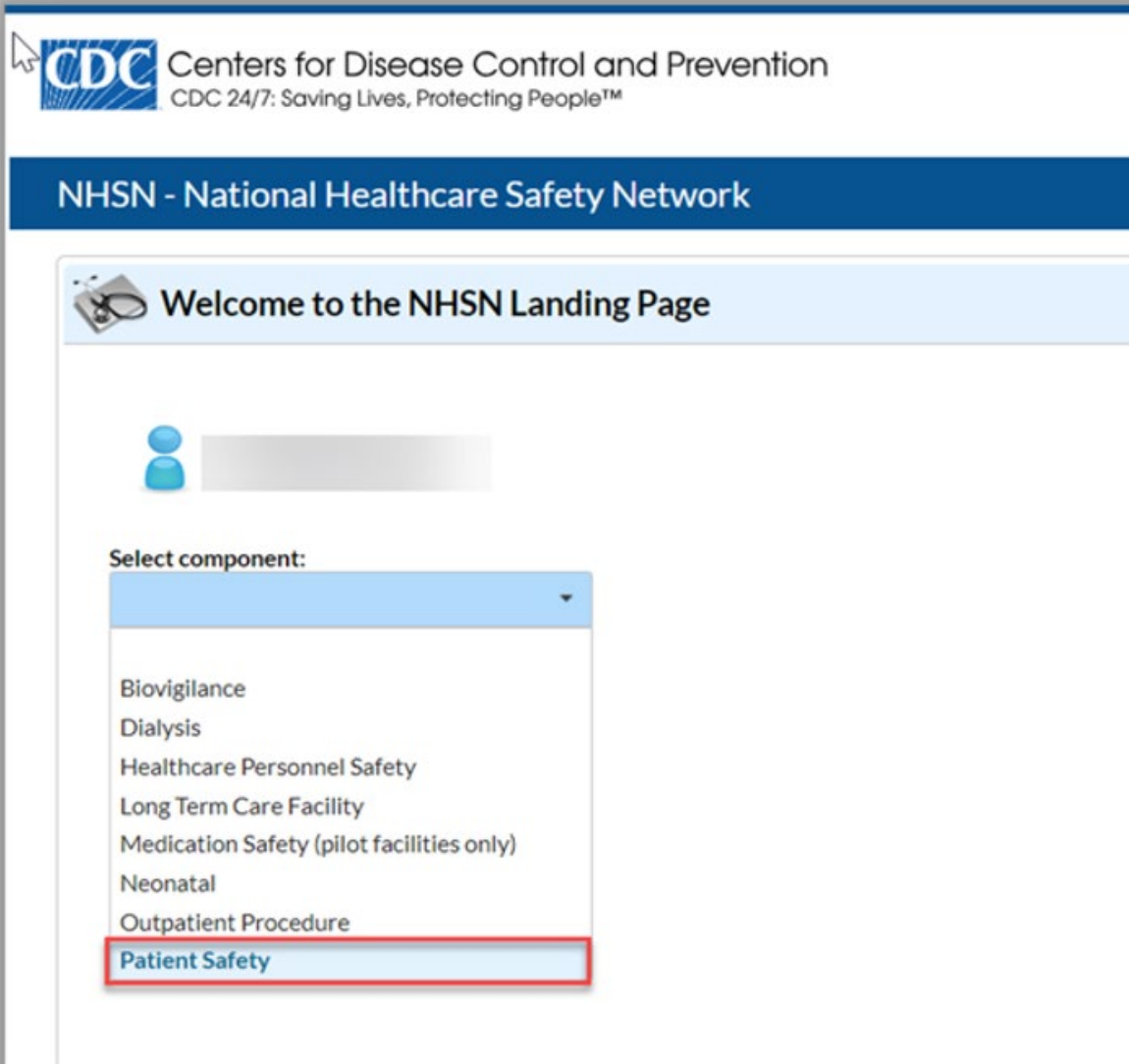
Reporting Requirements

- To participate in reporting of nurse staffing hours:
 - Facility must be enrolled in NHSN
 - Critical care units must be “mapped” in NHSN
 - Reporting for all mapped critical care units is encouraged
- Data can be entered either manually or using a CSV file
- Ideally, facilities would report at the end of the month for the previous month
 - Data may be entered retrospectively as far back as January 2023



Reporting of nurse staffing hours is **voluntary**

Reporting Process



The screenshot shows the top portion of the NHSN website. At the top left is the CDC logo with the text "Centers for Disease Control and Prevention" and "CDC 24/7: Saving Lives, Protecting People™". Below this is a dark blue banner with "NHSN - National Healthcare Safety Network" in white. The main content area has a light blue header with a stethoscope icon and the text "Welcome to the NHSN Landing Page". Below the header is a user profile icon (a blue person icon next to a grey rectangle). Underneath is a "Select component:" dropdown menu. The menu is open, showing a list of options: Biovigilance, Dialysis, Healthcare Personnel Safety, Long Term Care Facility, Medication Safety (pilot facilities only), Neonatal, Outpatient Procedure, and Patient Safety. The "Patient Safety" option is highlighted with a red border.

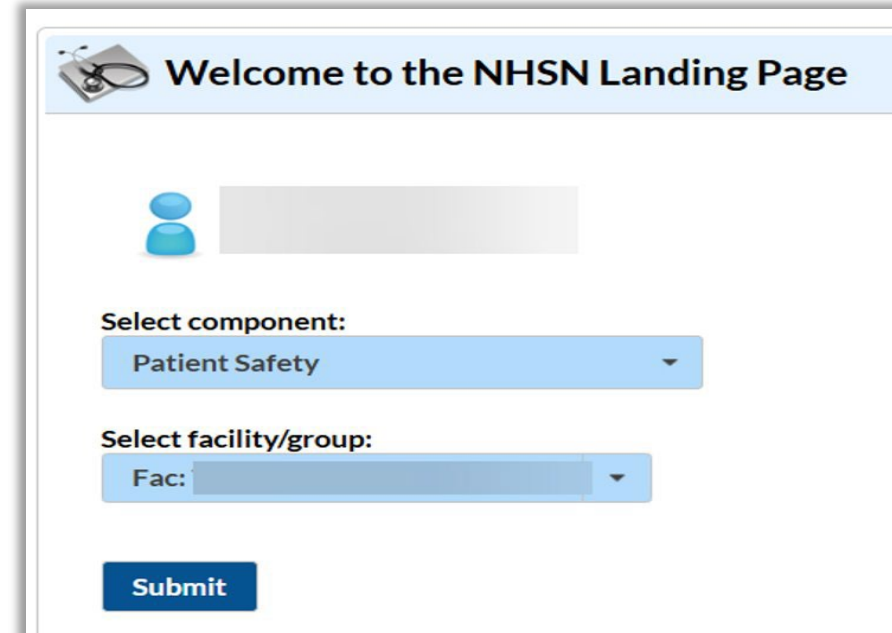
CDC Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

NHSN - National Healthcare Safety Network

Welcome to the NHSN Landing Page

Select component:

- Biovigilance
- Dialysis
- Healthcare Personnel Safety
- Long Term Care Facility
- Medication Safety (pilot facilities only)
- Neonatal
- Outpatient Procedure
- Patient Safety**



This is a close-up of the form area on the NHSN Landing Page. It features a light blue header with a stethoscope icon and the text "Welcome to the NHSN Landing Page". Below the header is a user profile icon (a blue person icon next to a grey rectangle). Underneath are two dropdown menus. The first is labeled "Select component:" and has "Patient Safety" selected. The second is labeled "Select facility/group:" and has "Fac:" selected. Below these dropdowns is a dark blue "Submit" button.

Welcome to the NHSN Landing Page

Select component:
Patient Safety

Select facility/group:
Fac:

Submit

Manual Data Entry

NHSN - National Healthcare Safety Network (ps1150-95cf7b597-mx6xt:80)

NHSN Patient Safety Component Home Page

- NHSN Home
- Alerts
- Dashboard
- Reporting Plan
- Patient
- Event
- Procedure
- Summary Data
- COVID-19
- Import/Export
- Surveys
 - Add
 - Find
 - Incomplete
 - Monthly
- Analysis
- Users
- Facility

Monthly Survey

Select month: September | Select year: 2025

Auto populates: Facility ID: 10000

*Month: September | *Year: 2025

Auto populates from summary data: *Total# Patient Days

*NHSN Location Code	*Total# Productive RN Hours	*Total# Productive LPN/LVN Hours	*Total# Productive UAP Hours	*Total# Patient Days
1				
12 WEST3				800
20000				
23				
3 MS				

CSV File Upload

- Available for facility and group uploads
- Groups can upload data for multiple facilities in one upload
- Group data cannot overwrite facility data
- CSV data will not overwrite patient days entered in summary data
- Template available

	A	B	C	D	E	F	G	H	I
1	month	year	location	numRNHours	numLPNLVNHhours	numUAPHours	numPatDays	orgid	
2									
3									
4									
5									
6									
7									
8									
9									
10									

Nursing Hours csv

Facility CSV Upload



Monthly Survey

Facility ID: *Month: *Year:

*NHSN Location Code	*Total# Productive RN Hours	*Total# Productive LPN/LVN Hours	*Total# Productive UAP Hours	*Total# Patient Days
---------------------	-----------------------------	----------------------------------	------------------------------	----------------------

Total Patient Days must be edited/updated on the Summary Data Denominators page for this location.

For information on the accepted file formats and content, click the Help link below.

[? Help](#)

No file chosen

CSV File

NHSN Home

- Alerts
- Dashboard
- Reporting Plan
- Patient
- Event
- Procedure
- Summary Data
- Hospital Respiratory Data
- Infectious Diseases of Public Health Concern
- Import/Export
- Surveys
- Analysis
- Users
- Facility

Import Editor

These records have no match in the database. For each record you have three options.

- Leave the record as is. It will be inserted when you press the Submit button.
- Ignore the record. Check the box in the Delete column and then press the Delete button.
- Edit the record. Press the Edit button if you need to change any of the record's fields.

Inserts (1)

Page 1 of 1

Delete		Month *	Year *	Location *	Total# Productive RN Hours *	Total #Productive LPN/LVN Hours *	Total #Pro
<input type="checkbox"/>	<input type="button" value="Edit"/>	3	2025	ICU/CCU	80.76	10.25	12.5

Page 1 of 1

Click Submit button to save data

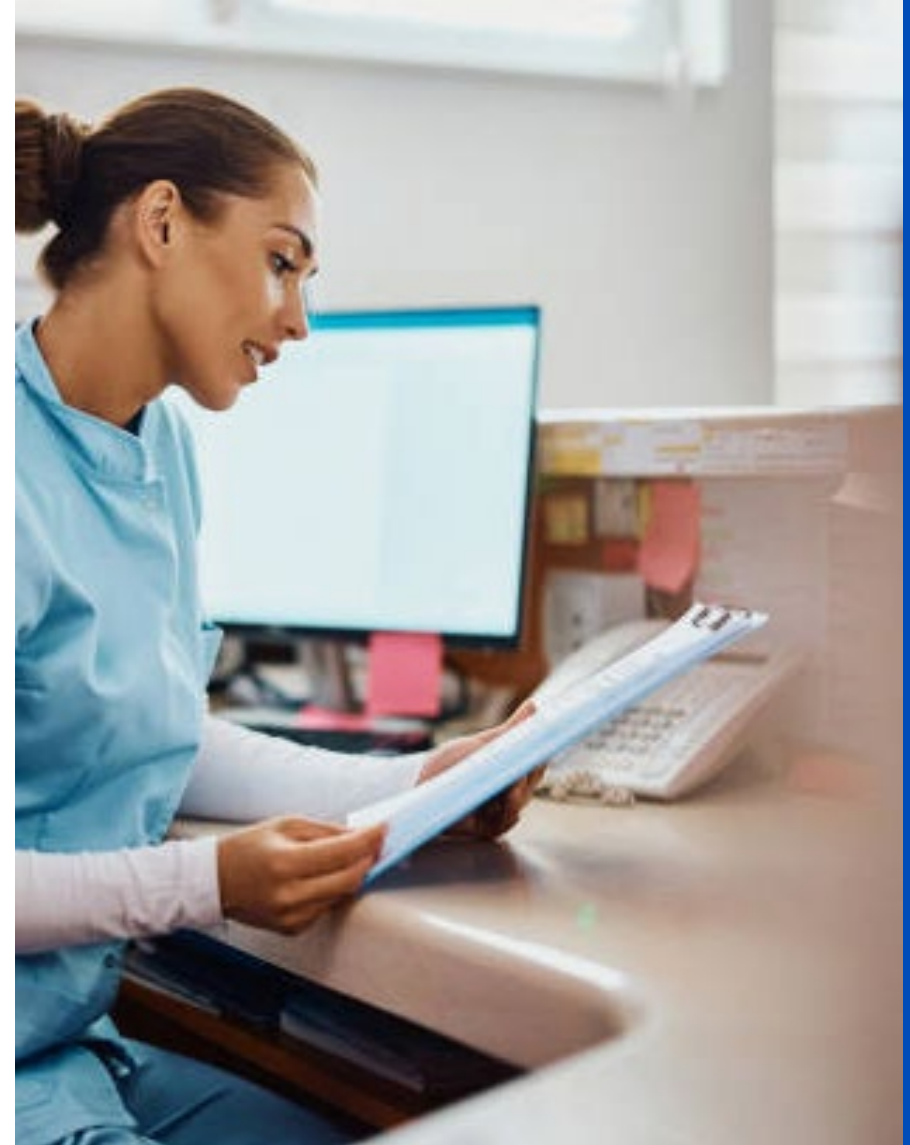
CSV Upload Form

<https://www.cdc.gov/nhsn/pdfs/Nurse-Staffing-Hours.csv>

Knowledge Check

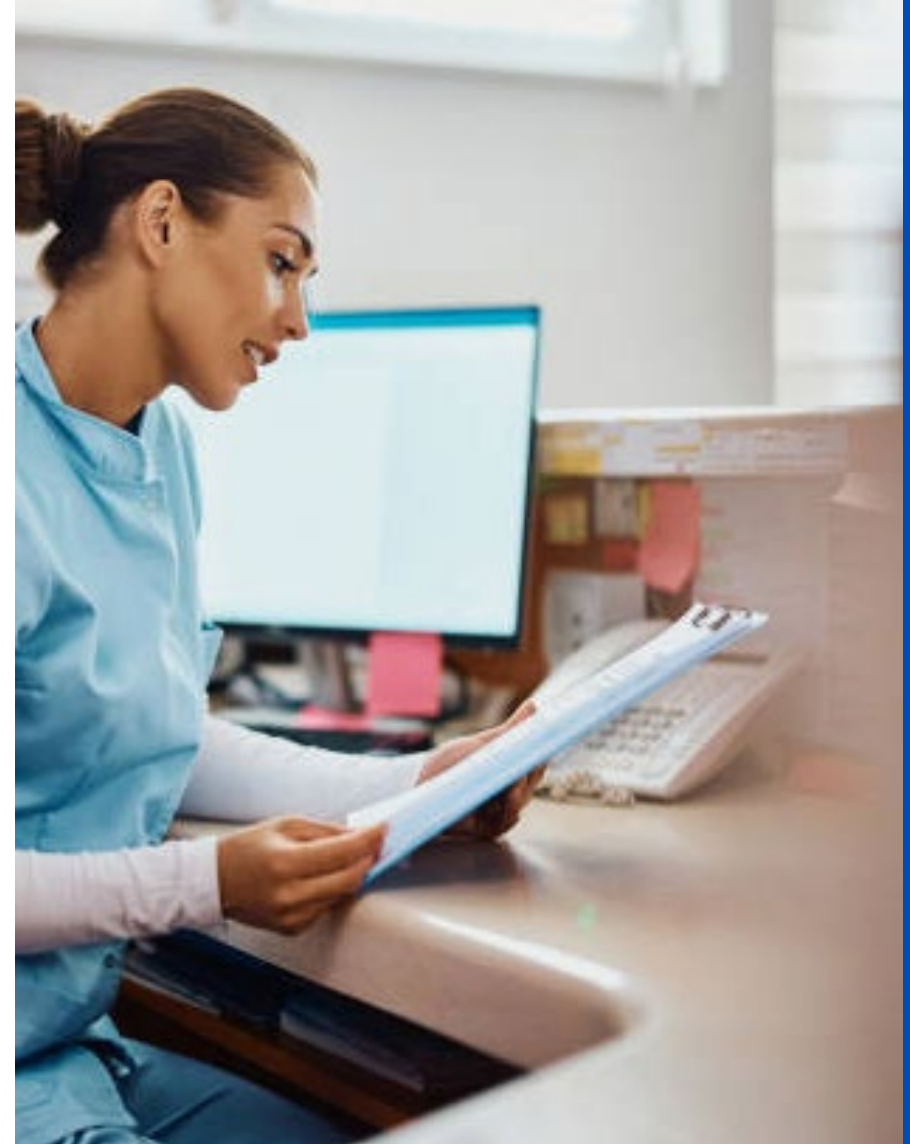
4. Which of the following is **NOT** true about reporting nurse staffing to NHSN?

- A. Reporting of nurse staffing is voluntary.
- B. On the application, select “Survey” and then “Monthly Survey” to access the reporting tool.
- C. Data can either be entered manually or uploaded through a CSV file.
- D. Data for each facility must be entered separately for groups.



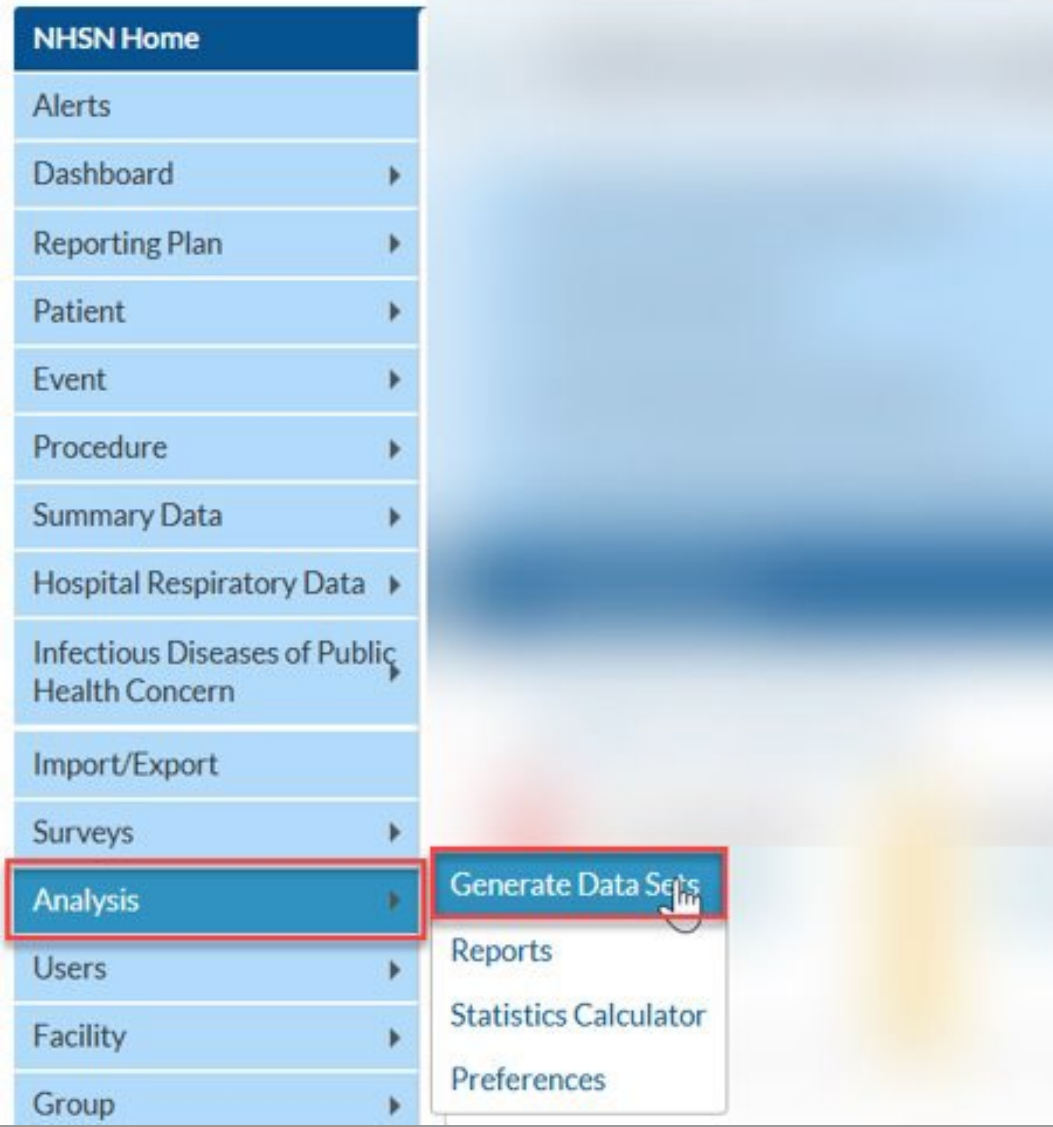
Knowledge Check

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 - D. **Data for each facility must be entered separately for groups.**



Analysis

NHSN - National Healthcare Safety Network



The screenshot shows the NHSN navigation menu. The 'Analysis' menu item is highlighted with a red box, and its sub-menu is open, also highlighted with a red box. A mouse cursor is pointing at the 'Generate Data Sets' option in the sub-menu.

- NHSN Home
- Alerts
- Dashboard ▶
- Reporting Plan ▶
- Patient ▶
- Event ▶
- Procedure ▶
- Summary Data ▶
- Hospital Respiratory Data ▶
- Infectious Diseases of Public Health Concern ▶
- Import/Export
- Surveys ▶
- Analysis ▶**
 - Generate Data Sets**
 - Reports
 - Statistics Calculator
 - Preferences
- Users ▶
- Facility ▶
- Group ▶

GENERATE DATASET

Preparing for analysis reporting

Generate data sets **before** running reports.

Analysis Options

- Analysis reports are available within the NHSN Application.
- Analysis can be performed at various levels:
 - Facility
 - CDC Location Code
 - Location Type
- Reports include rate tables for monitoring trends by CDC location.

NHSN - National Healthcare Safety Network

NHSN Home

- Alerts
- Dashboard ▶
- Reporting Plan ▶
- Patient ▶
- Event ▶
- Procedure ▶
- Summary Data ▶
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- Infectious Diseases of Public Health Concern ▶
- Import/Export
- Surveys ▶
- Analysis** ▶
- Users ▶
- Facility ▶
- Group ▶

Analysis Reports

Expand All Collapse All Search

- Folder: HAI Risk Adjusted Measure Reports (SIRs, SURs)
- Folder: HAI Detailed Reports (Line Lists, Rate Tables, etc.)
- Folder: Digital Quality Measure Reports (dQM)
- Folder: CMS Reports
- Folder: Targeted Assessment for Prevention (TAP) Reports
- Folder: Antimicrobial Use and Resistance Module
- Folder: COVID-19 Module
- Folder: Hospital Respiratory Data
- Folder: Nursing Hours Per Patient Day (NHPPD)**
 - Folder: NHPPD Data
 - Line Listing - Hospital Monthly Survey
 - Rate Table for Nursing Hours per Patient Days
- Folder: Supplemental Reports

Generate Data Sets from Reports
Reports and Reports
Statistics Calculator
Preferences



Guides for using the NHSN analysis features are available on the PSC website:

<https://www.cdc.gov/nhsn/ps-analysis-resources/index.html>.

Resources

Resources

- **Nurse Staffing Hours Indicator Webpage**
 - <https://www.cdc.gov/nhsn/psc/nshi/index.html>
- **NHSN Nurse Staffing Indicator Protocol**
 - <https://www.cdc.gov/nhsn/psc/nshi/Nurse-Staffing-Indicator-Protocol508c.pdf>
- **Monthly Survey Form**
 - <https://www.cdc.gov/nhsn/psc/nshi/Monthly-Survey-Form-508c.pdf>
- **CSV Upload Form**
 - <https://www.cdc.gov/nhsn/pdfs/Nurse-Staffing-Hours.csv>

PSC Modules, Events & Indicator

Access relevant training, protocols, data collection forms and supporting materials for each module.

AUR Module Antimicrobial Use & Resistance Options	PNEU Events Pneumonia (PedVAP) Events
BSI Events Bloodstream Infections	SSI Events Surgical Site Infection Events
CLIP Events Central Line Insertion Practice Adherence	UTI Events Urinary Tract Infections
MDRO & CDI Events Multidrug-Resistant Organism & <i>C. difficile</i> Infections	VAE Ventilator-associated Events
PedVAE Pediatric Ventilator-associated Events	NSHI Nurse Staffing Hours Indicator

References

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2. Shang J, Needleman J, Liu J, Larson E, Stone PW. Nurse staffing and healthcare-associated infection, unit-level analysis. *Journal of Nursing Administration*. 2019 May 1;49(5):260-5.
3. Cimiotti JP, Li Y, Kang YJ, Becker ER, Joski P, Landerfelt PE, Razmpour OR, Fridkin SK. Registered nurse workload and hospital-onset methicillin-resistant *Staphylococcus aureus* bloodstream infections. *Am J Infect Control*. 2025 Oct;53(10):1121-1123. doi: 10.1016/j.ajic.2025.06.008.
4. Needleman J, Buerhaus P, Mattke S, Stewart M, Zelevinsky K. Nurse-staffing levels and the quality of care in hospitals *N Engl J Med* 2002;346:1715- 1722
5. Weinstein RA, Stone PW, Pogorzelska M, Kunches L, Hirschhorn LR. Hospital staffing and health care-associated infections: a systematic review of the literature. *Clinical Infectious Diseases*. 2008 Oct 1;47(7):937-44
6. National Quality Forum. Measure #0204 - Skill mix (Registered Nurse [RN], Licensed Vocational/Practical Nurse [LVN/LPN], unlicensed assistive personnel [UAP], and contract). Retrieved from <https://www.qualityforum.org/QPS/>
7. National Quality Forum. Measure #0205 - Nursing Hours per Patient Day. Retrieved from <https://www.qualityforum.org/QPS/>
8. Schlachta-Fairchild L, Elfrink V, Deickman A. Patient Safety, Telenursing, and Telehealth. In: *Patient Safety and Quality: An Evidence-Based Handbook for Nurses*. Agency for Healthcare Research and Quality (US), Rockville (MD); 2008. PMID: 21328785

Thank you.

For any 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 <https://www.cdc.gov/>
Follow us on social [@CDCgov](#)

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

