



NURSE STAFFING AND SKILL MIX BENCHMARKING REPORT

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Background

Since 2021, hospitals have been asked to report through the [Leapfrog Hospital Survey](#) on the staffing levels of their medical, surgical, and med-surg units, the skill mix of the nurses in these units, and the education levels of registered nurses (RNs) throughout the hospital. The four measures Leapfrog is using to assess hospital performance include:

- Total Nursing Hours per Patient Day (NQF #0205)
- RN Nursing Hours per Patient Day (NQF #0205)
- Nursing Skill Mix (% of total nursing care hours provided by RNs) (NQF #0204)
- Percentage of RNs who are BSN-prepared (The Future of Nursing: Leading Change, Advancing Health. Washington (DC): National Academies Press (US); 2011. PMID: 24983041.)

To date, Leapfrog has not scored hospitals or publicly reported results on these four measures.

Requests for Benchmarking Data

Beginning with the 2023 Leapfrog Hospital Survey, Leapfrog will start scoring and publicly reporting hospital performance on these four measures. In response to this change, Leapfrog has received several requests for benchmarking data so that hospitals can better understand their current performance and understand how they compare nationally.

Data Used for Benchmarking

Over 1,004 hospitals voluntarily reported data for the four measures via the 2021 and 2022 Leapfrog Hospital Surveys, which was used to calculate the summary statistics outlined in the [Results](#) section below.

Details on how Total Nursing Hours per Patient Day and RN Nursing Hours per Patient Day measures were calculated are available in [Appendix A](#). Details on how Nursing Skill Mix was calculated is available in [Appendix B](#).

For the Total Nursing Hours per Patient Day, RN Nursing Hours per Patient Day, and Nursing Skill Mix measures, hospitals that reported via the 2021 or 2022 Leapfrog Hospital Surveys were placed into one of five cohorts - small teaching (<500 staffed beds), large teaching (>500 staffed beds), non-teaching,



pediatric, critical access - for the purposes of benchmarking. To place hospitals into cohorts, Leapfrog used the following criteria:

- Teaching status - obtained from the NHSN Annual Patient Safety Survey for hospitals that joined Leapfrog’s NHSN Group and submitted Section 7 on the 2021 or 2022 Leapfrog Hospital Survey
- Bed size - obtained from Section 1 Basic Hospital Information for hospitals that submitted the 2021 or 2022 Leapfrog Hospital Survey (only used for teaching hospitals)
- Pediatric status - only used for free-standing pediatric hospitals
- Critical Access status - only used for CMS designated critical access hospitals

For the Percentage of RNs who are BSN-prepared, hospitals were not placed into cohorts.

Results

The summary statistics in the tables below are based on responses to the 2021 and 2022 Leapfrog Hospital Survey. For three of the measures, Total Nursing Care Hours per Patient Day, RN Nursing Hours per Patient Day, and Nursing Skill Mix, hospitals were placed in one of five cohorts based on their teaching status, bed size, and type (i.e., pediatric or critical access) as described above.

For Total Nursing Care Hours per Patient Day, which includes employed or contract nursing staff with direct patient care responsibilities including, RNs, LPNs/LVNs, and UAPs, a higher number of hours per patient day is better.

Table 1. Total Nursing Care Hours per Patient Day

	Large Teaching Hospitals	Small Teaching Hospitals	Non-Teaching Hospitals	Pediatric Hospitals	Critical Access Hospitals
50 th percentile (meaning these hospitals performed better than 50% of the reporting hospitals)	9.378	9.423	9.449	11.44	11.37
25 th percentile (meaning these hospitals performed better than 25% of reporting hospitals)	8.475	8.216	8.228	9.983	10.24
10 th percentile (meaning these hospitals better than 10% reporting hospitals)	7.371	7.186	7.051	8.775	8.798



For RN Hours per Patient Day, which includes both RN nursing staff employed by the hospital or temporary staff who are not employed by the hospital (i.e., contracted/agency staff), a higher number of hours per patient day is better.

Table 2. RN Hours per Patient Day

	Large Teaching Hospitals	Small Teaching Hospitals	Non-Teaching Hospitals	Pediatric Hospitals	Critical Access Hospitals
50 th percentile (meaning these hospitals performed better than 50% of the reporting hospitals)	6.557	6.478	6.378	9.713	7.271
25 th percentile (meaning these hospitals performed better than 25% of reporting hospitals)	5.857	5.527	5.237	8.296	6.761
10 th percentile (meaning these hospitals performed better than 10% of reporting hospitals)	5.245	4.762	4.443	7.825	5.409

For the nursing skill mix measure, which calculates the proportion of total nursing care hours performed by RNs, a higher percentage is better.

Table 3. Nursing Skill Mix (% of total nursing care hours provided by RNs)

	Large Teaching Hospitals	Small Teaching Hospitals	Non-Teaching Hospitals	Pediatric Hospitals	Critical Access Hospitals
50 th percentile (meaning these hospitals performed better than 50% of the reporting hospitals)	70.89%	69.13%	69.14%	80.46%	64.29%
25 th percentile (meaning these hospitals performed better than 25% of reporting hospitals)	65.61%	63.51%	62.10%	74.33%	59.75%
10 th percentile (meaning these hospitals performed better than 10% of reporting hospitals)	61.48%	57.84%	56.46%	70.32%	54.05%

reporting hospitals)					
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Table 4. Percentage of RNs who are BSN-prepared

	Percentage of hospitals that reported on the measure
80% or more of RNs are BSN-prepared	19.07%
50% - 79% of RNs are BSN-prepared	51.95%
20% - 49% of RNs are BSN-prepared	26.57%
Less than 19% of RNs are BSN-prepared	2.41%

Appendix A

Example 1: Calculating Total Nursing Care Hours per Patient Day and RN Hours per Patient Day

Step 1: Sum the number of patient days, total number of productive hours worked by employee or contract nursing staff with direct patient care responsibilities, and total number of productive hours worked by RN nursing staff with direct patient care responsibilities from all four quarters for all applicable medical units, surgical units, and med-surg units.

Question #4: Enter your hospital's responses below by quarter across all adults and/or pediatric Medical Units (excluding step-down/progressive units):			
	(a) Total number of patient days	(b) Total number of productive hours worked by employee or contract nursing staff with direct patient care responsibilities (RN, LPN/LVN, and UAP)	(c) Total number of productive hours worked by RN nursing staff with direct patient care responsibilities
Quarter 1	7,000	58,000	45,000
Quarter 2	5,000	60,000	45,000
Quarter 3	8,000	58,000	45,000
Quarter 4	7,000	60,000	45,000
TOTAL	27,000	236,000	180,000

Question #6: Enter your hospital's responses below by quarter across all adult and/or pediatric Surgical Units (excluding step-down/progressive units):			
	(a) Total number of patient days	(b) Total number of productive hours worked by employee or contract nursing staff with direct patient care responsibilities (RN, LPN/LVN, and UAP)	(c) Total number of productive hours worked by RN nursing staff with direct patient care responsibilities
Quarter 1	5,000	58,000	45,000
Quarter 2	6,000	60,000	45,000
Quarter 3	6,000	58,000	45,000
Quarter 4	6,000	60,000	45,000
TOTAL	23,000	236,000	180,000

Question #8: Enter your hospital's responses below by quarter across all adult and/or pediatric **Med-Surg Units** (excluding step-down/progressive units):

	(a) Total number of patient days	(b) Total number of productive hours worked by employee or contract nursing staff with direct patient care responsibilities (RN, LPN/LVN, and UAP)	(c) Total number of productive hours worked by RN nursing staff with direct patient care responsibilities
Quarter 1	6,300	80,000	60,000
Quarter 2	6,700	80,000	65,000
Quarter 3	7,000	78,000	60,000
Quarter 4	6,400	80,000	64,000
TOTAL	26,400	318,000	249,000

Step 2: Then sum the total the total number of patient days, total number of productive hours worked by employee or contract nursing staff with direct patient care responsibilities, and total number of productive hours worked by RN nursing staff with direct patient care responsibilities across all units.

	(a) Total number of patient days	(b) Total number of productive hours worked by employee or contract nursing staff with direct patient care responsibilities (RN, LPN/LVN, and UAP)	(c) Total number of productive hours worked by RN nursing staff with direct patient care responsibilities
Medical Units	27,000	236,000	180,000
Surgical Units	23,000	236,000	180,000
Med-Surg Units	26,400	318,000	249,000
TOTAL	76,400	790,000	609,000

Step 3: Next divide the total number of productive hours worked by employee or contract nursing staff with direct patient care responsibilities by the total number of patient days from Step 2 to calculate the total nursing care hours per patient day.

Total number of patient days	Total number of productive hours worked by employee or contract nursing staff with direct patient care responsibilities (RN, LPN/LVN, and UAP)	Total Nursing Care Hours per Patient Day
76,400	790,000	$790,000 / 76,400 =$ 10.34

Step 4: Next divide the total number of productive hours worked by RN nursing staff with direct patient care responsibilities by the total number of patient days from Step 2 to calculate the RN hours per patient day.

Total number of patient days	Total number of productive hours worked by RN nursing staff with direct patient care responsibilities	RN Hours per Patient Day
76,400	609,000	$609,000 / 76,400 =$ 7.97

Appendix B

Example 1: Calculating Nursing Skill Mix

Step 1: Sum the total number of productive hours worked by employee or contract nursing staff with direct patient care responsibilities and the total number of productive hours worked by RN nursing staff with direct patient care responsibilities from all four quarters for all applicable medical units, surgical units, and med-surg units.

Question #4: Enter your hospital's responses below by quarter across all adults and/or pediatric Medical Units (excluding step-down/progressive units):			
	(a) Total number of patient days	(b) Total number of productive hours worked by employee or contract nursing staff with direct patient care responsibilities (RN, LPN/LVN, and UAP)	(c) Total number of productive hours worked by RN nursing staff with direct patient care responsibilities
Quarter 1	7,000	58,000	45,000
Quarter 2	5,000	60,000	45,000

Quarter 3	8,000	58,000	45,000
Quarter 4	7,000	60,000	45,000
TOTAL	27,000	236,000	180,000

Question #6: Enter your hospital's responses below by quarter across all adult and/or pediatric **Surgical Units** (excluding step-down/progressive units):

	(a) Total number of patient days	(b) Total number of productive hours worked by employee or contract nursing staff with direct patient care responsibilities (RN, LPN/LVN, and UAP)	(c) Total number of productive hours worked by RN nursing staff with direct patient care responsibilities
Quarter 1	5,000	58,000	45,000
Quarter 2	6,000	60,000	45,000
Quarter 3	6,000	58,000	45,000
Quarter 4	6,000	60,000	45,000
TOTAL	23,000	236,000	180,000

Question #8: Enter your hospital's responses below by quarter across all adult and/or pediatric **Med-Surg Units** (excluding step-down/progressive units):

	(a) Total number of patient days	(b) Total number of productive hours worked by employee or contract nursing staff with direct patient care responsibilities (RN, LPN/LVN, and UAP)	(c) Total number of productive hours worked by RN nursing staff with direct patient care responsibilities
Quarter 1	6,300	80,000	60,000
Quarter 2	6,700	80,000	65,000
Quarter 3	7,000	78,000	60,000
Quarter 4	6,400	80,000	64,000
TOTAL	26,400	318,000	249,000

Step 2: Then sum the total number of productive hours worked by employee or contract nursing staff with direct patient care responsibilities and total number of productive hours worked by RN nursing staff with direct patient care responsibilities across all units.

	(a) Total number of patient days	(b) Total number of productive hours worked by employee or contract nursing staff with direct patient care responsibilities (RN, LPN/LVN, and UAP)	(c) Total number of productive hours worked by RN nursing staff with direct patient care responsibilities
Medical Units	27,000	236,000	180,000
Surgical Units	23,000	236,000	180,000
Med-Surg Units	26,400	318,000	249,000
TOTAL	76,400	790,000	609,000

Step 3: Next divide the total number of productive hours worked by RN nursing staff with direct patient care responsibilities by the total number of productive hours worked by employee or contract nursing staff with direct patient care responsibilities from Step 2 to calculate the percentage of total productive hours worked by RN nursing staff with direct patient care responsibilities across all units (Nursing Skill Mix).

Total number of productive hours worked by employee or contract nursing staff with direct patient care responsibilities (RN, LPN/LVN, and UAP)	Total number of productive hours worked by RN nursing staff with direct patient care responsibilities	Percentage of total productive nursing hours worked by RN nursing staff with direct patient care responsibilities across all units (Nursing Skill Mix)
790,000	609,000	609,000 / 790,000 = 77%