



Measure Information

This document contains the information submitted by measure developers/stewards, but is organized according to NQF's measure evaluation criteria and process. The item numbers refer to those in the submission form but may be in a slightly different order here. In general, the item numbers also reference the related criteria (e.g., item 1b.1 relates to sub criterion 1b).

Brief Measure Information

NQF #: 0204

Corresponding Measures:

De.2. Measure Title: Skill mix (Registered Nurse [RN], Licensed Vocational/Practical Nurse [LVN/LPN], unlicensed assistive personnel [UAP], and contract)

Co.1.1. Measure Steward: American Nurses Association

De.3. Brief Description of Measure: NSC-12.1 - Percentage of total productive nursing hours worked by RN (employee and contract) with direct patient care responsibilities by hospital unit.

NSC-12.2 - Percentage of total productive nursing hours worked by LPN/LVN (employee and contract) with direct patient care responsibilities by hospital unit.

NSC-12.3 - Percentage of total productive nursing hours worked by UAP (employee and contract) with direct patient care responsibilities by hospital unit.

NSC-12.4 - Percentage of total productive nursing hours worked by contract or agency staff (RN, LPN/LVN, and UAP) with direct patient care responsibilities by hospital unit.

Note that the skill mix of the nursing staff (NSC-12.1, NSC-12.2, and NSC-12.3) represent the proportions of total productive nursing hours by each type of nursing staff (RN, LPN/LVN, and UAP); NSC-12.4 is a separate rate.

Measure focus is structure of care quality in acute care hospital units.

1b.1. Developer Rationale: Despite the consistent evidence that better nurse staffing contributes significantly to improved patient outcomes, there is considerable variations in skill mix across and within different unit types. Skill mix has been addressed in the research literature with respect to patient safety and quality of care. A lack of total nursing time and a lack of RN time for patients is thought to constrain the amount and quality of care that can be provided, as well as contribute to stress and fatigue among nursing staff. This creates a hazardous situation for patients and represents a major opportunity for use of the measures quality improvement at the patient care level and accountability (e.g., public reporting, an identified driver of improved patient safety). The Skill Mix measures allows hospitals, including nurse administrators/managers, to assess and plan their nurse staffing and develop strategies to provide adequate skill mix on a unit-by-unit and hospital-level basis allowing comparisons with regional, state, and national staffing data.

S.4. Numerator Statement: Four separate numerators are as follows:

RN hours – Productive nursing care hours worked by RNs with direct patient care responsibilities for each hospital in-patient unit during the calendar month.

LPN/LVN hours – Productive nursing care hours worked by LPNs/LVNs with direct patient care responsibilities for each hospital in-patient unit during the calendar month.

UAP hours – Productive nursing care hours worked by UAP with direct patient care responsibilities for each hospital in-patient unit during the calendar month.

Contract or agency hours – Productive nursing care hours worked by nursing staff (contract or agency staff) with direct patient care responsibilities for each hospital in-patient unit during the calendar month.

S.6. Denominator Statement: Denominator is the total number of productive hours worked by employee or contract nursing staff with direct patient care responsibilities (RN, LPN/LVN, and UAP) for each hospital in-patient unit during the calendar month.

S.8. Denominator Exclusions: Same as numerator; nursing staff with no direct patient care responsibilities are excluded.

De.1. Measure Type: Structure

S.17. Data Source: Management Data, Other

S.20. Level of Analysis: Facility, Other

IF Endorsement Maintenance – Original Endorsement Date: Aug 05, 2009 **Most Recent Endorsement Date:** Oct 23, 2019

IF this measure is included in a composite, NQF Composite#/title:

IF this measure is paired/grouped, NQF#/title:

De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results? N/A

1. Evidence, Performance Gap, Priority – Importance to Measure and Report

Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. ***Measures must be judged to meet all sub criteria to pass this criterion and be evaluated against the remaining criteria.***

1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form

0204_nqf_evidence_attachment_ver_7.1.docx

1a.1 For Maintenance of Endorsement: Is there new evidence about the measure since the last update/submission?

Do not remove any existing information. If there have been any changes to evidence, the Committee will consider the new evidence. Please use the most current version of the evidence attachment (v7.1). Please use red font to indicate updated evidence.

Yes

1b. Performance Gap

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- Disparities in care across population groups.

1b.1. Briefly explain the rationale for this measure (e.g., how the measure will improve the quality of care, the benefits or improvements in quality envisioned by use of this measure)

If a COMPOSITE (e.g., combination of component measure scores, all-or-none, any-or-none), **SKIP** this question and answer the composite questions.

Despite the consistent evidence that better nurse staffing contributes significantly to improved patient outcomes, there is considerable variations in skill mix across and within different unit types. Skill mix has been addressed in the research literature with respect to patient safety and quality of care. A lack of total nursing time and a lack of RN time for patients is thought to constrain the amount and quality of care that can be provided, as well as contribute to stress and fatigue among nursing staff. This creates a hazardous situation for patients and represents a major opportunity for use of the measures quality improvement at the patient care level and accountability (e.g., public reporting, an identified driver of improved patient safety). The Skill Mix measures allows hospitals, including nurse administrators/managers, to assess and plan their nurse staffing and develop strategies to provide adequate skill mix on a unit-by-unit and hospital-level basis allowing comparisons with regional, state, and national staffing data.

1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis. (*This is required for maintenance of endorsement. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.*) This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.

#0204 Skill mix (Registered Nurse [RN], Licensed Vocational/Practical Nurse [LVN/LPN], unlicensed assistive personnel [UAP], and contract), Last Updated: Oct 23, 2019

The following are descriptive statistics of skill mix by unit type across all NDNQI participating hospitals that provided nurse staffing data for 2017.

Skill Mix Measures

Descriptive by Unit Type (Unit Level Measure)

RN Skill Mix	Mean	Std Dev	Minimum	25th Pctl	50th Pctl	75th Pctl	Maximum
Adult Critical Care	0.89	0.07	0.33	0.85	0.89	0.95	1.00
Adult Step Down	0.74	0.10	0.03	0.68	0.73	0.79	1.00
Adult Medical	0.69	0.10	0.17	0.63	0.69	0.74	1.00
Adult Surgical	0.70	0.09	0.30	0.64	0.69	0.75	1.00
Adult Medical-Surgical	0.68	0.10	0.02	0.63	0.68	0.74	1.00
Neonatal	0.95	0.08	0.17	0.93	0.99	1.00	1.00
Pediatric Critical Care	0.93	0.08	0.27	0.88	0.94	0.99	1.00
Pediatric Medical/Surgical	0.83	0.12	0.06	0.76	0.83	0.92	1.00
Psychiatric	0.57	0.16	0.07	0.46	0.55	0.65	1.00
Rehabilitation	0.61	0.13	0.08	0.52	0.60	0.69	1.00

LPN Skill Mix	Mean	Std Dev	Minimum	25th Pctl	50th Pctl	75th Pctl	Maximum
Adult Critical Care	0.002	0.016	0.000	0.000	0.000	0.000	0.675
Adult Step Down	0.009	0.046	0.000	0.000	0.000	0.000	0.766
Adult Medical	0.014	0.043	0.000	0.000	0.001	0.001	0.816
Adult Surgical	0.014	0.040	0.000	0.000	0.001	0.001	0.460
Adult Medical-Surgical	0.018	0.064	0.000	0.000	0.000	0.001	0.830
Neonatal	0.005	0.040	0.000	0.000	0.000	0.000	0.831
Pediatric Critical Care	0.004	0.047	0.000	0.000	0.000	0.000	0.726
Pediatric Medical/Surgical	0.010	0.044	0.000	0.000	0.000	0.000	0.936
Psychiatric	0.029	0.063	0.000	0.000	0.027	0.027	0.624
Rehabilitation	0.053	0.095	0.000	0.000	0.000	0.068	0.787

UAP Skill Mix	Mean	Std Dev	Minimum	25th Pctl	50th Pctl	75th Pctl	Maximum
Adult Critical Care	0.10	0.07	0.00	0.04	0.10	0.15	0.55
Adult Step Down	0.25	0.09	0.00	0.26	0.31	0.31	0.97
Adult Medical	0.30	0.10	0.00	0.31	0.36	0.36	0.82
Adult Surgical	0.28	0.09	0.00	0.29	0.34	0.34	0.70
Adult Medical-Surgical	0.30	0.10	0.00	0.25	0.31	0.36	0.93
Neonatal	0.04	0.07	0.00	0.01	0.06	0.06	0.65
Pediatric Critical Care	0.07	0.07	0.00	0.00	0.05	0.11	0.49
Pediatric Medical/Surgical	0.16	0.11	0.00	0.05	0.16	0.24	0.84
Psychiatric	0.19	0.20	0.00	0.12	0.37	0.37	0.91
Rehabilitation	0.34	0.14	0.00	0.36	0.44	0.44	0.78

Descriptives by Hospital Characteristics

RN Skill Mix

Hospital Type	Mean	Std Dev	Minimum	25th Pctl	50th Pctl	75th Pctl	Maximum
General	-0.06	0.74	-4.55	-0.48	-0.06	0.33	3.24
Pediatric	-0.25	0.67	-5.23	-0.75	-0.26	0.21	1.45
Rehabilitation	-0.51	0.92	-2.23	-1.17	-0.59	-0.16	3.04
Psychiatric	-0.12	1.13	-1.77	-0.95	-0.30	0.35	2.73
Other specialty	0.59	0.73	-0.73	0.05	0.40	1.04	2.43
LTAC	-0.03	1.09	-1.69	-1.01	-0.11	0.55	2.84
Critical Access Hospital	0.14	0.98	-1.92	-0.66	0.04	1.01	2.70
Oncology Specialty	0.14	0.66	-1.37	-0.31	0.08	0.58	1.50
Orthopedic Specialty	-0.41	0.79	-1.56	-0.95	-0.53	-0.11	3.05
Women's Specialty	0.20	0.77	-1.14	-0.40	0.00	0.58	2.45

#0204 Skill mix (Registered Nurse [RN], Licensed Vocational/Practical Nurse [LVN/LPN], unlicensed assistive personnel [UAP], and contract), Last Updated: Oct 23, 2019

Cardiac Specialty											0.04	0.58	-1.09	-0.37	-0.10	0.39	1.48
Bed Size		Mean	Std Dev	Minimum		25th Pctl		50th Pctl		75th Pctl		Maximum					
<100	-0.05	0.92	-5.23	-0.63	-0.09	0.44	3.24										
100-199	-0.10	0.69	-2.73	-0.50	-0.09	0.30	2.71										
200-299	-0.08	0.67	-2.95	-0.47	-0.10	0.31	2.84										
300-399	-0.05	0.70	-2.17	-0.43	-0.04	0.33	2.82										
400-499	-0.01	0.67	-1.91	-0.38	-0.01	0.27	2.51										
>=500	-0.06	0.70	-4.55	-0.38	-0.01	0.31	2.12										
Teaching Status		Mean	Std Dev	Minimum		25th Pctl		50th Pctl		75th Pctl		Maximum					
Academic Medical Center		0.04	0.62	-3.06	-0.29	0.02	0.35	2.84									
Teaching Hospital			-0.12	0.75	-5.23	-0.53	-0.10	0.29	3.24								
Non-Teaching Hospital			-0.05	0.79	-3.74	-0.54	-0.09	0.37	3.24								
Location		Mean	Std Dev	Minimum		25th Pctl		50th Pctl		75th Pctl		Maximum					
Rural	-0.14	0.91	-2.75	-0.73	-0.26	0.30	3.24										
Metropolitan	-0.05	0.74	-5.23	-0.48	-0.06	0.34	3.24										
Micropolitan	-0.21	0.85	-3.41	-0.64	-0.16	0.27	3.24										
Magnet Status		Mean	Std Dev	Minimum		25th Pctl		50th Pctl		75th Pctl		Maximum					
Not Magnet Designated			-0.09	0.82	-5.23	-0.60	-0.10	0.36	3.24								
Magnet Applicant			-0.06	0.69	-4.55	-0.41	-0.04	0.31	3.24								
Magnet Designated			-0.03	0.66	-2.73	-0.41	-0.04	0.31	3.05								
LPN Skill Mix																	
Hospital Type		Mean	Std Dev	Minimum		25th Pctl		50th Pctl		75th Pctl		Maximum					
General	0.04	0.78	-0.46	-0.27	-0.23	-0.01	14.27										
Pediatric	-0.04	0.55	-0.32	-0.20	-0.18	-0.09	4.75										
Rehabilitation	-0.01	0.94	-0.56	-0.56	-0.45	0.16	4.36										
Psychiatric	0.05	1.09	-0.46	-0.46	-0.35	-0.03	5.30										
Other specialty	0.13	1.07	-0.36	-0.36	-0.29	-0.14	3.54										
LTAC	-0.01	0.66	-0.56	-0.56	-0.56	0.60	1.52										
Critical Access Hospital		0.33	1.82	-0.46	-0.26	-0.21	0.14	10.80									
Oncology Specialty		0.00	0.79	-0.34	-0.28	-0.26	-0.21	3.22									
Orthopedic Specialty		-0.10	0.58	-0.36	-0.36	-0.35	-0.27	1.82									
Women’s Specialty		-0.12	0.12	-0.30	-0.19	-0.16	-0.12	0.21									
Cardiac Specialty	1.10	2.03	-0.30	-0.25	-0.19	1.19	5.34										
Bed Size		Mean	Std Dev	Minimum		25th Pctl		50th Pctl		75th Pctl		Maximum					
<100	0.17	1.03	-0.56	-0.27	-0.22	0.17	10.80										
100-199	-0.02	0.65	-0.56	-0.28	-0.24	-0.04	7.08										
200-299	-0.01	0.58	-0.56	-0.27	-0.23	-0.03	4.72										
300-399	-0.04	0.51	-0.38	-0.27	-0.22	-0.04	6.71										
400-499	0.00	0.56	-0.46	-0.26	-0.20	0.02	4.97										
>=500	0.06	1.27	-0.37	-0.26	-0.22	-0.03	14.27										
Teaching Status		Mean	Std Dev	Minimum		25th Pctl		50th Pctl		75th Pctl		Maximum					
Academic Medical Center		-0.07	0.56	-0.56	-0.27	-0.21	-0.06	5.67									
Teaching Hospital			0.01	0.78	-0.56	-0.28	-0.23	-0.02	14.27								
Non-Teaching Hospital			0.09	0.88	-0.56	-0.27	-0.23	0.04	10.80								
Location		Mean	Std Dev	Minimum		25th Pctl		50th Pctl		75th Pctl		Maximum					
Rural	0.61	1.38	-0.46	-0.26	0.02	0.96	7.08										

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Metropolitan	-0.01	0.73	-0.56	-0.28	-0.23	-0.03	14.27	
Micropolitan	0.42	1.17	-0.39	-0.25	-0.09	0.52	7.95	

Magnet Status	Mean	Std Dev	Minimum	25th Pctl	50th Pctl	75th Pctl	Maximum
Not Magnet Designated	0.08	0.78	-0.56	-0.27	-0.22	0.07	7.95
Magnet Applicant	0.21	1.26	-0.56	-0.27	-0.21	0.09	14.27
Magnet Designated	-0.12	0.49	-0.56	-0.28	-0.24	-0.12	10.80

UAP Skill Mix

Hospital Type	Mean	Std Dev	Minimum	25th Pctl	50th Pctl	75th Pctl	Maximum
General	0.05	0.74	-3.11	-0.33	0.08	0.49	3.29
Pediatric	0.25	0.66	-1.38	-0.23	0.24	0.76	3.60
Rehabilitation	0.49	1.09	-2.50	0.29	0.78	1.06	2.48
Psychiatric	-0.62	0.53	-0.95	-0.95	-0.94	-0.41	1.14
Other specialty	-0.62	0.68	-2.08	-1.33	-0.52	-0.14	0.89
LTAC	0.10	0.90	-2.45	-0.59	0.23	0.86	1.57
Critical Access Hospital	-0.37	1.16	-3.01	-1.22	-0.36	0.66	1.64
Oncology Specialty	-0.16	0.92	-2.67	-0.46	-0.04	0.45	1.49
Orthopedic Specialty	0.45	0.76	-2.92	0.15	0.57	0.90	1.37
Women's Specialty	-0.12	0.80	-2.36	-0.58	0.10	0.53	1.41
Cardiac Specialty	-0.52	1.21	-2.59	-1.31	0.00	0.37	1.26

Bed Size	Mean	Std Dev	Minimum	25th Pctl	50th Pctl	75th Pctl	Maximum
<100	-0.05	0.92	-3.11	-0.56	0.02	0.58	3.60
100-199	0.12	0.70	-2.73	-0.26	0.14	0.54	2.92
200-299	0.08	0.68	-2.74	-0.30	0.14	0.51	2.30
300-399	0.06	0.68	-2.69	-0.31	0.08	0.47	1.82
400-499	0.02	0.73	-2.39	-0.34	0.05	0.47	2.03
>=500	0.03	0.67	-2.91	-0.27	0.03	0.41	1.78

Teaching Status	Mean	Std Dev	Minimum	25th Pctl	50th Pctl	75th Pctl	Maximum
Academic Medical Center	-0.02	0.65	-2.91	-0.33	-0.01	0.30	3.29
Teaching Hospital	0.12	0.76	-3.11	-0.28	0.13	0.59	3.60
Non-Teaching Hospital	0.01	0.79	-3.11	-0.41	0.10	0.52	3.01

Location	Mean	Std Dev	Minimum	25th Pctl	50th Pctl	75th Pctl	Maximum
Rural	-0.15	0.97	-3.11	-0.62	0.03	0.45	1.98
Metropolitan	0.05	0.76	-3.11	-0.34	0.09	0.52	3.60
Micropolitan	0.03	0.76	-3.11	-0.42	0.08	0.56	2.70

Magnet Status	Mean	Std Dev	Minimum	25th Pctl	50th Pctl	75th Pctl	Maximum
Not Magnet Designated	0.05	0.82	-3.11	-0.39	0.09	0.58	3.60
Magnet Applicant	-0.06	0.71	-3.11	-0.40	0.03	0.40	1.69
Magnet Designated	0.09	0.68	-3.01	-0.24	0.12	0.49	2.92

National Database of Nursing Quality Indicators (NDNQI), Q1-Q3 2014 data. The NDNQI is owned by Press Ganey Associates.

1b.3. If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.

1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity,

gender, age, insurance status, socioeconomic status, and/or disability. (*This is required for maintenance of endorsement. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included.*) For measures that show high levels of performance, i.e., “topped out”, disparities data may demonstrate an opportunity for improvement/gap in care for certain sub-populations. This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.

NDNQI has limited patient-level demographic characteristics, however, by linking our staffing data to AHA hospital survey data, we were able to examine nurse staffing by the Hospital-level percentage of Medicaid days. Because Medicaid days are a continuous variable, we categorized the hospitals by quartile for ease of presentation.

%RN Skill Mix by Hospital Percentage of Medicaid Days in Quartiles

N=880 Hospitals

	Mean	Standard Deviation		25th Percentile	50th Percentile	75th Percentile
1st Quartile	71.44	14.87	62.91	71.74	80.41	
2nd Quartile	71.65	13.81	63.99	72.19	79.77	
3rd Quartile	72.57	14.97	65.02	73.66	82.34	
4th Quartile	72.22	17.14	63.91	73.17	81.68	

%LPN/LVN Skill Mix by Hospital Percentage of Medicaid Days in Quartiles

N=880 Hospitals

	Mean	Standard Deviation		25th Percentile	50th Percentile	75th Percentile
1st Quartile	3.27	9.34	0.00	0.00	1.45	
2nd Quartile	4.63	13.25	0.00	0.07	3.10	
3rd Quartile	2.95	6.82	0.00	0.18	2.59	
4th Quartile	2.17	6.51	0.00	0.02	1.77	

%UAP Skill Mix by Hospital Percentage of Medicaid Days in Quartiles

N=880 Hospitals

	Mean	Standard Deviation		25th Percentile	50th Percentile	75th Percentile
1st Quartile	26.78	14.22	18.65	27.44	35.83	
2nd Quartile	25.37	12.81	16.87	27.03	32.78	
3rd Quartile	25.59	13.08	17.25	25.60	33.96	
4th Quartile	26.46	15.22	17.13	26.47	35.16	

1b.5. If no or limited data on disparities from the measure as specified is reported in 1b.4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations. Not necessary if performance data provided in 1b.4

N/A

2. Reliability and Validity—Scientific Acceptability of Measure Properties

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. **Measures must be judged to meet the sub criteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.**

2a.1. Specifications The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

De.5. Subject/Topic Area (check all the areas that apply):

De.6. Non-Condition Specific(check all the areas that apply):

Person-and Family-Centered Care : Workforce

De.7. Target Population Category (Check all the populations for which the measure is specified and tested if any):

Children, Populations at Risk

S.1. Measure-specific Web Page (Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)

None

S.2a. If this is an eMeasure, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)

This is not an eMeasure Attachment:

S.2b. Data Dictionary, Code Table, or Value Sets (and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)

Attachment Attachment: [Codebook_staffing-636542899570465618.pdf](#)

S.2c. Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

No, this is not an instrument-based measure Attachment:

S.2d. Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

S.3.1. For maintenance of endorsement: Are there changes to the specifications since the last updates/submission. If yes, update the specifications for S1-2 and S4-22 and explain reasons for the changes in S3.2.

No

S.3.2. For maintenance of endorsement, please briefly describe any important changes to the measure specifications since last measure update and explain the reasons.

Additional nursing unit types have been tested at both the unit level, and in the hospital composite measure. Additionally, a new version of the hospital-level measure that includes only medical, surgical, and medical-surgical combined units in the calculation of the composite was tested.

S.4. Numerator Statement (Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome) DO NOT include the rationale for the measure.

IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

Four separate numerators are as follows:

RN hours – Productive nursing care hours worked by RNs with direct patient care responsibilities for each hospital in-patient unit during the calendar month.

LPN/LVN hours – Productive nursing care hours worked by LPNs/LVNs with direct patient care responsibilities for each hospital in-patient unit during the calendar month.

UAP hours – Productive nursing care hours worked by UAP with direct patient care responsibilities for each hospital in-patient unit during the calendar month.

Contract or agency hours – Productive nursing care hours worked by nursing staff (contract or agency staff) with direct patient care responsibilities for each hospital in-patient unit during the calendar month.

S.5. Numerator Details *(All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)*

IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

Nursing care hours are defined as the number of productive hours worked by nursing staff (registered nurse [RN], licensed vocational/practical nurse [LVN/LPN], and unlicensed assistive personnel [UAP]) assigned to the unit who have direct patient care responsibilities for greater than 50% of their shift.

Productive hours are actual direct patient care hours worked by nursing staff including overtime, not budgeted or scheduled hours. Vacation, sick time, orientation, education leave, or committee time are considered non-productive hours. However, orientation programs vary from hospital to hospital. Once orientees reach the point where they are considered part of the staffing matrix, their work hours are charged to the unit and they would be replaced if they call in sick, then their hours are counted as productive.

Direct patient care responsibilities: Patient centered nursing activities by unit-based staff in the presence of the patient and activities that occur away from the patient that are patient related:

- Medication administration
- Nursing treatments
- Nursing rounds
- Admission, transfer, discharge activities
- Patient teaching
- Patient communication
- Coordination of patient care
- Documentation time
- Treatment planning
- Patient screening (e.g. risk) and assessment

Nursing staff included are either staff employed by the facility or temporary staff who are not employed by the facility (contracted/agency staff). Float staff—those are assigned to a unit other than their unit of employment on an as-needed basis—must be counted and reported in the unit's total nursing care hours where they provided direct patient care.

Included nursing staff:

Staff who are counted in the unit's staffing matrix, and
Are replaced if they call in sick, and
Work hours are charged to the unit's cost center

Excluded nursing staff:

- 1) Persons whose primary responsibility is administrative in nature
- 2) Specialty teams, patient educators, or case managers who are not assigned to a specific unit
- 3) Unit secretaries or clerks, monitor technicians, and other with no direct patient care responsibilities (Therapy assistants, student nurses who are fulfilling educational requirements, sitters who either are not employed by the facility or who are employed by the facility, but are not providing typical UAP activities)

Unlicensed Assistive Personnel (UAPs): Individuals trained to function in an assistive role to nurses in the provision of patient care, as delegated by and under the supervision of the registered nurse. Typical activities performed by UAPs may include (but are not limited to): taking vital signs, bathing, feeding, or dressing patients, assisting patients with transfers, ambulation or toileting.

Included UAPs: nursing assistants, orderlies, patient care technicians/assistants, graduate nurses (not yet licensed) who have completed unit orientation.

Mental Health Technicians (MHT): For Psychiatric In-Patient Units ONLY

Individuals functioning in an assistive role, for which your facility requires course work or training that is different from UAP. They

may be licensed or unlicensed. MHT hours are included in UAP hours when reporting, but their hours are collected separately from UAP hours if persons in this job position also meet the following criteria:

- They are engaged in direct care activities greater than 50% time, and
- Their position is staffed 24/7 and replaced when they call in sick, and
- Their hours are included in the nursing staff budget

Data Elements:

RN hours (Employee)
 RN hours (Contract/Agency)
 LPN/LVN hours (Employee)
 LPN/LVN hours (Contract/Agency)
 UAP hours (Employee)
 UAP hours (Contract/Agency)
 MHT hours (Employee)
 MHT hours (Contract/Agency)
 Year
 Month
 Type of Unit

S.6. Denominator Statement *(Brief, narrative description of the target population being measured)*

Denominator is the total number of productive hours worked by employee or contract nursing staff with direct patient care responsibilities (RN, LPN/LVN, and UAP) for each hospital in-patient unit during the calendar month.

S.7. Denominator Details *(All information required to identify and calculate the target population/denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*

IF an OUTCOME MEASURE, describe how the target population is identified. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).

Same as numerator; Total number of productive hours worked by nursing staff with direct patient care responsibilities for each in-patient unit is obtained by summing all number of productive hours worked by specific nursing staff with direct patient care responsibilities (RN, LPN/LVN, or UAP) for each hospital in-patient unit during the calendar month.

Nursing staff included are either staff employed by the facility or temporary staff who are not employed by the facility (contracted/agency staff). Float staff—those are assigned to a unit other than their unit of employment on an as-needed basis—must be counted and reported in the unit's total nursing care hours where they provided direct patient care.

Included nursing staff:

Staff who are counted in the unit's staffing matrix, and
 Are replaced if they call in sick, and
 Work hours are charged to the unit's cost center.

Excluded nursing staff:

- 1) Persons whose primary responsibility is administrative in nature
- 2) Specialty teams, patient educators, or case managers who are not assigned to a specific unit
- 3) Unit secretaries or clerks, monitor technicians, and other with no direct patient care responsibilities

Data Elements:

RN hours (Employee)
 RN hours (Contract/Agency)
 LPN/LVN hours (Employee)
 LPN/LVN hours (Contract/Agency)
 UAP hours (Employee)

UAP hours (Contract/Agency)
MHT hours (Employee)
MHT hours (Contract/Agency)
Month
Year
Type of Unit

S.8. Denominator Exclusions *(Brief narrative description of exclusions from the target population)*

Same as numerator; nursing staff with no direct patient care responsibilities are excluded.

S.9. Denominator Exclusion Details *(All information required to identify and calculate exclusions from the denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*

Excluded nursing staff:

Persons whose primary responsibility is administrative in nature.

Specialty teams, patient educators, or case managers who are not assigned to a specific unit.

Unit secretaries or clerks, monitor technicians, and other with no direct patient care responsibilities.

S.10. Stratification Information *(Provide all information required to stratify the measure results, if necessary, including the stratification variables, definitions, specific data collection items/responses, code/value sets, and the risk-model covariates and coefficients for the clinically-adjusted version of the measure when appropriate – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b.)*

Stratification variables are patient population and unit type. Units are stratified by patient population first and then unit type based on acuity level, age, or type of service provided.

1. Patient population

1) Adult population: limited to units generally caring for patients over 16 years old.

2) Pediatric population: limited to units generally caring for patients under 18 years old.

3) Neonate population: limited to units caring for newborn infants.

4) Psychiatric population: units caring for patients with psychiatric disorders.

5) Rehabilitation population: limited to distinct acute rehabilitation units providing intensive therapy 5 days/week.

2. Unit types by population

1) Adult population

Critical Care

Highest level of care, includes all types of intensive care units. Optional specialty designations include: Burn, Cardiothoracic, Coronary Care, Medical, Neurology, Pulmonary, Surgical and Trauma.

Step-Down

Limited to units that provide care for patients requiring a lower level of care than critical care units and higher level of care than provided on medical/surgical units. Examples include progressive care or intermediate care units. Telemetry alone is not an indicator of acuity level.

Medical

Units that care for patients admitted to medical services, such as internal medicine, family practice, or cardiology. Optional specialty designations include: BMT (Bone Marrow Transplant), Cardiac, GI, Infectious Disease, Neurology, Oncology, Renal or Respiratory.

Surgical

Units that care for patients admitted to surgical services, such as general surgery, neurosurgery, or orthopedics. Optional specialty designations include: Bariatric, Cardiothoracic, Gynecology, Neurosurgery, Orthopedic, Plastic Surgery, Transplant or Trauma.

Medical-Surgical Combined

Units that care for patients admitted to either medical or surgical services. Optional specialty designations include: Cardiac, Neuro/Neurosurgery or Oncology.

Critical Access

A unit located in a Critical Access Hospital that cares for a combination of patients that may include critical care, medical-surgical, skilled nursing (swing bed) and/or obstetrics.

2) Pediatric population

Refer to Adult unit type descriptions for corresponding unit types.

Critical care

Step-Down

Medical

Surgical

Medical-Surgical Combined

3) Neonate population

The three unit types below (Level I, II, and III/IV) are based on the Guidelines for Perinatal Care, 5th Ed., which are used by state certification programs. Level I, II, and III/IV neonatal units are the highest level of infant care provided, and are specified by sequential level of acuity.

Well-baby Nursery

Level I Continuing Care

Level II Intermediate Care

Level III/IV Critical Care

4) Psychiatric population

Adult

Units caring for adult patients with acute psychiatric disorders.

Child/Adolescent

Units caring for children and/or adolescents, predominantly ages 2-18 years old, with acute psychiatric disorders.

Geripsych

Units caring for elderly patients with acute psychiatric disorders.

Other (Behavioral Health, Specialty, Multiple Psychiatric Unit Types)

Behavioral Health

Units caring for individuals of any age with eating disorders or substance abuse (alcohol and drugs) diagnoses.

Specialty

Units caring for patients of any age with dual diagnoses (e.g., mental illness and mental retardation, or substance abuse and an additional mental illness diagnosis).

Multiple Psychiatric Unit Types

Units caring for patients that encompass 3 or more of the above unit types, but for which no one unit type comprises greater than 50% of the entire unit.

5) Rehabilitation population

Adult

Limited to units generally caring for rehab patients over 16 years old. Optional specialty designations include: Brain Injury/SCI, Cardiopulmonary, Neuro/Stroke and Orthopedic/Amputee Rehab units.

Pediatric

Limited to units generally caring for rehab patients under 18 years old.

S.11. Risk Adjustment Type (Select type. Provide specifications for risk stratification in measure testing attachment)

Other

If other: Each unit is stratified by unit type (e.g., critical care, step down, medical), which is not identical to risk, but may be related.

S.12. Type of score:

Rate/proportion

If other:

S.13. Interpretation of Score (Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)

Better quality = Higher score

S.14. Calculation Algorithm/Measure Logic (Diagram or describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; time period for data, aggregating data; risk adjustment; etc.)

Eligible unit identified and selected; input nursing care hours for each eligible staff category by month; then perform calculations to produce the quarterly nursing care hours for each eligible staff category by summing monthly values of the 3 months; then calculate the total nursing care hours by summing quarterly nursing care hours for each eligible staff category; then divide the quarterly nursing care hours for each eligible staff category by the total quarterly nursing care hours.

S.15. Sampling (If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)

IF an instrument-based performance measure (e.g., PRO-PM), identify whether (and how) proxy responses are allowed.

N/A

S.16. Survey/Patient-reported data (If measure is based on a survey or instrument, provide instructions for data collection and guidance on minimum response rate.)

Specify calculation of response rates to be reported with performance measure results.

N/A

S.17. Data Source (Check ONLY the sources for which the measure is SPECIFIED AND TESTED).

If other, please describe in S.18.

Management Data, Other

S.18. Data Source or Collection Instrument (Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc., and describe how data are collected.)

IF instrument-based, identify the specific instrument(s) and standard methods, modes, and languages of administration.

Database: National Database of Nursing Quality Indicators(R) [NDNQI(R)]; Hospitals have NDNQI guidelines and Excel spreadsheets to guide data collection; data are provided to NDNQI via web based data entry or XML upload.

S.19. Data Source or Collection Instrument (available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)

Available in attached appendix at A.1

S.20. Level of Analysis (Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)

Facility, Other

S.21. Care Setting (Check ONLY the settings for which the measure is SPECIFIED AND TESTED)

Inpatient/Hospital

If other:

S.22. COMPOSITE Performance Measure - Additional Specifications (Use this section as needed for aggregation and weighting rules,

or calculation of individual performance measures if not individually endorsed.)

2. Validity – See attached Measure Testing Submission Form

[0204_Measure_Testing_ver_7.1_v3.docx](#)

2.1 For maintenance of endorsement

Reliability testing: If testing of reliability of the measure score was not presented in prior submission(s), has reliability testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.

Yes

2.2 For maintenance of endorsement

Has additional empirical validity testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.

Yes

2.3 For maintenance of endorsement

Risk adjustment: For outcome, resource use, cost, and some process measures, risk-adjustment that includes social risk factors is not prohibited at present. Please update sections 1.8, 2a2, 2b1, 2b4.3 and 2b5 in the Testing attachment and S.140 and S.11 in the online submission form. NOTE: These sections must be updated even if social risk factors are not included in the risk-adjustment strategy. You MUST use the most current version of the Testing Attachment (v7.1) -- older versions of the form will not have all required questions.

No - This measure is not risk-adjusted

3. Feasibility

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

3a. Byproduct of Care Processes

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).

3a.1. Data Elements Generated as Byproduct of Care Processes.

Other

If other: [generated from electronic payroll/accounting report or electronic staffing system](#)

3b. Electronic Sources

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

3b.1. To what extent are the specified data elements available electronically in defined fields (i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields) Update this field for **maintenance of endorsement**.

[ALL data elements are in defined fields in a combination of electronic sources](#)

3b.2. If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources. For **maintenance of endorsement,** if this measure is not an eMeasure (eCQM), please describe any efforts to develop an eMeasure (eCQM).

3b.3. If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-

specific URL. Please also complete and attach the NQF Feasibility Score Card.

Attachment:

3c. Data Collection Strategy

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

3c.1. Required for maintenance of endorsement. Describe difficulties (as a result of testing and/or operational use of the measure) regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.

IF instrument-based, consider implications for both individuals providing data (patients, service recipients, respondents) and those whose performance is being measured.

SKILL MIX DATA COLLECTION PROCESS, SOURCES, AND BURDEN

According to NDNQI guidelines, all separate nursing care hours data by licensure levels (RNs, LPNs, and UAPs), as well as employment status (hospital employees and agency/contracts), must be reported by the calendar month. Payroll or staffing records should be audited to remove non-direct care hours (education, sick leave, vacation leave, etc.) and to ensure that ineligible staff are not included (i.e., unit secretary, monitor techs).

A survey was conducted in October 2018 of site coordinators (N=324) who have submitted skill mix data, which are used in calculating skill mix. Respondents indicated that skill mix data are obtained from electronic payroll/accounting systems most frequently (56.7%), followed by electronic staffing system reports (38.7%). A large majority of respondents (81%) indicated that generating and submitting skill mix data takes one day or less each month. The mean total hours required to extract clean, and submit the staffing measures was 6.0 with a range of 1-32 hours each month.

REPORTING ACCURACY

Overall, 79% of 467 respondents had high or very high confidence in the accuracy of the NDNQI quarterly staffing reports. For more accurate data collection, the NDNQI implemented several strategies, including periodic site coordinator surveys, data cleaning tools, and training for site coordinators. Almost 60% of respondents use some type of verification process prior to submitting data and 81% had used the NDNQI error reports to identify errors in submitted data. Almost 75% of respondents stated that they had to conduct manual adjustments to their data prior to submission in fewer than 10% of cases and 87% had to make manual adjustments to their data after submission in fewer than 10% of cases.

Since the measure was first endorsed, NDNQI has learned/modified the skill mix measure in a variety of ways. First, the definition of nursing care hours has been clarified by providing clear description on float staff (hospital employees temporarily assigned to provide direct patient care for all or part of a shift on a unit other than their unit of employment) when reporting their nursing care hours in the NDNQI data collection guidelines. Second, we periodically provided teleconferences for site-coordinators to educate, update some changes in data collection guidelines, and address issues about the definition of NDNQI quality indicators (e.g., nursing care hours) and data collection procedures (changes on the data entry fields and the use of data summary report and data error report to verify data before reporting to NDNQI). Lastly, NDNQI collects nursing care hours data through a secure NDNQI website. We provided data error messages to notify site coordinators that data on nursing care hours were not entered for all 3 months of a quarter, although it may or may not be an error. Most recently, we have tested the reliability of aggregating at the hospital-level, and have found the measure to be reliable. In addition, we have tested the reliability and validity of aggregating to the hospital-level medical, surgical, and medical-surgical units. These three combined units at the hospital-level have demonstrated reliability and validity.

3c.2. Describe any fees, licensing, or other requirements to use any aspect of the measure as specified (e.g., value/code set, risk model, programming code, algorithm).

None

4. Usability and Use

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance

results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

4.1. Current and Planned Use

NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.

Specific Plan for Use	Current Use (for current use provide URL)
	<p>Public Reporting</p> <p>State of Illinois http://www.healthcarereportcard.illinois.gov/</p> <p>State of Maine https://mhdo.maine.gov/_pdf/NSI%20Microspec%20Manual%20Nov%202013%20edition%20rev%20B.1.pdf</p> <p>State of New York https://www.health.ny.gov/regulations/recently_adopted/docs/2015-01-07_disclosure_quality_surveillance.pdf</p> <p>State of Vermont http://legislature.vermont.gov/statutes/section/18/221/09405b</p> <p>State of Illinois http://www.healthcarereportcard.illinois.gov/</p> <p>State of Maine https://mhdo.maine.gov/_pdf/NSI%20Microspec%20Manual%20Nov%202013%20edition%20rev%20B.1.pdf</p> <p>State of New York https://www.health.ny.gov/regulations/recently_adopted/docs/2015-01-07_disclosure_quality_surveillance.pdf</p> <p>State of Vermont http://legislature.vermont.gov/statutes/section/18/221/09405b</p> <p>Regulatory and Accreditation Programs</p> <p>Professional Certification or Recognition Program</p> <p>The American Nurses Credentialing Center Magnet Recognition Program http://www.nursecredentialing.org/Magnet</p> <p>The American Nurses Credentialing Center Pathways to Excellence Program http://www.nursecredentialing.org/Pathway</p> <p>Quality Improvement (external benchmarking to organizations)</p> <p>National Database of Nursing Quality Indicators pressganey.com</p> <p>Quality Improvement (Internal to the specific organization)</p> <p>National Database of Nursing Quality Indicators participating hospitals pressganey.com</p>

4a1.1 For each CURRENT use, checked above (update for maintenance of endorsement), provide:

- Name of program and sponsor
- Purpose
- Geographic area and number and percentage of accountable entities and patients included
- Level of measurement and setting

Public Reporting

Illinois: "Illinois Hospital Report Care and Consumer Guide to Health Care" through the Illinois Hospital Report Card Act

Sponsor: Illinois General Assembly & Illinois Department of Health

Purpose: Provide consumers with access to information about the quality of health care provided in the state

Geographic Area: All hospitals in Illinois

Information: Total Nursing Hours Per Patient Day, RN Hours Per Patient Day.

Website: <http://www.healthcarereportcard.illinois.gov/>

Maine: "Nursing Sensitive Indicator Quality Data Set"

Sponsor: Maine Health Data Organization

Purpose: To create and maintain a useful, objective, reliable and comprehensive health information database that is used to improve the health of Maine citizens

Geographic Area: All acute care hospitals in Maine

Information: Total Nursing Care Hours Per Patient Day, RN Hours Per Patient Day

Website: https://mhdo.maine.gov/_pdf/NSI%20Microspec%20Manual%20Nov%202013%20edition%20rev%20B.1.pdf

New York: "Disclosure of Quality and Surveillance Related Information"

Sponsor: New York Public Health and Health Planning Council and the Commissioner of Health

Purpose: Requires hospitals to disclose nursing quality indicator information to any member of the public.

Geographic Area: Hospitals and nursing homes in the state of New York

Information: Total number of nursing hours per patient day, RN hours Per Patient Day, LPN Hours Per Patient Day, UAP Hours Per Patient Day

Website: https://www.health.ny.gov/regulations/recently_adopted/docs/2015-01-07_disclosure_quality_surveillance.pdf

Vermont: "Hospital Community Reports,"

Sponsor: Vermont General Assembly

Purpose: Statute establishing standard formats for hospital community reports

Geographic area: All hospitals in Vermont

Information: Nursing hours per patients day

Website: <http://legislature.vermont.gov/statutes/section/18/221/09405b>

Professional Certification or Recognition Program

The American Nurses Credentialing Center (ANCC) includes skill mix as part of their Magnet Recognition Program and Pathways to Excellence Recognition Program (ANCC, 2015).

<http://www.nursecredentialing.org/Magnet>

<http://www.nursecredentialing.org/Pathway>

4a1.2. If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons? (e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?)

4a1.3. If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement. (Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.)

4a2.1.1. Describe how performance results, data, and assistance with interpretation have been provided to those being measured or other users during development or implementation.

How many and which types of measured entities and/or others were included? If only a sample of measured entities were included, describe the full population and how the sample was selected.

4a2.1.1

In 2018, we solicited feedback from all NDNQI participating hospitals (approximately 1800), and received feedback from 324.

4a2.1.2. Describe the process(es) involved, including when/how often results were provided, what data were provided, what educational/explanatory efforts were made, etc.

Hospitals participating in the National Database of Nursing Quality Indicators receive quarterly reports, which provide unit, unit type, and hospital-level benchmarks across a number of benchmarking categories (e.g. hospital type, bed size, teaching status).

4a2.2.1. Summarize the feedback on measure performance and implementation from the measured entities and others described in 4d.1.

Describe how feedback was obtained.

In 2018, we survey NDNQI site coordinators using a REDCap survey to obtain feedback about the usability of the measures and reports for quality improvement and feasibility of data collection at their facilities.

4a2.2.2. Summarize the feedback obtained from those being measured.

From a survey of 324 site coordinators, 8.2% report skill mix to a state database or regulatory program, 5.2% report to a national regulatory group, 4.1% report to a state quality registry (other than NDNQI), 4.6% report to a national registry (other than NDNQI), and 21.1% report staffing data to a state or national credentialing program.

In a survey of 324 site coordinators, 69.7% reported that the staffing measures are somewhat or very important to their hospital's quality improvement program.

4a2.2.3. Summarize the feedback obtained from other users

N/A

4a2.3. Describe how the feedback described in 4a2.2.1 has been considered when developing or revising the measure specifications or implementation, including whether the measure was modified and why or why not.

In previous years, we have examined the feedback to consider revisions to the measures that will reduce the burden of data collection, including changes to required versus optional data elements, and improved tools for data collection. No changes have been made to the measures based on the most recent feedback.

Improvement

Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

4b1. Refer to data provided in 1b but do not repeat here. Discuss any progress on improvement (trends in performance results, number and percentage of people receiving high-quality healthcare; Geographic area and number and percentage of accountable entities and patients included.)

If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

A study was conducted evaluating trends in nursing care hours provided on general care (medical, surgical, and medical-surgical combined) units and critical care units among NDNQI hospitals from 2004-2011. The sample included 2,634 medical units, 1,895 surgical units, 3,561 medical-surgical units, and 2,822 critical care units from 1,499 hospitals. During that time period there was a statistically significant 9.7% increase in the proportion of hours provided by RNs on general care units. At the same time, the proportion of nursing care hours provided by LPNs dropped by more than half on both general care units and ICUs (Staggs & He, 2013).

Staggs, V. S., & He, J. (2013). Recent trends in hospital nurse staffing in the United States. *The Journal of Nursing Administration*, 43(7-8), 388–393.

4b2. Unintended Consequences

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

4b2.1. Please explain any unexpected findings (positive or negative) during implementation of this measure including unintended impacts on patients.

None

4b2.2. Please explain any unexpected benefits from implementation of this measure.

These measures have been used in several studies to demonstrate the positive relationship between nurse staffing and improved patient outcomes. Although this is not an unexpected benefit, it can be used to argue for improved nurse staffing in hospitals.

5. Comparison to Related or Competing Measures

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

5. Relation to Other NQF-endorsed Measures

Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.

Yes

5.1a. List of related or competing measures (selected from NQF-endorsed measures)

0190 : Nurse staffing hours - 4 parts

0205 : Nursing Hours per Patient Day

5.1b. If related or competing measures are not NQF endorsed please indicate measure title and steward.

5a. Harmonization of Related Measures

The measure specifications are harmonized with related measures;

OR

The differences in specifications are justified

5a.1. If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):

Are the measure specifications harmonized to the extent possible?

Yes

5a.2. If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.

The measure is completely harmonized with 0205, as both use the same database and definition of RN hours and are applied to the same settings. Measure 0204 is actually a ratio of the RN hours and Total Nursing Hours elements that are the numerator for the rates tested in Measure 0205. Measure 0190 has had its endorsement removed, but the key differences in the measure are in the setting (inpatient acute care versus nursing home/SNF) and the denominator (per 1,000 patient days for 0204 versus total number of residents for 0190).

5b. Competing Measures

The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);

OR

Multiple measures are justified.

5b.1. If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):

Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)

Nursing hours per patient day and nurse staffing hours – 4 parts are related, not competing measures. Nursing hours per patient day is also a measure for which the American Nurses Association is the measure steward, and measures a different aspect of nurse staffing. There is no additional data collection burden. Therefore, Nurse staffing skill mix is not considered to be a competing measure with the other two measures (nursing hours per patient day and nurse staffing hours – 4 parts).

Appendix

A.1 Supplemental materials may be provided in an appendix. All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.

Attachment **Attachment:** [0204_MeasureLogic_ScientificSupplement.pdf](#)

Contact Information

Co.1 Measure Steward (Intellectual Property Owner): [American Nurses Association](#)

Co.2 Point of Contact: [Gregory, Craig](#), gregory.craig@ana.org, 301-628-5395-

Co.3 Measure Developer if different from Measure Steward: [University of Kansas Medical Center](#)

Co.4 Point of Contact: [Emily, Cramer](#), ecramer2@kumc.edu, 913-588-1657-

Additional Information

Ad.1 Workgroup/Expert Panel involved in measure development

Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.

The American Nurses Association sponsored the development of the nursing hours per patient day and nursing staff skill mix measures. The Lewin Group was hired by ANA to identify measures that likely were nurse-sensitive. An interview guide was developed and various institutions were selected based on their geographical location and organizational characteristics to provide a nation-wide sample that would include an academic medical center, private hospital, public hospital, urban hospitals, rural hospitals and hospital system. JCAHO, Catholic Health Association, AHA and AHCPH were also contacted to provide broader context. The interviews were conducted with nursing executives, quality specialists and other experts identified by each organization between August 1995 and October 1995. ANA's advisory committee was Rhonda Anderson RN, FAAN, Joanne Disch, PhD, RN FAAN, Gwendolyn Johnson, MA, RN, Clair B. Jordan, MSN, RN, Norma Lang, PhD, RN, FAAN, Pamela Mitchell, PhD, CNRN, FAAN, Margaret Sovie PhD, RN, FAAN, and Mary K. Walker, PhD, RN, FAAN.

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 Year the measure was first released: 1998

Ad.3 Month and Year of most recent revision: 01, 2014

Ad.4 What is your frequency for review/update of this measure? annual updates, with every 3 year reendorsement

Ad.5 When is the next scheduled review/update for this measure? 12, 2013

Ad.6 Copyright statement: [Copyright 2011, American Nurses Association. All Rights Reserved.](#)

Ad.7 Disclaimers:

Ad.8 Additional Information/Comments: