

# THE NATIONAL QUALITY FORUM

## National Voluntary Consensus Standards for Nursing-Sensitive Performance Measurement

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## NATIONAL VOLUNTARY CONSENSUS STANDARDS FOR NURSING-SENSITIVE PERFORMANCE MEASUREMENT

### INTRODUCTION

Nurses affect the lives of every patient. They are the principal caregivers in any healthcare system and are critical to the quality of care delivered. There is a growing body of evidence that demonstrates the influence of nursing personnel—and the stability of nursing personnel—on patient outcomes, hospital costs, and the professional atmosphere in which care is provided. Nurses, however, are becoming a scarce resource. The current and persistent nursing shortage—coupled with the growing demands of the hospital work environment, patients’ rising acuity, and the aging of America—have resulted in a lack of available registered nurses to attend to mounting patient and workforce demands. Taken together, these factors result in a situation that threatens the safety and quality of the U.S. healthcare system.

Florence Nightingale, the architect of professional nursing, embodied a sympathy for the sick and a knowledge of the role data, statistics, and measurement play in disease transmission and public health. It is with this same understanding that the interest in measuring the contribution of nursing care has grown. However, the state of nursing-sensitive performance measurement is limited by an underdevelopment of scientific research in this area.

Given the clinical and social value of nurses, the importance of nursing care, and the growing trend to make healthcare quality information available to consumers and purchasers, the absence of standardized nursing-sensitive performance measures is a major void in quality assurance and work system performance. Without a standardized approach to measure the environment of nursing practice and nursing’s contribution to patient care and safety, it is impossible to both consistently evaluate the extent to which the nursing shortage is affecting the quality of U.S. healthcare and to identify opportunities to improve nursing performance. Furthermore, as new approaches to delivering patient-centered care are developed, standardized ways to measure the performance of nursing care teams will be essential to evaluate their effectiveness. A standardized set of nursing-sensitive performance measures is needed for quality improvement, public accountability, and patient safety.

This report identifies 13 evidence-based nursing-sensitive performance measures endorsed by NQF as voluntary consensus standards. This initial set of performance measures

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32 emphasizes care provided by nursing personnel in acute care hospitals (i.e., the mix of  
33 personnel—RNs, LPNs, and nurse assistants—who deliver nursing services in acute care  
34 settings) with attention to measures that are compatible across settings of care. All measures  
35 have undergone detailed evaluation via the NQF Consensus Development Process (appendix  
36 G).

37 This report does not represent the entire scope of NQF work relevant to the quality of  
38 hospital and/or nursing care. NQF has completed or is currently working on separate projects  
39 of direct or ancillary relevance to nursing and its relationship to quality and patient safety. For  
40 example, *National Voluntary Consensus Standards for Hospital Care: An Initial Performance Measure*  
41 *Set*<sup>1</sup> identifies 39 hospital care performance measures (e.g., aspirin at arrival and discharge for  
42 acute myocardial infarction, neonatal mortality, cesarean section rates) that should be reported  
43 by all acute care hospitals. Of these endorsed hospital measures, several are supported by the  
44 delivery of nursing care (e.g., falls, nosocomial infections, smoking cessation). Another NQF  
45 report, *A Comprehensive Framework for Hospital Care Performance Evaluation*, details a framework  
46 for building a more complete and enduring set of hospital care performance measures; it  
47 recommends processes for reporting, implementing, maintaining, evaluating, and improving  
48 the measures and adding and deleting measures subsequent to this initial set.<sup>2</sup>

49 *Serious Reportable Events in Healthcare* identifies 30 serious adverse events (e.g., surgery  
50 performed on the wrong patient, infant discharged to the wrong person) that the NQF believes  
51 should be reported by all licensed healthcare facilities. Some of these events are directly  
52 relevant to nursing performance measurement (e.g., pressure ulcers, falls). Likewise, *Safe*  
53 *Practices for Better Healthcare* reports on 30 healthcare “safe practices”<sup>3</sup> that should be  
54 universally utilized in applicable care settings to reduce the risk of harm resulting from  
55 processes, systems, or environments of care; among the practices are several relevant to nursing  
56 care quality—e.g., adequate nurse staffing levels and prevention of pressure ulcers, deep vein  
57 thromboses, and nosocomial infections).<sup>4</sup>

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<sup>1</sup> National Quality Forum. “National Voluntary Consensus Standards for Hospital Care: An Initial Performance Measure Set.” Washington, DC: National Quality Forum. In press.

<sup>2</sup> National Quality Forum. *A Comprehensive Framework for Hospital Care Performance Evaluation*. Washington, DC: National Quality Forum; 2003. .

<sup>3</sup> National Quality Forum. *Safe Practices for Better Healthcare*. Washington, DC: National Quality Forum; 2003.

<sup>4</sup> National Quality Forum. *A National Framework for Healthcare Quality Measurement and Reporting*. Washington, DC: National Quality Forum; 2002.

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58 These initiatives, along with the nursing-sensitive performance measures detailed in this  
59 report, provide a growing number of consensus standards that directly and indirectly reflect  
60 the importance of nursing in measuring and improving quality of care. Organizations that  
61 adopt these consensus standards will help promote the development of safer and improved  
62 levels of care for patients across the nation.

## 63 THE INITIAL NURSING-SENSITIVE PERFORMANCE MEASURE SET

64 An NQF Steering Committee (appendix A) identified the initial approach (appendix B)  
65 to identify, assess, and recommend the nursing-sensitive performance measures presented in  
66 table 1. Specifications for these measures are listed in appendix C. Candidate measures were  
67 evaluated based on standardized criteria adopted by NQF. (See appendix B and box A in  
68 following section.) and supporting evidence (appendix E).

### 69 Purpose

70 The Steering Committee articulated two distinct purpose statements to inform the  
71 measure evaluation and prioritization process. Specifically, measures that met one or more of  
72 the purposes were considered for inclusion whereas measures that might be adequate in other  
73 ways, but that did not satisfy one or more purposes, were considered beyond the intent of the  
74 project.

75 **Recommended Purpose 1:** The primary purpose of measuring nursing care delivered in  
76 U.S. hospitals is to achieve the highest levels of patient safety and healthcare outcomes in acute  
77 care hospitals.

78 **Recommended Purpose 2:** Endorsed nursing-sensitive performance measures will help to:

- 79 • Enhance the clinical practice of nurses, nursing teams, and patient care teams today  
80 and in future;
- 81 • Promote public accountability, including, but not limited to, public reporting and  
82 financial incentives (e.g., pay for performance, performance-based contracting), to  
83 distinguish and reward the relationship between nursing and quality outcomes;
- 84 • Facilitate the identification of priority areas for needed research in measuring nursing  
85 care that will lead to improved patient safety and healthcare outcomes;
- 86 • Stimulate enhancements to the education of the current and future workforce;

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- 87       • Support benchmarking and sharing of best nursing care practices; and,  
88       • Promote the translation of the state of the science of nursing care into the practice of  
89       nurses and delivery of nursing care.

## 90 Framework for Nursing-Sensitive Performance Measurement

91       Establishing a conceptual model organizes measures into categories and shapes the nature  
92       and content of measures that are recommended in this set. It also provides a framework that  
93       can be used to delineate the scope of measures that should be included in the future once the  
94       state of research advances and the necessary body of evidence is established.

95       Recommended Framework: The framework for nursing-sensitive performance measurement  
96       shall be based on three categories of measures: patient-centered outcome measures that address  
97       the six NQF aims—i.e., care that is safe, beneficial, patient-centered, timely, efficient, and  
98       equitable<sup>5</sup>, nursing-centered intervention measures, and system-centered measures.

99       Additionally, the framework recognizes that:

- 100       • A subset of measures is, or a separate set of measures are, appropriate for public  
101       accountability.  
102       • Adaptation to non-hospital settings and facilitation of the stratification and/or  
103       segmentation of results by key factors such as nursing unit type, patient condition, and  
104       demographic population is critical.

105       General principles that drive the framework and a visual representation of the measurement  
106       framework are provided in appendix B.

## 107 Scope

108       The NQF-endorsed voluntary consensus standards for nursing-sensitive performance  
109       measurement encompass those that:

- 110       • are fully specified and accessible to users<sup>6</sup>;  
111       • are fully developed (e.g., precisely specified, tested, and in current use);

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<sup>5</sup> In *Crossing the Quality Chasm*, the Institute of Medicine identifies six aims of the healthcare quality system: safe, effective, efficient, timely, patient-centered, and equitable. In October 2000, the NQF Board of Directors adopted a purpose statement that largely mirrors the IOM aims, but states that one aim should be beneficial, which encompasses but also goes beyond effectiveness.

<sup>6</sup> On January 29, 2003, the NQF Board of Directors adopted a policy that NQF will endorse only fully open source measures.

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- 112 • apply to the set of personnel, or the mix of personnel who deliver nursing services in  
113 acute care settings (e.g., RNs, LPNs, and nurse assistants);
- 114 • focus on the care of patients with acute care needs with priority given to those  
115 measures that address nursing care delivered across settings and patients' needs  
116 across the continuum of care;
- 117 • apply to acute inpatient and/or hospital emergency care; and
- 118 • reflect those aspects of care influenced by, but not necessarily controlled by, nursing  
119 personnel.

### 120 Priority Areas for Nursing-Sensitive Performance Measurement

121 Patient care functions that are unique to nurses (e.g., assessment, prevention, patient  
122 education, care coordination) and comprise nurses' dependent, independent, and  
123 interdependent functions<sup>7,8</sup> were considered critical to address. The NQF-endorsed voluntary  
124 consensus standards are derived from the following priorities for measurement:

- 125 • Measures that address nursing care delivered across multiple healthcare settings and  
126 that address people's needs across the continuum of care (e.g., prevention,  
127 diagnosis, treatment) including those that focus on integrated care, care  
128 coordination, and access to care;
- 129 • Measures that address the six NQF aim areas including those that address the  
130 stewardship of resources (i.e., care that is safe, beneficial, patient-centered, timely,  
131 efficient, and equitable);
- 132 • Measures that are consistent with NQF-endorsed measures and practices;
- 133 • Measures that address clinical priority areas including, but not limited to, high-risk,  
134 high volume, high-cost or problem-prone inpatient conditions identified by the IOM  
135 report, *Priority Areas for National Action: Transforming Health Care Quality*<sup>9</sup>;

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<sup>7</sup> Irvine D, Sidani S, Hall LM. Linking outcomes to nurses' roles in health care. *Nursing Economics*. 1998;16:58-87.

<sup>8</sup> Doran DI, Sidani S, Keatings M, Doidge D. An empirical test of the Nursing Role Effectiveness Model. *Journal of Advanced Nursing*. 2002;38:29-39.

<sup>9</sup> Adams K, Corrigan JM, eds, Committee on Identifying Priority Areas for Quality Improvement. *Priority Areas for National Action: Transforming Health Care Quality*. National Academies Press: Washington, DC; 2003.

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- 136 • Measures that reflect priorities and areas for measurement as described in AHRQ’s  
137 *National Report on Health Care Quality and National Report on Healthcare Disparities*<sup>10</sup>;
- 138 • Measures that are evidence-based and in common, widespread use and/or required  
139 for other purposes (e.g., Joint Commission on Accreditation of Healthcare  
140 Organization Core Measures, Magnet status);
- 141 • For those measures intended for public reporting, measures that are useable to the  
142 public including consumers and purchasers of healthcare;
- 143 • Measures that promote the highest quality and safety of healthcare;
- 144 • At least some measures that apply to all nursing personnel; and
- 145 • At least some measures that apply to all hospital patients (e.g., all populations—  
146 pediatric and geriatric).

### 147 Criteria for Selection of Measures

148 Candidate measures were drawn from national nursing care performance measurement  
149 activities (e.g., Department of Health and Human Services (DHHS), American Nurses  
150 Association (ANA) National Database of Nursing Quality Indicators (NDNQI), Veterans  
151 Affairs Nursing Outcomes Database (VANOD), Military Nursing Outcomes Database  
152 (MilNOD), Joint Commission on Accreditation of Healthcare Organizations (JCAHO), etc.),  
153 other prominent nursing outcomes initiatives (e.g., California Nursing Outcomes Coalition  
154 (CalNOC), health plans and hospital systems efforts, etc.) and published research.  
155 Additionally, candidate measures were solicited through a national ‘Call for Measures’ that  
156 encompassed six dozen professional organizations, 180 NQF Members, and public notice.  
157 Measures were evaluated based on the criteria endorsed by NQF, as derived from the previous  
158 NQF work of the Strategic Framework Board (box A).<sup>11,12,13</sup>

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<sup>10</sup> *Preliminary Measure Set, National Healthcare Quality Report*. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.ahrq.gov/qual/nhrq02/premeasures.htm>.

<sup>11</sup> “The Strategic Framework Board’s Design for a National Quality Measurement and Reporting System.” *Medical Care*. 2003;41(1)suppl:I-1—I-89.

<sup>12</sup> National Quality Forum. *A National Framework for Healthcare Quality Measurement and Reporting*. Washington, DC: National Quality Forum; 2002.

<sup>13</sup> National Quality Forum. *A Comprehensive Framework for Hospital Care Performance Evaluation*. Washington, DC: National Quality Forum.; 2003.

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## Box A. Criteria for Evaluation and Selection of Measures in the Initial Performance Measure Set

Proposed measures will be evaluated for their suitability based on four sets of standardized criteria (e.g., important, scientifically acceptable, useable, and feasible). Not all acceptable measures will be strong—or equally strong—among each of the four sets of criteria, or strong among each of their related criteria. Rather, a candidate measure should be assessed regarding the extent to which it meets any of the desired criteria within each set:

- 1. Important.** This set addresses the extent to which a measure reflects a variation in quality, low levels of overall performance, and the extent to which it captures key aspects of the flow of care.
  - a. The measure addresses one or more key leverage points for improving quality.
  - b. Considerable variation in the quality of care exists.
  - c. Performance in the area (e.g., setting, procedure, condition) is suboptimal, suggesting that barriers to improvement or best practice may exist.
  
- 2. Scientifically acceptable.** A measure is scientifically sound if it produces consistent and credible results when implemented.
  - a. The measure is well defined and precisely specified. Measures must be specified sufficiently to be distinguishable from other measures, and they must be implemented consistently across institutions. Measure specifications should provide detail about cohort definition, as well as the denominator and numerator for rate-based measures and categories for range-based measures.
  - b. The measure is reliable, producing the same results a high proportion of the time when assessed in the same population.
  - c. The measure is valid, accurately representing the concept being evaluated.
  - d. The measure is precise, adequately discriminating between real differences in provider performance.
  - e. The measure is adaptable to patient preferences and a variety of contexts of settings. Adaptability depends on the extent to which the measure and its specifications account for the variety of patient choices, including refusal of treatment and clinical exceptions.
  - f. An adequate and specified risk-adjustment strategy exists, where applicable.
  - g. Consistent evidence is available linking the process measures to patient outcomes.
  
- 3. Useable.** Usability reflects the extent to which intended audiences (e.g., consumers, purchasers) can understand the results of the measure and are likely to find them useful for decision making.
  - a. The measure can be used by the stakeholder to make decisions.
  - b. The differences in performance levels are statistically meaningful.
  - c. The differences in performance are practically and clinically meaningful.
  - d. Risk stratification, risk adjustment, and other forms of recommended analyses can be applied appropriately.
  - e. Effective presentation and dissemination strategies exist (e.g., transparency, ability to draw conclusions, information available when needed to make decisions).
  - f. Information produced by the measure can/will be used by at least one healthcare stakeholder audience (e.g., public/consumers, purchasers, clinicians and providers, policymakers, accreditors/regulators) to make a decision or take an action.
  - g. Information about specific conditions for which the measure is appropriate has been given.
  - h. Methods for aggregating the measure with other, related measures (e.g., to create a composite measure) are defined, if those related measures are determined to be more understandable and more useful in decision making. Risks of such aggregation, including misrepresentation, have been evaluated.
  
- 4. Feasible.** Feasibility is generally based on the way in which data can be obtained within the normal flow of clinical care and the extent to which an implementation plan can be achieved.
  - a. The point of data collection is tied to care delivery, when feasible.
  - b. The timing and frequency of measure collection are specified.
  - c. The benefit of measurement is evaluated against the financial and administrative burden of implementation and maintenance of the measure set.
  - d. An auditing strategy is designed and can be implemented.
  - e. Confidentiality concerns are addressed.

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160 National Voluntary Consensus Standards for Nursing-Sensitive Performance Measurement<sup>14</sup>

161 Recommended Measures: The Steering Committee recommends that the initial set of  
162 voluntary consensus standards for nursing-sensitive performance measurement should include  
163 13 measures intended for public reporting.<sup>15</sup> Table 1 presents brief descriptions of these  
164 measures. Because measures must be consistently specified to meet the goal of standardization,  
165 each measure is further specified for risk adjustment and other components in appendix C.

## 166 RESEARCH

167 During the course of measure identification and selection, a number of high priority  
168 areas for measurement were identified but lacked measures that were appropriate for inclusion  
169 based on their insufficiency in meeting the established evaluation criteria. These priority areas  
170 were viewed by the Steering Committee as significant gaps in measurement that are essential to  
171 fill and that, without rapid advancements in research and measure development, will contribute  
172 to the widening healthcare quality chasm.<sup>16</sup> The following recommendations should guide  
173 research and development of suitable performance measures for measuring nursing care.

174 Research Recommendation 1: To fully understand the contribution of nursing services to  
175 healthcare, develop workforce measures and an empirical base to support them. Specifically,  
176 research the relationship between nursing variables—beyond staffing (e.g., turnover, education,  
177 competency)—and patient outcomes.

178 Research Recommendation 2: Develop measures where there are gaps in current  
179 consensus. Specifically, develop nurse-sensitive measures that promote the highest quality and  
180 safety of healthcare (e.g., symptom management, improved function), measures that address all  
181 NQF aims (i.e., care that is safe, beneficial, patient-centered, timely, efficient, and equitable) and

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<sup>14</sup> Standards are defined as “common and repeated use of rules, conditions, guidelines or characteristics for products or related processes and production methods, and related management systems practices; the definition of terms; classification of components; delineation of procedures; specification of dimensions, materials, performance, designs, or operations; measurement of quality and quantity in describing materials, processes, products, systems, services, or practices; test methods and sampling procedures; or descriptions of fit and measurements of size or strength.” U.S. Office of Management and Budget, Revised Circular A-119, *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*, February 10, 1998

<sup>15</sup> Turnover and vacancy were measures that stimulated great debate. While the Steering Committee voted to exclude these measures, clear division existed.

<sup>16</sup> Institute of Medicine, Committee on the Quality of Health Care in America. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: National Academy Press;2001.

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182 IOM priority areas,<sup>17</sup> and measures that address the role of patient care teams in achieving  
183 improved healthcare outcomes.

184           **Research Recommendation 3:** Research the relationship between patient outcomes and  
185 nurse-centered intervention process measures including those that describe the unique  
186 contributions of nursing (e.g., assessment, problem identification, prevention, patient  
187 education) and the dependent, independent, and interdependent activities of nurses.

188           **Research Recommendation 4:** Research nursing’s contribution to the assessment and  
189 management of pain. This is critically important to all hospital inpatients.

190           **Research Recommendation 5:** Investigate and document each measure’s adequacy with the  
191 NQF-endorsed measure evaluation criteria.

## Box B. Specific Priorities for Research

The Steering Committee viewed the following additional areas as essential for research, measure development, and investigation:

### **Other content areas for nursing-sensitive measure development**

- Care of all patient populations including pediatric, geriatric, and chronically-ill patients
- Care delivered longitudinally (across the continuum) including end-of-life care
- Assessment, diagnosis, care planning, and evaluation
- Patient education
- Coordination and integration of care including case management
- Access to and equity of nursing care provided
- Efficiency of nursing care including stewardship of resources
- Symptom management
- Pain assessment, management, and control
- Functional outcomes
- Malnutrition and supplemental feeding
- Patient satisfaction with nursing care
- Nursing satisfaction measures including those related to the work environment

### **Measure-specific opportunities**

- Measures considered but excluded from these NQF consensus standards (appendix B details all measures considered but excluded)
- Application of each measure beyond existing, specified populations (e.g., failure to rescue in medical inpatient populations, ICU-specific measures to non-ICU populations, etc.)
- Measures that are currently under development

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<sup>17</sup> Adams K, Corrigan JM, eds, Committee on Identifying Priority Areas for Quality Improvement. Priority Areas for National Action: Transforming Health Care Quality. National Academies Press: Washington, DC; 2003.

## **Empirical research, data availability, and technology innovation**

- Innovative use of data that may not otherwise be used for nursing-sensitive performance research
- Interdisciplinary research that enhances the understanding of nurses' current and evolving roles within the complex and dynamic healthcare system
- Additional data elements—beyond those currently required on hospital discharge abstracts—on which nursing-sensitive performance research can be based (e.g., diagnoses present on admission)
- Integration of measurement into daily operations/workflow, including collaborative research with information system vendors, to minimize burden and improve data reliability
- Technologic advancements that support nursing practice including their impact on patient outcomes

## **Implementation and evaluation of nursing-sensitive performance measures**

- Application of the initial nursing-sensitive performance measure set including application of the measures to specific populations and in non-hospital settings
- Performance of the consensus standards, testing the reliability and validity of the measures as a set, and developing a composite nursing care performance index
- Investigation of the effectiveness of the measure set in improving patient outcomes and the nursing work environment
- Evaluation of the implementation of the measures by all stakeholders including consumers' use of nursing-sensitive performance results

## 194 OTHER RECOMMENDATIONS

195 Recommendation Related to Data Issues: Data availability (at the unit- and institutional-  
196 levels), integrity, and comprehensiveness should be a high priority. With the standardization of  
197 limited, discrete data elements, the ability to measure nursing care will be dramatically  
198 enhanced.

199 Recommendation Related to Implementation: The readiness of organizations to collect data  
200 and derive nursing-sensitive performance measures shall be an overall indication of their  
201 commitment to quality patient care and an environment that is supportive of nursing.

202 Recommendation Related to Scope of Set: The national voluntary consensus standards for  
203 nursing-sensitive performance should be viewed together as a constellation of measures (i.e.,  
204 measure set) that characterize the influence of nursing personnel on healthcare processes and  
205 outcomes. No individual measure is intended to be an adequate facsimile of nursing care  
206 quality nor is it recommended that only some of the measures be implemented.

207 Recommendation related to Improving the Set: To ensure currency of the voluntary  
208 consensus standards, on a regular basis, and no less frequently than every three years, NQF  
209 should review the National Voluntary Consensus Standards for Nursing-Sensitive Performance

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210 Measurement for purposes of revision, evaluation, and improvement.<sup>18</sup> Because forthcoming  
211 research is anticipated to result in fully developed, evidence-based performance measures vital  
212 to nursing care (e.g., pain assessment and control, nursing turnover, nurses' educational  
213 preparation), pending funding, NQF should pursue more rapid review and improvement of the  
214 set in these selected areas.

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### 216 ACKNOWLEDGEMENTS

217 The NQF greatly appreciates the support provided by the Robert Wood Johnson  
218 Foundation and the Department of Veterans Affairs.

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<sup>18</sup> In *A Comprehensive Framework for Hospital Care Performance Evaluation*, it is recommended that an overall review of the National Voluntary Consensus Standards for Hospital Care by NQF occur no less frequently than every three years.

Table 1. National Voluntary Consensus Standards for Nursing-Sensitive Performance Measurement

Framework Category	Measure	Description
Patient-centered outcome measures	1. Failure to rescue (major surgical patients)	Percentage of major surgical inpatients who experience a hospital-acquired complication (i.e., sepsis, pneumonia, gastrointestinal bleeding, shock/cardiac arrest, deep vein thrombosis/pulmonary embolism) and die
	2. Pressure ulcer prevalence	Percentage of inpatients who have a hospital-acquired pressure ulcer (stage 2 or greater)
	3. Pneumonia (hospital-acquired) prevalence	Percentage of inpatients who have a secondary diagnosis of hospital-acquired pneumonia
	4. Falls prevalence *	<ul style="list-style-type: none"> <li>• Number of inpatient falls per 1,000 patient days</li> <li>• Number of inpatient falls with injuries per 1,000 patient days</li> </ul>
	5. Restraint prevalence	Percentage of inpatients who have a restraint
	6. Urinary tract infection (UTI) prevalence	Percentage of inpatients who have a secondary diagnosis of UTI
	7. Urinary catheter-associated UTI for intensive care unit (ICU) patients*	Rate of UTI associated with use of urinary catheters for ICU patients
	8. Central line catheter-associated blood stream infection rate for ICU and high-risk nursery (HRN) patients*	Rate of blood stream infections associated with use of central line catheters for ICU and HRN patients
	9. Ventilator-associated pneumonia for ICU and HRN patients	Rate of pneumonia associated with use of ventilators for ICU patients and HRN patients
Nursing-centered intervention measure	10. Smoking cessation counseling (AMI, HF, pneumonia)*	<p>Percentage of inpatients with history of smoking within the past year who received smoking cessation advise or counseling during hospitalization</p> <ul style="list-style-type: none"> <li>• acute myocardial infarction (AMI) inpatients</li> <li>• heart failure (HF) inpatients</li> <li>• pneumonia inpatients</li> </ul>

\* NQF-endorsed Hospital Care Performance Measure

<b>Framework Category</b>	<b>Measure</b>	<b>Description</b>
System-centered measures	11. Skill mix (RN and RN contract)	<ul style="list-style-type: none"> <li>• Percentage of registered nursing (RNs) care hours of total nursing care hours</li> <li>• Percentage of RN contracted hours of total nursing care hours</li> </ul>
	12. Nursing care hours per patient day (RN, LPN, aide)	<ul style="list-style-type: none"> <li>• Number of productive work hours by RNs with direct care responsibilities per 1,000 patient days</li> <li>• Number of productive work hours by nursing staff (RN, LVN/LPN, aides, and other direct care providers) with direct care responsibilities per 1,000 patient days</li> <li>• Number of productive work hours by RNs with direct care responsibilities who are contract staff per 1,000 patient days</li> <li>• Number of productive work hours by nursing staff (RN, LVN/LPN, aides, and other direct care providers) with direct care responsibilities who are contract staff per 1,000 patient days</li> </ul>
	13. Practice Environment Scale—Nursing Work Index (composite and five subscales)	<p>Composite score and mean presence scores for each of the following subscales derived from PEW-NWI:</p> <ul style="list-style-type: none"> <li>• Nurse participation in hospital affairs</li> <li>• Nursing foundations for quality of care</li> <li>• Nurse manager ability, leadership, and support of nurses</li> <li>• Staffing and resource adequacy</li> <li>• Collegial nurse-physician relations</li> </ul>