7.4 Describe the processes and rationale for the identification, development, and utilization of national databases that include nursing-sensitive measures that impact client-centered outcomes.

The process for the identification, development, and utilization of national databases that include nursing-sensitive measures impacting client outcomes has evolved at Massachusetts General Hospital (MGH) over the past several years. In 2002 nursing leaders at MGH became more involved in decision-making around the utilization of national databases that include nursing-sensitive measures, when the organization committed to pursue Magnet hospital designation and subsequently participation in the National Database of Nursing Quality Indicators (NDNQI) was required. An ad hoc group of nursing leaders was formed to oversee the data selection and submission process. The group included membership from the Nursing Executive Operations Committee, the Office of Quality and Safety, Patient Care Services Information Systems, and Patient Care Services Financial Management Systems. Initially, the group was charge with deciding what indicators would be selected, what specific data points would be submitted, and how the process for submission would be managed. An informal model for data selection and submission process evolved that included evaluating the various possibilities, involving relevant experts in the decision-making, making recommendations to the Nursing Executive Operations Committee, and obtaining appropriate agreement/approval before implementation.

Although initially intended to be a “one-time” process geared to the initial Magnet Hospital application, this general model continues, and many of the guiding principles used continue to impact present decisions about nursing sensitive indicators. The field of Nursing Quality Measurement is continually evolving, and has been impacted in the past few years by external recommendations (e.g., National Quality Forum, Institute of Medicine) and requirements (e.g. Centers for Medicare and Medicaid Services, Joint Commission on Accreditation of Healthcare Organizations, Leapfrog, National Database of Nursing Quality Indicators) for data and benchmarking. As such, MGH, and more specifically the Department of Nursing, is continually evaluating the selection of appropriate metrics, tools and methodologies to ensure that measurement is sound and benchmarking is meaningful.

The principles that direct the organizations decisions regarding participation in national databases include: 1) the data must be readily available, 2) the indicator data should be verifiable, 3) data collection processes must be cost effective, and 4) decisions regarding a particular metric should
consider the value of the benchmark comparison. The following examples are presented to illustrate
the use of these principles.

Indicators selected must be measurable and readily available, preferably in electronic format.
This is a simple but important concept in the decision making process. Data for patient days and
staff utilization, the components of the Nursing Hours Per Patient Day (NHPPD) metric, are readily
available in most hospitals. At MGH, the Department of Nursing has existing data files for
midnight census by unit by day that are easily accessed to calculate patient days, as well as monthly
FTE reports which are downloaded into an electronic file that contains data by role by unit by
month for worked hours (excludes benefit time). This readiness of data in addition to the ease of
data collection for NHPPD contributed to the organization’s ability to submit the requested data to
the National Database of Nursing Quality Indicators (NDNQI). The state of Massachusetts also
selected this indicator for the Patients First Initiative described in Force 10.1. MGH’s participation
in this initiative requires an annual submission by unit of planned/budgeted NHPPD and a report of
actual performance in comparison to this target.

In contrast, data related to failure-to-rescue is much more complex and difficult to obtain.
The patient data is dependent on several clinical pieces, such as medical service, occurrence of
specific clinical complications, and final patient disposition (e.g. death while hospitalized).
Obtaining the data from the hospital’s administrative database is a strategy, but this data is fully
dependent on medical record coding data. The Office of Quality and Safety conducted a
preliminary analysis of the MGH data for this indicator in 2005, which revealed that additional
medical record review was essential to validating the data. The difficult process for accurate data
collection makes this an undesirable indicator for voluntary reporting.

Indicators selected should be valid and verifiable, that is, the tools and measurement
processes should result in data that is replicable and able to be confirmed by multiple, independent
observers. This concern played a role in decisions of the Infection Control Unit to monitor
nosocomial ventilator-associated-pneumonias (VAP). Data for most infection control indicators
originate in laboratory findings that indicate an amount of specified bacterial growth. These tests
have a known measure of validity and reliability. In contrast, the criteria for identifying VAP
involves confirmation of several clinical findings, such as the appearance of a new or progressive
pulmonary infiltrate, fever, leukocytosis, and purulent tracheobronchial secretions. While clinically
relevant, these criteria are nonspecific and may be the result of clinical issues other than pneumonia
(e.g. drug reaction, extrapulmonary infection). Moreover, the data collection requires consideration
of data from multiple sources (e.g. x-rays, vital signs, lab results, clinical assessment) collected by an individual who must be knowledgeable and able to combine the many factors into a clinical determination, introducing a measure of subjectivity. Therefore, when MGH participated in Patients First piloting of clinical outcome measures, it shared concern regarding selecting this indicator as a quality outcome measure for all hospitals in the state, based on issues related to validity and the subjectivity of data collection. MGH remains cognizant that this is a National Quality Forum (NQF) endorsed nursing-sensitive indicator and therefore a significant potential for public reporting of this measure in the future. As a result, in 2006, the Infection Control Unit began a pilot of VAP data collection in two of the five adult critical care units.

Another example is the data collection for pressure ulcer incidence. For a number of years, MGH has participated in the Novation/Kinectic Concepts Inc. (KCI) National Prevalence and Incidence (P&I) study. The survey is conducted annually and involves data collection on adult inpatients. Data is collected on two separate days and a rate for hospital acquired pressure ulcers is measured by evaluating the same group of patients over a five day period to determine how many of the patients develop skin breakdown. The state-wide Patient’s First Initiative, however, adopted the NQF endorsed methodology for collection of pressure ulcer data requiring data collection and submission beginning in March 2007. The methodology for this study dictates that the unit-based Clinical Nurse Specialists (CNSs) collect data on one day, and review the medical record to determine if a pressure ulcer was hospital acquired. MGH CNSs had some difficulty adapting to the new data collection process in the area of interpretation of patients to be excluded and there was concern that the resulting rates might be erroneously high. To respond to this concern, a “tiger team” was created to obtain additional information about the data collection techniques, revise data collection tools, and further educate a smaller core group of CNSs who will be responsible for all patient data collection for the next study. To benefit from participation in external databases, the data collection and submission methods must be valid and reliable and there must be confidence in the accuracy of the data.

Decisions regarding participation in national databases are also based, in part, on a consideration of the time and cost involved in the measurement. The MGH Department of Nursing (DON) evaluates the amount of work and required expertise for accurate data collection, submission and dissemination of the findings, and considers this hand-in-hand with the benefits expected from participation. Strategies are employed to assist in making the cost/benefit analysis more favorable, such as minimizing the data collection components and automating processes.
whenever possible. In 2005, the NDNQI moved from a process of submitting data electronically using excel sheets to a web-based data submission. For submission of data pertaining to patient falls, the newer web-based data submission required that each fall be manually entered. It was estimated that the time for data submission would triple using the web-base method rather than the excel sheets. Discussion ensued around the benefit of continued participation in light of the amount of work required by the new format. MGH shared its concerns with NDNQI and an alternative submission method using an xml format was developed. To use the xml submission process, MGH programmers developed an Access file that would transfer the data into the required format. The resulting file is uploaded using the NDNQI website, a process which does not require additional time.

Another significant factor involved in decisions to participate in nursing sensitive databases is the inherent value that comes from an external benchmark, that is, the ability for MGH to evaluate its performance against a group of similar organizations. This comparative data is highly valued, as it involves a large number of units or organizations and has the ability to make “like” comparisons (i.e. between similar units in similar hospital settings).

The decision for MGH to submit fall data to NDNQI was based on the desire to compare MGH’s overall performance to a national benchmark. It also allowed comparison of performance by unit type. Stratification of the data by hospital size is also helpful in supporting valid comparison to organizations of similar size (i.e. > 500 beds). As of the first quarter of 2007, the number of patient care units reporting data for falls and falls with injury rates to NDNQI in the 500+ bed category was significant: adult critical care units – 447, adult medical units – 481, adult surgical units – 351, and adult medical/surgical units – 301. Participation of hospital/units in this database continues to increase, providing a valuable, on-going resource for performance measurement by unit type.

Not all data requests have been incorporated into the DON. In 2006, the NDNQI offered the option of participation in an RN satisfaction survey using the Practice Environment Scale (PES). Although MGH nursing leaders value measuring staff satisfaction and evaluating the practice environment, a Staff Perceptions of the Professional Practice Environment Survey (SPPPE) had been developed internally and conducted annually at MGH from 1999 through 2005 (Force 1.8). These surveys provide a rich resource of data and, more importantly, valuable information for the trending of data over time. Therefore, the decision was made to continue with the MGH SPPPE survey and not participate in the NDNQI PES. The option of using the PES in addition to the SPPPE in order to compare to national benchmarks is still being considered.