



COMPETENCY ASSESSMENT

In the Operative and Invasive Procedure Setting

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INTRODUCTION

Operative and invasive procedures requiring the use of sterile technique are no longer performed only in the operating room (OR). Advances in technology and techniques have facilitated the performance of procedures in non-traditional settings beyond the OR. These include settings such as cardiac catheterization labs, physician offices, gastrointestinal labs and interventional radiology suites. This white paper provides definitions germane to the field and also addresses competency assessment for members of the nursing team and those supporting the delivery of care in the operative and invasive procedure suite.

Patient safety and positive outcomes are the number one priority in operative and invasive procedure settings as the expectations of healthcare consumers and other stakeholders continue to rise in regard to nursing care. This complex environment must meet regulatory requirements from agencies such as the Occupational Safety and Health Administration (OSHA)¹, Centers for Medicare and Medicaid Services (CMS)², The Joint Commission (TJC)³, Agency for Healthcare Research and Quality (AHRQ)⁴, licensure boards, certification boards and other federal and state regulatory bodies.

Over the last 15 years, the methods of measuring and assessing competency have markedly improved, offering tools that truly measure an individual's performance in a specific situation. Competency assessment is one of the tools healthcare facilities can use to build a culture of quality patient care and potentially reduce the number of adverse outcomes. Within the operative and invasive procedure setting, it is one means of determining if nurses, surgical technologists and other staff members, including physicians and anesthesia professionals, are proficient and can demonstrate the technical, critical thinking and interpersonal skills necessary to provide safe patient care relevant to their specific role function.

Competency assessment may be viewed as a professional responsibility and a commitment to our patients to practice in a safe manner. Engaging in ongoing professional development, of which competency assessment is but one part, fulfills an obligation to the patient to provide high quality care. Competency assessment is a methodology to provide a higher level of assurance to our patients regarding our proficiency. Ideally, nurses and other healthcare professionals would each have a meaningful professional development plan to include periodic competency assessment and lifelong learning. In the absence of such plans, the employer assumes some responsibility and liability for the level of competency of those working at the facility. Thus, competency assessment becomes part of workplace activities.

Competency assessment is not simply a list of tasks that are observed and checked off at a specified period of time. Previously, healthcare facility managers used checklists of tasks annually to document competency. While skills checklists may be part of the larger scheme of competency assessment, these lists may no longer serve as the sole source of measuring competency. The days of using checklists as the



only measurement of competency are long gone, and facilities still using a single method such as an annual skills assessment do not truly evaluate competency. Donna Wright, BS, MSN, RN, a well-known author in the competency field, states:

Competency assessment is only meaningful when it reflects the dynamic nature of the job. This means you will not have one list of competencies or skills identified for a job that you will simply check off over and over each year; instead your competencies will be a collection of skills, abilities, and behaviors that address the changing nature of the job for a given period of time.⁵(p 2)

This paper provides definitions of the various terms used in the field of competency assessment and addresses competency assessment for members of the nursing team as well as those supporting the delivery of surgical care in the operative and invasive procedure suite. The results of Montgomery's Perioperative Nurse Competency Continuum Study,⁶ carried out in conjunction with a job analysis for perioperative nursing, reinforced current thinking on this subject. A job analysis is integral to the certification examination process and produces task and knowledge statements that delineate the role being studied. These task and knowledge statements may also fill another purpose in that they can be used in the competency assessment process.

DEFINITIONS

Inconsistent methods of defining and measuring clinical competency create the biggest obstacle in measuring competency assessment. Levine and Johnson state "there is no common definition of competence and no evidence for one best method to assess competence"⁷(p.58) Secondary to the issues regarding definitions of competency, many healthcare facilities focus on measuring the individual's ability to perform a given skill, not on their ability to perform in a practice setting. When applied to perioperative nursing, this approach reinforces the misconception that perioperative nursing is but a collection of tasks. This detracts from the complexity of perioperative nursing and denigrates the critical thinking skills so crucial in the profession. The definitions and methods described in this educational offering may assist perioperative managers striving to assess competency and move beyond the simplistic notion of annual skills fairs. With the goal of assessing competency in mind, establishing definitions of relevant terms is a priority. A collection of those terms follows.

Competence

Competence refers to a potential ability and/or a capability to function in a given situation.⁸ While the terms competence and competency are often used interchangeably, there is a distinct difference. Competence is the capacity to perform specific to a role and includes other behavioral attributes that make someone successful in that role.⁹

Competency

Before competency can be assessed, it must first be defined. The following definitions capture the essence of competency. Competency, as described by Stobinski,¹⁰ is what a nurse is capable of doing and is manifested in measurable actions and behaviors. It is one determinant of performance, but the relationship between competence and competency is not direct, and the exact contribution an individual's capability to the larger picture of performance is unknown.

Wright⁵(p 8) defines competency as the application of knowledge, skills and behaviors that are needed to fulfill organizational, departmental and work-setting requirements under various real world circumstances. Schroeter makes a defining statement in this field, stating, "Competency focuses on one's actual performance in a situation. This means competence is required before one can achieve competency."⁸(p.2) Specific to the OR, AORN defines competency as the knowledge, skills, and abilities needed to fulfill the professional role of an RN in the OR.^{11,12}

Continued Competence

Continued competence, as defined by the Hospice and Palliative Credentialing Center (HPCC) is "the on-going commitment of a registered nurse to integrate and apply the knowledge, skills and judgment with the attitudes, values and beliefs required to practice safely, effectively and ethically in a designated role and setting."¹³ The concept of continued competence has recently come to the forefront as a means to demonstrate ongoing learning, professional development and to protect patients. Lateef states that one salient reason to address the issue of measuring competency is to keep pace with the accelerated evolution of technology and increased consumer expectations.⁹ The credentialing industry, of which certification programs such as the CNOR certification is but one part, has become a discipline with a more structured, principle-based approach to continuing competence and credentialing. From that standpoint of a principle-based approach, we can consider Knapp & List's¹⁴ 2009 definition of continuing competence as the ability to perform a role at specified levels of knowledge and skill not only at the time of initial certification but also throughout an individual's professional career.

Competency Assessment

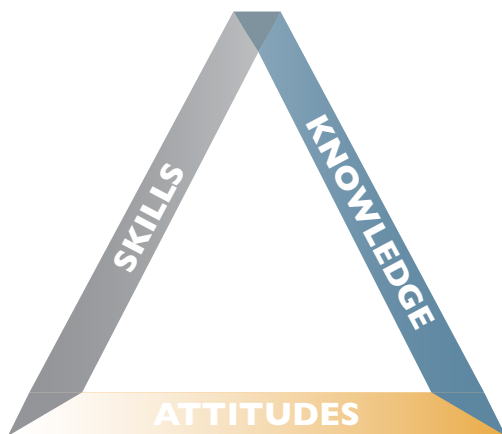
Wright⁵ describes competency assessment as a dynamic ongoing process where skills are obtained in three distinct phases: when hired, during initial practice and on-going practice. The competencies are different at each level of practice and correspond to phases where skills are obtained. This clearly has parallels to the work of Benner who described a novice to expert continuum.^{15,16} Stobinski¹⁰ discusses the relationship of performance to competency assessment and how this can be used to identify areas of professional development and educational



needs. This allows managers to align competencies with patient care needs. Thus, competency assessment, in a well-designed program, can be seen as a key element in a professional development program designed to continually elevate knowledge and skill levels.

THE COMPETENCY CONTINUUM

In one commonly used framework (the KSA model), the three components of competency are described as knowledge, skills and attitudes.¹⁷ This KSA framework provides a helpful perspective through which the process of competency assessment may be viewed. For example, knowledge acquired through formalized education and training is usually gained in a didactic mode. This classroom experience provides a significant contribution to knowledge levels.



In the perioperative setting, employee roles are diverse; however, there are three primary groups of non-physician providers that comprise the majority of personnel in the OR: Registered nurses (RNs), surgical technologists (STs) and central processing technicians (CPTs). Each of these types of employees has a base of knowledge that must be mastered for their specific job role. This education on the basic scientific knowledge of the profession, often provided in a didactic setting, is then combined with relevant experience and skills training. The key remaining ingredient in the KSA model is that of attitude, which may be influenced by the education and training the individual receives; but this area is typically not a centerpiece of competency assessment. The sum of these three components ultimately yields a level of competency for that individual.¹⁸

Competency assessment is necessary to evaluate individual and group performance. It helps identify challenging issues, serves as a cross reference to the performance appraisal process, identifies if reportable quality measures are being met, and ensures compliance with standards set by organizations such as OSHA. The process of competency assessment is also overseen by entities such as the Joint Commission, which accredits healthcare facilities. Competency assessment also may identify the contribution of employees to the overall financial stability of the organization. This concept will be explored in more detail in the discussion of value based purchasing (VBP).

ASSESSING PERIOPERATIVE COMPETENCY

Patricia Benner is a nursing theorist and a prolific and influential author. She is best known as the author of the classic 1984 work, *From Novice to Expert: Excellence and Power in Clinical Nursing Practice*.¹⁵ In this book, she describes and applies the Dreyfus Model of Skill Acquisition,¹⁹ with its stages of learning and skill acquisition, to the nursing profession. This five-level model describes the process of skill development from novice to expert (Table 1). This table is adapted from this seminal work by Benner.¹⁵ When designing competency assessment tools this model can provide guidance in tailoring assessment methods that are appropriate to the experience level of the practitioner.

Clinical competency is not evaluated similarly for all practitioners, and a one-size-fits-all assessment tool has little practical use. Rather, clinical competency must be evaluated

according to the practitioner’s level of skill acquisition and role expectations.²⁰ As the Dreyfus¹⁹ model demonstrates, no one begins at a competent level. To attain the competent level of skill acquisition, typically a clinician must gain experience, knowledge and skills over a two to three-year time period in the same practice area. Competency assessment validation tools must be appropriate to the level of skills of the person being assessed, including knowledge, psychomotor, technical and cognitive skills.

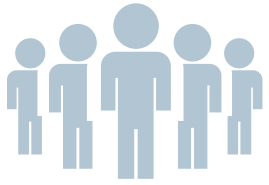
For example, the job description for a novice nurses in the OR may include providing patient care as an RN circulator. In this instance an area identified in the perioperative nursing job analysis with the heading of “Preoperative Patient Assessment and Diagnosis” could be the focus for competency assessment because this is a basic skill that even a novice or advanced beginner must master early in his or her career path. The expert nurse may have additional roles identified such as “Transfer of Care” requiring extensive coordination of interdisciplinary care services such as nutrition or wound care services.

DREYFUS & DREYFUS MODEL OF SKILL ACQUISITION¹⁻³

Novice	The novice nurse has no previous experience on which to base knowledgeable decision-making. Persons at this level seek concrete rules to follow and find it difficult when the rules do not apply to the situation encountered. When working with novices, it is important to be concrete and provide basic knowledge that can be applied to actions in practice.
Advanced Beginner	The advanced beginner nurse has some previous experiences on which to base decisions. This nurse is able to see “gray” aspects in previously perceived black-and-white rules or procedures. Although this person acknowledges that situations may vary and actions cannot always be predicted, they usually have a difficult time anticipating subtleties in a situation and prioritizing nursing actions. Nurses at this level are reactive rather than proactive.
Competent	The competent nurse has worked at least two to three years in the same practice area. Experience enables this nurse to discern commonalities and act toward meeting long-term outcomes or goals. Organization is a characteristic of this nurse and can be typically manifested in his or her deliberate plan for managing patient care priorities.
Proficient	Understanding the complete context of a situation rather than focusing on isolated tasks or pending actions is the hallmark of the proficient nurse. This nurse prioritizes easily and relies less on concrete rules and more on perceptions based on experience. Another characteristic is the ability to easily differentiate between the expected and the unexpected.
Expert	Intuitive knowing is a key characteristic of the expert nurse. Vast experience and cognition enables this nurse to provide high-quality nursing care by sensing subtle changes in the patient’s conditions and acting swiftly in response to these changes.

References

1. Novice to Expert: The Dreyfus Model of Skill Acquisition. <http://www.sld.demon.co.uk/dreyfus.pdf>. Accessed February 5, 2015.
2. Benner P. From Novice to Expert: Excellence and Power in Clinical Nursing Practice. Menlo Park, CA: Addison-Wesley; 1984.
3. Benner P, Tanner CA, Chesla CA. Expertise in Nursing Practice: Caring, Clinical Judgment and Ethics. New York, NY: Springer Publishing; 1984.



Managers may use the competency assessment process to facilitate the professional development path for the perioperative nurse. A timeline can be formulated for nurses depending on their knowledge and experience. For instance, a new graduate hired into the OR will be assessed on different competencies than a perioperative nurse with ten years' experience who is practicing at the expert level. The manager can guide the employee in a successful career path in the OR using information gathered from the competency assessment process.

Benner's Novice to Expert Continuum¹⁵ may also be used to compare the characteristics of an individual nurse's practice against the observable behaviors described in the chart above. Differences or shortfalls in clinical performance, which are identified in this comparison, can be used as teaching points and also to establish learning and growth opportunities. For example, a nurse with five years' experience should be capable of performing at the competent level of skill acquisition as described by Benner.¹⁵ This level of performance assumes the necessary clinical learning experiences and a supportive learning environment have been present. If the competency assessment process provides evidence that the nurse exhibits behaviors characteristic of an advanced beginner, there is an opportunity for additional learning and professional development activities.

The manager can supply mentoring and educational opportunities for the RN to safely function in his or her specific role. The RN's professional career path includes his or her own goals and those expected of the nurse by the manager and administrators in the facility. Areas of professional development, which may foster increased skill acquisition, may include additional clinical learning experiences, specialty certification, academic education and advanced nursing degrees.

For the nurse who desires to stay in the scrub or circulating role throughout his or her career, there are an abundance of educational and professional development opportunities that may facilitate the desire to provide hands-on care. This example points out the importance of tailoring a professional development path to the needs and goals of the individual. Not all staff members aspire to certification or to additional academic education. An astute leader will realize these differences and facilitate professional development that meets the needs of both the organization and the individual.

DESIGNING THE COMPETENCY ASSESSMENT TOOL

Wright⁵ has done extensive work on the subject of competency assessment. A basic premise of her work is for individuals to use as much evidence of their daily work as possible in the process of competency assessment. She believes that people should not be testing on tasks that are performed on a daily basis. This may seem confusing at first, but consider this perspective. For a task that is readily observed, frequently performed and the competency assessment is straightforward, that task may just require occasional observation by a peer possessing competency. Additional instruction or refresher training on this task would not be the most productive choice as it is frequently performed and readily observable. The time

spent on additional training would be best spent on tasks that are infrequently performed and that have a recent history of errors or substandard performance.

Developing a department-wide competency team to identify job position functions is a great start to a meaningful competency assessment process. To identify job functions for each position, a brainstorming session can help. This process should include those who are not part of the competency team by emailing a spreadsheet of job positions and functions and asking them to add any omitted items and return their additions to the team.

Information from a Job Analysis may also inform this process. Job Analysis findings exist for some of the roles performed in the OR setting as the Job Analysis or Role Delineation Study is part of building a certification examination. Many of the organizations that administer certification examinations share these findings with the public. Job Analysis findings are available for the role of the perioperative nurse, perianesthesia nurse, surgical technologist and central processing technicians. The use of Job Analysis findings is discussed in the next section of this paper.

This list of competency assessment needs should include the following:

- New procedures, policies, initiatives;
- Changes in the above that affect the job;
- High-risk aspects of the job (i.e., those that would cause harm or even death);
- Problematic aspects of the job identified through quality improvement (QI) data, surveys from patients and staff, reports; and
- Regulatory requirements

The next step is to write competency statements using action verbs. Table 2 is a condensed version of a table of action verbs.

TABLE 2: EXAMPLES OF ACTION VERBS					
Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Arrange	Classify	Apply	Analyze	Arrange	Appraise
Define	Convert	Change	Appraise	Assemble	Argue
Describe	Defend	Choose	Breakdown	Categorize	Assess
Duplicate	Describe	Compute	Calculate	Collect	Attach
Identify	Discuss	Demonstrate	Classify	Combine	Choose

Reference

1. Bloom's Taxonomy of Action Verbs. Clemson University. <http://www.clemson.edu/assessment/assessmentpractices/referencematerials/documents/Blooms%20Taxonomy%20Action%20Verbs.pdf>. Accessed February 6, 2015.

Using the table of action verbs, an example of a competency statement in the perioperative setting could be:

Nurse Jones will confirm patient identity using two patient identifiers throughout the patient's perioperative experience.

This statement establishes the behavior that will be assessed; however, a method or a choice of verification methods must be established to facilitate the competency assessment process. Faced with a need to designate verification methods, many will simply default to the well-known skills fairs and checklists; however, these do not allow for complete verification. Skills fairs only measure a point in time, and the evaluator can coach the employee until satisfactory results are achieved. According to Wright,⁵ several verification methods are appropriate for assessing competency (Table 3). These include case studies, return demonstrations, observation of daily work, discussion groups, presentations to department members, post-tests, mock events, exemplars, peer reviews, self-assessments and QI monitors. Whatever evaluation method a manager chooses, a check sheet can be devised documenting the learner, job position, work area, task, evaluation method, date and observer.

TABLE 3. COMPETENCY ASSESSMENT VERIFICATION METHODS

POST TESTS

Method

- Post tests only measure cognitive skills and knowledge (e.g., written, oral exams, puzzles, worksheets, surveys, quizzes).
- These tests do not measure behavioral, performance, or psychomotor skills.

Perioperative Example

- Rhythm recognition
- Documentation requirements

RETURN DEMONSTRATION

Method

- Demonstrates to an experienced, qualified observer how to safely perform a task.

Perioperative Example

- Prove competency to regulatory body by:
 - » testing blood glucose
 - » foley catheter insertion
 - » performing surgical prep



CASE STUDIES

Method

- Measure critical thinking skills.
- Provide situations and ask individuals to explain their responses to the situation.

Perioperative Example

- Malignant hyperthermia (high risk, low volume, time sensitive)
- Respiratory arrest in the OR

PEER REVIEWS

Method

- Written and face-to-face reviews
- Measure:
 - » critical thinking skills
 - » interpersonal skills
- Must be safe for the persons giving the feedback, receiving the feedback, and interpreting the feedback.

Perioperative Example

- Phone etiquette
- Communication skills
- Customer service
- Dealing with an unexpected change in the surgical procedure
- Ability/flexibility to deal with change
- Behavior in an emergency situation
- Accountability/individual responsibility



EXEMPLARS

Method

- Measure
 - » critical thinking skills
 - » interpersonal skills
- The individual writes a story of a situation he or she has or may have experienced.
- The story describes the choices made in the situation with the rationale behind those decisions.

Perioperative Example

- Presentation of assisting with induction.
- Summarize how to use a new piece of equipment.
- Describe caring for patient who has terminal cancer; assisting and comforting family members; present facts about what happened and how it happened.
- Describe hand overs and transitions of care.
- Demonstrate customer service.

SELF-ASSESSMENTS

Method

- Assess values, beliefs, opinions, and attitudes.
- Encourage employee reflection.
- Provide a means for employee to document thoughts that influence day-to-day judgments.

Perioperative Example

- Circulating RN facilitates room running on time.
- Scrub tech or nurse anticipates conversion of a laparoscopic procedure to an open procedure by having all the necessary supplies in the room.

EVIDENCE OF DAILY WORK

Method

- Measures technical skills.
- Assesses skill of activities performed on a daily basis.

Perioperative Example

- Positioning
- Administration of IV antibiotics
- Insertion of IV catheters
- Cleaning equipment
- Documenting patient assessment in computer software

QI MONITORS

Method

- Measures knowledge, critical thinking, technical skills, and interpersonal relations.
- Monitors patient care environment and outcomes.
- Used to monitor compliance with policies/protocols.
- Monitors benchmarks desired vs. achieved outcomes.

Perioperative Example

- Chart audits
- Documentation audits
- Infection control policy compliance
- Blood glucose monitors and other equipment cleaning and calibration
- Checking emergency cart, documenting it
- Setting up and tearing down equipment

PRESENTATIONS

Method

- Assess knowledge and understanding.

Perioperative Example

- Posters
- Presentations
 - » Oral
 - » Group
- Individual
- Teaching a class
- Explaining a process change or introducing a new process.

DISCUSSION GROUPS

Method

- Often used with mock events
- Measures critical thinking skills

Perioperative Example

- Debrief
- Analyze a sentinel event
- Discuss hypothetical events
- Introduce new equipment or new process such as new computerized program/charting



MOCK EVENTS

Method

- Assess responses in daily work.
- Simulate real situations.
- Measure the ability to function under stress.
- Used for high risk, infrequent tasks.

Perioperative Example

- Simulation: malignant hyperthermia:
 - » Where is the dantrolene?
 - » How is it mixed?
 - » Where can more be obtained, if needed?
- Cardiopulmonary resuscitation
- Airway management
- Point-of-care testing: blood glucose testing/calibration of machine

Reference

1. Wright D. *The Ultimate Guide to Competency Assessment in Healthcare*, 3rd ed. Minneapolis, MN: Creative Healthcare Management, Inc; 2005.

The perioperative job analysis discussed in the next section identifies the nine major practice areas specific to the current perioperative RN job role. These areas are sometimes referred to as domains when used as a basis for a certification examination. One component of the job analysis is the task and knowledge statements. The full listing of the current task and knowledge statements are found in the appendices of this resource. These statements can be used to formulate competency assessment statements. A discussion of recent research efforts regarding perioperative nursing job analysis processes provides additional depth to the competency assessment discussion.

JOB ANALYSIS FINDINGS

Job analysis studies are regularly performed to support high-stakes testing in fields such as certification and licensure. Common examples would be licensure examinations for entry into the nursing profession and certification examinations such as those for the CNOR[®] and CRNFA[®] certifications. These periodic job analyses validate that the tasks identified in the study or examination are performed by a nurse with a given level of experience. For example, to sit for the CNOR examination the nurse must have two years of practice experience.

In 2006, the Competency and Credentialing Institute (CCI) commissioned Linda Montgomery Thomson of Prometric, the company that administers the CNOR certification examination, to conduct a research study.⁶ Specifically, Montgomery and other Prometric staff conducted a job analysis/perioperative nurse competency continuum study. More than 1,500 individuals participated in different phases of this multi-method survey which yielded descriptive information about the tasks

performed by perioperative RNs and the knowledge and skills needed to adequately perform those tasks.⁶ A nationwide sample of perioperative nurses were asked to rate their:

- current competency level in performing 103 perioperative nursing tasks,
- years of preoperative nursing experience in performing the 103 tasks,
- point of acquisition of 64 perioperative nursing knowledge/skills, and
- professional development needs across the 64 perioperative knowledge/skills.⁶(p. 6)

This study reinforced some of the basic precepts of the work of both Wright⁵ and Benner^{15,16} regarding competency and skill acquisition. More importantly, for nurses working in the OR setting, these findings were focused closely on the role of perioperative nursing. The study was timely and now serves to buttress the concepts underlying the increasingly important process of competency assessment in the perioperative setting.

The Connection to Wright and Benner

The Montgomery study sought to validate the tasks, knowledge, and skills necessary to the role of the perioperative RN at three levels: novice, intermediate and experienced.⁶ This methodology also exceeds the periodic job analysis process that supports the CNOR credential which only seeks to validate task and knowledge levels for perioperative RNs at one point in their career (i.e., two years of experience).

The study data “suggest that there are between-group differences by years of perioperative nursing experience.”⁶(p. 7) In other words, there are differences in how often some of the perioperative nursing tasks are performed relative to the experience level of the nurse. These findings are both logical and consistent with Benner’s Novice to Expert Continuum.¹⁵ These findings also provide justification for one of the basic tenets from Wright’s⁵ work – that competency assessment should be tailored to the practice of the individual nurse.

Another finding of the Montgomery study, consistent with Wright’s work, is that, “The breadth of tasks performed consistently increases with years of experience . . .”⁶(p. 7) Thus, the number of tasks performed and their range increases as nurses acquire more experience. There is a range of intraoperative tasks, however, that is performed by both novices and experts. This collection of tasks, and the knowledge needed to perform these tasks, appears to form a core skill set that is common to all perioperative RN regardless of experience level.

This group of common tasks centered on intraoperative care represents domain three (Intraoperative Care) on the CNOR job analysis and comprises the single largest area covered on the certification examination. For the 2015 CNOR certification examination, for example, this section constituted 27% of the content. If intraoperative care is a core part of the work of perioperative RNs, this finding also passes the test of face validity. Perioperative nurses early in their careers are urged to maintain a consistent caseload to build up their skills. This

practice facilitates clinical learning and ensures necessary clinical experience. The CNOR job analysis reveals that intraoperative care comprises over one fourth of the work performed by perioperative nurses.

The study findings also noted that both novice and perioperative nurses with less experience (i.e., less than five years) focus more on task performance in routine situations, whereas perioperative nurses with more than five years experience focus more on task performance in complex or unusual situations. On a common sense level, this finding is logical, but it is also consistent with the general concepts of Benner's novice-to-expert continuum.¹⁵ Nurses with more experience are aware of the bigger picture and all of the facets inherent to a complex, perhaps non-routine, situation. An expert clinician is able to apply past learning to a new and complex scenario whereas a novice can have difficulty separating the salient factors in a complex situation to which they have not been previously exposed.

All of these connections to theoretical frameworks regarding competency assessment have one theme: that nurses and other healthcare professionals have different levels of competency throughout their careers. Thus, competency assessment methods should take this into account and have some measure of flexibility. A one-size-fits-all approach cannot measure these nuances and cannot truly measure clinical competency.

Use of Task and Knowledge Statements

In the 2006 Montgomery⁶ identified nine major practice areas (domains) for perioperative nursing. Subsequent job analyses in 2010 and 2014 reaffirmed the 2006 findings regarding these major practice areas:

- patient assessment and diagnosis;
- identification of expected outcomes and plan of care;
- intraoperative activities;
- communication;
- discharge planning;
- cleaning, disinfecting, packaging, and sterilizing;
- emergency situations;
- management of personnel; and
- professional accountability.

The knowledge statements for perioperative nursing may be used for competency assessment methods, thus saving managers time and resources while eliminating the need to create such statements. The most current Task and Knowledge Statements for the CNOR certification examination are included as appendices to this paper. Staff members performing competency assessment can work from the well-established statements contained in the perioperative nursing job analysis documents, which CCI makes available without charge to the nursing community. An illustration regarding the use of the task and knowledge statements in competency assessment may clarify this usage. In Table 4, Domain I, preoperative patient assessment and diagnosis is used as an example.



**TABLE 4. REQUIRED ELEMENTS OF DOMAIN I –
PREOPERATIVE PATIENT ASSESSMENT AND DIAGNOSIS**

REQUIRED ELEMENTS

**Confirm patient identity, procedures, and operative site, side/
site marking**

Example:

- Have patient verbally state their own name.
- Verify that name; including spelling is correct on patient ID bracelet before applying the bracelet.
- Ask the patient to provide a second patient identifier such as date of birth or medical record number.
- Confirm site by having patient verbalize the site and physically by having patient point to the site.
- Assess the marking of the surgical site that was performed by the surgeon.

REQUIRED ELEMENTS

Verify the surgical consent

Example:

- Ensure that correct patient's name and second identifier are on the consent
- Ask the patient to state the upcoming procedure
- Confirm that the surgical consent is consistent to what the patient stated, including correct site

REQUIRED ELEMENTS

**Conduct an individualized physical assessment including but not
limited to skin integrity and mobility deficits.**

Example:

- Confirm current H and P is on the chart:
 - » Vital signs
 - » Pulse-Points
 - » Heart Auscultation
 - » Lung Auscultation
 - » Abdominal palpitation/Auscultation
 - » Ask patient about rashes/shin sores
 - » Ask patient about mobility issues

REQUIRED ELEMENTS

Usage and culturally appropriate health assessment and interview techniques

Example:

- Begin interview with the assumption that patient's healthcare literacy is at least at a 5th grade level.
- Use age appropriate language for children and include input from parent/guardian.
- Ask patient if he/she has any cultural or religious beliefs that impact use of human products, i.e. blood products.

REQUIRED ELEMENTS

Collect, analyze and prioritize patient data (allergies, lab values, other medical conditions, previous relevant surgical history, chart review, NPO status)

Example:

- Ask patient to list any allergies.
- Confirm allergies on patient record and allergy band.
- Ask patient last time they had anything to eat or drink.
- Review and analyze lab results, reporting any abnormalities to physician.
- Through chart review and patient interview, confirm all information on H & P is current and correct. This includes medical conditions and past surgical history.

REQUIRED ELEMENTS

Review medication history (pre-operative meds, home meds, alternative and herbal supplements, medical marijuana use, alcohol use, recreational drug use)

Example:

- Assess medications from chart and confirm with patient for accuracy
- Ask about alcohol intake and drug use.
- Ask patient about mobility issues.

REQUIRED ELEMENTS

Perform a pain assessment

Example:

- Assess pain level using a I-IO scale.
- Document pain level.

REQUIRED ELEMENTS

Confirm advance directive and DNR status

Example:

- Ask patient/guardian about advance directives.
- Confirm DNR status.

VALUE-BASED PURCHASING

The Value-Based Purchasing (VBP) program is a federal government initiative designed by the CMS to reward hospitals based on quality of care and patient experience.²² The goal of the VBP program is to transition CMS from a passive payer to a prudent purchaser of healthcare services. This transformation has wide ranging implications for providers of healthcare services including hospitals and ambulatory surgery centers. The influence of CMS cannot be underestimated. The VBP program affects all ORs and, in turn, affects all staff members including surgeons and perioperative RNs.

The VBP initiative is a complex system of recordkeeping with corresponding financial incentives and disincentives. These incentives and disincentives are based on performance against benchmarks for best clinical practices and patient satisfaction measures. Relative performance has the potential for significant effects on the finances of a facility. While the vast majority of healthcare facilities must participate in VBP, there will be relatively few best performers. There will also be a number of facilities that cannot meet the highest standard. For those not able to reach the highest standards there will be financial consequences.²²

What is also evident is that the bar for performance will continue to be raised. It is not merely a matter of reaching a level of performance. The requisite performance for the highest standard, which will maximize reimbursement, will continue to move higher. Thus, all affected by VBP will be compelled to strive to meet an ever-higher standard, but only a relative few will attain that level. The desired effect, over the long term, is to raise the overall standard of care, but the financial effects may be harsh for settings that do not perform well. These harsh effects will eventually reach the level of individual performance in the clinical setting as facility administrators strive to meet increasingly rigorous standards. In the end CMS will examine all facets and providers of care.

Historically, in ORs, the imperative has always been to increase the volume of procedures. That approach was characterized by the saying, "Volume cures many ills." This was particularly true for those procedures with high operating margins and consistently good reimbursement. This volume-based approach to providing care produced higher revenue as volume increased and produced more efficient use of resources such as OR time. The CMS VBP approach is the single most visible manifestation of a larger shift from a volume-based approach to a system where value has greater importance.



In 2012, CMS introduced the pay for reporting process that included five reportable measures.²³ This has since increased to ten reportable measures in 2015²⁴ Hospitals that fail to report their data will suffer a two percent reduction in Medicare payments. Examples specific to surgical patients are that:

- Prophylactic antibiotic received within one hour prior to surgical incision;
- Prophylactic antibiotic selection for the patient;
- Prophylactic antibiotics discontinued within 24 hours after surgery end time and
- Cardiac surgery patients with a controlled 6:00 am post-operative serum glucose.

The CMS requires mandatory reporting of both clinical and patient experience data. Reimbursement is based on an evaluation of performance against quality measures. Performance on VBP measures are expressed in a Value Based Percentage Payment Summary Report²³ generated by CMS which delineates the amount of reimbursement that will be received from CMS. Thus, poor performance equates to a lesser level of reimbursement for services already rendered and for which resources have already been expended. In addition, CMS has an increasing number of never events for which it does not provide any reimbursement (e.g., foreign objects retained after surgery and Stage III and IV pressure ulcers). The combination of these mechanisms changes the dynamic for the provision of healthcare services in the United States.

This system of financial incentives and disincentives brings greater importance to the assessment of individual clinician competency. With VBP, the poor performance of one employee can translate into a financial effect for the both the department and the larger facility. Picture a scenario where a staff member working in central processing is not fully competent in the decontamination of surgical instruments. Those surgical instruments processed by that technician could then be unsterile and may eventually be used in a surgery. Any resulting surgical site infections (SSI) will have a negative financial consequence for the facility. A root cause analysis may eventually ascertain that a competency deficiency by that one individual was a contributing factor to the SSI. It may be possible to remedy the competency deficiency with remedial training, but the financial consequences have already occurred, and the patient's quality of life has suffered. To prevent such a scenario, it is far more efficient to perform meaningful competency assessment with the needed additional training rather than suffering the expensive financial disincentives and consequences to patients, which eventually follows poor performance against VBP standards.

Making the connection between CMS reimbursement and quality, managers must hold employees accountable. This leads to the importance of hospital administrators and managers investing in competency and professional development of their employees. Competent, accountable, informed employees

contribute to meeting the required clinical care measures, thereby improving patient experience and minimizing the potential for negative consequences.

IOM RECOMMENDATIONS

In 2010, *IOM Report on the Future of Nursing* discusses the critical role nurses will have in producing safe, quality care and coverage for all patients in our healthcare system. A common thread of new roles for nurses runs through that report. But, if nurses are to assume such roles, there must be improvements in educational preparation and professional development that include greater emphasis on lifelong learning. There are arguments that these improvements are the responsibility of the nursing profession and a necessary component of professionalism. Such views have not gained universal acceptance with all nurses. For many of the more than 2.5 million RNs in active practice, a personalized professional development path becomes subordinate to the realities of their daily demanding workload.

The recommendations from the IOM report give nurses something to which to aspire. Among these recommendations is the statement that, "All healthcare organizations and schools of nursing should foster a culture of lifelong learning and provide resources for interprofessional continuing competency programs."²⁵(p S11) The report makes a number of recommendations for institutional and structural changes, but ultimately the individual nurse must assume some responsibility and almost certainly will expend more resources to fulfill these responsibilities. Employers, licensing bodies and other organizations such as certification organizations will also have to do their part if these goals are to be realized.

This paper provides a resource for the employer to address the recommendation for lifelong learning and continuing competency assessment. This recommendation falls within the scope of responsibility of unit level or facility level leaders, and provides an introduction to the topic of continuing competency assessment specifically tailored to the work of perioperative nurses. These materials coupled with other references presented in this paper, are an excellent starting point for those who wish to learn more on this complex subject.

CONCLUSION

Although the complexities and time pressures of perioperative nursing often preclude the time needed for reflection on larger topics like the role of nursing in American healthcare, nursing leaders would be well-served to heed the highlights of influential documents such as the IOM Report on the Future of Nursing. Whether or not nurses choose to acknowledge the influence of such documents, these documents will come to affect their daily work. Those looking to the future would be wise to be familiar with the contents of the IOM Report.

The topic of competency assessment has not been a priority topic for many nurses but this passage from the IOM report is instructive, "Healthcare organizations and other organizations that offer continuing competency programs should regularly evaluate their programs for adaptability, flexibility, accessibility, and

impact on clinical outcomes and update the programs accordingly.”²⁵(p S11) As the recommendations of the IOM report are enacted by coalitions like The Center to Champion Nursing in America,²⁶ competency assessment will receive more attention. It can also reasonably be expected that regulatory and accreditation entities will place more emphasis on this topic.

The Competency and Credentialing Institute (CCI), the sponsor of these materials, acknowledges the influence of the IOM Report on the Future of Nursing and how it has affected CCI’s daily work. In addition, the influence of the report can be seen in the rapidly increasing numbers of nurses who are returning to school for additional formalized academic education beyond their entry level degree. This trend also has been accelerated by the subsequent work of many state-level action coalitions. Recent research that serves to reinforce the recommendations of the IOM report has also contributed to this trend. Large numbers of perioperative nurses returning for additional academic preparation is a relatively recent development, but it is testimony to the larger forces influencing the profession. Such change may soon affect the approach to competency assessment.

A key consideration for CCI is recommendation six of the IOM report.²⁷ That section states, “Ensure that nurses engage in lifelong learning. Accrediting bodies, schools of nursing, healthcare organizations, and continuing competency educators from multiple health professions should collaborate to ensure that nurses and nursing students and faculty continue their education and engage in lifelong learning to gain the competencies needed to provide care for diverse populations across the lifespan.”²⁵(p S11) As a healthcare certification organization with a vested interest in the future of perioperative nursing, CCI is striving to do its part to enhance competency assessment and professional development in the field.

Validating the ability of perioperative nurses to safely perform nursing interventions and activities in the operative and invasive procedure setting is achieved through competency assessment. Assessment focuses on the individual’s knowledge, cognitive and psychomotor skills. It is hoped that perioperative nurses will find this information useful as they enhance their work in competency assessment.

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APPENDIX

TASK & KNOWLEDGE STATEMENTS

Domain 1: Preoperative Patient Assessment and Diagnosis

Knowledge Statements

1. Anatomy and physiology
2. Pathophysiology
3. Pharmacology
4. Diagnostic procedures and results
5. Health assessment techniques (e.g., vital signs, pain assessment, allergies, lab values, other medical conditions, previous relevant surgical history, chart review, NPO status)
6. Approved nursing diagnoses (e.g., North American Nursing Diagnosis Administration, Perioperative Nursing Data Set)
7. Universal protocol
8. Consents (e.g., surgical, anesthesia, blood, photographs)
9. Advanced directives and DNR
10. Nursing process
11. Medication reconciliation protocol

Tasks

- Confirm patient identity using two patient identifiers
- Verify procedure, surgical consent, operative site, and side/site marking
- Assess Health Status of the Patient:--
 - » Collect, analyze and prioritize patient data (e.g., vital signs, pain assessment, allergies, lab values, other medical conditions, previous relevant surgical history, chart review, NPO status)
 - » Use age and culturally appropriate health assessment techniques to evaluate patient status (e.g., interview, observation)
 - » Review medication reconciliation (e.g., preoperative medications, home medications, alternative and herbal supplements, medical marijuana, alcohol use, recreational drug use)
 - » Conduct a physical assessment (e.g., skin integrity, mobility, body piercings, implants/foreign objects)
- Formulate nursing diagnoses
- Document preoperative assessment

Domain 2 Preoperative Plan of Care

Knowledge Statements

1. Physiological responses
2. Disease processes
3. Behavioral responses
4. Age specific needs
5. Transcultural nursing theory (e.g., cultural and ethnic influences, family patterns, spirituality and related practices)
6. Perioperative safety
7. Patient rights and responsibilities
8. Resources for patient/family education

9. Legal responsibilities and implications for patient care
10. Community and institutional resources
11. Patient outcomes
12. Standard Precautions and transmission-based Precautions
13. Preoperative patient preparation interventions (e.g., IV, removal of jewelry, hair removal)

Tasks

- Develop plan of care: -- a. Anticipate physiological responses (e.g., risk of infection, altered tissue perfusion, thermal regulation)
 - » b. Implement Surgical Care Improvement Project [SCIP] Protocol
 - » c. Prepare for perioperative safety needs (e.g., chemical, radiation, fire, laser, positioning)
 - » d. Identify behavioral responses of patient and family (e.g., comfort, anxiety, medication, pain management, cultural, and spiritual issues)
 - » e. Evaluate age-specific needs (e.g., temperature of room, size of instruments)
 - » f. Evaluate cultural diversity needs and requirements (e.g., language barriers, attire)
 - » g. Adhere to legal and ethical guidelines
 - » h. Collaborate and coordinate with the interdisciplinary healthcare team (e.g., radiology, ultrasound, pathology)
 - » Use a patient-centered model
- Identify and plan for expected patient outcomes
- Adhere to standard precautions

Domain 3: Intraoperative Care

Knowledge Statements

1. Surgical procedure
2. Perioperative documentation
3. Infection prevention and control
4. Aseptic technique
5. Skin prep antisepsis
6. Patient/personnel safety
7. Ergonomics and body mechanics
8. Potential complications
9. Positioning
10. Wound Healing
11. Wound Classification
12. Anesthesia management and anesthetic agents
13. Pain management
14. Medication management
15. Instruments, supplies, and equipment

16. Implants and explants
17. Surgical counts
18. Specimen management
19. Hazardous materials
20. Smoke plumes
21. Environmental factors (e.g., temperature, humidity, air exchange, noise, traffic patterns)
22. Blood and blood products
23. Equipment use per manufacturer's instructions

Tasks

- Optimize physiological responses of the patient (e.g., temperature control, infection control, perfusion)
- Monitor and maintain patient and personnel safety (e.g., chemical, fire, smoke plumes, radiation, laser, positioning)
- Optimize patient care based on behavioral responses (e.g., comfort, anxiety, medication, pain management; cultural, spiritual, and/or ethical issues)
- Prepare the surgical site
- Select procedure-specific protective materials and equipment (e.g., lead aprons, laser goggles)
- Monitor and evaluate the effects of pharmacological and anesthetic agents
- Assist with anesthesia management
- Identify and control environmental factors (e.g., humidity, noise, temperature, traffic)
- Maintain a sterile field utilizing aseptic technique
- Ensure the sterility of surgical products and instrumentation (e.g., expiration date, package integrity)
- Test and use equipment according to manufacturer's recommendations
- Maintain the dignity, modesty, and privacy of the patient
- Verify specimens with surgical team (e.g., name, type, suture tags)
- Prepare, label, and transport specimens
- Confirm, present, and prepare implants
- Prepare explants for final disposition
- Prepare and label solutions, medications, and medication containers
- Perform counts
- Adhere to universal protocol (e.g., time out, WHO Checklist, National Patient Safety Goals)
- Maintain accurate patient records/documentation (e.g., relevant facts and data elements, positioning, solutions and medications, counts)
- Manage patient hemodynamic needs (e.g., autotransfusion, blood products)
- Utilize ergonomics and proper body mechanics

Domain 4: Communication

Knowledge Statements

1. Communication techniques
2. Interviewing techniques

3. Methods and requirements for reporting to interdisciplinary healthcare providers (e.g., critical lab values, medical condition, medications, allergies, implants/implantable devices, hand off, read back verbal orders)
4. Barriers to communication
5. Perioperative patient education techniques
6. Information technology (e.g., software applications, security rules, HIPAA)

Tasks

- Communicate patient status and changes to the interdisciplinary healthcare providers (e.g., critical lab values, medical condition, medications, allergies, implants/implantable devices)
- Utilize hand-offs for continuity of patient care
- Provide information to the patient/family according to HIPAA guidelines (e.g., status, updates)
- Identify barriers to communication and participate in implementing effective solutions
- Provide and document perioperative education

Domain 5: Transfer of Care

Knowledge Statements

1. Interdisciplinary services for care coordination
2. Transfer of care criteria
3. Regulatory guidelines concerning post operative follow up (e.g., phone calls, appointments)

Tasks

- Collaborate with interdisciplinary services (e.g., nutrition, wound care, social work, visiting nurse, referrals, transportation)
- Evaluate patient status to facilitate transfer to the next level of care (e.g., PACU, ICU, home)
- Document transfer of care
- Provide and document post discharge follow up communication according to regulatory guidelines

Domain 6: Instrument Processing and Supply Management

Knowledge Statements

1. Cleaning techniques and products
2. Disinfecting techniques
3. Products and packaging techniques
4. Sterilization techniques
5. Transportation of equipment, instruments, and supplies
6. Storage of equipment, instruments, and supplies
7. Hazardous materials exposure (e.g., ETO, glutaraldehyde)
8. Bio hazardous materials (e.g., blood, CJD)
9. Documentation requirements for instrument sterilization including biological and chemical monitoring

10. Regulatory requirements for tracking of equipment, instruments, and supplies provided by external sources

Tasks

- Select appropriate methods and products for processing (e.g., cleaning, disinfecting, packaging, sterilizing, transportation, storage)
- Perform and document disinfection procedures (e.g., monitoring processes)
- Handle and dispose of hazardous materials (e.g., chemo drugs, radioactive materials, ETO, glutaraldehyde)
- Handle and dispose of biohazard materials (e.g., blood, CJD)
- Perform and document sterilization procedures including biological and chemical monitoring (e.g., load parameters)
- Monitor environmental conditions of sterilization and storage areas
- Manage materials and instruments provided by external sources

Domain 7: Emergency Situations

Knowledge Statements

1. Preparations for and management of medical emergencies (e.g., Malignant Hyperthermia (MH), anaphylaxis, cardiac arrest, trauma)
2. Preparations for and management of environmental hazards and natural disasters (e.g., extreme weather, terrorism, fire)
3. Roles of the interdisciplinary healthcare team members

Tasks

- Perform nursing interventions (e.g., Malignant Hyperthermia (MH), anaphylaxis, cardiac arrest, trauma)
- Coordinate members of the interdisciplinary healthcare team during emergency situations
- Protect patient and resources from environmental hazards and during disasters (e.g., fire, toxic fumes, natural disasters, terrorism)

Domain 8: Management of Personnel, Services, and Materials

Knowledge Statements

1. Scope of practice for the interdisciplinary team
2. Principles of product evaluation and cost containment
3. Environmental sustainability
4. Operating room and resource management (e.g., equipment, supplies, staffing)
5. Role of non OR personnel (e.g., vendor, students, visitors, family)
6. Environmental management (e.g., spills, room turnover, terminal cleaning)
7. Preventive maintenance required for equipment
8. Implants rules and regulations
9. Personal protection equipment (PPE)

Tasks

- Acquire equipment, supplies, and personnel

- Monitor and assist with implementation of cost-containment measures
- Participate in product evaluation/selection
- Supervise, educate, and mentor healthcare team members
- Delegate perioperative tasks to appropriate personnel within their scope of practice
- Supervise non-OR personnel (e.g., vendors, students, visitors, family)
- Implement environmental sustainability practices (e.g., reprocessing, recycling)
- Ensure use of Personal Protective Equipment (PPE)
- Oversee environmental cleaning (e.g., spills, room turnover, terminal cleaning)
- Coordinate preventive maintenance on equipment
- Track biological implants from order, receipt, storage, implant, explant, and wastage
- Monitor availability and sterility of supplies

Domain 9: Professional Accountability

Knowledge Statements

1. Regulatory standards and guidelines (e.g., AORN Standards, Recommended Practices and Guidelines, OSHA, Perioperative Explications for the ANA Code of Ethics for Nurses, state Nurse Practice Act)
2. Perioperative nurse scope of practice
3. Resources for professional growth
4. Quality improvement activities (e.g., research, evidence-based practice, performance improvement)
5. Responsibilities regarding behaviors that undermine a culture of safety
6. Patient's rights and advocacy
7. Principles of delegation
8. Risk management (e.g., event reporting, incorrect counts)

Tasks

- Protect patient confidentiality
- Advocate for and protect patients' rights
- Perform functions within scope of practice
- Demonstrate competence in perioperative nursing practice
- Acknowledge personal limitations and seek assistance as needed
- Identify and take appropriate action regarding behaviors that undermine a culture of safety
- Participate in professional development activities (e.g. shared governance activities, staff education, committees, certification, advanced degrees, professional organizations)
- Participate in quality improvement activities (e.g., research, evidence-based practice, performance improvement)
- Utilize standards and recommended practices (e.g., AORN, APIC, AAMI, IAHCSSM, ASPAN)
- Report unanticipated events