

Using data in nursing practice

By Kimberly S. Glassman, PhD, RN, NEA-BC, FAAN

Data and care quality go hand in hand.

NURSES, as the largest group of healthcare professionals, are key to quality and safety and to ensuring the best patient outcomes. To make informed practice decisions, nurses need access to aggregate data about their patients and the impact of their care, and they need to know how to interpret that data.

This article explores the role data plays in quality and safety and the synergistic relationship between data and nursing practice.

What's the connection between data and quality and safety?

In 2002, the Institute of Medicine held the Health Professions Education Summit to discuss potential reforms, with the goal of improving quality and patient safety. The summit, which included participants from throughout the healthcare disciplines, defined and developed core competencies in patient-centered care, interdisciplinary teams, evidence-based practice, quality improvement, and informatics that should be included in all health profession education.

Nursing led the charge in this effort with the development of the Quality and Safety Education for Nurses (QSEN) Institute, which has defined the essential knowledge, skills, and attitudes that ensure all new RNs and advanced practice RNs (APRNs) are prepared to participate in healthcare teams to improve quality and patient safety. QSEN has developed core competencies that reflect the outcomes of the 2002 summit:

- patient-centered care
- teamwork and collaboration
- evidence-based practice
- quality improvement
- safety
- informatics.

Both the summit and the QSEN included informatics as a competency needed to ensure quality and safety.

Informatics

The informatics competency helps nurses use information and technology to communicate, manage knowledge, mitigate error, and support decision-making at the point of care. Because of the rapid changes in healthcare information and technology, nursing students must know why information and technology skills are essential for safe patient care, understand how to apply information and technology tools, and appreciate the need for lifelong learning on these topics. (See *Informatics requirements*.)



How do we leverage the electronic health record?

The Health Information Technology for Economic and Clinical Health (HITECH) Act promotes the adoption and meaningful use of health information technology. (See *What is meaningful use?*)

The goal of HITECH and the original meaningful use legislation is to share electronic health record (EHR) data with patients and engage them in their care. Many hospitals and health systems with mature EHRs have portals for patients to access and record their own health data. Sharing this data, within the parameters of the Health Insurance Portability and Accountability Act, supports the meaningful use of EHRs. Nurses can help encourage public adoption of EHRs by supporting the meaningful use of electronically generated health data.

How do nursing practice and data inform each other?

Nurses, who do most of the EHR documentation (including plans of care, physiological parameters, assessments, interventions, and progress evaluations) in hospitals, are critical to care integration and patient safety. Whether entered into flow sheets or as “smart phrases” or narratives, all data are important to the healthcare team’s understanding of the individual patient. Because nurses regularly review individual patient data, they’re the essential communicators to providers about

Informatics requirements

The Quality and Safety Education for Nurses informatics competency requires that nursing students:

- understand the database of health information about patients (typically the electronic health record [EHR])
- demonstrate how to navigate the EHR
- appreciate the importance of the nurse's input into the record
- value the ability of technology to support clinical decision-making, support safe care, and reduce errors.

At the graduate level, the informatics competency requires:

- in-depth knowledge of informatics principles
- an understanding of the strengths and weaknesses of various technology systems
- the ability to evaluate the use of technology systems in supporting patient care
- the skill to describe and critique the taxonomy systems (nursing language) that support interoperability of EHR information to improve the nation's health.

any overt or subtle changes in a patient's condition.

EHRs also help nurses understand how to care for populations of patients. To do that, information about individual patients must be extracted and compiled into flow sheet rows. Vital signs and other physiologic measurements lend themselves nicely to flow sheet input. However, the context of the individual patient's story—the narrative that explains why he or she sought health care and what may have led to the problem—doesn't fit neatly into a flow sheet and

fragments the story. Nurses must partner with the vendors of EHR systems to improve this workflow so that the important narrative information can be captured to improve health for all patients.

In ambulatory care, much of the documentation required for quality metrics (such as screening tests, tobacco use, vaccines, and health teaching) is done by nursing staff. Some of these data are collected using a simple checkbox in the record. However, by checking *yes* or *no* about smoking, the patient can't give any context for why he or she uses tobacco, information about multiple quitting attempts, or the aspects of his or her life that support

or thwart the desire to quit. The opportunity for nurses to inform their documentation is essential for capturing relevant detailed patient information. And rather than serving as the recorder of the patient's information, nurses can support simple methods for patients to capture their own stories.

The quality of our nursing care and documentation informs the public and insurance companies through publicly reported measures at sites such as [medicare.gov/hospitalcompare/search.html](https://www.medicare.gov/hospitalcompare/search.html). As the most trusted professionals, we can leverage our relationship with patients to support better engagement with EHRs to capture the important data that allows us to provide better care. Nurses have to keep the patient front and center in everything we do and our ability to advocate for patients can include educating and supporting them to enter their own data into secure patient portals.

What is meaningful use?

Meaningful use of certified electronic health record technology:

- improves quality, safety, and efficiency, and reduces health disparities
- engages patients and their families
- improves care coordination and population and public health
- maintains privacy and security of patient health information.

For hospitals to qualify for Centers for Medicare & Medicaid Services Electronic Health Records Incentive Programs, meaningful use must meet specific objectives, which fall into three stages:

- 1 Capture and share data with patients and other providers, as permitted by the patient.
- 2 Advance clinical processes.
- 3 Improve outcomes.

Ultimately, meaningful use compliance results in improved clinical and population health outcomes, increased transparency and efficiency, empowered individuals, and robust research data on health systems.

What's the future of data and technology?

Eliminating duplication of effort will go a long way to simplifying and streamlining nursing workflow within EHRs. Patient care devices (such as cardiac monitors, vital sign monitors, and I.V. infusion pumps) can be linked with the EHR. Many of them are essentially mini-computers that store and send their discrete data to the EHR. Currently, a significant amount of complexity is involved with these data transfers. In the future, we'll expect them to be seamless and done in real time. Here are some examples of current and future technologies that improve our ability to obtain and analyze patient data.

Radio-frequency identification (RFID) tags are used today to locate mobile equipment and people. Some RFIDs can tell members of the team where to find the practitioner, nurse, or assistive personnel. All of the data can

be downloaded to a searchable and retrievable database.

Middleware is software that links a patient's monitoring device to a nurse's personal device. Some hospitals provide their staff with smartphones for communication between patients and nurses (nurse call), among team members (secure texting and direct calls), and between medical devices and nurses (alarm conditions with images and values).

Wearable medical devices, similar to fitness devices that track steps and heart rate, will make technology that we use now obsolete. For instance, the current telemetry box will shrink to a wearable device that monitors not only cardiac function, but laboratory values as well.

All of these devices and applications will evolve as technology improves.

What can you do?

To help make the future of nursing data a reality and provide nurses with more quality time with their patients, you must get involved. Be part of the selection process for new technology, provide feedback about technology support to improve workflows, and communicate with technology companies about what will improve patient care. Without your input, nurses are at the mercy of what engineers think is best. ★

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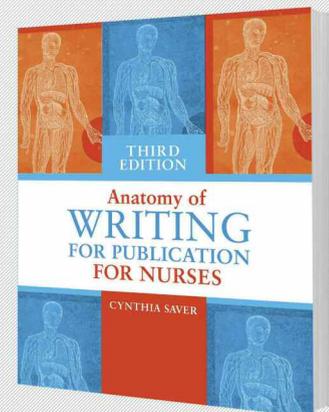
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