The field of nursing informatics has emerged since the 1980s from a nursing-centric role focused on building and managing technical aspects of nursing systems to a multidisciplinary role, supporting the implementation, management, and optimization of an electronic medical record (EMR) within the hospital. In 1989, experts defined nursing informatics as the combination of computer science, information science, and nursing science designed to assist in the management and processing of nursing data, information, and knowledge to support the practice of nursing and the delivery of nursing care. The American Nurses Association revised this definition in 2008, promoting nursing informatics as the specialty that integrates nursing science, computer science, and information science to manage and communicate data, information, knowledge, and wisdom in nursing practice.

This article focuses on our experience in developing a clinical informatics (CI) program for Tenet Health, a 52-hospital organization, and how clinical informaticists play an increasingly important role in the adoption and successful utilization of an EMR by clinical caregivers.

Creating a CI department
Because the benefits of an EMR are well-documented, most hospitals have either implemented, or are in various phases of implementing, clinical applications to create components of an EMR. Tenet hospitals are no exception; four hospitals have a fully implemented EMR, several other hospitals have a variety of clinical applications (some with multiple vendors), and the remaining hospitals are planning implementations of clinical systems. In addition, many Tenet hospitals have legacy systems that are facing obsolescence in the next 2 years. These factors have impacted the need for a CI program within the Tenet organization, as well as within each individual hospital.

To meet this need, Tenet leadership created the applied clinical informatics (ACI) department. ACI supports the implementation of clinical systems through development and adherence to clinical standards, cultural change management, governance, training, support of clinical workflows, and staff optimization for utilization of the EMR components. It was critical to us that ACI be a clinically focused department, led by nurses with CI backgrounds who understand both the technical and clinical side of the EMR. In essence, we wanted leaders who met the nursing informatics definition. Additionally, to reflect our clinical operations focus, ACI reports to the chief operating officer for the organization, along with other clinical departments such as quality and nursing, not to information systems (IT). However, ACI works closely with IT to implement and support clinical systems. To add synergy to this relationship, we created the Improving Patient Care through Technology (IMPACT) team, which is the ACI and IT program that oversees the implementation and support of clinical systems through alignment of people, process, and technology.

IMPACT facilitates the transformation of quality patient care delivery, improves productivity,
and enhances the patient, physician, and clinician experience. The components of the IMPACT program strive to meet the ever-changing needs of the healthcare environment, including the market, physicians, and clinicians. The benefits we’ve defined include providing market competitiveness, meeting regulatory compliance, enhancing physician allegiance, and providing for interoperability and data exchange across communities. We also strive to provide an integrated suite of applications from which to build the foundation for advanced clinical systems and improve clinical decision making at the point of care. Finally, we seek to enhance staff satisfaction and improve physician and staff recruitment and retention.

As a large organization with hospitals in seven states, we were compelled to create a CI program to support the hospitals and meet our need to optimize management of clinical systems. Our objective was that the CI program would develop clinical change specialists to champion the evolution of the EMR. We believed that a centralized program would provide consistency with maintaining clinical standards, education, and training, given a limited number of resources. The CI program isn’t focused on project management or building the clinical systems; rather, it supports and sustains the clinical systems by promoting patient care through optimizing clinical workflows and associated processes. We also wanted our clinical informaticists to bridge the gap between hospital and IT operations. These roles are defined through both corporate and hospital-based strategies.

Onto the corporate level
Corporate strategies guide the implementation of the CI program at a strategic level, while the hospital clinical informaticist manages the operational aspects of the program. The corporate strategies can be defined as:

♦ Integrate leadership and define the vision.
♦ Develop an interdepartmental system executive informatics steering committee to facilitate the alignment of strategic initiatives at the system level.

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• Develop a methodology for creation of interdepartmental hospital informatics steering committees to facilitate the alignment of strategic initiatives at the hospital level.
• Define target metrics for performance compliance analysis and collect baseline data.
• Mobilize the vision through change management and communication.
  • Develop and maintain a reporting structure to facilitate ongoing communication and change management resolution between hospital and system committees.
  • Define the role of the clinical informaticist as a change agent to champion issues through the informatics governance infrastructure and other tertiary committees involving key stakeholders at the hospital.
  • Develop a CI training program and toolkit.
  • Deploy trained clinical informaticist consultants to hospital locations with immediate needs.
• Sustain and optimize the vision through clinical adoption and benefits realization.
  • Develop a process for reporting and management of clinical issues and change requests around the systems in use.
  • Maintain relationships with key stakeholders to manage end-user expectations and facilitate clinical adoption of informatics solutions.
  • Assist with analysis of hospital performance measurements and make action plan recommendations for process redesign or potential informatics solutions to improve outcomes.

At Tenet, our corporate-based clinical informaticists are assigned to two to four hospitals, primarily in a consultant role of mentoring hospital staff to develop the clinical informaticist role within the hospital. This is an excellent way to introduce a CI program within the hospital and start to mentor key super-users or other interested staff to assume CI responsibilities. The number of clinical informaticists may vary, but the need for a CI program is critical when clinicians are interacting with the EMR in the course of managing patient care.

And at the hospital level
After we had a clear vision for a CI program at the corporate level, we started determining how to manage the clinical informaticists at the hospitals. We had to determine when an individual hospital needed a full-time clinical informaticist or when multiple hospitals could share one person in that role. Hospitals with few departmental systems and no multidisciplinary integration of systems, such as lab or radiology systems, don’t necessarily need a full-time clinical informaticist. Clinical informaticists are best utilized when there are clinical systems that follow workflows between and within a variety of clinical departments. This would include clinical documentation of patient information, orders, patient problems, assessments, history, interventions, medications, and discharge plans. Clinical informaticists are also needed when there’s continuity of an electronic record between departments, such as ED, critical care, procedural areas, and inpatient or outpatient units. The need for a clinical informaticist is dependent on workflows impacted by clinical systems, not the size of the hospital. A small hospital experiences the same impact on processes and interdepartmental dependencies as does a large facility with multiple services.

Ideally, the clinical informaticist within the hospital reports to hospital operations or nursing and to the corporate CI program director. Critical to the success of the CI program is that the clinical informaticist at the hospital has access to, and support of, both hospital leaders and clinical staff. The role of the clinical informaticist at the hospital level is composed of several different components. These components should be flexible and adapted to meet the needs of each specific facility. The role components include:

• Education
  • Assist with training and ongoing development of super-users.
  • Develop education plans for implementation and system changes.

• Communication
  • Participate in system and hospital steering, advisory, and operational committees.
  • Facilitate communication between system and hospital committees.
  • Develop a network of super-users to serve as a conduit for information dissemination and change management issue collection and resolution.

• Internal consultant
  • Integrate principles of CI and change processes to help maintain focus on system strategies.
  • Develop relationships and manage expectations of leaders and other stakeholders.
  • Facilitate and make recommendations for aligning hospital and system initiatives.

• Quality improvement and benefits measurement
  • Assist in developing, implementing, and maintaining a quality plan for CI systems, including short-term monitoring and long-term outcomes measurement.
  • Serve as a resource for action plan development to improve hospital compliance with system quality initiatives.
  • Manage report requests for system utilization and executive dashboards.
♦ Change management
• Conduct current and future state process and content analysis.
• Identify business and clinical opportunities for change.
• Develop and communicate regularly with a network of super-users to identify opportunities for change.
• Serve as a change champion to analyze issues, make recommendations for change, and present to appropriate committees.
• Develop a closed loop communication plan to keep end-users informed of issue status and updates.
• Serve as the onsite CI resource.
• Represent end-user needs.
• Understand baseline application functionality.
• Recognize and recommend potential informatics solutions to improve clinical processes.
• Challenge technologies that don’t enhance clinical processes or provide measurable benefits.

Ease the way with informaticists
The role of the clinical informaticist within a clinical setting can augment and support the adoption and use of clinical systems. In large multifacility organizations, a CI program can be developed and managed centrally through a core group of CI consultants who work within the hospital setting. Clinical informaticists can cover more than one hospital, but they must mentor staff at the hospitals they serve. Certainly, part of the mentoring should include education about the role of nursing informatics as a clinical discipline with its own unique body of knowledge, which may ultimately lead to nursing informatics certification. The clinical informaticist role is exciting, innovative, challenging, and fulfilling because it impacts patient care through preparing clinicians to provide the best care possible.

REFERENCES

At Tenet Healthcare Corp. in Dallas, Tex., Elizabeth O. Johnson is vice president, Applied Clinical Informatics, and Mary Beth Mitchell is senior director, Applied Clinical Informatics.

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