This Guest Editorial is the sixth in a series addressing the Josiah Macy Jr. Foundation’s report on technology and a continuous learning environment. The Foundation’s goal in the report was to identify key recommendations for the integration of technology with learning in health care. The conference attendees, who represented diverse constituencies from the health professions, academic medical centers, government, learning management vendors, and the health care technology industry, developed a vision statement for the future of health professions education:

...intelligent use of educational and information technologies supports the linkage between education and delivery systems to create a Continuously Learning Health System. In this environment, teachers, learners, and clinical data inform continuous improvement processes, enable lifelong learning, and promote innovation to improve the health of the public. (Josiah Macy Jr. Foundation, 2015, p. 4)

This issue focuses on the sixth recommendation:

Educational technologies should be used to facilitate the sharing of content and integration of data across systems and programs, thus promoting the scalability and adoption of efficient and effective educational technologies. (Josiah Macy Jr. Foundation, 2015, p. 6)

Specific recommendations include (Josiah Macy Jr. Foundation, 2015):
- Integration of electronic health records (EHR).
- Learning management systems and educational portfolios.
- Portability of educational data across systems.
- Multiple uses for content for greater efficiencies.
- Streamlining processes for licensing, registration, and certification yet facilitating transferability.

To achieve these recommendations, the following must be examined: (a) progress in sharing content and data across systems, (b) needed processes and partnerships, (c) challenges for implementation, and (d) strategies for promoting adoption and scalability.

Using technologies to share data and content across systems in the educational arena mirrors efforts to promote the exchange of health record information. A world that is increasingly dependent on the electronic communication of health information requires a more seamless integration of learning with EHR to enhance clinician effectiveness (Ellaway, Graves, & Greene, 2013). One such example is the use of an e-learning component of an EHR subsystem to support the smoking cessation efforts in Greek hospitals while also providing continuing medical education (Konstantinidis et al., 2009). Another example of sharing data and content across systems is the logging of learner encounters from EHRs for subsequent review, tracking, and education (Seufert et al., 2011). In addition, schools and facilities using different learning management systems (LMS) can share course cartridges to provide learners with common content in preparation for interprofessional learning activities. Although these projects are innovative and professionals in medical education are concerned with the slow movement in these arenas, nursing in both preprofessional and postlicensure education is notably absent from many of these initiatives.

Needed processes include the integration of data from multiple systems. EHR and LMS vendors generally have developed their products in isolation. Electronic records are available to learners, but the challenge is integrating EHR systems by incorporating features of LMS platforms. Before moving to this level of integration, some
of the current limitations placed on learners in accessing EHR and other resources must be addressed. For example, for prelicensure learners, half of a semester may go by before their access codes are activated for EHR or other technology access. Another example would be when benchmark data are not shared with clinical nurses on a unit or with other key stakeholders.

Moving beyond some of the current challenges, health care professionals and health informaticists can collaborate in identifying opportunities for integration with a focus on addressing the learning needs of preprofessional learners, novice professionals, and seasoned clinicians. Using real data to address ongoing problems with leaders creating a supportive environment will provide focus and direction to learning that is critical to success. Stakeholders from each of these communities should be included in all phases of planning and implementation.

Organizations that choose to embrace the concept of a learning health system will need to do so on multiple levels. The technical requirements of integration may be challenged by different systems that serve different purposes and have different architecture and design, necessitating that key individuals who are experts in different arenas need to come to common ground. For example, EHR systems traditionally have focused on data collection, with clinicians entering a vast array of information into EHR and other records. To improve clinician performance, information needs to be retrievable in a useful format with data analytics that support clinical decision making.

Although some of this work may require a cultural and paradigm shift, inroads can be made in these processes. For example, clinicians who are familiar with the tools used to track quality and performance and their unit’s or facility’s data likely will be more engaged in finding solutions to care delivery problems. For nurses, it may mean being familiar with the Hospital Consumer Assessment of Healthcare Providers and Systems scores, results of the National Database of Nursing Quality Indicators, and other trend data as well as the results of community need assessments required of health care systems under the Patient Protection and Affordable Care Act of 2010.

Recently, leading informaticists issued a call to action for nursing leadership to address the information needs of nurses through nursing-centric health information technology and health information technology usability (Staggers, Elias, Hunt, Makar, & Alexander, 2015). This leadership is a necessary, but fundamental, building block to a move toward advanced systems that integrate interdisciplinary learning with health information technology. Addressing the very real and pressing needs of nurses will better position nursing to take advantage of opportunities created by having a true learning organization and allow for the scalability of efforts.

The Macy Foundation report identified examples of educational technologies supporting its recommendation to use educational technologies to facilitate sharing of content and integration of data across systems. As with many innovations, we must consider how such innovations can be diffused to settings with limited resources. Although nurses are only included as users in some of these learning systems, another question to ask is whether nursing knowledge is included in the ground floor in the development of such systems or merely an afterthought for the health professional group that is the largest user of health information technology.

Another example includes the simplification and streamlining of compliance with professional requirements such as licensure, registration, and certification. Automatic relay of the completion of a continuing education program, from any provider, being sent automatically to an individual’s repository would make it much easier to track one’s accomplishments. Streamlining also is illustrated with the establishment of the Joint Accreditation for Interprofessional Continuing Education™ (n.d.) for medicine, pharmacy, and nursing, which was designed to facilitate interprofessional education and eliminate duplicate continuing education program applications.

Foundational to the incorporation of information technology and the creation and development of a continuously learning health system is relationship building. Although new technologies and new modalities for learning are being developed, it is relationships that will drive their adoption and use. Hence, if nurses from health care delivery systems and academia work together and then also work with members of other disciplines from the academic and health care system sectors, they will be poised to take advantage of innovative technologies and models of learning as they are developed. Waiting for the technology to be developed and then finding partners, although it may be necessary for current technologies and systems and for organizations starting out with their interprofessional endeavors, limits opportunities to forge ahead and maximize the potential for vertical and horizontal integration of learning systems with EHR and technologies.

Likewise, the creative synergies of professionals with differing expertise facilitates the incubation of ideas and strategies for their implementation. Fostering collaboration requires the breakdown of silos and persistence to achieve mutual goals. Some professions will be more advanced with certain modalities and programmatic efforts than others. Part of being a continuously learning organization is learning from each other and recognizing that different stakeholders or stakeholder groups may be the
most appropriate to take the lead in addressing a particular issue. Finally, sharing information about collaborative efforts and accomplishments in creating and sustaining a learning organization will help to promote new adoptations and scalability across a health care systems.

Some of the traditional challenges to policy development and implementation are just as true in creating the continuously learning organizations of the future. These include being sure that nurses are able to participate in policy tables where decisions are being made about technology, and that strategies to move forward in creating a learning health system are being developed. All too often, nurses are the implementers of the policies without having input into their formulation. For nurses to be full partners with physicians in designing the U.S. health care system, as recommended in the Future of Nursing report (Institute of Medicine, 2010), nurses should be included in policy tables focused on developing a culture of learning. Moreover, this should be more than just the single token nurse on a committee, where the only expectation is that the nurse will be responsible for implementation. This is also true for the efforts in developing true learning organizations.

The Macy Foundation report provides an exciting roadmap for harnessing technology to create and sustain learning health systems. However, it is the advocacy and vigilance of all nurses, not only the leaders in nursing practice and education, that will be necessary to reap the potential of continuously learning health systems to impact the outcomes of patients entrusted to our care.

REFERENCES