Are we there yet? This is a question every child has voiced to parents as the family embarks on a journey by car. This is also a question we can ask ourselves when reviewing the recent Josiah Macy Jr. Foundation report on advancing health professions education through the use of technology. In April 2015, the Josiah Macy Jr. Foundation sponsored a conference with the aim of Enhancing Health Professions Education Through Technology: Building a Continuously Learning Health System (2015). Six recommendations were made following this conference, as well as specific mechanisms for achieving each recommendation and examples of current technology innovations occurring in health care education around the world. Of particular concern to nursing practice is Recommendation III:

Educational technologies should be used to accelerate the transformation of health professions education to a system that is competency-driven, affordable, and accessible to the learner. (Josiah Macy Jr. Foundation, 2015, p. 8)

To accomplish this recommendation, the Macy Foundation suggested that technologies that assess practitioner readiness to provide care for patients and communities and track actual clinical performance throughout the health care provider’s career are needed.

One suggestion to accomplish these goals would require each nurse to have a readily accessible e-portfolio. This e-portfolio, presumably a secure application (app) collecting data throughout the nurse’s career, would enable the nurse to have instant updates to his or her learning needs and competencies. You can even envision this e-portfolio app sharing information with licensing and credentialing agencies. Data sharing and data mining is just beginning to be explored, but this technology and science will certainly accelerate learning for individuals and care teams.

The ability to implement technology to attain this recommendation is accelerated by the use of big data and predictive analytics. Predictive analytics uses statistical analysis to extract information using various technologies to uncover relationships and patterns within large volumes of data for the prediction of behavior and events (Eduventures, Inc., 2013). Predictive analytics are currently used to forecast attributes of successful learners and to determine the learners who are in need of assistance or determined to be at risk for successful program completion. Predictive analytics have been used in the business world for several years, and educators are just now exploring the power of data. Therefore, the use of millions of data points to predict the learning needs of competent health care providers is a major factor in our future.

The detail is in the types of data collected and the consistency of the data collection mechanisms across institutions. Collection of these data will allow aggregated data to assess individuals’, care teams’, and institutions’ performance over time. Unleashing these data will allow decisions to be made to improve performance, assess competence, improve individual learning effectiveness, and facilitate individual pathways of learning—all areas that are encouraged in the Macy Foundation’s Recommendation III. Anytime, anywhere learning will be accelerated by the use of the previously mentioned e-portfolios, which will be linked to multiple institutional data, licensure, and certifying bodies for the purpose of identifying health care provider learning needs and validating competencies.

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The author has disclosed no potential conflicts of interest, financial or otherwise.

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doi:10.3928/00220124-20160218-01
The break between classroom and clinical learning will no longer exist, as virtual or simulation environments can be accessed by care teams and individuals to overcome the barriers created by time and space. With encryption security increasing, Health Insurance Portability and Accountability Act–compliant patient information could be shared from a multitude of devices for team learning and optimal care decisions (Lee, 2015). Open, online learning platforms will allow information and knowledge to be available at all times for the interprofessional sharing of content. Currently, through the use of technology, Tufts University allows all medical school content to be available across the learning experience and shared across schools. Accessing and reaccessing information and knowledge when it is needed negates a linear progression of knowledge transfer (Lee, 2015).

Just as understanding data science or big data has the opportunity to advance the understanding of human health and disease through initiatives by the National Institutes of Health such as Big Data to Knowledge, data science has an important role in the future direction of health professions education (Brennan & Bakken, 2015). The hope for a continuous learning health system growing from information found in data receptacles such as the electronic health record will be accelerated by the aggregation of data and the application of algorithms to predict patterns of care and patient needs.

As noted previously, the Josiah Macy Jr. Foundation has distributed recommendations for a continuous learning health system. This will occur as we aggregate multiple data points for predicting the future of individual health care provider and care team learning needs and linking these findings back to the health care provider or care team for the purposes of continuous learning. Driven by data science, safe practice, patient-centered care, paths to maintenance of wellness, prevention of disease progression, and symptom science will remain at the forefront of health care practice. However, integration of new interventions by health care providers to impact these areas of focus will be almost instantaneous, as disruptive innovation becomes the norm in health care delivery.

Multiple examples of innovations in education were presented in the Josiah Macy Jr. Foundation conference recommendations (2015). One exciting project, Education in Pediatrics Across the Continuum (http://www.aamc.org/initiatives/epac/), is testing the feasibility of medical education based on the demonstration of defined competencies, rather than on academic performance over time, from early in medical school through completion of an individual’s residency. Few programs in nursing, whether in prelicensure education or in ongoing development, have this longevous view.

Are we there yet? No, but the journey has begun. I believe that with the development of accessibility to large data sets, appropriate tools, and data science training, we will accelerate the transformation of health professions education.

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