Tracking the impact of nursing informatics

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Today's healthcare environment relies on nurses to deliver and manage care while keeping patients safe. Nurses need timely, accurate, and accessible data and information to make the right decisions to improve patient outcomes. Communication is an essential tool and nurses need appropriate access to patient information, including medical histories, medication lists, lab and imaging results, and clinician notes, to understand a patient's clinical status. Much of our current communication is in an electronic format, which requires new skills to ensure that health information is accurate, easy to use and understand, and accessible whenever and wherever it's needed.

Nurse informaticists play an essential role in the design and use of health information technology (IT), including devices that enable clinicians to track data and deliver safe and efficient care. According to the American Nurses Association, nursing informatics is the specialty that integrates nursing science with multiple information and analytical sciences to identify, define, manage, and communicate data, information, knowledge, and wisdom in nursing practice. The contribution of nurse informaticists in developing and improving technology, such as electronic medical records (EMRs) and clinical decision support (CDS), is essential for reducing medical errors, patient care delays, and healthcare costs. The expanding use of health IT and devices has led to new career opportunities, including the specialty of nursing informatics. Building on the foundation of the nursing process, informatics nurses apply their understanding of IT to assist the healthcare team in managing data and assimilating increasingly complex information to achieve the desired outcomes.

The Healthcare Information and Management Systems Society (HIMSS) is a nonprofit professional society whose mission is to reform the global health ecosystem through the power of information and technology. HIMSS sponsors a vibrant nursing informatics community, which has grown to represent over 8,000 nurse informaticists, working in a wide variety of roles and settings. These roles build on functional areas that require informatics skills, including education, leadership and administration, consultation, systems analysis and design, policy development, quality and performance improvement, research, and evaluation.

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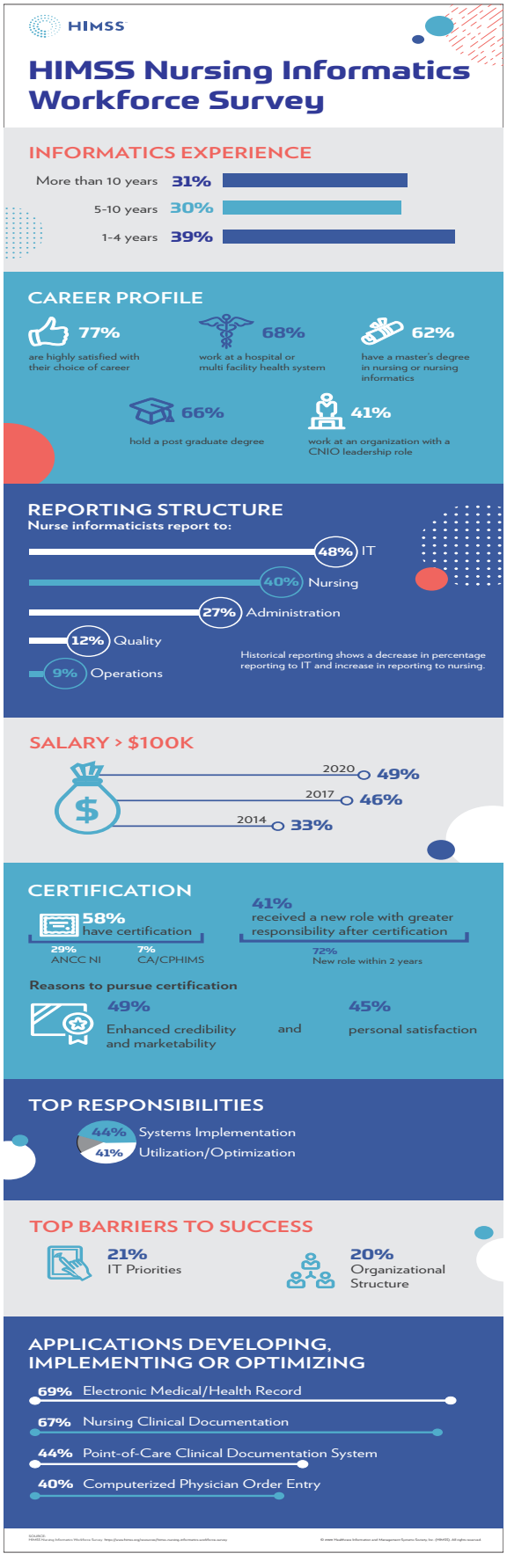

Since 2004, HIMSS has tracked nursing informatics workforce data to assess the evolving status of the specialty. The HIMSS 2020 Nursing Informatics Workforce Survey continues to show that nurse informaticists play a crucial role in healthcare. Just as the continuum of care has expanded beyond the walls of the hospital, nursing informatics has expanded its scope to welcome innovation into its practice. Virtual care, mobile devices, and point-of-care CDS are among the many new tools and technologies in use today. The specialty of nursing informatics has followed this high-tech trajectory by managing increasingly sophisticated applications, performing expanded job roles, experiencing increased salaries, and achieving advanced educational preparation.

Methodology

An email invitation, with a link to the web-based survey, was sent to nurse informaticists in November and December 2019. Invitations to participate in the survey were also distributed by organizations that sponsored and supported the research, including the Alliance for Nursing Informatics—a collaboration of organizations representing more than 20,000 nurse informaticists, bringing together 25 distinct nursing informatics groups globally. One-thousand three-hundred and fifty-nine usable responses were received (see *HIMSS Nursing Informatics Workforce Survey* infographic). In comparison, the 2017 survey received 1,279 responses; the 2014 survey, 1,047; and the 2011 survey, 660. To reflect current workforce trends, new questions and response options were added in 2020.

Respondents

Over two-thirds (68%) of the 1,359 survey respondents work for a hospital or multifacility health system. Most of the remaining respondents work for a vendor/payer, government or military organization, or in an academic setting. Ambulatory informatics roles are increasing, with 6% of respondents reporting that the ambulatory environment is their primary workplace. The 2020 survey captured workforce data from a global audience, with 94 respondents reporting that they work primarily outside of the US. Distribution of nurse informaticists across the US in 2020 roughly matches the distribution of the population. Of note, more than half (53%) work at a Magnet®-recognized hospital, and 41% work at a HIMSS Electronic Medical Record Adoption Model Stage 6/7 hospital. These organizational achievements

may correlate with the increased value of nursing informatics in overall health system accomplishments.

Education. The 2020 survey reflected an increase in the percentage of respondents (62%) who have a master's degree in nursing (24%), nursing informatics (27%), or some other field (11%). In comparison, 59% of respondents reported having a master's degree in any field in 2017. This may correlate with the percentage of survey respondents who have increasing salaries and expanded leadership roles. Nurse informaticists with higher levels of formal education tend to have higher salaries; 61% of PhD or equivalent degree holders have a salary of over $100,000 compared with just 38% of those with a bachelor's degree.

Nursing background. In terms of respondents' clinical experience before becoming a nurse informaticist, more respondents (25%) indicated that they have 6 to 10 years of clinical experience than in 2017 (22%). However, there was a noticeable decline in the number of respondents reporting having more than 20 years of experience at the bedside, from 26% in 2011 to 19% in 2020. Top areas of experience included medical-surgical (42%), critical care (33%), and administration (21%).

Leadership. Noteworthy from this year's survey is the number of respondents (41%) whose organizations currently have a formal chief nursing informatics officer (CNIO) or senior nursing informatics officer role (see *What's a CNIO?*). Along with this increasing leadership status, salaries continue to rise, with nearly half (49%) of respondents making more than $100,000 per year. In 2020, 10% of respondents reported holding the title of manager of clinical informatics compared with just 1% in 2017. The percent of director-level respondents increased as well: 11% compared with 7% in 2017. Still, most respondents (24%) stated that their title is nursing informatics specialist, a small increase over 20% in 2017. This year's survey results also showed a significant change in reporting structure, with more nurse informaticists reporting to nursing (40%), quality (12%), and operations (9%) over the historical trend of reporting to IT (48%).

Job responsibilities. The top job responsibilities of nurse informaticists continue to be systems implementation (44%) and systems utilization/optimization (41%). Although systems development remains ranked in the top three job responsibilities, only 34% of respondents reported currently working in this area. Because EMRs are more pervasive in 2020 than in previous survey time frames, this may be driving the focus on utilization/optimization of existing systems over new systems development. About a third (36%) of respondents manage at least one direct report, with 19% managing between one and five employees. Another 8% manage six to 10 employees. This year's job responsibilities data included two new categories: project management (30%) and change/control management (26%).

Other key findings

Applications. The 2020 survey highlights a trend over time as nurse informaticists are increasingly working with point-of-care CDS (44%) and decreasingly working with nursing clinical documentation (67%).

What's a CNIO?

The CNIO role is a strategic and operational role that supports not only nursing practice, but also the entire care delivery team in anticipating and adapting to changes in the healthcare environment. CNIOs combine the knowledge of patient care, informatics concepts, and change management to effectively address the information and knowledge needs of healthcare professionals and patients to promote safe, effective, and efficient use of digital health in clinical settings.

Other applications that they're developing, implementing, or optimizing include EMRs (69%), computer-based provider order entry (40%), and electronic medication administration records (38%).

Barriers to success. Over the history of the survey, there's been a shift in the identified barriers to success for the nurse informaticist. In the 2004 and 2007 surveys, respondents identified the lack of financial resources as the top barrier, whereas in 2011 it was the lack of integration and interoperability. In 2014 and 2017, a lack of administrative support and a lack of staffing resources were the primary barriers faced. This year, 21% of respondents identified IT priorities as the top barrier, followed by organizational structure (20%) and lack of administrative support (18%).

Career satisfaction. Respondents' satisfaction in their current position and their career choice in informatics was rated using a 1-to-7 scale where 1 wasn't at all satisfied and 7 was highly satisfied. Just over half (51%) of respondents indicated that they're highly satisfied with their current position (score of 6 or above), down 7% from 2017 (58%). However, most respondents (77%) reported being highly satisfied with their informatics career choice, down 3% from 2017 (80%). Overall, respondents seem to have remained quite satisfied with their choice of career in informatics but not as satisfied with the current position they hold.

Certification. The number of respondents with any professional certification took a significant jump from 49% in 2017 to 58% in 2020. In a new question for 2020, survey respondents selected enhanced credibility and marketability (49%) and personal satisfaction (45%) as the top reasons to pursue certification. These answers also topped the list when respondents were asked about the perceived value of certification, although personal satisfaction (81%) ranked slightly over enhanced credibility and marketability (78%). American Nurses Credentialing Center certification was the most common, held by 20% of nurse informaticists. Holding an informatics certification was associated with higher salaries, with 56% of those certified earning $100,000 or more. Certification was also found to have an impact on respondents' career paths. Forty-one percent of respondents received a new role with greater responsibility after achieving certification. The average rating for the impact that certification has on a career was 5.14 out of 7 compared with 4.96 in 2017.

Informatics career. Nearly a third (31%) of respondents reported having more than 10 years of experience in nursing informatics, the same as in 2017. However, the percent with less than 1 year of experience increased from 8% in 2017 to 14% in 2020, which may indicate an increase in the number of nurses entering nursing informatics practice. The number of respondents who've been in their current role for more than 5 years also increased from 31% in 2017 to 38%, suggesting a maturing of the specialty.

Salary. The number of respondents earning more than $150,000 a year has stayed the same (11%) since 2017. The number of respondents making $131,000 to $150,000 rose by 4% in the same time period and those making $116,000 to $130,000 increased by 3%. Similar to previous years, the majority of respondents (63%) stated that they earn a base annual salary between $61,000 and $115,000. Salary also correlates with level of education: Nearly a quarter (24%) of respondents with doctorates reported making $151,000 or more per year. More than two-thirds (70%) of respondents with 11 or more years of nursing informatics experience reported earning more than $100,000 per year.

Training and education. Training and education continue to be a priority for nurse informaticists, and the 2020 survey

results saw a significant rise in formal education. The percentage of respondents with a master's degree, DNP, or PhD was 66% compared with 61% in 2017. Fifteen percent of respondents reported having completed a vendor/supplier certification—a new category in the 2020 survey. On-the-job training continued its downward trend, with 54% of respondents reporting that they engaged in it compared with 56% in 2017 and 58% in 2014. The top three resources for continuing education were audio conferences/webinars (71%), professional organizations (59%), and national conferences (57%).

Digitally enabled

The National Academy of Medicine is evolving the Future of Nursing recommendations into the next decade, and nurse informaticists will continue to lead the mobilization of a digitally enabled nursing workforce. As implied by the results of the 2020 Nursing Informatics Workforce Survey, this highly capable workforce will eagerly respond to the Future of Nursing 2020–2030 call to improve the health of individuals, families, and communities by addressing social determinants of health and providing effective, efficient, equitable, and accessible care for all across the care continuum. ■

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This article originally appeared as: Sensmeier J, Anderson C. Tracking the impact of nursing informatics. *Nurs Manage*. 2020;51(9):50-53.

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The authors have disclosed no financial relationships related to this article.

DOI-10.1097/01.NME.0000723408.80090.47