Standardized Nursing Data and the Oncology Nurse

Jenny Alderden, APRN, MN, CCRN, CCNS, and Mollie Cummins, RN, PhD, FAAN

Oncology nurses are experts in conducting comprehensive assessments of symptoms and patient responses to treatments, but documentation in electronic health records frequently results in data that cannot be readily shared or compared because of a lack of standardization of the terms. Standardized nursing terminology can enhance communication among nurses and between nurses and other members of the healthcare team. It can improve care coordination and may enable nurses to capture and make visible the unique, holistic perspective that they provide to patient care. Standardization also is important for large-scale data aggregation, which will enable healthcare teams to learn about particular subsets of patients so that care can be tailored to individual characteristics and responses.

At a Glance

- In 2015, the American Nurses Association (ANA) published a position statement that reaffirmed support for the use of ANA-recognized terminologies in an effort to facilitate interoperability of the data collected by nurses.
- Within individual healthcare organizations, immediate benefits of standardization include improving communication, capturing the value of what nurses really do, and improving patient care.
- Nurses need to understand the importance of standardized nursing documentation and, where necessary, gain the knowledge and skills necessary to champion the inclusion of nursing data in standardization efforts.

Jenny Alderden, APRN, MN, CCRN, CCNS, is a PhD candidate in the College of Nursing and Mollie Cummins, RN, PhD, FAAN, is an associate professor in the College of Nursing and Department of Biomedical Informatics, both at the University of Utah in Salt Lake City. The authors take full responsibility for the content of the article. The study was supported, in part, by awards (T32NR01345 and F31NR014608) from the National Institute of Nursing Research of the National Institutes of Health. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health. No financial relationships relevant to the content of this article have been disclosed by the editorial staff. Alderden can be reached at jenny.alderden@gmail.com, with copy to editor at CJONEditor@ons.org.

Key words: electronic health record; standardized nursing terminologies; nursing documentation

Digital Object Identifier: 10.1188/16.CJON.336-338

Although electronic health records (EHRs) are in common use, the data that nurses record in EHRs rarely are used to their full potential. Customization of commercially available EHR systems or development of proprietary EHRs for specific health systems frequently results in data that cannot be readily shared or compared because of a lack of standardization of the used terms (Scherb et al., 2013; Westra et al., 2015). For example, a nurse who charts that a patient has severe nausea in one organization's EHR may be using different criteria than a nurse who charts severe nausea in another organization's EHR, or even in a different clinical unit within the same organization. However, if the nurse documenting severe nausea does so using agreed-upon standardized nursing terminology, then the information will have the same definition across clinical settings.

Standardization of clinical nursing data is particularly important in oncology because oncology nurses are experts in conducting comprehensive assessments of patients' symptoms and responses to treatments. The detailed patient-level data that oncology nurses produce have the potential to transform oncology care by allowing clinicians and researchers to learn from the care being provided on a routine basis, and to evaluate outcomes and make adjustments in care processes (Corwin et al., 2014). This type of "virtuous cycle," in which routinely collected data are used to continually build knowledge and improve patient care, depends on adequately structured data collection. If the data also are standardized and coded in a way that enables their aggregation and interpretation alongside data from other healthcare organizations, nurses are able to learn from routinely collected clinical data across organizational boundaries. This interoperability, or the ability of disparate information systems to share and use data, is the key to creating such a learning health system.

The potential of a learning health system to lower costs and improve outcomes in the U.S. healthcare system is widely recognized among thought leaders and

is the focus of a major Health and Medicine Division of the National Academies of Sciences, Engineering, and Medicine initiative (Smith, Saunders, Stuckhardt, & McGinnis, 2013). Standardization of nursing data also has immense potential to support precision medicine, or the customization of an individual patient's health care (inclusive of nursing care). Large-scale data aggregation, enabled by standardization and interoperability, allows healthcare teams to learn about particular subsets of patients so that care can be more precisely tailored based on an individual's unique characteristics and responses (Fernández-Breis et al., 2013; Pathak et al., 2013).

The standardization and interoperability that enable learning health systems and precision medicine also can be leveraged to improve transitions of care. When a patient is transferred from one healthcare setting to another, a lack of adequate communication and information sharing disrupts continuity of care and contributes to poorer outcomes (King et al., 2013). Nursing data standardization enables innovative approaches to information sharing in support of transitions of care—approaches that leverage standardized, interoperable data to ensure sharing of patient-centered sharing across the care continuum and settings.

Standards for Clinical Data

Standards serve as agreed-upon ways to record information and to compare and share data. Standards are everywhere—from the standards that dictate that a thermostat set at 70 degrees actually operates to keep a room at that temperature, to the standard that ensures that the number of gallons of gasoline for which a person paid actually are delivered at a gas station (International Organization for Standardization, 2016). Healthcare data standards operate the same way; they represent clinical data in a structured way to ensure that content recorded in the EHR has the same meaning across settings and systems (Westra et al., 2015).

Standardized nursing terminologies (or classification systems) identify, define, and code concepts in an organized structure to represent nursing knowledge (American Nurses Association [ANA], 2015b). Multiple existent terminology systems can be used to represent nursing data. The emergence of terminology systems for representing nursing data during the late 20th century constituted a major advance in nursing informatics and had a wide-ranging impact on nursing education and practice. However, a single system for representing nursing data never has been universally adopted. As a result, nursing has suffered with multiple competing standards for representing nursing data and no single commonly accepted standard. Over time, individual healthcare organizations adopted one or more of these standards or, quite commonly, none at all.

However, recent events powerfully support harmonization of nursing terminologies. New federal initiatives incentivize and effectively mandate the use of five specific clinical terminologies, including key clinical terminologies known as LOINC® (Logical Observation Identifiers Names and Codes) and SNOMED-CT (Systematized Nomenclature of Medicine—Clinical Terms), general clinical terminologies that are not specific to nursing (Warren, Matney, Foster, Auld, & Roy, 2015). ANA (2015a) published a position statement that reaffirmed support for the use of ANA-recognized terminologies in an effort to facilitate interoperability of the data that nurses collect. The National Institutes of Health National Library of Medicine curates a crucial tool, the UMLS® (Unified Medical Language System) Metathesaurus®, that enables mapping between nursing terminologies and LOINC/SNOMED-CT, effectively enabling harmonization. In conjunction with the ANA (2015a) position statement, the National Library of Medicine released a new Web page dedicated to nursing resources for achieving harmonization (http://1.usa.gov/1EmKYvo) (Warren et al., 2015).

Why Standardize?

The prospect of learning health systems, precision medicine, and safe, effective transitions of care is a powerful incentive for standardization of nursing data. However, within individual healthcare organizations, immediate benefits of standardization include improving communication, capturing the value of what nurses really do, and improving patient care. First, incorporation of standardized nursing terminologies can enhance communication among nurses and between nurses and other members of the healthcare team, resulting in improved care coordination (Rantz et al., 2010). With the right technology in place, a patient whose data are recorded using standardized terminology can transfer between healthcare units or even facilities and the information nurses have recorded will be readily understood by the receiving unit's systems.

Standardization also is beneficial because it enables nurses to capture the unique, holistic perspective that they provide to patient care (Brennan & Bakken, 2015). The care that nurses perform frequently is invisible and, therefore, may not be recognized. If all care delivered by nurses, including important nursing-specific interventions such as skin care, bathing, and mobility, is incorporated into the EHR in a structured, standardized way, then the effects of invisible aspects of nursing practice on patient outcomes can be made apparent, allowing measurement of impact across large numbers of patients.

Most importantly, adoption of standardized nursing terminologies can improve patient care. Standardization will allow use of the data nurses routinely collect to evaluate interventions and outcomes. Use of data can occur in a number of ways. One unit, facility, or healthcare system may choose to examine data about a particular type of patient in aggregate, or information may be shared within a clinical data repository so that data can be aggregated and compared at local, regional, or national levels. Real-time documentation in standardized language even can be used to optimize clinical decision making at the point of care using tools that already are available (Rantz et al., 2010). Standardization also will streamline the reporting of quality measures like falls or pressure ulcers if nurses use consistent documentation models and data standards (Westra et al., 2015).

Moving Toward Standardization

Despite recent dramatic advancements in standardization, several challenges

impede implementation of standardized nursing terminologies in EHRs. First, nurses need to have the knowledge and skills necessary to champion the inclusion of nursing data in standardization efforts. Accredited nursing education programs must include technology and informatics at all education levels (except the PhD), but they are not currently required to include nursing terminologies in their curriculums (American Association of Colleges of Nursing, 2016). Increased education about standardization, interoperability, and nursing terminologies is critical at all levels of nursing education, including the PhD (Westra et al., 2015).

Second, a practice barrier exists because few nurse clinicians understand the importance of standardized nursing documentation. Some nurses have endorsed a belief that standardized language cannot be used to reflect their practice (Conrad, Hanson, Hasenau, & Stocker-Schneider, 2012). The primary goal of standardized language is to support efficient and complete documentation in the EHR; therefore, practicing nurses should be involved in standardization implementation efforts to be certain that clinical needs are considered alongside the need for interoperability. Finally, national health policy presents a challenge for nursing because incentive payments for meaningful use standards do not include most nursing-derived data (Westra et al, 2015).

Standardized nursing data have the potential to transform health care, allowing nurses to achieve the triple aim of reducing costs, improving health, and improving patient experience. All nurses have an important role in moving standardization and, ultimately, patient care forward. Nurses at the bedside can help by advocating for inclusion of ANA-approved standardized nursing terminologies in their home institution, by supporting clinical nursing representation in organizational information technology decision making, and by advocating for health information technology policy that adequately leverages nursing data for improved health care.

References

American Association of Colleges of Nursing. (2016). Essentials series. Retrieved from http://www.aacn.nche.edu/education-resources/essential-series

American Nurses Association. (2015a). Inclusion of recognized terminologies within EHRs and other health information technology solutions. Retrieved from http://www.nursingworld.org/MainMenuCategories/Policy-Advocacy/Positions-and-Resolutions/ANAPositionStatements/Position-Statements-Alphabetically/Inclusion-of-Recognized-Terminologies-within-EHRs.html

American Nurses Association. (2015b). *Nursing informatics: Scope and standards of practice* (2nd ed.). Silver Springs, MD: Nursebooks.

Brennan, P.F., & Bakken, S. (2015). Nursing needs big data and big data needs nursing. *Journal of Nursing Scholarship, 47,* 477–484. doi:10.1111/jnu.12159

Conrad, D., Hanson, P.A., Hasenau, S.M., & Stocker-Schneider, J. (2012). Identifying the barriers to use of standardized nursing language in the electronic health record by the ambulatory care nurse practitioner. *Journal of the American Academy of Nurse Practitioners, 24,* 443–451. doi:10.1111/j.1745-7599.2012.00705.x

Corwin, E.J., Berg, J.A., Armstrong, T.S., DeVito Dabbs, A., Lee, K.A., Meek, P., & Redeker, N. (2014). Envisioning the future in symptom science. *Nursing Outlook, 62,* 346–351. doi:10.1016/j.outlook.2014.06.006

Fernández-Breis, J.T., Maldonado, J.A., Marcos, M., Legaz-García Mdel, C., Moner, D., Torres-Sospedra, J., . . . Robles, M. (2013). Leveraging electronic healthcare record standards and semantic web technologies for the identification of patient cohorts. *Journal of the American Medical Informatics Association, 20,* e288–e296. doi:10.1136/amiajnl-2013-001923

International Organization for Standardization. (2016). About ISO. Retrieved from http://www.iso.org/iso/home/about.htm

King, B.J., Gilmore-Bykovskyi, A.L., Roiland, R.A., Polnaszek, B.E., Bowers, B.J., & Kind, A.J. (2013). The consequences of poor communication during transitions from hospital to skilled nursing facility: A qualitative study. *Journal of the American Geriatrics Society, 61,* 1095–1102. doi:10.1111/jgs.12328

Pathak, J., Bailey, K.R., Beebe, C.E., Bethard, S., Carrell, D.C., Chen, P.J., . . . Chute, C.G. (2013). Normalization and standardization of electronic health records for high-throughput phenotyping: The SHARPn consortium. *Journal of the American Medical Informatics Association, 20,* e341–e348. doi:10.1136/amiajnl-2013-001939

Rantz, M.J., Skubic, M., Alexander, G., Popescu, M., Aud, M.A., Wakefield, B.J., . . . Miller, S.J. (2010). Developing a comprehensive electronic health record to enhance nursing care coordination, use of technology, and research. *Journal of Gerontological Nursing, 36,* 13–17. doi:10.3928/00989134-20091204-02

Scherb, C.A., Maas, M.L., Head, B.J., Johnson, M.R., Kozel, M., Reed, D., . . . Moorhead, S. (2013). Implications of electronic health record meaningful use legislation for nursing clinical information system development and refinement. *International Journal of Nursing Knowledge, 24,* 93–100. doi:10.1111/j.2047-3095.2013.01235.x

Smith, M., Saunders, R., Stuckhardt, J., & McGinnis, J. (Eds.). (2013). *Best care at lower cost: The path to continuously learning health care in America.* Washington, DC: National Academies Press.

Warren, J.J., Matney, S.A., Foster, E.D., Auld, V.A., & Roy, S.L. (2015). Toward interoperability: A new resource to support nursing terminology standards. *Computers Informatics Nursing, 33,* 515–519. doi:10.1097/CIN.0000000000000210

Westra, B.L., Latimer, G.E., Matney, S.A., Park, J.I., Sensmeier, J., Simpson, R.L., . . . Delaney, C.W. (2015). A national action plan for sharable and comparable nursing data to support practice and translational research for transforming health care. *Journal of the American Medical Informatics Association, 22,* 600–607.

Do You Have an Interesting Topic to Share?

Professional Issues provides readers with a brief summary of nonclinical issues relevant to oncology nursing. Length should be no more than 1,000–1,500 words, exclusive of tables, figures, insets, and references. If interested, contact Associate Editor Kristen L. Fessele, PhD, RN, AOCN®, at kristen.fessele@nurs.utah.edu.