

## Syllabus

### Course Overview

Nursing informatics (NI) is a growing specialty due to its increasing impact on health care. NI integrates nursing science with information management and analytics "to identify, define, manage, and communicate data" and information to inform nursing practice as well as organizational and health care policy (Healthcare Information and Management Systems Society, n.d.). NI's impact is expansive and can serve to assist health care professionals, patients, and organizations in making decisions that positively impact patient care.

Baccalaureate-prepared nurses leverage technology to effectively and efficiently achieve desired patient, systems, and population outcomes. This course focuses on the development of generalist nursing practice competencies for the management of health information and patient care technologies.

#### Reference

Healthcare Information and Management Systems Society (n.d.). What is nursing informatics? Retrieved from <https://www HIMSS.org/what-nursing-informatics>

### Discussion Requirements

You are required to follow the guidelines in the School of Nursing and Health Sciences faculty expectations message (FEM) for all course discussion posts and responses. Be sure to review these requirements and contact your faculty member if you have questions.

When you incorporate another writer's ideas in your work (as a quotation, paraphrase, or summary) to support your position or substantiate a claim, be sure to credit that writer in a correctly formatted APA in-text citation. In addition, be sure to provide the full reference for the source. When paraphrasing or summarizing, remember that an APA citation includes the in-text citation (the author's last name and the year of publication) and the full reference for the source. When quoting directly, be sure to include quotation marks and the page or paragraph number in the citation.

### Audiovisual Recordings

As part of this course, you are required to record and submit audiovisual recordings for several discussions, as well as an audio recording for your Unit 9 assignment. You may use Kaltura (preferred) or other technology of your choice. Refer to [Using Kaltura](#) for more information about this courseroom tool.

You will need a built-in or external microphone and a video camera (webcam or other device). Make sure you set up and test your equipment ahead of time.

**Note:** If you use assistive technology or any alternative communication methods to participate in these activities, please contact [DisabilityServices@capella.edu](mailto:DisabilityServices@capella.edu) with any access-related questions or to request accommodations.

### Course Competencies

(Read Only)

To successfully complete this course, you will be expected to:

- 1 Describe nurses' and the interdisciplinary team's role in informatics with a focus on electronic health information and patient care technology to support decision making.
- 2 Implement evidence-based strategies to effectively manage protected health information.
- 3 Evaluate the impact of patient care technologies on desired outcomes.
- 4 Recommend the use of a technology to enhance quality and safety standards for patients.
- 5 Apply professional, scholarly communication to facilitate use of health information and patient care technologies.

### Course Prerequisites

*There are no prerequisites for this course.*

## Syllabus >> Course Materials

### Required

The materials listed below are required to complete the learning activities in this course.

### Library

The following required readings are provided in the Capella University Library or linked directly in this course. To find specific readings by journal or book title, use [Journal and Book Locator](#). Refer to the [Journal and Book Locator library guide](#) to learn how to use this tool.

- [ALJ requires MD Anderson Cancer Center to pay \\$4.3M for HIPAA violations.](#) (2018). *The Journal of Medical Practice Management*, 34(2), 68.
- Archibald, M. M., & Barnard, A. (2018). [Futurism in nursing: Technology, robotics and the fundamentals of care.](#) *Journal of Clinical Nursing*, 27(11–12), 2473–2480.
- Aziz, H. A. (2017). [A review of the role of public health informatics in healthcare.](#) *Journal of Taibah University Medical Sciences*, 12(1), 78–81.
- Baek, H., Cho, M., Kim, S., Hwang, H., Song, M., & Yoo, S. (2018). [Analysis of length of hospital stay using electronic health records: A statistical and data mining approach.](#) *PLoS ONE*, 13(4), 1–16.
- Balestra, M. L. (2018). [Social media missteps could put your nursing license at risk.](#) *Alabama Nurse*, 45(3), 18.
- Burton, A. (2018). [Expecting exoskeletons for more than spinal cord injury.](#) *The Lancet Neurology*, 17(4), 302–303.
- Cassano, C. (2014). [The right balance – technology and patient care.](#) *Online Journal of Nursing Informatics*, 18(3).
- Chauvette, A. (2016). [History of nursing informatics in Canada.](#) *Canadian Journal of Nursing Informatics*, 11(4).
- Connolly, D., & Wright, F. (2017). [The nursing quality indicator framework tool.](#) *International Journal of Health Care Quality Assurance*, 30(7), 603–616.

- Corchia, L., Monti, G., De Benedetto, E., & Tarricone, L. (2017). Wearable antennas for remote health care monitoring systems. *International Journal of Antennas and Propagation*, 2017, 1–11.
- Cummins, M. R., Gundlapalli, A. V., Murray, P., Park, H.-A., & Lehmann, C. U. (2016). Nursing informatics certification worldwide: History, pathway, roles, and motivation. *Yearbook of Medical Informatics*, 264–271.
- Darvish, A., Bahramnezhad, F., Keyhanian, S., & Navidhamidi, M. (2014). The role of nursing informatics on promoting quality of health care and the need for appropriate education. *Global Journal of Health Science*, 6(6), 11–18.
- de Leoni, M., van der Aalst, W. M. P., & Dees, M. (2016). A general process mining framework for correlating, predicting and clustering dynamic behavior based on event logs. *Information Systems*, 56, 235–257.
- Denying release of PHI can be a HIPAA violation. (2016). *Healthcare Risk Management*, 38(3).
- Don't forget that small HIPAA violations can cause big problems for hospitals. (2016). *Hospital Access Management*, 35(5).
- Doors open for HIM professionals. (2017). *AHIMA Advantage*, 22(3), 1, 3–4.
- Ehteshami, A. (2017). Barcode technology acceptance and utilization in health information management department at academic hospitals according to technology acceptance model. *Acta Informatica Medica*, 25(1), 4–8.
- Elkind, E. C., & Higgins, K. M. Patient portal considerations. *Nursing Management*, 49(3), 9–11.
- Gambo, J. M., Bahreman, N. T., Watties-Daniels, D., Neal, M., & Swoboda, S. M. (2017). Can mobile technology enhance learning and change educational practice? CIN: Computers, Informatics, Nursing, 35(8), 375–380.
- Georgsson, M. (2018). A nursing informatics research career in the making – personal reflections and insights. *Online Journal of Nursing Informatics*, 22(2).
- Ghersi, I., Mariño, M., & Miralles, M. T. (2018). Smart medical beds in patient-care environments of the twenty-first century: A state-of-art survey. *BMC Medical Informatics and Decision Making*, 18, 1–12.
- Gordon, W. J., Fairhall, A., & Landman, A. (2017). Threats to information security — public health implications. *The New England Journal of Medicine*, 377(8), 707–709.
- Gray, G. (2017, Fall). Ensuring secure and safe infusion delivery in a connected world. *Biomedical Instrumentation and Technology*, 38–41.
- Green, J. (2017). Nurses' online behaviour: Lessons for the nursing profession. *Contemporary Nurse*, 53(3), 355–367.
- Hague, S. N., Ebron, S., Bailey, R., & Blumenthal, B. (2018, Fall). Using health information exchange to support community-based innovations. *Perspectives in Health Information Management*, 1–11.
- Halamka, J. D., & Micky, T. (2017). The HITECH era in retrospect. *The New England Journal of Medicine*, 377(10), 907–909.
- Hessels, A., Flynn, L., Cimiotti, J. P., & Bakken, S. (2015). Impact of health information technology on the quality of patient care. *Online Journal of Nursing Informatics*, 19(3).
- Hickey, K., Katapodi, M., Coleman, B., Reuter-Rice, K., & Starkweather, A. (2017). Improving utilization of the family history in the electronic health record. *Journal of Nursing Scholarship*, 49(1), 80–86.
- Holden, R. J., Asan, O., Wozniak, E. M., Flynn, K. E., & Scanlon, M. C. (2016). Nurses perceptions, acceptance, and use of a novel in-room pediatric ICU technology: Testing an expanded technology acceptance model. *BMC Medical Informatics and Decision Making*, 16, 1–10.
- Hussey, P. A., & Kennedy, M. A. (2016). Instantiating informatics in nursing practice for integrated patient centered holistic models of care: a discussion paper. *Journal of Advanced Nursing*, 72(5), 1030–1041.
- Jagyasi, P. (2016, November 7). How augmented and virtual reality will revolutionize healthcare. *Instablogs*.
- Jagyasi, P. (2018, January 4). Ten cases where virtual reality is used in healthcare. *Instablogs*.
- Jang, H. J., Weberg, D., & Dower, C. (2018). Nursing partnerships in research and quality improvement within a large integrated health care system. *Nursing Administration Quarterly*, 42(4), 357–362.
- Ju, Q. -Y., Huang, L. -H., Zhao, X. -H., Xing, M. -Y., Shao, L. -W., Zhang, M. -Y., & Shao, R. -Y. (2018). Development of evidence-based nursing-sensitive quality indicators for emergency nursing: A Delphi study. *Journal of Clinical Nursing*, 27(15–16), 3008–3019.
- Kruse, C. S., Smith, B., Vanderlinden, H., & Nealand, A. (2017). Security techniques for the electronic health records [PDF]. *Journal of Medical Systems*, 41(8), 1–9.
- Kvedar, J., Coye, M. J., & Everett, W. (2014). Connected health: A review of technologies and strategies to improve patient care with telemedicine and telehealth. *Health Affairs*, 33(2), 194–199.
- Lavin, M. A., Harper, E., & Barr, N (2015). Health information technology, patient safety, and professional nursing care documentation in acute care settings. *Online Journal of Issues in Nursing*, 20(2), 6.
- Lechner, N. H. (2018). Developing a compliant cybersecurity process for medical devices. *Central European Conference on Information and Intelligent Systems*, 197–204.
- Lindstrom, R. L. (2018). Despite barriers, telemedicine plays important role. *Ocular Surgery News*, 36(5), 4–5.
- Lyles, C. R., Fruchterman, J., Youdelman, M., & Schillinger, D. (2017). Legal, practical, and ethical considerations for making online patient portals accessible for all. *American Journal of Public Health*, 107(10), 1608–1611.
- Ma, C. -C., Kuo, K. -M., & Alexander, J. W. (2016). A survey-based study of factors that motivate nurses to protect the privacy of electronic medical records. *BMC Medical Informatics and Decision Making*, 16(13), 1–11.
- MacDonald, V., Maher, A. B., Mainz, H., Meehan, A. J., Brent, L., Hommel, A., . . . Sheehan, K. J. (2018). Developing and testing an international audit of nursing quality indicators for older adults with fragility hip fracture. *Orthopaedic Nursing*, 37(2), 115–121.
- Mancuso, P. J., & Myneni, S. (2016). Empowered consumers and the health care team: A dynamic model of health informatics. *Advances in Nursing Science*, 39(1), 26–37.
- Mather, C. A., Cummings, E. A., & Gale, F. (2018). Preparing the nursing workforce for mobile learning at point of care. *Australian Nursing and Midwifery Journal*, 25(11), 44.
- McCartney, P. R. (2016). The electronic health record and nursing practice. *The American Journal of Maternal/Child Nursing*, 41(2), 126.
- McCormick, K. A., Gugerty, B., & Sensmeier, J. (2017). A Comparison of professional informatics-related competencies and certifications. *Online Journal of Nursing Informatics*, 21(1).

- Meenan, C., Erickson, B., Knight, N., Fossett, J., Olsen, E., Mohod, P., . . . Langer, S. G. Workflow lexicons in healthcare: Validation of the SWIM lexicon. *Journal of Digital Imaging*, 30(3), 255–266.
- Mettler, T., Sprenger, M., & Winter, R. (2017). Service robots in hospitals: New perspectives on niche evolution and technology affordances. *European Journal of Information Systems*, 26(5), 451–468.
- Mgudlwa, S., & Iyamu, T. (2018). Integration of social media with healthcare big data for improved service delivery. *South African Journal of Information Management*, 20(1), 1–8.
- Millery, M., Aguirre, A. N., & Kukafka, R. (2017). Does a community-engaged health informatics platform facilitate resource connectivity? An evaluation framework. *AMIA Annual Symposium Proceedings*, 1292–1301.
- Moss, E., Seifert, P. C., & O'Sullivan, A. (2016). Registered nurses as interprofessional collaborative partners: Creating value-based outcomes. *Online Journal of Issues in Nursing*, 21(3), 1–12.
- Nanotechnology biochip could speed detection of pneumonia. (2017, October 2). *RT Online*.
- Navigating the laws and benefits of telemedicine. (2017). *Medical Staff Briefing*, 27(8), 1–7.
- Nelson, R. (2017). Telemedicine and telehealth: The potential to improve rural access to care. *American Journal of Nursing*, 117(6), 17–18.
- Neumeier, M. (2016). Can nursing informatics improve person-centered care? *Canadian Journal of Nursing Informatics*, 11(4).
- Nickelsen, N. C. M., & Elkjaer, B. (2017). Shifting boundaries in telecare – the nurse-doctor relationship. *Journal of Workplace Learning*, 29(7), 588–600.
- Nyarku, M., Mazaheri, M., Jayaratne, R., Dunbabin, M., Rahman, M., Uhde, E., & Morawska, L. (2018). Mobile phones as monitors of personal exposure to air pollution: Is this the future? *PLoS ONE*, 13(2), 1–18.
- Pearce, L. (2018). What does the future of e-nursing look like? *Nursing Standard*, 32(30), 22–24.
- Phildon, J. M. (2017). Exploring the influence of informatics in nursing: The Filipino student nurses perspective. *Online Journal of Nursing Informatics*, 21(2).
- Potter, A. J., Ward, M. M., Natafqi, N., Ullrich, F., Clinton MacKinney, A., Bell, A. L., & Mueller, K. J. (2016, Summer). Perceptions of the benefits of telemedicine in rural communities. *Perspectives in Health Information Management*, 1–13.
- Rahn, D. J. (2016). Transformational teamwork: Exploring the impact of nursing teamwork on nurse-sensitive quality indicators. *Journal of Nursing Care Quality*, 31(3), 262–268.
- Roberts, S., Marshall, A., & Chaboyer, W. (2017). Hospital staffs perceptions of an electronic program to engage patients in nutrition care at the bedside: A qualitative study. *BMC Medical Informatics and Decision Making*, 17, 1–11.
- Rouleau, G., Gagnon, M. -P., & Côté, J. (2015). Impacts of information and communication technologies on nursing care: An overview of systematic reviews (protocol). *Systematic Reviews*, 4, 1–8.
- Ruiz Morilla, M. D., Sans, M., Casasa, A., & Gimenez, N. (2017). Implementing technology in healthcare: Insights from physicians. *BMC Medical Informatics and Decision Making*, 17, 1–9.
- Ryan, G. (2016). International perspectives on social media guidance for nurses: A content analysis. *Nursing Management*, 23(8), 28–35.
- Sandlin, J. K., & Hinmon, D. (2016). Beyond baby steps: Today's use of social networking sites and the nursing profession. *The Journal of Perinatal and Neonatal Nursing*, 30(3), 204–208.
- Schwartz, S., Ross, A., Carmody, S., Chase, P., Coley, S. C., Connolly, J., . . . Zuk, M. (2018). The evolving state of medical device cybersecurity. *Biomedical Instrumentation and Technology*, 52(2), 103–111.
- Shaked, N. A. (2017). Avatars and virtual agents – relationship interfaces for the elderly. *Healthcare Technology Letters*, 4(3), 83–87.
- Sher, M. -L. Talley, P. C., Yang, C. -W., & Kuo, K. -M. (2017). Compliance with electronic medical records privacy policy: An empirical investigation of hospital information technology staff. *INQUIRY*, 54, 1–12.
- Stodart, K. (Ed.). (2017). Understanding the skills our future nurses need is key. *Kai Tiaki: Nursing New Zealand*, 23(9), 26–27.
- Strudwick, G., Booth, R. G., Bjarnadottir, R. I., Collins, S., & Srivastava, R. (2017). Exploring the role of the nurse manager in supporting point-of-care nurses' adoption of electronic health records: Protocol for a qualitative research study. *BMJ Open*, 7(10), 1–7.
- Sweeney, J. (2017). Healthcare informatics. *Online Journal of Nursing Informatics*, 21(1).
- The risk of HIPAA violations and messaging apps. (2016). *Healthcare Risk Management*, 38(2).
- Tyler, D. D. (2018). A day in the life of a nurse informaticist: Collaboration and collegiality. *Journal of Informatics Nursing*, 3(1), 30–32.
- van Dishoeck, A. -M., Looman, C. W. N., Steyerberg, E. W., Halfens, R. J. G., & Mackenbach, J. P. (2016). Performance indicators: the association between the quality of preventive care and the prevalence of hospital-acquired skin lesions in adult hospital patients. *Journal of Advanced Nursing*, 72(11), 2818–2830.
- van Houwelingen, C. T. M., Moerman, A. H., Roelof, G. A. E., Helianthe, S. M. K., & ten Cate, O. (2016). Competencies required for nursing telehealth activities: A Delphi-study. *Nurse Education Today*, 39, 50–62.
- Wang, Y. C., & DeSalvo, K. (2018). Timely, granular, and actionable: Informatics in the Public Health 3.0 era. *American Journal of Public Health*, 108(7), 930–934.
- Wilk, S., Kezadri-Hamiaz, M., Rosu, D., Kuziemyk, C., Michalowski, W., Amyot, D., & Carrier, M. (2016). Using semantic components to represent dynamics of an interdisciplinary healthcare team in a multi-agent decision support system. *Journal of Medical Systems*, 40(2), 1–12.
- Wu, J. (2016). Healthcare system-use behavior: A systematic review of ITs determinants. *Journal of International Technology and Information Management*, 25(4), 75–83.
- Zhang, Y. -F., Gou, L., Tian, Y., Li, T. -C., Zhang, M., & Li, J. -S. (2016). Design and development of a sharable clinical decision support system based on a semantic web service framework. *Journal of Medical Systems*, 40(5), 1–14.

#### External Resource

Please note that URLs change frequently. While the URLs were current when this course was designed, some may no longer be valid. If you cannot access a specific link, contact your instructor for an alternative URL. Permissions for the following links have been either granted or deemed appropriate for educational use at the time of course publication.

- Agency for Healthcare Research and Quality. (n.d.). [Health information technology integration](https://www.ahrq.gov/ncepcr/tools/health-it/index.html). Retrieved from <https://www.ahrq.gov/ncepcr/tools/health-it/index.html>
- [Alliance for Nursing Informatics](https://www.allianceni.org/). (n.d.). Retrieved from <https://www.allianceni.org/>
- [American Health Information Management Association](http://www.ahima.org/). (n.d.). Retrieved from <http://www.ahima.org/>
- [American Medical Informatics Association](https://www.amia.org/). (n.d.). Retrieved from <https://www.amia.org/>
- [American Nurses Informatics Association](https://www.ania.org/). (n.d.). Retrieved from <https://www.ania.org/>
- ANA Center for Ethics and Human Rights. (2015). [American Nurses Association position statement on privacy and confidentiality \[PDF\]](https://www.nursingworld.org/~4ad4a8/globalassets/docs/ana/position-statement-privacy-and-confidentiality.pdf). Available from <https://www.nursingworld.org/~4ad4a8/globalassets/docs/ana/position-statement-privacy-and-confidentiality.pdf>
- Barnett, J. (2017). [Beyond meaningful use: The value of patient portals](https://www.healthitoutcomes.com/doc/beyond-meaningful-use-the-value-of-patient-portals-0001). Retrieved from <https://www.healthitoutcomes.com/doc/beyond-meaningful-use-the-value-of-patient-portals-0001>
- Compliance Group. (n.d.). [HIPAA fines listed by year](https://compliance-group.com/hipaa-fines-directory-year/). Retrieved from <https://compliance-group.com/hipaa-fines-directory-year/>
- Gamache, R., Kharrazi, H., & Weiner, J. P. (2018). [Public and population health informatics: The bridging of big data to benefit communities \[PDF\]](https://www.thieme-connect.com/products/ejournals/pdf/10.1055/s-0038-1667081.pdf). *IMIA Yearbook of Medical Informatics*, 199–206. Available from <https://www.thieme-connect.com/products/ejournals/pdf/10.1055/s-0038-1667081.pdf>
- Grandia, L. (2017). [Healthcare information systems: A look at the past, present, and future \[PDF\]](http://www.healthcatalyst.com/wp-content/uploads/2014/05/A-Look-at-the-Past-Present-and-Future-Healthcare-Information-Systems.pdf). Available from <http://www.healthcatalyst.com/wp-content/uploads/2014/05/A-Look-at-the-Past-Present-and-Future-Healthcare-Information-Systems.pdf>
- Healthcare Compliance Pros. (n.d.). [Posting with caution: The do's and don'ts of social media and HIPAA compliance](http://www.healthcarecompliancepros.com/blog/posting-with-caution-the-dos-and-donts-of-social-media-and-hipaa-compliance-2/). Retrieved from <http://www.healthcarecompliancepros.com/blog/posting-with-caution-the-dos-and-donts-of-social-media-and-hipaa-compliance-2/>
- Healthcare Information and Management Systems Society. (2011). [Position statement on transforming nursing practice through technology and informatics \[PDF\]](https://www.himss.org/sites/hde/files/d7/HIMSSorg/handouts/HIMSSNIPositionStatementMonographReport.pdf). Retrieved from <https://www.himss.org/sites/hde/files/d7/HIMSSorg/handouts/HIMSSNIPositionStatementMonographReport.pdf>
- Healthcare Information and Management Systems Society. (n.d.). [Online Journal of Nursing Informatics](http://www.ojni.org). Retrieved from <http://www.ojni.org>
- [Healthcare Information and Management Systems Society](https://www.himss.org/). (n.d.). Retrieved from <https://www.himss.org/>
- Healthcare Information and Management Systems Society. (n.d.). [What is nursing informatics?](https://www.himss.org/what-nursing-informatics) Retrieved from <https://www.himss.org/what-nursing-informatics>
- Heath, S. (2017). [Do health data security concerns influence patient data sharing?](https://patientengagementthit.com/news/do-health-data-security-concerns-influence-patient-data-sharing) Retrieved from <https://patientengagementthit.com/news/do-health-data-security-concerns-influence-patient-data-sharing>
- HIPAA Journal. (2018). [HIPAA social media rules](https://www.hipaajournal.com/hipaa-social-media/). Retrieved from <https://www.hipaajournal.com/hipaa-social-media/>
- HIPAA Training. (2015, February 8). [Understanding the 5 main HIPAA rules \[Blog post\]](https://www.hipaaexams.com/blog/understanding-5-main-hipaa-rules/). Retrieved from <https://www.hipaaexams.com/blog/understanding-5-main-hipaa-rules/>
- [International Medical Informatics Association](https://imia-medinfo.org/wp/). (n.d.). Retrieved from <https://imia-medinfo.org/wp/>
- Irizarry, T., DeVito Dabbs, A., & Curran, C. R. (2015). [Patient portals and patient engagement: A state of the science review](https://www.jmir.org/2015/6/e148/). *Journal of Medical Internet Research*, 17(6). Retrieved from <https://www.jmir.org/2015/6/e148/>
- Manojlovich, M., Adler-Milstein, J., Harrod, M., Sales, A., Hofer, T. P., Saint, S., & Krein, S. L. (2015). [The effect of health information technology on health care provider communication: A mixed-method protocol](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4526935/). *JMIR Research Protocols*, 4(2). Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4526935/>
- Marr, B. (2018, September 16). [Smart dust is coming. Are you ready?](https://www.forbes.com/sites/bernardmarr/2018/09/16/smart-dust-is-coming-are-you-ready/#3f64e6dc5e41) *Forbes*. Retrieved from <https://www.forbes.com/sites/bernardmarr/2018/09/16/smart-dust-is-coming-are-you-ready/#3f64e6dc5e41>
- Martin, K. (2017, January 24). [The future of health informatics in 2017 – and beyond](https://electronichealthreporter.com/future-health-informatics-2017-beyond/). *Electronic Health Reporter*. Retrieved from <https://electronichealthreporter.com/future-health-informatics-2017-beyond/>
- National Council of State Boards of Nursing, Inc. (2018). [A nurse's guide to the use of social media \[PDF\]](https://www.ncsbn.org/NCsBN_SocialMedia.pdf). Available from [https://www.ncsbn.org/NCsBN\\_SocialMedia.pdf](https://www.ncsbn.org/NCsBN_SocialMedia.pdf)
- National Database of Nursing Quality Indicators. (n.d.). [NDNQI nursing-sensitive indicators](https://nursingandndnqi.weebly.com/ndnqi-indicators.html). Retrieved from <https://nursingandndnqi.weebly.com/ndnqi-indicators.html>
- National Institute of Diabetes and Digestive and Kidney Diseases. (n.d.). [The future of health information technology](https://www.niddk.nih.gov/health-information/communication-programs/ndep/health-professionals/practice-transformation-physicians-health-care-teams/information-systems/future-health-information-technology). Retrieved from <https://www.niddk.nih.gov/health-information/communication-programs/ndep/health-professionals/practice-transformation-physicians-health-care-teams/information-systems/future-health-information-technology>
- Palgon, G. (2018, May 2). [The history of health information management – from then to now \[Blog post\]](https://www.liaison.com/blog/2017/05/02/history-health-information-management-now/). Retrieved from <https://www.liaison.com/blog/2017/05/02/history-health-information-management-now/>
- Sprinkle, T. (2017). [Remote health care is the future of medicine](https://www.asme.org/engineering-topics/articles/technology-and-society/remote-health-care-future-medicine). Retrieved from <https://www.asme.org/engineering-topics/articles/technology-and-society/remote-health-care-future-medicine>
- The Office of the National Coordinator for Health Information Technology. (n.d.). [What is health information technology fact sheet \[PDF\]](https://www.healthit.gov/sites/default/files/pdf/health-information-technology-fact-sheet.pdf). Retrieved from <https://www.healthit.gov/sites/default/files/pdf/health-information-technology-fact-sheet.pdf>
- U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality. (n.d.). [Quality improvement and monitoring at your fingertips](https://www.qualityindicators.ahrq.gov). Retrieved from <https://www.qualityindicators.ahrq.gov>
- University of Illinois at Chicago. (n.d.). [Three ways technology has changed healthcare](https://healthinformatics.uic.edu/resources/articles/3-ways-technology-has-changed-healthcare/). Retrieved from <https://healthinformatics.uic.edu/resources/articles/3-ways-technology-has-changed-healthcare/>
- USF Health. (n.d.). [Data mining in healthcare](https://www.usfhealthonline.com/resources/healthcare/data-mining-in-healthcare/). Retrieved from <https://www.usfhealthonline.com/resources/healthcare/data-mining-in-healthcare/>

- Wyber, R., Vaillancourt, S., Perry, W., Mannava, P., Folaranmi, T., & Celi, L. A. (2015). Big data in global health: Improving health in low- and middle-income countries. *Bulletin of the World Health Organization*, 93, 203–208. Retrieved from <https://www.who.int/bulletin/volumes/93/3/14-139022/en/>
- Zabel, L. (2016). Ten common HIPAA violations and preventative measures to keep your practice in compliance. Retrieved from <https://www.beckershospitalreview.com/healthcare-information-technology/10-common-hipaa-violations-and-preventative-measures-to-keep-your-practice-in-compliance.html>

## Suggested

The following materials are recommended to provide you with a better understanding of the topics in this course. These materials are not required to complete the course, but they are aligned to course activities and assessments and are highly recommended for your use.

## Optional

The following optional materials are offered to provide you with a better understanding of the topics in this course. These materials are not required to complete the course.

### External Resource

Please note that URLs change frequently. While the URLs were current when this course was designed, some may no longer be valid. If you cannot access a specific link, contact your instructor for an alternative URL. Permissions for the following links have been either granted or deemed appropriate for educational use at the time of course publication.

- Atlantic Training. (2012). HIPAA infographic: Protecting patient privacy, how important is it? Retrieved from <https://www.atlantictraining.com/blog/hipaa-infographic-high-cost-violations/>
- HITC Staff. (2017). Infographic: The rise of medical data sharing and privacy concerns. Retrieved from <https://hitconsultant.net/2017/08/11/infographic-medical-data-sharing/>
- U.S. Department of Education. (n.d.). Family Educational Rights and Privacy Act (FERPA) <https://www.ed.gov/policy/gen/guid/fpco/ferpa/index.html>
- U.S. Department of Health & Human Services. (n.d.). Summary of the HIPAA privacy rule <https://www.hhs.gov/hipaa/for-professionals/privacy/laws-regulations/index.html>
- University of Illinois at Chicago. (n.d.). Protecting patient information in the age of breaches. Retrieved from <https://healthinformatics.uic.edu/blog/protecting-patient-information/>

## Unit 1 >> Role of Information Systems in Health Care

### Introduction

In this unit you will be introduced to the emergence of health information systems and their influence on the interprofessional health team and patient care outcomes. The earliest documentation of patient records appeared in ancient Greece as written narratives to document cures, share observations, and teach care providers through written narratives. Paper documentation was the norm in health care until the 1960s, when computers led to the standardization and sharing of medical records. Today, informational technology is the driving force behind change, innovations, and improvements in managing patient care and patient information.

Informational technology has increased the timeliness and accuracy of patient care, health care accessibility, and evidence-based treatment. It offers a way to control operational/staffing costs and enhance interprofessional collaborative communication. Health care professionals are using cutting-edge digital platforms, hand-held computers, and electronic documentation to record and instantly share real-time patient data such as lab results, vital signs, prescriptions, and medical records. Patients have transparency regarding and access to their health records. Software programs have improved hospital admission registration, service capacity, and public health surveillance, and compiled databases help control disease and enhance health care outcomes for individuals, communities, and the global population.

### Learning Activities

#### u01s1 - Studies

## How Information Technology Is Changing Health Care

- Healthcare Information and Management Systems Society. (2011). Position statement on transforming nursing practice through technology and informatics [PDF]. Retrieved from <https://www.himss.org/sites/himssorg/files/HIMSSorg/handouts/HIMSSNIPositionStatementMonographReport.pdf>
  - This position statement identifies specific recommendations for eliminating barriers and addressing nursing's role in transforming health care through the use of IT, particularly in regard to the role of nursing informatics.
- Hessels, A., Flynn, L., Cimiotti, J. P., & Bakken, S. (2015). Impact of health information technology on the quality of patient care. *Online Journal of Nursing Informatics*, 19(3).
  - This article examines how the adoption of electronic health records (EHR) affects adverse outcomes and patient satisfaction.
- Manojlovich, M., Adler-Milstein, J., Harrod, M., Sales, A., Hofer, T. P., Saint, S., & Krein, S. L. (2015). The effect of health information technology on health care provider communication: A mixed-method protocol. *JMIR Research Protocols*, 4(2). Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4526935/>
  - Manojlovich and co-authors examine health information technology on patient/provider health care communications.
- Mgudlwa, S., & Iyamu, T. (2018). Integration of social media with healthcare big data for improved service delivery. *South African Journal of Information Management*, 20(1), 1–8.
  - This article discusses the intersection of health care privacy and social media.
- Neumeier, M. (2016). Can nursing informatics improve person-centered care? *Canadian Journal of Nursing Informatics*, 11(4).
  - This discussion reviews how care recipients and care providers need better access to more appropriate information in a more timely fashion in order to improve care.
- Sweeney, J. (2017). Healthcare informatics. *Online Journal of Nursing Informatics*, 21(1).
  - This article discusses notable implications of health care informatics, both constructive and adverse.
- University of Illinois at Chicago. (n.d.). Three ways technology has changed healthcare. Retrieved from <https://healthinformatics.uic.edu/resources/articles/3-ways-technology-has-changed-healthcare/>
  - This web article explains how information technology is considered the driving force behind improvements in health care.

## Staff Perceptions of Informatics

- Ma, C. -C., Kuo, K. -M., & Alexander, J. W. (2016). A survey-based study of factors that motivate nurses to protect the privacy of electronic medical records. *BMC Medical Informatics and Decision Making*, 16(13), 1–11.
  - This study examines factors that motivate nurses to protect privacy in electronic medical records.
- Ehteshami, A. (2017). Barcode technology acceptance and utilization in health information management department at academic hospitals according to technology acceptance model. *Acta Informatica Medica*, 25(1), 4–8.
  - This article reviews the acceptance and use of barcode technology in health care settings.
- Holden, R. J., Asan, O., Wozniak, E. M., Flynn, K. E., & Scanlon, M. C. (2016). Nurses perceptions, acceptance, and use of a novel in-room pediatric ICU technology: Testing an expanded technology acceptance model. *BMC Medical Informatics and Decision Making*, 16, 1–10.
  - This study examines pediatric intensive care unit nurses' perceptions of a health IT device.
- Ruiz Morilla, M. D., Sans, M., Casasa, A., & Gimenez, N. (2017). Implementing technology in healthcare: Insights from physicians. *BMC Medical Informatics and Decision Making*, 17, 1–9.
  - This article reviews the opinions of physicians regarding how technology has changed how health care organizations operate.
- Wu, J. (2016). Healthcare system-use behavior: A systematic review of ITs determinants. *Journal of International Technology and Information Management*, 25(4), 75–83.
  - Wu explores the need to advance user understanding of informatics in health care settings.

### u01s1 - Learning Components

- Define what is meant by evidence-based.
- Explain the role of a nurse informaticist.
- Define nursing informatics.
- Define an interdisciplinary team.

### u01s2 - Your Online ePortfolio

Online ePortfolios serve two key purposes: 1) to support learning and reflection, and 2) to be used as a showcase tool. Your learning journey can be documented, and ePortfolios contribute to lifelong learning and growth through reflection and sharing. Online ePortfolios can also be shared with employers and peers to present artifacts that demonstrate your accomplishments at Capella.

## Using ePortfolio to Prepare for Your Capstone

Your program may culminate in a capstone course. At that time you may be required to show evidence of your learning throughout the program by referring to multiple assessments that you have created. You will be telling a story about your learning throughout the program using artifacts you have collected during many of these courses.

## Using ePortfolio to Build Your Career

As you are preparing to tell your story in the professional world, leverage your ePortfolio artifacts to demonstrate the knowledge and competencies you have gained through your program in professional conversations, performance reviews, and interviews.

To do that, reflect on the knowledge and skills you have gained from your courses and the elements you have put in your portfolio, along with how you have already applied these things to your professional life or how you might apply them in the future.

Next, create your story or talking points to tell your professional story.

## Saving Your Documents to ePortfolio

You will need a place to store your documents in an organized fashion so that you can access them at a later date. Do not rely on the courseroom for storage, as you will lose access to the courseroom after you have completed the course. Capella uses a cloud-based portfolio platform to facilitate your organization of the artifacts you create throughout your program.

To make an online portfolio useful, it is essential that it is organized clearly and that important files of any format are accessible. Read the [Online ePortfolio Guidelines \[PDF\]](#) to ensure you set up your online portfolio correctly. For more information on ePortfolio visit the Campus [ePortfolio](#) page.

## Privacy Statement

Capella complies with privacy laws designed to protect the privacy of personal information. While you may voluntarily share your own information publicly, you are obligated to protect the personal information of others that may be associated with your academic or professional development. Before sharing information and material in any ePortfolio that is set up to be shared externally to your program at Capella, please consider privacy obligations in relation to protected populations who may be included or referenced in your academic or clinical work. Refer to the [Family Educational Rights and Privacy Act \(FERPA\)](#) and/or the [Health Insurance Portability and Accountability Act \(HIPAA\)](#) if you have specific questions or concerns about your choices.

### u01d1 - Technology in Health Care

**Note:** Remember to adhere to the time and day requirements for discussion postings and responses addressed in the School of Nursing and Health Sciences faculty expectations message.

Record a 3–5 minute video in which you share your experiences with information systems in the health care environment during your career. You may use Kaltura or other tools of your choice to create your video. Be sure to respond to the following:

- In your career, what technology has posed a challenge to you and/or the interdisciplinary team?
- Why was the implementation of this technology challenging for you and/or the interdisciplinary team?
- What impact has the emergence of this technology had on you, patients, nursing practice, and/or the workplace?
- How did you and/or your team overcome this challenge?

Post a written transcript with your video. A script will be of help to you in recording your video and provides a text alternative to the audio portion of your recording.

## Response Guidelines

Respond to two of your peers' videos in a written post. Try to comment on those videos that have had few or no responses thus far. In each response, refer to the SoNHS faculty expectations message as you address the following:

- How were your experiences similar to or different from those of your peer?
- How could the transition to the technology in your peer's post have been handled better? Support your position with at least one current professional source. Share the source as a link.

Course Resources

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Undergraduate Discussion Participation Scoring Guide

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[Using Kaltura](#)

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[DisabilityServices@Capella.edu](mailto:DisabilityServices@Capella.edu)

u01d1 - Learning Components

- Define nursing informatics.
- Define an interdisciplinary team.

**u01d2 - Insight on Informatics**

A novice nurse has asked you for advice about the use of informatics in health care.

- What is the most important thing for a novice nurse to know about informatics?
- What suggestions would you give to a colleague who was considering nursing informatics as a specialty?

Review the HIMSS Position Statement on Transforming Nursing Practice Through Technology and Informatics, linked in the Resources. Support your response with one current resource.

## Response

Respond to at least two peers, and offer suggestions or additional advice.

Course Resources

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Undergraduate Discussion Participation Scoring Guide

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[Position Statement on Transforming Nursing Practice Through Technology and Informatics \[PDF\]](#)

## Unit 2 >> History and Evolution of Nursing Informatics

### Introduction

In this unit you will learn about the historical evolution of nursing informatics (NI). Health care has witnessed the development of NI since the turn of the century. Initially NI focused primarily on basic computer literacy and basic use of computers in nursing. About thirty years ago, NI expanded to include information management science and nursing science. Nurses used nursing information systems (NIS) in bed assignments, patient classification systems, quality assurance and assurance, care planning, and problem solving.

Recognizing that a standardized language for information management in nursing practice was critical, the American Nurses Association established NI Scope and Standards of Nursing Informatics Practice competencies and generated a position statement delineating the educational preparation and knowledge requisites of a nurse informaticist. In response to hospital accreditation standards for information management, nursing programs at all levels of nursing curricula became proactive in providing NI education. Standards for baccalaureate and graduate nursing education programs were established by the Association of Colleges of Nursing (AACN). Certification through the American Nurses Credentialing Center or Healthcare Information and Management Systems Society (HIMSS) became the gold standard for bridging evidence-based education and practice initiatives, policy development, and preparation of a global workforce.

Today NI has become integral to bridging clinical practice and health informational systems supporting quality patient-centric care and health care reform across all care settings. The nurse informaticist works closely with the interdisciplinary team to combine nursing science, information science, and computer science to enhance care and safety and improve workflow and processes in a multiplicity of health care venues.

## Learning Activities

### u02s1 - Studies

## History of Information Technology in Nursing

The following articles explore the history of nursing informatics:

- Chauvette, A. (2016). History of nursing informatics in Canada. *Canadian Journal of Nursing Informatics*, 11(4).
- Grandia, L. (2017). Healthcare information systems: A look at the past, present, and future [PDF]. Available from <http://www.healthcatalyst.com/wp-content/uploads/2014/05/A-Look-at-the-Past-Present-and-Future-Healthcare-Information-Systems.pdf>
- Palgon, G. (2018, May 2). The history of health information management – from then to now [Blog post]. Retrieved from <https://www.liaison.com/blog/2017/05/02/history-health-information-management-now/>

## What Do Nurse Informaticists Do?

- Tyler, D. D. (2018). A day in the life of a nurse informaticist: Collaboration and collegiality. *Journal of Informatics Nursing*, 3(1), 30–32.
- Healthcare Information and Management Systems Society. (n.d.). What is nursing informatics? Retrieved from <https://www.himss.org/what-nursing-informatics>
  - This web article explains the nursing informatics profession.
- Roberts, S., Marshall, A., & Chaboyer, W. (2017). Hospital staffs perceptions of an electronic program to engage patients in nutrition care at the bedside: A qualitative study. *BMC Medical Informatics and Decision Making*, 17, 1–11.
  - This study explores hospital staffs' perceptions of using technology to engage patients in their care.
- Georgsson, M. (2018). A nursing informatics research career in the making – personal reflections and insights. *Online Journal of Nursing Informatics*, 22(2).
  - Georgsson shares personal reflections and insights on nursing informatics.

## Nursing Perspectives on Informatics

- Phildon, J. M. (2017). Exploring the influence of informatics in nursing: The Filipino student nurses perspective. *Online Journal of Nursing Informatics*, 21(2).
  - This study explores the experiences of student nurses with the impact of information and computer technology.

## Nursing Opportunities in Informatics

- Doors open for HIM professionals. (2017). *AHIMA Advantage*, 22(3), 1, 3–4.
  - This article explores career opportunities for health information management professionals.
- Moss, E., Seifert, P. C., & O'Sullivan, A. (2016). Registered nurses as interprofessional collaborative partners: Creating value-based outcomes. *Online Journal of Issues in Nursing*, 21(3), 1–12.
  - This article looks at opportunities for interprofessional collaboration for RNs to implement evidence-based programs.

## Nurse Informatics Competencies

- McCormick, K. A., Gugerty, B., & Sensmeier, J. (2017). A Comparison of professional informatics-related competencies and certifications. *Online Journal of Nursing Informatics*, 21(1).
  - This article describes various types of professional informatics competencies that are measured by certification standards.

## Health Care and Nursing Informatics Professional Resources

Explore the following health care and nursing informatics websites for resources, education, and networking opportunities for nursing informatics professionals:

- Healthcare Information and Management Systems Society. (n.d.). Retrieved from <https://www.himss.org/>
- Healthcare Information and Management Systems Society. (n.d.). Online Journal of Nursing Informatics. Retrieved from <http://www.ojni.org>
- American Nurses Informatics Association. (n.d.). Retrieved from <https://www.ania.org/>
- Alliance for Nursing Informatics. (n.d.). Retrieved from <https://www.allianceni.org/>

#### u02s1 - Learning Components

- Define what is meant by evidence-based.
- Explain the role of a nurse informaticist.
- Define nursing informatics.
- Define an interdisciplinary team.

#### u02s2 - Assignment Preparation

In the Unit 3 Nursing Informatics in Health Care assignment, you will prepare a proposal to add the nurse informaticist role to your organization. To successfully complete this assignment, you may want to start working on the following preparatory activities:

- Review the assignment instructions and scoring guide in Unit 3.
- Conduct independent research on the nursing knowledge and skills necessary to interact with health information and patient care technology.
  - Focus your research on current resources available through peer-reviewed articles, professional websites, government websites, professional blogs, wiki pages, job boards, et cetera.
  - Consult this resource for help in identifying scholarly and authoritative sources: [BSN Program Library Research Guide](#).
- Interview peers in your network who are considered information technology experts.
  - Ask them about how information technology advances are impacting patient care at the bedside, at the organizational level, and beyond.

#### u02d1 - History of Nursing Informatics

**Note:** Remember to adhere to the time and day requirements for discussion postings and responses addressed in the School of Nursing and Health Sciences faculty expectations message.

Using the Capella library, find one current article on the history of nursing informatics that you can use as a resource in your Unit 3 assignment. Post a link to the resource for your peers. Then, respond to the following in a 2–3 minute video segment:

- How did nursing informatics evolve in health care?
- What value does a nurse informaticist bring to a team?
- What impact does a nursing informatics have on patient care outcomes and patient satisfaction?

Post a written transcript with your video. A script will be of help to you in recording your video and provides a text alternative to the audio portion of your recording.

### Response Guidelines

View two of your peers' videos, and review the article they provided. Then, respond to two of your peers in a written post. Try to comment on those videos that have had few or no responses thus far. In each response, refer to the SoNHS faculty expectations message as you address the following:

- What did you learn from the article your peer provided that you found useful or enlightening, and why?
- How does the article enrich or advance your understanding of the nursing informatics profession?
- How would the topic addressed in the article be useful to a nurse informaticist? How will it enhance patient care?

Course Resources

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Undergraduate Discussion Participation Scoring Guide

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[Using Kaltura](#)

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[DisabilityServices@Capella.edu](mailto:DisabilityServices@Capella.edu)

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#### u02d1 - Learning Components

- Explain the role of a nurse informaticist.
- Define nursing informatics.

## u02d2 - Interdisciplinary Update

**Note:** Remember to adhere to the time and day requirements for discussion postings and responses addressed in the School of Nursing and Health Sciences faculty expectations message.

In this discussion, you are preparing for your Unit 5 assignment, where you will develop an interdisciplinary update. For this activity, you will be placed in small discussion groups by your instructor. In your group, discuss the factors you consider most important in developing an interdisciplinary update, such as:

- Audience.
- Appearance.
- Tone.
- Resources.

Why are these essential to developing an appropriate and effective update? What additional points should you consider?

After concluding your small group discussion, post an explanation of how you will use what you discussed to develop your interdisciplinary update. What challenges do you anticipate?

## Response Guidelines

Respond to at least two peers. In your responses, offer suggestions on how your peers can effectively deal with challenges they anticipate as they develop their interdisciplinary updates. Suggest what other ideas they might want to include. Why are these additional considerations important?

Course Resources

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Undergraduate Discussion Participation Scoring Guide

u02d2 - Learning Components

- Define an interdisciplinary team.

## Unit 3 >> Nursing Informatics and Interdisciplinary Teams

### Introduction

The role of the nurse informaticist and the interdisciplinary team will be introduced in this unit.

Nurses use and share evidence-based information and patient data to initiate a care plan with the interdisciplinary team to achieve quality care outcomes. Nursing informatics bridges research, education, and practice venues to achieve advances for nursing practice while supporting decision-making processes for nurses, consumers, patients, and the entire interprofessional health care team. Depending on the circumstance, the nurse informaticist acts as a teacher, investigator, researcher, product developer, support manager, change agent, clinical analyst/systems specialist, and entrepreneur. At times, the nurse informaticist may be the project manager.

The nurse informaticist works closely with the interdisciplinary team to develop effective and efficient health information technology. Each member of the team is integral to maintaining and safeguarding protected health information, quality care outcomes, and operational goals. The information technologists work with software, hardware, databases, network management, and database administration and protection. The project manager optimizes clinical workflow and maintains high quality standards and outcomes by streamlining patient care services. The nurse manager manages the unit and coordinates efforts to maintain the quality of patient care and staffing. The nurse on the unit interfaces with these team members at various times in order to provide safe, quality care and enhance the effectiveness and efficiency of their clinical unit.

Reference

Healthcare Information and Management Systems Society. (n.d.). What is nursing informatics? Retrieved from <https://www.himss.org/what-nursing-informatics>.

### Learning Activities

#### u03s1 - Studies

## Nurse Informaticist and the Interdisciplinary Team

- Cassano, C. (2014). The right balance – technology and patient care. *Online Journal of Nursing Informatics*, 18(3).
  - This article discusses the importance of patient education as it relates to electronic documentation and the interdisciplinary team.
- Cummins, M. R., Gundlapalli, A. V., Murray, P., Park, H.-A., & Lehmann, C. U. (2016). Nursing informatics certification worldwide: History, pathway, roles, and motivation. *Yearbook of Medical Informatics*, 264–271.
  - This article describes the history, pathways, and nuances of certification in nursing informatics across the globe.
- Halamka, J. D., & Micky, T. (2017). The HITECH era in retrospect. *The New England Journal of Medicine*, 377(10), 907–909.
  - Halamka discusses the benefits and challenges of the HITECH Act as it relates to clinicians and the health care teams.
- Hussey, P. A., & Kennedy, M. A. (2016). Instantiating informatics in nursing practice for integrated patient centered holistic models of care: a discussion paper. *Journal of Advanced Nursing*, 72(5), 1030–1041.
  - Hussey discusses how informatics can enable nursing to transition to integrated models of care.
- Jang, H. J., Weberg, D., & Dower, C. (2018). Nursing partnerships in research and quality improvement within a large integrated health care system. *Nursing Administration Quarterly*, 42(4), 357–362.
  - This article describes a partnership between clinical operations leaders and researchers (nurse scientists) to determine and utilize evidence-based practices to meet a system goal.
- Mancuso, P. J., & Myneni, S. (2016). Empowered consumers and the health care team: A dynamic model of health informatics. *Advances in Nursing Science*, 39(1), 26–37.
  - This article presents a new model of health informatics and its impact on the health care team.
- Rouleau, G., Gagnon, M. -P., & Côté, J. (2015). Impacts of information and communication technologies on nursing care: An overview of systematic reviews (protocol). *Systematic Reviews*, 4, 1–8.
  - The authors provide an overview of information and communication technologies and system integration.
- Tyler, D. D. (2018). A day in the life of a nurse informaticist: Collaboration and collegiality. *Journal of Informatics Nursing*, 3(1), 30–32.
  - This article explores the relationship between the nurse informaticist and the health care team.

## Medical Informatics and Health Information Professional Resources

Explore the following health care and nursing informatics websites for resources, education, and networking opportunities for nursing informatics professionals.

- American Health Information Management Association. (n.d.). Retrieved from <http://www.ahima.org/>
- American Medical Informatics Association. (n.d.). Retrieved from <https://www.amia.org/>
- International Medical Informatics Association. (n.d.). Retrieved from <https://imia-medinfo.org/wp/>

## Capella Media

The Team Perspective of the Nurse Informaticist activity explores the nurse informaticist role from the different perspectives of the health care team.

u03s1 - Learning Components

- Define what is meant by evidence-based.
- Define an interdisciplinary team.

**u03a1 - Nursing Informatics in Health Care**

## Introduction

Nurses at the baccalaureate level in all practice areas are involved in nursing informatics through interaction with information management and patient care technologies. Nurses must not only demonstrate knowledge of and skills in health information and patient care technologies, but also how to use these tools at the bedside and organizational levels. Moreover, nurses need to recognize how information gathered from various health information sources can impact decision making at the national and state regulatory levels.

## Demonstration of Proficiency

By successfully completing this assignment, you will demonstrate your proficiency in the course competencies through the following scoring guide criteria:

- Competency 1: Describe nurses' and the interdisciplinary team's role in informatics with a focus on electronic health information and patient care technology to support decision making.
  - Define nursing informatics and the role of the nurse informaticist.
  - Explain how the nurse collaborates with the interdisciplinary team, including technologists, to improve the quality of patient care.
  - Justify the need for a nurse informaticist in a health care organization.
- Competency 2: Implement evidence-based strategies to effectively manage protected health information.
  - Explain evidence-based strategies that the nurse and interdisciplinary team can use to effectively manage patients' protected health information (privacy, security, and confidentiality).
- Competency 5: Apply professional, scholarly communication to facilitate use of health information and patient care technologies.
  - Follow APA style and formatting guidelines for citations and references.
  - Create a clear, well-organized, and professional proposal that is generally free from errors in grammar, punctuation, and spelling.

## Scenario

For this assignment, assume you are a nurse attending a meeting of your state's nurses' association. A nurse informaticist conducted a presentation on her role and its impact on positive patient and organizational outcomes in her workplace. You realize that your organization is undergoing many technological changes. You believe this type of role could provide many benefits to your organization.

You decide to pursue proposing a nurse informaticist role in your organization. You speak to your Chief Nursing Officer (CNO) and Human Resources (HR) Manager. These individuals ask you to prepare a 4–5 page evidence-based proposal to support the new role. In this way, they can make an informed decision as to whether the addition of such a role could justify the return on investment (ROI). They need your proposal before an upcoming fiscal meeting.

## Proposal Format

The CNO and HR manager have asked you to include the following headings in your proposal and to be sure to address the bullets underneath each heading:

### Nursing Informatics and the Nurse Informaticist

- What is nursing informatics?
- What is the role of the nurse informaticist?

### Nurse Informaticists and Other Health Care Organizations

- What is the experience of other health care organizations with nurse informaticists?
- How do these nurse informaticists interact with the rest of the nursing staff and the interdisciplinary team?

### Impact of Full Nurse Engagement in Health Care Technology

- How does fully engaging nurses in health care technology impact:
  - Patient care?
  - Protected health information (security, privacy, and confidentiality)?
  - Workflow?
  - Costs and return on investment?

### Opportunities and Challenges

- What are the opportunities and challenges for nurses and the interdisciplinary team with the addition of a nurse informaticist role?
  - How can the interdisciplinary team collaborate to improve quality care outcomes through technology?

### Summary of Recommendations

- What are the 3–4 key takeaways from your proposal about the recommended nurse informaticist role that you want the CNO and the HR manager to remember?

## Additional Requirements

- **Written communication:** Ensure written communication is free of errors that detract from the overall message.
- **Submission length:** 4–5 double-spaced pages, in addition to a title page and references page.
- **Font:** Times New Roman, 12 point.
- **Citations and References:** Cite a **minimum of 3** current scholarly and/or authoritative sources to support your ideas. In addition, cite a **minimum of 1** current professional blog or website to support your central ideas. Current means no more than five years old.

- **APA formatting:** Be sure to follow APA formatting and style guidelines for citations and references. For an APA refresher, consult the APA Style and Format page on Campus.

**Portfolio Prompt:** Save your presentation to your ePortfolio. Submissions to the ePortfolio will be part of your final Capstone course.

Course Resources

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[APA Style and Format](#)

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[ePortfolio](#)

## Unit 4 >> Information Security and Confidentiality

### Introduction

This unit introduces information security and confidentiality in health care, how it has transformed the level of and efficiency of health care, and concern it poses over how data is captured, stored, managed, and transmitted. Data security for the electronic health record poses potential and unintentional breaches of private/confidential health information by the health care provider. Health care providers need to protect how, when, and where they document or share protected information in the workplace and public venue, so as not to violate state and federal laws created to protect and maintain patient privacy and confidentiality. Abuses need to be reported to the compliance officer in the workplace immediately.

The Health Information Portability and Accountability Act (HIPAA) legally mandates health professionals to safeguard personal and clinical information privacy for individuals, families, and communities, regardless of the setting. HIPAA security addresses three rules: security, transactions, identifiers, and enforcement. The security rule regulates standards and procedures associated with the electronic storage, accessibility, and transmission of personal health information (PHI). The transaction rule addresses the use of code sets to ensure the protections of PHI records. Identifiers rule regulates administrative and financial transactions. The enforcement rule, derived from the ARRA/HITECH Act, addresses HIPAA violations and mandatory federal privacy and security breach reporting and disclosures. Understanding these rules provides the foundation for the development and application of security protocols and compliance (HIPAA Training, 2015). Provision 3, interpretive statement 3.1 of the Code of Ethics for Nurses with Interpretive Statements supports legislation, policies, and standards that protect identifiable health information (ANA Center for Ethics and Human Rights, 2015).

### Reference

ANA Center for Ethics and Human Rights. (2015). American Nurses Association position statement on privacy and confidentiality. Retrieved from <https://www.nursingworld.org/~4ad4a8/globalassets/docs/ana/position-statement-privacy-and-confidentiality.pdf>

HIPAA Training. (2015, February 8). Understanding the 5 main HIPAA rules [Blog post]. Retrieved from <https://www.hipaaexams.com/blog/understanding-5-main-hipaa-rules/>

### Learning Activities

#### u04s1 - Studies

## Cybersecurity

- Schwartz, S., Ross, A., Carmody, S., Chase, P., Coley, S. C., Connolly, J., . . . Zuk, M. (2018). [The evolving state of medical device cybersecurity](#). *Biomedical Instrumentation and Technology*, 52(2), 103–111.
  - The authors explain the cybersecurity risks associated with interconnectivity and interoperability.

## HIPAA

The following articles explore the role of nursing informatics and HIPAA compliance:

- Heath, S. (2017). [Do health data security concerns influence patient data sharing?](#) Retrieved from <https://patientengagementthit.com/news/do-health-data-security-concerns-influence-patient-data-sharing>
  - Heath explains why patients need better assurances of PHI and health data security before opting into a health information exchange or other patient data sharing model.
- HIPAA Training. (2015, February 8). [Understanding the 5 main HIPAA rules \[Blog post\]](#). Retrieved from <https://www.hipaaexams.com/blog/understanding-5-main-hipaa-rules/>

- This is an in-depth look at 5 HIPAA laws and regulations to ensure training and documentation protocols are error-free and are consistent with the current standards.

## HIPAA Violations

The following articles address HIPAA violations:

- [ALJ requires MD Anderson Cancer Center to pay \\$4.3M for HIPAA violations.](#) (2018). *The Journal of Medical Practice Management*, 34(2), 68.
- [Denying release of PHI can be a HIPAA violation.](#) (2016). *Healthcare Risk Management*, 38(3).
- [Don't forget that small HIPAA violations can cause big problems for hospitals.](#) (2016). *Hospital Access Management*, 35(5).
- Compliancy Group. (n.d.). [HIPAA fines listed by year](https://compliancy-group.com/hipaa-fines-directory-year/). Retrieved from <https://compliancy-group.com/hipaa-fines-directory-year/>
- [The risk of HIPAA violations and messaging apps.](#) (2016). *Healthcare Risk Management*, 38(2).
- Zabel, L. (2016). [Ten common HIPAA violations and preventative measures to keep your practice in compliance](https://www.beckershospitalreview.com/healthcare-information-technology/10-common-hipaa-violations-and-preventative-measures-to-keep-your-practice-in-compliance.html). Retrieved from <https://www.beckershospitalreview.com/healthcare-information-technology/10-common-hipaa-violations-and-preventative-measures-to-keep-your-practice-in-compliance.html>

## Electronic Health Records

The following articles discuss security concerns with patient health records:

- Hickey, K., Katapodi, M., Coleman, B., Reuter-Rice, K., & Starkweather, A. (2017). [Improving utilization of the family history in the electronic health record](#). *Journal of Nursing Scholarship*, 49(1), 80–86.
- Kruse, C. S., Smith, B., Vanderlinden, H., & Nealand, A. (2017). [Security techniques for the electronic health records](#). *Journal of Medical Systems*, 41(8), 1–9.
- McCartney, P. R. (2016). [The electronic health record and nursing practice](#). *The American Journal of Maternal/Child Nursing*, 41(2), 126.
- Sher, M. -L. Talley, P. C., Yang, C. -W., & Kuo, K. -M. (2017). [Compliance with electronic medical records privacy policy: An empirical investigation of hospital information technology staff](#). *INQUIRY*, 54, 1–12.
- Strudwick, G., Booth, R. G., Bjarnadottir, R. I., Collins, S., & Srivastava, R. (2017). [Exploring the role of the nurse manager in supporting point-of-care nurses' adoption of electronic health records: Protocol for a qualitative research study](#). *BMJ Open*, 7(10), 1–7.

### u04s1 - Learning Components

- Identify who is responsible for safeguarding health information.
- Explain the need to safeguard health information.
- Identify evidence-based approaches to protecting electronic health information.

### u04s2 - Assignment Preparation

In the Unit 5 Protected Health Information (PHI): Privacy, Security, and Confidentiality Best Practices assignment, you will prepare a staff update on social media use for distribution to inter-professional team members. To successfully complete this assignment, you may want to start working on the following preparatory activities:

- Review the assignment instructions and scoring guide in Unit 5.
- Search the Internet for infographics about protecting PHI. These infographics should serve as examples of how to succinctly summarize evidence-based information about protecting the security, privacy, and confidentiality of patient data. Some examples of infographics are provided for you in the Resources.
  - **Note:** In a staff update, you will not have all the images and graphics that an infographic might contain. Instead, focus on what makes the messaging in the infographics effective.
- Select from any of the following options, or a combination of options, the focus of your interprofessional staff update:
  - Social media best practices.
  - What not to do: Social media.
  - Social media risks to patient information.
  - Steps to take if a breach occurs.
- Conduct independent research on the topic you have selected in addition to reviewing the resources provided in the Unit 5 studies. This research will serve as the sources of the information contained in your interprofessional staff update. Consult the [BSN Program Library Research Guide](#) for help in identifying scholarly and authoritative sources.

### Course Resources

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[HIPAA Infographic: Protecting Patient Privacy. How Important Is It?](#)

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[Infographic: The Rise of Medical Data Sharing and Privacy Concerns](#)

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[Protecting Patient Information in the Age of Breaches.](#)

#### **u04d1 - HIPAA Violation**

**Note:** Remember to adhere to the time and day requirements for discussion postings and responses addressed in the School of Nursing and Health Sciences faculty expectations message.

Record a 3–5 minute video in which you share an actual or potential HIPAA violation you experienced or observed in your personal or professional life.

- How was it handled?
- What was your role?
- What impact did it have on your personal or professional life?

Post a written transcript with your video. A script will be of help to you in recording your video and provides a text alternative to the audio portion of your recording.

### **Response Guidelines**

Respond to two of your peers' videos in a written post. In each response, address the following:

- Explain how your experiences were similar to or different from those of your peer.
- Offer suggestions on how the actual or potential HIPAA violation could have been handled differently.

Course Resources

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[Undergraduate Discussion Participation Scoring Guide](#)

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[Using Kaltura](#)

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[DisabilityServices@Capella.edu](mailto:DisabilityServices@Capella.edu)

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#### **u04d1 - Learning Components**

- Identify who is responsible for safeguarding health information.
- Explain the need to safeguard health information.

#### **u04d2 - High-Quality Evidence**

In this discussion you will have the opportunity to locate high-quality evidence related to protected health information (PHI) that you can use in the Unit 5 assignment and help your course colleagues to do the same.

Use the Capella library to find at least one current source related to PHI and social media. Share a link to the article with your peers. Summarize the article and identify why your selection is relevant to the topic of your assignment.

### **Response Guidelines**

Familiarize yourself with the other topics posted by your peers, and choose one post to respond to. Using the Capella library, locate one other current, peer-reviewed resource that your peer should consider using in the Unit 5 assignment. Explain why you think the source is relevant.

Course Resources

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[Undergraduate Discussion Participation Scoring Guide](#)

- Identify evidence-based approaches to protecting electronic health information.

## Unit 5 >> Ethics in Nursing Informatics

### Introduction

This unit focuses on the impact of social media on privacy of protected health information. Social media forums such as social networking sites, blogs, Instagram, and online chat rooms are becoming popular in our society to communicate with friends and families instantaneously. In the workplace, social media may foster professional networking and is a quick and easy way to educate individuals, families, and communities on related health care concerns, provided they are managed effectively.

While health care organizations typically have policies governing the use of social media, texting, taking patient pictures, and surfing the Internet on employer computers, these policies often do not extend to the sharing of workplace issues on home computers, personal phones, and other handheld electronic devices. All health professionals, including nurses, have a moral and legal duty, under HIPAA, to protect and maintain confidentiality of all personal and health information such as the patient's name, health condition, or any information that could identify the patient in a work setting and in public places/forums. Disclosure without consent may result in serious personal and professional repercussions. Interprofessional team relationships may be threatened. The character of the health care organization may be impacted or subject to litigation and/or regulatory penalties. Health professionals need to be conscious of how they convey themselves in social media and report any violations regardless of the setting (ANA Center for Ethics and Human Rights, 2015; National Council of State Boards of Nursing, Inc., 2018).

### References

ANA Center for Ethics and Human Rights. (2015). American Nurses Association position statement on privacy and confidentiality. Retrieved from <https://www.nursingworld.org/~4ad4a8/globalassets/docs/ana/position-statement-privacy-and-confidentiality.pdf>

National Council of State Boards of Nursing, Inc. (2018). A nurse's guide to the use of social media. Retrieved from [https://www.ncsbn.org/NCSBN\\_SocialMedia.pdf](https://www.ncsbn.org/NCSBN_SocialMedia.pdf)

### Learning Activities

#### u05s1 - Studies

## The Nurse's Role in Patient Privacy

- ANA Center for Ethics and Human Rights. (2015). [American Nurses Association position statement on privacy and confidentiality \[PDF\]](https://www.nursingworld.org/~4ad4a8/globalassets/docs/ana/position-statement-privacy-and-confidentiality.pdf). Available from <https://www.nursingworld.org/~4ad4a8/globalassets/docs/ana/position-statement-privacy-and-confidentiality.pdf>
  - This ANA position statement examines the role of nurses in protecting privacy and confidentiality and provides recommendations to maintain compliance.

## Social Media and Privacy

- Balestra, M. L. (2018). [Social media missteps could put your nursing license at risk](#). *Alabama Nurse*, 45(3), 18.
  - This article explores how social media social media can create legal problems for nurses and reviews best practices for managing social media missteps.
- Green, J. (2017). [Nurses' online behaviour: Lessons for the nursing profession](#). *Contemporary Nurse*, 53(3), 355–367.
  - Green states that nurses need to carefully navigate the complexities between the personal and the professional on social media. This article includes a look at the legalities and etiquette of the online environment.
- Healthcare Compliance Pros. (n.d.). [Posting with caution: The do's and don'ts of social media and HIPAA compliance](#). Retrieved from <http://www.healthcarecompliancepros.com/blog/posting-with-caution-the-dos-and-donts-of-social-media-and-hipaa-compliance-2/>
- HIPAA Journal. (2018). [HIPAA social media rules](#). Retrieved from <https://www.hipaajournal.com/hipaa-social-media/>
  - This article reviews the HIPAA laws and standards that apply to social media use by health care organizations and their employees.
- National Council of State Boards of Nursing, Inc. (2018). [A nurse's guide to the use of social media \[PDF\]](#). Available from [https://www.ncsbn.org/NCSBN\\_SocialMedia.pdf](https://www.ncsbn.org/NCSBN_SocialMedia.pdf)
  - Inappropriate social media posts by nurses have resulted in licensure and legal repercussions. This guide was developed by NCSBN nurses and nursing students on how to use social media responsibly.
- Ryan, G. (2016). [International perspectives on social media guidance for nurses: A content analysis](#). *Nursing Management*, 23(8), 28–35.

- This report analyzes the content of national and international professional guidelines on social media and consolidates good practice examples for the nursing profession.
- Sandlin, J. K., & Hinmon, D. (2016). Beyond baby steps: Today's use of social networking sites and the nursing profession. *The Journal of Perinatal and Neonatal Nursing*, 30(3), 204–208.
  - This article suggests ways to use social media and stay consistent with professional standards.

## Capella Media

The Breach of Protected Health Information (PHI) activity provides an opportunity for you to test your knowledge of potential privacy, security, and confidentiality violations of protected health information.

u05s1 - Learning Components

- Identify who is responsible for safeguarding health information.
- Explain the need to safeguard health information.
- Identify evidence-based approaches to protecting electronic health information.
- Define social media.

### u05a1 - Protected Health Information (PHI): Privacy, Security, and Confidentiality Best Practices

## Introduction

Health professionals today are increasingly accountable for the use of protected health information (PHI). Various government and regulatory agencies promote and support privacy and security through a variety of activities. Examples include:

- Meaningful use of electronic health records (EHR).
- Provision of EHR incentive programs through Medicare and Medicaid.
- Enforcement of the Health Insurance Portability and Accountability Act (HIPAA) rules.
- Release of educational resources and tools to help providers and hospitals address privacy, security, and confidentiality risks in their practices.

Technological advances, such as the use of social media platforms and applications for patient progress tracking and communication, have provided more access to health information and improved communication between care providers and patients.

At the same time, advances such as these have resulted in more risk for protecting PHI. Nurses typically receive annual training on protecting patient information in their everyday practice. This training usually emphasizes privacy, security, and confidentiality best practices such as:

- Keeping passwords secure.
- Logging out of public computers.
- Sharing patient information only with those directly providing care or who have been granted permission to receive this information.

Today, one of the major risks associated with privacy and confidentiality of patient identity and data relates to social media. Many nurses and other health care providers place themselves at risk when they use social media or other electronic communication systems inappropriately. For example, a Texas nurse was recently terminated for posting patient vaccination information on Facebook. In another case, a New York nurse was terminated for posting an insensitive emergency department photo on her Instagram account.

Health care providers today must develop their skills in mitigating risks to their patients and themselves related to patient information. At the same time, they need to be able distinguish between effective and ineffective uses of social media in health care.

This assignment requires you to develop a staff update for an interprofessional team to encourage team members to protect the privacy, confidentiality, and security of patient information.

## Demonstration of Proficiency

By successfully completing this assignment, you will demonstrate your proficiency in the course competencies through the following scoring guide criteria:

- Competency 1: Describe nurses' and the interdisciplinary team's role in informatics with a focus on electronic health information and patient care technology to support decision making.
  - Describe the security, privacy, and confidentiality laws related to protecting sensitive electronic health information that govern the interdisciplinary team.
  - Explain the importance of interdisciplinary collaboration to safeguard sensitive electronic health information.
- Competency 2: Implement evidence-based strategies to effectively manage protected health information.

- Identify evidence-based approaches to mitigate risks to patients and health care staff related to sensitive electronic health information.
- Develop a professional, effective staff update that educates interprofessional team members about protecting the security, privacy, and confidentiality of patient data, particularly as it pertains to social media usage.
- Competency 5: Apply professional, scholarly communication to facilitate use of health information and patient care technologies.
  - Follow APA style and formatting guidelines for citations and references.
  - Create a clear, concise, well-organized, and professional staff update that is generally free from errors in grammar, punctuation, and spelling.

## Instructions

In this assignment, assume you are a nurse in an acute care, community, school, nursing home, or other health care setting. Before your shift begins, you scroll through Facebook and notice that a coworker has posted a photo of herself and a patient on Facebook. The post states, "I am so happy Jane is feeling better. She is just the best patient I've ever had, and I am excited that she is on the road to recovery."

You have recently completed your annual continuing education requirements at work and realize this is a breach of your organization's social media policy. Your organization requires employees to immediately report such breaches to the privacy officer to ensure the post is removed immediately and that the nurse responsible receives appropriate corrective action.

You follow appropriate organizational protocols and report the breach to the privacy officer. The privacy officer takes swift action to remove the post. Due to the severity of the breach, the organization terminates the nurse.

Based on this incident's severity, your organization has established a task force with two main goals:

- Educate staff on HIPAA and appropriate social media use in health care.
- Prevent confidentiality, security, and privacy breaches.

The task force has been charged with creating a series of interprofessional staff updates on the following topics:

- Social media best practices.
- What not to do: Social media.
- Social media risks to patient information.
- Steps to take if a breach occurs.

You are asked to select one of the topics, or a combination of several topics, and create the content for a staff update containing a **maximum** of two content pages. When distributed to interprofessional team members, the update will consist of one double-sided page.

The task force has asked team members assigned to the topics to include the following content in their updates in addition to content on their selected topic(s):

- What is protected health information (PHI)?
  - Be sure to include essential HIPAA information.
- What are privacy, security, and confidentiality?
  - Define and provide examples of privacy, security, and confidentiality concerns related to the use of the technology in health care.
  - Explain the importance of interdisciplinary collaboration to safeguard sensitive electronic health information.
- What evidence relating to social media usage and PHI do interprofessional team members need to be aware of? For example:
  - What are some instances of nurses being terminated for inappropriate social media usage in the United States?
  - What types of sanctions have health care organizations imposed on interdisciplinary team members who have violated social media policies?
  - What have been the financial penalties assessed against health care organizations for inappropriate social media usage?
  - What evidence-based strategies have health care organizations employed to prevent or reduce confidentiality, privacy, and security breaches, particularly related to social media usage?

## Notes

- Your staff update is limited to two double-spaced content pages. Be selective about the content you choose to include in your update so that you are able to meet the page length requirement. Include **need-to-know** information. Leave out **nice-to-know** information.
- Many times people do not read staff updates, do not read them carefully, or do not read them to the end. Ensure your staff update piques staff members' interest, highlights key points, and is easy to read. Avoid overcrowding the update with too much content.
- Also supply a separate reference page that includes 2–3 peer-reviewed and 1–2 non-peer-reviewed resources (for a total of 3–5 resources) to support the staff update content.

## Additional Requirements

- **Written communication:** Ensure the staff update is free from errors that detract from the overall message.
- **Submission length:** Maximum of two double-spaced content pages.
- **Font and font size:** Use Times New Roman, 12-point.

- **Citations and references:** Provide a separate reference page that includes 2–3 current, peer-reviewed and 1–2 current, non-peer-reviewed in-text citations and references (total of 3–5 resources) that support the staff update's content. Current means no older than 5 years.
- **APA format:** Be sure your citations and references adhere to APA format. Consult the APA Style and Format page for an APA refresher.

**Portfolio Prompt:** Save your presentation to your ePortfolio. Submissions to the ePortfolio will be part of your final Capstone course.

Course Resources

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[APA Style and Format](#)

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[ePortfolio](#)

## Unit 6 >> Telemedicine and Remote Care Systems

### Introduction

This unit focuses on remote care systems as value technologies that support clinical decision making and care coordination. Health care has made great strides since the 1950s, when telemedicine was introduced as telecommunication and information technology to diagnose and treat patients remotely and globally by transmitting digital imaging and conducting video consultations. Today, encrypted technology has expanded into telehealth, a wider variety of remote health care that focuses on both clinical and nonclinical services (such as training and continuing education).

Health care consumers have access to basic telemedicine devices like mobile phones, handheld devices, and home-use medical devices to diagnose, monitor, and enhance care outcomes. Health care providers use this technology and more to curtail costs and enhance patient satisfaction in the inpatient and community settings. Technology such as Skype, electronic medication administration (eMar), bar coding, wireless monitors, and clinical documentation software have improved timeliness and patient safety while decreasing duplication and errors. Complex remote care systems, and even the simplest technology such as pulse oximeters and automated blood pressure cuffs, have impacted patient care outcomes and have streamlined health care.

While transportation, childcare/eldercare challenges, and missing work are no longer issues for the consumer, and the workplace is enhanced for the provider, the technology may be costly and detrimental if not used correctly or maintained. HIPAA mandates keep all patient information secure. Health care providers need to work closely with information specialists and the consumer so that all become comfortable when using and maintaining this technology. Health care providers need to stress that this technology does not take the place of face-to-face interaction, especially as the need for it propagates toward telehealth and technology due to the graying of America with chronic conditions, educated consumers, health care worker shortages, and upwardly spiraling health care costs.

### Learning Activities

#### u06s1 - Studies

## Benefits of Health Information Technology

- Kvedar, J., Coye, M. J., & Everett, W. (2014). [Connected health: A review of technologies and strategies to improve patient care with telemedicine and telehealth](#). *Health Affairs*, 33(2), 194–199.
  - This article examines the concept of connected health as an overarching structure for telemedicine and telehealth.
- The Office of the National Coordinator for Health Information Technology. (n.d.). [What is health information technology fact sheet \[PDF\]](#). Retrieved from <https://www.healthit.gov/sites/default/files/pdf/health-information-technology-fact-sheet.pdf>
  - This article explores the advances and efficiencies of health information technology.
- Mather, C. A., Cummings, E. A., & Gale, F. (2018). [Preparing the nursing workforce for mobile learning at point of care](#). *Australian Nursing and Midwifery Journal*, 25(11), 44.
  - This article looks at how nurses can harness mobile technology for learning and professional development.
- [Navigating the laws and benefits of telemedicine](#). (2017). *Medical Staff Briefing*, 27(8), 1–7.
  - This article examines the regulations around telemedicine programs.
- Sprinkle, T. (2017). [Remote health care is the future of medicine](#). Retrieved from <https://www.asme.org/engineering-topics/articles/technology-and-society/remote-health-care-future-medicine>
  - This article reviews the types of technology we are likely to see and use in the future.

- Zhang, Y. -F., Gou, L., Tian, Y., Li, T. -C., Zhang, M., & Li, J. -S. (2016). Design and development of a sharable clinical decision support system based on a semantic web service framework. *Journal of Medical Systems*, 40(5), 1–14.
  - This study examines the design and development of a shareable clinical decision support system.
- Nelson, R. (2017). Telemedicine and telehealth: The potential to improve rural access to care. *American Journal of Nursing*, 117(6), 17–18.
  - Nelson asserts that barriers to care in rural communities can be overcome with telemedicine and telehealth services.

## Challenges of Health Information Technology

- Gray, G. (2017, Fall). Ensuring secure and safe infusion delivery in a connected world. *Biomedical Instrumentation and Technology*, 38–41.
  - Gray explains the issue of smart infusion pumps and cybersecurity as the devices become increasingly connected to the hospital network.
- Potter, A. J., Ward, M. M., Natafqi, N., Ullrich, F., Clinton MacKinney, A., Bell, A. L., & Mueller, K. J. (2016, Summer). Perceptions of the benefits of telemedicine in rural communities. *Perspectives in Health Information Management*, 1–13.
  - This article examines how telemedicine effects the hospital–community relationship.
- van Houwelingen, C. T. M., Moerman, A. H., Roelof, G. A. E., Helianthe, S. M. K., & ten Cate, O. (2016). Competencies required for nursing telehealth activities: A Delphi-study. *Nurse Education Today*, 39, 50–62.
  - The authors of this article present a set of competencies they believe are necessary to address the increasing demands in health information technology.
- Wilk, S., Kezadri-Hamiaz, M., Rosu, D., Kuziemy, C., Michalowski, W., Amyot, D., & Carrier, M. (2016). Using semantic components to represent dynamics of an interdisciplinary healthcare team in a multi-agent decision support system. *Journal of Medical Systems*, 40(2), 1–12.
  - The authors examine clinical workflows in interdisciplinary teams that are difficult to manage.
- Lindstrom, R. L. (2018). Despite barriers, telemedicine plays important role. *Ocular Surgery News*, 36(5), 4–5.
  - This article addresses some of the problems associated with telemedicine.
- Nickelsen, N. C. M., & Elkjaer, B. (2017). Shifting boundaries in telecare – the nurse-doctor relationship. *Journal of Workplace Learning*, 29(7), 588–600.
  - The authors of this study analyzed online video consultations conducted by health care professionals at four hospitals.

### u06s2 - Assignment Preparation

In the Unit 7 Annotated Bibliography on Technology in Nursing assignment, you will prepare an annotated bibliography. To successfully complete this assignment, you may want to start working on the following preparatory activities:

- Review the assignment instructions and scoring guide in Unit 7.
- Select a single direct or indirect patient care technology that is relevant to your current practice or that is of interest to you. **Direct** patient care technologies require an interaction, or direct contact, between the nurse and patient. Nurses use direct patient care technologies every day when delivering care to patients. Electronic thermometers or pulse oximeters are examples of direct patient care technologies. **Indirect** patient care technologies, on the other hand, are those employed on behalf of the patient. They do not require interaction, or direct contact, between the nurse and patient. A handheld device for patient documentation is an example of an indirect patient care technology. Examples of topics to consider for your annotated bibliography include:
  - Delivery robots.
  - Electronic medication administration with barcoding.
  - Electronic clinical documentation with clinical decision support.
  - Patient sensor devices/wireless communication solutions.
  - Real-time location systems.
  - Telehealth.
  - Workflow management systems.
- Conduct a library search using the various electronic databases available through the Capella University Library.
  - Consult the [BSN Program Library Research Guide](#) for help in identifying scholarly and authoritative sources.
- Scan the search results related to your chosen technology.
- Select **four** peer-reviewed publications focused on your selected topic that are the most interesting to you.
- Evaluate the impact of patient care technologies on desired outcomes.
  - Analyze current evidence on the impact of a selected patient care technology on patient safety, quality of care, and the interdisciplinary team.
  - Integrate current evidence about the impact of a selected patient care technology on patient safety, quality of care, and the interdisciplinary team into a recommendation.

**Notes:**

- Publications may be research studies or review articles from a professional source. Newspapers, magazines, and blogs are not considered professional sources.
- Your selections need to be current—within the last five years.

Refer to the helpful links below as you prepare your assignment.

- [APA Style and Format](#).
- [Annotated Bibliography](#).

u06s2 - Learning Components

- Define nursing informatics.

#### u06d1 - Remote Care Systems

**Note:** Remember to adhere to the time and day requirements for discussion postings and responses addressed in the School of Nursing and Health Sciences faculty expectations message.

Develop 1–2 PowerPoint slides on your experience with telemedicine or a remote care system. Share an experience where you had challenges in using the technology. Address the following:

- Why was it a challenge for you?
- What did you do to overcome the challenge?
- How did it impact your work flow?
- How did it impact patient care and/or satisfaction when you started using the tool?
- In what way did patient care and satisfaction change after you became comfortable with the tool?
- How does the remote care system support clinical decision making and care coordination?

Provide a link to at least one current source to support the use of the remote care system in your practice.

## Response Guidelines

Review the PowerPoint slides, and respond to two peers. How does your experience with remote care systems compare to your peers' experiences? Offer insight into how your peers could have overcome their challenges to improve patient care outcomes and workflow.

Course Resources

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Undergraduate Discussion Participation Scoring Guide

u06d1 - Learning Components

- Identify who is responsible for safeguarding health information.
- Explain the need to safeguard health information.
- Identify evidence-based approaches to protecting electronic health information.

#### u06d2 - Annotated Bibliography Tip Sheet

**Note:** Remember to adhere to the time and day requirements for discussion postings and responses addressed in the School of Nursing and Health Sciences faculty expectations message.

In this discussion, you are preparing for your Unit 7 assignment, where you will develop an annotative bibliography. For this activity, you will be placed in small groups by your instructor. In your group, discuss what elements should be considered when you are researching and writing an annotated bibliography. Why are these essential?

After concluding your small group discussion, post a personalized tip sheet that you can use to help you prepare for your annotative bibliography.

## Response Guidelines

Read and respond to the posts of two of your peers. Try to comment on those that have few or no responses thus far. In each response, refer to the SoNHS faculty expectations message as you address the following:

- Read and offer suggestions on the posted tip sheet.
- Explain the rationale behind your suggestions.

Course Resources

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Undergraduate Discussion Participation Scoring Guide

## Unit 7 >> Workflow and Informatics Tools

### Introduction

This unit introduces workflow and informatics tools as a way to collect and analyze data patterns predicting health care trends, compliance issues, and performance problems. Interdisciplinary health care team documentation is compiled as databases in organization informational systems and translated into logs. Trends and patterns are analyzed in the effort to enhance policy development, benchmark clinical practice, and streamline the workplace. Workflow and data mining enhance organizational goals and patient care outcomes. Health care organizations may engage in a root cause analysis, in accordance with the Patient Safety and Quality Improvement Act of 2005 mandate, to investigate national databases of medical oversights to develop best practices to prevent sentinel events.

### Learning Activities

#### u07s1 - Studies

### Patient Portal Considerations - Health Literacy and Accessibility

- Elkind, E. C., & Higgins, K. M. Patient portal considerations. *Nursing Management*, 49(3), 9–11.
  - This article explores the need for a collaborative team approach to helping patients take a more active role in their health care by utilizing the patient portal.
- Lyles, C. R., Fruchterman, J., Youdelman, M., & Schillinger, D. (2017). Legal, practical, and ethical considerations for making online patient portals accessible for all. *American Journal of Public Health*, 107(10), 1608–1611.
  - This article explains the need to improve the accessibility of portals for more vulnerable patient populations, especially patients with limited health literacy or limited English proficiency, and individuals with disabilities.

### Sustained Utilization of Patient Portals

- Agency for Healthcare Research and Quality. (n.d.). Health information technology integration. Retrieved from <https://www.ahrq.gov/ncepcr/tools/health-it/index.html>
- Barnett, J. (2017). Beyond meaningful use: The value of patient portals. Retrieved from <https://www.healthitoutcomes.com/doc/beyond-meaningful-use-the-value-of-patient-portals-0001>
  - Barnett discusses the value of patient portals across clinical and financial operations.
- Irizarry, T., DeVito Dabbs, A., & Curran, C. R. (2015). Patient portals and patient engagement: A state of the science review. *Journal of Medical Internet Research*, 17(6). Retrieved from <https://www.jmir.org/2015/6/e148/>
  - These authors reviewed studies on ways patients using patient portal functionality can be supported in making knowledgeable personal health care decisions.

### Workflow and Data Mining

- Baek, H., Cho, M., Kim, S., Hwang, H., Song, M., & Yoo, S. (2018). Analysis of length of hospital stay using electronic health records: A statistical and data mining approach. *PLoS ONE*, 13(4), 1–16.
  - This study explored factors associated with length of hospital stay based on electronic health records.
- USF Health. (n.d.). Data mining in healthcare. Retrieved from <https://www.usfhealthonline.com/resources/healthcare/data-mining-in-healthcare/>

- This article explains how health care providers are using electronic health records to improve the efficiency and quality of their organizations using data mining.
- de Leoni, M., van der Aalst, W. M. P., & Dees, M. (2016). A general process mining framework for correlating, predicting and clustering dynamic behavior based on event logs. *Information Systems*, 56, 235–257.
  - This study examines different process mining research techniques and proposes a new framework.
- Meenan, C., Erickson, B., Knight, N., Fossett, J., Olsen, E., Mohod, P., . . . Langer, S. G. Workflow lexicons in healthcare: Validation of the SWIM lexicon. *Journal of Digital Imaging*, 30(3), 255–266.
  - The authors of this study measured workflow steps in a real-world clinical setting to determine how accurately departmental information systems captured patient flow.

## Capella Media

The Annotative Bibliography Formative Assessment activity provides an opportunity to critique annotated bibliographies for accuracy.

u07s1 - Learning Components

- Explain how patient care technology can impact patient safety.
- Identify patient care technologies.
- Explain how patient care technology can impact quality of care.
- Identify why a selected technology would improve patient care.

**u07a1 - Annotated Bibliography on Technology in Nursing**

## Introduction

Rapid changes in information technology go hand-in-hand with progress in quality health care delivery, nursing practice, and interdisciplinary team collaboration. The following are only a few examples of how the health care field uses technology to provide care to patients across multiple settings:

- Patient monitoring devices.
- Robotics.
- Electronic medical records.
- Data management resources.
- Ready access to current science.

Technology is essential to the advancement of the nursing profession, maintaining quality care outcomes, patient safety, and research.

This assignment will give you the opportunity to deepen your knowledge of how technology can enhance quality and safety standards in nursing. You will prepare an annotated bibliography on technology in nursing. A well-prepared annotated bibliography is a comprehensive commentary on the content of scholarly publications and other sources of evidence about a selected nursing-related technology. A bibliography of this type provides a vehicle for workplace discussion to address gaps in nursing practice and to improve patient care outcomes. As nurses become more accountable in their practice, they are being called upon to expand their role of caregiver and advocate to include fostering research and scholarship to advance nursing practice. An annotated bibliography stimulates innovative thinking to find solutions and approaches to effectively and efficiently address these issues.

## Demonstration of Proficiency

By successfully completing this assignment, you will demonstrate your proficiency in the course competencies through the following scoring guide criteria:

- Competency 3: Evaluate the impact of patient care technologies on desired outcomes.
  - Analyze current evidence on the impact of a selected patient care technology on patient safety, quality of care, and the interdisciplinary team.
  - Integrate current evidence about the impact of a selected patient care technology on patient safety, quality of care, and the interdisciplinary team into a recommendation.
- Competency 4: Recommend the use of a technology to enhance quality and safety standards for patients.
  - Describe organizational factors influencing the selection of a technology in the health care setting.
  - Justify the implementation and use of a selected technology in a health care setting.
- Competency 5: Apply professional, scholarly communication to facilitate use of health information and patient care technologies.
  - Create a clear, well-organized, and professional annotated bibliography that is generally free from errors in grammar, punctuation, and spelling.
  - Follow APA style and formatting guidelines for all bibliographic entries.

## Annotated Bibliography

Prepare a 4–6 page annotated bibliography in which you identify and describe at least **four** peer-reviewed publications that promote the use of a selected direct or indirect patient care technology that is relevant to your current practice or that is of interest to you to enhance quality and safety standards in nursing. Be sure that your annotated bibliography includes all of the following elements:

- **Introduction to the Selected Technology Topic**
  - What is your rationale for selecting this particular technology topic? Why are you interested in this?
  - What research process did you employ?
    - What databases did you use?
    - What search terms did you use?
    - **Note:** In this section of your bibliography, you may use first person since you are asked to describe your rationale for selecting the topic and the research strategies you employed. Use third person in the rest of the bibliography, however.
- **Annotation Elements**
  - For each resource, include the full reference followed by the annotation.
  - Explain the focus of the research or review article you chose.
  - Provide a summary overview of the publication.
    - According to this source, what is the impact of this technology on patient safety and quality of care?
    - According to this source, what is the relevance of this technology to nursing practice and the work of the interdisciplinary health care team?
    - Why did you select this publication to write about out of the many possible options? In other words, make the case as to why this resource is important for health care practitioners to read.
- **Conclusion/Recommendation**
  - How would you tie together the key learnings from each of the four publications you examined?
  - What organizational factors influence the selection of a technology in a health care setting? Consider such factors as organizational policies, resources, culture/social norms, commitment, training programs, and/or employee empowerment.
  - How would you justify the implementation and use of the technology in a health care setting? Consider the impact of the technology on the health care organization, patient care/satisfaction, and interdisciplinary team productivity, satisfaction, and retention.

Refer to the helpful links in Resources as you prepare your assignment.

**Example assignment:** You may use the assignment example, linked in the Resources, to give you an idea of what a Proficient or higher rating on the scoring guide would look like.

## Additional Requirements

- **Written communication:** Ensure written communication is free of errors that detract from the overall message.
- **Length:** 4–6-typed, double-spaced pages.
- **Number of resources:** Cite a **minimum** of four peer-reviewed resources.
- **Font and font size:** Use Times New Roman, 12 point.
- **APA:** Follow APA style and formatting guidelines for all bibliographic entries.

**Portfolio Prompt:** Save your presentation to your ePortfolio. Submissions to the ePortfolio will be part of your final Capstone course.

Course Resources

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[Annotated Bibliography](#)

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[APA Style and Format](#)

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[ePortfolio](#)

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Unit 7 Assignment Example [PDF]

## Unit 8 >> Informatics and Community/Public Health

### Introduction

This unit explore the role of informatics in community/public health and the need for educating the community. Americans are becoming more active in their health care and demanding information about health promotion, disease prevention, and health maintenance. Health literacy for the health care consumer is a priority (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, n.d.).

Informed people have better quality care outcomes because they can make appropriate health care decisions. Basic health information and information about available services on the Web, however, may not be accurate. For instance, Wikipedia, a popular resource, may not provide reliable and valid information because it can be modified by anyone.

Health care providers are accountable for educating health care consumers. Traditional educational materials such as printed materials are quickly being replaced with wireless communication, e-brochures, podcasts, blogs, support groups, and patient portals because educational material can be stored electronically, tailored for the health care consumer, and easily accessed, and they can keep pace with rapidly changing information. Interactive technologies connect generations and health care providers and can be used in a variety of settings such as inpatient, schools, community health fairs, and clinics. It is essential that health professionals ensure that the health care consumer has the desire, capability, and access to technology before they educate them about the appropriateness of a source or app. This technology is not right for everyone. Informational prescriptions need to be provided that direct the consumer to appropriate Web-based information.

The health professional is also empowered in their decision making because current evidence-based information is available at their fingertips. Interactive programs and apps make it easier to educate the consumer. Health care providers are able to determine the appropriateness of electronic resources—whether they are user friendly and meet the skills and/or educational needs of the consumer. Health care professionals, like consumers, need to be educated on identifying appropriate evidence-based Web information.

#### Reference

U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. (n.d.). Healthy People 2020. Retrieved from <https://www.healthypeople.gov/>

## Learning Activities

### u08s1 - Studies

## Informatics and Public Health

- Aziz, H. A. (2017). A review of the role of public health informatics in healthcare. *Journal of Taibah University Medical Sciences*, 12(1), 78–81.
  - This article provides an overview of the field of public health informatics.
- Gamache, R., Kharrazi, H., & Weiner, J. P. (2018). Public and population health informatics: The bridging of big data to benefit communities [PDF]. *IMIA Yearbook of Medical Informatics*, 199–206. Available from <https://www.thieme-connect.com/products/ejournals/pdf/10.1055/s-0038-1667081.pdf>
  - The authors of this study explore the impact of health care providers and public health agencies using informatics to create and share data.
- Gordon, W. J., Fairhall, A., & Landman, A. (2017). Threats to information security — public health implications. *The New England Journal of Medicine*, 377(8), 707–709.
  - This article reviews recent ransomware attacks and their impact on the delivery of health care that is increasingly dependent on information systems.
- Millery, M., Aguirre, A. N., & Kukafka, R. (2017). Does a community-engaged health informatics platform facilitate resource connectivity? An evaluation framework. *AMIA Annual Symposium Proceedings*, 1292–1301.
  - This study presents a health informatics platform designed to improve connectivity among community health providers.
- Hague, S. N., Ebron, S., Bailey, R., & Blumenthal, B. (2018, Fall). Using health information exchange to support community-based innovations. *Perspectives in Health Information Management*, 1–11.
  - The authors review the use of informatics to support community-based health initiatives.
- Wang, Y. C., & DeSalvo, K. (2018). Timely, granular, and actionable: Informatics in the Public Health 3.0 era. *American Journal of Public Health*, 108(7), 930–934.
  - The authors of this article argue that informatics is essential for the protection of our health today.
- Wyber, R., Vaillancourt, S., Perry, W., Mannava, P., Folaranmi, T., & Celi, L. A. (2015). Big data in global health: Improving health in low- and middle-income countries. *Bulletin of the World Health Organization*, 93, 203–208. Retrieved from <https://www.who.int/bulletin/volumes/93/3/14-139022/en/>
  - This articles argues that the collection and analysis of data of good quality are critical to improvements in health care delivery.

## Technology and Nursing Education

- Gambo, J. M., Bahreman, N. T., Watties-Daniels, D., Neal, M., & Swoboda, S. M. (2017). [Can mobile technology enhance learning and change educational practice?](#) *CIN: Computers, Informatics, Nursing*, 35(8), 375–380.
  - This article discusses the differences in generational learning style and how technology can be used at the bedside for a novice nurse.
- Darvish, A., Bahramnezhad, F., Keyhanian, S., & Navidhamidi, M. (2014). [The role of nursing informatics on promoting quality of health care and the need for appropriate education.](#) *Global Journal of Health Science*, 6(6), 11–18.
  - This article examines the role of nurses and discusses the importance of information technology in educational programs to promote quality care.

### u08s1 - Learning Components

- Explain how patient care technology can impact patient safety.
- Explain the influence of the organization of technology selection.
- Identify patient care technologies.
- Explain how patient care technology can impact quality of care.

### u08s2 - Assignment Preparation

In the Unit 9 Informatics and Nursing-Sensitive Quality Indicators assignment, you will develop an 8–10 minute audio (with optional video) training module to orient new nurses to a single nursing-sensitive quality indicator critical to the organization. To successfully complete this assignment, you may want to start working on the following preparatory activities:

- Review the assignment instruction and scoring guide in Unit 9.
- Select a single nursing-sensitive quality indicator that you see as important to a selected type of health care system.
- Conduct independent research on the most current information about the selected nursing-sensitive quality indicator.
- Interview a professional colleague or contact who is familiar with quality monitoring and how technology can help to collect and report quality indicator data. You do not need to submit the transcript of your conversation, but do integrate what you learned from the interview into the audio tutorial. Consider these questions for your interview:
  - What is your experience with collecting data and entering it into a database?
  - What challenges have you experienced?
  - How does your organization share with the nursing staff and other members of the health care system the quality improvement monitoring results?
  - What role do bedside nurses and other frontline staff have in entering the data? For example, do staff members enter the information into an electronic medical record for extraction? Or do they enter it into another system? How effective is this process?
- View the [Informatics and Nursing-Sensitive Quality Indicators Video Exemplar](#). This media piece provides an example to help you successfully complete this assignment.

## Recording Your Presentation

To prepare to record the audio for your presentation, complete the following:

- Set up and test your microphone or headset using the installation instructions provided by the manufacturer. You only need to use the headset if your audio is not clear and high quality when captured by the microphone.
- Practice using the equipment to ensure the audio quality is sufficient.
- Consult [Using Kaltura](#) if you plan to use this Capella-supported tool to record your presentation.
- View [Creating a Presentation: A Guide to Writing and Speaking](#). This video addresses the primary areas involved in creating effective audiovisual presentations. You can return to this resource throughout the process of creating your presentation to view the tutorial appropriate for you at each stage.

### Notes:

- You may use other tools to record your tutorial. You will, however, need to consult [Using Kaltura](#) for instructions on how to upload your audio-recorded tutorial into the courseroom, or you must provide a working link your instructor can easily access.
- You may also choose to create a video of your tutorial, but this is not required.
- If you require the use of assistive technology or alternative communication methods to participate in this activity, please contact [DisabilityServices@Capella.edu](mailto:DisabilityServices@Capella.edu) to request accommodations.

## u08d1 - NDQI to Improve Patient Care Standards

**Note:** Remember to adhere to the time and day requirements for discussion postings and responses addressed in the School of Nursing and Health Sciences faculty expectations message.

To prepare for your Unit 9 assignment, in your assigned small group, discuss instances where the National Database of Nursing Quality Indicators (NDNQI ) would improve patient care standards and how the nurse could incorporate it into care delivery.

Post the link to an evidence-based peer-reviewed article on the topic you have chosen for the Unit 9 assignment. Discuss why you found it useful in developing your assignment.

## Response Guidelines

Read at least one article posted by a peer, and state how it would be useful to you as a professional nurse.

Course Resources

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Undergraduate Discussion Participation Scoring Guide

### u08d1 - Learning Components

- Explain how patient care technology can impact patient safety.
- Explain the influence of the organization of technology selection.
- Explain how patient care technology can impact quality of care.

## u08d2 - Audio Tutorial Key Points

In preparation of your Unit 9 assignment, post a 3–5 minute video on key points to remember about your target audience when developing an audio training tutorial, for example age, health literacy, et cetera. Explain why it is important to take an audience-centered approach in a presentation.

Post a written transcript with your video. A script will be of help to you in recording your video and provides colleagues with a text alternative to the audio portion of your recording.

## Response Guidelines

Respond to two of your peers' videos in a written post. Offer suggestions that they could consider as they complete their Unit 9 assignment.

Course Resources

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Undergraduate Discussion Participation Scoring Guide

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[Using Kaltura](#)

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[DisabilityServices@Capella.edu](mailto:DisabilityServices@Capella.edu)

## Unit 9 >> Informatics and Nursing Sensitive Quality Indicators

### Introduction

This unit introduces the National Database of Nursing Quality Indicators (NDNQI ), established by the American Nurses Association as a standardized approach to evaluate nursing performance in relation to patient outcomes. It provides a database and quality measurement program to track clinical performance and to compare nursing quality measures against other hospital data at the national, regional, and state levels.

Nursing-sensitive quality indicators help establish evidence-based practice guidelines in the inpatient and outpatient settings to enhance quality care outcomes and initiate quality improvement educational programs, outreach, and protocol development. Health care facilities utilize this data to establish organizational goals and best practice through monitoring progress in patient care and workplace outcomes. These quality indicators reflect the structure (staff supply/skill competency), process (patient assessment and nursing intervention methods/job satisfaction), and outcome of patient care related to the quantity or quality of nursing care.

The implementation of quality indicators requires effective communication strategies and the removal of associated barriers. Donabedian's theory of quality health care focused on the links between quality outcomes and the structures and processes of care (Grove, Gray, Jay, Jay, & Burns, 2015).

#### Reference

Grove, S. K., Gray, J. R., Jay, G. W., Jay, H. M., & Burns, N. (2015). *Understanding nursing research: Building an evidence-based practice* (6th ed.). St. Louis, MO: Elsevier.

### Learning Activities

#### u09s1 - Studies

## Nursing Quality Indicators Databases

- National Database of Nursing Quality Indicators. (n.d.). [NDNQi nursing-sensitive indicators](https://nursingandndnqi.weebly.com/ndnqi-indicators.html). Retrieved from <https://nursingandndnqi.weebly.com/ndnqi-indicators.html>
  - Please note that the acronym for the Joint Commission is now TJC.
- U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality. (n.d.). [Quality improvement and monitoring at your fingertips](https://www.qualityindicators.ahrq.gov). Retrieved from <https://www.qualityindicators.ahrq.gov>

## ANA Documentation Standards

- Connolly, D., & Wright, F. (2017). [The nursing quality indicator framework tool](#). *International Journal of Health Care Quality Assurance*, 30(7), 603–616.
  - This paper presents a nursing quality indicator (NQI) framework using multiple approaches that provides a comprehensive reporting mechanism for nursing care.
- Lavin, M. A., Harper, E., & Barr, N (2015). [Health information technology, patient safety, and professional nursing care documentation in acute care settings](#). *Online Journal of Issues in Nursing*, 20(2), 6.
  - This study attempts to better understand staff nurses' perspectives, reflections, and recommendations for improving patient record documentation and documentation technology, and encourages nurses to develop informatics skills.

## Quality Indicator Framework

- MacDonald, V., Maher, A. B., Mainz, H., Meehan, A. J., Brent, L., Hommel, A., . . . Sheehan, K. J. (2018). [Developing and testing an international audit of nursing quality indicators for older adults with fragility hip fracture](#). *Orthopaedic Nursing*, 37(2), 115–121.
  - This article examines an audit process created to identify the extent to which accepted nursing quality care indicators for older adults are reflected in acute care policies and protocols.
- Ju, Q. -Y., Huang, L. -H., Zhao, X. -H., Xing, M. -Y., Shao, L. -W., Zhang, M. -Y., & Shao, R. -Y. (2018). [Development of evidence-based nursing-sensitive quality indicators for emergency nursing: A Delphi study](#). *Journal of Clinical Nursing*, 27(15–16), 3008–3019.
  - This article reports on the efforts to establish evidence-based nursing-sensitive quality indicators for emergency nursing in China.
- Rahn, D. J. (2016). [Transformational teamwork: Exploring the impact of nursing teamwork on nurse-sensitive quality indicators](#). *Journal of Nursing Care Quality*, 31(3), 262–268.
  - This study investigated the relationship between nursing teamwork and NDNQi outcomes, including pressure ulcers, falls, and catheter-associated urinary tract infections.
- van Dishoeck, A. -M., Looman, C. W. N., Steyerberg, E. W., Halfens, R. J. G., & Mackenbach, J. P. (2016). [Performance indicators: the association between the quality of preventive care and the prevalence of hospital-acquired skin lesions in adult hospital patients](#). *Journal of Advanced Nursing*, 72(11), 2818–2830.
  - This study explores the relationship between the occurrence of pressure ulcers or incontinence dermatitis and the quality of preventative care.

## Capella Media

The [Donabedian Quality Assessment Framework](#) activity provides an opportunity to consider how the triad of structure (such as the hospital, clinic, provider qualifications/organizational characteristics) and process (such as the delivery, coordination, education, protocols, practice style, or standard of care) may be modified to achieve quality outcomes.

### u09s1 - Learning Components

- Explain how patient care technologies enhance patient safety, satisfaction, and outcomes.
- Explain how quality indicator data influences patient care.
- Define nursing-sensitive quality indicators.
- Explain how nursing-sensitive quality indicators impact organizational performance.
- Relate nursing-sensitive quality indicators to evidence-based practice guidelines.

### u09a1 - Informatics and Nursing-Sensitive Quality Indicators

## Introduction

The American Nursing Association (ANA) established the National Database of Nursing Quality Indicators (NDNQI) in 1998 to track and report on quality indicators heavily influenced by nursing action.

NDNQI was established as a standardized approach to evaluate nursing performance in relation to patient outcomes. It provides a database and quality measurement program to track clinical performance and to compare nursing quality measures against other hospital data at the national, regional, and state levels. Nursing-sensitive quality indicators help establish evidence-based practice guidelines in the inpatient and outpatient settings to enhance quality care outcomes and initiate quality improvement educational programs, outreach, and protocol development.

The quality indicators the NDNQI monitors are organized into three categories: structure, process, and outcome. Theorist Avedis Donabedian first identified these categories. Donabedian's theory of quality health care focused on the links between quality outcomes and the structures and processes of care (Grove, Gray, Jay, Jay, & Burns, 2015).

Nurses need to be knowledgeable about the indicators their workplaces monitor. Some nurses deliver direct patient care that leads to a monitored outcome. Other nurses may be involved in data collection and analysis. In addition, monitoring organizations, including managed care entities, exist to gather data from individual organizations to analyze overall industry quality. All of these roles are important to advance quality and safety outcomes.

The focus of this assignment is on how informatics support monitoring of nursing-sensitive quality indicator data. You will develop an 8–10 minute audio training module to orient new nurses in a workplace to a single nursing-sensitive quality indicator critical to the organization. Your recording will address how data are collected and disseminated across the organization, along with the nurses' role in supporting accurate reporting and high-quality results.

### Reference

Grove, S. K., Gray, J. R., Jay, G.W., Jay, H. M., & Burns, N. (2015). *Understanding nursing research: Building an evidence-based practice* (6th ed.). St. Louis, MO: Elsevier.

## Demonstration of Proficiency

By successfully completing this assignment, you will demonstrate your proficiency in the course competencies through the following scoring guide criteria:

- Competency 1: Describe nurses' and the interdisciplinary team's role in informatics with a focus on electronic health information and patient care technology to support decision making.
  - Describe the interdisciplinary team's role in collecting and reporting quality indicator data to enhance patient safety, patient care outcomes, and organizational performance reports.
- Competency 3: Evaluate the impact of patient care technologies on desired outcomes.
  - Explain how a health care organization uses nursing-sensitive quality indicators to enhance patient safety, patient care outcomes, and organizational performance reports.
- Competency 4: Recommend the use of a technology to enhance quality and safety standards for patients.
  - Justify how a nursing-sensitive quality indicator establishes evidence-based practice guidelines for nurses to follow when using patient care technologies to enhance patient safety, satisfaction, and outcomes.
- Competency 5: Apply professional, scholarly communication to facilitate use of health information and patient care technologies.

- Deliver a professional and effective audio tutorial on a selected quality indicator that engages new nurses and motivates them to accurately report quality data in a timely fashion.
- Follow APA style and formatting guidelines for citations and references.

## Instructions

For this assignment, imagine you are a member of a Quality Improvement Council at any type of health care system, whether acute, ambulatory, home health, managed care, et cetera. Your Council has identified that newly hired nurses would benefit from comprehensive training on the importance of nursing-sensitive quality indicators. The Council would like the training to address how this information is collected and disseminated across the organization. It would also like the training to describe the role nurses have in accurate reporting and high-quality results.

The Council indicates a recording is preferable to a written fact sheet due to the popularity of audio blogs. In this way, new hires can listen to the tutorial on their own time using their phone or other device.

As a result of this need, you offer to create an audio tutorial orienting new hires to these topics. You know that you will need a script to guide your audio recording. You also plan to incorporate into your script the insights you learned from conducting an interview with an authority on quality monitoring and the use of technology to collect and report quality indicator data.

You determine that you will cover the following topics in your audio tutorial script:

### Introduction: Nursing-Sensitive Quality Indicator

- What is the NDNQI ?
- What are nursing-sensitive quality indicators?
- Which particular quality indicator did you select to address in your tutorial?
- Why is this quality indicator important to monitor?
  - Be sure to address the impact of this indicator on quality of care and patient safety.
- Why do new nurses need to be familiar with this particular quality indicator when providing patient care?

### Collection and Distribution of Quality Indicator Data

- According to your interview and other resources, how does your organization collect data on this quality indicator?
- How does the organization disseminate aggregate data?
- What role do nurses play in supporting accurate reporting and high-quality results?
  - As an example, consider the importance of accurately entering data regarding nursing interventions.

After completing your script, practice delivering your tutorial several times before recording it.

Refer to the helpful links in the Resources as you prepare your assignment. The Informatics and Nursing Sensitive Quality Indicators Video Exemplar provides an example to help you successfully complete this assignment.

## Additional Requirements

- **Audio communication:** Deliver a professional, effective audio tutorial on a selected quality indicator that engages new nurses and motivates them to accurately report quality data in a timely fashion.
- **Length:** 8–10 minute audio recording. Use Kaltura to upload your recording to the courseroom, or provide a working link your instructor can access.
- **References:** Cite a minimum of three scholarly and/or authoritative sources.
- **APA:** Submit along with the recording a separate Reference page that follows APA style and formatting guidelines. For an APA refresher, consult the APA Style and Format page.

**Portfolio Prompt:** Save your presentation to your ePortfolio. Submissions to the ePortfolio will be part of your final Capstone course.

Course Resources

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[Creating a Presentation: A Guide to Writing and Speaking](#) | Transcript

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[APA Style and Format](#)

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[Using Kaltura](#)

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[DisabilityServices@Capella.edu](mailto:DisabilityServices@Capella.edu)

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[Informatics and Nursing-Sensitive Quality Indicators Video Exemplar](#) | Transcript

## Unit 10 >> Future of Informatics

### Introduction

This unit will focus on the future of health care informatics. Technology is becoming smaller, more user friendly, and affordable. The future is bright. Voice-activated communicators enhance communication and documentation among health professionals, whereby increasing clinical productivity. Games and simulations offer a safe way for health professionals to practice skills such as nursing interventions based on case scenarios, medication administration, and health assessment. Wearable devices such as smart watches track activity and alert consumers and professionals to health issues. Health consumers are now able to avoid prolonged hospitalization and readmission because of enhanced care delivery and health information. Exoskeletons and 3D printers offer hope for immobile people. Smart dust and biochips speed detection of health issues. Informatics offer hope to the advancement of health care and improvement of the quality of life.

### Learning Activities

#### u10s1 - Studies

## What Does the Future Hold?

- Corchia, L., Monti, G., De Benedetto, E., & Tarricone, L. (2017). Wearable antennas for remote health care monitoring systems. *International Journal of Antennas and Propagation*, 2017, 1–11.
  - This article explores the use of wearable antennas to monitor the health and well-being of elderly patients.
- Ghersi, I., Mariño, M., & Miralles, M. T. (2018). Smart medical beds in patient-care environments of the twenty-first century: A state-of-art survey. *BMC Medical Informatics and Decision Making*, 18, 1–12.
  - This article examines electric medical beds or "smart beds" as part of an increasingly comprehensive patient-care environment.
- Lechner, N. H. (2018). Developing a compliant cybersecurity process for medical devices. *Central European Conference on Information and Intelligent Systems*, 197–204.
  - This paper proposes a cybersecurity methodology for device manufacturers as an integral part of their quality management.
- Martin, K. (2017, January 24). The future of health informatics in 2017 – and beyond. *Electronic Health Reporter*. Retrieved from <https://electronichealthreporter.com/future-health-informatics-2017-beyond/>
  - Martin discusses how dramatically informatics is changing patient care delivery.
- National Institute of Diabetes and Digestive and Kidney Diseases. (n.d.). The future of health information technology. Retrieved from <https://www.niddk.nih.gov/health-information/communication-programs/ndep/health-professionals/practice-transformation-physicians-health-care-teams/information-systems/future-health-information-technology>
  - This site explores the promising future of using information systems to enhance health care delivery for people with diabetes.
- Nyarku, M., Mazaheri, M., Jayaratne, R., Dunbabin, M., Rahman, M., Uhde, E., & Morawska, L. (2018). Mobile phones as monitors of personal exposure to air pollution: Is this the future? *PLoS ONE*, 13(2), 1–18.
  - This article explores the potential of using mobile phones as a personal health monitoring device.
- Pearce, L. (2018). What does the future of e-nursing look like? *Nursing Standard*, 32(30), 22–24.
- Stodart, K. (Ed.). (2017). Understanding the skills our future nurses need is key. *Kai Tiaki: Nursing New Zealand*, 23(9), 26–27.

## Robotics

- Archibald, M. M., & Barnard, A. (2018). Futurism in nursing: Technology, robotics and the fundamentals of care. *Journal of Clinical Nursing*, 27(11–12), 2473–2480.
  - This article explores the concept of futurism and explains how nurses need to embrace technology to maintain relevance.
- Burton, A. (2018). Expecting exoskeletons for more than spinal cord injury. *The Lancet Neurology*, 17(4), 302–303.
  - Burton explores the potential use of exoskeletons to treat multiple sclerosis, cerebral palsy, stroke damage, movement disorders, and other neurological problems.
- Mettler, T., Sprenger, M., & Winter, R. (2017). Service robots in hospitals: New perspectives on niche evolution and technology affordances. *European Journal of Information Systems*, 26(5), 451–468.
  - The authors consider the use of service robots in hospitals and managed care facilities.

## Augmented and Virtual Reality

- Jagyasi, P. (2016, November 7). [How augmented and virtual reality will revolutionize healthcare](#). *Instablogs*.
  - The author discusses the potential uses of augmented and virtual reality in health care.
- Jagyasi, P. (2018, January 4). [Ten cases where virtual reality is used in healthcare](#). *Instablogs*.
  - This article reviews the use of immersive experiences to improve health care.

## Nanotechnology

- [Nanotechnology biochip could speed detection of pneumonia](#). (2017, October 2). *RT Online*.
  - This article looks at the use of a device that can detect deadly diseases such as ovarian cancer and pneumonia early in their progression.
- Marr, B. (2018, September 16). [Smart dust is coming. Are you ready?](#) *Forbes*. Retrieved from <https://www.forbes.com/sites/bernardmarr/2018/09/16/smart-dust-is-coming-are-you-ready/#3f64e6dc5e41>
  - Marr explains the use of microelectromechanical systems (MEMS).

## Avatars

- Shaked, N. A. (2017). [Avatars and virtual agents – relationship interfaces for the elderly](#). *Healthcare Technology Letters*, 4(3), 83–87.
  - The author makes a case for the use of avatars and virtual agents for both home care monitoring and companionship.

u10s1 - Learning Components

- Explain how patient care technologies enhance patient safety, satisfaction, and outcomes.
- Explain how quality indicator data influences patient care.

### u10d1 - Reflection

**Note:** Remember to adhere to the time and day requirements for discussion postings and responses addressed in the School of Nursing and Health Sciences faculty expectations message.

Record and post a 3–5 minute reflection video on what you learned from this course and how it will impact your nursing practice.

Post a written transcript with your video. A script will be of help to you in recording your video and provides a text alternative to the audio portion of your recording.

## Response Guidelines

Respond to at least one peer.

Course Resources

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Undergraduate Discussion Participation Scoring Guide

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[Using Kaltura](#)

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[DisabilityServices@Capella.edu](mailto:DisabilityServices@Capella.edu)

u10d1 - Learning Components

- Explain how patient care technologies enhance patient safety, satisfaction, and outcomes.

### u10d2 - What's Next?

**Note:** Remember to adhere to the time and day requirements for discussion postings and responses addressed in the School of Nursing and Health Sciences faculty expectations message.

In a post, discuss your thoughts on what nursing informatics will look like in the next ten years. Focus on what challenges may be on the horizon for the following:

- NIS.
- Health care team.
- Health care in general.

Offer a suggestion as to how the nurse can effectively deal with these challenges. Support your post with a current resource. Share the link of the source with your peers.

## Response Guidelines

Read at least one peer's post and the article they shared. In your response, make a suggestion your peer could consider to effectively deal with the challenge they identified.

Course Resources

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Undergraduate Discussion Participation Scoring Guide

u10d2 - Learning Components

- Explain the role of a nurse informaticist.
- Identify evidence-based approaches to protecting electronic health information.