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**NURS 472 – Informatics**

**NURS 472 - Week 1: Health Informatics Overview**

**Student Learning Outcomes:**

1. Define health informatics.
2. Discuss the significance of health informatics within healthcare delivery.
3. Provide an overview of health informatics-related topics.

**Learning Materials:**

* Ahmad, F.B., & Anderson, R.N. (2021). The leading causes of death in the US for 2020. *JAMA, 325*(18). 1829-1830. <https://doi.org/10.1001/jama.2021.5469>
* Institute of Medicine. (1999). *To err is human: Building a safer health system  
  brief*. <https://www.nap.edu/resource/9728/To-Err-is-Human-1999--report-brief.pdf>
* Makary, M.A., & Daniel, M. (2016, May 3). Medical error -The third leading cause of death in the US. *BMJ*, *353*(i2139). <https://doi.org/10.1136/bmj.i2139>
* The White House: President George W. Bush. (n.d.). *Promoting innovation and competitiveness: President Bush’s technology agenda*. <https://georgewbush-whitehouse.archives.gov/infocus/technology/>
* American Psychological Association. (2020). UpToDate article references. *APA Style* [blog]. Retrieved from <https://apastyle.apa.org/style-grammar-guidelines/references/examples/uptodate-article-references>
* Kohn, L. T., Corrigan, J., & Donaldson, M. S. (Eds.). (2000). *To err is human: Building a safer health system*. National Academy Press. <https://nap.nationalacademies.org/catalog/9728/to-err-is-human-building-a-safer-health-system>

**Online Assessments:**

1. Discussion board – Prompt - Even though you know each other, I do not know you. Please tell me one unique item about yourself that "may" help me remember you.

QSEN Scenario: After sharing that you are learning about informatics with a nursing colleague, the colleague asks you what informatics has to do with the quality and safety of nursing practice. How would you respond?

1. Please make a ***video note*** answering these questions. This will not be shared with anyone. This is not graded. It doesn't have to be perfect. It can be as short or long as you like. I'd like to put a face with your name. Answer as many of these questions as you like.
   1. Tell me about yourself.
   2. How do you define success?
   3. What helps you be successful?
   4. What are your barriers to being successful?
   5. What can I do to help?

**NURS 472 - Week 2: Knowledge Theories & Evidence-Based Practice**

**Student Learning Outcomes**

1. Introduce the Foundation of Knowledge model as an organizing conceptual framework.
2. Clarify the differences between evidence-based practice, practice-based evidence, and translational research.
3. Explore models for introducing research findings into practice.
4. Assess barriers to research utilization in practice.

**Learning Materials (Placed on Reserve at the Library)**

1. Nelson, R., & Staggers, N. (2018). *Health informatics: An interprofessional approach* (2nd Ed.). Elsevier.
   1. Chapter 2 (p. 23-25 up to Learning theory);
   2. Chapter 3 (p. 38-59)
2. McGonigle, D., & Mastrian, K. G. (2018). *Nursing informatics and the foundation of knowledge* (4th Ed.). Jones & Bartlett Learning.
   1. Section 1: Chapter 1

**Lecture Online**

1. Knowledge Theories online lecture (15:18 minutes)
   1. Nelson Data-to-Wisdom Continuum
   2. Foundation of Knowledge Model
   3. Tanner’s Clinical Judgment Model
2. EBP-PBE lecture online (11:10 minutes)

**In-Class**

* 1. Intent to Graduate information day.

**Assessments**

1. Complete Knowledge Theories & EBP/PBE Escape Room in D2L.
   1. <https://docs.google.com/forms/d/e/1FAIpQLSdgbResGAigdnClJQNs31V6RDFA36_C-1zhuvtpA24rGUBbog/viewform>
2. If you haven't completed a video note, please do so.

**NURS 472 - Week 3: Electronic Health Record (EHR)**

**Student Learning Outcomes**

1. Describe the common components of an EHR.
2. Assess the benefits of implementing an EHR.
3. Evaluate the flexibility of the EHR in meeting the needs of the clinicians and patients.

**Learning Materials**

1. Read EHR Requirements & Key Features
   * Green, J. (2021, July 15). *EHR requirements and key features: Your complete guide.* EHR in Practice. <https://www.ehrinpractice.com/ehr-requirements-and-key-features.html>
2. National Institute of Standards and Technology. (2022, October 3). *ONC certification*. U.S. Department of Commerce. <https://www.nist.gov/itl/products-and-services/healthcare-standards-testing/onc-certification-test-methods-health/onc>
3. Siwicki, B. (2022, November 3). *Improving the patient experience is a two-way street*. Healthcare IT News. <https://www.healthcareitnews.com/news/improving-patient-experience-two-way-street>

**Assessments**

1. Initial Discussion post due Thursday night at midnight. 1 response due Sunday night at midnight.
2. If your last name starts with A-N, complete your initial post on question #1 and your response on question #2.
3. If your last name starts with O-Z, complete your initial post on question #2 and your response on question #1.
4. Increasingly, patients expect full access to their EHRs. What limitations, if any, would be in the best interest of patients? For example, should healthcare providers have access to new test results for 3 full business days before these are posted for patient viewing?
5. It is anticipated that EHR functionality will expand to allow consumers to enter data into the system along with direct input of other types of patient-generated data (PGD). What are some benefits and challenges associated with this change from the perspective of consumers and providers?

**NURS 472 - Week 4: CDSS, Interoperability, and Standardized Terminology**

**Student Learning Outcomes**

1. Explain how standards affect the adoption of an interoperable EHR.
2. Identify organizations involved in setting standards at the national and international levels.
3. Describe why clinical decision support is needed and its impact.
4. Explain the major types of clinical decision support.
5. Analyze best practices for clinical decision support.
6. Synthesize the current adoption status and the barriers to the wide adoption of clinical decision support.
7. Outline recent progress toward disseminating clinical decision support on a national level.

**Learning Materials**

1. Health IT. (n.d.). *Connecting health and care for the nation: A shared nationwide interoperability roadmap.* p. ix-xvii. <https://www.healthit.gov/sites/default/files/hie-interoperability/nationwide-interoperability-roadmap-final-version-1.0.pdf>
2. Office of National Coordinator (ONC) Workforce Training Curriculum. (2023). Networking and Health Information Exchange. Standards Developing Organizations Lecture A: Health IT standards (Component 9, Unit 3). *HealthIT.gov.* <https://www.healthit.gov/topic/health-it-resources/health-it-curriculum-resources-educators>
3. Interoperability Institute. (2021). FHIR Fundamentals, *OER Commons*. <https://www.oercommons.org/courseware/lesson/85313>
4. Baker, A., & Myers, E. (2022, October 13). *Interoperability in action: CMS rule builds on ONC initiatives to simplify health information exchange.* Office of the National Coordinator for Health Information Technology. <https://www.healthit.gov/buzz-blog/blog-series-cms-ipps-rule/interoperability-in-action-cms-rule-builds-on-onc-initiatives-to-simplify-health-information-exchange>
5. Baker, A., & Myers, E. (2022, October 25). *Interoperability in action: ONC informs CMS ruling on hospital measures for public health and health equity reporting.* Office of the National Coordinator for Health Information Technology. <https://www.healthit.gov/buzz-blog/blog-series-cms-ipps-rule/interoperability-in-action-onc-informs-cms-ruling-on-hospital-measures-for-public-health-and-health-equity-reporting>

**Assessments**

1. Complete quiz over weeks 1-4 by Sunday night 2359. You have 1 attempt but unlimited time to complete the quiz. The quiz is to be completed on your own--not with anyone else. You can use D2L information to complete the quiz.

**NURS 472 - Week 5: Emerging Technologies Poster & Presentation**

**Student Learning Outcomes**

1. Explore various emerging technologies to critically think about in relation to current practices.
2. Identify implications of emerging technology for nursing practice.
3. Describe benefits and risks of emerging technology.

**Learning Materials**

* 1. Emerging Technologies Poster & Presentation expectations document

1. Abstract template document
2. Emerging Technology poster template
   1. Alternative templates - <https://www.posternerd.com/sciposters-templates>
3. Emerging Technologies Grading Criteria and Grading Rubric
4. Peer evaluation form

**Assessments**

* 1. See course calendar for various due dates for the Poster and Presentation Assignment.
  2. Choosing a topic; pick top 3 choices.
  3. Instructor will email your group with the final topic.

**NURS 472 - Week 6: HITECH, HIPAA, MU, and QPP**

**Student Learning Outcomes**

1. Explore the Health Insurance Portability & Accountability Act (HIPAA) of 1996.
2. Describe the purposes of the Health Information Technology for Economic & Clinical Health (HITECH) Act of 2009.
3. Appreciate how the HITECH Act enhanced the security & privacy protections of HIPAA & how these protections continue to evolve as health information technology develops.
4. Survey the provisions of the 21st Century Cures Act and its impact on health.

**Learning Materials**

1. CaptureBilling. (2010, October 30). *The HITECH act: Electronic health records and meaningful use*. YouTube. <https://youtu.be/GzeUKKWvC0o> (4:37 minutes)
2. CMSHHSgov. (2017, February 9). *What is the quality payment program?* YouTube. <https://youtu.be/96djML-m2Wo> (2:28 minutes)
3. CMSHHSgov. (2022, April 13). *MIPS value pathways: The future of MIPS.* YouTube. <https://youtu.be/1pfY_T_Y1pY> (2:57 minutes)
4. Department of Health and Human Services. (2013, January 25). *Federal register/Vol. 78, No. 17/Friday, January 25, 2013/Rules and regulations.* Office of the Secretary. <https://www.govinfo.gov/content/pkg/FR-2013-01-25/pdf/2013-01073.pdf>
5. Office of eHealth Innovation. (2021, November). *Colorado health IT roadmap: Leading change today for a healthier tomorrow.* [*https://oehi.colorado.gov/sites/oehi/files/documents/Colorado%20Health%20IT%20Roadmap%20Final%20November%20Version.pdf*](https://oehi.colorado.gov/sites/oehi/files/documents/Colorado%20Health%20IT%20Roadmap%20Final%20November%20Version.pdf)

**Assessments**

1. Email abstract by Sunday 2359 - if you get it done sooner, please email it
   * Topics will be emailed to the group on Monday. As a group, work on abstract. Please email it as soon as you have it done. Make sure to include all group members on the email.
2. Write 10 midterm exam questions and submit.
   * You will be writing your midterm exam! The exam is 50 questions, worth 100 points.
   * Each group will write a minimum of 10 questions with answers. A group can be 1-4 people.
   * 1 person from each group post the questions to the discussion. Make sure to include the names of those that worked on the set of questions.
   * You do NOT have to respond to the questions, but I strongly encourage you to read them. If you feel a question could be worded better or is confusing, you certainly can post a response asking/posing your thoughts.
   * The midterm will be during class.
   * Questions are multiple choice, T/F, or matching. Make sure to include the answers.
   * Include at least 1 question from each topic below:
   1. Intro
   2. EBP/PBE
   3. Either the Nelson data to Wisdom Continuum or the Foundation of Knowledge Model
   4. EHR
   5. Interoperability
   6. Standardized Terminology
   7. CDSS
   8. HITECH/MU/QPP/Promoting Interoperability

**NURS 472 - Week 7: Patient Safety & Quality Initiatives**

**in Health Informatics**

**Student Learning Outcomes**

1. Explore the characteristics of and strategies for developing a safety culture.
2. Appreciate the impact of informatics technology on patient safety.
3. Recognize how human factors contribute to patient safety and errors.
4. Explore interdisciplinary collaboration and communication in relation to patient safety.

**Learning Materials**

1. Feldman, S., Buchalter, S., & Hayes, L. (2018). Health information technology in healthcare quality and patient safety: Literature review. JMIR Medical Informatics, 6(2), e10264. <https://doi.org/10.2196/10264>
2. Institute for Healthcare Improvement. (2017). *QI Essentials Tookit: Failure Modes and Effects Analysis (FMEA) Tool.* <https://www.ihi.org/resources/Pages/Tools/FailureModesandEffectsAnalysisTool.aspx>
3. Joint Commission. (2023). *2023 National Patient Safety Goals*. <https://www.jointcommission.org/-/media/tjc/documents/standards/national-patient-safety-goals/2023/2023-hap-npsg-goals-102122_simple.pdf>

**Assessments**

1. Complete quiz over weeks 6 & 7 by Sunday night 2359.

**NURS 472 - Week 8 - Midterm**

**Assessments**

* 1. Midterm

**NURS 472 - Week 9: Privacy and Security**

**Student Learning Outcomes**

1. Analyze current federal & state laws & regulations, & their implications for privacy & security practices & procedures.
2. Identify various methods of user authentication and relate authentication to the security of a network.
3. Consider methods for anticipating & preventing typical threats to network security.

**Learning Materials**

1. HIPAA Journal. (2023, Feb. 2). *The most common HIPAA violations you should be aware of.* <https://www.hipaajournal.com/common-hipaa-violations/>
2. U.S. Department of Health and Human Services*.* (2022, January 19). *Your rights under HIPAA.* <https://www.hhs.gov/hipaa/for-individuals/guidance-materials-for-consumers/index.html>
3. U.S. Department of Health and Human Services*.* (2021, May 17). *HIPAA for professionals.* <https://www.hhs.gov/hipaa/for-professionals/index.html>
4. U.S. Department of Health and Human Services*.* (2023, April 14). *Regulatory initiatives.* <https://www.hhs.gov/hipaa/for-professionals/regulatory-initiatives/index.html>
5. Centers for Medicare & Medicaid Services. (2021, December 1). *CMS information security and privacy overview: “Holding ourselves to a higher standard.”* <https://www.cms.gov/Research-Statistics-Data-and-Systems/CMS-Information-Technology/InformationSecurity>
6. Podcast episode on privacy and security.

**Assessments**

1. Listen to Guest Lecturer Podcast and complete *Privacy & Security* Escape Room
   1. Post the certificate to the *Escape Room Certificate* file by Sunday night 2359.
2. Complete Week 9 *Privacy & Security* Worksheet
   1. Post it to the *Escape Room Certificate* file by Sunday night 2359.

**NURS 472 - Week 10: Legal Issues, Federal Regulations and Accreditation**

**Student Learning Outcomes**

1. Discuss the intersection of federal fraud & abuse regulations as they relate to EHRs & health IT.
2. Outline accreditation measures & agencies in the United States.

**Learning Materials**

1. The Joint Commission. (2021, February 2). *Sentinel event alert 62: Health care workers in the midst of crisis.* <https://www.jointcommission.org/resources/sentinel-event/sentinel-event-alert-newsletters/sentinel-event-alert-62-se-health-care-workers-in-the-midst-of-crisis/#.ZFvuvnbMKM8>
2. The Joint Commission. (2021, April 14). *Sentinel event alert 63: Optimizing smart infusion pump safety with DERS.* <https://www.jointcommission.org/resources/sentinel-event/sentinel-event-alert-newsletters/sentinel-event-alert-63-optimizing-smart-infusion-pump-safety-with-ders/#.ZFvvtHbMKM8>
3. The Joint Commission. (2021, November 10). *Sentinel event alert 64: Addressing health care disparities by improving quality and safety.* <https://www.jointcommission.org/resources/sentinel-event/sentinel-event-alert-newsletters/sentinel-event-alert-64-addressing-health-care-disparities/#.ZFvwH3bMKM8>
4. The Joint Commission. (2021, November 10). *Sentinel event alert 65: Diagnostic overshadowing among groups experiencing health disparities.* <https://www.jointcommission.org/resources/sentinel-event/sentinel-event-alert-newsletters/sentinel-event-alert-65-diagnostic-overshadowing-among-groups-experiencing-health-disparities/#.ZFvwfnbMKM8>
5. KFF Health News. (2019, March 18). *Death by 1,000 clicks: Where electronic health records went wrong.* <https://kffhealthnews.org/news/death-by-a-thousand-clicks/>
6. HealthIT.gov. (2022, October 31). *Information blocking.* <https://www.healthit.gov/topic/information-blocking>
7. HIPAA TV. (2021, October 15). *Medicare Fraud & Abuse Training*. YouTube. <https://youtu.be/_U87WzQPYPQ> (8:51 minutes)
8. Optional: U.S. Senate Committee on Health, Education, Labor, & Pensions. (2019, May 7). *Full committee hearing: Implementing the 21st Century Cures Act: Making electronic health information available to patients and providers, Part II.* (01:46:56 minutes)

**Assessments**

1. Complete *Legal Issues & Federal Regulations* Escape Room by Sunday night 2359.
2. One group member submits the first draft of your poster to the *1st Draft Poster* file by Sunday night 2359.

**NURS 472 - Week 11: Health Policy & Informatics**

**Student Learning Outcomes**

1. Identify key health policy issues of importance to the practice of health informatics.
2. Explain the process for developing and utilizing informatics principles and concepts in developing health policy.

**Learning Materials**

* 1. American Nurses Association. (n.d.). *Health policy.* <https://www.nursingworld.org/practice-policy/health-policy/>
  2. Health Stream. (2021, June 14). *How do nurses influence health policy?* <https://www.healthstream.com/resource/blog/how-do-nurses-influence-health-policy#:~:text=Facility%20and%20Organizational%20Policy%20%E2%80%93%20It,and%20guidelines%20regarding%20specific%20populations.%22>
  3. Marymount University. (2021, May 6). *5 ways DNP-Prepared Nurses can Shape Policy* [*https://online.marymount.edu/blog/nursing-influence-on-health-care-policy*](https://online.marymount.edu/blog/nursing-influence-on-health-care-policy)
  4. Anders, R. L. (2021). Engaging nurses in health policy in the era of COVID-19. *Nursing Forum, 56*(1), 89-94. <https://doi.org/10.1111/nuf.12514>
  5. Colorado General Assembly. (2022, September 13). *Summary of 2022 health care and health insurance legislation.* <https://leg.colorado.gov/publications/summary-2022-health-care-and-health-insurance-legislation>

**Assessments**

1. Submit completed poster.
2. Print poster.

**NURS 472 - Week 12: Telehealth and Applications**

**for Delivering Care at a Distance**

**Student Learning Outcomes**

1. Explore the use of telehealth technology in nursing practice.
2. Describe clinical and nonclinical uses of telehealth.
3. Specify and describe the most common telehealth tools used in nursing practice.
4. Explore telehealth pathways and protocols.
5. Identify legal, ethical, and regulatory issues of telehealth practice.
6. Describe the role of the telehealth nurse.

**Learning Materials**

1. Sorrells-Jones, J., Tschirch, P., & Liong, M. A. S. (2006). Nursing and telehealth: Opportunities for nurse leaders to shape the future. *Nurse Leader, 4*(5), 42-48, 58. <https://doi.org/10.1016/j.mnl.2006.07.008>
2. Goodwin, S., McGuirk, M., & Reeve, C. (2017). The impact of video telehealth consultations on professional development and patient care. *The Australian Journal of Rural Health, 25,* 185-186. <https://doi.org/10.1111/ajr.12297>
3. Siwicki, B. (2020, September 9). *Telehealth working ‘beyond our wildest dreams’ at Chicago’s Rush.* Healthcare IT News. <https://www.healthcareitnews.com/news/telehealth-working-beyond-our-wildest-dreams-chicago-s-rush>
4. Centers for Medicare & Medicaid Services. (n.d.). *Telehealth.* <https://www.medicaid.gov/medicaid/benefits/telehealth/index.html>
5. Bear in Mind Strategies. (2019, October 6). *Telehealth etiquette: Medical consult.* YouTube. <https://youtu.be/YVJOesPIdc4> (22:22 minutes)
6. Optional: Sinvani, L., Hertz, C., Chandra, S., Ilyas, A., Ardito, S., & Hajizadeh, N. (2022, January). Using telehealth to improve the accuracy of delirium screening by bedside critical care nurses. *American Journal of Critical Care, 31*(1), 73-76. <https://doi.org/10.4037/ajcc2022773>

**Assessments**

1. Submit recording of poster presentation.
2. Complete quiz over weeks 9-12 by Sunday night 2359.

**NURS 472 - Week 13: Nursing Informatics Scopes & Standards for Practice**

**Student Learning Outcomes**

1. Describe the nursing informatics specialty.
2. Explore the scope and standards of nursing informatics practice.
3. Assess the evolving roles and competencies of nursing informatics practice.
4. Appreciate the future of nursing informatics in our rich, technology-laden healthcare environments.

**Learning Materials**

1. Garcia-Dia, M. J. (2021, May). Nursing informatics: An evolving specialty. *Nursing Management, 52*(5), 56. <https://doi.org/10.1097/01.numa.0000743444.08164.b4>
2. Prestigiacomo, J. (2012, January 30). *The rise of the senior nurse informaticist.* Healthcare Innovation. <https://www.hcinnovationgroup.com/home/article/13019107/the-rise-of-the-senior-nurse-informaticist>
3. King, B. D., Riemann, L. A., & Brant, J. M. (2020, June). Oncology nurse informaticists: An evolving role to support nursing practice. *Clinical Journal of Oncology Nursing, 24*(3), 324-327. <https://doi.org/10.1188/20.cjon.324-327>
4. Schlak, S. E., & Troseth, M. (2013, January). TIGER initiative: Advancing health IT. *Nursing Informatics, 44*(1), 19-20. <https://doi.org/10.1097/01.numa.0000424025.21411.be>
5. Hussein, M., Morawski, T. S., Fonseca, R., Schug, S., Westbury, L., & Aleksandric, A. (2022, September 7). *Integration in medical and nursing curricula.* Healthcare Information and Management Systems Society, Inc. <https://www.himss.org/resources/status-informaticsehealth-integration-medical-and-nursing-curricula>
6. Lin, C-T., Bookman, K., Sieja, A., Markley, K., Altman, R. L., Sippel, J., Perica, K., Reece, L., Davis, C., Horowitz, E., Pisney, L., Sottile, P. D., Kao, D., Adrain, B., Szkil, M., Griffin, J., Youngwerth, J., Drew, B., & Pell, J. (2020). Clinical informatics accelerates health system adaptation to the COVID-19 pandemic: Examples from Colorado. *Journal of the American Medical Informatics Association,* *27*(12), 1955-1963. <https://doi.org/10.1093/jamia/ocaa171>

**Assessments**

1. Present your poster at community event.
2. Submit your poster with a recording to the *Final Poster*file. This file will have 2 submissions.
3. Everyone completes the Peer Evaluation form and places it in the file titled *Emerging Technologies Deadlines & Peer eval Grading Criteria.*

**NURS 472 - Week 14: Public Health Informatics**

**Student Learning Outcomes**

1. Provide an overview of community and population health informatics.
2. Assess informatics tools for promoting community and population health.
3. Explore the roles of federal, state, and local public health agencies in the development of public health informatics.

**Learning Materials**

1. Centers for Disease Control and Prevention. (2022, October 19). *PHIN vocabulary access & distribution system.* <https://www.cdc.gov/phin/index.html>
2. Office of Public Health Scientific Services. (2018, September). *Public Health Surveillance: Preparing for the Future.* Centers for Disease Control and Prevention. <https://www.cdc.gov/surveillance/pdfs/Surveillance-Series-Bookleth.pdf>
3. Colorado Department of Public Health & Environment. (n.d.). *COVID-19 (SARS-CoV-2) reporting requirements.* <https://cdphe.colorado.gov/report-a-disease/covid>

**Assessments**

* 1. Complete the Public Health Worksheet.

**NURS 472 - Week 15: What’s Next – Future Directions**

**Student Learning Outcomes**

1. Assess how informatics supports and evolves the realities.
2. Explore various realities to contemplate and critically think about in relation to your current reality and foreseeable realities while imagining your future realities.
3. Assess the relationship among Internet of Things (IoT), Intelligence of Things (IoT), and Artificial Intelligence of Things (AIoT) and reality.
4. Describe the impact of big data, robotics, and smart devices on our professional reality as well as our patients' realities.

**Learning Materials**

1. Guest Lecturer from the Career Center on utilization of technology through social media outlets.

**Assessments**

1. Complete quiz over weeks 13-15 by Sunday night 2359.
2. Complete class evaluation

**NURS 472 - Week 16: Poster Presentation – Community Event Final**

**Assessments**

* 1. Community Poster Event participation is counted as the final.