Applied Health Informatics Certificate Program

Program Purpose

The purpose of the Applied Health Informatics Certificate is to prepare existing Providence St. Joseph Health and Partners caregivers to understand and leverage the power of informatics to help transform care delivery and create healthier communities at every level. In their current and future roles, students who complete the program will promote use of health information and tools to actively engage consumers, their families, and the interprofessional team in optimizing safe, timely, effective, efficient, equitable health care.

The Applied Health Informatics Certificate (AHIC) program is an academic-industry partnership program between the University of Great Falls (UGF) and Providence St. Joseph Health and Partners.

Program Learning Outcomes

To better serve our patients and health care consumers, graduates will be able to:

1) Translate clinical and operational needs into initial design and improvement of technology solutions.
2) Support better use of health data to help improve outcomes by advocating for data quality and standards compliance.
3) Improve patient/consumer and caregivers’ use of existing and emerging technologies, including the electronic health record, for wellness and health care.
4) Accelerate the adoption of health information and communication tools and technologies to more rapidly realize the benefits for patients and caregivers.
5) Be an organizational resource for application of informatics concepts by demonstrating continuous learning and inquiry about the field
6) Advocate for health information systems that reflect consumers’ needs, values, and preferences and empower them to participate in their care decisions.
7) Promote use of health information and communication technologies as foundational for a learning health system that includes active engagement of health care consumers.

Course 1: Exploring Informatics: Improving Human Health

In this introductory course the student will gain broad exposure to the field of health informatics with an emphasis on its application to clinical health care settings and consumer-focused health and wellness initiatives. Students from both clinical and non-clinical backgrounds will articulate the value of core informatics competencies for all health care professionals and will apply systems thinking to bridge the clinical and information technology worlds. This course incorporates concepts of information literacy, use of data standards and controlled vocabularies to facilitate interoperability and data exchange, and data security and privacy. Ethical dilemmas related to data sharing and security risks are examined. Students will explore impacts of informatics on health care cost, access, quality and safety – through the perspectives of the patient and clinician experience in multiple settings. This course prepares the student to be an on-going learner in the field of applied health informatics.

Student Learning Outcomes

By the end of this course, the student will be able to:

- Analyze how informatics concepts and tools contribute to current and evolving health care delivery models and influence cost, access, safety, and quality of care.
- Examine ethical dilemmas related to data sharing and security risks.
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- Use systems thinking to identify and describe functions of basic system infrastructure components.
- Be a life-long learner who stays informed of new and emerging health information and communication technologies, policies, and social changes and their potential impact on health care consumers.

Course 2: Applying Informatics: Linking People, Processes, and Tools

This course prepares the student to participate in the clinical information system life cycle with a focus on requirements and strategies for design and use of safe and effective systems. It incorporates essential concepts and principles of human-technology interaction and user-centered design and their impact as they relate to error prevention and health care information technology (HIT) usability for clinicians and consumers. Topics include an introduction to HIT-related safety issues, practical application of clinical information and workflow process analysis, and development of recommendations for process improvement and redesign. Clinical and non-clinical students will learn a common vocabulary for communicating system requirements that meet user needs and optimize usability.

Student Learning Outcomes

By the end of this course, the students will be able to:
- Recommend opportunities for involving clinicians and consumers in the information system life cycle.
- Develop recommendations for improvement of patient care technologies, information systems and/or communication tools by applying human-technology interface concepts and design principles.
- Propose opportunities for process improvement or redesign of informatics-enabled clinical workflows and information management practices.
- Ease the communication gap between clinical professionals and information technology experts to clarify informatics-related needs.

Course 3: Leading Informatics: Accelerating Transformation

This course prepares the student to support successful clinician and consumer adoption of health care information technology (HIT). This course focuses on key implementation methodology, project management, and change management roles and principles, and the impact of factors leading to HIT adoption success or failure in a variety of health and health care contexts. Measures and methods for qualitative and quantitative evaluation of HIT are introduced. This course prepares the student to design, implement, and evaluate effective training strategies for adult learners, with special attention to consumer-specific impacts of HIT.

Student Learning Outcomes

By the end of this course, the students will be able to:
- Be an effective member of a project team that is implementing an informatics-related initiative.
- Apply change management principles for the training and adoption of a new or redesigned health care technology-related process or tool.
- Develop a role-specific training and evaluation plan for a health or health care technology used by adult patients/consumers.
Course 4: Revealing Informatics: Understanding the Power of Data

This course prepares the student to be an advocate for data-driven decision-making in health care. It emphasizes essential aspects of data quality, data integrity, and data standards as foundational for data transformation to information and knowledge. This course incorporates essential concepts about the relationship between principles of evidence-based care, clinical decision support, and quality improvement, and the applications and limitations (unintended consequences) of decision support as a supplement to clinical judgment. Industry trends in advanced retrospective and predictive analytics and their impacts on personalized care and population health will be introduced.

Student Learning Outcomes:

By the end of this course, the student will be able to

- Frame a clinical or operational question to be answered using data analytics.
- Understand the appropriate acquisition and use of data.
- Relate informatics to evidence-based practice, decision support, and quality improvement.
- Use decision support concepts to promote safe practice.
- Advocate for data-driven decision-making.