

## **CHIP-725 Electronic Health Records – Spring 2023**

Randall Blanco

Tuesdays 6:00PM – 8:30PM

Instruction mode: Remote Only-Synchronous via Zoom

Carolina Health Informatics Program (CHIP)

University of North Carolina at Chapel Hill

### **Course Description**

Healthcare has changed dramatically in the last few years whereby the use of digital tools and platforms is no longer an option but a basic requirement to offer optimal services to patients and support the day-to-day operations of core service units (including financial and administrative). A key driver has been the move toward an analytics-anchored organization, often referred to as the learning health system, which implies a sustained development of an organization based on smart use of evidence across full-range of the care organization. A basic pre-requisite for evolving toward a learning organization is comprehensive, continuous and accurate data collection, and transforming the data to actions that match best practices and guidelines.

Electronic Health Record (EHR) systems fit the latter milieu in a critical manner, as they are the principal tools health organizations rely on to collect data and support evidence-based care services.

Beyond supporting primary services in day-to-day care settings, the data platform a modern EHR provides also can directly support interactions with patients, through the patient portal, and interfacing with a wide variety of wearable devices and tools that can collect patient-reported-data and outcomes. Social determinants of health outcome (SDHO) data are increasingly becoming critical to determining health conditions, assist providers to improve diagnosis and treatments, and help payors in predicting care costs and managing care plans.

EHR systems are also becoming important to long-term care quality assessments, refining enterprise-scale care provision approaches to ensure a good balance in workload, and optimizing the care so that patients receive the best care at the right time. EHRs are also becoming a powerful tool to ensure appropriate shift-in-care or care handoffs when a large group of providers is involved -- driving proper care coordination. Post-discharge, tracking of patients and compliance also demand a good interfacing with the base EHR platform used by the health care organization. As care payment models evolve, the reliance on care quality data and compliance become even more important – particularly at the cohort and population health levels.

Finally, a major secondary use of EHR data now is support for advanced biomedical research and translational projects that help learning health organization remain at the forefront of patient care.

In this class, we will focus on EHR as a comprehensive platform to support best-in-class evidence-based care and as the core component for big data analytics to help the care organization adapt and transform itself into a learning organization. We will focus on a large number of health data architectures, data standards, quality assessment, and workflow methods. A key aspect of the course is a project that involves an in-depth focus on an EHR topic.

### **Objectives include learning about the following areas:**

EHR systems data architectures, data structures, and system use work-flows

Data management, data warehouses, and analytics platforms

Clinical decision support and link to evidence-based care

Secondary use of data, quality assessment and improvement, and research use of data

Governance and medical data security

Practical experience with EHR tools and applications.

**Course Requirements:**50% **Project (Group Effort)**

25% Topic Selection &amp; Initial Project Presentation (15 slides max)

25% Final Project Presentation (8 slides max)

25% **Take-home final exam**25% **Class Participation** (active participant during classes)

Required readings, and videos, for each class/lesson are listed in **SAKAI**.

**Grading Schemas:**

Graduate Grading Scale	
70-100	<b>P</b>
<70	<b>F</b>
Undergraduate Grading Scale	
90-100	<b>A</b>
80-89	<b>B</b>
70-79	<b>C</b>
60-69	<b>D</b>
<60	<b>F</b>

**Recommended books:**

Electronic Health Records: Understanding and Using Computerized Medical Records, Third Edition; Garteer, R; ISBN-13: 978-0-13-425750-1.

Secondary Analysis of Electronic Health Records; MIT Critical Data; ISBN-13: 978-3-319-43740-8.

Good Charts; Berinato, S; Harvard Business Review Press; ISBN-13: 978-1-63369-070-7.

Good Charts – Work Book; Berinato, S; Harvard Business Review Press; ISBN-13: 978-1-63369-617-4.

Fundamentals of Database Systems; Navathe, S and Elmasri, R; ISBN-13: 978-0-13608-620-8.

**Honor Code:**

All students are expected to follow general classroom decorum and respect the rights of everyone to have a safe and collegial environment for learning. Violations of general academic practices and norms will not be tolerated. Please refer to the Carolina Honor system to learn more about basic academic expectations at UNC at Chapel Hill:

<https://studentconduct.unc.edu/honor-system>

Do not hesitate to contact the instructor if you have any questions about the honor system and related matters.

**Contact Information:**

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