

**TEXAS A&M UNIVERSITY SCHOOL OF PUBLIC HEALTH  
PHPM 631 Health Information Management Systems (Spring 2020)**

**COURSE WEBSITE**

<http://pinformatics.org/phpm631>

**You are required to check the class website regularly (at least three times a week) as it will have important class announcements and reading materials.**

**CLASS SESSION(S)**

Course Time: Mondays, 5:30 pm to 8:30 pm

Location: SPH Classroom Building 110; sometimes in 120 (computer lab) for parts of the class

**INSTRUCTOR**

Hye-Chung Kum, PhD, MSW;

Building A, Rm 124; Office hours: schedule via email (kum at tamu dot edu)

**TEACHING ASSISTANT**

Theodoros Giannouchos, MSc;

Office hours: schedule via email (tgiannouchos at tamu dot edu)

**COURSE DESCRIPTION**

The overall goal of the course is to familiarize students with current issues associated with health information technology (IT) and their impact on the U.S. healthcare system. Health IT applications (e.g., electronic health records, computerized physician order entry systems, decision support systems, health information exchanges, etc) are playing an increasingly important role in the efficiency and effectiveness of healthcare delivery and management.

This course will expose students to (1) current developments in the HIT field and (2) a broad coverage of technology concepts and trends underlying current and future developments in information technology, and fundamental principles for the effective use of computer-based information systems. Through a set of selected outside readings, class lectures, student discussions, and hands-on learning we will explore key concepts and issues surrounding the adoption and use of information systems within health care organizations.

This course is intended for students with little or no background in computer technology. The intent is not to train experts in computer technology, but to build enough understanding of the basics of the technology and the data so that you can manage IT projects (e.g., evaluate software products and consultants), effectively communicate and collaborate with IT personnel, use data effectively, and ultimately make good decisions about HIT, which are key skills in health care management.

**PREREQUISITES**

PHPM 601; PHPM 605 or 606 or approval by the instructor.

**COURSE REQUIREMENTS**

This course requires consistent in-class participation (there are in class case discussions), substantial work outside the classroom (e.g., readings, submission of assignments almost every week, a class presentation), a midterm and a final exam.

**COURSE EXPECTATIONS**

We will meet once a week for a three hour in class session (see next section for details). Students are expected to spend approximately 9 hours outside the class session on assignments and readings.

**Required Textbook & Other Required Readings**

Wager, Lee, Glaser. Health Care Information Systems. 4th edition. (2017) John Wiley and Sons.

There will be required readings every week. The details will be posted on the course website.

**Use and Sharing of Course Materials**

You may not use course materials from prior classes. AND you may not share course materials from this class with future students. This applies to all quizzes, exams, and assignments.

**Assessment and Grading Policy**

Requirement	Description	Grade
Online Quizzes	Quizzes to be completed via E-Campus approximately weekly in advance of class (approximately on wed).	10%
Exam	A cumulative mid-term exam covering lecture, reading, discussion and assignment topics.	30%
Assignments *	Individual or group assignments.	35%
Final Project	There will be final take-home project on materials covered after the midterm	10%
Class Group Presentation	Everyone will give one group presentation in class	10%
Class participation	Weekly including Lab submissions	5%

*\*Tentative due dates can be found on the schedule below*

**Online Quizzes**

Students will complete approximately 8-10 short quizzes throughout the semester. These quizzes are not meant to be “high-stakes” assessments. Instead, these quizzes are meant to help students monitor their ongoing comprehension of the assigned course materials and be prepared for in-class lectures, discussions, and activities. Typically, the quizzes must be completed via E-campus prior to the first class meeting of each week. Tentative quiz due dates are on the schedule below. Quiz openings and exact due dates will be announced via the course website.

- Each quiz will contain up to two parts:
  - Part 1 will be approximately 5-20 multiple choice or true/false questions
  - Part 2 may include 1-2 open-ended question to be discussed in class the following week
- Quiz 1 serves as practice and students will receive full credit by answering all questions.
- Quiz 2 and beyond will be graded for correctness (multiple choice and T/F questions only)
- Students will be given two attempts to complete each quiz.
- Students must complete the quizzes individually and should NOT share any information about the quizzes with their classmates.
- Each student’s lowest quiz grade will be dropped from the final grade calculation.

**Homework Assignments**

There will be a homework assignment due almost every week. Homework assignments and related materials will be made available on the course website. **I strongly advise students to begin to work on their homework assignments soon after they are assigned, so that if they need help from the instructor they have time to ask for and receive assistance.** The overall weight of the assignments on the final course grade is **35%**. These include submission of results from in-class activities. **All assignments are due at 11:59pm the day before the class they are due.**

**Late Assignments.** Each student will be allowed one late assignment, due 7 days from the due date. NO other late assignments or make up will be accepted.

**Collaboration:** Collaboration on assignments, in-class labs and homework, IS encouraged. However, what you hand in must be in your own writing/typing. Good scholarship requires that all collaborations must be acknowledged. **Thus, if you collaborate on the solution of the problem set, I expect that you list your collaborators at the top of the page.** Collaboration on in-class evaluations (quizzes, mid-terms, and the final exams) is, of course, a violation. This includes a discussion of questions on a quiz, midterm, or final with students from sections that have not yet taken the evaluation.

**Plagiarism:** If you consult any outside sources when doing your work, you are expected to further document these sources. Give credit where credit is due. Plagiarism will not be tolerated. **Coping open source code is permitted as long as credit to the source is given.**

**All handed in homework should state at the top any assistance with debugging and programming, as well as citations of any program segments copied from a website.**

**Learning and Seeking Help:** Learning basic concepts in technology requires you learn by actually doing simple tasks using technology and understanding how technology operates at a fundamental level. **You will learn and get as much out of this class as you put into it.** Ask for assistance from your fellow students or from the TA or instructor, especially if you find yourself struggling. But remember in the end, building technology skills are like skill-building math classes. Either you know how to do them or not. No amount of watching others or the instructor doing things will suffice for you to build these skills. Only your hard work to work through them will build your skills. It is a lot of work to build these skills, but data and technology skills are highly valuable in the job market in the modern digital world, so it will be well worth your effort. Furthermore, once you learn to think in this manner, it's not something you forget.

### **Class Participation: Active Learning**

Most classes will have the last hour be designed as an active learning session. You are expected to submit the results in 7 days (following midnight Sunday). If you were not able to complete the activities or missed class, you are expected to complete them outside class and submit. These submissions are graded as

- satisfactory submission
- unsatisfactory submission
- No submission

### **Assignments and Exam Schedule** (Minor modifications may be made as needed with notice)

	<b>Date</b>	<b>Online Quiz</b>	<b>Assignment Given</b>	<b>Assignment Due</b>	<b>Presentations* (Tentative)</b>
1	1/13		Assignment 1		
	1/20	MLK		<b>Assignment 1 Progress Report</b>	
2	1/27	Quiz 1 (practice)	Assignment 2	<b>Assignment 1 Email on Presentation</b>	
3	2/3	Quiz 2	Assignment 3	Assignment 2	
4	2/10	Quiz 3			Group 1
5	2/17	Quiz 4	Assignment 4	Assignment 3	Group 2
6	2/24	Quiz 5			Group 3
7	3/2	Quiz 6	Assignment 5	Assignment 4	Group 4
	3/9		<b>SPRING BREAK</b>		
8	3/16	Quiz 7	Assignment 6	Assignment 5	GUEST LECTURE
9	3/23	Quiz 8			GUEST LECTURE
10	3/30		Assignment 7: Review	Assignment 6	
11	4/6		<b>Midterm</b>	Assignment 7: Review	
12	4/13		Assignment 8		Group 5
13	4/20				Group 6
14	4/27		Final Project	Assignment 8	Group 7
	4/30			<b>Final Project</b>	

\* Guest lecture dates are not finalized, so presentation dates might have to be moved back some after scheduling. If this occurs, I will email ahead of time. I will do my best to finalize schedule within 4 weeks.

### **COURSE STRUCTURE & TOPICS**

A three-hour class session will generally be split into three segments as follows

- 90-minute lecture: Basic concepts and principles will be presented in a lecture
- 10-minute break
- 20-minute presentations: These will be mostly group presentations or guest lectures. On guest lecture days, the time distribution could change.
- 60 minute actively learning: Hands-on in class activities and discussions (you will be asked to hand in the results of your classroom activities)

**The detailed schedule of classes is posted on the course website and will be updated.**

Tentative schedule (The final detailed schedule of classes is posted on the course website and will be updated as the semester progresses.)

Week	Lecture	Readings & Quiz (For class)
1	Introduction & Tableau	None
2	Health Care Data	Ch 1 & 2; Quiz 1
3	Health Care Information Systems	Ch 3; Quiz 2
4	Population Health Management	Ch 4; Quiz 3
5	System Requirements & Acquisition	Ch 5; Quiz 4
6	IT Management & Implementation	Ch 6 & 8; Quiz 5
7	IT Adoption & Use	Ch 7; Quiz 6
8	Standards & Coding	Ch 10 & 11; Quiz 7
9	Security	Ch 9; Quiz 8
10	Privacy	R1 (see course website); Quiz 9
11	Midterm	
12	SQL I	R2 (see course website); Quiz 10
13	SQL II	Lab 9
14	Wrap up & SQL III	

### **COURSE LEARNING OBJECTIVES**

By the end of the course, the student will be able to demonstrate knowledge of fundamentals of computing and Health Information Management Systems.

MHA Core Competency	Course Objectives	Assessment
<b>Domain:</b> Health Care Environment and Community <b>Core Competency Area(s):</b> Legal and Ethical Bases for Health Services and Health Systems	Describe the legal and ethical issues of privacy in sensitive health data.  Define and explain the different security technology and legal tools available to protect the sensitive data.	Security & Privacy Worksheet and Flyer
<b>Domain:</b> Leadership Skills <b>Core Competency Area(s):</b> Problem Solving, Decision Making, and Critical Thinking	Develop stories using relevant data, the evidence, to support a decision	Data to Decision
<b>Domain:</b> Management Skills <b>Core Competency Area(s):</b> Performance Improvement	Describe the impact of HIT on medical outcomes	Adoption & Use
<b>Domain:</b> Analytic and Technical Skill <b>Core Competency Area(s):</b> Data Analysis and Information Management	Describe common components of an EMR Write SQL queries to answer specific questions about the information in the database	EMR SQL queries

### **OTHER RELEVANT MATERIAL**

#### **Attendance and Make-up Policies**

**Attendance:** Class attendance and participation is an individual student responsibility. Students taking traditional face-to-face courses are expected to attend class and to complete all assignments by stated due dates. Students enrolled in distance education courses are expected to regularly engage with instructional materials and complete all assignments by stated due dates.

A university-excused absence is the **only** excuse acceptable for missing an assignment credit. For information regarding what constitutes an excused absence, required documentation, and timing of notifications and provision of documentation, please see <http://student-rules.tamu.edu/rule07>. Unexcused absences will result in a grade of a 0, for missed assignments.

University-excused absences do not relieve the student of responsibility for prior notification (where possible) and documentation. In cases where prior notification is not feasible (e.g., accident or emergency) the student must provide notification by the end of the second working day after the absence, including an explanation of why notice could not be sent prior to the class. Failure to notify and/or document properly may result in classification as an unexcused absence. Falsification of documentation is a violation of the Honor Code.

Other absences may be excused at the discretion of the instructor with prior notification and proper documentation.

**Make-Up Policies:** If an absence is excused, the instructor will either provide the student an opportunity to make up any work that contributes to the final grade or provide a satisfactory alternative by a date agreed upon by the student and instructor. If the instructor has a regularly scheduled make up exam, students are expected to attend unless they have a university-approved excuse. Make-up work must be completed in a timeframe not to exceed 30 calendar days from the last day of the initial absence.

#### **eCampus (Blackboard)**

eCampus, powered by Blackboard Learn, is the university-wide learning management system for uploading syllabi, managing grades, and teaching courses either partially or completely online. eCampus is a secure, centralized system that features: grade center, assignments, quizzes, surveys, chat rooms, discussions, blogs, email, and content management tools.

In order to access the course materials you will need to log in to [Howdy](#), then click the **eCampus** button or go to <http://ecampus.tamu.edu>. *Your eCampus login is the same as your Howdy login (NetID)*. Review the [eCampus Tutorials](#) (in the EdTech Tools & Resources section of School's Office of Academic Assessment and Instructional Technology website) or visit the [Student Documentation for eCampus](#).

#### **Computer Requirements for Online Courses**

For this and all online courses we recommend the minimum technical requirements outlined on our [Computer Requirements](#) web page.

For technical support, contact HelpDesk [hdc@tamu.edu](mailto:hdc@tamu.edu), or phone to (979) 845-8300

**Important!!!** Save your work as you go along. Nothing is more discouraging than to lose an assignment due to a computer hang ups! You may want to also make hard copies of your work to have "proof" and save yourself time and trouble!

#### **Academic Integrity**

Academic integrity is the pursuit of scholarly activity free from fraud and deception and is an educational objective of this institution. Students are expected to adhere to all TAMUS, TAMU, HSC, and School policies regarding academic integrity and classroom conduct. Academic dishonesty includes, but is not limited to, cheating, plagiarizing, fabricating information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used, or tampering with the academic work of another student. Individuals found responsible of academic dishonesty may be dismissed from the degree program, and at a minimum will receive an F for the course. **It is the student's responsibility to have a clear understanding of how to reference other individuals' work, as well as having a clear understanding in general as to the various aspects of academic dishonesty.**

Information on the Aggie Honor Code is found at <http://aggiehonor.tamu.edu> .

Students are encouraged to view two short videos at: <https://aggiehonor.tamu.edu/Student-Resources/AHSO-Videos>

As well as review available materials and examples of academic dishonesty found at: [https://library.tamu.edu/services/library\\_tutorials/academic\\_integrity/index.html](https://library.tamu.edu/services/library_tutorials/academic_integrity/index.html)

**Remember:**

*“An Aggie does not lie, cheat, or steal, or tolerate those who do.”*

**Course Evaluation**

Constructive feedback from students on course evaluations is held in high regard at the School of Public Health. Your assistance in helping the School in its assessment of courses and faculty through participation in the evaluation of courses is requested. As public health professionals you will one day have the responsibility to evaluate colleagues and health initiatives. The School views providing feedback on the School's courses as part of your professional responsibility.

**SPH Mission**

The Texas A&M School of Public Health is committed to transforming health through interdisciplinary inquiry, innovative solutions, and development of leaders through the Aggie tradition of service to engage diverse communities worldwide.

**Americans with Disabilities Act (ADA)**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit <http://disability.tamu.edu>.

**Copyright Statement**

The materials used in this course are copyrighted. These materials include but are not limited to syllabi, quizzes, exams, lab problems, in-class materials, review sheets, and additional problem sets. Because these materials are copyrighted, you do not have the right to copy or share, unless permission is expressly granted by the instructor.

**FERPA**

The Federal Education Rights & Privacy Act requires that we advise students that by registering for this course, their University assigned e-mail address will be revealed to classmates and the instructor. By continuing your enrollment in the course you acknowledge your understanding of this policy. By enrolling in this course you agree to the following statement: “I understand that as a result of registering for this course, my University assigned e-mail address will be revealed to classmates and the instructor.”

**Equal Opportunity Statement**

Texas A&M University is an Equal Opportunity/Affirmative Action/Veterans/Disability Employer committed to diversity. Inquiries regarding nondiscrimination policies may be directed to the Human Resources by phone at 979-845-4141 or to Texas A&M University Division of Human Resources and Organizational Effectiveness, 750 Agronomy Road, General Services Complex Suite 1201, College Station, TX 77843-1255.

**Title IX**

Title IX of the Education Amendments of 1972 protects people from sex discrimination in educational programs and activities at institutions that receive federal financial assistance. Texas A&M University and the Texas A&M Health Science Center are committed to maintaining a learning environment that is free from discriminatory conduct based on gender. As required by Title IX, the University does not discriminate on the basis of sex in its education programs and activities, and it encourages any student or non-student who thinks that he or she has been subjected to sex discrimination, sexual harassment (including sexual

violence) or sexual misconduct by another student, member of the faculty or staff, or campus visitor or contractor, to immediately report the incident to any of the individuals persons or offices listed below.

For complaints against students:

Dr. Anne Reber  
[Dean of Student Life](#)  
Student Services @ White Creek  
Student Life #3 (Bldg. #0072), Room 101  
Texas A&M University  
College Station, TX 77843-1257  
(979) 845-3111  
[studentlife@tamu.edu](mailto:studentlife@tamu.edu)

For complaints against faculty, staff, visitors, contractor, vendors, or unknowns:

Kevin McGinnis  
Chief Compliance Officer  
Medical Sciences Library  
202 Olsen Blvd., Suite 007  
College Station, TX 77843  
(979) 458-8407  
[CivilRights@tamu.edu](mailto:CivilRights@tamu.edu)

The University encourages students to immediately consult with or report incidents of sex discrimination, sexual harassment (including sexual violence) or sexual misconduct to the TAMHSC Title IX Coordinator. Students may also report incidents of sex discrimination, sexual harassment (including sexual violence) or sexual misconduct to any School of Public Health administrator, university administrator, official or unit supervisor, who is then responsible for promptly notifying any of the above Title IX coordinators of the reported incident.

**DISCLAIMER**

This syllabus is representative of materials that will be covered in this class. It is subject to change. These changes will be communicated via email or posted as announcements. If you have any problems related to this course, please feel free to discuss them with the instructor.

## **APPENDIX A: SCHOOL OF PUBLIC HEALTH COMPETENCIES- *Council on Education for Public Health (CEPH)***

### **D1. MPH & DrPH Foundational Public Health Knowledge**

#### **Profession & Science of Public Health**

- D1.1. Explain public health history, philosophy and values
- D1.2. Identify the core functions of public health and the 10 Essential Services
- D1.3. Explain the role of quantitative and qualitative methods and sciences in describing and assessing a population's health
- D1.4. List major causes and trends of morbidity and mortality in the US or other community relevant to the school or program
- D1.5. Discuss the science of primary, secondary and tertiary prevention in population health, including health promotion, screening, etc.
- D1.6. Explain the critical importance of evidence in advancing public health knowledge

#### **Factors Related to Human Health**

- D1.7. Explain effects of environmental factors on a population's health
- D1.8. Explain biological and genetic factors that affect a population's health
- D1.9. Explain behavioral and psychological factors that affect a population's health
- D1.10. Explain the social, political and economic determinants of health and how they contribute to population health and health inequities
- D1.11. Explain how globalization affects global burdens of disease
- D1.12. Explain an ecological perspective on the connections among human health, animal health and ecosystem health (e.g., One Health)

### **D2. MPH Foundational Competencies**

#### **Evidence-based Approaches to Public Health**

- D2.1. Apply epidemiological methods to the breadth of settings and situations in public health practice
- D2.2. Select quantitative and qualitative data collection methods appropriate for a given public health context
- D2.3. Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate
- D2.4. Interpret results of data analysis for public health research, policy or practice

#### **Public Health & Health Care Systems**

- D2.5. Compare the organization, structure and function of health care, public health and regulatory systems across national and international settings

### **HPMC. MPH in Health Policy and Management Concentration Competencies**

- HPMC.1. Use policy and management tools to evaluate implications of specific programs, policies, and interventions on organizations and populations.
- HPMC.2. Develop and justify budgets that support programs and organizations in the public health and health care sectors.
- HPMC.3. Communicate evidence-based options to address public health management and policy problems.
- HPMC.4. Apply project management and strategic management tools to create public health program goals, strategies, and objectives.
- HPMC.5. Recommend and justify policies or organizational initiatives for implementation after examining their feasibility and implications.

- D2.6. Discuss the means by which structural bias, social inequities and racism undermine health and create challenges to achieving health equity at organizational, community and societal levels

#### **Planning & Management to Promote Health**

- D2.7. Assess population needs, assets and capacities that affect communities' health
- D2.8. Apply awareness of cultural values and practices to the design or implementation of public health policies or programs
- D2.9. Design a population-based policy, program, project or intervention
- D2.10. Explain basic principles and tools of budget and resource management
- D2.11. Select methods to evaluate public health programs

#### **Policy in Public Health**

- D2.12. Discuss multiple dimensions of the policy-making process, including the roles of ethics and evidence
- D2.13. Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes
- D2.14. Advocate for political, social or economic policies and programs that will improve health in diverse populations
- D2.15. Evaluate policies for their impact on public health and health equity

#### **Leadership**

- D2.16. Apply principles of leadership, governance and management, which include creating a vision, empowering others, fostering collaboration and guiding decision making
- D2.17. Apply negotiation and mediation skills to address organizational or community challenges

#### **Communication**

- D2.18. Select communication strategies for different audiences and sectors
- D2.19. Communicate audience-appropriate public health content, both in writing and through oral presentation
- D2.20. Describe the importance of cultural competence in communicating public health content

#### **Interprofessional Practice**

- D2.21. Perform effectively on interprofessional teams

#### **Systems Thinking**

- D2.22. Apply systems thinking tools to a public health issue



## APPENDIX B: THE MHA PROGRAM COMPETENCY MODEL

**DOMAIN: Health Care Environment and Community** (the relationship between health care operations and their communities and local, state, regional, and national organizations and policies)

- **Public and Population Health Assessment** Historic, current, and anticipated future characteristics and requirements for health care at local, state, regional, and national markets
- **Delivery, Organization, and Financing of Health Services and Health Systems** Resources, structure, process, and outcomes associated with providing health care informed by theory, data, and analytic methods
- **Policy Analysis** Creation, analysis, and implications of policy for health care structures and delivery systems
- **Legal and Ethical Bases for Health Services and Health Systems** Laws, regulations, and social or other norms that formally or informally provide guidance for health care delivery

**DOMAIN: Leadership Skills** (the motivation and empowerment of organizational resources to achieve a shared vision)

- **Ethics, Accountability, and Self-Assessment** Professional and personal values and responsibilities that result in ongoing self-reflection, professional awareness, learning, and development
- **Organizational Dynamics** Organizational behavior methods and human resource strategies to maximize individual and team development while ensuring cultural awareness and inclusiveness
- **Problem Solving, Decision Making, and Critical Thinking** Data, analytic methods, and judgment used in support of leadership decisions
- **Team Building and Collaboration** Partnerships that result in functional, motivated, skill-based groups formed to accomplish identifiable goals

**DOMAIN: Management Skills** (the control and organization of health services delivery)

- **Strategic Planning** Market and community needs served by defined alternatives, goals, and programs supported by appropriate implementation methods
- **Business Planning** Develop and manage budgets, conduct financial analysis; identify opportunities and threats to organizations using relevant information
- **Communication** Verbal and non-verbal communication to convey pertinent information
- **Financial Management** Read, understand, and analyze financial statements and audited financial reports
- **Performance Improvement** Data, information, analytic tools, and judgment used to guide goal setting for individuals, teams, and organizations
- **Project Management** Design, plan, execute, and assess tasks and develop appropriate timelines related to performance, structure, and outcomes in the pursuit of stated goals

**DOMAIN: Analytic and Technical Skills** (the successful accomplishment of tasks in health services delivery)

- **Systems Thinking** Interrelationships between and among constituent parts of an organization
- **Data Analysis and Information Management** Data, information, technology, and supporting structures used in completing assigned tasks
- **Quantitative Methods for Health Services Delivery** Economic, financial, statistical, and other discipline-specific techniques needed to understand, model, assess, and inform health care decision making and address health care questions

## APPENDIX C: PhD-HEALTH SERVICES RESEARCH COMPETENCIES

C1: Identify, assemble, evaluate, and critique a large body of existent research addressing a specific research agenda.

C2: Develop a theoretically grounded research design that allows for rigorous evaluation of health services research questions that stand up to peer review, including the use of appropriate methods for the research question at hand.

C3: Identify, collect, and prepare appropriate data through primary or secondary sources with adequate documentation for replication.

C4: Execute quantitative and qualitative analytical techniques to explore and clarify associations between variables and to delineate causal inferences.

C5: Effectively communicate the findings and implications of health services research through multiple modalities to technical and lay audiences.

C6: Develop policy solutions to public health problems that are based on the best evidence available and that will hold up to scrutiny from others.

C7: Demonstrate knowledge of economic principles and their application for research questions in health services research.

C8: Exhibit knowledge of the institutions, organizational structures, and management strategies used to enhance effectiveness in health delivery systems.