

**NEW YORK UNIVERSITY
WAGNER GRADUATE SCHOOL OF PUBLIC SERVICE
HEALTH POLICY AND MANAGEMENT PROGRAM**

**P11.2821 - HEALTH CARE MANAGEMENT INFORMATION SYSTEMS
Spring, 2009**

Instructor: Roger Kropf, Ph.D.
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Day, Time and Location: Mondays, 6:45-8:25 p.m., 194 Mercer, Room 203
Prerequisites: P11.1833, Health Services Management, or permission of the instructor.

COURSE DESCRIPTION

The major purpose of this course is to provide students with an understanding of how information systems and technology can be used to implement an organization's strategy. How information systems and technology can improve the quality of service provided to consumers and the clinical quality of health care is examined, as well as the technology selection, acquisition and implementation processes.

Issues related to organizing and managing the information services function in a health care organization are discussed, and how they are being resolved. By the end of this course, students should be able to work more productively with information systems professionals to plan, justify, select, and implement an information system. This requires both an understanding of the concepts and techniques used by information systems professionals and the ability to define what information is needed to effectively manage health services.

COURSE OBJECTIVES

At the end of this course, students will be able to:

1. state how information systems and technology can be used to implement an organization's strategy;
2. define one or more information systems and technologies which could improve the satisfaction of consumers receiving a health care service;
3. identify one or more information systems or technologies which could improve the clinical quality of a health care service;
4. describe a process for selecting an information system or technology to help implement a strategy; and

5. state how individual and group responses to information systems and technology can inhibit implementation, and define techniques for increasing the chances of successful implementation.

REQUIRED COURSE MATERIALS

Roger Kropf and Guy Scalzi, Making Information Technology Work: Maximizing the Benefits for Health Care Organizations (Chicago: Health Forum/AHA Press, 2007). For more information, go to <http://www.nyu.edu/classes/kropf/> Copies are available at the NYU Professional Bookstore on LaGuardia Place.

Readings listed below posted on Blackboard, available on-line or handed out in class, as indicated below.

OPTIONAL COURSE MATERIALS

Those of you who feel the need to learn about (or update your knowledge of) information systems topics not specific to health services should review a recent text. An example is: Kenneth C. Laudon and Jane P. Laudon, Management Information Systems: Managing the Digital Firm, Tenth Edition (Upper Saddle River, N.J.: Prentice Hall, 2007, <http://www.prenhall.com/laudon/>). The important thing is to find a very recent text, since this field changes rapidly.

Two excellent reference sources for a range of healthcare IT topics are:

Karen A. Wager, Frances Wickham Lee and John P. Glaser, Managing Health Care Information Systems: A Practical Approach for Health Care Executives (San Francisco: Jossey-Bass, 2005).

Gerald Glandon, Detlev Smaltz and Donna Slovensky, Information Systems for Healthcare Management, Seventh Edition (Chicago: Health Administration Press, 2008).

INTERNET REFERENCE RESOURCES ON INFORMATION SYSTEMS

1. HIMSS Topics and Tools
<http://himss.org/ASP/topicsHome.asp>
2. Journals and newsletters:

| | |
|-------------------------------|--|
| <u>Health Data Management</u> | http://www.healthdatamanagement.com/ |
| <u>iHealthBeat</u> | http://www.ihealthbeat.org A free daily email from the California Health Care Foundation. |
| <u>Informatics Review</u> | http://www.chcf.org/topics/index.cfm?topic=CL108 http://www.informatics-review.com/ |

3. Webopedia, an on-line dictionary for computer and Internet terms.
<http://www.webopedia.com/>
4. TechEncyclopedia <http://www.techweb.com/encyclopedia/>
5. Kropf's Favorite Links at www.nyu.edu/classes/kropf/favorite_links.htm
- 6.. Pam Pohly's Net Guide <http://www.pohly.com/>
7. American Medical Informatics Association <http://www.amia.org/>
8. Leapfrog Group <http://www.leapfroggroup.org>
9. Open Directory Project-Medical Informatics
<http://dmoz.org/Health/Medicine/Informatics>
10. Center for Information Technology Leadership <http://www.citl.org/>
11. Connected Health Initiative <http://www.connected-health.org>
The Connected Health Initiative focuses on extending the care community beyond the traditional walls of healthcare institutions by bringing healthcare to the everyday surroundings of the health consumer and their families.
12. Agency for Healthcare Research and Quality National Resource Center for Health Information Technology <http://www.healthit.ahrq.gov>
13. Certification Commission for Healthcare Information Technology <http://www.cchit.org/>

Resources on mobile and handheld computing

14. HIMSS, Handheld Healthcare <http://www.himss.org/webguides/handheld/index.asp>
15. Journal of Mobile Informatics <http://www.rnpalm.com/>

CIO Blogs

16. John D. Halamka, MD, MS, is Chief Information Officer of the CareGroup Health System, Chief Information Officer and Dean for Technology at Harvard Medical School
<http://geekdoctor.blogspot.com/>
17. Will Weider, CIO of Ministry Health Care and Affinity Health System.
<http://candidcio.com/>
18. Edward Marx joined Texas Health Resources (THR) in 2007 as senior vice president and chief information officer. http://community.advanceweb.com/blogs/hx_3/default.aspx

ASSIGNMENTS AND GRADING

All assignments will be graded as Pass or Fail and returned with comments. Grades will be assigned based on the number of assignments completed

| Grade | No. of Assignments |
|-------|--------------------|
| A | 5 |

| | |
|----|--------|
| B+ | 4 |
| B | 3 |
| C | 2 |
| F | 1 or 0 |

The assignments and due dates are:

| Assignment | Date Distributed | Date Returned |
|--|-------------------|----------------|
| Oral presentation (5 min.) | Assigned randomly | One week later |
| Case analysis | March 23 | March 30 |
| In-class exam on the readings | April 27 | April 27 |
| Quality improvement project (counts as 2 assignments for grading) | February 9 | May 11 |

There will be two major written assignments during the semester which will be completed outside of class and returned, typed double-spaced, on the date shown below.

REPORT TO A CIO

The first assignment will ask you to apply what you have learned by responding to questions posed by the CIO of a healthcare organization. The assignment is in two parts. Part one will be a memo to the CIO. Part two will be a memo to the instructor explaining how the concepts and knowledge in the course have been applied, and will include appropriate footnotes.

QUALITY IMPROVEMENT PROJECT

The Quality Improvement Project will be to present an information systems or technology plan for improving the quality of a health care service. Students will select a service (e.g., ambulatory pediatric services in a small group practice or hospital radiology services) and define an information system (or enhancement to an existing system) that would improve customer satisfaction, clinical quality, or both. The addition of an information technology (e.g., voice data input and output) can also be included.

You will determine client needs (e.g., by interviews, observation), look at systems on the market, and make a recommendation on which one should be considered for a purchase. You will observe at least two software products available for a particular application in operation at two different locations similar to the client organization. With the permission of the instructor, on-

line demos can be substituted. Further instructions on what should be included in a plan will be provided by the instructor. Students should submit a one-page proposal describing the service and the quality objective or problem that they would like to focus on by March 23.

With prior approval, students can work in a team of up to two people. Approval will be based on the complexity of the service selected. Late papers will not be accepted without prior approval by the instructor.

INCOMPLETES

See the Wagner School's policy on Incomplete Grades at:
<http://wagner.nyu.edu/current/policies/incompletes.php>

COURSE OUTLINE & READING ASSIGNMENTS

January 26 Healthcare Information Systems: Vision And Priorities

1. Roger Kropf, "Information Management" in Kovner and Knickman, Health Care Delivery in the United States, 9th Edition (New York: Springer Publishers, 2008). Full-text available at:
<http://www.nyu.edu/classes/kropf/>
2. 2008 Leadership Survey: Healthcare CIO Key Trends Index (Chicago: HIMSS, 2007). Available at
http://www.himss.org/2008Survey/healthcareCIO_keytrends.asp

February 2 Information and Technology As Strategic Resources; IT Governance

1. "Introduction," Roger Kropf and Guy Scalzi, Making Information Technology Work
2. University Hospitals: IT Governance and Creation of a Project Management Office" from Roger Kropf and Guy Scalzi, Making Information Technology Work: Maximizing the Benefits for Health Care Organizations.
3. Jeanne Ross and Peter Weill, "Six IT Decisions Your IT People Shouldn't Make," *Harvard Business Review* (November 2002), p. 5-11. (Blackboard)
4. Keith Frey et. al., "The Development and Implementation of a Strategic and Tactical Planning Framework at Mayo Clinic Arizona," *Journal of Healthcare Information Management* 19:3 (Summer 2005), p. 39-46. (BB)

February 9 Assessing Value Before Implementation

1. "Part One : Assessing Value Before Implementation", Kropf and Scalzi, Making Information Technology Work
2. Kaushal, Rainu, Ashish Jha, and Calvin Franz et. al. "Return on Investment for

a Computerized Physician Order Entry System." *Journal of the American Medical Informatics Association* 13, no. 3 (May/June 2006). (BB)

3. Wang, Samuel, et al. "A Cost-Benefit Analysis of Electronic Medical Records in Primary Care." *The American Journal of Medicine* 114 (April 1 2003): 397-403. (BB)

Additional Resources/Optional Reading:

1. Roger Kropf, "How Shall We Meet Online? Choosing Between Videoconferencing and Online Meetings," *Journal of Healthcare Information Management*, Vol. 16, No. 4 (Fall, 2002), p. 68-72. Full-text available at: <http://www.himss.org/content/files/jhim/16-4/Section%2018%20-%20OriginalContrib3.pdf>

2. GAO, *Information Technology: Benefits Realized for Selected Health Care Functions*, Report GAO-04-224 (Washington, D.C.: GAO, 2003). Full-text available at: <http://www.gao.gov/new.items/d04224.pdf>

Description of Quality Improvement Project distributed

February 16 NYU Holiday - No Class

February 23 Integrating Health Systems Through Technology: Federal and Local Initiatives

1. Susannah Patton, "Sharing Data, Savings Lives," *CIO* (March 1, 2005). (BB)
2. First Consulting Group, *Overcoming Ten Non-Technical Challenges of RHIOs* (Long Beach, CA, 2006). (BB) Full text available: <http://www.himss.org/content/files/OvercomingRHIOChallengesRpt.pdf>
3. Joy M. Grossman, Thomas S. Bodenheimer, and Kelly McKenzie, "Hospital-Physician Portals: The Role Of Competition In Driving Clinical Data Exchange," *Health Affairs* 25: 6 (November/December 2006), p. 1629-1636. (BB)
4. Robert H. Miller and Bradley S. Miller, "The Santa Barbara County Care Data Exchange: What Happened?" *Health Affairs*, 26, no. 5 (2007): w568-w580. (BB)

Other Resources/Optional Reading:

1. David Brailer, *The Decade of Health Information Technology: Delivering Consumer-centric and Information-rich Health Care, Framework for Strategic Action: Executive Summary* (Washington: Office of the National Coordinator for Health Information Technology, HHS, 2004).

<http://www.hhs.gov/healthit/executivesummary.html>

Full-text of the report is available at:

<http://www.hhs.gov/healthit/documents/hitframework.pdf>

2..HIMSS RHIO/Health Information Exchange Resources

http://himss.org/ASP/topics_rhio.asp

March 2 HIPAA: Security And Privacy

1. “Security of Health Care Information Systems”, Ch. 10 in Karen A. Wager, Frances Wickham Lee and John P. Glaser, Managing Health Care Information Systems: A Practical Approach for Health Care Executives (San Francisco: Jossey-Bass, 2005).
2. John Ennis, “Information Security Strategy: Questions You Wish the CEO Would Ask,” Journal of Healthcare Information Management 17:3 (Summer, 2003), p. 5-8 (On Blackboard)
3. Milt Freudenheim and Robert Pear, “Health Hazard: Computers Spilling Your History,” *New York Times* (December 3, 2006) (Blackboard)
4. Deborah Gage and Kim Nash, “Identity Theft: Providence Health’s Serious Pain,” *Baseline Magazine* (December 6, 2006). Full-text available at: <http://www.baselinemag.com/article2/0,1540,2069952,00.asp>

Additional Resources/Optional Reading:

1. HIMSS Privacy/Security/ resource
http://www.himss.org/asp/topics_privacy.asp
2. Official HHS websites on HIPAA. <http://www.hhs.gov/ocr/hipaa/> and <http://aspe.hhs.gov/admsimp>
3. Joan Hash et.al., An Introductory Resource Guide for Implementing the Health Insurance Portability and Accountability Act (HIPAA) Security Rule. Computer Security Division, Information Technology Laboratory, National Institute of Standards and Technology, Gaithersburg, MD. (March 2005). Full-text available at: <http://csrc.nist.gov/publications/nistpubs/800-66/SP800-66.pdf>

March 9 Improving Healthcare Service Quality Through Technology

1. Donald Berwick, “Knowledge Always On Call.” *Modern Healthcare* (September 27, 1999), p. 2-4. (BB)
2. Julie Deardorff, “Online with your doctor,” *Chicagotribune.com* (December 2, 2007). Full text available at: http://www.chicagotribune.com/features/lifestyle/q/chi-1202_digital_docs_p1_de_c02,0,4333721,print.column
3. Eric Liederman and Catrina Morefield, “Web Messaging: A New Tool for Patient-Physician Communication,” *Journal of the American Medical Informatics Association* 10:3 (May/June, 2003), p. 260-270. Full-text available at: <http://www.jamia.org/cgi/content/full/10/3/260>
4. Michael Matheny et. al., “Impact of an Automated Test Results Management System on Patients’ Satisfaction About Test Result Communication,” *Archives of*

Internal Medicine 167:20 (November 12, 2007), p. 2233-2239. (BB)

5. Francesca Cariello, "Computerized Telephone Nurse Triage: An Evaluation of Quality and Cost," *Journal of Ambulatory Care Management* 26:2 (April-June, 2003), p. 124-137. (BB)

Additional resource/Optional Reading:

1. Keith MacDonald, Online Patient-Provider Communication Tools: An Overview (California HealthCare Foundations, 2003). Full text available at: www.chcf.org/documents/ihealth/PatientProviderCommunicationTools.pdf

2. Medem, "eRisk Working Group on Healthcare's Guidelines for Online Communications, January, 2007 ." Full text at: http://www.medem.com/corporate/corporate_Addendum_A_eRiskGuidelines.cfm#medem_erisk

March 16 No Class - Spring Break

March 23 Improving Clinical Quality Through Information Technology (Part I)

1. Donald Berwick, "My Right Knee," *Annals of Internal Medicine* 2005:142: 121-125. (BB)

2. David Bates and Atul Gawande, "Improving Safety with Information Technology," *New England Journal of Medicine* 348:25 (June 19, 2003), p. 2526-2534..(BB)

3. Edward H. Shortliffe and Leslie E. Perreault, Editors. Medical Informatics: Computer Applications In Health Care. (Reading, MA: Addison-Wesley Publishing Co., 1990), p. 469, 475-480.

4. David Bates et al., "Ten Commandments for Effective Clinical Decision Support: Making the Practice of Evidence-based Medicine a Reality," *Journal of the American Medical Informatics Association* 10:6 (Nov/Dec, 2003), p. 523-530. Full-text available at: <http://www.jamia.org/cgi/content/full/10/6/523>

5. Richard Lang, "Clinical Decision Support: Fulfilling a Real-Time Need with Available Means," *Journal of Healthcare Information Management* 21:2 (Spring, 2007), p. 2-4. (BB)

Additional Resources/Optional Reading (Not in reading packet):

1. Jane Metzger and Keith MacDonald , Clinical Decision Support for the Independent Physician Practice (Oakland: California Healthcare Foundation, 2002). Not in reading packet. Full text available at: <http://www.chcf.org/documents/ihealth/ClinicalDecisionSupport.pdf>

Case analysis distributed. Due on March 30

Submit a one-page proposal describing the service and the quality objective or problem that they would like to focus on by March 23.

March 30 Improving Clinical Quality (Part II: Managing The Use of Drugs)

1. “Electronic Prescribing Systems: Making It Safer to Take Your Medicine?” RAND Research Highlights, 2005. Full-text available at: http://www.rand.org/pubs/research_briefs/RB9052/index1.html
2. David W. Bates et. al., “Effect of Computerized Physician Order Entry and a Team Intervention on Prevention of Serious Medication Errors,” *JAMA* 280:15 (October 21, 1998), p. 1311-1316.
3. Victoria M. Bradley et. al., “Evaluation of Reported Medication Errors Before and After Implementation of Computerized Practitioner Order Entry,” *Journal of Healthcare Information Management* 20:4 (Fall, 2006), p. 46-53.
4. Ross Koppel, et. al., “Role of Computerized Physician Order Entry Systems in Facilitating Medication Errors,” *JAMA* 293:10 (March 9, 2005), 1197-1203.
5. Steve Lohr, “Doctors' Journal Says Computing Is No Panacea,” *New York Times* (March 9, 2005).

Case analysis due on March 30 by 6:45 pm.

April 6 System Evaluation and Selection

Guest Speaker: **Helen Levine** is nationally recognized as an advocate for leveraging information technology to achieve breakthroughs in patient care and healthcare delivery. She works with the industry as an executive, consultant, educator, and speaker. She has come up through the ranks at Exxon Corporation and Booz Allen and Hamilton, launched and managed the consulting practices of Healthcare Management Counselors and Park City Solutions, taught at New York University and Harvard, and served as a CIO in integrated delivery systems.

April 13 Project Management

1. “Part Two: Project Management During Implementation,” Kropf and Scalzi, Making Information Technology Work.
2. Re-read “University Hospitals: IT Governance and Creation of a Project Management Office” from Roger Kropf and Guy Scalzi

Additional Resources/Optional Reading:

1. Gregg Mohrmann and Roger Kropf, “IT Management and Governance Systems and Their Emergence in Healthcare,” *Journal of Healthcare Information Management* 21:1 (Winter 2007), p. 33-39. (BB)

2. Gregg Mohrmann, Craig Schlusberg and Roger Kropf, “Demand Management in Healthcare IT: Controlling IT Demand to Meet Constrained IT Resource Supply,” *Journal of Healthcare Information Management* 21:4 (Fall, 2007), p. 56-63.(BB)

April 20 Managing Implementation: Outsourcing and Service Level Agreements

1. “Chapter 9: Service Level Agreements - A Tool for Negotiating and Sustaining Performance” in Kropf and Scalzi
2. “University of Pennsylvania Health System (UPHS) Development and Use of Service Level Agreements (SLAs) in Kropf and Scalzi
3. Rose Ann Laureto-Ward, “Healthcare Information Systems Outsourcing,” Chapter 27 in Kevin Beaver (ed.), Healthcare Information Systems (Boca Raton, FL: Auerbach Publishers, 2003), p. 369-389.

Guest Speaker: **Guy Scalzi** is a Principal with Aspen Advisors, a professional services firm that works with healthcare organizations to optimize the value of their information technology. He was previously Executive Vice President of Veloz Global Solutions. From 1999-2006, he was Senior Vice President and Managing Director of FCG's Group Management Services business. He has held the position of CIO at the New York-Presbyterian Hospital, New York/Cornell Medical Center and the Hospital for Joint Diseases, a division of New York University Medical Center.

April 27 Performance Management After Implementation

1. “Part III: Performance Management After Implementation,” Kropf and Scalzi, Making Information Technology Work, Chapters 7 and 8.
2. “Banner Estrella Medical Center: Determining the Benefits of Care Transformation and IT Implementation” in Kropf and Scalzi

In-class exam on the readings.

May 4 Clinician Acceptance And Use of Information Systems

1. Eric Poon, David Blumenthal, Tonushree Jaggi, Melissa Honour, David Bates and Rainu Kaushal. Overcoming Barriers To Adopting and Implementing Computerized Physician Order Entry Systems in U.S. Hospitals. Health Affairs, 2(4), (July/August 2004). 184-190.
2. William Bria and Richard Rydell, “Chapter 1: A Road Map to a Successful Patient Care Information Systems,” The Physician-Computer Conundrum: Get Over It! (Chicago: HIMSS, 2004), p. 1-21.
3. Patricia Skarulis, John Brill and Martha Lehman, “Rush Physician Order Entry:

From Physician Resisters to Physician Champions,” Proceedings of the 2002 Annual HIMSS Conference, Session 126 (Chicago: HIMSS,2002) The full text is available at:
<http://www.himss.org/content/files/proceedings/2002/sessions/ses126.pdf>

May 11 **No Class - Quality Improvement Papers Due**