



POPULATION COURSE SYLLABUS HEALTH

Quality of Health Care PH/ISyE 703

Fall 2010

Monday 4:45-7:15 p.m.

Room 1220 HSLC Building (750 Highland Ave.)

University of Wisconsin-Madison

Course Organizer:	Maureen Smith, MD, MPH, PhD
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Office hours:	Generally available following class, or by appointment
Prerequisites:	No formal prerequisites, but instructor consent is required to enroll
Instructors:	Maureen Smith, MD, MPH, PhD Tosha Wetterneck, MD, MS Chris Crnich, MD, MS Ben-Tzion Karsh, PhD

Course Objectives

The objectives of this course are:

- 1) To review the conceptualization and measurement of quality of healthcare and patient safety.
- 2) To illustrate basic concepts and methods in quality improvement as applied to current issues in healthcare.
- 3) To understand the diverse perspectives that can be used to address quality and safety issues in different healthcare organizations.

Course Readings

A packet of required readings has been organized by weekly reading assignments and will be provided on the course [Learn@UW](#) site. Staying current with assigned readings and participation in class discussions is required.

Course Requirements and Evaluation

Course Modules (150 possible points for each of 4 modules = 600 possible points)

- The course is composed of four modules. Each module is worth 150 points (detailed below).
 - Module 1 – Conceptualization and Measurement: A Clinical Perspective
 - Module 2 – Conceptualization and Measurement: A Systems Engineering Perspective
 - Module 3 – Quality Improvement by Changing Provider Behavior
 - Module 4 – Technological Design and Implementation
- 50 points per module: Your attendance and participation in class.

Students are expected to prepare for class by completing all assigned readings in advance. The basis for the participation grade is the amount and quality of effort put forth by each student to provide thoughtful and constructive commentary.
- 100 points per module: Your grade on a mini-paper.
 - ✓ For each module, you will choose a topic from the list of possible paper topics below. Using your knowledge gained from that module, write a mini-paper (~1,000 words) addressing the questions posed. Use the references provided or any other references of your choosing. Your papers will be submitted online in the Dropbox on the course Learn@UW site.
 - ✓ For Module 2, your paper topic must be different from the topic for Module 1.
 - ✓ For subsequent modules, you may repeat topics or choose different ones.
- No points will be given for papers received after the due date.

Final Group Project (300 possible points)

- The final group poster and presentation is an analysis of an attempt to improve the quality of health care. Groups of students will be determined by the course faculty and will consist of students from different academic disciplines (i.e., health care students paired with engineering students). During class, the groups are requested to exchange phone numbers and e-mail addresses and to schedule meeting times. The timeline and detailed information on the group project are located below.
- The objectives of the group poster and presentation are to:
 1. Identify course principles that apply to the problem
 2. Identify how different principles interact and conflict
 3. Identify alternative approaches to solving the problem
 4. Improve the ability to research the primary literature on a specified subject;
 5. Evaluate methodologies, technologies, and experiments serving as the basis of research;
 6. Determine how pertinent data and analyses lead to conclusions reached by experts;
 7. Equip students in the concise preparation of data for presentation in a poster format.

- Each poster should contain the following components (use charts or graphs when possible):
 1. Description of the problem that the process was targeted to address.
 - Demonstrate your knowledge of the problem by showing you understand its nature, rates, extent, diversity, and criticality, as applicable.
 2. Description of the process adopted by the organization or individual.
 - Demonstrate your understanding of the solution by showing that you understand what the solution is, how it is implemented, design considerations, implementation considerations, and ways it has been applied.
 3. Extraction of the core principles that appear to have informed the process. Describe as a bulleted list (with sufficient detail to allow someone who has not taken the class to understand your points). Avoid jargon. Reference supporting literature for these principles.
 - With regard to the solution proposed, provide a bulleted list of core principles *from each module* that apply to this solution. This can be tied to component #4 below or done separately. That is a stylistic decision for you to make.
 - Supporting literature should go beyond the references provided if you want a good grade. We will be looking for you to cite the most relevant studies. Having a long list of references that are not on point will do you no good.
 4. Discussion of how these principles interact or potentially conflict with one another. Use the literature to support your discussion of how these principles interact or conflict.
 - Demonstrate you understand the pros and cons of each applicable principle.
 - Demonstrate you understand the extent to which the achievement of certain principles may be to the detriment of others. That is, show you understand the tradeoffs.
 5. Discussion of other ways to approach the process for this problem. Reference these approaches in the literature.
 - State and explain alternative solutions, the pros and cons of those solutions, and back those with evidence as applicable.
 6. Identification of core principles relevant to these other approaches. Describe as a bulleted list. Reference supporting literature for these principles.
 - For your alternatives, discuss them with respect to the principles and the tradeoffs the alternatives present.
 7. Discussion of what you would have done if faced with this problem. Describe how your approach would differ. Reference supporting literature for your approach.
 - Tell us what you think would be a better solution and defend your answer using the principles and tradeoffs. If you think the solution proposed is the best answer, defend that in a similar way.
 8. A complete bibliography of papers referenced in the poster should be included.
- The final reporting of the grade is a simple total of two components (faculty evaluation of the poster and peer evaluation). Only the total grade is reported—since the peer evaluation is anonymous, we cannot reveal the grades for either of the components. Students strongly support this policy.

- ✓ Faculty evaluation of poster: All faculty will evaluate posters for the purpose of assigning a group grade. Each faculty independently grades the posters on a basis of 0-150 points (with 150 being highest). These evaluations and questions regarding the posters must be completed before the oral defense. The group grade for the poster is arrived at by consensus discussion and is awarded to each student in the group.
- ✓ Peer evaluation: Each student is required to evaluate every other member of his/her group. This peer evaluation is worth 150 points. Each student must apportion a fixed number of points to her/his peers. It is the students' responsibility to determine what criterion to use in this apportioning of points. Some of the criteria students may use could be time spent, useful discussion, work on research, work on layout, and general organizational skills. The peer evaluation form will be posted on Learn@UW. The form must be completed and returned at the time of your oral exam (it is your ticket to the exam).

Mini-Paper and Group Project Topics

Important Note: References below are given only as a starting point for your research. You may use any references of your choosing to address the problem and evaluate the solution.

- 1) *Problem*: 31% of Americans who have hypertension are not receiving treatment.

Organization involved: A local health plan.

Possible solution: Medical record review and feedback of performance to individual primary care physicians, comparing the percentage of their hypertensive patients who are receiving treatment to the average percentage of hypertensive patients receiving treatment across the health plan.

Question: What key factors should this organization consider when considering this solution from the perspective of Module (Fill in the Blank)?

References:

Sennett, C. Implementing the new HEDIS hypertension performance measure. *Managed Care*. 2000;9(4 Suppl), 2-17.

- 2) *Problem*: The use of medical abbreviations contributes significantly to medication errors.

Organization involved: A local hospital

Possible solution: Large colorful advertisements placed in obvious locations around the hospital urging providers not to use medical abbreviations.

Question: What key factors should this organization consider when considering this solution from the perspective of Module (Fill in the Blank)?

References:

Lesar TS, Briceland L, Stein DS. Factors related to errors in medication prescribing. *JAMA*. 1997;277(4):312-7.

Joint Commission on Accreditation of Healthcare Organizations. (September 2001). Medication errors related to potentially dangerous abbreviations. Joint Commission on Accreditation of Healthcare Organizations. Retrieved Dec 15, 2002 from the World Wide Web:
http://www.jointcommission.org/SentinelEvents/SentinelEventAlert/sea_23.htm

- 3) *Problem*: Test and laboratory results that return after discharge from the hospital are not being reviewed by physicians (hospitalist or primary care) and shared with patients.

Organization Involved: A large integrated medical center with a tertiary care hospital and primary care and specialty clinics that use the hospitalist model of care.

Possible solution: implementation of a “tracking system” for test & laboratory results

Question: What key factors should this organization consider when considering this solution from the perspective of Module (Fill in the Blank)?

References:

Hallock, M. L., Alper, S. J., and Karsh, B. A macroergonomic work system analysis of the diagnostic testing process in an outpatient health care facility for process improvement and patient safety. *Ergonomics*. 2006;49(5-6);544-566.

Roy CL, Poon EG, Karson AS, et al. Patient safety concerns arising from test results that return after hospital discharge. *Annals of Internal Medicine*. 2005;143(2);121-128.

- 4) *Problem:* Information sharing among primary care, anesthesiology, and surgical team members is critical for optimal care in the ambulatory surgery setting, but a significant number of patients arrive on the day of surgery without complete information available to their surgical team.

Organization involved: A local ambulatory surgery center

Possible solution: Create an electronic template that must be submitted by the surgeon at least 24 hours in advance of the surgery.

Question: What key factors should this organization consider when considering this solution from the perspective of Module (Fill in the Blank)?

References:

Carayon, P., Schultz, K. and Hundt, A.S. “Wrong site surgery in outpatient settings: The case for a human factors system analysis of the outpatient surgery process” *The Joint Commission Journal on Quality and Safety*, July 2004, vol.20, no.7, 405-410.

Schultz, K., Carayon, P., Hundt, A.S. and Springman, S.R. “Care transitions in the outpatient surgery preoperative process: Facilitators and obstacles to information flow and their consequences” *Cognition, Technology and Work*. 2007; 9(4): 219-231.

- 5) *Problem:* Patients in ambulatory surgery settings are often discharged within a few hours of surgery, allowing potentially preventable complications to occur in the home and leading to subsequent hospital readmission.

Organization involved: A local ambulatory surgery center.

Possible solution: Identify high-risk patients for additional telephone follow-up at regular intervals.

Question: What key factors should this organization consider when considering this solution from the perspective of Module (Fill in the Blank)?

References:

Reid, J. H. Meeting the informational needs of patients in a day surgery setting—an exploratory level study. *British Journal of Theatre Nursing*. 1997;7(4), 19-24.

- 6) *Problem:* Many patients hospitalized with a heart attack do not receive life-saving drug therapy on discharge.

Organization involved: A local hospital.

Possible solution: Develop and implement a guideline for heart attack patients in your hospital that includes the recommendation to discharge patients on these drugs.

Question: What key factors should this organization consider when considering this solution from the perspective of Module (Fill in the Blank)?

References:

Mehta, R. H., et. al. Improving quality of care for acute myocardial infarction: The Guidelines Applied in Practice (GAP) Initiative. *JAMA*. 2002;287(10), 1269-1276.

- 7) *Problem:* Approximately two-thirds of kidney dialysis patients with hyperlipidemia do not receive hyperlipidemic drugs.

Organization involved: A local kidney dialysis center.

Possible solution: Organize an in-house workshop for all physicians associated with the kidney dialysis center to educate them in the necessity of conducting laboratory testing to identify hyperlipidemia and the importance of drug therapy for kidney dialysis patients.

Question: What key factors should this organization consider when considering this solution from the perspective of Module (Fill in the Blank)?

References:

Fox CS, Longenecker JC, Powe NR, et al. Undertreatment of hyperlipidemia in a cohort of United States kidney dialysis patients. *Clinical Nephrology*. 2004;61(5):299-307.

- 8) *Problem:* 50% of all antibiotics for upper respiratory infection are unnecessary.

Organization involved: A local group of primary care physicians.

Possible solution: Large colorful advertisements placed in the clinic waiting room to educate patients about the inappropriateness of antibiotics for viral infections.

Question: What key factors should this organization consider when considering this solution from the perspective of Module (Fill in the Blank)?

References:

Mangione-Smith R, McGlynn EA, M N Elliott et al. The relationship between perceived parental expectations and pediatrician antimicrobial prescribing behavior. *Pediatrics*. 1999;103:711-717.

Gonzales R, Steiner J, Lum A, Barrett P. Decreasing antibiotic use in ambulatory practice: Impact of a multidimensional intervention on the treatment of uncomplicated acute bronchitis in adults. *JAMA*. 1999;28:1512-1519.

- 9) *Problem:* Four out of every 1000 drugs ordered in a hospital setting are administered inappropriately (wrong route, wrong dose, wrong patient, wrong time, wrong drug) (Lesar 1997).

Organization involved: A local hospital.

Possible solution: Implementation of a bar-coding medication administration system.

Question: What key factors should this organization consider when considering this solution from the perspective of Module (Fill in the Blank)?

References:

Bates DW, Cullen DJ, Laird N, et al. Incidence of adverse drug events and potential adverse drug events. Implications for prevention. ADE Prevention Study Group. *JAMA*. 1995;274(1):29-34.

Johnson CL, Carlson RA, Tucker CL, Willette C. Using BCMA software to improve patient safety in Veterans Administration medical centers. *Journal of Healthcare Information Management*. 2002;16(1):46-51.

10) *Problem:* Medicare and Medicaid reimbursement are now tied to the meaningful use of electronic health records. 1-2% of physician prescriptions are illegible.

Organization involved: A local outpatient clinic associated with a large teaching hospital.

Possible solution: Implementation of a computerized physician order entry system.

Question: What key factors should this organization consider when considering this solution from the perspective of Module (Fill in the Blank)?

References:

Bates DW, Teich JM, Lee J, Seger D, Kuperman GJ, Ma'Luf N, Boyle D, Leape L. The impact of computerized physician order entry on medication error prevention. *Journal of the American Medical Informatics Association*. 1999;26(12):2578-84.

11) *Problem:* The information in paper medical charts is not easily accessible by all providers involved in a patient's care, leading to significant safety and quality problems in health care.

Organization involved: A local health system.

Possible solution: Implementation of a system-wide (inpatient and outpatient) electronic medical record.

Question: What key factors should this organization consider when considering this solution from the perspective of Module (Fill in the Blank)?

References:

Fernandopulle R, Patel N. How the electronic health record did not measure up to the demands of our medical home practice. *Health Affairs*. 2010;29(4):622-8.

Timeline for Group Project

- Mon, Sep 13** Student survey due in Dropbox on Learn@UW site.
- Mon, Sep 20** Groups are determined and posted on the Learn@UW site. During class, the groups are requested to exchange phone numbers and e-mail addresses and to schedule meeting times.
- Mon, Sep 27** Groups meet during the second half of class to choose two potential poster topics from the available list of topics, and e-mail the chosen poster topics to Colleen Brown (boerman@wisc.edu).
- Fri, Oct 1** Groups are assigned faculty advisors and one of their two chosen poster topics. Students begin data collection; make appointments with library staff as necessary. Within the next few weeks, students must analyze the project case and complete a literature search.
- Mon, Oct 25** Students submit a rough draft of several items from the required poster content to their advisor for critique through Learn@UW. The groups must address the following areas and must include a draft bibliography. After submission, advisors provide written feedback on the rough draft items.
1. Description of the problem that the process was targeted to address.
 2. Description of the process adopted by the organization or individual. Reference supporting literature for this process.

3. Extraction of the core principles that appear to have informed the process (in light of the modules that have been discussed to date in the course). Describe as a bulleted list (with sufficient detail to allow someone who has not taken the class to understand your points). Avoid jargon. Reference supporting literature for these principles.
4. Discussion of how these principles interact or potentially conflict with one another (in light of the modules that have been discussed to date in the course). Use the literature to support your discussion of how these principles interact or conflict.
5. Discussion of other ways to approach the process for this problem. Reference these approaches in the literature.
6. A complete bibliography of papers referenced should be included.

Mon, Nov 22 Students submit a final rough draft of their poster and their final bibliography to their advisor through Learn@UW. Size limitations (4'x 3' w x h) should be adhered to. After submission, advisors provide written feedback on the final drafts.

Mon, Dec 6 The group project is presented. Each student presents their completed evaluation of fellow group members as a ticket to the presentation. **The peer evaluation form must be completed and returned at the time of your presentation.**

Introduction

Mon, Sept 13 – Student Survey due

Submit your student survey in the Dropbox on Learn@UW by midnight.

Mon, Sept 13 – Introduction to PH703 Philosophy and Instructors

Chassin, M. R., & Galvin, R. W. The urgent need to improve health care quality. Institute of Medicine National Roundtable on Health Care Quality. *JAMA*. 1998;280(11):1000-1005.

Shi L, Singh DA. A Distinctive System of Health Care Delivery. *Delivering Health Care in America - A Systems Approach*. 3d ed. Sudbury, MA: Jones and Bartlett; 2004. (pp. 2-20 ONLY)

Vicente KJ. What does it take? A case study of radical change toward patient safety. *Joint Commission Journal on Quality and Safety*. 2003;29(11):598-609.

Conceptualization and Measurement: A Clinical Perspective Module 1 - Maureen Smith

Mon, Sept 13 – Lecture – Quality Assessment and the Professional Model

Medical Professionalism Project – ABIM Foundation. Medical professionalism in the new millennium: a physician charter. *Annals of Internal Medicine*. 2002;136(3):243-6.

Shortell, S. M., T. M. Waters, et al. Physicians as double agents: maintaining trust in an era of multiple accountabilities. *JAMA*. 1998;280(12):1102-8.

Donabedian, A. The quality of care. How can it be assessed? *JAMA*. 1988;260:1743-8.

Mon, Sept 20 – Lab – Measuring the Quality of Care for a Heart Attack Patient

We will abstract structural, process, and outcome measures of the quality of care from the hospital chart of a patient discharged with a diagnosis of acute myocardial infarction.

CMRI. Improving care for acute myocardial infarction. 2002.

Loeb, J. The current state of performance measurement in health care. *International Journal for Quality in Health Care*. 2004;16(1):i5-i9.

Review www.wchq.org specifically for measures of “heart care.”

Identify where UW Hospitals and Clinics ranks within the Southern region on CMS/JCAHO measures of hospital quality for heart attack care (including Adult Smoking Cessation, ACE Medication, Aspirin at Discharge, Aspirin at Arrival, Beta Blocker at Discharge, Beta Blocker at Arrival, and PCI within 120 minutes).

Mon, Sept 20 – Lecture – Performance Measurement – Who Does It?

Williams, S., Schmaltz, S., Morton, D., Koss, R., & Loeb, J. Quality of care in U.S. hospitals as reflected by standardized measures, 2002-2004. *The New England Journal of Medicine*. 2005;353(3):255-264.

Schoenbaum, S. & Holmgren, A. The National Committee for Quality Assurance’s “The State of Health Care Quality.” *The Commonwealth Fund*. 2006;969(1):1-6.

Roski, J. & Gregory, R. Performance measurement for ambulatory care: moving towards a new agenda. *International Journal for Quality in Health Care*. 2001;13(6):447-453.

Review www.wchq.org specifically for measures of “diabetes care.”

Identify where Unity Health Insurance ranks within the Southern region on HEDIS measures of health plan quality for blood sugar control. (Unity Health Insurance is wholly owned by UW Health.)

Identify where UW Medical Foundation ranks within the Southern region on WCHQ measures of physician group quality for blood sugar control.

Recommended reading: Thompson, B. & Harris, J. Performance measures: are we measuring what matters? *The American Journal of Preventive Medicine*. 2001;20(4):291-293.

Mon, Sept 20 – Lecture – Pay for Performance – Are We Ready?

Doran, T., Fullwood, C., Gravelle, H., Reeves, D., Kontopantelis, E., Hiroeh, U., & Roland, M. Pay-for-performance programs in family practices in the United Kingdom. *The New England Journal of Medicine*. 2006;355(4):375-384.

Epstein, A. Pay for performance in the United States and abroad. *The New England Journal of Medicine*. 2006;355(4):406-408.

Rowe, J. Pay-for-performance and accountability: related themes in improving health care. *Annals of Internal Medicine*. 2006;145:695-699.

Grossbart, S. What’s the return? Assessing the effect of “pay-for-performance” initiatives on the quality of care delivery. *Medical Care Research and Review*. 2006;63(1):29S-48S.

Mon, Sept 27 – Guest Lecture – Dr. Bartell, Quality Assurance at Group Health Cooperative

Dr. Bartell is an internal medicine physician, Director of Clinical and Service Quality at Group Health Cooperative of South Central Wisconsin, and a clinical assistant professor in the Department of Internal

Medicine at the University of Wisconsin. She has a Masters degree in Population Health Sciences from the University of Wisconsin. Her research interests have included health care access and quality, clinical guidelines, and disease management.

Mon, Sept 27 – Decide on Group Project Topics in Class

The second half of this class period will be available for you to meet with your groups and decide on two potential poster topics. By midnight, e-mail Colleen Brown (boerman@wisc.edu) your chosen topics.

Fri, Oct 1 – Group Project Topics and Faculty Advisors Assigned

Group project topics (one of the two that your group has selected) and faculty advisors for each group will be assigned and e-mailed to the class on this date.

Mon, Oct 4 – Measuring and Improving Performance

England, E. How interrupted time series analysis can evaluate guideline implementation. *The Pharmaceutical Journal*. 2005;275:344-347.

Chan, P., Khalid, A., Longmore, L, et al. Hospital-wide code rates and mortality before and after implementation of rapid response team. *JAMA*. 2008;300(21):2506-2513.

Morgan, O., Griffiths, C., & Majeed, A. Interrupted time-series analysis of regulations to reduce paracetamol (acetaminophen) poisoning. *Public Library of Science: Medicine*. 2007;4(4):0654-0659.

Note: Module 2 begins during the second half of class on October 4. Please ensure that you read the articles for the first lecture of Module 2 for this date.

Conceptualization and Measurement – A Systems Engineering Perspective Module 2 – Tosha Wetterneck

Mon, Oct 4 – Lecture – Systems Engineering and Quality: Structure and Process

Carayon, P., Hundt, A. S., Karsh, B.-T., Gurses, A. P., Alvarado, C. J., Smith, M., and Brennan, P.F. Work system design for patient safety: The SEIPS model. *Quality & Safety in Health Care*. 2006;15(Suppl I), i50-i58.

Shortell, S. M., Zimmerman, J. E., Rousseau, D. M., Gillies, R. R., Wagner, D. P., Draper, E. A., et al. The performance of intensive care units: Does good management make a difference? *Medical Care*. 1994;32(5), 508-525.

Carayon, P., Schultz, K. and Hundt, A.S. Righting wrong site surgery. *The Joint Commission Journal on Quality and Safety*, July 2004, vol.30, no.7, 405-410.

Carayon, P., Gurses, A. P., Hundt, A. S., Ayoub, P., & Alvarado, C. J. Performance obstacles and facilitators of healthcare providers. In: C. Korunka & P. Hoffmann (Eds.), *Change and Quality in Human Service Work* (Vol. Volume 4, pp. 257-276). Munchen, Germany: Hampp Publishers. 2005.

Fri, Oct 8 – Mini-Paper 1 Due

Mon, Oct 11 – Case Study – Work System and Process Analysis in Outpatient Surgery

We will apply the systems engineering perspective and the SEIPS model of work system and patient safety to outpatient surgery. We will use the SEIPS model to analyze observation data on the experience of a patient at an outpatient surgery center.

Carayon, P., Alvarado, C. J., Hundt, A. S., Springman, S., & Ayoub, P. Patient safety in outpatient surgery: The viewpoint of the healthcare providers. *Ergonomics*. 2006;49(5-6), 470-485.

Schultz, K., Carayon, P., Hundt, A.S. and Springman, S.R. Care transitions in the outpatient surgery preoperative process: Facilitators and obstacles to information flow and their consequences. *Cognition, Technology and Work*. 2007; 9(4): 219-231.

Mon, Oct 11 – Lecture – Organizational Change and System Redesign

Carayon, P., Wetterneck, T.B., Hundt, A.S., Rough, S. and Schroeder, M. Continuous technology implementation in health care: The case of advanced IV infusion pump technology. In: Klaus J. Zink, ed., *Corporate Sustainability as a Challenge for Comprehensive Management*, 2008.

Carayon, P., Smith, P., Hundt, A.S., Kuruchittham, V. and Li, Q. Implementation of an Electronic Health Records system in a small clinic: the viewpoint of clinic staff. *Behaviour and Information Technology*. 2009;28(1):5-20.

Mon, Oct 18 – Guest Lecture – Dr. Schwartzstein, “Creating a Primary Care Medical Home”

Alan I. Schwartzstein, MD, President-Elect of the Wisconsin Academy of Family Physicians and practicing Family Physician at Dean Medical Center, will give a presentation on the journey toward the implementation of the Medical Home in primary care.

Mon, Oct 18 – Lecture – Discussion about the Medical Home

Based on the presentation and the readings, we will identify the structural and process issues related to the Medical Home concept.

Rosenthal, T.C. The medical home; Growing evidence to support a new approach to primary care. *Journal of the American Board of Family Medicine*. 2008;21: 427-440.

Berenson, R.A., Hammons, T., Gans, D.N., Zuckerman, S., Merrell, K., Underwood, W.S., and Williams, A.F. A house is not a home: Keeping patients at the center of practice redesign. *Health Affairs*. 2008;27(5):1219-1230.

Nutting, P.A., Miller, W.L., Crabtree, B. F., Jaen, C.R., Stewart, E.E., Stange, K.C. Initial lessons from the First National Demonstration Project on Practice Transformation to a Patient-Centered Medical Home. *Annals of Family Medicine*. 2009;7(3):254-260.

Reid RJ, Fishman PA, Yu O, Ross TR, Tufano JT, Soman MP, Larson EB. Patient-centered medical home demonstration: a prospective, quasi-experimental, before and after evaluation. *American Journal of Managed Care*. 2009;15(9):e71-87.

Fri, Oct 22 – Mini-Paper 2 Due

Quality Improvement by Changing Provider Behavior
Module 3 – Christopher Crnich

Mon, Oct 25 – Poster Rough Draft Items Due

Submit your group poster rough draft items in the Dropbox on Learn@UW.

Mon, Oct 25 – Lecture – Introduction: Why Do Providers Do the Wrong Things?

Atul Gawande. The Checklist. *The New Yorker Magazine* 2007.

Cabana, M., Rand, S., et al. Why don't physicians follow clinical practice guidelines? A framework for improvement. *JAMA*. 1999;282:1458-1465.

Michie and Johnston. Changing clinical behaviour by making guidelines specific. *BMJ* 2004; 328(7435): 343-5.

Grol et al. Attributes of clinical guidelines that influence use of guidelines in general practice: observational study. *BMJ* 1998; 317 (7162): 858-61

Mon, Oct 25 – Lecture – Psychological Theories of Behavior and Their Role in Healthcare

Kretzer, E. K. and E. L. Larson. Behavioral interventions to improve infection control practices. *American Journal of Infection Control*. 1998;26(3): 245-253.

O'Boyle, C. A., S. J. Henly, et al. Understanding adherence to hand hygiene recommendations: The theory of planned behavior. *American Journal of Infection Control*. 2001;29(6): 352-360.

Ceccato et al. Adopting health behavior change theory throughout the clinical practice guideline process. *The Journal of Continuing Education in the Health Professions* 2007; 27 (4): 201-7.

Schulte. Avoiding culture shock. Using behavior change theory to implement quality improvement programs. *Journal of AHIMA / American Health Information Management Association* 2007; 78 (4): 52-6.

(Optional Reading #1) Michie and Lester. Words matter: increasing the implementation of clinical guidelines. *Quality & Safety in Health Care* 2005; 14 (5): 367-70.

(Optional Reading #2) Pittet, D. The Lowbury lecture: Behaviour in infection control. *Journal of Hospital Infection* 2004; 58 (1): 1-13.

Mon, Nov 1 – Lecture – Changing Provider Behavior: What Works?

Naikoba, S. and A. Hayward. The effectiveness of interventions aimed at increasing handwashing in healthcare workers - a systematic review. *Journal of Hospital Infection* 2001;47(3): 173-80.

Grimshaw et al. Changing provider behavior: an overview of systematic reviews of interventions. *Medical Care* 2001; 39 (8 Suppl 2): II2-45.

Grol, R. and J. Grimshaw. From best evidence to best practice: effective implementation of change in patients' care. *Lancet*. 2003;362(9391): 1225-30.

Mon, Nov 1 – Lecture – Engaging the Organization: Bringing Context Back into Behavior Change

Berenholtz et al. Eliminating catheter-related bloodstream infection in the intensive care unit. *Critical Care Medicine* 2004; 32 (10): 2014-20.

Pronovost et al. Creating high reliability in health care organizations. *Health Services Research* 2006; 41 (4 Pt 2): 1599-617.

Sinuff et al. Facilitating clinician adherence to guidelines in the intensive care unit: A multicenter, qualitative study. *Critical Care Medicine* 2007; 35 (9): 2083-9.

Pronovost et al. Translating evidence into practice: a model for large scale knowledge translation. *BMJ* 2008; 337: a1714.

Pronovost et al. Sustaining reductions in catheter related bloodstream infections in Michigan intensive care units: observational study. *BJM* 2010; 340: c309.

Mon, Nov 8 – Lab – Prevention of Ventilator-Associated Pneumonia

The Institute for Health Improvement (IHI) has recently updated their recommended bundle for the prevention of ventilator-associated pneumonia. For this exercise, the class will be divided into three groups to work on one component of the bundle. Each group will be required develop an implementation plan using the principles identified in this module.

Please review the information found at the following URL:

<http://www.ihl.org/IHI/Topics/CriticalCare/IntensiveCare/Changes/ImplementtheVentilatorBundle.htm>

Mon, Nov 8 – Guest Lecture – Sue Sanford-Ring, “The Role of the Organization in Changing Provider Behavior”

Sue Sanford-Ring currently serves as the Director of Quality and Patient Safety at the University of Wisconsin Hospital and Clinics. She will give a lecture on how healthcare organizations can facilitate and support behavior change in its providers.

Fri, Nov 12 – Mini-Paper 3 Due

Technological Design and Implementation *Module 4 – Ben-Tzion Karsh*

Mon, Nov 15 – Lecture – Introduction and Technology Design

Stead WW, Lin HS, eds. *Computational Technology for Effective Health Care: Immediate Steps and Strategic Directions*. Washington DC: National Academies Press; 2009.

Blumenthal and Tanner 2010. The “meaningful use” regulation for electronic health records. *New England Journal of Medicine*. 2010;363(6):501-504.

Read the Fact Sheets at

http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov__meaningful_use_resources/3006

Koppel, R., Metlay, J. P., Cohen, A., Abaluck, B., Localio, A. R., Kimmel, S. E., et al. Role of computerized physician order entry systems in facilitating medication errors. *JAMA*. 2005;293:1197-1203.

Sawyer, D. *Do it by design: An introduction to human factors in medical devices*. US Food and Drug Administration. 1996. Pages 1-32.

Fairbanks RJ, Caplan SH, Bishop PA, Marks AM, Shah MN. Usability study of two common defibrillators reveal hazards. *Annals of Emergency Medicine*. 2007;50(4):424-432.

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Mon, Nov 22 – Final Poster Rough Draft and Bibliography Due

Submit your group's final poster rough draft and bibliography to the Dropbox on Learn@UW.

Mon, Nov 22 – Guest Lecture – Bill Brookings, RN: "Health IT from the View of the IT Department: User Complaints, Design, and Patient Care"

Bill Brookings, RN, is a Senior Analyst in the Information Technology Services Department at the University of Wisconsin Hospital & Clinics, working on the Inpatient Electronic Medical Record team. He is a Registered Nurse with a Master's of Science in Health Care Informatics, and has been through the entire life System Development Life Cycle of the inpatient EMR at UW Hospital. In his current role, he is involved with EMR optimization and development for new clinical, business, and reporting needs.

Mon, Nov 22 – End User Panel – Chris Sinsky, MD; John Beasley, MD; and Brian Arndt, MD: "Views of EHRs from the Trenches"

Chris Sinsky, MD: Department of Internal Medicine; Medical Associates Clinic and Health Plans. EHR: McKesson HAC (Horizon Ambulatory Care) for outpatients and Cerner PowerChart for inpatients.

Dr. Sinsky is a full time primary care physician who has used two different EHRs (McKesson in the clinic and Cerner in the hospital) on a daily basis for the past 7 years. She has also testified to the ONC Meaningful Use HIT Policy committee about the role of EHRs in promoting care coordination and presented nationally on the role of HIT in patient engagement.

John Beasley, MD: UWMF Verona Family Medicine Clinic, Verona, WI. EHR: Epic Systems.

Dr. Beasley is a practicing physician who uses the Epic EHR both when he is seeing patients and when he is supervising resident physicians, medical students, and PA students. While not a "power" user, he is comfortable with the system. He is also aware of its limitations.

Brian Arndt, MD: Assistant Professor in the UW Department of Family Medicine. EHR: Epic Systems

Dr. Arndt is a practicing physician who uses the Epic EMR for patient care on a daily basis. He has experience in abstracting large data sets derived from clinical data to create registries that are useful for non-physician staff to do disease management of populations outside of the traditional clinical encounter.

Mon, Nov 29 – Lecture and Case Study – Technology Implementation/Use

Ash, J., Berg, M., Coiera, E. Some unintended consequences of information technology in health care: the nature of patient care information system-related errors. *Journal of the American Medical Informatics Association*. 2004;11:104-112.

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Han, Y. Y., Carcillo, J. A., Venkataraman, S. T., Clark, R. S. B., Watson, R. S., Nguyen, T. C., et al. Unexpected increased mortality after implementation of a commercially sold computerized physician order entry system. *Pediatrics*. 2005;116(6): 1506-1512.

Carayon P, Wetterneck TB, Hundt AS, Ozkaynak M, DeSilvey J, Ludwig B, Ram P, Rough S. Evaluation of nurse interaction with bar code medication administration technology in the work environment. *Journal of Patient Safety*. 2007;3(1):34-42.

Koppel R, Wetterneck T, Telles J, Karsh B. Workarounds to barcode medication administration systems: their occurrences, causes, and threats to patient safety. *JAMIA*. 2008;15(4):408-423.

Berg M, Aarts J, van der Lei J. ICT in health care: Sociotechnical approaches. *Methods of Information in Medicine*. 2003;42(4):297-301.

Conclusion

Mon, Dec 6 – Student presentations

Fri, Dec 10 – Mini-Paper 4 Due