PUBH 716/MCH816/HPM716
Applied Quality Improvement for Healthcare and Public Health
3 credits
Spring 2017

Faculty: Rohit Ramaswamy, PhD, MPH, Grad. Dip. Bios. (PHLP/MCH)
(ramaswam@email.unc.edu)

Office: 4107 McGavran-Greenberg Hall

Teaching Assistant: Luke Newton (ljin8@email.unc.edu)

Room: Online

Office Hours: Synchronous online sessions TBD

Course URL: https://sakai.unc.edu/portal/site/304af11f-2527-40c7-b20c-96f48e637bed/page/553a6a5b-b4be-4ed6-9a0f-626f7a84e19e

Course Overview:
This is a three-credit hour, online graduate-level, interdisciplinary course in which teams of students apply quality improvement methods to improve processes of delivery of public health services.

Students will work in teams and use a systematic quality improvement method (the Model for Improvement) on a real life case study to analyze performance, identify sources of variability in performance, and develop and test improvement solutions. The skills gained in this course are applicable to a wide variety of health care and public health situations in the US and globally.

Course Objectives:
Through this course(s), students will:

1. Become familiar with Quality Improvement (QI) methods, especially the Model for Improvement;
2. Develop skills in using the tools of QI to solve a real-life improvement problem
3. Develop generalizable insights about use of QI to facilitate local and global improvements in health care and public health;

Competencies:
The course is designed to support student attainment of the following Global Health Core Competencies (ASPPH 2011):
1. Assist host entity in assessing existing capacity;
2. Conduct a situation analysis across a range of cultural, economic, and health contexts;
3. Develop monitoring and evaluation frameworks to assess programs;
4. Exhibit interpersonal communication skills that demonstrate respect for other perspectives and cultures;
5. Develop strategies that strengthen community capabilities for overcoming barriers to health and well-being;
6. Design context-specific health interventions based upon situation analysis;
7. Design program work plans based on logic models;
8. Develop context-specific implementation strategies for scaling up best-practice intervention;
9. Apply scientific evidence throughout program planning, implementation, and evaluation;

In addition, the course is designed to support student knowledge in the following content areas for the common core of the MPH degree (ASPPH 2015):

- Systems thinking regarding the dynamic interactions among sectors, organizations, and actors with which public health professionals interact to achieve health improvements
- Concepts of project implementation and management, including planning, budgeting, human resources, assessment, and evaluation
- The cultural context of public health issues and respectful engagement with people of different cultures and socioeconomic strata
- Principles of effective functioning within and across organizations and as members of interdisciplinary and interprofessional teams

Course Requirements:

Five requirements will be the basis for assigning grades for this course:

1. Completing reflective posts and question assignment
2. Successful completion of online quizzes associated with each module.
3. Participation in the online group case study which builds progressively through each module.
4. A group report describing the problem, analysis, solution, implementation, results and recommendations based on the case study.
5. A final exam.

As a member of a team, you are expected to participate in the case study. Participation does not only mean passively providing input – it also means reacting to what your peers have said and contributing to discussion online. Your participation grade will be based on faculty evaluation and on peer assessments. At the end of the course, you will have the
opportunity to evaluate your group members based on your perception of their level of participation and contribution to the group. We will use this feedback both for improving participation and for evaluation at the end of the course.

In addition, for each module, you will be asked for one **reflective post and one question**. These are not graded individually but are mandatory, and will count towards your participation grade in the course.

**Grading:**

The distribution of points for each course requirement is shown below:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>% of Grade</th>
<th>Points possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Quizzes</td>
<td>15%</td>
<td>15</td>
</tr>
<tr>
<td>2) Case Study report and presentation</td>
<td>30%</td>
<td>40</td>
</tr>
<tr>
<td>3) Final exam</td>
<td>35%</td>
<td>35</td>
</tr>
<tr>
<td>4) Participation (reflection question and case study)</td>
<td>20%</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100</td>
</tr>
</tbody>
</table>

The final report and presentation will be graded on the following dimensions:

- Logical, appropriate, evidence-based conclusions, analyses, and recommendations in both the presentation and paper (30 percent)
- Effectiveness of presentations (30 percent)
- Clearly written report with topics arranged logically. Well-designed tables and figures that convey relevant, important information (20 percent)
- Effective, appropriate application of course materials and other resources in the presentation and paper (20 percent)

Grading will be according to the following scheme:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Explanation</th>
</tr>
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<tbody>
<tr>
<td>H</td>
<td>Clear Excellence</td>
</tr>
<tr>
<td>P</td>
<td>Entirely Satisfactory</td>
</tr>
<tr>
<td>L</td>
<td>Low Passing</td>
</tr>
<tr>
<td>F</td>
<td>Fail</td>
</tr>
</tbody>
</table>
Typically, H grades are given to those scoring 90% or above, P to scores of 70% and above and L to scores of 55% and above. These are guidelines, and are not meant to be absolute numbers.

A grade of H will indicate that you have gone beyond the expectations of the assignment and have produced an exceptional output. A P is completely acceptable and indicates that you met the expectations of the assignment. An L indicates that you have turned in passing performance, but that the effort is minimally acceptable.

Course Evaluation

Course participation includes completion of the UNC-CH’s online course evaluation. Your responses will be anonymous, with feedback provided to the instructors in the aggregate. Open-ended comments will be shared with instructors, but individual students are not identified. Providing constructive course evaluative feedback is a professional responsibility. Feedback is critical for improving the quality of our courses.

Text Book:

The Improvement Guide, 2nd edition (2009) [referred to as TIG]

Course Outline:

Module 1: Introduction to Principles of Improvement
January 11-January 22

- Learning Objectives: To understand the principles of improvement in healthcare and public health
- Readings:
- Assignments:
  - Reflective post and question due January 18th
Module 2: Beginning an Improvement Project
January 23-February 4

- **Learning objectives:**
  - Understand Deming’s theory of profound knowledge
  - Describe the Model for Improvement
  - Develop the scope and charter for an improvement project

- **Readings:**
  - TIG Chapter 1: Changes that result in Improvement (pg. 15-25)
  - TIG Chapter 2: Skills to support improvement (pg. 27-47)
  - TIG Chapter 4: The science of improvement (pg. 75-88)

- **Videos:**
  - Deming’s System of Profound Knowledge Part 1
    [https://www.youtube.com/watch?v=xKv--YA8XJE](https://www.youtube.com/watch?v=xKv--YA8XJE)
  - Deming’s System of Profound Knowledge Part 2
    [https://www.youtube.com/watch?v=STTwZGNvLmM&t=18s](https://www.youtube.com/watch?v=STTwZGNvLmM&t=18s)
  - Model for Improvement Part 1
    [https://www.youtube.com/watch?v=SCYghxtioIY](https://www.youtube.com/watch?v=SCYghxtioIY)
  - Model for Improvement Part 2
    [https://www.youtube.com/watch?v=6MIUqdlNwQ](https://www.youtube.com/watch?v=6MIUqdlNwQ)
  - Red Bead Experiment
    [https://www.youtube.com/watch?v=R3ewHrpqclA](https://www.youtube.com/watch?v=R3ewHrpqclA)

- **Tools:**
  - Process GPS Project Charter
  - Pg. 445-448: Example Charter, Forms B1, B2, B3
  - Project Charter Template

- **Assignments:**
  - Reflective post and question due January 29th
  - Quiz # 2 Due Feb 5th
  - Case Study Part 1: Developing the Project Charter. Due Feb 5th

Module 3: Viewing Work as a Process
February 6-February 19

- **Learning objectives:** Creating a process map and a preliminary diagram for an improvement project.
- **Readings:**

- **Videos:**
  - Process Mapping Overview [https://www.youtube.com/watch?v=tGzHRjrrL5-4](https://www.youtube.com/watch?v=tGzHRjrrL5-4)
  - Swimlane Process Map Overview [https://www.youtube.com/watch?v=wQxnzLu7TqU](https://www.youtube.com/watch?v=wQxnzLu7TqU)
  - SIPOC Process Map Overview [https://www.youtube.com/watch?v=N9K2Sz0OCoW](https://www.youtube.com/watch?v=N9K2Sz0OCoW)
  - Driver Diagram Overview [https://www.youtube.com/watch?v=yfcE_Q-IRFg](https://www.youtube.com/watch?v=yfcE_Q-IRFg)

- **Tools**
  - TIG Pg. 430-431: Figure B14-B16
  - SIPOC Template

- **Assignments:**
  - Reflective post and question due Feb 12th
  - Quiz # 3 due Feb 19th
  - Case Study Part 2: Developing Process Maps and Driver Diagrams due Feb 19th

**Module 4: Collecting Data for Improvement**

February 20-March 5

- **Learning Objective:** To develop a data collection plan to measure process performance
- **Readings:**
Tools:
- Institute for Healthcare Improvement Simple Data Collection Planning Template 2004

Assignments:
- Reflective post and question due February 26th
- Quiz#4 Due March 5
- Case Study Part 3: Developing a data collection
  - March 5

Module 5: Analyzing Baseline Data for Patterns and Trends
March 6-March 26 (Including Spring Break)

Learning Objective: To analyze baseline process performance

Readings:
- TIG Chapter 5: Using the Model (pg. 89-108)
- Deming, W.E. Out of the Crisis, Chapter 11: Common Causes and Special Causes of Improvement: Stable Systems (pg. 300-324;336-337)
- Deming, W.E. Out of the Crisis, Chapter 12: More Examples of Improvement Downstream (pg. 371-387)

Tools:
- TIG Pg. 433-442: Figures B19- B25
- TIG Pg. 426-431 Figure B9-B16
- Ishikawa K. 7 quality tools for process improvement. Hong Kong Hospital Authority. Available at www3.ha.org.hk/qeh/wiser/doc/7bqt.pdf

Assignments:
- Reflective post and question due March 19
- Quiz#5 Due March 26
- Case Study Part 4: Identifying Root Causes
  - March 26
Module 6: Generating and Evaluating Improvement Solutions
March 27 – April 9

- **Learning Objectives:** Learn how to identify and develop changes that will result in improvement

- **Readings:**
  - TIG Chapter 6: Developing a Change (pg. 109-137)

- **Tools:**
  - TIG Appendix A (pg. 357-408)

- **Assignments:**
  - Reflective post and question due April 2
  - Quiz#6 Due April 9
  - Case Study Part 5: Developing and Evaluation Solutions
    - April 9

Module 7: Testing and Implementing Solutions
April 10 – April 23

- **Learning Objectives:** To test selected solutions and to develop an implementation plan

- **Reading:**
  - TIG Chapter 7: Testing a Change(pgs. 139-171)
  - Zimmerman – factorial design for influenza vaccination

- **Additional tools:**
  - Design for Experiments Tutorial

- **Assignments:**
  - Reflective post and question due April 16
  - Quiz#7 Due April 23
  - Case Study Part 6: Experimental Testing and Implementation Plan
    - April 23

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**Module 8: Adapting and Sustaining Solutions**

April 24 – May 5

- **Learning Objectives:** To ensure that the change is sustainable
- **Reading:**
  - TIG Chapter 8: Implementing a Change(pg. 173-194)

- **Tools:**
  - Pg. 443-444 Figure B26- Table B5

- **Assignments:**
  - Reflective post and question due April 30
  - Quiz#8 Due May 5
  - Case Study Part 7: FMEA analysis
    - May 5
Final exam date: May 8, 9 (Online Take Home)

UNC Honor Code

The principles of academic honesty, integrity, and responsible citizenship govern the performance of all academic work and student conduct at the University. Your acceptance of enrollment in the University presupposes a commitment to the principles embodied in the Code of Student Conduct and a respect for this most significant Carolina tradition. Your reward is in the practice of these principles.

Your participation in this course comes with the expectation that your work will comply fully with the Honor Code. Academic dishonesty in any form is unacceptable, because any breach in academic integrity, however small, strikes destructively at the University's life and work.

If you have any questions about your responsibility or the responsibility of faculty members under the Honor Code, please consult with someone in either the Office of the Student Attorney General (966-4084) or the Office of the Dean of Students (966-4042).

Read “The Instrument of Student Judicial Governance” (http://instrument.unc.edu).