GOALS
This course encourages students to think creatively about what it means for a healthcare organization to make quality the highest priority. We will explore the current forces driving the push toward quality outcomes and accountability at all levels and settings of healthcare, while focusing on the philosophy of continuous improvement through teamwork and statistical thinking. Students will use structural tools for analysis, decision making and performance measurement.

LEARNING OUTCOMES
At the successful completion of this course, students will be able to:
1. Appreciate the historical evolution of healthcare quality improvement.
2. Understand the current forces driving changes in healthcare quality.
3. Describe the major models for improvement that provide a framework for change.
4. Apply a systematic method of improving a process using a team approach.
5. Understand the use of structural, process and outcome indicators for measuring quality.
6. Recognize the implications of organization-wide transformation to continuous systems improvement.
7. Appreciate the challenges facing leaders in sustainability and spread of improvement efforts.
8. Demonstrate skills in working collaboratively.

COURSE EXPECTATIONS
1. Attend every class on time.
2. Read all assigned materials prior to class.
3. Actively participate in class discussions and exercises.
4. Complete on-line and written assignments on time.

LEARNING STRATEGIES
This course is based on 1) discussion of current events and the common themes emerging that are affecting the delivery of healthcare services and 2) learning by doing, i.e. applying methods learned in class to process improvement assignments. Process analysis provides the student the opportunity to think, read, write and present ideas logically in an organized manner. Emphasis will be placed on oral and written communication and working in teams.

In this course, students will take the role of a team in a specific department or service in a health care organization. The organization’s Performance Improvement Program includes monthly reporting on key structural, process and outcome measures from each department/service. These measurement reports help the organization identify where the problems are and how to prioritize its resources to improve the delivery of health service operations in accordance with its mission, vision and strategic plan.

Students will use management tools and techniques, diagnose problems and develop innovative, practical and cost-effective solutions to address a process needing improvement. Assignments are geared towards analyzing a specific process that is producing a less than optimum outcome, identifying the data required to analyze the problem and using specific QI tools and techniques for innovative solutions.

One of the goals of this course is to equip students with a working knowledge of basic statistical process control (SPC) tools to measure and analyze operational and medical data. For assignment one each team member will create a flowchart for practice, of which one will be designated the “official” flowchart for assignment one.

This course will integrate with the IHI Open School for Health Professions, an online school for helping students learn about quality improvement and patient safety competencies.

REQUIRED ARTICLES: Posted under “Required Readings” in Blackboard.
REQUIRED ON-LINE COURSES: IHI Open School on-line courses on Quality Improvement and Patient Safety. Courses are free to students and completion by the required date on the Syllabus is required and will be tracked by an IHI on-line tracker program. One time registration on IHI website; the organization is “NYU Wagner CQI,” which you must indicate at the beginning of each course to get credit for taking it, and you must complete the evaluation at the end of each course to be considered complete.


ASSIGMENTS AND GRADES
In teams of 3 or 4, students will select an organization to which at least one team member has access, and investigate a process that needs improvement. The process you choose should be meaningful to the organization so that recommended changes can be adapted immediately. You must be able to collect data (concurrently or retrospectively) about the process over time, so be sure to choose a process that is well defined and lends itself to measurement, always thinking within the framework of the Model for Improvement: 1) What are we trying to accomplish? 2) How will we know that a change is an improvement? 3) What changes can we make that will result in improvement? Note: Teams will be set up during the first class session. Each team will submit its process for improvement to the instructor for approval via email no later than 2/6/12.

100 points are possible in this course. Each IHI course completed by the due date earns 3 points (15 courses in all). Written assignments can earn up to 50 points. Since written assignments represent a team effort, all team members will receive the same written assignment grade. The final presentation accounts for 5 points. Hard copies of written assignments are handed in during class on the due date, with an electronic copy submitted to the instructor via email. All absences must be excused in advance.

OVERVIEW OF TOPICS FOR IN-CLASS DISCUSSION

QUALITY TODAY OVERVIEW
- What is quality in general? And in your organization?
- Why is a strategy of focusing on quality a better way to operate than previous strategies?
- Why do we need to continually improve our organization?
- What are the driving forces in healthcare today?
- How do the following models relate and interact: Model for Improvement, Collaborative Learning Model, the Chronic Care Model, Outcome Evaluation (i.e. Logic) models, Health Leadership Competency Model and the Model for Spread and Diffusion of Innovation.

FOCUS ON PROCESS
- What are health services? How is the production of these services different from the production of goods?
- How can one identify a process and use complimentary models to improve the outcome?

VARIATION AND STATISTICAL THINKING
- What is the concept of variation and how does it apply in a process(es)? How can understanding the use of variation impact decisions made in daily work life?
- What is special and common cause variation?
- What measurement tools are used to further explain variation?
- What are the appropriate management actions to address each type of variation?

ORGANIZATIONAL TRANSFORMATION
- What are the characteristics of the present and preferred states of an organization?
- What are the learning/investment curves and how do they apply to an organizational transformation?
- What are the characteristics of an organization in transition and how can you help an organization through the transition stage?
- What are the characteristics of an effective leader in organizational change?
ASSIGNMENT #1
FLOW CHART

The first step on the improvement journey is to select the process for improvement. Answer the 3 Model for Improvement questions and diagram the process flow. When selecting the process to analyze, consider “measurability,” since you will be collecting data on this process for your next assignments. Identify the process concretely and think about the type of information needed. Be sure your flow charts are well defined with beginning and end points. Label your flowchart to clearly state the process being mapped.

Format
1. Cover page with course name, team member names, date.
2. Brief (1 page) description of process being analyzed, ending with MFI questions/answers
3. Flow charts: one from each team member, and designate one as the official team copy

Grading
1. Flow chart: appearance and flow, including correct use of basic flow chart symbols* 5 points
2. Written description of process – start with why you picked this process 3 points
3. MFI questions with answers – one sentence answers 1 point
4. Grammar, formatting, spelling 1 point

* oval (begin, end) rectangle (activity), diamond (decision point)

ASSIGNMENT #2
CAUSE AND EFFECT DIAGRAM

A cause and effect diagram (also known as an Ishikawa or fishbone diagram) is a tool used to explore the relationship between causes and an effect. For the problem that you flowcharted in Assignment #1, prepare a cause and effect diagram. Use the problem as your effect (the head of the fish); brainstorm the causes using the 5M’s or 4 P’s and then group them under the main causes (the scales of the fish). Each cause should be clearly stated as to how/why it’s contributing to the effect. Identify the most significant causes (root causes) contributing to the problem.

Format
1. Cover page as in Assignment #1
2. Cause and Effect diagram
3. Brief description of root causes

Grading
1. Technical quality of cause/effect diagram 5 points
2. Analysis of root causes 4 points
3. Grammar, formatting, spelling 1 point

ASSIGNMENT #3
RUN CHART/CONTROL CHART

Run charts are graphs of data taken over time. Control charts build on the run chart and are one of the key tools used to display variation in the process, and identify the presence or absence of special or common cause variation. The purpose is to determine the type and cause of variation so that appropriate action can be taken.

Using Assignment 2 results, identify the one aspect of the process that is the most problematic and measurable. Gather data and prepare a run chart (≥ 20 data points). Add upper and lower control limits (1 or 2 SD), to turn your run chart into a control chart, which will help you identify causes of variation. Label your chart to clearly state the content. Prepare a written summary of your analysis of the variation.

Format
1. Cover page as in Assignment #1.
2. Run chart/control chart
3. Brief (1 page) written analysis of variation

**Grading**

1. Technical quality of run/control chart  
   5 points
2. Analysis of variation: special and/or common cause  
   4 points
3. Grammar, formatting, spelling  
   1 point

**ASSIGNMENT #4**

**PDSA CYCLE, RECOMMENDATIONS FOR IMPROVEMENT AND MEASUREMENT PLAN**

Now that you have gathered the data and determined the main causes for the problem, recommend a change. Conduct a PDSA cycle and based on that test, write an implementation plan for your recommended change. Be specific. Include the who, what, where, when and how of implementation. To help the organization determine if the plan is successfully implemented and effective after you leave, develop a measurement plan and tool that you will leave with the organization for ongoing measurement. At a minimum the plan should include the data that will be collected, who is accountable for collection and specific timeframes/dates.

**Format**

1. Cover page as in Assignment #1
2. PDSA results
3. Implementation plan
4. Measurement Plan

**Grading**

1. PDSA cycle  
   9 points
2. Written implementation plan  
   5 points
3. Written measurement plan and tool  
   5 points
4. Grammar, formatting, spelling  
   1 point

**Final Presentation to class**  
5 points

Summarize your journey through the improvement process, including at a minimum:

1. Overview of the specific healthcare organization with which you were involved
2. What problem did you set out to solve
3. Obstacles encountered along the way
4. Significant findings
5. Recommendations that you made
6. Response from organization at end of project
7. Lessons learned

Be creative! All team members should actively participate in a professional, engaging and compelling performance!

“[Better] performance is not simply – it is not even mainly – a matter of effort; it is a matter of design”

- Don Berwick

Former CEO, IHI; former head of CMS
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<tr>
<th>Date</th>
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| Jan 25 | Introductions                                                        | Check on-line resources before first class session.                                             | Publically reported measures: [http://hospitals.nyhealth.gov/](http://hospitals.nyhealth.gov/)  
[http://whynotthebest.org](http://whynotthebest.org) (CF)  
[http://hospitalcompare.hhs.gov](http://hospitalcompare.hhs.gov)  
What is our national scorecard telling us about health care in the US? | Submit team improvement process for approval via e-mail no later than 2/6/12.                | Organize into teams. Examples of previous team processes – in Blackboard.          |
|        | Overview of improvement models and performance measurement           | Complete “Tell me about yourself” document posted on Blackboard and bring to first class.      |                                                                                  |                                                                                  | Introducing the IHI Open School: 10 minute video; instructions for course completion on Blackboard. |
|        |                                                                       |                                                                                               |                                                                                  |                                                                                  | The IHI Open School Chapter network is now 138 strong, including 18 international Chapters. |
| Feb 1  | Quality Yesterday and Today: from Deming to Berwick                  | IHI MHO 101 – Achieving Breakthrough Quality, Access, and Affordability                       |                                                                                  |                                                                                  | Escape Fire videotape.                                                          |
| Feb 8  | Driving Force: Safety                                                | “Reducing Medical Error: Can You Be as Safe in a Hospital as You Are in a Jet?” [Issue Brief](http://www.iom.edu)  
National Health Policy Forum, George Washington University, May 14, 1999  
|        |                                                                       | IHI PS 100 – Introduction to Patient Safety  
IHI PS 101 – Fundamentals of Patient Safety                                                   |                                                                                  |                                                                                  |                                                                                  |
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| Feb 15 | Regulation and Accreditation       | IHI QI 101 – Fundamentals of Improvement  
Fed Reg 2/23/98 – Inspector General Compliance Program for Hospitals (Contents Table)  
www.jcaho.org  
Patient Safety Goals; core measures  
HEDIS 2012 measures  
http://www.leapfroggroup.org/ employer advocacy for health reform |                  | Team formation and working together at your sites.                                        |
| Feb 22 | Apply the culture of safety to the workplace. | “Patient Safety and the “Just Culture”: A Primer for Health Care Executives,” April 17, 2001, Marx JD  
IHI PS 102 – Human Factors and Safety  
IHI PS 106 – Intro to Culture of Safety |                                                                                      |                  |                                                                 |
| Feb 29 | Variation and Statistical Process Control  
“Building Measurement and Data Collection into Medical Practice” Annals of Internal Medicine, March 15, 1998, Nelson, Batalden  
IHI QI 103 – Measuring for Improvement | http://www.symphonytech.com/redbeads.htm  
flip through “How to Conduct the Experiment” and conduct 4 simulations. | Assignment #1 due | Understanding the basic concepts of variation and how to apply to quality improvement. |
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<tr>
<td>Mar 7</td>
<td>The Collaborative Learning Model</td>
<td>“Redesigning the Patient Visit,” Gordon and Chen</td>
<td><a href="http://www.ihi.org">www.ihi.org</a> search for “Learning Collaborative Model”: Breakthrough Series white paper</td>
<td></td>
<td>The power of collaboratives to achieve widespread improvement.</td>
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<tr>
<td></td>
<td>The Chronic Care Model</td>
<td>“For 80 cents more” The Economist, August 17, 2002</td>
<td><a href="http://www.improvingchroniccare.org">www.improvingchroniccare.org</a> “The Chronic Care Model”</td>
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<tr>
<td></td>
<td></td>
<td>“A Nation’s Health At Risk” NACHC Issue Brief</td>
<td>Become familiar with the six model elements, listen to the Chronic Care Model Talk.</td>
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<tr>
<td>Mar 14</td>
<td>Spring Recess</td>
<td></td>
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<td>Assignment #2 due</td>
<td>The critical role of leaders in sustaining and spreading improvement.</td>
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<td></td>
<td></td>
<td>“Factors Contributing to Sustainability and Spread in a Learning Collaborative” PCDC Research Paper funded by CWF.</td>
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<td>IHI L101 – So You Want to Be a Leader in Health Care</td>
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<td>IHI PS 105 – Communicating With Patients After Adverse Events</td>
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<td>Mar 28</td>
<td>Medical Home Model</td>
<td>Bringing together all improvement methodologies to the Medical Home Model concept.</td>
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<td>Guest: Regina Neal</td>
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<td>Apr 11</td>
<td>Lean Six Sigma</td>
<td>IHI QI 106 – Level 100 Tools</td>
<td>Lean’s 8 types of waste: Defects, Overproduction, Transportation, Waiting, Inventory, Motion, Processing, Human Potential = change concepts.</td>
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<td>Guest: Allison Bloom, MBA, RHIA Black Belt, NYU Lean Six Sigma experiences at NYU</td>
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<tr>
<td>Apr 18</td>
<td>Outcome Evaluation models, Model for Spread and Diffusion of Innovation</td>
<td>IHI QI 104 – Putting It All Together</td>
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<td>Apr 25</td>
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<td>Assignment #4 due</td>
<td>Final Presentations</td>
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<td>May 2</td>
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<td>Wrapup celebration</td>
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