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 team work 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 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. Team members will evaluate each other midway through and at the end of the course.

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. Microsoft Visio is required for the first flow chart assignment, with each team member creating a flowchart for practice, of which one will be designated the “official” flowchart for assignment one. The remaining assignments may use a combination of software applications. Visio is available in the NYU computer lab.

WHAT’s NEW THIS SEMESTER? 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 TEXTBOOK: The Team Handbook, 3rd Edition, Scholtes, Joiner, Streibel (re assignments)
REQUIRED ARTICLES: Posted under “Documents” in Blackboard.
REQUIRED ON-LINE COURSES: IHI Open School free on-line courses on Quality Improvement and Patient Safety (http://www.ihi.org/IHI/Programs/IHIOpenSchool/IHIOpenSchoolforHealthProfessions.htm?TabId=4)

ADDITIONAL SUGGESTED READINGS/ACTIVITIES: The Improvement Guide, A Practical Approach to Enhancing Organizational Performance, Langley, Nolan; If Disney Ran Your Hospital, 9 1/2 Things You Would Do Differently, Fred Lee.

ASSIGNMENTS 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 via e-mail for approval no later than 9/22/09.

Assignments and the final presentation represent 95% of each student’s grade (95 points in total). Assignments represent a team effort; therefore all team members will receive the same written assignment grade. Written assignments are graded for grammatical correctness as well as content. They should be submitted electronically through the digital drop box function in Blackboard under Student Tools no later than a week after the last class of the semester. Hard copies of written assignments are handed in during class on the due date.

The remaining 5% of each individual student’s grade will be based on participation in classroom discussion, attendance, and team evaluations. 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 model 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 your 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  p. 4-16 - 4-19

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 chart has well defined 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 chart – designate one as the official one, others for information only to show Visio was used by all team members.

Grading
1. Flow chart - appearance and flow, including correct use of flow chart symbols* 10 points
2. Written description of process – start with why you picked this process 5 points
3. MFI questions with answers – one sentence answers 3 points
4. Grammar, formatting, spelling 2 points
* oval (begin, end) rectangle (activity), diamond (decision point)

ASSIGNMENT #2
RUN CHART/CONTROL CHART  p. 4-23 – 4-24; 5-54 – 5-59

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.

For the process that you studied in Assignment #1, identify one aspect of the process that is problematic and is 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 8 points
2. Analysis of variation: special and/or common cause 8 points
3. Grammar, formatting, spelling 2 points

ASSIGNMENT #3
CAUSE AND EFFECT DIAGRAM  p. 4-26 – 4-27, 5-34 – 5-35
PARETO DIAGRAM  p. 4-22 – 4-23

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 analyzed in Assignment #2, 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 contributing to the problem.

A Pareto Diagram (the 80/20 principle) is a bar graph for establishing priorities: where to direct improvement to produce the greatest benefit. Create a Pareto Diagram from your significant causes to identify the one or two root causes that seem to contribute most significantly to the problem.
Format
1. Cover page as in Assignment #1
2. Cause and Effect diagram
3. Brief description of root causes
4. Pareto Diagram

Grading
1. Technical quality of cause/effect diagram 7 points
2. Technical quality of Pareto Diagram 5 points
3. Analysis of root causes 5 points
4. Grammar, formatting, spelling 2 points

ASSIGNMENT #4
PDSA CYCLE, RECOMMENDATIONS FOR IMPROVEMENT AND MEASUREMENT PLAN
p. 5-27 – 5-42

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 10 points
2. Written implementation plan 8 points
3. Written measurement plan and tool 8 points
4. Grammar, formatting, spelling 2 points

Final Presentation to class 10 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

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

- Don Berwick

CEO, IHI
**TENTATIVE CLASS SCHEDULE**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings – Textbooks and Articles</th>
<th>On-line Resources</th>
<th>Written Assign.</th>
<th>Class Discussion</th>
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<tbody>
<tr>
<td>Sept 10</td>
<td>Introductions</td>
<td>Overview of improvement models and performance measurement</td>
<td>Check on-line resources before first class session.</td>
<td>Submit team improvement process for approval via e-mail no later than 9/22.</td>
<td>Organize into teams. Examples of previous team processes</td>
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<tr>
<td>Sept 17</td>
<td>Quality Yesterday and Today</td>
<td>Textbook: Introduction, Chapters 1, 2 and 6</td>
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</table>
IHI free course: QI 102 – Model for Improvement, Your Engine for Change. (see IHI Open School link under online readings). |  | Safety and CQI  
Introducing the IHI Open School: 10 minute video  
The IHI Open School Chapter network is now 138 strong, including 18 international Chapters.  
Guest: Rachael Laumann from NYU Chapter |
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<tbody>
<tr>
<td>Oct 1</td>
<td>Apply the culture of safety to the workplace.</td>
<td>“Patient Safety and the “Just Culture”: A Primer for Health Care Executives,” April 17, 2001, Marx JD</td>
<td>IHI free course: PS 102: Human Factors and Safety (see IHI Open School link under online readings).</td>
<td></td>
<td>Guest lecture: Beth Duthie, RN, PhD. Director of Patient Safety NYU Langone Medical Center</td>
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<tr>
<td>Oct 22</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; (must register (free) to view)</td>
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<td>Discuss assignment 2</td>
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<td>1. Average cycle time at Belson was 68 minutes, pre Redesign. What contributed to the long wait times?</td>
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<td>The power of collaboratives to achieve widespread improvement.</td>
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<td></td>
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<td>2. The Redesign team was successful in decreasing the cycle time to 41 minutes. What attributes did the team have to succeed?</td>
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<td>Guest: Allison Bloom, MBA, RHIA Black Belt, NYU</td>
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<td>3. What processes needed to change for Redesign to succeed?</td>
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<td></td>
<td>Six Sigma – the lean version</td>
<td>Textbook: The DMAIC Method, 5-25-5-26</td>
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<tr>
<td>Oct 29</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” Become familiar with the six model elements, listen to the Chronic Care Model Talk. <a href="http://www.iom.edu">www.iom.edu</a> “Priority Areas for National Action: Transforming Healthcare Quality” January 2003 report, Executive Summary (free download of PDF file)</td>
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<td>Understand the Chronic Care Model of Care as it relates to population-based improvement initiatives</td>
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<td>“A Nation’s Health At Risk” NACHC Issue Brief</td>
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<td>Discuss assignment #3</td>
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<td>Data and quality improvement; CCHIT Meaningful</td>
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<td>Nov 12</td>
<td>Leadership</td>
<td>Textbook: Chapter 3 and 7</td>
<td><a href="http://www.nchl.org/ns/index.asp/resources/competency">IT Strategic Plan</a> model</td>
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<td>Use measures</td>
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<tr>
<td>Nov 19</td>
<td>Pay for Performance</td>
<td>IHI archived 6/24/09 lecture by Don Berwick: <a href="http://www.ihi.org/IHI/Programs/IHISchool/On+Call+Does+Pay+for+Performance+Work.htm">www.ihi.org/IHI/Programs/IHISchool/On+Call+Does+Pay+for+Performance+Work.htm</a></td>
<td>Assignment #3 due</td>
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<td>What did you learn from assign #3?</td>
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<td>Dec 3</td>
<td>Outcome Evaluation models, Model for Spread and Diffusion of Innovation</td>
<td>Chapter 8</td>
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<td>Assignment #4 due</td>
<td>Why outcome evaluation?</td>
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<td>Dec 10</td>
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<td>Final Presentations</td>
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<td>Dec 17</td>
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<td>Final Presentations if needed</td>
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