Continuous Quality Improvement (CQI)

Introduction
This course encourage 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.

Prerequisites:
- CORE-GP.1011 Statistical Methods for Public, Nonprofit, and Health Management,
- HPAM-GP.4833 Health Care Management I: Control and Organizational Design, and
- Computer Proficiency.

Students lacking the prerequisites must obtain permission to enroll in the course.

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

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 learning in class to process improvement assignments.
3. 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 healthcare 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 toward 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.

Course Expectations
- Attend every class on time,
- Read all assigned materials prior to class,
- Actively participate in-class discussions and exercises, and
- Complete online and written assignments on time.

Please discuss with me as soon as possible should you foresee difficulty in adhering to any course expectation. All class absences must be excused in advance. Extensions for assignment completion are granted only in cases of emergency.

Expectations of The Instructor
- In-person meetings: I will do my best to make myself available 2 hours before every class, but please make prior arrangements with me.
- Email: this is the best way to communicate with me. I will do my best to provide a timely response; however, please allow yourself 24 hours to ensure responses to any pertinent questions related to an assignment.

Grading
IHI Open School course completion. Total 40 points.
- Each IHI course (16 total) completed by the due date earns 2.5 points
Written assignments. Total 50 points.

- This course relies heavily on teamwork and communication. Because written assignments represent a team effort, all team members will receive the same written assignment grade.
- Written assignments are submitted on the due date under “Assignments” in NYU Classes.

Final presentation. Total 10 points.

Each IHI course and written assignment handed in late without approved extensions will be penalized 2 points per day after the due date.

Although class participation is not graded, it is strongly encouraged that you participate to maximize your learning experience.

Wagner’s Academic Honesty and Grading Policy

All students are expected to pursue and meet the highest standards of academic excellence and integrity. This course will abide by Wagner’s general policy guidelines on grading and academic honesty, including plagiarism. It is the student’s responsibility to become familiar with these policies.

- Grading Guidelines: [http://wagner.nyu.edu/students/policies/grading.php](http://wagner.nyu.edu/students/policies/grading.php)
- Incomplete Grades: [http://wagner.nyu.edu/students/policies/incompletes.php](http://wagner.nyu.edu/students/policies/incompletes.php)
- Academic Honesty: [http://wagner.nyu.edu/students/policies/](http://wagner.nyu.edu/students/policies/)

Proper citation of ideas, data and published work is expected in this course.

- Writing references: [http://wagner.nyu.edu/students/services/tutoring.php](http://wagner.nyu.edu/students/services/tutoring.php)

Recommended References


Required Articles

Posted under “Resources” in NYU Classes.

Required Online Courses

IHI Open School online courses are free to students and provide important lessons in patient safety, quality improvement and leadership. Completion by the required date as noted in the syllabus is required and will be tracked by an IHI online 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. The IHI Open School offers a basic certificate of completion. An IHI Open School iPhone/iPad app is also available to view the courses.
Written Assignments
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 Model for Improvement framework:

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 set up during the first class section. Each team will submit its process for improvement to the instructor for approval under “Assignments” in NYU Classes no later than 2/11.

Assignment #1: Flowchart
The first step on the improvement journey is to select the process for improvement. Answer the 3 Model for Improvement (MFI) 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 flowcharts 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. One-page description of process being analyzed, ending with MFI questions/answers. Use the IHI Open School’s Charter Form as a format guide.
3. Flowcharts: one from each team member, and designate one as the official team copy.

Grading
1. Flowchart: 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 categories discussed in class (i.e. combination of 5M’s: man, machine, methods, materials, measurement and 4P’s: people, plant, policies and procedures) 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 root causes contributing to the problem. You can use the IHI Open School’s Cause and Effect Diagram Form as a guide.

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 and effect diagram [5 points]
2. Analysis of root causes [4 points]
3. Grammar, formatting, spelling [1 point]

Assignment #3: Run/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 standard deviations), 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, 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 and 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 tool and plan 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. You can use the IHI Open School’s PDSA Form as a guide.

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 for Class
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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<td>Discuss Assignment 1.</td>
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<td>Discuss working together at your sites.</td>
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Assignment 1 due. |
| Week 6 | Mar 6  | Leadership and Teamwork  | IHI L101: So You Want to Be a Leader in Health Care  
IHI PS 103: Teamwork and Communication  
IHI PS 102: Human Factors and Safety  
IHI PS 106: Intro to Culture of Safety | Mid-Semester Evaluation Forms due. |
| Week 8 | Mar 20 | Spring Recess  | No Class |
|---------|--------|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
Meaningful Use: [http://www.healthit.gov/providers-professionals/ehr-incentives-certification](http://www.healthit.gov/providers-professionals/ehr-incentives-certification) |  |
| April 24 |  |  |  |
| Week 14 | **Final Presentations** |  | Assignment 4 due. |  |
| May 1 |  |  |  |
| Week 15 | **Final Class** |  |  |  |
| May 8 | **Wrap up celebration.** |  |  |  |
| May 15 | **Final Exam Period** | **No Class** |  |  |