

## PGME Quality Improvement and Patient Safety Elective

Developed by the PGME Quality Improvement and Patient Safety Education Committee &  
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**Suggested for:** PGY2+

### **Overview**

- 4-week self-guided learning curriculum (can be modified to 8 weeks or longer if needed)
- Provides a structure and validated resources and assessment tools for residents interested in a QI elective
- Resident meets with a potential supervisor a few months beforehand to identify a few potential QI project ideas, and the level of objectives that are most appropriate for their level of experience. Recommended to complete a needs assessment prior to starting the elective.
- Involvement in a QI project – may join their program’s QI Co-Learning Curriculum project (if applicable) or work with an SJH or HHS CQI Specialist if interested/feasible – can join in on an existing project or start their own
- Weekly check-ins with faculty supervisor

### **Objectives<sup>1</sup>**

There are three sets of objectives for the resident and their faculty supervisor to choose from based on the resident’s level of experience.

### **QUALITY IMPROVEMENT**

At the end of this 4-week elective, the trainee will be able to:

#### Fundamental

- Distinguish between quality assurance (QA) and quality improvement (QI).
- Write an aim statement for a QI process.
- Determine how to organize a QI team for a clinical process.
- Generate a flow chart for QI of a clinical process.
- Answer the following three questions of the model for improvement:
  - What are we trying to accomplish?
  - How will we know that a change is an improvement?
  - What changes will we make that will result in an improvement?
- List at least one outcome measure, one process measure, and one balancing measure for data collection.
- Consider how data collection can take place at baseline and after changes have been implemented in the clinical process.
- Summarize how data collection can be embedded in the workflow.
- Interpret a run chart and/or control chart by identifying common-cause versus special-cause variation of the data.

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<sup>1</sup> Source: [Wong et al. Teaching Quality Improvement in Residency Education – Royal College 2015 – pages 42-43](#)

- Discuss whether an intervention appears to work (improvement) or not work (non-improvement) on the basis of the data analysis.

### Intermediate

- Form a QI team and decide on the accountability of the team members.
- Select a clinical area for a QI project and a venue for data collection.
- Produce at least one aim statement for a self-selected QI project.
- Develop a QI charter by answering the three core questions of the model for improvement for the self-selected QI project: What are we trying to accomplish? How will we know that a change is an improvement? What changes will we make that will result in an improvement?
- Establish a timeline that is realistic and feasible.
- Establish appropriate division of labour among team members.
- Identify needs for QI support and resource requirements.
- Identify indicators for data collection, including at least one outcome measure, process measure and balancing measure.
- Devise plans for data collection to ensure feasibility and sustainability.
- Analyze the data collected, with the aid of QI analysts, in the form of run charts and/or control charts.
- Discuss whether an intervention appears to work (improvement) or not work (non-improvement) on the basis of the data analysis.

### Advanced

After having achieved all of the learning objectives for the fundamental and intermediate QI curricula, the trainee working at the advanced level will be able to:

- Lead a QI team.
- Align QI with health promotion and disease prevention strategies.
- Explain the ethical implications of collecting data for QI.
- Seek ethical approval when indicated.
- Write a QI abstract that meets standard criteria.
- Produce and deliver, with team members, an oral presentation of the findings of a QI project in a podium session.
- Write a QI scholarly article that meets standard criteria.

### PATIENT SAFETY

- Explain key patient safety concepts such as adverse events, near misses, no-harm events, errors, and root cause analysis.
- Describe how QI can be used to contribute to a culture that promotes patient safety, including:
  - Improving disclosure after a safety incident
  - How to evaluate practices in place for patient safety (human factors, transfer of care, verbal and written communication)

## Weekly Schedule of Resources and Assignments

### QUALITY IMPROVEMENT

#### General resources:

- Read: Fundamentals of QI (7 pages): <https://canmeds.royalcollege.ca/en/tools>
- IHI Open school modules (optional): [link](#)

#### Week 1: Problem characterization

##### a) Resources:

- Watch: HQO video on Problem Statements ([link](#))
- Review: The Ottawa Hospital Project Charter template ([source](#))
- Review: The Ottawa Hospital 5w2h guide and template ([source](#))
- Review: HQO QI Essentials resources ([link](#))

##### a) Assignments:

- Hand in: HQO QI Charter template ([source](#)) (direct download [link](#)) - *includes Aim statement - leave process and balancing measures blank*
- Hand in: Brief literature review on chosen healthcare problem

##### b) Resources:

- Read: The Ottawa Hospital Process Mapping Guide ([source](#))

##### b) Assignments:

- Hand in (may be handed in by end of Week 2): The Ottawa Hospital Process Map template ([source](#))

##### c) Resources:

- Read: The Ottawa Hospital Run Chart Guide ([source](#))
- Optional read: Run and Shewhart Chart tool ([source](#)) (direct [download](#))

##### c) Assignments:

- Hand in (may be handed in by end of Week 2): Baseline run chart and analysis

#### Week 2: Diagnostics

##### a) Resources:

- Watch: HQO video on diagnostics ([link](#))
- Review: The Ottawa Hospital fishbone diagram guide ([source](#))
- Review: The Ottawa Hospital 5-Whys guide ([source](#))
- Optional review: HQO Fishbone tool ([source](#))
- Optional review: HQO 5 Whys tool ([source](#))

##### a) Assignments:

- Hand in: The Ottawa Hospital fishbone diagram template ([source](#))
- Hand in: The Ottawa Hospital 5-why Worksheet ([source](#))

#### Week 3: Change Idea generation, measurement plan, and PDSA proposal

##### a) Resources:

- Watch: HQO Video on Change ideas and PDSAs ([link](#))
- Read: HQO Change Concepts and Ideas guide ([source](#)), (direct [link](#))
- Review: The Ottawa Hospital PDSA template and worksheet ([source](#))

- a) Assignments:
- Hand in: HQO PDSA Tool (only fill out the “Plan”, outlining which root cause the chosen general change concept and specific change idea is addressing). [Source](#) and [direct link](#)
- b) Resources:
- Read: HQO Measurement Guide ([source](#)), (download [link](#))
- b) Assignments:
- Hand in: HQO Measurement Plan tool ([source](#)), download [link](#)
  - Hand in: updated HQO QI Charter tool ([source](#)) (direct download [link](#))

**Week 4: (if feasible): carry out PDSA 1, propose next PDSA**

- a) Assignments:
- Hand in: complete HQO PDSA Tool for PDSA 1. [Source](#) and [direct link](#).
  - Hand in: Reflection document

**PATIENT SAFETY**

- Resources:
  - View IHI Open School Modules (Patient Safety) - [link](#)
  - Read: CMPA articles on patient safety incident reviews ([link](#)) and ([link](#)) and disclosure of patient safety incidents ([link](#))
  - Read (Optional): Canadian Incident Analysis Framework ([source](#))
- Assignments:
  - IHI Modules Assignments (quizzes) Patient Safety
    - PS 101: Introduction to Patient Safety\* - Week 1
    - PS 102: From Error to Harm\* - Week 1
    - PS 103: Human Factors and Safety\* - Week 2
    - PS 104: Teamwork and Communication\* - Week 2
    - PS 105: Responding to Adverse Events\* - Week 3
    - PS 201: Root Cause Analyses and Actions - Week 3
    - PS 202: Achieving Total Systems Safety - Week 4
    - PS 203: Pursuing Professional Accountability and a Just Culture - Week 4

**Assessment**

A number of tools are available for assessment, including the Self-Assessment Program (SAP) and the Quality Improvement Knowledge Application Tool (QIKAT) which now includes an updated version, the Quality Improvement Knowledge Application Tool Revised (QIKAT-R). The SAP and the QIKAT/QIKAT-R can be administered at the start of the first session to establish a baseline of the trainee’s knowledge of QI. After the elective is completed, the assessment should be repeated, using the SAP and a different version of QIKAT/QIKAT-R. Using a second version of QIKAT/QIKAT-R will minimize any learning effect related to the test.

These tools can be downloaded from the Self-Assessment tab on this website:

<https://www.royalcollege.ca/en/canmeds/canmeds-framework/patient-safety-quality-improvement.html>

And

[https://journals.lww.com/academicmedicine/fulltext/2014/10000/the\\_quality\\_improvement\\_knowledge\\_application\\_tool.26.aspx](https://journals.lww.com/academicmedicine/fulltext/2014/10000/the_quality_improvement_knowledge_application_tool.26.aspx)

## Self-assessment Program (SAP) for QI Competencies

Thank you for taking the time to answer the following questions, which were adapted, with permission, from a tool developed by Dr. Greg Ogrinc (Geisel School of Medicine, Dartmouth College, Hanover, NH) and used by his research team (Ogrinc G, LA Headrick, LJ Morrison, T Foster. Teaching and assessing resident competence in practice-based learning and improvement. *Journal of General Internal Medicine* 2004;19(5 Pt 2):496–500).

### Instructions:

How comfortable are you in your current skill with the following aspects of quality improvement? Please circle the most appropriate option (whole numbers only) for each item.

[1] not at all [2] slightly [3] moderately [4] extremely

1. Defining a clear problem statement (goal, aim)	1	2	3	4
2. Applying best professional knowledge	1	2	3	4
3. Developing appropriate measures	1	2	3	4
4. Studying the process of care	1	2	3	4
5. Developing a data collection plan consistent with time and resource limitations	1	2	3	4
6. Analyzing data	1	2	3	4
7. Applying statistical process control	1	2	3	4
8. Describing the roles of different professionals in health care improvement	1	2	3	4
9. Implementing a structured plan to test a change	1	2	3	4
10. Sustaining a change over time	1	2	3	4
<b>This is the end of the questionnaire. Thank you for your input.</b>				

### Balanced Score Card

*This tool is to be used after completion of the QI project.*

Title of project:

Team members:

Rating system:

0 = no

1 = some attempt was made but does not meet the requirements

2 = met some requirements but substantial improvement is required

3 = good (can use some improvement)

4 = very good (only minimal improvement is required)

5 = excellent (no improvement needed)

Please circle appropriate number for each question

1. Have the residents worked effectively as a team?	0	1	2	3	4	5
2. Do the project findings indicate a patient focus?	0	1	2	3	4	5
3. Do the project findings indicate knowledge of process?	0	1	2	3	4	5
4. Do the project findings incorporate PDSA/small tests of change?	0	1	2	3	4	5
5. How would you rate the aim statement (including use of appropriate methodology to identify causes of the problem)?	0	1	2	3	4	5
6. How would you rate the measurement/collection/use of data? (0 = no actual data)	0	1	2	3	4	5
7. Has the team engaged stakeholders in planning, executing and evaluating the change?	0	1	2	3	4	5
8. How would you rate the change suggested/achieved? (0 = no change suggested)	0	1	2	3	4	5
9. Do the three elements (aim, measure, change) bear some relationship to each other?	0	1	2	3	4	5

Comments:

Total Score

/45

### Revised QIKAT Scoring Rubric (QIKAT-R)

Each item receives one point if the response adequately addresses the item and zero points if it does not. The total possible score is 9 points for each scenario.

3 points for the AIM. The AIM ...	
A1	is focused on the system-level of the problem presented.
A2	includes direction of change (increase or decrease).
A3	includes at least <u>one</u> specific characteristic such as magnitude (% change) or time frame.
3 points for the MEASURE. The MEASURE...	
M1	is relevant to the aim.
M2	is readily available so data can be analyzed over time.
M3	captures a key process or outcome.
3 points for the CHANGE. The CHANGE...	
C1	is linked directly with the aim.
C2	proposes to use existing resources.
C3	provides sufficient details to initiate a test of change.