PRACTICE QUALITY IMPROVEMENT (PQI) PROJECT

RESOURCE MANUAL

FAMILY MEDICINE RESIDENCY PROGRAM

CONTENTS

What is practice quality improvement and why is it important?

The College of Family Physicians of Canada program guidelines "General Information and Regulations on Program Accreditation and Examinations" states:

"3.2.6: The residency program provides formal training in continuous improvement with opportunities for residents to apply their training in a project or clinical setting".

During their family medicine residency program, each resident will be required to undertake a project on "Practice Quality Improvement" (PQI) to develop skills in quality improvement and practice audits. This project is mandatory for all residents.

The PQI project requires active data collection and analysis. You must complete the project with a clinical team that would engage your faculty advisor (and if applicable, your community preceptor), to agree on your project, refine the question and collect relevant references.

What are the requirements for the PQI project(s)

PQI project (an audit can be done if further assessment of the project is required– pg 7)

o   All residents <u>must</u> complete a PQI project with at least one PDSA cycle during their residency. The essential components include completing 1 test of change (PDSA cycle) in your clinic during your family medicine block time. Follow the steps of PDSA outlined in this manual. You will be required to:
  o   Present your PQI project during your family medicine block time.
  o   Submit a final report outlining your PQI project
  o   Submit a Team Charter (exemplary).

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[1] The College of Family Physicians of Canada. Standards for Accreditation of Residency Training Programs. 2018 version 1.2

Learning Objectives

The project goals are:

To provide family medicine residents the opportunity to develop the skills required to implement the process of quality assessment and improvement in their clinical practices.

The overall goals of the PQI project are:
1. to develop the skills required to conduct a practice quality improvement project and audit in clinical practice; and
2. to demonstrate skills in critiquing the literature (literature searches, critical appraisal); and
3. to carry out this project in collaboration with a practice; and
4. to improve the quality of patient care

SPECIFIC PQI OBJECTIVES
- Identify areas for improvement in practice (may refer to the 6 dimensions of quality and/or the quintuple aim.
- Describe the differences between Research, Quality Improvement (QI) and Quality Assurance (QA) as well as the common ground between these.
- Identify activities (research and QI) that require REB approval and resources that you can use to determine if a QI project requires REB approval (e.g. experts, REB).
- Critically review, evaluate and appraise research- and QI-related literature so as to assess its relevance and appropriateness for adoption or adaption in one's practice.
- Incorporate QI and measurement as part of everyday practice.
- Demonstrate a commitment to high quality care.
- Describe the role of QI in family medicine.
- Identify opportunities for improvement within a practice (e.g. audits, significant event analyses, surveys, practice reports).
- Define a problem and develop an AIM statement (what are the specific outcomes you are trying to change, develop a SMART AIM statement).
- Identify team members for a QI initiative.
- Work within a team when undertaking QI or PQI (audit).
- Plan a QI initiative using the Model for Improvement's three questions (e.g. What are we trying to accomplish? How will we know that a change is an improvement? What change can we make that will result in an improvement?).
- Identify appropriate outcome, process and balance measures.
- Prepare a QI project charter (exeplary).
- Describe the Quintuple aim.
- Demonstrate an understanding of privacy and how to safeguard privacy during a PQI cycle.
- Describe how data (quantitative, qualitative, mixed) is collected, managed and stored in ethically sound ways that also considers privacy and the Health Information Act.
- Collect and analyze data from various sources (including information from patients and colleagues, data audits etc.) to inform QI.
- Conduct a PDSA cycle or a practice audit.
- Disseminate findings through presentations and reports.

Definitions

1. Audit is a *"process of asking how well an activity is being conducted in practice, when compared with how well that activity should be conducted."* (Godwin, 2001).

2. Quality improvement is *"A commitment to continuously improve the quality of healthcare, focusing on the preferences and needs of the people who use services. It encompasses a set of values (which include a commitment to self-reflection, shared learning, the use of theory, partnership working, leadership and an understanding of context); and a set of methods (which include measurement, understanding variation, cyclical change, benchmarking and a set of tools and techniques)"* (Royal College of General Practitioners, United Kingdom). The process involves sampling of enough sequential data to assess change.

3. Quality assurance involves an audit cycle. It is an investigation of current practice, comparing the findings to an accepted target, to ensure that standards are being maintained. The process usually aims to sample 100% of available data.

4. The Quintuple Aim are the four goals of improvement (Bodenheimer 2014) plus equity (see additional Women's College Hospital information)

5. The Six Dimensions of Quality provide a framework to help identify improvement opportunities. They include:
   1. Timely
   2. Efficient
   3. Equitable
   4. Safe
   5. Effective
   6. Patient-Centred

How to do a PQI

A quality improvement project is aimed to improve healthcare. The quintuple aim and the six dimensions of quality can help identify areas that require improvement. The Model for Improvement is an approach on to do a Quality Improvement project. It consists of three questions followed by the Plan-Do-Study-Act cycle. (also refer to Health Quality Ontario's Quality Improvement Guide for details)

Plan

1. Identify the and engage a clinical team on your project (including your faculty advisor and/or your community preceptor). Teams may include physicians, nurses, assistants, quality coordinators, and patients. Assign tasks and organize regular brief meetings with the team.

2. Ask three questions:

   o **"What are we trying to accomplish?"** What is your aim, that is, what specific outcomes are your trying to achieve? What problems are you trying to solve? Develop a SMART AIM STATEMENT:
   1) Specific reflecting on the quintuple aim and six dimensions of quality, choose a specific on what you plan to improve.
   2) Measurable – e.g. express the goal as a percentage/proportion
   3) Achievable – look for data that you have access to and that are easily obtained. Focus on 1 – 2 outcomes
   4) Realistic - pick a problem/question that is focused and easy to answer
   5) Timely choose something that can be done easily and that could allow you to repeat the audit after implementing a change.
   (e.g. AIM QUESTION = By April 1,20XX, 85% of patients over the age of 65, who visited the clinic from Jan-Feb 20XX, will have Goals of Care documented in their chart. Note- initially start small (e.g. 5 patients) and then go big (20 - 50 patients).)

   o **"How will we know that a change is an improvement?"** What measures will help you track success? Baseline measurements are important and determine if there is a need to improve. If there is no need to improve on the baseline date, you may need to identify another area for improvement with baseline data that supports a need for improvement.
   When doing a quality improvement project one measurement may not be enough. Consider collecting data to obtain measurement that capture different perspectives. There are three different types of measures to consider.

   1) Process measures evaluate activities or a process (such as are HbA1Cs being ordered in diabetic patients).

   2) Outcome measures assess results (such HbA1C at target in diabetics).

   3) Balance measures assess if a change in one part of the system has a negative impact on another part (such as increased hypoglycemic episodes with reaching HbA1C targets).

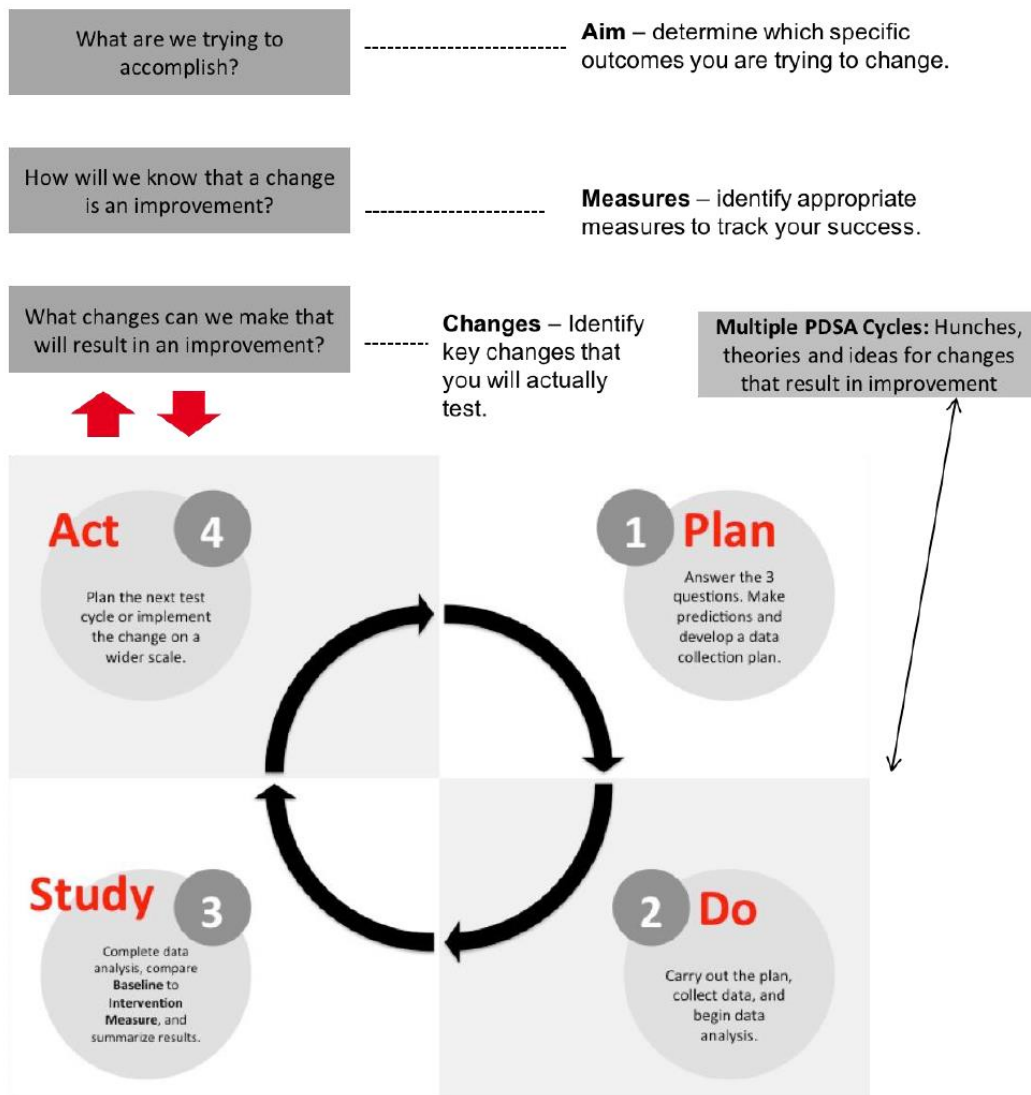- o **"What changes can we make that will result in an improvement?"** Identify changes that you can test.

3. Generate Change Ideas – brainstorm changes by thinking about root causes, five whys, etc.

Do Carry out your plan, collect data, and document any unintended outcomes.

Study Analyze the data comparing baseline to intervention and summarize results.

Act If target not achieved, implement another change idea informed by your results and conduct another audit cycle (PDSA).

The Model for Improvement – PDSA Cycles

What are we trying to accomplish?

Aim – determine which specific outcomes you are trying to change.

How will we know that a change is an improvement?

Measures – identify appropriate measures to track your success.

What changes can we make that will result in an improvement?

Changes – Identify key changes that you will actually test.

Multiple PDSA Cycles: Hunches, theories and ideas for changes that result in improvement

Act 4
Plan the next test cycle or implement the change on a wider scale.

1 Plan
Answer the 3 questions. Make predictions and develop a data collection plan.

Study 3
Complete data analysis, compare **Baseline** to **Intervention Measure**, and summarize results.

2 Do
Carry out the plan, collect data, and begin data analysis.

Source: Langley, G.L., Nolan, K.M., Nolan, T.W., et al. (1996). The improvement guide: a practical approach to enhancing organizational performance. San Francisco: Jossey-Bass.

How to do an Audit

The purpose of an audit is to evaluate how well an activity is being conducted in practice compared to how well it should be conducted. The audit helps to determine what could be done to improve or maintain quality practice. The PQI cycle involves repeating audits to re-evaluate practice in an ongoing cycle of quality improvement.

Audits and Quality Improvement projects (QIPs) are very similar, they both examine how well health care standards are with an aim to improve them. However there are differences. Typically, audits may require more formal measurement of outcomes and require a larger sample and take a longer time to achieve . While the Plan-Do-Study-Act cycles in a quality improvement project are done over a much shorter time period such as weekly or daily.

Audit Cycle Diagram
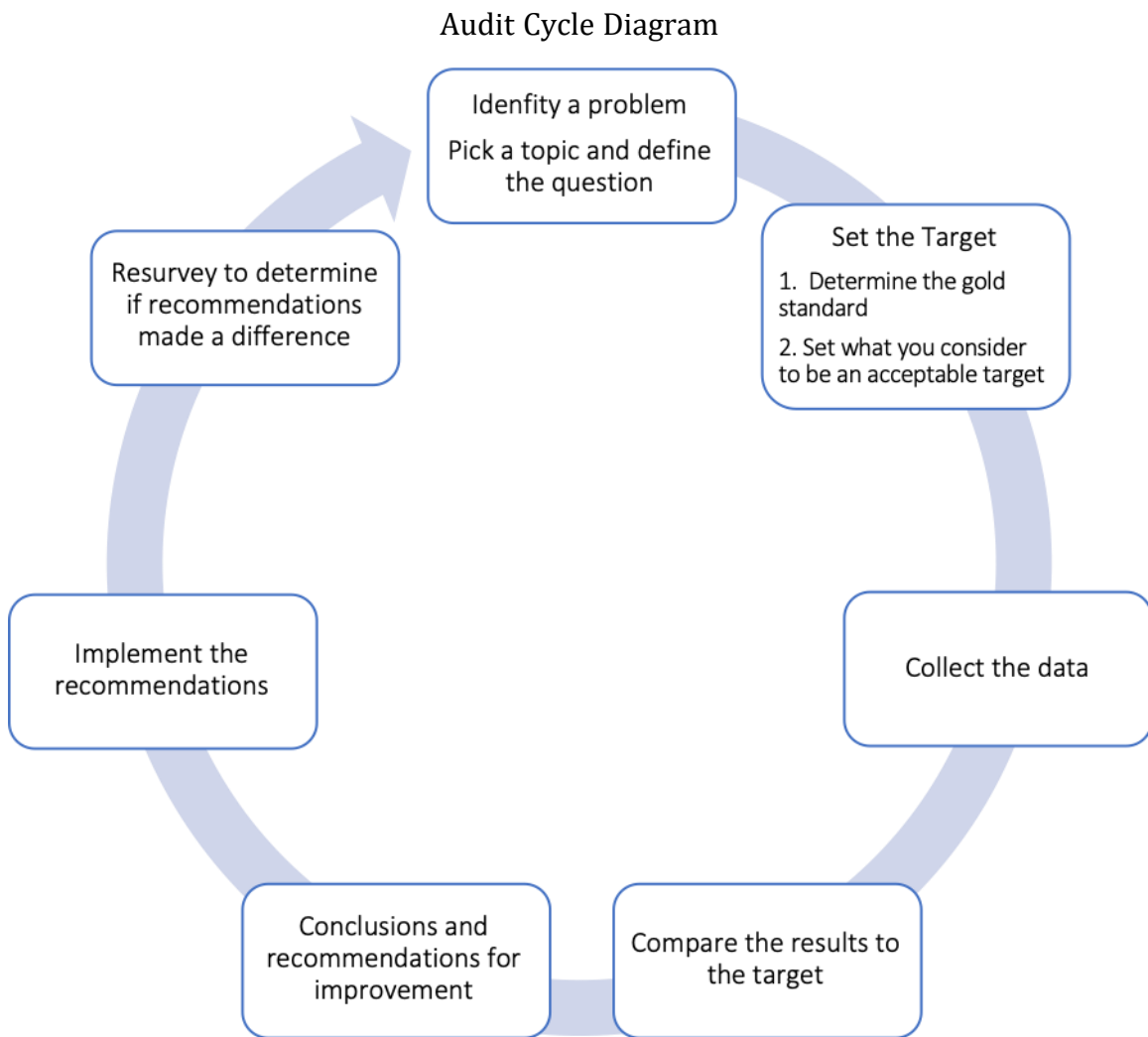
1. **Problem Definition for an AUDIT**: Pick a topic and define the question. This part requires the most thought and refinement. There must be agreement between you and your faculty advisor or community preceptor and the clinic as to the focus of the problem.

2. **Setting the Target (Defining Quality) for an AUDIT:** In order to determine the target or standard to which you are going to compare your data, a review and critical appraisal of the relevant literature must be done. For example, if you are studying whether your annual lab evaluation of diabetics is appropriate you must determine what is considered appropriate according to the consensus of Canadian diabetic experts and guidelines. (NB – If needed, you can use the AGREE II tool to evaluate the quality of clinical practice guidelines, see RESOURCES). In some projects, there may be very little literature and you may have to canvass personal opinions of experts. Occasionally, an arbitrary standard will be used.
The literature will help inform the standard; however, you and your faculty advisor or community preceptor must be in agreement as to what standard or target you will use. This may or may not be the "gold standard" as determined from the literature depending upon the situation and/ setting, in many cases you may not find a gold standard. For example, the standard for the time it takes for a patient to complete an appointment for a practice with a high prevalence of chronic disease and elderly patients is different than that of a younger, less complex practice.

3. **Collecting Data for an AUDIT:** Decide what data you want to collect. Data can be collected retrospectively or prospectively. Depending on the project, collection may involve chart audits, surveys, data sheets, check lists, interviews, etc. Always consider privacy policies and protect identities.
For outcome and process measures:

   a. **Decide on an appropriate number and select the sample:** This depends on a number of factors such as time and the number of patients with the condition you are assessing. With an uncommon condition such as congestive heart failure, you may want to assess the entire population. With hypertension, you may decide only to review 50 or 100 charts. In these cases, you should randomly select a portion of the sample.
   You may also choose to look at patients seen in a certain time frame. For example, you could record over a period of one-week period, how long patients waited in a room before being seen by their doctor.

   b. **Create an audit form (or electronic spreadsheet) to collect the data:**
   Code the data to protect identities by assigning a PQI identification number. Remove any identifiable information from the data collected on

the spreadsheet to de-identify the data (i.e. health care number, names, etc).

You may create a key that links a code/identification number to the patient. If a key is created, keep the key in a secure place at the practice site and destroy the key once the PQI has been completed and presented. At <u>no</u> time should identifying information leave the practice site.

4. **Comparing results to the target for an AUDIT:** The data collected can be stored and/or presented in many different ways depending on the data. However it exists, the data must be analyzed and compared to what has been agreed earlier as the target.

5. **Conclusions and recommendations:** Analysis of the data should lead you to conclusions and proposals for change. If the defined target has not been achieved, what corrective processes need to be done? If the target has been surpassed, is it the right target? Recommendations should follow from the analysis of data and conclusions reached.

6. **Future/Re-survey:** After the recommendations have been agreed to and put in place, a resurvey should be carried out after appropriate time has passed to see if the solutions agreed to have achieved the desired results. Any follow-up re-survey will probably not be carried out by you, but rather one of your future colleagues due to time limitations and duration of the residency-training period.

Can I do a research project instead of my PQI?

The answer to this question is **No** (unless the research project is a PQI).

While we encourage residents to undertake research activities, the PQI has learning objectives that need to be met and not all research activities will meet these objectives.

OUTLINE OF THE WRITTEN PQI REPORT

A written report of your project is to be presented to your faculty advisor and the community preceptor (an additional copy to the Department of Family Medicine is also requested). Your faculty advisor and/or community preceptor may also request an oral presentation of your project.

The PQI report should be in publishable format with the following headings:

- **Title page** – Include the title of the project, your name, the name of your primary community preceptor, faculty advisor's name, and date.

- **Introduction** – Start with a sentence or two summarizing the problem. (e.g. what is the problem, why is it important?). Provide a brief description of the setting and the team (e.g. roles and positions of the project team members). For a quality improvement project also provide an Aim Statement (e.g. articulate your project aim using the SMART acronym).

- **Methodology** – Describe: 1) What PQI measures you used to evaluate the interventions (e.g. outcome, process, and balance measures). 2) Describe change ideas and what change(s) were implemented. Where possible, describe why the proposed changes would be expected to address the problem. 3) Provide a detailed description of each iterative (PDSA) cycle used to implement the change ideas. 4) Describe the analytic approach used to evaluate the impact of the intervention (e.g. check sheets, run chart, histograms, scatter plots, pareto charts, audits, etc.).

- **Ethical implications** – Check with the UofA's ethics office for any ethical implications, and if needed request a determination of of ethics review.

- **Results** – Present/summarize the main results of the PQI and/or anticipated results.

- **Conclusions** – State concisely what you are able to conclude, include implications of findings. Comment on limitations and future directions.

- **Acknowledgements** - Acknowledge the supports you received to complete your project.

- **References** – If included, check references for accuracy, completeness, and proper format (according to the Uniform Requirements for Manuscripts Submitted to Biomedical Journals; **http://www.icmje.org/**). References should be numbered in the order they appear in the text. List all authors when there are 6 or fewer; when there are 7 or more, list the first 6, then et al.

  e.g. Godwin M. Conducting a clinical audit. Fourteen steps to better patient care. Can Fam Physician. 2001;47:2331-3.

OUTLINE OF TEAM CHARTER

Project Title:	**Scope/Boundaries:** Indicate the beginning and end steps and the process being focused on and possibly what might be "out of scope".
Team: List the names and roles/positions for the project team. **Key Stakeholders:** List the names and roles/positions for the key stakeholders.	**Problem Statement:** • What is the problem and what parts of the organization does it impact/touch? • Why is this important to the organization? • Is it linked to a strategic priority? • Is there data or other evidence that helps to highlight the problem?
Aim Statement: Articulate your project aim using the SMART acronym.	**Measures:** Include a Family of Measures: • Outcome Measures • Process Measures • Balance Measures
Root Cause(s) of the Problem: How were they identified? Include any available evidence.	**Change Ideas:** What are they?
Anticipated Barriers and Mitigation Strategies: List the anticipated barriers and mitigation strategies.	**Anticipated Timeline:** Over how many months will the project be conducted? If possible, specify start date by month and year, and end date by month and year. **Key Milestones:** Identify key points over the project duration at which time you anticipate key deliverables/results.
Resources Required: Dedicated staff time, meeting time, data indicators, information requirements etc.	**Signatures:** Signals that these individuals have read the Charter and are aware of the project focus, and at minimum, commit to and agree with the design, set up, and resource requirements at the early stages. **Team Lead:** **Faculty:**

PQI -initial Check-list and Sign Off Form

Complete <u>BEFORE</u> doing the PQI

1. **Question/Aim adequate and doable?** ☐

    A meaningful and doable question that both resident and practice agree on

2. **Project does not require ethical approval?** ☐
    - No comparisons are being made and this is not a research project hence consent is not required
    - There are no risks or burdens beyond routine care
    - The resident would normally have access to the information being collected
    - The information does not go beyond that routinely collected in clinical care
    - There are no risks of breaching confidentiality of any individual's information (i.e. could you identify a physician or patient from the results)
    - The project does not infringe on the rights, privacy or professional reputation of participants (patients, providers, clinics)
    - The project is sensitive to privacy and has no ethical issues
      (If unsure check with the Research Program or Research Ethics Board) To determine if QI is not Research (https://www.ualberta.ca/research/media-library/reo/human-ethics-files/forms-files/guidelines-for-differentiating-among-research.pdf)
      If needed Request UofA Determination of Ethic Review (https://docs.google.com/forms/d/e/1FAIpQLSdF7zSkkCleXK-mwjgyIV9BSVLBaIOR6OYsXJLluw59G2io0A/viewform)

3. **Decide on standards and discuss with advisor?** ☐

    Based upon a critical review of the literature adapted to the practice setting

Signature of Resident   _____   Date_____

Signature Faculty Advisor   _____   Date_____

Signature of Preceptor   _____   Date_____

PQI - final Check-list and sign off Form

Complete <u>AFTER</u> completing PQI

4. Measured performance? ☐

How did findings compare with the chosen target?
(i.e. The target was 85% however only 50% of patients with hypertension had a FBS done in the last 3 years)

5. Sought out explanation for outliers? ☐

Reviewed with the practice or physician possible explanations for variance from the target. (i.e. the physician was on maternity leave so 30% of the patients left the practice)

6. Made suggestions for change? ☐

Interpret the findings appropriately to determine what is done well and what could be improved on.
(i.e. after correcting for patients that left the practice only 80% of hypertensive patients had a FBS, it was decided to mail a requisition to those patients with hypertension who did not have a FBS in the last three years on their birthdays)

7. Presented findings? ☐

Presentation made and written report completed

Signature of Resident   _____   Date_____

Signature Faculty Advisor   _____   Date_____

Signature of Preceptor   _____   Date_____

When a PQI is research – when in doubt check it out

Quality improvement projects are usually exempt from Research Ethics Board (REB) review and approval. On occasion, it can be difficult to determine when practice quality improvement is actually research that requires ethical approval to protect participants. If there is any doubt it is best to check with the Research Program or the REB.

In general, <u>research</u> is defined as a systematic investigation to establish facts, principles or generalizable knowledge. <u>Practice evaluation</u> could be considered to be the systematic collection of information about the activities, characteristics and outcomes of practices/programs to make judgments about the practice, improve clinic effectiveness, and or inform decisions about future programming/initiatives for the practice. The following question may help frame how you think about your project. This is not an exhaustive list and varying scenarios present new challenges every day. If in doubt, check it out.

<u>Is my project PQI?</u>

1. Are the activities or findings surrounding my project restricted to a specific program/practice/clinic?
2. Is my project designed to detect deficiencies, errors, cost control measures, service delivery times or satisfaction with service delivery?

<u>Is my project research?</u>

1. Can the findings from my project be expanded beyond the practice population?
2. Does my project activity involve a clinical departure from routine care provided to patients?
3. Does my project involve randomization or the use of a control group or a placebo?
4. Am I collecting information about a patient beyond that routinely collected in clinical care?
5. Is there an explicit requirement for review of this project by an REB as part of its funding arrangements?
6. Is the project designed to test a specific hypothesis or answer a specific qualitative or quantitative question?
7. Does my project involve the use of personally identifiable health information?

Receiving a determination that your project is PQI and not requiring ethics approval, does not mean that the conduct of the project should discount the use of <u>ethical principles</u> and <u>privacy legislation</u>.

May 16, 2023

RESOURCES

Articles on how to conduct a clinical practice audit

1. Godwin M: Conducting a clinical practice audit. Fourteen steps to better patient care. Can Fam Physician 2001, 47:2331-2333. (see https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2018459/)

2. Limb C, Fowler A, Gundogan B, Koshy K, Agha R: How to conduct a clinical audit and quality improvement project. Int J Surg Oncol (N Y) 2017, 2(6):e24. (see https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5673151/)

3. Bodenheimer T, Sinsky C: From triple to quadruple aim: care of the patient requires care of the provider. Ann Fam Med 2014, 12(6):573-576. (see http://www.annfammed.org/content/12/6/573.full)

The Institute for Healthcare Improvement uses the Model for improvement as a framework to guide improvement work.
(see http://www.ihi.org/resources/Pages/HowtoImprove/default.aspx)

Health Quality Ontario's Quality Improvement Guide
(http://www.hqontario.ca/portals/0/documents/qi/qi-quality-improve-guide-2012-en.pdf)

AGREE Advancing the science of practice guidelines, AGREE II (see https://www.agreetrust.org/resource-centre/agree-ii/)

The Centre for Evidence-Based Medicine critical appraisal worksheets
(https://www.cebm.net/2014/06/critical-appraisal/)

EQUATOR Network - resources for writing and publishing QI and Research
(**https://www.equator-network.org/**)