Individual Scholarly Project & Chart Audit - PGY2

Quality Improvement (QI) Initiative or research project

An activity associated with the CanMEDS-FM Scholar Role curriculum

During your second year Family Medicine Block Time (FMBT) rotation, you are expected to produce a project composed of:

- a written paper, and
- a presentation based on that paper

The design and application of this Quality Improvement (QI) OR research project must be based on chart audit as the method of data collection. In the case of a research project the chart audit may include only preliminary data that describes or supports the question(s). This document outlines the expectations of this project.

The QI or research project should focus on data collected from paper, electronic records or administrative data related to either:

1. a Family Medicine clinic where you care for out-patients during your PGY2 FM experience, OR
2. a hospital ward where you care for in-patients during your PGY2 FM experience

The project conducted must be relevant to Family Medicine and should be appropriate for the site where you collect the data. The site should have input into your project and findings will be shared with the site. Each site will identify the appropriate mode and process for sharing the results. Please speak with your QI Faculty Lead to determine the expectations at your site.

IMPORTANT: Within a stream, each individual’s project is expected to be unique (i.e. the same clinical topic and measure cannot occur within the same teaching site/stream/unit in the same year). To ensure all projects are unique, all topics require approval by your stream’s/site’s/units QI Faculty Lead.

In this document, the word project refers four components:

1. the chart audit process of planning, sampling, data collection and analysis
2. the resulting QI plan or research project
3. the written paper including a literature review of the chosen topic
4. the presentation

For your project, you must choose to do either a QI or a research project.

Section A outlines the expectations if you are completing a QI project.

Section B outlines the expectations if you are completing a research project.

Section C offers resources.
Section A: Expectations for the Quality Improvement (QI) Project

PURPOSE

The purpose of conducting a Chart Audit as part of QI is to identify current practice and to provide suggestions to move practice to a level closer to a predefined benchmark.

DEFINITIONS

In this section, the word **standard** refers to a defined evidence-informed frequency of provision of some important aspect of care. A standard can be a frequency:

A. per individual (e.g. occurs at each visit, occurs a minimum of twice a year)
B. across a whole practice population (e.g. 100% of all people over the age of 65)
C. across a specific population (e.g. all patients on opioids for more than three months should have a signed opioid contract)

In this section, the word **benchmark** is the standard to which you have pre-determined is most appropriate for your local setting. The benchmark often equals the standard, but if the standard seems unrealistic, too difficult to measure, or otherwise inappropriate, you can choose a benchmark that is different from the standard – or perhaps even a proxy measure for the standard.

STEPS

Do NOT prepare a project with a focus on a disease process (i.e. like something that looks like it came out of UpToDate).

QI is about defining an aspect of care, seeing if the delivery of that care is meeting a predefined standard, and then (if needed) working to change your local system in order to move the delivery of that care closer to the standard.

**Step 1**

Identify an aspect of the delivery of care you suspect likely needs to be improved or studied in your local setting and why you believe this to be so (the so-called 'care gap'). Discuss this issue with the health care team at your site and outline what is important and interesting about the aspect of care delivery you have decided to focus on, addressing both the medical issues and system-delivery issues.

Consider the following:

- What is in the literature about the care gaps (i.e. the delivery of care you think is less than ideal)
- How can we be doing this better here in this location?
- What kind of system change(s) or improvement(s) are likely needed so that care being delivered moves closer to the benchmark criteria?
- What systems or processes do we need in place in order to make doing the right thing easier?
- What can we build into our systems of care so we don’t have to rely just on our memories or on an altruistic sense of better care to ensure the care is closer to the benchmark?
- Besides the physician, who needs to be involved in the change?
- When you discuss the care-gap with representatives of the various clinicians involved – what do they see as barriers to implementing change (beyond the universal issues of time and money)?
• What are reasonable, low-cost clinician-behavior and system-process changes to recommend so when a re-audit is done, the care being delivered is at or beyond the benchmark?

**EXAMPLE**

You decide to assess the frequency with which diabetic patients in your clinic are weighed and have their feet visually inspected. You would need to explain why this is an important issue, how it affects disease progression, what the literature indicates as to the danger/risk of weighing & feet checking at an inappropriate frequency, and what the literature says about the ideal standards (i.e. in this case – frequency of weighing and feet checking either each visit or a certain number of times per year) to aim for.

**Step 2**

Explain and justify the benchmark(s) (i.e. specific measurement outcomes) you are going to use for the standard you have chosen to assess.

• What does the literature say about the measure(s) you are using?
• What is the quality of that literature regarding the benchmarks and its applicability to a family medicine setting? (source, level of evidence, sample population, etc.)
• What specific criteria are you using to determine if YES – appropriate care being delivered, or NO – appropriate care not being delivered for each chart reviewed?
• Even if benchmarks exist in the literature, describe the process you undertake to identify a “local consensus benchmark”. For this process, you must include a representative sample of the health care team at your site (consider both health professionals and office support staff who are most involved in delivering the aspect of medical care you are interested in to the patient population.) Your discussions with the health care team should be included in your paper.

**Example**

If wanting to assess the frequency with which diabetic patients are weighed and their feet visually inspected when they are seen in the clinic and you can't find a valid recommendation in the literature to use as your benchmark, you would need to involve the people in your clinical setting who actually do the weighing of patients – perhaps this is non-medical personnel – and the visual inspection – likely fellow medical personal – to determine your local consensus benchmarks. It is not enough simply to measure the frequencies and indicate in your paper these things should be done more frequently. Is 100% of a population ever feasible? What is a realistic goal?

**Step 3**

Describe in detail the population you plan to sample, including inclusion and exclusion criteria.

• What is your planned sample size to allow you to achieve a reliably representative result? How did you determine that? What confidence interval are you considering acceptable?
• What is your search strategy to find appropriate charts?
• What is your actual sample size? Explain your results in the appropriate level of detail. If it varied from your planned sample size, explain and justify.
• Compare the characteristics of the population you actually did sample to the description of what you wanted to sample – if there are discrepancies between the two, please explain.
Step 4

Conduct your chart audit, share the findings and provide suggestions for practice improvement

- How do your findings from the charts compare to your benchmarks? Are the benchmarks you decided to use too lax or too rigid?

Expectations For The Written Paper – Quality Improvement (QI)

The proceeding guidelines should be followed to ensure successful completion of your written paper. There must be a footer at the bottom of each page that includes your name, stream and page number.

The format below describes the ICMJE format for a QI Publication:

<table>
<thead>
<tr>
<th>SECTION</th>
<th>What to include:</th>
</tr>
</thead>
</table>
| Title page | • A title that indicates what is being assessed  
 | |   • Your name and residency stream  
 | |   • Clinic / hospital ward where audit occurred  
 | |   • Date  |
| Introduction  
(focusses on the rationale of your study) | • Brief background knowledge of the care-gap  
 | | |   • The hypothesized problem in care delivery at your site  
 | | |   • Specific description of the intended aim of improvement  |
| Methods  
(focuses on what you did) | • Describe the chart audit in sufficient detail that others could reproduce it  
 | | |   • Describe aspects of the audit that are specifically concerned with internal validity (integrity of the data) and external validity (generalizability)  
 | | |   • Include a copy of the data abstraction form as an appendix  
 | | |   • Explain methods used to assure data quality and adequacy  
 | | |   • Provide details of methods used to draw inferences from data  
<p>| | |   • Summarize your discussions with the health care team in determining benchmarks |</p>
<table>
<thead>
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</tr>
</thead>
</table>
| Results (focusses on what you found) | - Description of data obtained from chart audit  
- Pictorial flow chart of your audit process including projected number of charts needed, those rejected and why, actual number assessed, numbers that met criteria or didn’t, etc.  
- site in order to close the care-gap? (Use the SMART mnemonic to aid in your discussion  
- Indicate the main factors/rationale that contributed to the recommendation(s) of specific intervention(s)  
- Outlines plans for how the intervention(s) is/are to be implemented and how the discussion of your results and recommendations was (or would be) coordinated with the site involved |
| Discussion of your audit and the Quality Improvement plan | - Highlight your audit’s strengths and weaknesses to inform a change process in your local setting  
- What specific and measurable changes are you recommending for your local site in order to close the care-gap? (Use the SMART mnemonic to aid in your discussion)  
- Indicate the main factors/rationale that contributed to the recommendation(s) of specific intervention(s)  
- Outlines plans for how the intervention(s) is/are to be implemented and how the discussion of your results and recommendations was (or would be) coordinated with the site involved |
| References and Appendices | - List your references using the style used in Canadian Family Physician  
- Include a (maximum length one-page) summary of your specific search strategy for charts as an Appendix A  
- Include a one-page representation of your data abstraction form as Appendix B |

IMPORTANT: An abstract is NOT necessary for completion of this project
Expectations For The Presentation – Quality Improvement (QI)
A 10-minute presentation with an additional five minutes for questions will be scheduled at the end of second year.

It is a good idea to PRACTICE the presentation before giving it. Ten minutes for presenting takes a lot more work to ensure clarity and appropriateness than a longer presentation time. Please refer to the literature provided regarding brief presentations.

Focus the presentation on the chart audit and the QI recommendations. Do not spend time educating about the clinical condition or all of your time justifying the choice of benchmarks.

Evaluation / Marking – Quality Improvement (QI)
The following rubric will be used to generate your PROJECT mark. The marking will be based on three aspects:

| WRITTEN PAPER - 65% | • To what degree has the chart audit been done so results are reliable and valid?  
| | • Have the instructions for the written format been followed?  
| | • Was there appropriate justification of the chosen benchmarks?  
| | • Did the literature review justify the importance of the topic and the approach selected for intervention?  
| | • Are the QI suggestions or research project ideas specific, reasonable, feasible, and supported by a representative sample of the health-care providers who are potentially affected? |
| PRESENTATION - 20% | • Did the presentation clearly present the purpose and findings of the audit and QI suggestions?  
| | • Were methods and benchmarks well defined?  
| | • Were strengths and weaknesses of the findings and suggestions presented?  
| | • Was the presentation well organized? i.e. time, flow slides? |
| PARTICIPATION - 15% | • The degree to which you have engaged with others at the site in setting a local benchmark for your standard (if applicable) AND the degree to which you have involved others (e.g. clinicians, clinic or hospital staff) in defining the system issues that can be changed and the barriers to implementing them (beyond the universal issues of time and money).  
| | • How effectively were the results and recommendations communicated with the site/community involved OR was there an effective communication plan? |
Section B: Expectations for the research project

PURPOSE:

The purpose of conducting a research project is to understand the requirements and challenges involved in conducting a rigorous evaluation of a novel or innovative question. The Chart Audit component is still required to provide preliminary data and/or support a research question and its relevance to Family Medicine.

STEPS:

Do NOT prepare a project with a focus on a disease process (i.e. like something that looks like it came out of UpToDate).

Research in this case is aimed at identifying a novel approach or discovery based on expanding existing knowledge in a domain relevant to Family Medicine.

Step 1

Identify an aspect of the delivery of care you suspect needs to be improved or requires further studied and is relevant to your local setting. Outline what is important and interesting about the aspect of care delivery you have decided to focus on and consider a rationale for pursuing research in this area.

Step 2

- Conduct a chart audit to gather preliminary data or proof that there is an issue worth studying in your research.
- The content of the chart audit or initial database search can form the basis of your preliminary results or prove the need to study the question in greater detail using expanded (or different) research methods.

Step 3

- Identify your specific research question based on the results of your preliminary data from the chart audit.
- You may choose to structure a project similar to a QI intervention but propose and identify the specific data sources that can be used to answer the research question(s). A research question should be structured to identify the Population, Intervention, Comparison and Outcomes (PICO). These concepts must be clear in your research objectives and research question(s).
  - Population – describe the characteristics of the population in question
  - Intervention – explain what you plan to do for the “patient” of your population
  - Comparison – describe the main alternative you are considering
  - Outcomes – specify the results of what you plan to improve, should it be measurable.

Step 4

Find, evaluate and assess appropriate literature as background to your research question?

- What is in the literature about this question?
- Why is replicating a previously studied concept valid in different settings?
- What does the literature say about similar innovations and or measure(s) you are using?
- What is the quality of the exiting literature on this topic (source, level of evidence, etc.)?
- Why does this topic require further study or new understanding?
Step 5

Describe in detail the population you plan to sample, including inclusion and exclusion criteria.

- What is your planned sample size to allow you to achieve a reliably representative result?
- How did you determine that? What confidence interval are you considering acceptable?

Step 6

Define your data sources and research methods clearly. There are several sources of primary care data in Manitoba, the following links provide two options:

- Manitoba Primary Care Research Network (Primary Care EMR data):

- Manitoba Centre for Health Policy (Administrative Health and Social Services data)
  http://umanitoba.ca/faculties/health_sciences/medicine/units/community_health_sciences/departmental_units/mchp/resources/repository/index.html

- Please note, in order to access data from the above repositories approval is required from the respective sources and from the University of Manitoba Health Research Ethics Board (HREB) in advance. Please contact Research Assistant Sylvia Froese (Sylvia.Froese@umanitoba.ca) for assistance in completing the necessary documentation. This should be done well in advance (~4-6 months) to facilitate timely completion of your project.

- If you are considering qualitative research or another data source, justify why this is the appropriate tool to answer your question.

Step 7

You need to consider the types of statistical analysis that could be (or were) done to reliably answer your research question and/or conduct a power analysis to justify the research procedures.

Step 8

Identify your planned process of Knowledge Translation to share your research findings with your local clinic and the greater public.

Expectations for the Written Paper– Research

The proceeding guidelines should be followed to ensure successful completion of your written paper:

- There must be a footer at the bottom of each page that includes your name, stream and page number.
- The written part of your research project should be written in the format of a scientific paper typically seen in the Canadian Family Physician journal which uses the “International Committee of Medical Journal Editors (ICMJE)” specifications. You may use preliminary data to compose the manuscript although if further data sources are not analyzed or completed at the time of composition a full description of the analysis plan should be included.
- The Steps above should be described in the format ICMJE format described here:
  http://www.icmje.org/recommendations/browse/manuscript-preparation/preparing-for-submission.html

IMPORTANT: An abstract is NOT necessary for completion of this project
Marking – Quality Improvement (QI)
The following rubric will be used to generate your PROJECT mark. The marking will be based on three aspects:

| WRITTEN PAPER - 65% | • To what degree has the chart audit been done so results are reliable and valid?  
|                     | • Have the instructions for the written format been followed?  
|                     | • Was there appropriate justification of the chosen benchmarks?  
|                     | • Are the research project methods specific and reasonable?  
|                     | • Do the results and discussion represent prove the validity, novelty and relevance of the study?  

| PRESENTATION - 20% | • Did the presentation clearly present the purpose and findings of the audit and research project?  
|                   | • Were methods and statistical analyses well defined?  
|                   | • Were strengths and weaknesses of the results/findings presented?  
|                   | • Was the presentation well organized (ie. time, flow slides)?  

| PARTICIPATION - 15% | • The degree to which you have engaged with others at the site in identifying an appropriate research question.  
|                    | • The degree to which you have engaged with others at the site in identifying the process of Knowledge Translation to share the findings of the research project.  

Section C: Resources

1. Academic Day presentation and handouts outlining the expectations of the audit.
2. This project syllabus
3. Each clinic will identify individuals who are skilled at creating inquiries with the electronic medical record in order to identify the charts you want to find. Each site/stream/unit will have a representative on the Quality Improvement and Informatics working group who can assist in mentorship regarding the project.