

Resident Guidelines for Continuous Quality Improvement (CQI) Projects

This document is intended to provide a guide for senior residents in planning and conducting their CQI project. **Completion of a satisfactory CQI project is an essential objective of the core programme.**

1) TIMING

A satisfactory CQI project must be completed no later than mid-December of the third year of training. Some residents still do the project during their third year; however, we encourage residents to begin their project early during their first or second year of training.

2) WHAT ARE THE BASICS OF A CQI PROJECT?

The basic structure of a project is as follows:

- i) identify an aspect of internal medicine care in which there is **GOOD EVIDENCE** for a certain practice, or set of practices, to ensure optimal patient outcome
- ii) on the basis of this evidence, develop criteria for optimal, or acceptable, care
- iii) review patient charts to determine if the standards that you have developed are being met at an institution or institutions in Hamilton

Alternatively, you can follow up a project that was done in a previous year. The structure would then be as follows:

- i) Review a CQI project that documented a deficiency in care
- ii) Develop and implement an intervention to improve the quality of care
- iii) Repeat the chart review, and see if the intervention was associated with any change in behaviour

3) WILL YOU BE WORKING ALONE?

Only if you want to. We encourage the three residents who are doing their Chief Residency at an institution to work together on a single project. This will only be possible, however, if you wait until late in your second year to start your project. Everything in the rest of this document can be applied to a project you do on your own, or one you do as a team with your colleagues.

4) WHERE CAN YOU GET HELP IN DEVELOPING A CQI PROJECT?

As soon as you identify your mentor, you should make an appointment with the mentor to discuss possible CQI projects. If you have an idea and are considering starting a CQI project before this time, you should discuss the idea with the program director.

5) WHERE WILL YOUR IDEA FOR A CQI PROJECT COME FROM?

Ideally, projects will come from ideas that you have. However, we expect that most residents will need to be presented with a variety of ideas to stimulate their imagination with respect to possible CQI projects. The Residency Office will provide you with a list of past projects. The CTU Director can be another source of ideas. We would also encourage you to meet with the head of the Quality Assurance Committee at your hospital. To the extent that projects could be tied in to the hospital Quality Assurance Committee, this would be a good thing. It may be satisfying for you to contribute to a project to which other people are also devoting energy.

Projects from the previous year or years may have identified a deficiency in care in a particular area. If you choose to construct and implement an intervention to address this deficiency and monitor the impact, that would be an ideal project.

6) HOW WILL YOU GET HELP DURING YOUR CQI PROJECT?

Your Mentor can help you with an idea for your project, but the help doesn't stop there. Your final mentor for the project may be the CTU Director, but it may also be a specialist in the area you have chosen for your project. The mentor can help you refine your question, conduct the literature search, develop your "optimal quality" criteria, deal with obtaining ethics approval if this is necessary, and in general help you with the implementation of your project.

7) HOW DO YOU KNOW YOU ARE ON TRACK WITH YOUR PROJECT?

To ensure you are on track, the Residency Office will expect a written proposal from you no later than mid- July of your third year of training. You will need to find out whether ethics approval is necessary, and if it is make sure it is obtained (for most chart review projects, ethics approval will not be necessary). You will also need to enlist the co-operation of medical records in terms of chart retrieval (again, usually not a problem).

8) IF YOU ARE STILL VAGUE ON WHAT A CQI PROJECT IS, WHAT CAN YOU DO?

Answer: read the following. Although we are very open to variations in approaches to conducting a CQI project, the following describes one approach which you may find of use. In italics is provided a theoretical example (though it is very similar to a project a resident did) to hopefully give you a better idea of what is meant.

i) Define the basic issue that you want to address. The idea should be to find a clinical situation in which you are interested and in which you suspect practice may not be up to the standard you would like. Principles of choosing a situation might include the following:

- a) common
- b) criteria for adequate practice easily specified
- c) some evidence available for criteria
- d) data for deciding whether criteria have been met are easily obtained

It may be useful to you to define the issue in terms of a question.

In patients who present to the emergency room with a suspicion of deep venous thrombosis (DVT) and who ultimately prove to have DVT how long is it from the time they arrive in emergency to the time that intravenous heparin is begun?

ii) Decide on criteria which would define inadequate care. This can be a single criterion, or multiple criteria. You should be able to defend your criteria on the basis of evidence, although the evidence need not be definitive.

Heparin should be started within 12 hours of arrival in emergency. Patients who take longer to reach a therapeutic level of PTT and who spend less of the time in the first day after they start anticoagulation at a therapeutic PTT have a greater incidence of recurrent disease. It thus follows that prompt institution of therapy is likely to lead to improved outcome.

iii) Decide what crucial information you will need to collect. One way of doing this is to think how your final report is going to read, and thus what information you will need for it. You will need to specify exactly how patients will be identified, and how the chart material will be interpreted to answer the key questions.

Patients will be identified by asking medical records to pull all charts of patients admitted in 1991 who had a diagnosis of DVT. It will be worthwhile to define the patient population. Thus patients' age, sex, and underlying medical conditions will be recorded. This information will come from review of the initial admitting note. Time of patient arriving in emergency will be found in the emergency sheet. What diagnostic tests were done (IPG, Venogram) will be deduced from doctors' orders and from radiology reports, and from nurses notes. The timing of these procedures will be deduced from nurses notes. The timing of start of heparin will be deduced from nursing notes.

iv) Decide on the number of patients you will need to include to accomplish the goals of the project. You will need help from someone familiar with sample size calculations for this one. The principles are actually pretty simple, and there is no need for you to know exactly how the arithmetic is done. All that you have to do is decide how you are going to present your main outcome (i.e. how often your primary criteria are met) and how precisely you want to state how often the criteria are met. Conceptually, if you review 10 charts and the criteria are met in 7 you would be a lot less confident that criteria are met 70% of the time than if you reviewed 100 charts and found criteria met on 70.

We should be sure that the true proportion of people who have heparin started within 12 hours of presentation to emergency is no more than 10% less, or 10% more than the proportion that is actually observed. For instance, if we find that heparin gets started within 12 hours of presentation to emergency in 50% of the patients we want to be sure that the true proportion (i.e. the proportion we would have found if we'd reviewed all charts over a number of years) is no less than 40% and no greater than 60%. To achieve this goal, 100 charts will have to be reviewed.

iv) Collect the data. This part can be very flexible. We are trying to get you to understand what is involved in a rigorous CQI project. This can, to a large extent, be accomplished without actually completing the project. Clearly, if you completed your project you would learn more, and it would be more satisfying, and we would strongly encourage anyone inclined to do so. At a minimum, we would expect you to collect enough data to get a very preliminary sense of the extent to which your criteria are being met (in the heparin example, for instance, ten charts might be abstracted). If you are involved in a group project full data collection will be expected.

If you wish to actually carry out the project in the most rigorous fashion you will get help and demonstrate that your chart abstraction is reproducible (that is, if you and someone else both review the charts you end up with the same data).

v) Prepare a report to be reviewed by your mentor and ultimately by the Program Director.

An outline of the categories that may be used in the written report follows:

Background

Why the question was chosen

DVT is a very frequent condition. I have the impression that there is often unacceptable delays in getting people started on heparin. If this is the case then patients are likely to be suffering. I could imagine strategies being implemented which would reduce this delay and improve patient care at the hospital.

Objective

Statement of question.

In patients who present to the emergency room with a suspicion of deep venous thrombosis (DVT) and who ultimately prove to have DVT how long is it from the time they arrive in emergency to the time that intravenous heparin is begun?

Criteria

Criteria for adequate quality of care

Summary of literature supporting criteria

Heparin should be started within 12 hours of arrival in emergency. Studies which present data on the consequences of delayed commencement of heparin, and/or delay in reaching therapeutic PTT, would be presented briefly, including a basic critical appraisal.

Methods

Methods by which information was collected documenting current practice

This is as above with a description of how patients were found, and where the information was found in the charts. The data collection form should be appended.

Results

What was found

Of 100 patients, 60 were female and 40 male. Their age was 55 (mean) \pm 15 (standard deviation). Fifty had no underlying diagnosis. The others had ... X had IPG (time to procedure) and x had venography (time to procedure). Heparin was started a mean of x hours after admission to emergency (standard deviation y). XX of the 100 patients had heparin started within 12 hours of their arrival in emergency room.

Discussion

Conclusions regarding whether care was adequate and recommendations for improvement and further monitoring

Current practice is not optimal. Some strategies that might be brought to bear to improve current practice would be.... Following institution of these policies another 100 patients should be reviewed at the end of one year's time.

Topics of past projects and an evaluation form can be accessed from the main page.

Note: The Royal College of Canada has specified quality assurance as a requirement of core programme training. Therefore, one's training will not be complete until a CQI project is received. The final project is due by mid-December of the third year of training. The Education Committee reviews and determines consequences of incomplete projects.