

Conducting a clinical practice audit

Fourteen steps to better patient care

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Clinical practice audit is potentially useful for self-assessment and quality improvement in medicine. The audit process has been shown to help decrease cesarean section rates,¹ improve seizure management,² and improve physician prescribing of antibiotics for upper respiratory infections,³ to name just a few benefits.

Much of what is called “audit” in the medical literature could more appropriately be referred to as descriptive research. The term is often used, I think inappropriately, for any review of clinical activity that answers questions of how, how much, how often, or when that activity is being conducted, without any reference to a criterion standard.

What I mean by audit in this paper is the process of asking *how well* an activity is being conducted in practice, when compared with how well that activity *should* be conducted. How well an activity should be conducted is called the criterion standard. As a discipline we need to look critically at what we do and try to improve the care we give our patients. We need to ask and answer questions about how well we are doing. Practice audit is the tool we use for answering this type of question. It is also a means by which certificants of the College of Family Physicians of Canada can obtain MAINPRO-C credits.

It is important to note that a clinical practice audit is done by *you*, not by some outside person or agency, and the purpose is to improve the quality of the care you provide your patients. An audit always asks the question, “How well am I doing with X?” “How well am I meeting the recommendations of this clinical practice guideline?” It assesses how well something is being done compared with a criterion standard. If it is not attempting to answer that question, it is not the type of audit I am referring to and probably is more like chart

Table 1. Fourteen steps in clinical practice audit

Step 1:	Choose a topic
Step 2:	Choose a criterion standard
Step 3:	Write out your main audit question and secondary questions
Step 4:	Decide which data you want to collect from the charts
Step 5:	Design your data collection form
Step 6:	Decide how many charts you will audit
Step 7:	Decide how you will choose the charts
Step 8:	Pull the charts and collect the data using the abstraction sheet
Step 9:	Enter the data into a computer
Step 10:	Answer your audit questions
Step 11:	Present results and share them with colleagues
Step 12:	Decide what changes you should make based on the results
Step 13:	Implement the changes
Step 14:	Re-audit after time has elapsed

abstraction research. It is easy to fall into the trap of setting out to do an audit and ending up doing research.^{3,4}

Much has been written describing audits, their value, the barriers, and whether they truly change or improve practice. My purpose is not to revisit that discussion but rather to describe steps in conducting an audit in your practice (**Table 1**).⁵⁻¹⁴

There are two main types of audits: process audits, which evaluate an activity or process that happens in the course of delivery of care, and outcome audits, which evaluate the results of activities that affect patients' health. Practically speaking, you must take 14 steps to complete a clinical practice audit in family medicine. In **Table 2** I expand on each of the steps.

Table 2. Examples of critical assessment following 14 steps to clinical practice audits

STEP 1: CHOOSE A TOPIC

Hypertension? Diabetes? Ischemic heart disease?
 How well is blood pressure controlled in my practice?
 How many of my diabetic patients have ophthalmic examinations each year?
 How many patients with known ischemic heart disease have had their lipid levels checked?
 How long do patients wait in my waiting room?

STEP 2: CHOOSE A CRITERION STANDARD

Clinical practice guidelines: All diabetic patients should have their retinas checked yearly
 Evidence from the literature: Angiotensin-converting enzyme (ACE) inhibitors are the best first-line treatment for congestive heart failure
 By consensus: You decide that no one should wait in the waiting room for more than 30 minutes

STEP 3: WRITE OUT YOUR MAIN AUDIT QUESTION AND SECONDARY QUESTIONS

Your main question is always in terms of how well you are doing compared with the criterion standard

- What proportion of my hypertensive patients had a blood pressure level lower than 140/90 mm Hg on their last visit?
- What proportion of patients with a diagnosis of congestive heart failure are receiving ACE inhibitors?
- What proportion of patients are seen within 30 minutes of their scheduled appointment time?

You might want to ask secondary questions

- Does the age of patients with congestive heart failure affect whether or not they receive ACE inhibitors?
- Do women wait longer in the waiting room than men?

STEP 4: DECIDE WHICH DATA YOU WANT TO COLLECT FROM THE CHART

Let's consider the audit of ACE inhibitors in congestive heart failure. Data that might be collected:

- Chart number or name
- Patient's usual doctor (if you are in a multi-physician clinic and more than one of you is involved in the audit)
- Patient's age
- When congestive heart failure was diagnosed
- Cause of congestive heart failure
- Drugs taken for congestive heart failure
- Whether the patient is receiving an ACE inhibitor; if so, which one?
- Contraindications, allergies, or reactions to ACE inhibitors
- Whether congestive heart failure is well controlled

STEP 5: DESIGN YOUR DATA COLLECTION FORM

Audit of ACE inhibitors in congestive heart failure

Unique ID number _____
 Name _____
 Age _____

Sex F M
 Physician code _____
 Date congestive heart failure first mentioned in chart _____

Cause of congestive heart failure

- Ischemic heart disease
- Hypertension
- Valvular heart disease
- Cardiac arrhythmia
- Cardiomyopathy
- Other
- Don't know

Medication types taken by patient

- ACE inhibitor
- Calcium channel blocker
- Diuretic
- β-Blocker
- Digoxin
- Long-acting nitroglycerin

Any known allergies or adverse reactions to ACE inhibitors?

Y N

Any contraindication to taking an ACE inhibitor? Y N

Congestive heart failure control at last visit

- Poor
- Moderate
- Good

STEP 6: DECIDE HOW MANY CHARTS YOU WILL AUDIT

Depends on several factors

- How much time you have is critical
- How many patients in your practice are likely to have the condition is another factor

You might review 50 or 100 charts of people with hypertension or diabetes

You might not have many patients with congestive heart failure in your practice, so reviewing 20 charts could get most of them and will be enough

The waiting room audit might require about 200 patients to get a good sense of how long people wait

STEP 7: DECIDE HOW YOU WILL CHOOSE THE CHARTS

Depends on how your practice is organized

If your patient records are on computer databases, it is easy to pull up a list of all patients with hypertension or diabetes or congestive heart failure

You could identify patients with congestive heart failure as they come in for appointments

Physicians and nurses could meet for half an hour and list as many names as they can recall of people with congestive heart failure

Maybe you are looking at a process and not a diagnosis

- Perhaps you wonder how many people have up-to-date problem lists on their charts
- Suppose you have 2000 charts: You want to take a random sample of 200 charts (10%) to check the problem list. One easy way is to divide 2000 by 200, which gives you 10. Then pull every 10th chart to review

STEP 8: PULL THE CHARTS AND COLLECT THE DATA USING THE ABSTRACTION SHEET

It is a good idea to do a pilot study of four or five charts first to make sure the data you are trying to collect are actually in the chart and relatively easy to access

Pull 10 charts at a time so as not to disrupt your filing system too much

Try to get the data collected in a week or two at the most

STEP 9: ENTER THE DATA INTO A COMPUTER

Epi Info
Excel
Access
SPSS (Statistical Program for the Social Sciences)

STEP 10: ANSWER YOUR AUDIT QUESTION

Use a computer program that does simple frequency counts and distributions as well as cross-tabulations, such as Epi Info, Excel, or SPSS

If you are not comfortable with computers and databases and simple statistics, find a friend who is. You could need his or her help with steps 9 and 10. You can consider auditing 50 patients or fewer without a computer. Beyond that number, a computer offers definite advantages

STEP 11: PRESENT RESULTS AND SHARE THEM WITH COLLEAGUES

Depending on how comfortable you are, you might or might not wish to do this step. I think it is important

Write up your results

Get data into a presentation format (PowerPoint, overhead transparencies, slides). You could need your computer-savvy friend again

Present results to colleagues for discussion

STEP 12: DECIDE WHAT CHANGES, IF ANY, YOU SHOULD IMPLEMENT BASED ON THE RESULTS

This is why you did the audit!

It is unlikely you will have met the criterion standard perfectly. Decide what changes you should make in your practice to improve your performance

Examples

- Decide to put a stamp on the outside cover of each diabetic patient's chart to remind yourself to check whether the patient has seen an ophthalmologist within the past year
- Decide to place a list of all patients with congestive heart failure above your desk and check names off as you offer patients ACE inhibitors or indicate why they cannot be started on ACE inhibitors
- Decide to start booking patients every 15 minutes instead of every 10 minutes to allow more time and therefore be less likely to get behind
- Decide to have your nurse knock on the door when you are going overtime

STEP 13: IMPLEMENT THE CHANGES

Take 3 or 6 or 12 months and make the changes you are recommending

Remember these are recommendations to yourself. No one else is looking at your work and judging you

You are doing this yourself to improve the care you provide your patients

STEP 14: RE-AUDIT AFTER TIME

After 3 or 6 or 12 months, redo the audit

Have things improved?

- If yes, you should continue with the changes you implemented and perhaps consider other changes if things are not yet just right
- If no, consider other things you can try to meet the criterion standard

If the standard was a consensus, maybe you set the standard too high

If the standard was a clinical practice guideline or evidence from the literature, maybe it does not apply to your practice—but be careful here and do not use that explanation as an excuse for suboptimal care

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