



Practice Tips

Chart audits in my practice

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To improve the quality of care I am providing, I need to measure how I am currently doing, to compare my findings with “ideal care,” to decide what to change and how to change it, and then to measure again some time later. In other words, I need to do chart audits.¹ Although time is very limited in family practice, I have found several ways to conduct audits within reasonable amounts of time.

Chart audits through clinical studies

I sometimes get invited to participate in clinical studies. I look for research sponsored by universities, especially from departments of family medicine. Several of the projects I have volunteered to participate in have involved practice audits. The researchers come to my office, do the audits for their study, and are happy to give me the results from my own practice. They take pains to avoid disrupting the practice, and my staff have not found them to be a problem. During the last 4 years, I have had audits done on angina, osteoporosis, and diabetes management, as well as on overall quality of care.

A few years ago, a chart audit done for a research study on diabetes showed me that 62% of my patients' blood pressure (BP) readings were 140/90 mmHg or lower; 58% had hemoglobin A_{1c} (HbA_{1c}) levels lower than 0.084, and 14% had low-density lipoprotein (LDL) levels lower than 2.6. I looked at what guidelines at the time were recommending and decided to improve my management. Every time a patient came in for the next 6 months, I looked at his or her cholesterol level and prescribed a statin if levels were higher than 2.5. I also looked at his or her last HbA_{1c} level and added medications, or insulin if needed. At the end of 6 months, I thought most of my patients had improved; however, I really had no way of checking, other than by doing a second audit.

I managed this second audit with the help of a co-op student who had been in my practice recently. High schools are sending interested students to various workplaces. Students get high-school credits, and employers get help. After a few weeks, I gave the student a list of my diabetic patients (I used the billing database for my

practice to generate a list of all patients with diagnostic codes for diabetes for the last 2 years), and asked her to record BP and LDL cholesterol and HbA_{1c} levels. My secretary entered the results in an Excel spreadsheet.

Results indicated that 65% of patients had BP lower than 140/90 mmHg, 50% had LDL levels lower than 2.6, and 74% had HbA_{1c} levels lower than 0.084. I shared the results with everyone at the office. It was interesting and exciting to find out how we had improved. I then asked the student to go back and put sticky notes labeled BP, LDL, or A_{1c} in the clinical notes for patients who had not reached target levels for those measures.

I am now aiming for BP of 130/80 mmHg and HbA_{1c} levels of 0.070,² although this goal will be difficult to achieve. A recent study using lots of clinical resources and involving motivated patients achieved target BP in fewer than 50% of subjects and target HbA_{1c} levels in fewer than 20% of patients randomized to intensive diabetes therapy.³ The sticky notes currently prompt me to change my patients' medications when they come in. In a couple of years, I will revisit the subject.

I liked the chart-audit process, but wish it could be done more systematically. Perhaps medical schools could consider involving medical students in quality-improvement projects for community family practices.

Audits of prescribing patterns

Another easy method of obtaining a practice audit is through a company called IMS. This company obtains physicians' prescribing records from pharmacies (I have concerns about this practice). The company will, however, provide an ongoing yearly overview of my prescribing patterns upon request. They will also provide summary statistics for other family physicians in my province and in Canada as a whole for comparison. You can call IMS at 888 400-4672.

I decided some years ago to try to prescribe antibiotics less frequently and to counsel patients to avoid these drugs for viral illnesses. I also sometimes use delayed prescriptions (typically over long weekends).⁴ I can see from the IMS audits that 3.8% of my prescriptions were for antibiotics in 2003 compared with 7.3%

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of prescriptions of Ontario family physicians overall. In 2001, 3.7% of my prescriptions were for antibiotics, and in 2002, 2.9%. I might not be able to reduce this further, but will keep an eye on my 2004 antibiotic prescriptions to make sure they do not increase. My patients now sometimes tell me that they know I will not prescribe an antibiotic, so perhaps expectations have changed over time.

I expect to prescribe more statins because the indications have broadened for primary prevention of heart disease⁵ and for diabetes care.^{2,6} In 2001, 4.1% of my prescriptions were for this class of medication; in 2002, 4.7%; and in 2003, 5.8%.

Conclusion

Audits will likely be much easier to do once electronic medical records are introduced. Recently, a large study documented improvements in quality of care with systematic use of information technology that enabled regular audits and feedback.⁷ Audits are a good first step toward quality improvement and can indicate where changes in practice are needed. Repeat audits let you see whether the steps you have taken are effective. ❁

References

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We encourage readers to share some of their practice experience: the neat little tricks that solve difficult clinical situations. Tips can be sent by mail to Dr Tony Reid, Scientific Editor, *Canadian Family Physician*, 2630 Skymark Ave, Mississauga, ON L4W 5A4; by fax 905 629-0893; or by e-mail tony@cfpc.ca.

Answer to Self Learning

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The incorrect statement is:

3. When metformin is used as monotherapy, hypoglycemia is a serious side effect.

Metformin lowers blood glucose among patients with type 2 diabetes mellitus largely by decreasing hepatic glucose output. It is also thought to increase glucose uptake by skeletal muscle. It is not protein bound and has maximum accumulation in the small intestine wall. It is excreted unmodified by the kidney.

In placebo-controlled trials, metformin lowered hemoglobin A_{1c} concentrations by 1.0% to 1.5%. The efficacy of metformin monotherapy is equivalent to that of sulfonylurea monotherapy. It is associated with weight loss or at least no weight gain. Improvements in lipid profiles have also been noted. The United Kingdom Prospective Diabetes Study examined the long-term effects of metformin compared with conventional diet therapy and intensive sulfonylurea or insulin therapy in a subgroup of overweight patients. The metformin group experienced less hypoglycemia and weight gain than did the intensive groups. In addition, the metformin group experienced a 36% relative risk reduction in all-cause mortality, a 39% relative risk reduction in myocardial infarction, and a 30% relative risk reduction in all macrovascular end points compared with the conventional group.

Gastrointestinal side effects of metformin are observed in 10% to 15% of patients, depending on the dose, and include abdominal discomfort, anorexia, bloating, and diarrhea. Because insulin secretion is unaltered, hypoglycemia is not a side effect of metformin used as monotherapy.

To date, metformin is the only oral hypoglycemic agent to demonstrate substantial cardiovascular benefit over and above its glucose-lowering effect in diabetes. It is recommended as first-line therapy for overweight patients with type 2 diabetes mellitus.

If you chose answer 1

This is not the right answer. In placebo-controlled trials, metformin lowered hemoglobin A_{1c} concentrations by 1.0% to 1.5%.

If you chose answer 2

This is not the right answer. Metformin is associated with weight loss or at least no weight gain.

If you chose answer 3

This is the right answer. Because insulin secretion is unaltered, hypoglycemia is not a side effect of metformin used as monotherapy.

If you chose answer 4

This is not the right answer. In the United Kingdom Prospective Diabetes Study, the metformin group experienced a 36% relative risk reduction in all-cause mortality. ❁