Online Learning:
A New Option for Family Physicians?

Western

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As part of a program to translate research knowledge into improvements in family practice, an innovation called case-based online learning was implemented and tested. It incorporates adult learning principles, self-directed learning and small group format, as well as an online approach.[1-3]

The goal was not only for an increase in knowledge, but also an increase in quality of care—a manifestly more difficult objective according to literature on the evaluation of CME.[4]

About Gabrielle

- Gabrielle, 53, presents to your office with hot flashes but with no acute health problems.
- Gabrielle's history shows that she:
  - is perimenopausal,
  - smokes and
  - drinks a couple of glasses of wine a day.
- She has not visited a physician in over three years.

There are a number of preventative issues that need exploring—*where should we start? What should our priorities be?*

This is our first case that we will be discussing for the next two weeks, with regular information and further questions as we go along. Please remember to reply to CBOLL-C@uwo.ca to get to the whole group (if you want to discuss other issues—post it to fern2001@uwo.ca

For another case, go to page 71.

Table 1

Chart audit items for preventive care (first case)

1) What was the BP documented in the chart during the patient's visit?
2) If systolic BP was >140 mmHg diastolic and BP > 90 mmHg, was management discussed/instituted?
3) Is the weight of the patient documented?
4) Has menopausal counseling been documented?
5) Have alternative therapies for menopause been recommended or discussed?
6) Has a bone density test been ordered or discussed?
7) Did a physician perform a breast exam?
8) Has a mammogram been ordered or discussed?
9) Has a smoking history been discussed?
10) For smokers, was smoking cessation discussed?
11) For smokers, was a chest X-ray ordered?
12) Was alcohol consumption documented in units/week or equivalent?
13) If alcohol consumption is > 10 units per week, was a screening test documented?
14) Was dental care discussed?
15) Has activity/exercise been discussed with patient?
16) Was a cervical cytology performed or discussed?
17) Was a bi-manual pelvic exam or a pelvic exam documented?
18) Has tetanus immunization been reviewed, discussed, or documented as current?

How is case-based online learning organized?

Family physicians interested in online learning need to spend several weeks introducing themselves online and getting used to posting comments several times a week. The group needs to be larger than a face-to-face, small group, which is usually between eight participants to 12 participants. The online discussion group should be approximately 30 participants. An email list program for communication with other people who have subscribed to the same list, known as a list serve, is all that is required. A family physician who acts as a moderator, may begin the online discussion by presenting a brief case scenario followed by a few clinically relevant questions. Every two or three days, the moderator adds detail to the case and poses additional questions. Frequently, Web-based links are included so that participants can click on a reference to the latest relevant evidence, while taking part in the online discussion. Participants email their discussion points to the entire group. At the end of the case-based discussion, the moderator provides a summary of the points discussed in a format that the participants can easily access and to which they can refer to during future office visits.

All participants must check their e-mail at least twice per week during each case-based discussion is going on. They read and post responses at any hour convenient to their schedule.

The references, web links and the moderator's summary are based on up-to-date evidence.

Table 2

Chart audit items for diabetes (second case)

1) Has the patient been seen for two or more diabetic visits over the past six months?
2) Has a family history of diabetes been documented?
3) Was BP recorded?
4) Was the patient's systolic BP at or below the target range (130 mmHg)?
5) Was diastolic BP ≤ target range of (80 mmHg)?
6) If the patient's BP is not to target, was treatment started or discussed (*i.e.*, lifestyle changes)?
7) Is the patient on any medication for Type 2 diabetes?
8) Has the doctor completed a fasting lipid profile within the last six months?
9) If the low density lipoprotein is not within target range (*i.e.*, less than 2.5) has the patient been prescribed a lipid lowering agent?
10) Retinopathy—documentation or referral to either an opthamologist or optometrist been made?
11) Documentation of foot examination?
12) Neuropathy exam: assess vibration
13) Neuropathy exam: assess sensitivity with monofilament
14) Neuropathy exam: assess ankle reflexes
15) Nephropathy: assess urine albumin/creatinine ratio (A/C ratio)
16) Nephropathy: assess urine dip or urinalysis for protein performed
17) Nephropathy: 24-hour urine test for protein
18) Does either the A/C ratio, or the 24-hour urine test show elevated results?
19) If either the A/C ratio or the 24-hour urine test are elevated, has an angiotension converting enzyme inhibitor been started?
20) Has HbA1C been documented at least once in the past six months?
21) If HbA1C is > 0.070, has the physician discussed or changed patient management (*i.e.*, increase/addition of medications, lifestyle change)?
22) Has the physician discussed lifestyle modifications (*i.e.*,increase in exercise, smoking cessation, alcohol consumption)?
23) Has weight, diet, referral to dietician or diabetes education counseling been reviewed or discussed?
24) Has self-monitoring with a glucometer been reviewed or discussed?

About Mike

- Mike, 68, is a retired mechanic. He is a Korean War vet and activities at the Royal Canadian Legion are very important to him. He participates regularly in parades and the accompanying social activities. He doesn't like to let his mates down at these events.
- He has had diabetes for the past eight years.
- The following are pertinent details from Mike's chart:

– Height	5'8" (170 cm)
– Weight	211 lb. (96 kg)
– BMI	33
– BP	148/94 mmHg
– Fasting sugar	12.9 mmol/L
– Random sugar	11.4 to16.4 mmol/L, in office
– Total cholesterol	5.19 mmol/L (below 5.20 mmol/L)
– Triglyceride	4.6 mmo1/L (below 2.30 mmol/L)
– HgbA1C	0.121 (0.044 to 0.066)
– HDL-cholesterol	0.76 mmol/L

What are the advantages of case-based online learning?

Participants report that what they most appreciate about online learning is that it is so convenient. Online learning does not require travel, or leaving a busy practice and it is also possible to fit in the reading and the discussion into a quiet time of day, which is different for each participant. As well, participants appreciate the fact that all, including the moderator, are family physicians who are all commenting on the relevance of the discussion points.

How effective is case-based online learning?

In a randomized controlled trial with 28 family physicians (divided into an intervention group and a control group), discussing two cases (as shown), the intervention group vs. the control group demonstrated improvement in terms of knowledge and chart audit scores for the first case, but not for the second case. It may be that the order of the cases matters, with the case presented first eliciting a higher number of postings and the second case possibly leading to participant fatigue. Also, the level of baseline knowledge, if already high as in the diabetes case, may preclude a demonstrable improvement after the case-based online learning.

The experience with and evaluation of case-based online learning identified it as a promising CME format.

Take-home message

1. The technology for online CME is relatively simple and widely available.
2. Family physicians like the convenience and peer support of online learning.
3. Case-based online learning shows promise in terms of gains in knowledge and improvements in practice.

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References
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