

# Small-group CME using e-mail discussions

## *Can it work?*

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### abstract

**PROBLEM BEING ADDRESSED** Traditional continuing medical education (CME) approaches do not work well in changing physicians' behaviour, but some promising strategies and technologies might help. Our program sought to meld small-group learning with an Internet e-mail approach.

**OBJECTIVE OF PROGRAM** In 1994, the Family medicine Education and Research Network (FERN) was developed to support on-line discussion among London, Ont, and area family physicians. To support educational, moderated case discussions using e-mail, FERN Dissemination (FERN-D) was introduced to a subgroup of participants. We hoped to increase awareness and use of evidence-based research in clinical practice and to increase use of Internet-based resources for CME. The target group was family physicians in the London area.

**MAIN COMPONENTS OF PROGRAM** Forty volunteers were recruited and were e-mailed one case every 2 weeks; 34 completed the study. Each case was followed by further postings and, at the end of 2 weeks, by a summary of the group's discussion. Background material for each case was researched and was evidence-based. Evaluation was conducted using preintervention and postintervention mailed surveys combined with an e-mail feedback questionnaire and a modified focus group.

**CONCLUSION** On-line case-based discussion is a promising strategy for encouraging family physicians to access current research. More research is needed to determine whether it can be effectively used to change physicians' practice.

### résumé

**PROBLÈME À RÉSOUDRE** Les approches traditionnelles de la formation médicale continue (FMC) ne sont pas très productives pour ce qui est de changer les comportements chez les médecins, mais certaines stratégies et technologies prometteuses pourraient se révéler utiles. Notre programme cherchait à fusionner l'apprentissage en petit groupe à une approche se servant des courriels par Internet.

**OBJECTIF DU PROGRAMME** En 1994, le Family Medicine Education and Research Network (FERN) était mis sur pied dans le but de favoriser les discussions en direct entre les médecins de famille de London, en Ontario, et ses environs. Le programme intitulé FERN Dissemination (FERN-D) a été instauré auprès d'un sous-groupe de participants à l'appui de discussions éducatives dirigées, au moyen de courriels. Nous espérions rehausser la sensibilisation et le recours à la recherche fondée sur des données probantes en pratique clinique, et accroître l'utilisation des ressources basées dans Internet aux fins de FMC. Le groupe cible comptait des médecins de famille de la région de London.

**PRINCIPALES COMPOSANTES DU PROGRAMME** Au total, 40 volontaires ont été recrutés et ont reçu par courriel un cas à toutes les deux semaines; 34 ont effectué l'étude. La présentation du cas était suivie de renseignements supplémentaires et, à la fin des deux semaines, d'une synthèse des discussions du groupe. Le matériel servant de base à chaque cas a fait l'objet de recherches et se fondait sur des données probantes. L'évaluation a été effectuée à l'aide de sondages par la poste avant et après l'intervention ainsi qu'au moyen d'un questionnaire de rétroaction par courriel et d'une discussion en groupe témoin modifié.

**CONCLUSION** Une discussion en direct fondée sur un cas se révèle une stratégie prometteuse pour inciter les médecins de famille à accéder aux résultats des recherches courantes. Il faudrait une recherche plus approfondie pour déterminer s'il est possible d'y recourir efficacement pour modifier les habitudes de pratique des médecins.

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ow can family doctors be encouraged to improve their practice by incorporating up-to-date research results and guidelines? Most traditional continuing medical education (CME) approaches, such as lectures and conferences, have not persuaded doctors to improve their practice in this way.<sup>1</sup> More promising strategies for changing physician behaviour include reminder systems, academic detailing, using peers as teachers, and patient-mediated strategies.<sup>2,4</sup>

Practice-based small-group learning also appears promising.<sup>5</sup> Key elements for changing practice could include surprise, conflict or novelty in educational approach, reinforcement over time, and perhaps a trial of the change with a few patients.<sup>6,7</sup> Newly emerging clinical evidence shows that local norms and peer opinions exert great influence on decisions to change practice.<sup>8</sup> It has also been reported that family physicians tend to rely more on informal consultation with colleagues than internists do.<sup>9</sup> Another issue is the increasing number of barriers family physicians face in accessing, discussing, and integrating new information. These barriers are related to many factors, including the increase in case loads and family physicians' declining involvement in hospital-based activities.<sup>10</sup>

We believe that Internet-based e-mail discussion groups can provide the key elements for overcoming identified barriers and stimulate changes in practice. Participating physicians have the opportunity to discuss the material presented among themselves, reinforcing ideas over a much longer period than is usual for CME and possibly allowing trials of these changes in practice before discussion of a topic ends.<sup>8,11</sup>

A recent literature search found one randomized controlled trial of using the Internet to engage family physicians in a practice-based small-group discussion. The study randomly assigned family physicians either to using the Internet to access learning resources and engaging in an e-mail-based

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discussion or just to having Internet access to the resources and no discussion. Following this intervention, the authors found no significant differences in scores on a multiple-choice knowledge questionnaire between the groups. They concluded it was unclear whether the method was effective.<sup>12</sup> Our intervention differs in several areas, such as the time allotted for each discussion and how the interaction occurred.

In 1994, the Thames Valley Family Practice Research Unit (TVFPRU) in London, Ont, which conducts research relevant to primary care in partnership with family physicians and other health care providers, developed a local, Internet-based, e-mail discussion group called the Family Medicine Education and Research Network (FERN). The network was established to provide a forum for London and area family physicians to discuss issues relevant to family practice, to strengthen partnerships through an increased sense of community, and to raise awareness of family medicine research. By September 1996, about a quarter of all area family physicians were members of FERN (129/480). Discussions on FERN are unstructured and largely unmoderated; topics range from political to patient care to family practice management issues.

### Objectives

The TVFPRU decided to develop a program that would recruit a subset of the family physicians already on FERN and run a CME program of moderated, case-based, e-mail discussions. Specific objectives of the program were to increase awareness, understanding, and use of evidence-based research and guidelines in clinical practice and to increase use of Internet-based resources to support CME.

### Components of the program

Volunteer participants in the program, who had been recruited via e-mail and a newsletter, agreed to read their e-mail a minimum of twice a week and allow their time on the Internet to be monitored. These 40 family physicians were all from the Thames Valley region of southwestern Ontario, and 34 actually completed the study. Discussions occurred from November to May because previous experience with FERN told us that use of e-mail discussion was highest during that period. Participants logged on regularly for an average of 3.5 hours a week.

Participants discussed five clinical cases that had been prepared to be evidence-based and to support discussion of clinical issues in a way that would lead

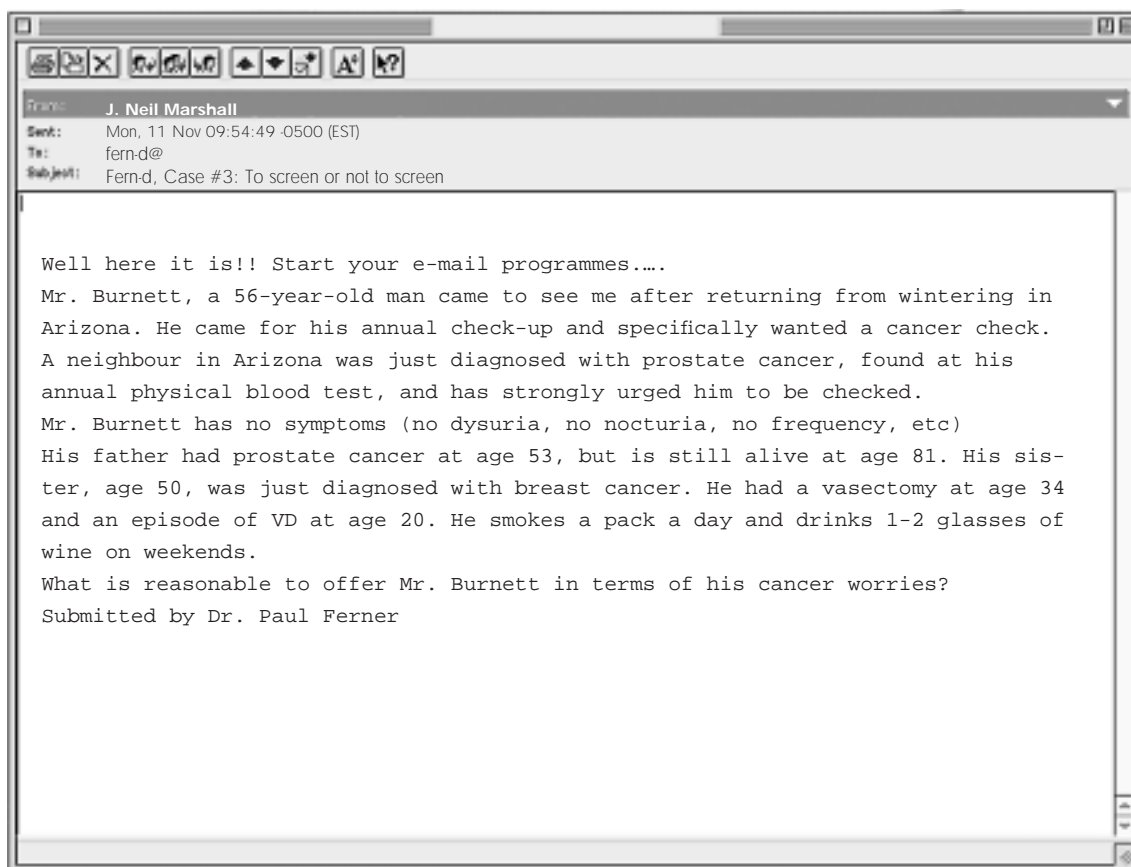
**Table 1. FERN-D case study topics**

TOPIC	ISSUE
To screen or not	Prostate-specific antigen and prostate cancer
Non-insulin-dependent diabetes mellitus	Management
To vaccinate or not	Pneumococcal vaccine
Good practice—check-ups	Periodic health examinations
To Holland with atrial fibrillation	Atrial fibrillation management

to changes in knowledge and practice. The cases (**Table 1**) focused on prevention topics selected on the basis of committee review of the recommendations of the Canadian Task Force on the Periodic

Health Examination.<sup>13</sup> Project staff, with the assistance of family physician experts, prepared case background material, including summaries of other evidence-based guidelines and other related resources. The principal author (J.N.M.) moderated all five cases. Participants were encouraged to respond to all postings from the moderator and other participants with comments, further questions, and information they thought was relevant, but could also passively sit back and watch cases and discussions unfold.

Each case arrived in the same format in participants' e-mail. Case discussion was designed to extend over 2 weeks. The first day, participants received a case scenario and a couple of starter questions (**Figure 1**). After 2 or 3 days of uninterrupted discussion (**Figure 2**), participants received more information, guidelines, and clarifications, along with further questions (**Figure 3**). At the end of each 2-week case, participants

**Figure 1. Moderator's FERN-D first posting**

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received a summary of key points and important issues (**Figure 4**).

The moderator's role was to post the case and subsequent information in a lively way, encourage participants, and solve any problems the group might have with the technology.

### Evaluation

Evaluation was by means of a preintervention and postintervention survey mailed to both participants and a comparison group. In addition, participants completed an e-mail questionnaire and were invited to an "end of series" meeting run as a focus group. The preintervention survey was sent to all family physicians practising in the area (N = 480); the postintervention survey was sent only to those who completed the first survey. A schedule involving three mailings (initial mailing, postcard reminder, and subsequent mailing of a replacement survey) was followed for both surveys.<sup>14</sup> The comparison group did not receive any interventions or learning

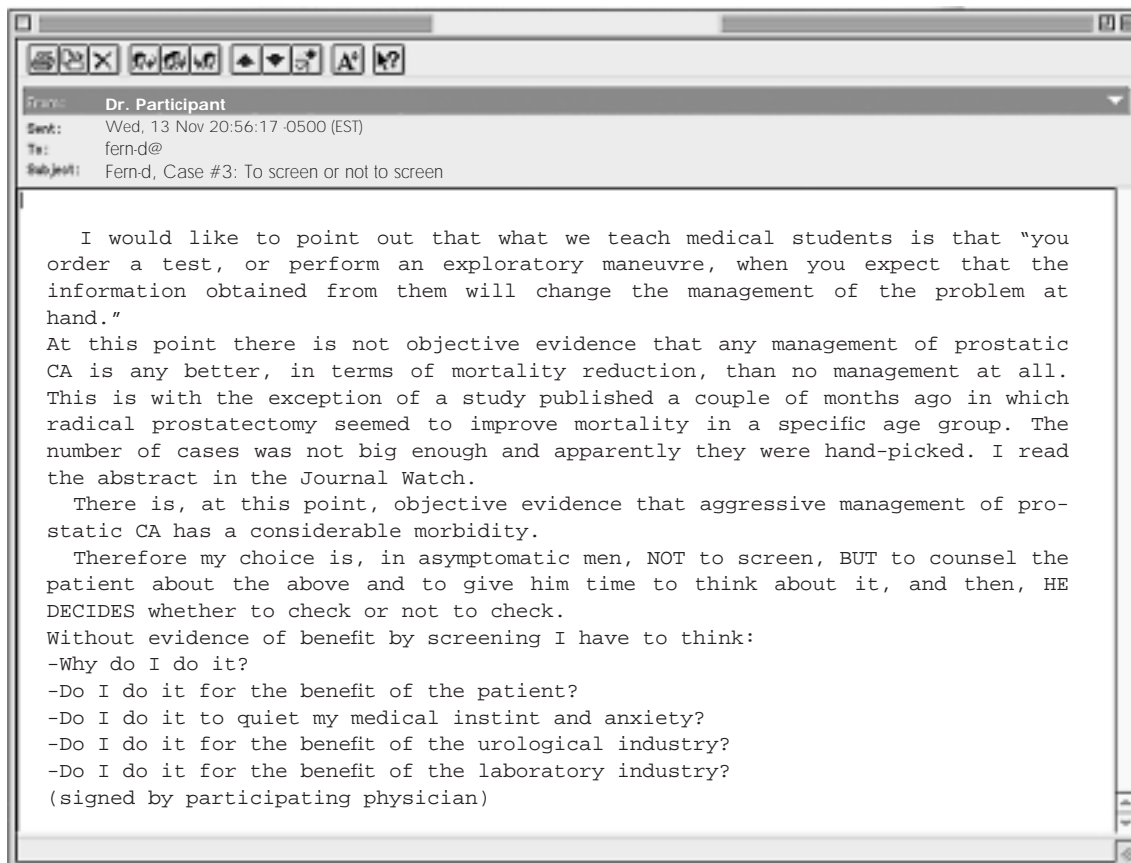
**Table 2. Physicians' practice characteristics**

PRACTICE CHARACTERISTICS	FERN-D INTERVENTION GROUP (N = 34)		COMPARISON GROUP (N = 151)	
	MEAN NO.	SD	MEAN NO.	SD
Years in practice	16.3	8.3	19.8	10.8
Patient visits weekly	128.6	55.2	140	53.8

materials in order to control for other learning and interventions that might have been available during the study period.

The groups were comparable in most demographic and practice variables (**Table 2**); the FERN-D group tended to be younger and to have more university affiliations (**Table 3**). When tested with questions related to the prevention issues discussed in the five cases, a higher percentage of the FERN-D group

**Figure 2. Example of FERN-D participant e-mail**



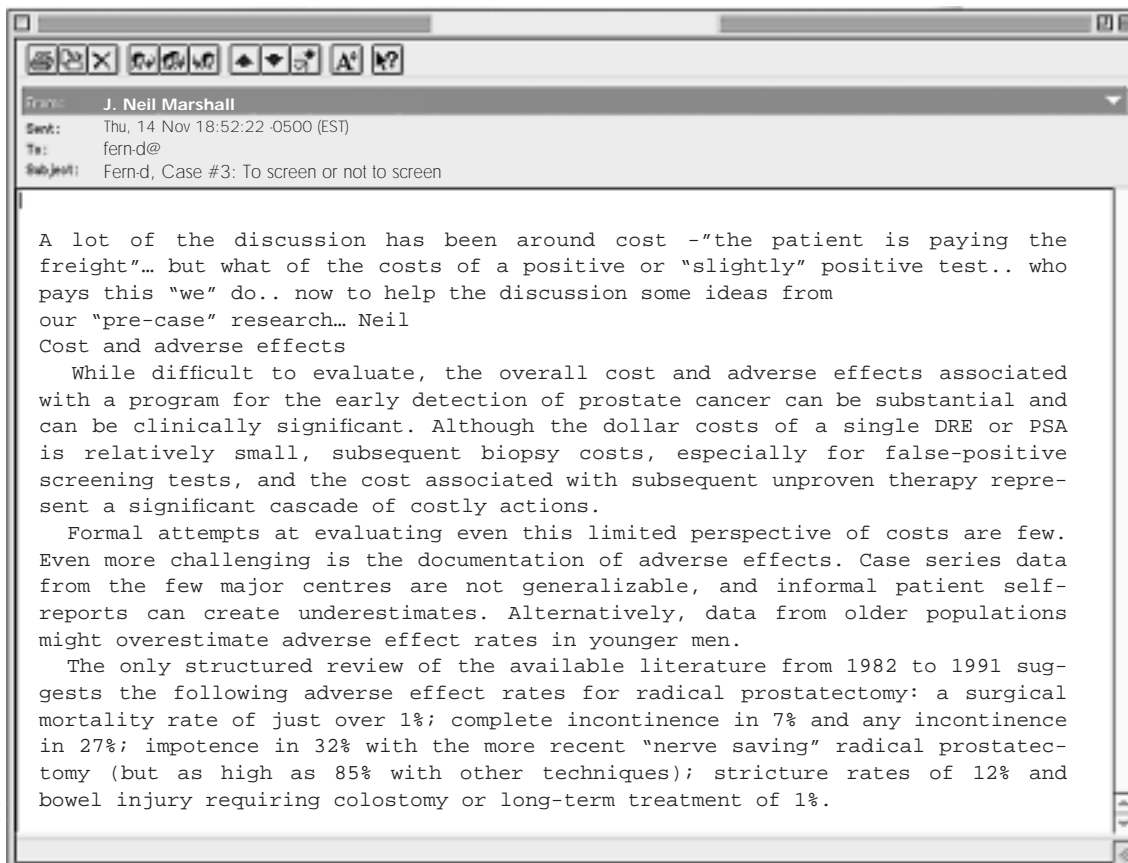
**Table 3. Characteristics of FERN-D and comparison group members**

DEMOGRAPHIC VARIABLES	(FERN-D) INTERVENTION GROUP (N = 34) N (%)	COMPARISON GROUP (N = 151) N (%)
• Male	22 (64.7)	120 (79.5)
• Female	12 (35.3)	31 (20.5)
• Urban location	25 (73.5)	106 (70.0)
• Rural location	9 (26.5)	45 (30.0)
• Full-time practice*	26 (83.9)	134 (92.4)
• Part-time practice*	5 (16.1)	11 (7.6)
• Group practice	26 (76.5)	90 (59.6)
• Solo practice	8 (23.5)	61 (40.4)
University affiliation		
• Full-time	7 (20.6)	7 (4.6)
• Part-time	12 (35.3)	26 (17.2)
• None	15 (44.1)	118 (78.2)

\*Data are missing for three FERN-D members.

had accurate knowledge on seven of the eight items. Both groups improved their preventive practice scores over the time of the intervention. More members of the FERN-D group thought they had become aware of new techniques or relevant research (58.8%) and had made changes in their practice (64.7%) than had those in the comparison group (38.5% and 30.8%, respectively).

The FERN-D group was also invited to attend a postintervention meeting conducted as a focus group to discuss their experiences in more depth. Key discussion points were the advantages and disadvantages of this method of CME, which cases were considered good and why, and the role of the moderator. The meeting was audiotaped and transcribed, and main themes were described as convenience: "I have two kids, which means that a lot of the CME stuff that gets held [is] difficult.... I...have to be able to drag the kid along;... that's much tougher than doing it by e-mail. I really enjoyed that"; as the importance of FERN-D being organized,

**Figure 3. Moderator's e-mail on day 4**

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run, and moderated by family physicians: "I think the biggest advantage of this type of CME is not constantly being told by specialists about this.... I get suggestions from other family doctors who really understand what it is the problem seems to be"; and as on-line discussions being case-based with cases developed on the basis of researched background material: "you felt [the case scenarios described] real people.... There was somebody that could walk into your office.... That's what we deal with, the people."

Participants also reported they enjoyed this type of CME, would like to take part in a similar initiative again in the future, and would recommend it to colleagues. Advantages cited included convenience, use of family physician moderators, the interaction among family physicians, and the case-based format.

Disadvantages cited included lack of opportunity to meet other participants face-to-face and the difficulties associated with on-line dialogue

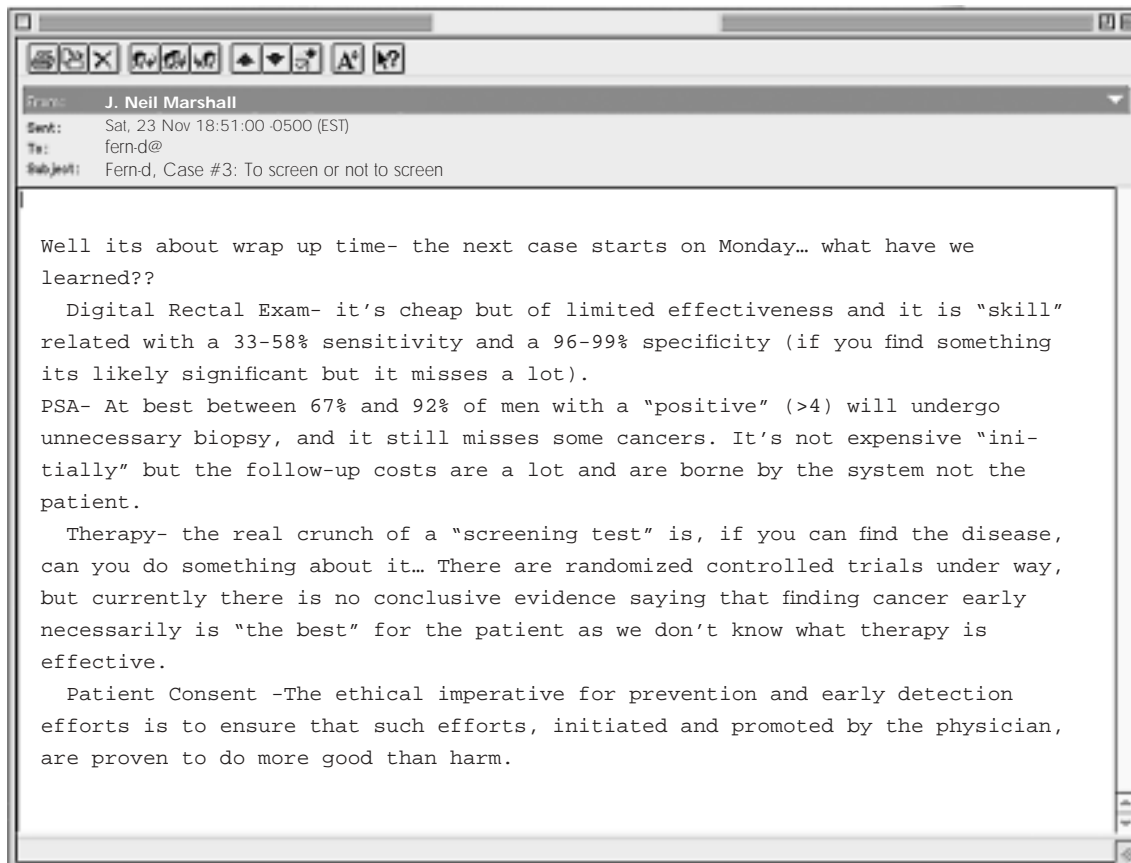
(ie, typing). Overall, participants supported ongoing development of Internet-based CME for family physicians.

### Discussion

Evaluation indicated further development and assessment was worthwhile. There are obvious parallels between e-mail discussion groups and practice-based small-group learning. Theoretical work by Nowlen stressed the role of the group in adopting new information.<sup>15</sup> Potential advantages of e-mail over face-to-face small-group learning include the ability to learn at one's own pace at personally convenient times and use of the 2-week time frame for each case to integrate and "practice-test" new information. Different approaches to CME are believed to have various effects on learners.<sup>16</sup> This supports development of alternative approaches to CME to target physicians' individual needs, preferences, motivation, and knowledge.

Some limitations should be considered. Some cases generated more participation than others, perhaps

**Figure 4. Moderator's summary of e-mail discussion**



because of the topic or the approach taken by the moderator. If participants read the case but did not post a reply, the program cannot document the degree of participation. The program was limited to physicians who are somewhat computer literate and able to type. Development of the case-based educational material for each case required several weeks' work by an education associate. The role of the moderator was key to successful group process and, as with other small-group learning, requires specific knowledge and skills. Currently there are no training opportunities for moderators.

### Conclusion

This pilot program showed there is promise in using the Internet for CME if participants get involved. The main strength of e-mail education is the lack of geographic restraints. Also, the evidence-based material and case-based approach, once developed, can be used easily with other e-mail groups and can be adapted for use in other formats, including face-to-face discussion groups. The next challenge is to show that these new ways of delivering CME are effective in changing physicians' behaviour and, ultimately, patient outcomes. ❀

### Competing interests

None declared.

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### Editor's key points

- In London, Ont, a case-based CME Internet program was developed. E-mail presentation of the case was followed by 2 weeks of e-mail discussions by participants.
- The program included a case, starter questions, further information and guidelines, the opportunity for participants to make comments, and, at the end of 2 weeks, a summary of key points.
- A family physician moderator facilitated the debate; this was considered a key component.
- Participants liked the convenience of on-line CME and thought they had obtained useful information that would change their practice.

### Points de repère du rédacteur

- À London, en Ontario, on a conçu un programme de FMC dans Internet. Une présentation du cas était transmise par courriel, suivie d'une discussion entre les participants par ce même médium durant une période de deux semaines.
- Le programme comportait un exposé de cas, des questions de démarrage, des renseignements plus détaillés et des directives, la possibilité pour les participants de présenter des commentaires et, au terme des deux semaines, une synthèse des faits saillants.
- Un médecin de famille animateur dirigeait la discussion; cet élément a été jugé comme une composante importante.
- Les participants ont aimé le caractère pratique de la FMC en direct et étaient d'avis avoir obtenu des renseignements utiles susceptibles de modifier leur pratique.

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