Public Health Capacity and Interest in Using Electronic Communication for Staff Training and Resource Dissemination: A National Survey

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E-mail and the World Wide Web (WWW) offer expanded opportunities for public health workers. These technologies promise increased access and reduced travel costs compared with traditional information delivery (e.g., workshops); ability to regularly and economically update materials; and capacity to link participants via e-mail to encourage interaction and provide feedback more effectively than print materials.¹ Instructors can more easily and cost-effectively incorporate audio-visual, text and other resources with e-mail and the WWW than with traditional delivery systems.¹

Tobacco use control continues to be a top public health priority²⁻⁶ in which local initiatives play a key role.⁷ It represents an area in which recent technologies could benefit public health providers who need up-to-date information and scientific evidence to influence decision-making. Little is known about current capacity to use electronic communication for staff training and resource dissemination within the Canadian public health system. A previous survey conducted in 1996 found limited capacity.⁸ Prior to developing a Web course for planning youth tobacco control,

we conducted a survey to reassess this capacity and interest. Information from this survey will be useful to those concerned with supporting public health practice and considering the use of Web-based technologies.

METHODS

All Canadian Medical Officers of Health (MOH) (n = 120)* received an introductory letter by mail that asked them to forward the survey to the staff person within the health unit responsible for planning youth tobacco use reduction; in Ontario, the letters were sent directly to the Tobacco Contact. Survey items asked respondents to identify factors that predispose, enable and reinforce their e-mail / WWW use as well as their tobacco reduction activities (a copy of the survey can be obtained from the first author). Respondents were then interviewed by telephone in October-November 1998. The survey response rate was 90% (n = 101).

For selected items, comparisons were made across five regions: British Columbia, the Prairies (Alberta, Saskatchewan, Manitoba, Northwest Territories), Ontario, Quebec, and the Atlantic provinces (New Brunswick, Newfoundland, Nova Scotia, Prince Edward Island). Comparisons were also made between small population centres (< 100,000 residents) and large centres (≥ 100,000 residents).

* Due to public health re-organization, some health units had merged to form Regional Health Authorities. The paper refers to jurisdictions covered by a Medical Officer of Health generically as a health unit, as identified in a list provided by the Canadian Public Health Association.

RESULTS

Capacity

To measure access to information technologies, respondents reported the type and amount of e-mail and WWW use. The vast majority of health unit staff (92%) use a personal computer at work. Most (82%) access e-mail in the workplace and 73% have their own e-mail account. Of the 84% who use the WWW at least weekly, over one half (57%) access the Web at work. One third (32%) of respondents said they have exclusive access to the Web. Another third (32%) share access with others, but have no time restrictions on use. Staff at health units serving smaller populations are more likely to access e-mail from home and less likely to have their own e-mail account at work.

A higher percentage of health units serving large versus small populations have access at work to e-mail (91% versus 69%) and the WWW (72% versus 43%). At work, access to e-mail ranges from 69% in the Prairies to 94% in Quebec, while access to the WWW ranges from 45% in the Maritimes to 75% in Quebec.

Perceived efficacy is an enabling factor for e-mail and WWW capacity. More than one half (64%) report a high level of confidence in their e-mail skills compared to one third (36%) who report a high level of confidence regarding their WWW skills.

Another factor influencing capacity is actual use of e-mail and WWW. One half (50%) of the respondents cite journals and government reports as their most frequent source of information about youth smoking interventions, followed by other staff (32%), contacts (26%), professional devel-

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opment (23%) and the WWW (8%). WWW-based information also received the fewest *very useful* ratings (11%) whereas professional development received the most *very useful* ratings (37%).

A majority of health unit staff have used e-mail and browsed the Web. However, as Figure 1 shows, fewer respondents use the WWW for complex functions such as conducting an advanced search. Listserv use is high in British Columbia and Ontario (approximately 50%) as compared to the rest of the nation (25% or less). Quebec's use of e-mail (84%) and e-mail attachments (68%) is similar to other regions. However, a smaller percentage of Quebec respondents use a search engine (31% versus >70% in other regions) or download information from the Web (21% versus >60% in all other regions). In general, a higher percentage of health units that serve larger population centres have experience in using e-mail and the Web.

Support and resources for electronic communication will enable their use. Respondents most often rely on manuals (69%) to support their use of e-mail and WWW, followed by reliance on colleagues who are off-site (64%). On-site technical support (e.g., Information Systems Department) is available in 36% of health units. Access to on-site technical assistance ranges between 47% in the Prairies to 75% in Ontario and is similar in small (63%) and large (72%) population centres.

Interest

To assess interest in WWW-based training, we used youth tobacco reduction as an example. As shown in Figure 2, the majority of respondents (79%) indicate that staff need training to reduce youth smoking. In comparison to other regions, a smaller percentage of Quebec respondents perceived a need for this training (42% versus >80% in other regions). The high expressed need for training may be related to reports by two thirds of respondents (62%) that reducing tobacco use among youth is the most important issue facing their health unit.

The majority of respondents (70%) prefer to access a Web-based course on tobacco control from work. There was a strong

Figure 1. Percentage of respondents completing various electronic communication tasks

Figure 2. Percentage of respondents indicating need for training to reduce youth smoking

support for participating in Web-based training during work hours (84%) rather than non-work hours. One third (33%) of respondents thought that more staff would participate in Web-based versus face-to-face training, while 20% believe fewer staff would participate.

DISCUSSION

This survey suggests that most public health units have the capacity and interest needed to use electronic communication for staff training and access to resources. We conclude that the use of these tech-

nologies for training and information delivery is appropriate and that capacity and interest will continue to proliferate over the coming years. Health units serving smaller and less central regions were less likely to have the infrastructure in place to use this technology. Initiatives to increase capacity in these regions are needed. Interest in Web-based training is high in all regions with the exception of Quebec, where moderate levels of interest were reported. This may be due to the lack of French language resources.

Despite the high level of capacity and interest, we were surprised to find that most use was restricted to simple functions (e.g., e-mail, simple searches). In contrast to traditional methods of information delivery, staff perceived the WWW as being less useful. This perception may be related to the quality of materials available on the WWW, or it might reflect a lack of skill in using more complex functions (e.g., advanced searches, signing up for a listserve). The WWW now contains more quality materials such as journals (e.g., *Tobacco Control* at www.tobaccocontrol.com) and reviews (e.g., Cochrane library at <http://hiru.mcmaster.ca/cochrane/>), however, many individuals may lack the skills needed to maximize use of these resources. To fully uti-

lize knowledge on the WWW, public health needs more than quality materials.⁹⁻¹¹

Research is needed to expand organizational and personal efficacy in using the WWW.¹² Researchers also need to assess the effectiveness of electronic communication for public health information delivery and staff training. We are developing and will evaluate a Web-based training course for planning youth tobacco use reduction attempts to help address these needs.

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Rapport sur la santé dans le monde 2000

Pour un système de santé plus performant

Dans le Rapport sur la santé dans le monde 2000, des spécialistes analysent l'influence croissante des systèmes de santé sur la vie quotidienne des gens dans le monde entier. Ils tiennent compte, comme on ne l'avait encore jamais fait, du rôle de chacun de nous dans le système de santé en tant que prestataire et usager des services, contributeur financier, agent de santé et citoyen participant à une gestion responsable.

Les systèmes de santé sont l'interface indispensable entre les interventions destinées à sauver des vies et à améliorer la qualité de vie et les personnes qui en ont besoin. Si les systèmes de santé sont inefficaces, l'effet de ces interventions sera faible, voire nul. Toute initiative visant à améliorer la santé ou à mieux utiliser les ressources doit par conséquent accorder une priorité absolue aux systèmes de santé.

Le rapport sur la santé dans le monde 2000 vise ainsi à nourrir un débat fécond sur les moyens de mieux mesurer la performance des systèmes de santé et, sur cette base, de définir une nouvelle orientation offrant des garanties de succès. En présentant sous un nouvel éclairage les facteurs du fonctionnement des systèmes de santé, l'OMS espère aussi aider les responsables à examiner le problème dans toute sa complexité, à étudier toutes les options et à faire des choix judicieux.

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