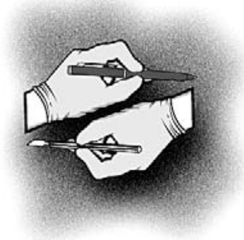

Original Article
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Bridging the gap in population health for rural and Aboriginal communities: a needs assessment of public health training for rural primary care physicians

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Introduction: The literature identifies significant inequalities in the health status of rural and Aboriginal populations, compared with the general population. Providing rural primary care physicians with public health skills could help address this issue since the patterns of mortality and morbidity suggest that prevention and health promotion play an important role. However, we were unable to identify any community needs assessment for such professionals with dual skills that had been performed in Canada.
Methods: We conducted key informant interviews and focus groups in 3 rural and Aboriginal communities in British Columbia (chosen through purposive sampling). We analyzed transcripts following standard qualitative iterative methodologies to extract themes and for discussing content.
Results: There was broad support for a program to train primary care physicians in public health. The characteristics identified as necessary in such a physician included a long-term commitment to the community with partnership building, advocacy, communication and cultural sensitivity skills. The communities we studied identified some priority challenges, most notably that the current remuneration structure does not support physicians engaging in public health or research.
Conclusion: There is great potential and support for the training of rural primary care practitioners in public health to improve population health and engage communities in this process.

Introduction : Les publications décrivent des inégalités importantes au niveau de l'état de santé des population rurales et autochtones comparativement à la population en général. Si les médecins ruraux de première ligne étaient formés en santé publique, ils et elles pourraient participer à résoudre le problème, puisque les tendances de la mortalité et de la morbidité indiquent que la prévention des maladies et la promotion de la santé jouent un rôle important. Nous n'avons toutefois pas réussi à trouver d'évaluation canadienne des besoins communautaires de professionnels dotés de ce type de double compétence.
Méthodes : Nous avons interviewé des personnes-ressources clés et organisé des groupes de discussion dans trois communautés rurales et autochtones de la Colombie-Britannique (sélectionnées au moyen d'un échantillonnage par choix raisonné). Nous avons analysé les transcriptions des échanges en suivant des méthodologies itératives qualitatives standards afin d'extraire les thèmes et de discuter du contenu.
Résultats : On appuie en général un programme visant à donner une formation en santé publique à des médecins de première ligne. Les caractéristiques jugées nécessaires chez un tel médecin comprenaient un engagement à long terme envers la communauté, conjugué à des techniques d'établissement de partenariats, de représentation et de communication, et à la sensibilité culturelle. Les communautés que nous avons

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étudiées ont décrit certains défis prioritaires et indiqué surtout que le régime actuel de rémunération n'incite pas les médecins à s'occuper de santé publique ou à faire de la recherche.

Conclusion : La formation en santé publique des médecins ruraux de première ligne, afin d'améliorer la santé de la population et de mobiliser les communautés dans cet

Introduction

The literature identifies significant inequalities in the health status of rural and Aboriginal populations, compared with the general population.[1–9] There are variations in the use of health services by rural and Aboriginal populations[8,10,11] as well as variations between different rural areas.[12] Some studies show that rural communities want to address health determinants, but they do not specifically address the role and skills needed by physicians in these communities.[4,13,14] Physicians trained to handle both the demands of practising clinical medicine and to address public health needs might be more beneficial than other hospital or specialist services at reducing the gap in rural and remote area health status.[10,15] Public or community health is concerned with the health of the community as a whole rather than the health of an individual. Public health can be defined as "the science and practice of protecting and improving the health of a community, as by preventive medicine, health education, control of communicable diseases, application of sanitary measures, and monitoring of environmental hazards."[16]

Australia began training general practitioners in public health,[17] in part, because rural mortality and morbidity patterns, which are similar to those of rural Canada, suggested an important role for prevention and collaborative work.[8,18,19] Other rural undergraduate and family practice training programs have assessed such needs and introduced more public health training for rural family practitioners.[20–26] These programs have given insight into the wider role that a physician can play in the health of a community.[26] Better physician training in the assessment of the population's health status can lead to the realization of community projects[21,24] with innovative solutions to health problems as well as benefits for the communities.[22,23] Exposure to rural practice during medical training is associated with a significantly higher likelihood of choosing rural practice[27] as well as with a better educational experience for students.[28,29]

While many perceive a need to integrate public health with rural family practitioner training, this need and its associated challenges have not been confirmed in a formal research setting in Canada. This study explores, from a community perspective, the need for dual-skills training and the perceived skills, qualities and supports necessary for such a practitioner.

Methods

An interprofessional partnership with representatives from the University of British Columbia (UBC) Community Medicine and Family Practice residency programs, medical health officers, the First Nations and Inuit Health Branch of Health Canada, and the UBC Centre for Teaching and Academic Growth was struck to carry out the project.

We performed a multicentre needs and opportunities assessment using purposive sampling (i.e., selecting sampling units based on a specific purpose rather than randomly)[30] designed to maximize the diversity of participants in the research. Consent forms were developed in compliance with UBC ethics standards. Our focus group consisted of 3 BC communities. They fulfilled our criterion for diversity for a variety of health care delivery settings. These ranged from private practice to community health centres with various degrees of integration of community and hospital services, salaried versus fee-for-service payment of physicians, and a mix of rural and Aboriginal communities. As suggested by community members, we sent letters of invitation to potential focus group participants to reach a broad range of health care providers and people living in the community.

Semistructured key informant interviews and focus groups were held between November 2001 and January 2002. A set of predetermined questions developed by the research team guided but did not limit the discussions. Some examples of these questions include:

- What do you think are the primary concerns about the health care provided in your community?
- How do you see the relation between health and primary care in this community?
- Could you please describe the communication

between physicians and members of this community?
- How do you think a physician trained in both rural family practice and community medicine could best address some of the concerns and needs that you have identified in the community?
- How do you envision the ideal physician for this community? What specific skills, qualities and supports would this physician need?
- (question for physicians) In your experience as a rural physician, do you believe that having more skills in community health would be an advantage to you?

The interviews and focus groups were conducted by trained qualitative researchers. These sessions were audiotaped and lasted up to 1.5 hours. Interviews and focus groups were transcribed word for word into interview transcripts and entered into Atlas.ti, a qualitative data analysis software package that provides a medium for organizing large amounts of textual data.

We used an interpretive description[31] approach to the inquiry, with a systematic process of indexing, coding, categorizing and writing to analyze the data.[32–34] Each interview transcript was read in its entirety to get a sense of the whole. The analysis began with the establishment of initial meaning units or codes that served as the organizing system for the data.[33] Two of the investigators engaged in this process separately to ensure that every idea was identified. Phrases or quotes that represented similar ideas or themes were then grouped together and preliminary identifiers, or codes, were chosen. This step served to establish common themes among the quotes to develop the initial first-level code list. We then used this list to code each transcript. We read all data associated with each code line by line and attached second-level codes to each idea. The second-level codes served to generate patterns among the concepts and illuminate the properties that described each code.

Results

In total, we conducted 6 focus groups. We interviewed 8 key informants from various locations in BC, including people with expertise in rural family practice, public health specialists serving rural populations and practitioners who had received formal training in both public health and family practice. These key informants were 2 medical officers of health from rural health regions; a medical officer of health from an Aboriginal community; a family physician practising in a remote area; a salaried, practising, dual-trained, rural physician; a consultant with the First Nations and Inuit Health Branch; a member of the First Nations Chiefs Committee; and a director of a First Nations Health Centre. The communities and the focus group participants are described in Table 1. In total, 33 members of various communities were engaged in the research process.

We identified 3 major categories that summarize participants' responses to the idea of a dual-trained physician:

1) Demonstrating needs;

Table 1. Descriptions of the communities and the focus group populations

Group	Community 1	Community 2	Community 3
Community			
Location	Northeast coast, Vancouver Island	Central coast district (not accessible by land from BC mainland)	Island village north of Vancouver Island
Demographics	Logging and aquaculture industries; about 2800 people, mostly white	> 2000 people; First Nations	About 700 people; First Nations reserve of 300 people with registered Indian status
Focus group participants*			
Community members	All community members who attended were health care professionals	A teacher and home school supervisor, a community member whose family lived there for 3 generations, a social worker and a consumer of health services	Only one focus group was held and some community members were unable to attend owing to a last minute meeting on land claim issues
Health professionals	A hospital manager, a community liaison continuing care manager, a home support supervisor, a mental health counsellor, a youth and child resource worker, and a community services supervisor	A hospital site manager, head nurse of the health clinic, former village chief, a representative from Child and Family Services, a nurse and a school psychologist	A hospital manager and a health centre director
Physician group	Physicians were invited but did not attend	All 5 community physicians participated	2 salaried physicians

*Many health professional participants were also long-time community members.

2) A vision of training for dual skills; and
3) Acknowledging challenges.
Table 2 summarizes these categories.

Demonstrating needs

Participants confirmed the need for rural primary care physicians who are trained in both family practice and public health. In particular, it was suggested that this type of training would allow physicians to promote and protect the health of the population by obtaining a scope of practice that includes individual prevention and proactive care rather than focusing only on curative and reactive services (e.g., planned care with preventative elements in diabetes rather than only responding to episodes of acute illness). This perspective is illustrated by the following comment:

> I think that the world of public health has to infuse the knowledge of primary care practitioners so they're not just concentrating on treating the individual sick person, but making efforts in their community to promote and maintain health and healthy communities. So, my perspective is that anybody who trains to be a primary care provider should have public health as well as family practice skills.

It was suggested that public health skills will give physicians the chance to move past identifying problems in their day-to-day practice to being able to address some of these issues. They would have a "better perspective" on the care needs of their community and be able to act on the identified problems with "a more organized, comprehensive approach to providing care." This would be owing to the maintenance of physicians' greater awareness of community needs and their understanding of the health system in which they are working. The issue of substance abuse, a particularly pressing problem in many rural and remote communities, provides a good example of the need for a broader approach to treatment than what one physician can do in one-on-one office visits. Rural doctors continually treat alcohol-related crises without the ability to address the longer term issues of addiction and recovery. With the appropriate skills, such situations could be better addressed through the use of community resources and collaboration with other community health personnel. Further, these physicians would have the ability to work toward understanding risk factors and, eventually, have the skills to assess whether their efforts are improving the community's health.

A vision of training for dual skills

Study participants described the type of training that would be necessary for a family physician to gain competency in public health and they provided

Table 2. Needs, training vision and challenges of an integrated family practice and public health practitioner
Needs
Health determinants are contributing significantly to the burden of diseases
Lack of provision of preventative individual and community intervention leading to increased need for direct clinical care
Lack of integration of various health stakeholders
Lack of local community assessment of health needs and evaluation of interventions
Lack of continuity of interventions
Need for locally adapted approaches
Lack of involvement of the community members in health priorities and interventions
Training vision
Hands-on learning of public health skills in rural and Aboriginal communities for most primary care practitioners
Skills to mobilize and build partnerships in the community and in the health system
Capacity to conduct population health assessment, evaluation and research, as well as link with academic institutions
Exposure to rural practice in training; increasing rural practice in the future
Ability to navigate complex health systems
Advocacy and communication skills
Ability to intervene in a culturally sensitive manner
Realistic views of what can be achieved in short-, medium- and long-term
Foster long-term commitment and selection of individuals with that goal
Challenges
Remuneration schemes not designed to favour community health interventions or research
High turnover of health professionals and short-term commitment of many of them
Difficulty of the task of addressing population health needs
Other present curative health needs are diverting time and resources from prevention and community intervention
Size and characteristics of communities vary

a list of the skills they felt physicians should possess. The suggested curriculum for training would combine learning-specific skills with the opportunity to gain "real life" experience working in a variety of health care and community settings. The graduates would obtain a broad perspective on health issues (i.e., see health issues in the social context in which many are derived). They will also acquire the following skills: competency in research, epidemiology and grant writing; sensitivity to community and cultural issues; appreciation and partnership building skills used toward improving and addressing community health concerns; the ability to empower patients, enable them to do effective self-care and to adopt healthy behaviours; and strong communication skills.

A central component of this training vision is the importance of the process through which trainees "get [their] hands dirty," or in other words, have first hand experience doing public health work in rural and remote communities. While certain skills can be taught (i.e., grant writing or epidemiology), the understanding of community dynamics and the development of strong skills in managing community relationships requires immersion in the community setting. As one participant mentioned, "you have to get respect and [have] interactive dialogue," which requires being able to communicate with people of many different cultures, age groups and sociodemographic circumstances.

It was highlighted that one physician with additional skills is still "one person trying to do an awful lot." Attempting to bring change to the health of a community involves activities that require building strong partnerships between physicians, other health care providers and community members. A detailed knowledge of the health care system and of community players with the ability to navigate through the system effectively is also an important part of the learning experience, as this work cannot be done in isolation:

> The other thing that I would really like to see this practitioner have is the skills in building partnerships so that instead of working in isolation and responding reactively to the patient, they understand the team, they work well with the team, and they are able to refer and receive referrals from the multidisciplinary [team].

To successfully use the dual skills in the community, it was suggested that these physicians would benefit from having an affiliation with a university medical faculty, as presently rural physicians tend to be "divorced from the whole academic world."

Acknowledging challenges and providing support

A number of challenges were put forth that questioned how effective a physician could be in this dual-trained role. How would it work on a day-to-day basis? Challenges related to physician characteristics, community relationships and resources, and the physician payment system were highlighted as important considerations. These challenges would need to be addressed and supports put in place to allow dual-trained physicians to successfully use their skills in a rural setting.

Continuity and personal commitment

Community health initiatives are not aimed at immediate outcomes and therefore require a long-term commitment from a physician. Finding physicians who are committed to invest in forming relationships in the community and carrying out longer-term initiatives is essential to properly use public health skills:

> You certainly need consistency and committed people. If people are just flying in and out and are only just staying for a year, you don't make those contacts and get sustainability in the community…without the continuity, it doesn't work. People just see faces coming and going and they don't build up that recognition or trust.

The more a physician is "part of the community," and has been for some time, the greater the likelihood of creating successful community interventions. In addition to this commitment, participants discussed the need for a dual-trained physician to think beyond the medical model and to consider health care issues from a social determinants perspective. Participants cited issues, such as abuse and unemployment, that are central problems in their communities that "work their way down to being biomedical things like diabetes and depression." Those with an open mind, flexibility and who have the ability to "think outside of the box" will find themselves more capable of dealing with the demands of the job and the reality of these situations.

Community characteristics and health care infrastructure

The inner workings and systems already in place in the community were cited as critical factors in determining the success of health promotion initiatives.

One person alone cannot make substantial headway in a community; the issues are too multifaceted and deep rooted. An infrastructure that facilitates a deep, consistent and committed level of support for members of the team is ideal:

> The reason that we can do what we can do is because the infrastructure is there…You can come in with all of your wonderful ideas, but if you don't have the home care nurse, the band council, the addiction treatment facility, the childcare workers, you need that. We have a 24 [hour] suicide prevention team, 24 hour child protection, 24 [hour] access to them, safe house for women and kids, an elder centre…This is my fourth year here, and in that time, we have only had one completed suicide. Now, that is not because of the doctors, it is because of the infrastructure.

Smaller communities may lack available resources but can provide an easier environment within which to initiate changes: "we can identify health issues in the community relatively easily because we are a relatively small system, we address those issues fairly quickly."

However, the greater the degree to which health care organizations in these communities are truly sharing knowledge, reducing redundancies and pooling resources, the better able they are to "move and shake and make a difference." Partnerships that currently exist with active members of the community are crucial to "making things happen in the community" because of their influence in the community.

Remuneration and practice

The remuneration system for physicians is a further consideration for the successful implementation of dual skills in practice. Participants were concerned that public health does not lend itself to a fee-for-service structure. It was suggested that salaried compensation would better suit a physician practising with both family practice and public health interventions. Salaried positions would encourage a community-based approach and would allow time to be spent on research:

> Physicians should be paid for health prevention work as well as interventions. We have to think about an integrated person working in the context of a payment system that will acknowledge research and community linkage as part of what that person does, so that it's kind [of] a whole new structure of practice.

Discussion

This is the first Canadian study assessing the needs and challenges for a physician trained in rural family practice and public health. Its validity is reinforced by the richness of the discussion possible with qualitative study and by the inclusion of a variety of rural and Aboriginal communities as well as various key stakeholders.

Public health training

This study involved a variety of community members representing clinical, administrative, governmental and consumer interests. The results agree with the current literature providing evidence that an integrated training program is an important initiative to reduce the dichotomy of primary care and public health.[35–37] It leads to benefits for rural, Aboriginal and general populations.[35–37] Further, our study suggests that rural and Aboriginal communities favour an approach in which most rural physicians would have some public health skills rather than a subgroup of physicians with specialty training.

As outlined by this study and others,[38] long-term commitment, ability and willingness to spend time in the community are the perceived key factors to successful physician promotion of healthy communities. Appropriate candidates for this experience will require strong interpersonal skills and a deep commitment to working toward system change. These factors might be considered in selecting candidates. Further, Maurana and colleagues. insist on institutional long-term partnerships rather than solely on an individual trainee's characteristics or commitment.[38] This suggests that the program organizers might want to build relationships with particular communities to achieve the maximal benefits for the trainee and the community.

Some public health training can be incorporated into existing family practice residency programs. For example, the UBC Aboriginal family practice residency program encourages residents to spend time with public health physicians. Other family practitioners may choose to expand their public health knowledge through courses or by obtaining a master's degree in public health or health science. These additional skills and collaboration with public health physicians and academics will enable family practitioners' involvement in research.

Limitations

Despite the fact that they were invited, none of the physicians from the first community attended the focus group. It is not known what impact their attendance would have had on the results. However, there was substantial input from physicians in other

communities. Another limitation of the study is the potential influence of the local context on the results, which prevents them from being generalized to all Canadian rural communities.

The need for research

The need for more rural community and Aboriginal health research, as expressed by our study participants and identified in the literature,[39] could be addressed by the skills of a physician trained in both primary care and public health with appropriate university support. It could lead to the development of mutual respect between communities and academia.[40] Protecting the family practitioners' time for research is important to promote active involvement in research projects.[41]

The need for remuneration

This assessment reinforces the idea that an appropriate remuneration scheme is a determining factor in nurturing a community health approach within the practice of family medicine. Governments at the provincial, federal and international level acknowledge the need for support of such initiatives.[8,9,42] The next step is for these governments to realize that concrete financial and organizational support is not only important for training opportunities, but also for the promotion of dual practice, community health research, partnerships and actions through the offer of appropriate payment schemes for physicians. Further, dual-skills training can provide a solid base for 2 current initiatives in medical education in BC and Canada: to include public health as a mandatory component in the medical curriculum[43] and to develop a distributed medical education model in rural areas.[44]

Conclusion

The results illustrate that rural communities greatly support family practitioners having the dual skill set. The interviews and focus groups provided us with a rich understanding of the challenges of attempting to implement and integrate this situation into practice. We discussed a number of supports that would be necessary in the community as well as particular characteristics of a physician's practice that would need to be in place. Study participants provided a vision of the type of training a dual-trained physician would need, including an emphasis on "real world" experience.

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References

1. Rosenblatt RA. A view from the periphery—health care in rural America. *N Engl J Med* 2004;351(11):1049-51.
2. Martens PJ, Derksen S. A matter of life and death for Manitoba's children: an overview of birth rates and mortality rates. *Can J Public Health* 2002;93(Suppl 2):S21-6.
3. Mayer F, Ross N, Berthelot JM, et al. Disability-free life expectancy by health region. *Health Rep* 2002;13:49-60.
4. Newbold KB. Problems in search of solutions: health and Canadian Aboriginals. *J Community Health* 1998;23:59-73.
5. Martens PJ, Sanderson D, Jebamani LS. Mortality comparisons of First Nations to all other Manitobans: a provincial population-based look at health inequalities by region and gender. *Can J Public Health* 2005;96(Suppl 1):S33-8.
6. Cass A. Health outcomes in Aboriginal populations. *CMAJ* 2004; 171:597-8.
7. Zhao Y, Guthridge S, Magnus A, et al. Burden of disease and injury in Aboriginal and non-Aboriginal populations in the Northern Territory. *Med J Aust* 2004;180:498-502.
8. Ministerial Advisory Council on Rural Health. *Rural health in rural hands: strategic directions for rural, remote, northern and aboriginal communities*. Ottawa (ON): Health Canada; 2002.
9. *British Columbia PHO Report on the Health of British Columbians. Provincial Health Officer's Annual Report 2001. The health and well-being of Aboriginal people in British Columbia*. Victoria (BC): Ministry of Health Planning; 2002.
10. Veugelers PJ, Yip AM, Elliott DC. Geographic variation in health services use in Nova Scotia. *Chronic Dis Can* 2003;24:116-23.
11. Martens PJ, Sanderson D, Jebamani L. Health services use of Manitoba First Nations people: is it related to underlying need? *Can J Public Health* 2005;96(Suppl 1):S39-44.
12. Lix LM, Ekuma O, Brownell M, et al. A framework for modelling differences in regional mortality over time. *J Epidemiol Community Health* 2004;58:420-5.
13. Thomlinson E, McDonagh MK, Crooks KB, et al. Health beliefs of rural Canadians: implications for practice. *Aust J Rural Health* 2004;12:258-63.
14. MacKinnon M. A First Nations voice in the present creates healing in the future. *Can J Public Health* 2005;96(Suppl 1):S13-6.
15. Margolis PA, Lannon CM, Stevens R, et al. Linking clinical and public health approaches to improve access to health care for socially disadvantaged mothers and children. A feasibility study. *Arch Pediatr Adolesc Med* 1996;150:815-21.
16. Houghton Mifflin Company. *American Heritage Dictionary of the English Language*. 4th ed. Boston (MA): Houghton Mifflin Company; 2000.
17. Fraser J. Evaluation of a general practice registrar training post in public health in rural New South Wales. *Aust Fam Physician* 2002;31:685-8.
18. Humphreys JS, Rolley F, Weinand HC. Evaluating the importance of information sources for preventive health care in rural Australia. *Aust J Public Health* 1993;17:149-57.
19. Australia's health system: the search for a cure. The Australian Democrats' discussion paper on Australia's health system. *World Hosp Health Serv* 1998;34:2-18.
20. Norris TE, Coombs JB, Carline J. An educational needs assessment

of rural family physicians. *J Am Board Fam Pract* 1996;9:86-93.

21. Stearns JA, Stearns MA, Glasser M, et al. Illinois RMED: a comprehensive program to improve the supply of rural family physicians. *Fam Med* 2000;32:17-21.
22. Summerlin HH Jr, Landis SE, Olson PR. A community-oriented primary care experience for medical students and family practice residents. *Fam Med* 1993;25:95-9.
23. Mareck DG. Minnesota's rural health school: interdisciplinary community education. *Fam Med* 2003;35:86-8.
24. Kaplan KM, Masters PA, Leong SL, et al. Evaluating students on an interdisciplinary primary care clerkship at the Pennsylvania State University College of Medicine. *Acad Med* 1999;74(1 Suppl):S67-9.
25. Whiteside C, Mathias R. Training for rural practice. Are graduates of a UBC program well prepared? *Can Fam Physician* 1996;42:1113-21.
26. Kamien M. Education in community medicine with an emphasis on the health of an Aboriginal community: a pilot project. *Med J Aust* 1975;2:509-13.
27. Rourke J, for The Task Force of the Society of Rural Physicians of Canada. Strategies to increase the enrolment of students of rural origin in medical school: recommendations from the Society of Rural Physicians of Canada. *CMAJ*. 2005;172(1):62-5.
28. Johnsen JH. Do residents in a northern program have better quality lives than their counterparts in a city? *Can Fam Physician* 2001;47:999-1004.
29. Worley P, Silagy C, Prideaux D, et al. The parallel rural community curriculum: an integrated clinical curriculum based in rural general practice. *Med Educ* 2000;34:558-65.
30. Morse J. *Strategies for sampling qualitative nursing research: a contemporary dialogue.* Rockville (MD): Aspen; 1989. p. 17-131.
31. Thorne S, Kirkham SR. MacDonald-Emes J. Interpretive description: a noncategorical qualitative alternative for developing nursing knowledge. *Res Nurs Health* 1997;20:169-77.
32. Sandelowski M. Writing a good read: strategies for re-presenting qualitative data. *Res Nurs Health* 1998;21:375-82.
33. Tesch R. *Qualitative research: analysis types and software tools*. New York (NY): Falmer Press; 1990.
34. Wolcott HF. *Transforming qualitative data: description, analysis, and interpretation*. Thousand Oaks (CA): Sage Publications; 1994.
35. Danila RN, Lexau C, Lynfield R, et al. Addressing emerging infections: the partnership between public health and primary care physicians. *Postgrad Med* 1999;106(2):90-2.
36. Magill MK. Medicine and public health. Whose agenda? *Arch Fam Med* 1999;8:81-2.
37. Gulitz E, Bustillo-Hernandez M, Kent EB. Missed cancer screening opportunities among older women: a provider survey. *Cancer Pract* 1998;6:325-32.
38. Maurana CA, Beck B, Beversdorf SJ, et al. Moving from medical student placement to a community-academic partnership with a rural community. *J Rural Health* 2000;16:371-9.
39. Young TK. Review of research on Aboriginal populations in Canada: relevance to their health needs. *BMJ* 2003;327:419-22.
40. Osborn EH, O'Neil EH. "Bimodal" medical schools: excelling in research and primary care. [erratum in *Acad Med* 1996;71:1313]. *Acad Med* 1996;71:941-9.
41. Curtis P, Dickinson P, Steiner J, et al. Building capacity for research in family medicine: is the blueprint faulty? *Fam Med* 2003;35:124-30.
42. National Advisory Committee on SARS and Public Health. *Learning from SARS — renewal of public health in Canada*. Ottawa (ON): Health Canada; 2003.
43. Association of Faculties of Medicine of Canada. *Association of Faculties of Medicine of Canada Council of Deans*. Paper presented at: Learning from each other: 2005 Medical Education Conference—AFMC, CAME, CFPC, MCC, RCPSC; April 30–May 4, 2005; Saskatoon, SK.
44. Delva D. *Distributed medical education: programs and experience*. Paper presented at: Learning from each other: 2005 Medical Education Conference—AFMC, CAME, CFPC, MCC, RCPSC; April 30–May 4, 2005; Saskatoon, SK.

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