

these extraordinarily difficult choices. They took their challenge seriously, they learned a great deal from each other, and they came to terms with the choices in ways that would astonish many political leaders and technical experts in health care. Citizens were quick to grasp the budgetary and technological pressures we face, and yet they were able to articulate a set of values-based choices about a system that is immensely important to them. They were remarkably pragmatic and clear about the choices.

This dialogue was commissioned by the Commission on the Future of Health Care in Canada, led by Roy Romanow. The dialogue involved 12 groups of 40 citizens, selected to represent the Canadian population. Over the course of a full day, they constructed a consensus view of what an ideal health care system would look like in 10 years' time, and then worked through the trade-offs and choices that would make that system financially sustainable. The Commission will publish the report on this dialogue this month. Mr. Romanow is also engaged in an intensive dialogue with the stakeholders — providers, managers and governments. In his final report in November, he will therefore have a unique opportunity to create the synthesis of the values base of Canadians with the best technical advice available from the people who govern, manage and deliver health care in Canada.

Mr. Romanow will have all the right materials to renovate the medicare edifice. In November, we shall see what architecture he recommends.

Ms. Maxwell is President, Canadian Policy Research Networks Inc., Ottawa, Ont. She is also Adjunct Professor at the University of Ottawa, and is a Fellow of the School of Policy Studies at Queen's University, Kingston, Ont.

Competing interests: None declared.

Reference

1. National Forum on Health. *Canada health action: building the legacy*, vol. II, Synthesis Reports and Issues Papers. Available: www.hc-sc.gc.ca

Correspondence to: Mrs. Judith Maxwell, President, Canadian Policy Research Networks Inc., Ottawa ON K1P 6M1; fax 613 567-7640; jmaxwell@cprn.org

Articles to date in this series

Lewis S. The bog the fog, the future: 5 strategies for renewing federalism in health care. *CMAJ* 2002;166(11):1421-2.

Chiropractic students' attitudes about vaccination: A cause for concern?

Robert Pless, Beth Hibbs

§ See related article page 1531

Immunization was, without question, one of the greatest public health achievements of the 20th century.¹ Given its continuing success in controlling diseases that once maimed or killed, vaccination should be recognized as an important part of health care or, at the very least, an acceptable health care practice even to health professionals who do not perform it.² Unfortunately, a subset of chiropractors weigh in on the issue in a negative fashion by discouraging vaccination or raising concerns about its safety or effectiveness among their patients^{3,4} or even by actively opposing immunization.⁵

In the survey reported on page 1531 of this issue, Busse and colleagues⁶ discovered an unsettling trend during the professional education of chiropractic students. The authors found that while some students had negative attitudes toward vaccination on entering their training for the profession, many others appeared to develop such attitudes as

they progressed through their studies. Yet the core curriculum of the Canadian Memorial Chiropractic College (CMCC), where the survey was conducted, teaches both immunology and health promotion⁷ and is itself supportive of vaccination. In addition, the policy viewpoint of the Canadian Chiropractic Association also supports vaccination as it is currently practised in Canada.⁵ It seems that the negative attitudes acquired by some students resulted from their stated reliance on more "informal" sources of vaccine information during their studies, such as the general chiropractic literature and informal talks held at the college.

Some of the attitudes expressed by CMCC students are truly disturbing. That 23.5% of the 119 fourth-year students agreed with the statement that "there is little scientific proof that immunization prevents infectious disease" and 16.8% agreed that "vaccines have not substantially changed the incidence of any major infectious disease" is

difficult to understand, given that smallpox has been eradicated, polio is on the verge of eradication and measles is near elimination from the Western Hemisphere. These accomplishments are clearly presented in basic public health courses and remain the subject of media attention.

The greatest concern about the negative attitudes toward vaccination of some of the CMCC students is that, in light of the growing prevalence of chiropractic care in Canada and elsewhere,⁸ there is a risk that these attitudes will be passed on to patients.^{2,5} Surveys have shown, not surprisingly, that parents' get most of their information about vaccination from their doctors.⁹ However, the extent to which those who seek chiropractic care might be influenced by their chiropractor's views is unknown.

There are a number of reasons why some chiropractors might oppose vaccination,⁵ as well as suggestions about where they might acquire those beliefs. However, the study reported here⁶ suggests that even in the face of education to the contrary (provided by their own professional school) and despite the policies of their professional association, negative beliefs are still acquired or persist in a sizeable minority of students. The propagation of these negative attitudes could chip away at vaccination coverage and put infants and children in harm's way once again, something no health care professional should want.

Reliable and accessible information about vaccines, along with the tools to evaluate myths and invalid claims about their safety, may help to put vaccination decisions in their proper perspective. For the general public, the Centers for Disease Control and Prevention, along with public health partners such as the American Academy of Pediatrics, the Immunization Action Coalition and the National Network for Immunization Information, have created and maintain comprehensive information about vaccination, disseminated through a variety of channels, including the Internet, telephone hotlines and traditional mail. Canada is doing the same through its Canadian Immunization Awareness Program.¹⁰ Similarly, although critical appraisal and research skills are taught to CMCC students,⁷ these clearly need to be reinforced during the lectures that discuss vaccination as a health promotion practice, to even better equip students to separate fact from fiction, particularly in the context of the informal lectures and discussions in which they participate. The survey reported by Busse and colleagues⁶ did not measure the degree to which students truly believe some of the more common myths related to vaccination, nor did it evaluate the reasons for development of negative attitudes regarding the value of infant and adult vaccination recommendations. Thus, it would be of interest to ascertain how informal sessions at the college are organized, what their content is and, most important, why they appear to undermine concepts taught in the core curriculum.

Although chiropractic professionals have not traditionally been considered influential in discussions of vaccination-related issues, it is clear from this study and others that they are interested and engaged. However, there is a perception among some in the medical profession that the chiropractic profession is "antivaccine," which makes it difficult for the 2 groups to work together. In reality, only a segment of the chiropractic profession holds such views. Given that CMCC graduates some 80% of all chiropractors in Canada and is located close to the University of Toronto, the largest medical school in the country, promotion of vaccination programs might be an ideal model for encouraging medical and chiropractic students to work together and learn from each other. To our knowledge, such collaboration has not been formally attempted. Members of the public seeking the best combination of health care for themselves and their families would only benefit if this could be achieved.

The authors are with Vaccine Safety and Development Activity, Epidemiology and Surveillance Division, National Immunization Program, Centers for Disease Control and Prevention, Atlanta, Ga.

Competing interests: None declared.

Contributors: Robert Pless was responsible for the concept, initial research, first draft and editing of the final manuscript. Beth Hibbs was responsible for the concept, review of draft, additional research and editing of the final manuscript.

References

- Centers for Disease Control and Prevention. Ten great public health achievements — United States, 1900–1999. *MMWR Morb Mortal Wkly Rep* 1999;48 (12):241–3.
- Nelson CF. Why chiropractors should embrace immunization. *Chiropract Tech* 1993;5(2):68–74.
- Colley FC, Haas DC. Attitudes on immunization: a survey of American chiropractors. *J Manipulative Physiol Ther* 1994;17(9):584–90.
- Nasir L. Reconciling the antivaccination web sites: news from the front. *J Fam Pract* 2000;49(8):731–3.
- Campbell JB, Busse JW, Injeyan HS. Chiropractors and vaccination: a historical perspective. *Pediatrics* [serial online] 2000;105(4):e43. Available: www.pediatrics.org/cgi/content/abstract/105/4/e43 (accessed 2002 Apr 10).
- Busse JW, Kulkarni AV, Campbell JB, Injeyan HS. Attitudes toward vaccination: a survey of Canadian chiropractic students. *CMAJ* 2002;166(12):1531–4. Available: www.cmaj.ca/vol-166/issue-12/1531.html
- Canadian Memorial Chiropractic College. CMCC course calendar 2001/02. Available: www.cmcc.ca/calendar (accessed 2002 Apr 10).
- Hurwitz EL, Coulter ID, Adams AH, Genovese BJ, Shekelle PG. Use of chiropractic services from 1985 through 1991 in the United States and Canada. *Am J Public Health* 1998;88(5):771–6.
- Gellin BG, Maibach EW, Marcuse EK. Do parents understand immunizations? A national telephone survey. *Pediatrics* 2000;106(5):1097–102.
- West R. Immunize your kids – boost their chances for health: the Canadian Immunization Awareness Program [editorial]. In: Canadian national report on immunization, 1998. *Pediatr Child Health* 1999;4(Suppl C) [serial online]. Available: www.hc-sc.gc.ca/hpb/lcdc/publicat/paediatr/vol4supc/pch_c_e.html (accessed 2002 Apr 11).

Correspondence to: Dr. Robert Pless, National Immunization Program, Centers for Disease Control and Prevention, MS E61-1600 Clifton Rd. NE, Atlanta GA 30333; fax 404 639-8834; rpless@cdc.gov