Improving the Public Health/Physician Partnership for Influenza Vaccination

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ABSTRACT

Background: Alberta doctors can request supplies of publicly funded influenza vaccine to administer to patients who meet provincial program criteria.

Purpose: To describe the proportions of Alberta family doctors who vaccinate patients, the sources from which they obtain vaccine and their evaluation of public health influenza vaccination program components.

Methods: Cross-sectional postal survey, 2003. Doctors were asked to complete a nine-page questionnaire or to answer a one-page "mini-survey". The proportion of physicians who vaccinated patients against influenza was estimated separately for the main questionnaire and the mini-survey. Frequencies and cross-tabulations were used to examine sources of vaccine supply and physician ratings of five aspects of influenza vaccine program services provided by Regional Health Authorities (RHA).

Results: The survey response rate was 52.3% (1387/2650); an additional 14% (372) returned a mini-survey. The proportion of respondents who vaccinated one or more patients against influenza in the fall of 2002 was 81.5% for the main questionnaire and 83.1% for the mini-survey. Vaccine was most commonly obtained from the RHA. Three items were rated as poor/fair by more than 10% of respondents: provision of information for distribution to patients (37%), timeliness of vaccine delivery to offices (16%) and vaccine availability over the entire influenza season (18%). Item ratings varied by RHA but provision of information for distribution to patients was consistently a problem.

Conclusion: A high priority should be placed on improving resources for doctors to give to patients, timeliness of vaccine deliveries to doctors' offices and vaccine availability over the entire season.

MeSH terms: Program evaluation; influenza/pc; primary health care; vaccination; immunization programs

La traduction du résumé se trouve à la fin de l'article.

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In Alberta, routine childhood vaccines are administered exclusively by public health nurses, however doctors are key partners in publicly funded population-based influenza vaccination programs. As part of the provincial public health influenza vaccination program, Regional Health Authorities (RHA) provide vaccine and information to doctors. We examined the proportions of physicians who vaccinated patients, the sources of the influenza vaccine that they used, and their perceptions of the provision of vaccine and information received from RHAs. Provincial and regional data in this area are lacking and the study results are important to future program improvement.

METHODS

Data were collected through a postal survey of all family physicians/general practitioners (FPs/GPs) who were licenced and practising in Alberta in the fall of 2002 with a valid postal address at the time of survey. A listing of doctors and their demographic data (year of graduation from medical school, gender) was obtained from the College of Physicians and Surgeons of Alberta. Physicians were asked to complete a nine-page questionnaire. Non-respondents after two questionnaire mailings were asked to complete a one-page "mini-survey". The long questionnaire included items on demographics, beliefs, and vaccination behaviours, and asked respondents to rate the delivery of vaccine and information provided to doctors by RHAs. The mini-survey inquired whether they saw patients as part of their work and if the doctor had vaccinated any patients in the fall of 2002. Respondents were deemed eligible for the present analysis if they were seeing patients as part of their work during the influenza vaccination period of Fall 2002. Those who indicated (long survey) that they had vaccinated at least one patient in Fall 2002 and had also ordered vaccine from an RHA were asked to rate five items on a scale of excellent (5), very good (4), good (3), fair (2) and poor (1). The five items were: a) efficiency of system for ordering vaccine, b) timely delivery of the vaccine to doctors' office, c) availability of vaccine for the entire influenza season, d) provision of information to doctor about the vaccine, and e) provision of information for distribution to doctors'

patients. An open-ended question solicited comments.

Data analysis included frequencies and proportions of the ratings for each item and created a summary index (SATISFIED) by dichotomizing the scores for each item (i.e., excellent/very good/good = 1, fair/poor = 0) and summing the scores across the items. We explored for associations between ratings and the index scores by size of the community in which the doctors practised, and by RHA (2002 boundaries) using analysis of variance at $\alpha = 0.05$. Data were analyzed using STATA statistical software.¹ Responses to the open-ended question were content analyzed using methods recommended by Miles and Huberman.²

The Conjoint Health Research Ethics Board of the University of Calgary approved the study.

RESULTS

Response

Of 2,650 eligible physicians who were surveyed, 1,387 (52.3%) returned a long questionnaire. An additional 372 persons (14.0%) returned a completed mini-survey. Of the 1,387 doctors who returned a long questionnaire, 1,243 were eligible for the present analysis, as were 344 of those who returned a completed mini-survey. Respondent type (main survey respondent vs. mini-survey respondent vs. non-respondent) did not vary by gender, RHA or time of graduation from medical school.

Vaccination of patients

The proportion of physicians who vaccinated one or more patients in the fall of 2002 was similar for those who completed the long questionnaire (1013/1243, 81.5%) and those who completed only the mini-survey (286/344, 83.1%). The proportions of physicians who vaccinated patients varied by RHA (Figure 1).

Sources of vaccine and satisfaction with RHA services

Most doctors obtained influenza vaccine from their RHA (97.4%), however other sources were also used (Table I). Only 372 doctors (44.1%) ordered vaccine exclusively from an RHA. Figure 2 displays the proportion of respondents who rated each aspect of service provision by the RHA as

TABLE I

Sources of Influenza Vaccine Supply
(N = 843; more than one response possible)

Sources	N (%)
RHA	821 (97.4)
Other source	
Local pharmacy	316 (37.5)
Pharmaceutical company	27 (3.2)
Prescription for purchase	56 (6.6)
Other	10 (1.2)

Figure 1. Percentage of doctors who administered influenza vaccine in 2002 by RHA

Other: Data combined for RHAs 14-17 due to small numbers in strata

excellent/very good/good. This proportion was highest for «provision of information to me about the vaccine» and lowest for «provision of information for distribution to my patients». Three items were rated as poor/fair by more than 10% of respondents. More than one third of respondents (37%) were dissatisfied with provision of information for distribution to patients. Poor/fair ratings were also given by 16% of respondents for timeliness of vaccine delivery to offices and by 18% for vaccine availability over the entire influenza season.

The mean SATISFIED score was significantly lower for doctors who also ordered vaccine from a source other than RHA (4.0 vs. 5.0; $p < 0.0001$).

The mean SATISFIED score did not vary by community size, but varied significantly by RHA ($p = 0.01$). Examination of individual items showed there was a significant association between RHA and item rating for availability of vaccine for the entire influenza season, and for provision

of information for distribution to patients. Findings were similar when the analysis was done using the RHA boundaries as revised on April 1, 2003 when the number of RHAs was reduced from 17 to 9.

Comments were made by 233 doctors. Similar proportions of those who did or did not make comments ordered vaccine from an RHA. Those who made comments were less satisfied with RHA services than those who did not make comments (mean SATISFIED score 3.9 vs. 4.2; $p = 0.005$). Content analysis (Table II) revealed two major themes: enablers/barriers to physicians vaccinating patients, and roles of RHA/Ministry of Health. Enablers/barriers to physicians vaccinating patients included the costs of providing clinics, vaccine availability, inadequate remuneration for vaccinating patients, and delivery of vaccine to physician offices as well as communication about vaccine availability, a lack of clear billing guidelines, reporting/paperwork requirements,

TABLE II
Major and Minor Themes Arising from Comments from Open-ended Questions
(N of respondents who made comments: 233)

Major Theme	Minor Theme	N (%) of Those Who Made One or More Comments
Enablers/Barriers to Physicians Vaccinating Patients		128 (54.9)
	Costs of providing clinics: reminder recall, staffing, supplies	37 (15.9)
	Vaccine availability	24 (10.3)
	Inadequate remuneration	22 (9.4)
	Delivery of vaccine to physician office	14 (6.0)
	Communication re: vaccine availability	8 (3.4)
	Unclear billing guidelines	5 (2.1)
	Reporting requirements/paperwork	4 (1.7)
	Need for patient education materials	4 (1.7)
Roles of RHA/Ministry of Health	Communication re: vaccination records	3 (1.3)
		40 (17.2)
	Increase eligibility for free vaccine	16 (6.9)
	Provide recall system/registry	12 (5.2)
	Provide/increase access points for vaccination	7 (3.0)
	Educate health care workers and the public	3 (1.3)

Figure 2. Percentage rating provision of services by RHA excellent/very good/good by service

need for patient education materials and communications about vaccination records. The comments also addressed the roles of the RHAs/Ministry of Health in four areas: increasing eligibility for free vaccine, providing recall system/registry, providing/increasing access points for vaccination, and educating health care workers and the public.

DISCUSSION

The strengths of this study include the province-wide focus and the use of the mini-survey strategy to obtain data on a

key variable (vaccinating patients) among respondents unwilling to complete a long survey. The distributions of RHA, gender and time of graduation from medical school did not differ by type of respondent (main survey vs. mini-survey vs. non-respondent); despite this, however, it is possible that respondents to the main survey differed from both mini-survey respondents and non-respondents with respect to their satisfaction with RHA services. It is not possible to assess the generalizability of the themes because they were developed from comments provided only by respondents to the main questionnaire. In addition,

only a minority of main-questionnaire respondents made comments and these persons were less satisfied with RHA services than the other main-survey respondents.

The majority of family physicians in Alberta provide influenza vaccination services to their patients, and this proportion is higher than that previously observed in Quebec.³ However, the proportion of Alberta doctors who vaccinate varies by RHA. Although the most common supplier for the vaccine is the RHA (i.e., publicly funded vaccine), other suppliers (particularly local pharmacies) are also used. Doctors who obtained vaccine from suppliers other than the RHA were less satisfied with RHA services. This dissatisfaction might be a reason for obtaining vaccine from sources other than RHA, however, in Alberta (unlike Ontario) the publicly funded program targets risk groups rather than the entire population. Physicians may be obtaining vaccine from sources other than RHA in order to administer it to people who are not eligible for publicly funded vaccine.

The variation by RHA for both satisfaction with RHA services and proportion of doctors who vaccinate patients suggests the hypothesis that satisfaction with RHA services may be one of the causal factors in the physician decision to provide vaccination to patients; although other factors may also be important. We were not able to directly test this hypothesis as only those doctors who vaccinated patients were asked to rate RHA services.

Three services provided by RHAs that have immediate implications for improvement were rated as poor/fair by more than 10% of respondents: 1) provision of information for distribution to patients (37%), 2) timely delivery of the vaccine to my office (16%) and 3) availability of vaccine for the entire influenza season (18%). Some of the minor themes from the content analysis are directly consistent with the three items most frequently rated as poor/fair by the doctors. However the other minor themes also suggest several important hypotheses for further investigation. Specifically, they suggest that enablers/barriers to provision of vaccination services are very important and that these extend beyond the five issues for which inquiry was made in the quantita-

tive questions. In particular, future attention should be paid to the costs to doctors of providing clinics (including reminder/recall, staffing and supplies) and the adequacy of remuneration for physicians who vaccinate. The RHAs and Ministry of Health are suggested to have roles in addressing these issues, particularly by increasing the eligibility for free vaccine and in providing a recall/registry system for vaccination. A number of barriers to vaccination by physicians have been reported: lack of assistant available to vaccinate patients,⁴ manufacturing delays, distribution problems, and poor remuneration.⁵ The current data also suggest that requirements for documentation should be simplified. An electronic health record, which does not include immunization information, is in development in Alberta.⁶ A minor theme suggests that immunization information should be part of that record. Examination of the adequacy of the remuneration provided to Alberta doctors for vaccinating patients as well as the assumptions on which the remuneration is based should be conducted. Assistance with billing guidelines is also desirable.

The minor theme of increasing eligibility for publicly funded vaccine may reflect awareness of the recommendations of the National Advisory Committee on Immunization that any individual who wishes to protect him/herself from influenza should be encouraged to receive the vaccine.⁷ However, we hypothesize that the theme might also have arisen because doctors find it confusing or inconvenient to track supplies of publicly funded vaccine for persons eligible to receive it under current program guidelines.

CONCLUSION

Alberta RHAs should place a high priority on developing concise informational resources on influenza vaccination for doctors to distribute to patients, timeliness of vaccine delivery and availability of vaccine for the entire vaccination season. The variation by RHA in the proportions of doctors who vaccinate patients as well as in satisfaction with RHA services also indicate that further research may identify best practices that should be implemented by all RHAs to improve their partnerships with physicians for influenza vaccination. This might increase the proportion of doctors who vaccinate their patients.

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RÉSUMÉ

Contexte : Les médecins de l'Alberta peuvent demander des stocks de vaccins antigrippaux subventionnés par l'État pour les administrer aux patients qui respectent les critères du programme provincial.

Objet : Déterminer la proportion de médecins de famille de l'Alberta qui vaccinent des patients, leurs sources d'approvisionnement en vaccins et leur évaluation de divers aspects du programme de santé publique axé sur les vaccins antigrippaux.

Méthode : Dans le cadre d'une enquête postale transversale menée en 2003, nous avons demandé aux médecins de remplir un questionnaire de neuf pages ou un mini-questionnaire d'une page. La proportion de médecins qui vaccinaient leurs patients contre l'influenza a été estimée séparément selon le questionnaire auquel ces médecins avaient répondu. Nous avons utilisé des tableaux des fréquences et des tableaux en croix pour examiner les sources d'approvisionnement en vaccins et les notes accordées par les médecins à cinq aspects des services offerts par les offices régionaux de la santé (ORS) dans le cadre du programme des vaccins antigrippaux.

Résultats : Le taux de réponse au questionnaire de neuf pages était de 52,3 % (1 387/2 650); 14 % de plus (372 médecins) ont rempli le mini-questionnaire. La proportion des répondants ayant vacciné un ou plusieurs patients contre l'influenza à l'automne 2002 était de 81,5 % pour le long questionnaire et de 83,1 % pour le mini-questionnaire. Les vaccins provenaient le plus souvent d'un ORS. Trois éléments ont été jugés faibles ou passables par plus de 10 % des répondants : l'information à distribuer aux patients (37 %), la rapidité de livraison des vaccins au cabinet du médecin (16 %) et la disponibilité des vaccins pendant toute la saison grippale (18 %). Les cotes attribuées aux divers éléments variaient selon l'ORS, mais l'information à distribuer aux patients était un problème généralisé.

Conclusion : Il faudrait améliorer d'urgence les ressources que les médecins peuvent distribuer à leurs patients, la rapidité de livraison des vaccins au cabinet du médecin et la disponibilité des vaccins tout au long de la saison grippale.

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