Patient Views on Reminder Letters for Influenza Vaccinations in an Older Primary Care Patient Population

A Mixed Methods Study

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ABSTRACT

Objectives: To explore the perspectives of older adults on the acceptability of reminder letters for influenza vaccinations.

Methods: We randomly selected 23 family physicians from each Family Health and Primary Care network participating in a demonstration project designed to increase the delivery of preventive services in Ontario. From the roster of each physician, we surveyed 35 randomly selected patients over 65 years of age who recently received a reminder letter regarding influenza vaccinations from their physician. The questionnaires sought patient perspectives on the acceptability and usefulness of the letter. We also conducted follow-up telephone interviews with a subgroup of respondents to explore some of the survey findings in greater depth.

Results: 85.3% (663/767) of patients completed the questionnaire. Sixty-five percent of respondents recalled receiving the reminder (n=431), and of those, 77.3% found it helpful. Of the respondents who recalled the letter and received a flu shot (n=348), 11.2% indicated they might not have done so without the letter. The majority of respondents reported that they would like to continue receiving reminder letters for influenza vaccinations (63.0%) and other preventive services (77.1%) from their family physician. The interview participants endorsed the use of reminder letters for improving vaccination coverage in older adults, but did not feel that the strategy was required for them personally.

Conclusions: The general attitude of older adults towards reminder letters was favourable, and the reminders appear to have contributed to a modest increase in influenza vaccination rates.

Key words: Reminder systems; preventive health services; influenza vaccine; patient satisfaction

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

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There is substantial evidence supporting patient reminders as an effective tool for increasing influenza vaccination rates in older adult populations. A systematic review found that all types of patient reminders, including letters, improved the uptake of influenza immunizations.¹ Reminders are more effective with increased frequency and degree of personalization² and with the inclusion of educational materials.³

Few studies have examined patient perspectives on reminders. Survey findings suggest that older patients are more likely to find a reminder helpful,⁴ and that a letter from a physician is the primary factor influencing many individuals' vaccination decisions.⁵ Patients also report preferring that their primary care providers take a more proactive approach to influenza vaccination.⁶ Eliciting patient feedback on reminder systems for preventive services can help ensure that features important to patients are included, potentially improving compliance with the recommendations.⁷

As part of the *Provider and Patient Reminders in Ontario: Multi-strategy Prevention Tools* (P-PROMPT) project, an influenza vaccination reminder letter intervention was implemented for older adults in Primary Care Network (PCN) and Family Health Network (FHN) practices across southwestern Ontario. These health care delivery models are characterized by patient rostering, a capitation payment structure, and financial incentives to physicians for providing targeted preventive services.⁸

The purpose of this mixed methods study was to examine patient views on reminder letters for influenza vaccinations. We used a questionnaire to gather information on the acceptability and utility of the reminder letters, followed by qualitative interviews to explore the survey findings in greater depth.

METHODS

We used a sequential explanatory mixed methods design, which involves qualitative data collection and analysis subsequent to quantitative data collection and analysis.^{9,10} Ethics approval was obtained from the McMaster University Research Ethics Board.

Patient surveys

We used multistage cluster sampling to randomly select participants.¹¹ One physician from each PCN/FHN network was random-

ly selected and asked to participate (n=23). If a physician declined (n=2), we randomly selected another physician from the same network. Physicians were eligible if they sent 30 or more influenza vaccination reminder letters (n=199) and had not been selected to participate in other surveys conducted concurrently by the P-PROMPT project.

Postal surveys typically obtain response rates of approximately 60%.¹² The target sample size was 400 completed questionnaires, which allowed for a 5% margin of error at a 95% confidence level; therefore, a mail-out of approximately 700 questionnaires was required (30 patients for each of 23 physicians). The sampling frame only included patients who were mailed a reminder. We increased the sample to 35 randomly selected patients per practice to allow the participating physicians to remove any patients who should not receive a questionnaire, as we wanted to prevent the sample from dropping too low if physicians removed a substantial number.

The questionnaires were mailed with accompanying letters from each participant's family physician in January 2006, following the completion of the 2005 influenza vaccination campaigns. The self-administered tool consisted primarily of categorical scales (Yes/No/Unsure) with one five-point Likert scale (1 = not influenced; 5 = influenced a lot), and an additional page eliciting socio-demographic information. The questionnaires were mailed by the project office to the same mailing address used for the reminder letters, and included a stamped and addressed return envelope. Follow-up questionnaires were sent 5 weeks after the initial mail-out.

Data were analyzed using SPSS 14.0, and a significance level of 0.05 was used for all statistical tests. We calculated frequency distributions and descriptive statistics for each questionnaire item, and we grouped Likert scale ratings to determine agreement (4 or 5), disagreement (1 or 2), or a neutral stance (3).

To explore characteristics of positive responses, we estimated multilevel logistic regression models for three questionnaire items: whether the respondent found the reminder helpful, agreement that the letter influenced decision-making, and desire to receive future reminders for influenza vaccinations. The models were estimated using the GENMOD procedure in SAS 9.1 with the physician as the clustering

TABLE I

The Demographic Profile of Survey Respondents (n=663)

Respondent Characteristic	n	%
Mean age (SD) = 74.0 (6.9)	N/A	N/A
Male	263	39.7
Urban residence	473	71.3
Currently married/common law	440	66.4
Live in retirement or LTC* facility	33	5.0
Canadian-born	456	68.8
English as first language	371	56.0
Education		
Elementary	141	21.3
High School	253	38.2
Post-Secondary	242	36.5
Self-reported health status		
Excellent	232	35.0
Good	271	40.9
Fair	137	20.7

* Long-term care

TABLE II

Response Frequencies for Questions Completed by All Respondents (n=663)

Survey Item	% Yes (n)
Did you receive a letter from your family physician in the last 3 months reminding you to have a flu shot this year?	65.0% (431)
Prior to that letter, have you ever received a reminder from your physician about flu shots?	50.8% (337)
Would you like to receive a reminder letter from your doctor every year when you are due for a flu shot?	63.0% (418)
Would you like to receive a reminder letter from your doctor when you are due for other preventive care services?	77.1% (511)
Would you prefer to receive reminder letters and educational materials in a language other than English?	4.4% (29)

unit and the following independent variables: sex, age, place of residence (urban/rural), Canadian-born (Y/N), resides in a retirement community or long-term care facility (Y/N), highest level of education (elementary/high school/post-secondary), self-assessed health status (poor/good/excellent), and self-reported flu shot in 2005 (Y/N).

Telephone interviews

As part of the questionnaire mail-out, 10 randomly selected patients from each practice received an invitation to participate in a telephone interview. This number was based on qualitative recruitment rates from concurrent surveys by the P-PROMPT project. We randomly selected participants from the pool of volunteers.¹¹

All interviews were done via telephone and we made three attempts to contact each individual. All participants were asked to provide explicit oral consent to the interview and audio-taping. We used a semi-structured interview strategy with an open-ended conversational technique,¹³ and all interviews were approximately 10 to 15 minutes in length. The questions were developed a priori based on preliminary results from the questionnaire, and

interviews were conducted until saturation was reached (at n=13 interviews).

We transcribed the interview data verbatim into the software program NVivo 2.0. We analyzed the data using a template style, which involved the creation of a coding manual based on the interview questions and survey findings, with refinement of codes throughout the analytic process.^{14,15} Upon completion of the coding, we sorted and reviewed the coded segments to find emergent themes and summaries.¹⁴

RESULTS

Survey results

The physicians removed 38 of the randomly selected patients (n=805) from the mailing list, for a total sample size of 767 (95.3%). The excluded individuals were older (p=0.01) and a greater proportion lived in an urban area (p=0.01) than patients who received a survey. Explanations for exclusion were provided by some physicians, and usually related to the patient being ill or deceased.

A response rate of 86.4% (n=663 completed questionnaires) was achieved, and the demographic profile of respondents is shown in Table I. Respondents were slightly

TABLE III

Response Frequencies for Questions Completed by Respondents Recalling the Reminder Letter (n=431)

Survey Item	% Yes (n)
Did it let you know that you were due for a flu shot?	89.1% (384)
Did it let you know why it is important to get a flu shot each year?	81.0% (349)
Did it let you know the potential side effects of receiving a flu shot?	47.3% (204)
Did it let you know when and where you could get your flu shot?	90.7% (391)
Did you find the reminder letter helpful?	77.3% (333)

TABLE IV

Quotes Representative of Interview Participants' Views on Emergent Themes in the Qualitative Analysis

Topic	Quote
a) Reinforcement of desire to have flu shot	"I think it's very good. Everybody knows that flu season is coming up and I guess I might take the flu shot, but if you get a letter it's definitely concrete evidence, and you know you mark your calendar and you call your doctor and you make your appointment. It reinforced that you want to make your phone call."
b) Value of information from reminder letter	"Well, I had it in the back of my mind at that time that flu shot time was coming up, so the reminder was I think useful in the sense that it made it very clear to me that my doctor, my physician, was ready to start administering these things...it gave me a clear signal as to when I could call him to make an appointment to get the shot."
c) Belief in the strategy for others, but not necessary for self	"I mean, I would have got it anyways, but I think it does give people that aren't sure, it gives them a little reminder." "...because I imagine some people might forget or not go for one if they didn't have a reminder. Like we usually figure the end of November that we'd have ours anyways, but it's probably a good idea for them to send out a letter to remind people."
d) Measure unnecessary and excessive	"I think that anybody who is my age - you know, in the senior's group - would be the same. They would get it anyways, and those who don't want it couldn't be talked into it...in the back of my mind it's another expense that I feel probably wouldn't affect that many people because the people who are going to have them are aware of it anyways...And you know, there's enough warnings in the paper from the government, you know it just seems that it's a superfluous measure..."
e) Measure ineffective for chronic refusers	"Well, I read it and I ignored it because I was not going to go for a needle. I think it's good for some people who insist on having them every year...I think it's a good reminder for people that do take it, but to me it was just a letter..." [INTERVIEWER: So a letter wouldn't change your mind?] "Nope."

younger than non-respondents (mean age 74.0 years vs. 75.5 years), but did not differ in terms of gender or place of residence.

The response frequencies of select questionnaire items are presented in Tables II and III. A high proportion of respondents (84.0%) reported receiving an influenza vaccination during the 2005 season. Many respondents did not recall the reminder (Table II) or some important information contained within the letter (Table III). It is noteworthy that most respondents reported that the reminder provided information regarding the times and locations to receive a vaccination (Table III), although only 7 of the 23 participating physicians included this information in their letter.

The majority of respondents who recalled the reminder letter reported that they found it helpful (Table III). Nearly one third (31.3%) agreed that the letter

had influenced their decision to have a flu shot. Of the vaccinated respondents who recalled the reminder (n=348), 11.2% indicated that they might not have obtained the flu shot had they not received the letter from their physician. The participants reported wanting reminder letters in the future, both for flu shots and for other preventive services (Table II).

The multilevel logistic regression analyses indicate that the only variable significantly predictive of patient responses for each questionnaire item was vaccination status for 2005/06. Specifically, patients who received the influenza vaccination were more likely to report that they found the reminder helpful ($\chi^2=34.6$; $p<0.01$), that the letter influenced vaccination decisions ($\chi^2=12.5$; $p<0.01$), and that they wanted to continue receiving reminder letters for influenza vaccinations ($\chi^2=49.3$; $p<0.01$).

Patient interview findings

Forty-six survey respondents volunteered to participate in the qualitative interviews. We contacted the first 20 volunteers on the pre-randomized list: 13 interviews were conducted, 2 individuals subsequently refused participation, and we were unable to reach 5 potential participants. Interviews ranged from 11 to 21 minutes (average=13 mins). Participants had a mean age of 71 years (SD=4.9), and 4 were male. Twelve participants received an influenza vaccination for the previous two years, and the 1 unvaccinated participant had never received a flu shot.

Participants generally had positive responses to the reminders for influenza vaccinations. They liked the letter because they felt that it reinforced that they wanted and needed a flu shot (Table IVa). Most stated they would have obtained a vaccination irrespective of the reminder, as it had become part of an annual routine. Although the letter did not change their behaviour, several participants liked receiving the reminder for the information contained within (Table IVb). The predominant message from older adults regarding influenza vaccination reminder letters was that they did not feel that a letter was necessary for them personally, although they believed this strategy was an effective means for improving uptake in others (Table IVc).

One participant felt that the measure was unnecessary and excessive given that media campaigns promote the flu shot every fall (Table IVd) and did not feel that letters would influence chronic refusers, a sentiment confirmed by the individual who had never been vaccinated (Table IVe). Participants were fairly evenly divided between wanting to receive reminder letters in the future and feeling that it was unnecessary for them personally.

DISCUSSION

The findings from the survey and the qualitative interviews suggest that the participants had favourable attitudes toward the use of reminder letters for maximizing influenza vaccination. Despite these favourable opinions, a significant number of survey respondents did not remember the letter, although the reminder was mailed to the same address as the questionnaire. Many respondents also did not accurately recall

some of the information contained within. This is consistent with findings from a survey exploring patient attitudes toward reminders for cholesterol screening, which also found that many respondents did not recall the reminder or its contents.⁷

The majority of respondents reported that they found the letter helpful, although a smaller number reported that they wanted to continue receiving reminders. This discrepancy is explained by the interview findings, as many participants reported that they already obtain a flu shot every year and thus did not feel that they required a reminder. This may also be an explanation for the greater proportion of patients wanting future reminders for other preventive services. Although many did not believe that reminders were needed for themselves, the interview participants endorsed the use of this strategy for others.

Survey respondents who did not find the reminder helpful may have received the letter after the vaccination was obtained or an appointment booked, as mentioned by several interviewees. Alternatively, the individuals who did not find the letter helpful may have been the same ones who did not receive influenza vaccinations. The results of the multivariate analyses suggest that patients who already obtain and endorse the vaccination are predominantly the same individuals with favourable attitudes toward reminders. Further research is needed to evaluate the impact of reminder letters for chronic vaccine refusers and other hard-to-reach groups.

There are several limitations to our findings. First, the questionnaire may have biased the results, as it was developed by the investigators and was not extensively tested for validity or reliability. Additionally, 84% of older adults in our sample received an influenza vaccination, as compared with a reported rate of 75% for Ontario,¹⁶ potentially leading to more favourable responses towards the use of the reminder letter strategy. The significant proportion of patients who did not remember the reminder or who inaccurately recalled the information that was contained within also raises concerns about the credibility and accuracy of other responses. Finally, the demographic profile of the sample may have been affected by having physicians remove patients who should not receive a questionnaire.

Despite these limitations, there is evidence to suggest that older adults are receptive to receiving reminder letters regarding annual influenza vaccinations. The letters do influence some patients, and the reminders appear to be responsible for a modest increase in vaccination delivery. Thus, the use of reminder letters for maximizing the delivery of influenza vaccinations is an acceptable intervention for improving vaccination rates, even if not all patients feel it is necessary. Future research should focus on investigating subgroups of the older adult population where reminders will be the most beneficial, and on features of reminder letters that promote patient adherence.

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RÉSUMÉ

Objectifs : Étudier le point de vue de personnes âgées sur l'acceptabilité des lettres de rappel concernant les vaccins antigrippaux.

Méthode : Nous avons sélectionné au hasard 23 médecins de famille associés aux réseaux de santé familiale et de soins primaires compris dans un projet de démonstration visant à accroître la prestation des services préventifs en Ontario. Sur la liste des patients de chaque médecin, nous avons sondé 35 patients de plus de 65 ans sélectionnés au hasard qui avaient reçu récemment une lettre de rappel de leur médecin concernant les vaccins antigrippaux. Dans le questionnaire, on demandait au patient ce qu'il ou elle pensait de l'acceptabilité et de l'utilité de la lettre. Nous avons aussi mené des entrevues téléphoniques de suivi auprès d'un sous-groupe de répondants pour approfondir certains des résultats du sondage.

Résultats : 85,3 % des patients (663/767) ont rempli le questionnaire. Soixante-cinq p. cent des répondants se souvenaient d'avoir reçu la lettre de rappel (n=431), et parmi eux, 77,3 % l'avaient trouvée utile. Parmi les répondants qui se souvenaient de la lettre et qui s'étaient fait vacciner contre la grippe (n=348), 11,2 % ont indiqué qu'ils ne l'auraient peut-être pas fait sans cette lettre. Les répondants ont déclaré en majorité qu'ils aimeraient continuer à recevoir des lettres de rappel de leur médecin de famille concernant les vaccins antigrippaux (63 %) et d'autres services de prévention (77,1 %). Les participants aux entrevues étaient d'accord avec l'envoi de lettres de rappel pour améliorer la couverture vaccinale chez les personnes âgées, mais ne considéraient pas qu'une telle stratégie était nécessaire dans leur cas personnel.

Conclusion : L'attitude générale des personnes âgées à l'égard des lettres de rappel était favorable, et les rappels semblent avoir contribué à une hausse modeste des taux de vaccination contre la grippe.

Mots clés : systèmes de rappel; services préventifs de santé; vaccin contre la grippe; satisfaction des patients