

Compliance With Influenza Immunization: A Survey Of High-Risk Patients At A Family Medicine Clinic

Heidi L. Hutchinson, MD, and Lee A. Norman, MD, MHS, MBA

Background: Realizing that influenza is an important health problem and that vaccination rates continue to be low, our primary survey goal was to find factors that affect patient compliance with the influenza immunization program at the Swedish Family Medicine Clinic in Seattle, Washington.

Methods: Five hundred nineteen high-risk patients from a total clinic population of 4926 were mailed a questionnaire that asked about their influenza immunization history, their assessment of their influenza risk, and their reasons for obtaining or not obtaining the influenza vaccination.

Results: The survey results revealed several important issues about this group: many patients were not aware of their increased risk for influenza; reminder letters were helpful, especially for older patients; younger high-risk patients were less likely to comply with immunization recommendations than older patients; and patients who were noncompliant with immunization recommendations in previous years would likely continue to be noncompliant.

Conclusions: To improve influenza immunization rates, the following interventions are recommended: (1) reminder letters should be sent to patients at appropriate times to explain their risk factors, (2) younger high-risk patients should receive intensive education about the importance of influenza immunization and why they are considered to be at increased risk, and (3) high-risk patients who have failed to obtain the vaccination in previous years should be the target of intensified efforts. (J Am Board Fam Pract 1995; 8:448-51.)

With more than 40,000 deaths occurring in each of several recent influenza epidemics,¹ it is clear that prevention of influenza is an important health consideration. An estimated less than 25 percent of high-risk patients receive the vaccination annually,² even though immunizing these patients yearly, before the influenza season, is the most important measure for decreasing the medical and economic impact of influenza.¹

Several studies have shown improved patient compliance using differing interventions in preventive health care programs.²⁻¹⁰ These interventions included mailed patient reminders,^{2,3} physician reminders,⁴ physician incentives,⁵ an appointment with a primary care provider,⁶ a combination of both patient and physician reminders,⁷⁻⁹ and a patient-carried reminder card.¹⁰ These studies did not, however, survey patients directly about their own self-assessment of influenza risk and why they have or have not obtained an influenza vaccination in the past. Our study surveyed high-risk patients to find out this information.

Methods

In February 1994 a one-page questionnaire was mailed to all known high-risk patients attending the Swedish Family Medicine Clinic in Seattle, Washington; a second mailing was sent the following month. The questionnaire requested information regarding immunization history, self-assessment of influenza risk, and reasons for or against obtaining an influenza vaccination.

The survey group was selected using the Quality Care Program (QCP; Cybis Medical Systems, Inc., Bellevue, Washington), a comprehensive, computer-assisted, ambulatory care quality-improvement program that has specific goals and methodology for assuring that patients receive health maintenance and preventive care. It does so through physician and patient reminders that are unique to each patient, based upon their age, sex, and medical and family histories. The physician interaction with the system involves a one-page multipurpose work sheet that displays important patient medical information and allows physicians to recognize patients at high risk for specific diseases or illnesses.

Five hundred nineteen of the 4926 clinic patients were considered to be at high risk for influenza. All 519 patients were mailed a vaccination reminder letter in fall 1993 as part of the immuni-

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From the Department of Family Medicine, Swedish Medical Center, Seattle, Washington. Address reprint requests to Heidi L. Hutchinson, MD, 1101 Madison, Suite 270, Seattle, WA 98104.

zation program. These patients were also sent the study questionnaire.

Results

Of the 519 questionnaires distributed, 335 were returned for a response rate of 64 percent. Eight questionnaires were excluded because of incompleteness, leaving 327 survey respondents with sufficiently completed questionnaires. The respondents had an average age of 55 years, ranging 6 to 98 years, and they were 61 percent female. When asked, "Have you ever received a flu shot?" and "Did you receive a flu shot this year?" 267 (nearly 82 percent) responded that they had at some time in their life received an influenza vaccination; 233 (72 percent) of 326 (there was 1 nonrespondent) said they had received one during the fall of 1993.

One hundred sixty-seven (72 percent) of the 233 respondents who did receive the vaccination during fall 1993 obtained it at the Swedish Family Medicine Clinic, 34 (15 percent) received it at another health facility, and 32 (14 percent) received it at work. Not all survey respondents answered each of the questions. Of the 227 who answered, their reasons for receiving the vaccination included 100 (44 percent) who stated they always receive a vaccination, 58 (26 percent) who were prompted by the reminder letter from the clinic, 28 (12 percent) through media announcements, 20 (9 percent) by physician recommendation, and 21 (9 percent) for other reasons.

Of the 93 respondents who did not receive the vaccination, only 82 answered the question relating to their reasons for not obtaining the vaccination. Of these 82 respondents, 31 (38 percent) refused because they did not believe they were at risk for influenza. Fourteen (17 percent) stated they had had an adverse reaction to a previous vaccination, 11 (13 percent) thought the risks of

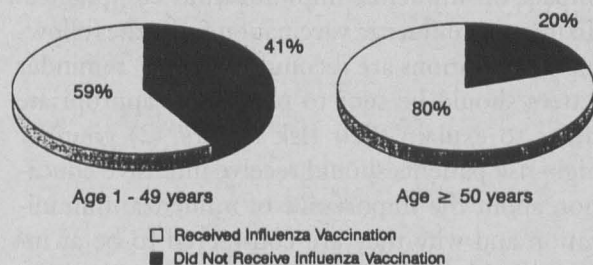


Figure 1. Influenza vaccination compliance rates in younger and older survey respondents.

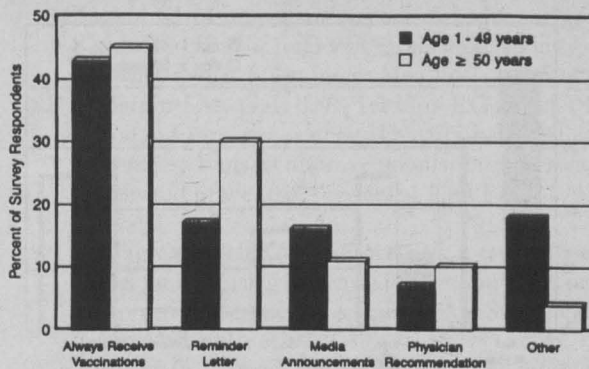


Figure 2. Stated reasons for receiving influenza vaccination in younger and older survey respondents.

the shot outweighed the benefits, 8 (10 percent) were too busy, 7 (9 percent) said the clinic provided inconvenient times to obtain the vaccination, and 11 (13 percent) had other reasons.

Using the 323 respondents who answered the corresponding questions, Figure 1 shows the relation between patient age and immunization compliance. Of the 133 patients younger than 50 years of age, 78 (59 percent) received the vaccination. One hundred fifty-two (80 percent) of the 190 patients older than 50 years of age received the vaccination, a statistically significant difference ($P < 0.01$).

Figure 2 compares the ages of patients with their reasons for obtaining the vaccination. The reminder letter was more helpful in the group older than 50 years of age, resulting in a statistically significant difference ($P < 0.01$) between the age groups on this variable. The other reasons for obtaining the influenza vaccination were similar in each age group.

Figure 3 compares the age of patients with their reasons for not obtaining the vaccination. While there was a trend showing that the younger group more often believed they were not at risk for influenza, the difference was not statistically significant. The older group was more likely to reject the influenza vaccination because of an adverse reaction to a previous vaccination.

The final study question asked whether the patient planned to obtain a vaccination in 1994. Not all survey respondents answered this question. The data show that 220 (98 percent) of 225 respondents receiving the vaccination in 1993 did plan to continue yearly immunization. In comparison, of the group that did not obtain a vaccination in 1993, 51 (65 percent) of 79 respondents did not plan to get vaccinated in 1994.

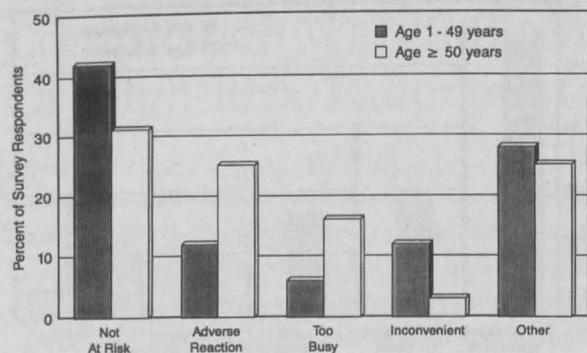


Figure 3. Stated reasons for refusing influenza vaccination in younger and older survey respondents.

Discussion

We found several important issues concerning patient compliance with the influenza immunization program at the Swedish Family Medicine Clinic. Reminder letters were helpful, especially for older patients. This finding is supported by other studies showing that patients were more likely to receive the vaccination if they had been sent a reminder letter.^{2,3}

Also noted was a difference in compliance between younger and older patients. There was a two times higher risk of not obtaining the vaccination if the patient was in the younger group. This difference appeared to be related to their perceptions of risk; younger high-risk patients were less likely to perceive themselves to be at risk, and they were therefore less likely to receive the vaccination. A substantial number of older patients also did not perceive themselves to be at risk. The older patients had other reasons for not seeking immunization, including a vaccine reaction in the past.

A large number of patients who did not receive the influenza vaccination in 1993 were not planning to receive it in the following year. Without further intervention, these high-risk patients will likely continue to be noncompliant with influenza immunization recommendations in the future.

There was a 54 percent (278) immunization rate of all 519 high-risk patients in 1993 at the Swedish Family Medicine Clinic, more than twice the national estimate.² We believe an important strength contributing to this success is the Quality Care Program (QCP). This computer-assisted system, described in detail elsewhere,^{11,12} allows for easy selection of high-risk patients in the clinic, assuring that all are at least offered the

influenza vaccine, usually through both a mailed reminder to the patient's home and a prompted verbal reminder at an office visit during the influenza season.

The QCP is a software program that contains patient demographic and clinical information, entered by a data-entry office employee from a health risk factor questionnaire. The extensive data base serves numerous purposes: (1) it is used to generate an encounter work sheet at each patient visit that contains health maintenance intervention completion information and displays those cancer-screening, preventive care, and immunization interventions that are due; (2) it generates reminder letters for health maintenance interventions; (3) it is used for tracking health care outcomes, including overdue test results, to assure that they are not lost; (4) it has a visit-specific practice guideline and physician decision-support module; and (5) it allows for physician and clinic performance tracking to monitor adverse clinical outcomes, patient and physician health maintenance compliance rates, and patient satisfaction.

The system operates on a personal computer. The QCP coordinator divides his time between QCP operation, quality management activity, clinical and effectiveness research, and general office work.

The encounter work sheet, displayed by the QCP at each clinic visit, provides a reminder for influenza immunization apart from scheduled influenza vaccination clinics. This reminder gives the physician an additional opportunity to educate high-risk patients about the importance of the immunization, explain the reasons why they are believed to be at risk, and alleviate misperceptions about the risks of the vaccination.

Summary

We found certain factors to have an important impact on influenza immunization compliance. To improve influenza vaccination rates, the following interventions are recommended: (1) reminder letters should be sent to patients at appropriate times to explain their risk factors, (2) younger high-risk patients should receive intensive education about the importance of influenza immunization and why they are considered to be at increased risk, and (3) high-risk patients who have failed to obtain the vaccination in previous years should be the target of intensified efforts.

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