

# Low Influenza Vaccination Rate over the Age of 65: Should We Increase the Pressure on Medical Teams?

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In adults, the annual global attack rate of the influenza virus is estimated at 5–10% [1]. For elderly people over the age of 65 in the United States, influenza-associated deaths range between 30 and 150 per 100,000, and it is estimated that 90% of deaths due to influenza occur among the elderly [1,2].

The seasonal influenza vaccine has been shown to be effective in reducing influenza-like illnesses confirmed by serological tests in many studies [1-7], but reducing influenza-associated morbidity and mortality for populations over the age of 65 was rarely shown in randomized controlled trials [3]. Current vaccination strategies provide less protection in older adults than in younger persons [4]. A recent update of a Cochrane review on the effectiveness and safety of vaccination for the population over the age of 65 concluded: "The available evidence is of poor quality and provides no guidance regarding the safety, efficacy or effectiveness of influenza vaccines for people aged 65 years or older" [3]. The same group concluded that for the general adult population aged 18 to 65 "influenza vaccines have a modest effect in reducing influenza symptoms and working days lost. There is no evidence that they affect complications, such as pneumonia" [5].

Nevertheless, the recommendation for universal influenza vaccination over the age of 65 is widely accepted [1-3,6,8,9].

Influenza vaccines have been available since the 1940s [7]. Vaccination programs recommend that the elderly be vaccinated against influenza; in the USA the recommendation is for those  $\geq 50$  years of age, in Austria, Germany, Hungary and Russia  $\geq 60$  years of age; and in other European countries and Israel  $\geq 65$  years [6,8,9]. At a later stage, the rate of vaccination is used as a quality measurement to judge the quality of health care systems and even the quality of individual physicians. In some countries a high rate of compliance with vaccination among adults may supplement the income of primary care physicians [9,10].

Many surveys have found that the rate of vaccination is low, worldwide as well as in Israel. Surveys in the UK, Germany, Italy, France and Spain that were conducted between 2003 and 2005 found that the vaccination rate for those aged 65 was 64% [11]. A study in Sweden in 2005 found a lower rate of 46% for those aged 65 or older [12]. A random national sample of the data from the 1999 U.S. Centers for Disease Control and Prevention among those aged 65 or older found that the average influenza vaccination rate was 67% [13]. In 2007, only 57% of the members of the four health funds in Israel who were over the age of 65 were immunized against influenza [9]. The main obstacle to universal vaccination is non-compliance of the population. Many strategies have been tried to increase the vaccination rate but they have been met with limited success. A meta-analysis [14] found some evidence that personal contact through postcards, phone calls and even home visits are helpful in increasing the vaccination rate. This meta-analysis

based only on high quality RCTs found three personalized interventions (postcard or phone call) that had significant but low effectiveness in increasing vaccination rates. The meta-analysis also found two RCTs of home visit interventions that were both effective. Surprisingly, the three high-quality RCTs of reminders for physicians were found to have no effect on patients' immunization rates.

In this issue of *IMAJ*, Abramson et al. [15] attempt a different approach: namely, changing the physicians' behavior concerning their own vaccination in the hope that it will also reflect on their patients' compliance with the recommendation for immunization. The association of the physician's personal behavior and approach to patient consultation has been established for other health behaviors such as physical activity and healthy diet [16,17]. Patients who consulted with an enthusiastic doctor were also more likely to comply with cancer screening recommendations [18]. In a previous RCT, Abramson and collaborators [19] delivered a successful intervention consisting of a lecture session given by a family physician, e-mail distributed literature and reminders, and a key member of the staff who personally approached each member. These interventions increased the immunization levels of medical staff from 27% to 53% in the intervention clinics compared to 20% and 27% in the control clinics (odds ratio 3.5, 95% confidence interval 2.0–06.1) [19]. However, the results of the current study were disappointing. The difference in the rate of change of immunization between enrollees in the intervention clinic and in

RCT = randomized control trial

the control clinics was only 1%.

What can we learn from this elegant study? I believe that public immunization rates are influenced only partially by the interaction that takes place at the clinic between staff members and the public. The main components of compliance with vaccination recommendations are socioeconomic.

The data from the 1999 U.S. CDC study that assessed factors relating to influenza vaccination among those aged 65 or older found immunization rate differences between whites (68%) and blacks (53%), those with annual household incomes less than \$15,000 (58%) vs. those earning \$50,000 or more (70%), and for different employment status [14]. Also in Israel, there is a wide difference in vaccination rates between low income groups (49%) and all others (60%) [9]. In the current study [15], health fund members with complementary insurance (and with a higher average income) were 1.8 more likely to be vaccinated ( $P < 0.001$ ). This association is much stronger than that observed for immunization levels of the medical staff.

In addition, the influence of the media cannot be underestimated. This was demonstrated in many studies. In a previous report by Abramson and Levi [19], with the same setup as the current study, panic created by the media during the vaccination period was reported to have influenced 34% of the staff members, who had not been previously immunized, not to take the vaccination. It was magnified by a slow response by the authorities [19]. Several surveys in the UK during the N1H1 mini-pandemic found that the rates for vaccination were low. One reason for this may be the low level of public concern about the possibility of catching swine flu, due to the hesitant media coverage at the beginning of the outbreak. The authors concluded that when levels of concern are generally low, acting to increase the volume of mass media and advertising coverage is likely to increase the perceived

efficacy of recommended behaviors [20]. Media campaigns are organized at the state level and not at the individual clinic level, and thus the rate of immunization can barely serve as an indicator for the efficiency of the physician or the clinic. The many surveys reported by the Health Technology Assessment Journal [20] during the H1N1 outbreak agreed that "too much fuss had been made about the risk of swine flu" by the media and thus reduced the likelihood of the population being vaccinated. They conclude: "messages that highlight people's concerns or worries about the outbreak may be effective in improving uptake. Communications that emphasize the effectiveness of the vaccine in protecting against the disease are also likely to be effective."

In conclusion, we should first rethink the evidence that supports universal coverage of the influenza vaccine for all those over 65 years old. If the coverage is really desired for all, the public health authorities should expend most of their efforts on public education through balanced media coverage that distributes reliable information. From the study by Abramson et al., we learn that the clinics' staff is only a small component in achieving this goal. We must reduce the pressure on the individual staff members and probably remove influenza vaccination from the list of quality measures. That should also be true for other measurements that were not proven completely beneficial.

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CDC = Centers for Disease Control