

## Barriers to Influenza Immunization

Mohsen Moghaddami,<sup>1,\*</sup> and Mitra Amini<sup>2</sup>

<sup>1</sup>Health Policy Research Center, Shiraz University of Medical Sciences, Shiraz, Iran

<sup>2</sup>Quality Improvement in Clinical Education Research Center, Shiraz University of Medical Sciences, Shiraz, Iran

\*Corresponding author: Mohsen Moghaddami, Health Policy Research Center, Shiraz University of Medical Sciences, Shiraz, Iran. E-mail: moghadami@sums.ac.ir

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### Dear Editor,

Influenza is responsible for considerable global health problems each year. Complications of the disease occur especially in elderly patients as well as high-risk groups such as immunocompromised individuals and those suffering from chronic diseases such as cardiovascular or respiratory problems (1, 2). Vaccination is an effective way for reducing mortality and morbidity related to influenza, especially in the elderly and patients with underlying high-risk conditions (3-5).

Although the childhood immunization program of the Islamic Republic of Iran has been very successful (6) in preventing influenza, the same level of achievement has not been attained in adult groups (7). For example, annual influenza vaccine usage is not compatible with the summation of the number of adults aged  $\geq 65$  years and for any adult with certain chronic conditions in the country. Additionally, it should be mentioned that in Iran we have herds of animals or cross-reactive immunity against new seasonal or even pandemic influenza viruses (8).

To understand why adults do not immunize themselves as recommended, we conducted surveys of 508 adult patients eligible for influenza vaccine according to the WHO criteria who visited the Shahid Motahari infectious diseases clinic from September 2016 to February 2017 for any reason. The surveys focused on general vaccination attitudes, knowledge about influenza, and barriers for annual influenza vaccine usage. The questions included solicited information about the patient's immunization history against influenza, barriers, or reasons why they did not receive vaccines and personal demographics. History of influenza-like illnesses in recent years was also checked.

The age distribution of the study population was as follows: 18% aged 19 - 34 years, 14% aged 35 - 44 years, 40% aged 45 - 64 years, 28% aged  $\geq 65$  years. Most respondents (68%) rated their health as good to excellent, 17% reported having a serious medical condition, and the rest (15%) explained their condition as acceptable. The most common underlying high-risk conditions were immunocompromi-

sation due to immunosuppressive drugs or HIV/AIDS (15%), diabetes mellitus (13%), pregnancy (4%), hematological malignancy (16%), neurological disorders (8%), end stage renal diseases (12%), heart disease (18%), and chronic lung disease (14%).

Only 35% were aware of the need for influenza vaccine. Although awareness was higher in the immunocompromised group (65%), only 60% knew that adults should repeat annual injections in this group.

Among these high-risk patients, 20% had vaccinated or decided to be vaccinated against influenza. When asked multiple questions for possible reasons for not being immunized, 75% said: "The doctor didn't tell me I needed it." Most of them (80%) specified that they were likely to receive a vaccination if their physician recommended it. A significant number of patients (66%) said they feared receiving any type of vaccine. This skepticism may reflect misunderstandings about vaccination; for example, 90% of pregnant women and 55% of immunocompromised patients were concerned about suffering from the side effects of the vaccine.

Financial concerns were not a limiting factor for immunization for most patients. Only 6% stated that they failed to receive 1 dose of vaccine because of the cost. Immunization costing approximately 200,000 Rials (about 5 USD) would be highly valuable, for prevention of the disease and prevention of complications according to 83% of the consumers.

Our survey confirmed that many high-risk patients do not receive immunizations against influenza as recommended. This is not the first-time barriers to influenza immunization have been examined (9, 10). However, studies in Iran based on our culture and economic situation is scarce (11).

Our healthcare providers in hospital and clinical settings should talk about influenza and other necessary immunizations during regular visits or hospital admissions. The most significant practice barrier to immunization against influenza virus is other urgent concerns in clini-

cal setting; therefore, we have established standard practice procedures and protocols to suggest necessary vaccinations to inpatients and outpatients.

## References

1. Kroneman M, van Essen GA, John Paget W. Influenza vaccination coverage and reasons to refrain among high-risk persons in four European countries. *Vaccine*. 2006;**24**(5):622-8. doi: [10.1016/j.vaccine.2005.08.040](https://doi.org/10.1016/j.vaccine.2005.08.040). [PubMed: [16169638](https://pubmed.ncbi.nlm.nih.gov/16169638/)].
2. McDaid D, Maynard A. Translating evidence into practice. The case of influenza vaccination. *Eur J Public Health*. 2001;**11**(4):453-5. doi: [10.1093/eurpub/11.4.453](https://doi.org/10.1093/eurpub/11.4.453). [PubMed: [11766490](https://pubmed.ncbi.nlm.nih.gov/11766490/)].
3. Choi DK, Fuleihan RL, Walterhouse DO. Serologic response and clinical efficacy of influenza vaccination in children and young adults on chemotherapy for cancer. *Pediatr Blood Cancer*. 2016;**63**(11):2011-8. doi: [10.1002/pbc.26110](https://doi.org/10.1002/pbc.26110). [PubMed: [27327360](https://pubmed.ncbi.nlm.nih.gov/27327360/)].
4. Treanor JJ. CLINICAL PRACTICE. Influenza Vaccination. *N Engl J Med*. 2016;**375**(13):1261-8. doi: [10.1056/NEJMcpi1512870](https://doi.org/10.1056/NEJMcpi1512870). [PubMed: [27682035](https://pubmed.ncbi.nlm.nih.gov/27682035/)].
5. Vasileiou E, Sheikh A, Butler C, Ferkh K, Simpson CR. P133 Safety and effectiveness of influenza vaccines in people with asthma: a systematic review and meta-analysis. *Thorax*. 2016;**71**(Suppl 3):155.1. doi: [10.1136/thoraxjnl-2016-209333.276](https://doi.org/10.1136/thoraxjnl-2016-209333.276).
6. Moradi-Lakeh M, Esteghamati A. National Immunization Program in Iran: whys and why nots. *Hum Vaccin Immunother*. 2013;**9**(1):112-4. doi: [10.4161/hv.22521](https://doi.org/10.4161/hv.22521). [PubMed: [23442584](https://pubmed.ncbi.nlm.nih.gov/23442584/)].
7. Shokouhi S, Alavi Darazam I, Kardan G. Adult immunization among health care personnel and target groups in Iran. *Arch Clin Infect Dis*. 2015;**10**(1) doi: [10.5812/archcid.24714](https://doi.org/10.5812/archcid.24714).
8. Moghadami M, Moattari A, Tabatabaee HR, Mirahmadizadeh A, Rezaianzadeh A, Hasanzadeh J, et al. High titers of hemagglutination inhibition antibodies against 2009 H1N1 influenza virus in Southern Iran. *Iran J Immunol*. 2010;**7**(1):39-48. [PubMed: [20371918](https://pubmed.ncbi.nlm.nih.gov/20371918/)].
9. Weingarten S, Riedinger M, Bolton LB, Miles P, Ault M. Barriers to influenza vaccine acceptance. A survey of physicians and nurses. *Am J Infect Control*. 1989;**17**(4):202-7. doi: [10.1016/0196-6553\(89\)90129-6](https://doi.org/10.1016/0196-6553(89)90129-6). [PubMed: [2774292](https://pubmed.ncbi.nlm.nih.gov/2774292/)].
10. Hsu DJ, North CM, Brode SK, Celli BR. Identification of Barriers to Influenza Vaccination in Patients with Chronic Obstructive Pulmonary Disease: Analysis of the 2012 Behavioral Risk Factors Surveillance System. *Chronic Obstr Pulm Dis*. 2016;**3**(3):620-7. doi: [10.15326/jcopdf.3.3.2015.0156](https://doi.org/10.15326/jcopdf.3.3.2015.0156). [PubMed: [27981230](https://pubmed.ncbi.nlm.nih.gov/27981230/)].
11. Askarian M, Khazaeipour Z, McLaws ML. Influenza vaccination uptake among students and clinical staff of a university in Iran. *Int J Infect Dis*. 2009;**13**(4):476-82. doi: [10.1016/j.ijid.2008.09.013](https://doi.org/10.1016/j.ijid.2008.09.013). [PubMed: [19046912](https://pubmed.ncbi.nlm.nih.gov/19046912/)].