

## Summary

### **Evaluation of Attitudes and Knowledge Regarding Influenza Vaccination and Preventing Influenza Among the Medical Staff of UCK WUM in Warsaw**

The influenza virus is one of the most common causes of upper and lower respiratory tract infections. Globally, an estimated one billion people contract influenza annually, of which 3 to 5 million cases are severe illnesses. According to a Global Pandemic Mortality Project II study, the annual number of deaths from seasonal influenza worldwide, averaging 389,000 between 2002 and 2011, oscillated between 294,000 and 518,000 cases. According to the National Institute of Hygiene, 3,888,294 suspected or diagnosed influenza cases were reported in Poland during the 2021/2022 season. The risk of contracting influenza among healthcare workers is twice as high as in the general population.

Countering the spread of the influenza virus is one of the leading health policy challenges of many countries worldwide. Annual vaccination is the most effective method of preventing infections and complications caused by the influenza virus. Vaccination is especially advisable for people at high risk of post-influenza severe complications, as well as for people in close contact with those at high risk and their caregivers.

The World Health Organization recommends seasonal flu vaccination in every age group, particularly for pregnant women, children aged 6-23 months, the elderly, the chronically ill, and healthcare workers. The general population's influenza vaccination rate in Poland is low, including among healthcare workers. The dissertation aimed to assess knowledge and beliefs about influenza prevention and attitudes toward influenza vaccination among healthcare workers.

The aim of this dissertation, based on three publications, was to assess the knowledge and beliefs regarding influenza prevention, as well as attitudes toward influenza vaccination among healthcare workers.

Two publications were based on a cross-sectional survey I conducted among employees of the University Clinical Centre of Warsaw Medical University (UCK WUM) between August and October 2020. The survey on knowledge and beliefs about influenza prevention was conducted using the PAPI (paper and pencil interview) method at three academic hospitals, among 950 medical and administrative employees (of whom 85% were women, 45% were <40 years old, 33% were doctors, 48% were nurses, and 56% were employees working at the children's hospital). During the period in which the study was conducted, Dr. Monika Wanke-Rytt and I set up a so-called "mobile" vaccination centre at the Children's Clinical Hospital of

UCK WUM (consisting of vaccinating employees in the departments where they were employed or vaccinating at the vaccination centre without the need for an appointment), and conducted a campaign to promote vaccination among hospital staff. The third publication, being a narrative review, focused on the analysis of barriers and potential organizational measures, with consideration of the role of professional communities.

The first article, published in *Vaccines*, summarized the state of knowledge about methods of preventing influenza virus infection among teaching hospital employees. Respondents most often considered hand washing (52.8%) and avoiding contact with sick people (49.3%) the most effective measures to prevent influenza infection. About three out of ten people considered wearing a protective mask (30.1%) and getting vaccinated against influenza (29.9%) as effective in preventing influenza infection. Flu vaccination was often chosen by those who worked in a paediatric hospital as effective in preventing influenza virus infection. Nurses were twice as likely as doctors to declare that influenza vaccination prevents infection (42.4% of nurses vs. 84% of doctors). At the same time, 20.4% of nurses believed that eating garlic prevented flu infection effectively, and 28.1% declared that taking vitamin C daily helped prevent the disease. The study identified educational gaps regarding the role and effectiveness of vaccination in preventing influenza virus infection among medical personnel. In addition, the study showed the prevalence of belief in medical myths related to protection against influenza virus infection among staff at teaching hospitals.

The second article, published in *PLOS One*, analysed the attitudes of clinical hospital staff toward influenza vaccination. Of all staff members surveyed, 25% said they were vaccinated, and 54% planned to be vaccinated next season. Men, those aged <40 years, physicians, and those working in a children's hospital were significantly more likely to be vaccinated. Similarly, those in the groups above had more positive attitudes toward interventions promoting vaccination, i.e., mandatory vaccination for medical personnel, workplace and during working hours, free vaccination, participation in vaccination training, or access to complete vaccination information. The factors most persuasive for influenza vaccination included free vaccination (a persuasive argument for 52.6% of respondents), access to complete vaccination information (44.9% of respondents), and vaccination during working hours (42.9% of respondents) and at the workplace (38.8% of respondents).

The third publication expands the analysis to include organizational and educational aspects, focusing on systemic opportunities to improve influenza vaccination coverage among healthcare workers. It also aimed to reach a broader Polish-speaking audience and to disseminate knowledge about effective strategies for increasing vaccine acceptance. The article

discusses the broader legal and organizational context of influenza vaccination and highlights the need for systemic solutions that support healthcare workers in their decision to get vaccinated, with particular emphasis on the role of occupational medicine physicians and the Polish Society of Occupational Medicine as key partners in promoting influenza vaccination among medical staff.

Mandatory flu vaccination imposed on healthcare workers would convince 24.9% of those surveyed but discourage 22.8%. In addition, for all people surveyed, it was shown that flu vaccination free of charge and in the workplace would significantly increase their willingness to be vaccinated, which was particularly true for the subgroup of nurses.

In conclusion, the first article identified significant gaps in medical personnel's knowledge regarding effective prophylaxis of influenza virus infection, particularly influenza vaccination. In contrast, the second article identified factors that could positively influence hospital employees' willingness to be vaccinated against influenza. Vaccination free of charge, at the workplace, and during working hours, as well as access to vaccination knowledge, can significantly improve the vaccination rate of medical personnel against influenza. In the third article, I aimed to disseminate knowledge about effective strategies for improving vaccination coverage by identifying the most frequently reported barriers and discussing possible courses of action to support vaccination uptake, with particular emphasis on the organizational perspective and the role of professional communities.

