

## An Overview Prevention Measures Strategies For Seasonal Influenza, Roles Of Public Health Together With The Pharmacist

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### Abstract

The burden of influenza extends beyond mortality and disability. Influenza viruses possess the capacity to impact a significant number of individuals over a restricted timeframe, typically spanning a few weeks. This can exert substantial strain on healthcare systems and public services in their entirety. During influenza seasons, the absence of pharmacist and healthcare employees from school and work can have a negative effect on productivity and, in extreme cases, may even cause disruptions to vital public services. Lastly, it is crucial to take into account the pandemic potential of influenza viruses when evaluating the importance of preventing seasonal influenza for public health. The presence of a well-established system for addressing severe influenza, including the vaccination of high-risk and targeted groups for seasonal influenza, enhancing the ability to produce vaccines, and implementing monitoring systems to evaluate the safety and effectiveness of influenza vaccines, forms a strong foundation for any plan aimed at preparing for a pandemic.

**Keyword:** *influenza, healthcare systems, prevention.*

### Introduction

In most cases, influenza is a community-based infection that is spread by the transmission of the virus in families and other community settings.

Every year, between five and twenty percent of people living in the United States become infected with the influenza virus. A significant number of these people will seek medical attention in ambulatory healthcare settings, such

as pediatricians' offices and urgent-care clinics. As an additional point of interest, each year, influenza-related complications result in the hospitalization of an average of over 200,000 individuals. Infections caused by influenza that are related with healthcare can take place in any particular healthcare facility, although they are most prevalent during times when influenza is concurrently circulating in the community. As a result, the influenza prevention strategies that

are described in this guidance ought to be adopted in every hospital context [1].

An acute respiratory illness that is caused by an infection with the influenza virus is known as influenza. Epidemics are most common during the winter months in Korea. The influenza virus is characterized by a sudden onset of fever, cough, and exhaustion, in addition to other constitutional and respiratory symptoms. In most cases, influenza is a self-limiting sickness that does not result in any problems; nevertheless, certain people who are at a higher risk may develop severe complications or even pass away. Due to the fact that influenza is an infectious disease that can infect a large number of patients in a short amount of time, the spread of influenza in the community can result in difficulties with public health as well as socioeconomic challenges [2].

There is a distinct difference in the epidemiology and impact of influenza within a medical institution in comparison to influenza that is found in the population. The number of influenza patients who attend medical facilities is significant, and the wards are packed with patients who are at a high risk of contracting the disease. As a result, there is a significant likelihood that influenza can transmit from one patient to another within a medical facility, and influenza has the potential to cause a greater number of complications and fatalities in this particular environment. Therefore, in order to reduce the amount of harm caused by influenza in a medical facility, it is essential to implement efficient infection control measures in order to stop the spread of influenza and prevent its spread [3].

In the context of other respiratory illnesses, particularly respiratory syncytial virus public health, the prevention and mitigation of influenza are significant strategic challenges. In addition to HIV, TB, and illnesses that are related with health care, influenza is regarded as a priority situation all over the world [4].

### **Review:**

Direct contact with a patient, interaction with the environment surrounding a contaminated patient, and inhalation of a droplet that contains the virus are the three ways in which the influenza virus can be transmitted from one

person to another within a patient. On a contaminated hand, the influenza virus can live for five minutes; on infected clothing or tissue, it can live for eight to twelve hours; and on polluted metal or plastic, it can live for twenty-four to forty-eight hours. It is possible for the virus to transfer to a hand after remaining on contaminated clothing or tissue for up to fifteen minutes, and after remaining on contaminated metal or plastic for up to two to eight hours [5]. In animal models, influenza has been transmitted in close, separated spaces without that animal coming into direct contact with the infected animal or its surroundings. Additionally, outbreaks of influenza in confined spaces such as aircrafts have been reported, which suggests that there is a possibility of airborne transmission in certain circumstances [5].

In the event that the influenza virus is transmitted, roughly fifty percent of patients will develop symptoms of influenza. Furthermore, even individuals who are asymptomatic themselves can shed influenza virus. Twenty percent to thirty percent of cases can shed the virus up to five to ten days after the first day of symptoms. Young people and middle-aged adults are infectious one day before the start of symptoms, and infectivity rapidly decreases three to five days after the beginning of symptoms. The virus can be passed on to young children for up to three weeks. The duration of viral shedding can be shortened through the utilization of antiviral medicines. When antiviral medicines were not administered to severe influenza patients who required hospitalization, the ratio of detecting virus RNA one week after the beginning of symptoms was 57.1%. On the other hand, when antiviral medications were administered within 48 hours of the onset of symptoms, the ratio was 14.3% [6,7]. It has been observed that patients with weakened immune systems shed the virus for a longer amount of time than healthy individuals. It was confirmed that approximately thirty percent of patients who were elderly or patients who had underlying problems continued to shed the virus for at least one week following the onset of symptoms. During the influenza outbreak that occurred in 2009, it was observed that highly immunocompromised individuals experienced persistent viral shedding for a period of two weeks or longer, even when antiviral medications were administered [8].

Vaccination on an annual basis is the most effective method for preventing seasonal influenza infection that can be used. In order to prevent the spread of influenza from healthcare professionals to patients and from patients to healthcare professionals, it is essential to achieve high vaccination rates for influenza among both healthcare professionals and patients. All individuals aged six months and older, including healthcare professionals, patients, and residents of long-term care facilities, should be vaccinated, as recommended by the most recent national standards, unless it is contraindicated to do so [9].

Providing incentives, providing vaccines to healthcare professionals at no cost, improving access (for example, offering vaccinations at work and during work hours), requiring personnel to sign declination forms to acknowledge that they have been educated about the benefits and risks of vaccination, and mandating influenza vaccination for all healthcare professionals who do not have contraindications are some of the systematic strategies that have been utilized by some institutions in order to improve vaccination rates among healthcare professionals. It has been demonstrated that many of these strategies are effective in increasing vaccination rates; monitoring the level of influenza vaccination coverage among healthcare professionals can be an essential component of a comprehensive strategy for protecting patients and healthcare professionals. Strong organizational leadership and an infrastructure for clear and timely communication and instruction, as well as for program implementation, have been common aspects in successful programs. This is true regardless of the technique that was utilized. The appendix titled *Influenza Vaccination tactics* [10] contains additional information on the various vaccination tactics that are available for patients with HCP.

There is a wide variety of administrative policies and practices that can be implemented in order to reduce the risk of influenza exposure prior to arrival, during arrival, and throughout the duration of the visit to the healthcare facility. The screening and triage of patients who are experiencing symptoms, as well as the application of respiratory hygiene and cough etiquette, are all measures that are taken.

Respiratory hygiene and cough etiquette are measures that are designed to minimize potential exposures of all respiratory pathogens, including influenza virus, in healthcare settings. These measures should be adhered to by everyone, including patients, visitors, and healthcare professionals, upon entry and should be continued throughout the entirety of a patient's stay in a healthcare setting [10].

In the event that ILI manifests itself during the influenza season, it is possible to make a clinical diagnosis of influenza. When ILI is defined as a sudden fever that is accompanied by a cough or sore throat, the positive predictive value is reported to be in the range of 79% to 88% in adults who are living in the community [11]. As a result, patients who are hospitalized and have new-onset fever or respiratory symptoms, patients who have underlying respiratory symptoms that worsen in elderly patients, patients who have no symptoms other than fever in infants, and patients who are in serious condition with fever or hypothermia should be suspected of having influenza during the influenza season.

The rapid antigen test (RAT), the reverse transcriptase-polymerase chain reaction (RT-PCR), serology, and virus culture are all procedures that can be utilized in the laboratory to successfully diagnose influenza. Clinical scenarios that require the results to be confirmed in a short amount of time are where RT-PCR and RAT are utilized. The nasopharyngeal aspirate or swab is the most appropriate clinical specimen for children or adults, while the nasal aspirate or swab is the most appropriate specimen for infants. It is possible to get a greater detection rate in terms of time when the sample is obtained within 72 hours of the commencement of the sickness. When an infection of the lower respiratory tract is present, the detection rate of endotracheal suction and broncho-alveolar lavage is significantly higher [12].

It is possible to utilize RAT in any medical facility because it is a point-of-care testing method that just requires the diagnostic kit and does not require any other laboratory equipment. Additionally, the findings can be obtained in a time span of less than fifteen minutes. Despite its high specificity of over 90%, its sensitivity is lower than that of real-time PCR (in children, it is between 70% and 90%, and in adults, it is less

than 40% to 60%). As a result, it cannot be utilized for the purpose of confirming a diagnosis [13]. The real-time polymerase chain reaction (RT-PCR) is a confirmation test since it has a high sensitivity and specificity. The results can be acquired within four to six hours when the samples are analyzed in the laboratory of a medical institution; however, it may be difficult to obtain rapid results when the samples are transferred to an external laboratory [8].

When compared to coughing, sneezing, talking, or breathing, some operations that are done on patients who have a suspected or confirmed influenza infection may be more likely to generate larger quantities of infectious respiratory aerosols. These procedures have the potential to place healthcare professionals at a higher risk of being exposed to influenza. Many organizations, including the World Health Organization (WHO), urge that additional measures be taken whenever such operations are carried out, despite the fact that there is a small amount of data available on the transmission of influenza connected to such aerosols. These include some procedures that are typically planned in advance, such as bronchoscopy, sputum induction, elective intubation and extubation, and autopsies; and some procedures that frequently take place in unplanned, emergency settings and have the potential to save a patient's life, such as cardiopulmonary resuscitation, emergent intubation, and open suctioning of the airways. In an ideal scenario, a combination of precautions ought to be taken in order to lessen the exposures that are caused by these aerosol-generating procedures when they are carried out on patients who have been diagnosed or suspected of having influenza [14].

In most cases, the influenza virus is spread from person to person through the droplet of big particles that is produced when an influenza patient coughs or sneezes. In certain instances, it is possible for it to spread by tiny aerosols. Droplets are able to travel less than one meter, and as a result, they are transmitted through close contact. Indirect contact is another method by which the influenza virus can be transmitted from infected surfaces to the mouth or eyes through the hands. In light of this, it is necessary to implement both conventional and droplet precautions. When performing procedures that result in the production of aerosols, it is important to take airborne precautions [15].

It is imperative that all healthcare professionals adhere to established precautions in order to mitigate the risk of influenza transmission. Standard precautions are taken with patients who are possibly infected or colonized with an organism that has the ability to spread the disease. This includes patients who have respiratory illnesses, which includes influenza. The practice of performing hand hygiene prior to and following interaction with a patient, contact with a potential source of infection, and the wearing of personal protective equipment such as gloves is recommended for everyone working in the healthcare industry. When it comes to hand hygiene, you have the option of using either water and soap or an alcohol hand massage that does not include water. Whenever they notice that their hands are noticeably dirty, they should wash their hands with soap and water. It is important for medical facilities to provide resources for proper hand hygiene. Workers in the healthcare industry should always wash their hands after removing gloves and should wear gloves whenever they come into touch with a potential source of infection. It is not appropriate to wash gloves with the intention of reusing them; instead, gloves should be changed for each individual patient. Before coming into touch with patients, healthcare professionals should put on a gown if they are expected to come into contact with blood, body fluids, secretions, or excretions from the respiratory tract or any other system. First, they should remove their robes before leaving the patient's surroundings, and then they should wash their hands. Every patient ought to have a different gown for them to wear [16].

## **Conclusion:**

In the context of this guideline, the term "healthcare workers" refers to any individual who is able to be exposed to the environment that patients are surrounded by or who has contact with patients, whether through regular visits or by dwelling in a medical facility. This comprises those who are employed by the medical institution or an entity that is affiliated to the medical institution to work at the medical institution, as well as trainees, volunteers, and students who are undergoing practical training. The responsibility for prevention measures falls on a wide range of individuals, including but not limited to medical professionals, nurses,

assistant nurses, medical technicians, pharmacists, administrative staff, clerical staff, students, trainees, facility managers, cooks, workers in the central supply department, laundry workers, cleaners, security personnel, volunteers, and others. There is a significant number of instances in which caretakers or guardians of patients stay within the medical institution in the context of the domestic medical environment. When this circumstance is taken into consideration, it is beneficial to apply the recommendation of this guideline to caretakers and guardians in order to effectively manage influenza at a medical facility, even though these individuals are not employed by the medical institution or any connected institutions for that matter.

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