

CRITICAL ANALYSIS ON INFLUENZA STATUS IN PAKISTAN: CURRENT POLICY, CHALLENGES AND RECOMMENDATIONS

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Abstract

Influenza is a major public health issue across the globe and developing countries especially facing a threatening situation because of lack of effective policies and limited health care resources. Pakistan, a developing country, ranked 6th among populous countries of the globe with urban population share 40% where influenza virus spreads in early October of the year 2017 and its prevalent activity rises to a maximum by the end of the year. Influenza is endemic in Pakistan and affects all age groups. A major reason for unsuccessful planning and implementation of anti-influenza coverage programs is that current policies are not synchronized with the needs of the population. Effective surveillance network, ensuring sufficient vaccination supply and anti-viral medication corresponding to public needs are important steps to take.

Manuscript in Detail

Influenza is a respiratory illness caused by different strains of influenza virus, of whom, types A (H1N1) and A (H3N2) are highly pathogenic in humans and responsible for pandemics. This may affect any individual but high-risk groups are healthcare workers, pregnant females, the children aged less than 5 years, elderly individuals, patients with chronic diseases, and immune-compromised individuals. Seasonal epidemics commonly occur during the winter season in temperate climate zone while irregular influenza outbreaks can be witnessed in tropical regions throughout the year (1).

It is estimated that influenza affects 5 to 10% adults and 20 to 30% children around the globe every year (2). The most recent estimates by WHO indicates influenza-attributed mortality rate is between 4.0-8.8 deaths per 100000 individuals annually from 1999 to 2015. (3). Influenza is a major public health issue across the globe and developing countries especially facing a threatening situation because of lack of effective policies and limited health care resources.

The ranking of Pakistan as the 6th most populous nation in the world with 40% share of the urban population vis-a-vis low health facilities make her vulnerable to influenza outbreak. This malaise is endemic in Pakistan and affects all age groups. (4). The country's first H1N1 infection was registered in June 18, 2009 (5). This new influenza pandemic strain A (H1N1) increased the influenza rate up to 27% (367 cases) in 2009 from 21 % (77cases) in 2008. From 2010 to 2011 influenza incidence rate again raised from 18% (372 cases) to country's highest outbreak with 28% (673 cases). From 2008 to 2011, about 1489 (22.8%) positive cases of influenza virus were confirmed from 6258 suspected specimens with the provincial distribution of 2% in Baluchistan, 8% in Khyber Pakhtunkhwa, 13% in Sindh, 24% in Punjab and 53% in Federal capital (6). Keeping up with the trend, the virus claimed many lives along the years: 444 in 2013 (7) 28 in 2015 and 31 in 2016 (8).

In 2017, mainstream media reports showed that influenza activity was surging again in the country by causing illness and fatalities among young adults and the predominant viral strain in this outbreak was (H1N1) pdm09. Until September 22, 2017, there was only one confirmed case from 34 suspected cases (9) whereas, worsening the situation, till 31 December 2017 seasonal influenza had claimed 12 mortalities. (10). Death toll escalated to 21 till 6 January 2018 while a number of positive cases were also confirmed including three physicians (11) and ongoing deaths raised to 38 till 30 January 2018 (12).

The cornerstone of outbreak control and prevention of influenza is primarily by strain-explicit vaccination. The patients are treated with prescription antiviral drugs to control viral progression. Some drugs such as oral oseltamivir and inhaled zanamivir have proven efficacy over placebo for treatment of uncomplicated influenza in randomized controlled trials (RCTs) (13). The WHO recommends annual vaccination of the high-risk groups to prevent morbidity. Apart from immunization and antiviral drugs, public awareness about personal preventive measures like hand washing, self-isolation of individuals with suspected infection and mask-wearing habits are crucial for substantial pandemic control (1).

In Pakistan, influenza surveillance has been performed irregularly by the National Institute of Health (NIH) Islamabad since 1980 (6). In 2004, an agreement was signed between NIH and Centre for disease control and Prevention (CDC) to support and improve influenza surveillance in Pakistan. Under this agreement, Influenza-like illness and severe acute respiratory illness (SARI) should be monitored by establishing 5 geographically represented surveillance sites and state of the art diagnostic laboratories. Hitherto, there was no sentinel lab-based surveillance system in Pakistan prior to CDC funding (14).

The government of Pakistan, after 2009 pandemic, started proper influenza surveillance. Several guidelines were published from health ministry of Pakistan but the sorry state of affairs continues as the rate of immunization is still suboptimal (8). National data with current updated influenza vaccination statistics is not available. Presently influenza vaccination status is poor as is evident by the alarming situation where three doctors are also tested positive in this seasonal outbreak. This picture of poor vaccination status even among healthcare providers also bells a threatening alarm about the vaccination status of the general population or high-risk groups. Adding insult to injury, vaccination and antiviral drugs availability situation is also unstable with not enough medical supplies in

Government hospitals currently despite ongoing increase in suspected cases (15). Affordability of vaccine is also challenging owing to low daily wages of unskilled workers in comparison to cost (approximately 600 Rs [\$ 5.43 US]) of Fluarix® by GSK (8).

National vaccination policy against influenza is nearly non-existent in Pakistan which is evident by unsuccessful planning and implementation of anti-influenza coverage programs. Defective hierarchy, improper preference, flawed allocation and distribution of funds, and incompetent human resources plagues the health care system. (16).

Awareness among community and health care workers about a disease is considered to be a major component of primary prevention strategies. Pakistan healthcare system faces a major challenge in the form of low health literacy primarily due to low literacy rate (58% in 2017) (17) and the situation becomes worst due to decades-old social and irrational religious beliefs.

A recent study shows the current snapshot of awareness level and attitude toward influenza vaccination among a sample of 532 parents having one or more child aged older than 6 months. The study reported only 24.4% of respondents know about the availability of any influenza vaccine while 18.6 % parents believed it is not a serious health issue and vaccine may result in side effects (24.6%) (4). The vaccination level among health care providers is also suboptimal in Pakistan despite they are considered to be role models for patients and community. It is reported all respondents in a study sample of 165 health care providers did not consider influenza vaccination mandatory for them and even their institutions had no such requirement for their immunization against influenza (18).

The most important point of consideration is, the current counts on deaths and positive cases are based on laboratory tests of severely ill patients. An extraordinary fee of 7000 Rs (\$63.28 US) for influenza diagnostic test is beyond the scope of working-class, so current figures do not present a true picture of epidemic cases and are self-biased in nature. Due to high-cost test is offered to individuals who can afford it and to severely ill hospitalized patients.

As experts state that seasonal influenza is here to stay in upcoming years, the current outbreak situation provides a good point to respond to public health policies regarding surveillance and prevention of diseases such as influenza. NIH Islamabad can play a leading role in devising robust surveillance programs. There is a strong recommendation of the establishment of centralized prevention and surveillance centre that is more effectively integrated and have collaboration with provincial health surveillance systems to control situations like the present outbreak by timely warning health delivery units across the country.

In Future Ministry of National Health Services, Regulation and Coordination (NHRC) should introduce a robust national policy for influenza vaccination. Strategies regarding effective surveillance of influenza-like illness and severe acute respiratory illness must be devised in early hours. The other option is that to include influenza in country's Extended program on immunization (EPI). Also, it is recommended that special attention should be paid for access to health services by increasing healthcare human resources. Authorities should also take necessary action regarding the cost and availability of drugs and vaccines. Countries with good monitoring systems regarding vaccine uptake rates (Spearman's rho = 0.639, p = 0.010) or sending personal letters offering free vaccination (Sp = 0.728, p = 0.002) showed on average higher coverage among the elderly than countries with less developed vaccine management systems (19). Many countries like Thailand, South Africa and Egypt had established national vaccination policy or guidelines against influenza that has proven effective in improving influenza vaccination status in population (20). Policy of free vaccination in Beijing, China has also proven fruitful (21).

Public awareness about influenza through media outlets can be used as an effective tool for control and prevention of disease. Educational intervention about vaccination benefits and preventive measure recommended by WHO may increase awareness level in society that in turn may result in increased immunization rates and prevention of disease. A study conducted in Bangkok Thailand reported that health education using an educational video demonstrated a significant impact on acceptance, willingness to pay, knowledge and attitude in older people (22) One randomized controlled trial conducted in Karachi reported 38% improvement in vaccination completion rate in

the intervention group (23).

Health care providers should be educated and trained in modern trends of treatment and prevention as these can play a crucial role in awareness of community. Communities and opinion leaders must be involved in such campaigns to scope up positive outcomes. PRECEDE - PROCEED appears to be a well-suited health promotion planning model for application to the workplace (24). The primary focus of all these educational campaigns must be high-risk groups especially in remote areas where people having low health literacy and suboptimal health facilities. Policymakers must take appropriate evidence-based actions to improve awareness of individual and community based educational programs to cop up current outbreak situations.

Conclusion

The current surge of influenza cases in the country demands, the authorities in Pakistan have to learn from past by reviewing existed strategies of combating and have to move a step ahead of sole guidelines development. Indeed, it is high time for policymakers to plan a comprehensive strategy by taking into account all aspects including development of national policy for influenza vaccination, actions regarding pricing of diagnostic test and vaccines. Putting the discussion in a nutshell, effective education and awareness campaigns involving health care providers should be launched with a prime focus on high-risk groups as a key primary prevention strategy.

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