

# Pandemic Influenza A (H1N1) Epidemic Among Health Care Providers Of a Teaching Hospital

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## ABSTRACT

**Background:** Globally, India was one among the most affected countries for cases and deaths of swine flu (influenza A H1N1) during 2009 influenza pandemic with lot of public hype and panic.

**Materials and Methods:** Total of 204 health care providers were included in the study, of which 76 were doctors (16 Senior Residents, 28 Junior Residents and 32 Interns) and 128 were staff nurses.

**Results:** Majority of the doctors (69.7%) and nurses (65.6%) agreed that enough measures were taken by the hospital authorities to prevent and control the swine flu epidemic.

**Conclusion:** Knowledge regarding swine flu pandemic was low among study participants. Most of the participants had health seeking behavior, as many of them practiced hand washing.

**Keywords:** Health Care Provider, Swineflu, H1N1, Pandemic.

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## INTRODUCTION

Swine flu is an acute respiratory disease, caused by a strain of the influenza type A virus known as H1N1, officially referred as novel A/H1N1.<sup>1</sup> The virus is a mixture of four known strains of influenza A virus: One endemic in humans, one endemic in birds and two endemic in pigs (swine). Swine influenza was first proposed to be a disease related to human influenza during the 1918 flu pandemic, which was known as Spanish flu, (infected about 500 million people and caused approximately 50 million deaths).<sup>2</sup> Transmission of the new strain is human-to-human. Its symptoms are similar to those of influenza in general. It includes fever, cough, sore throat, body aches, headache, chills and fatigue. The flu can make chronic health problems worse. Vaccines are available for different kinds of swine flu. However, vaccines against the new strain are developed, with safety profile like seasonal flu vaccine. Knowledge, attitude and practice (KAP) of people regarding swine flu are a cornerstone in prevention of virus spread and outbreak.<sup>3</sup>

India is ranked 3rd among the most affected countries for cases and deaths of swine flu globally.<sup>4</sup> The highest number of cases were reported in 2009 (27,236), followed by 2010 (20,604) and 2012 (5,054 cases). The highest number of swine flu deaths took place in 2011 (1,763), followed by 2009 (981) and 2012 (405).<sup>5</sup> Sheer volume of cases could easily overstretch already fragile and overburdened health services, especially in the developing

countries and cause considerable suffering in human populations around the world.<sup>6</sup> Aim of the study was to be the knowledge and practices of health care providers toward the prevention of the swine flu epidemic in teaching hospital.

## MATERIALS AND METHODS

This cross-sectional study was conducted in the Department of Community Medicine, Hind Institute of Medical Sciences, Lucknow, Uttar Pradesh in the month of January 2018, among doctors and nurses. A maximum of 31% of the total health care providers of Hind Institute of Medical Sciences were covered because of feasibility and logistics, and, therefore, the sample size was 204. Ethical consideration was met through institutional ethical committee. The information thus collected was computerized and analyzed by using Statistical Package for Social Science (SPSS 16.0) software program for Windows. Data was presented as proportions and Chi-square test was used as to find out the association.

## RESULTS AND DISCUSSION

This present study carried out in the Department of Community Medicine, Hind Institute of Medical Sciences. Total of 204 health care providers were included in the study, of which 76 were doctors (16 Senior Residents, 28 Junior Residents and 32 Interns)

and 128 were staff nurses. Most of the study participants in both the categories of health care provider had knowledge about the symptoms of H1N1 infection in fig.1.

The common symptoms of swine flu responded were fever, upper respiratory infection, body aches and vomiting. The period of communicability of H1N1 infection was correctly known to 86.2% of the health care providers. Respiratory mode of spread of infection was answered correctly by all the doctors as compared with 92.7% of the nurses.

Surprisingly, about half of the doctors and one-third of the nurses had misconceptions that it can be transmitted by blood; one-fifth of the respondents opined that swine flu can also be spread by

consuming food infected with H1N1 virus in fig.2. Three or more habits were changed by the health care providers to prevent the infection. About 96.2% of the doctors and 87.8% of the nurses knew about the effective treatment available against swine flu. The major side-effects of Oseltamaivir elicited were gastritis, vomiting and depression.

Majority of the doctors (69.7%) and nurses (65.6%) agreed that enough measures were taken by the hospital authorities to prevent and control the swine flu epidemic. Surprisingly, one-third of the health care providers responded that vaccine against swine flu is available, while actually it was not when this study was conducted.

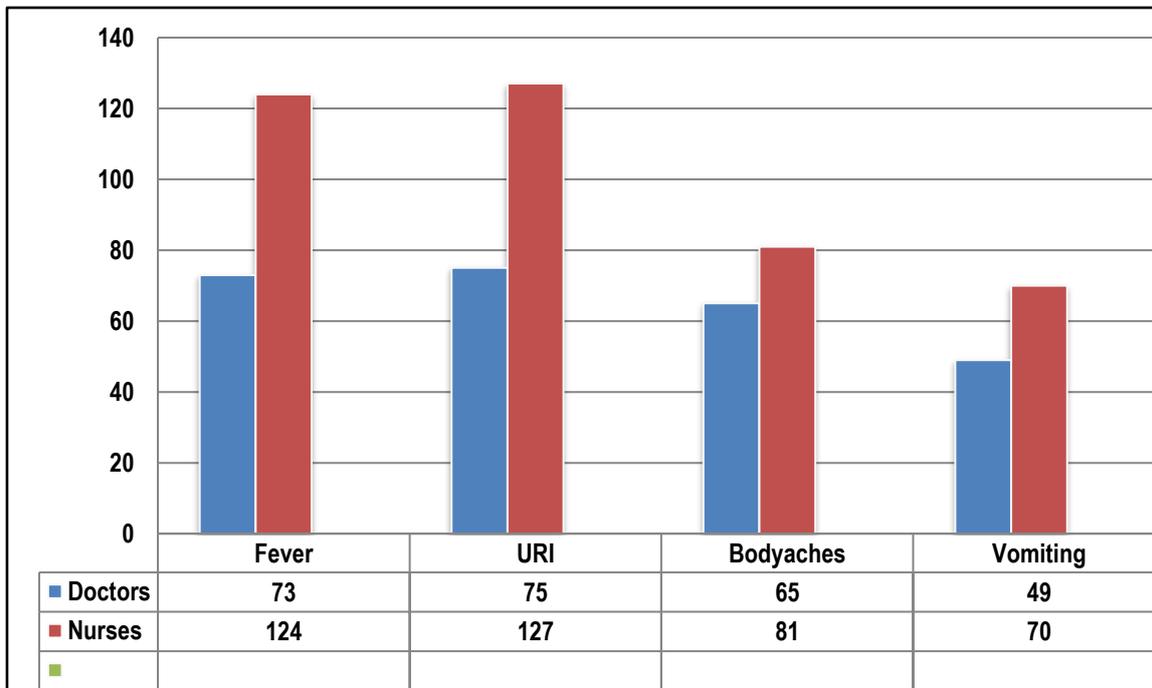


Fig.1: Knowledge about the symptoms of swine flu.

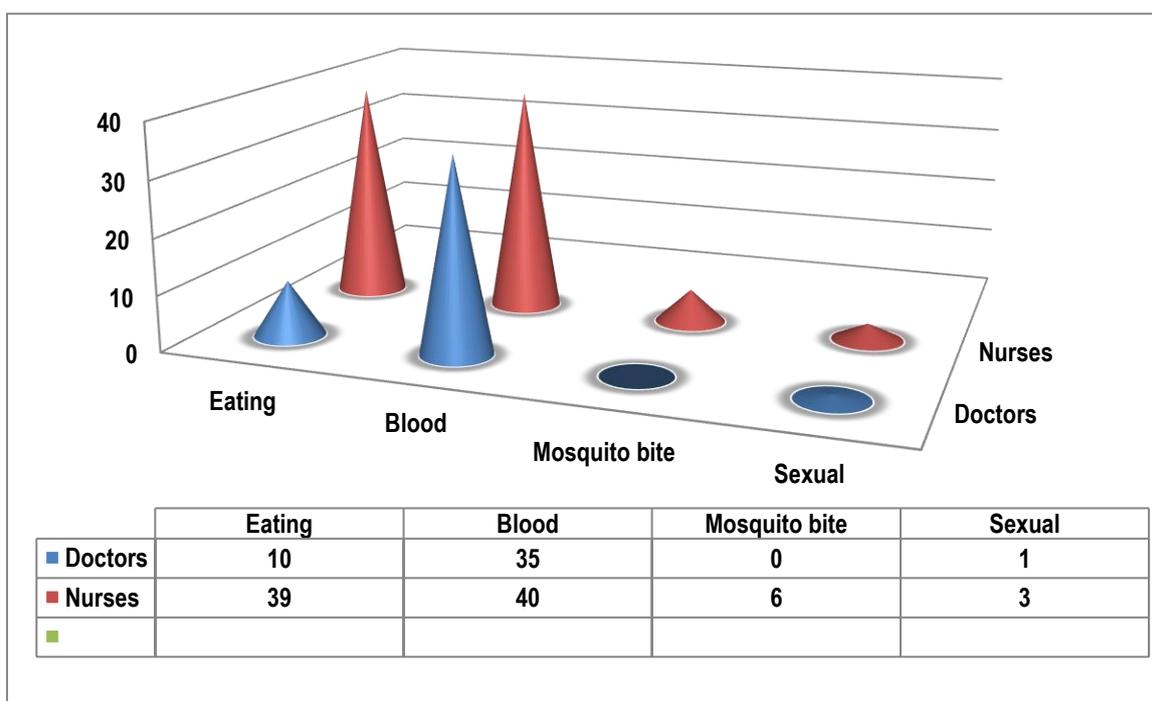


Fig.2: Knowledge regarding the mode of spread of swine flu.

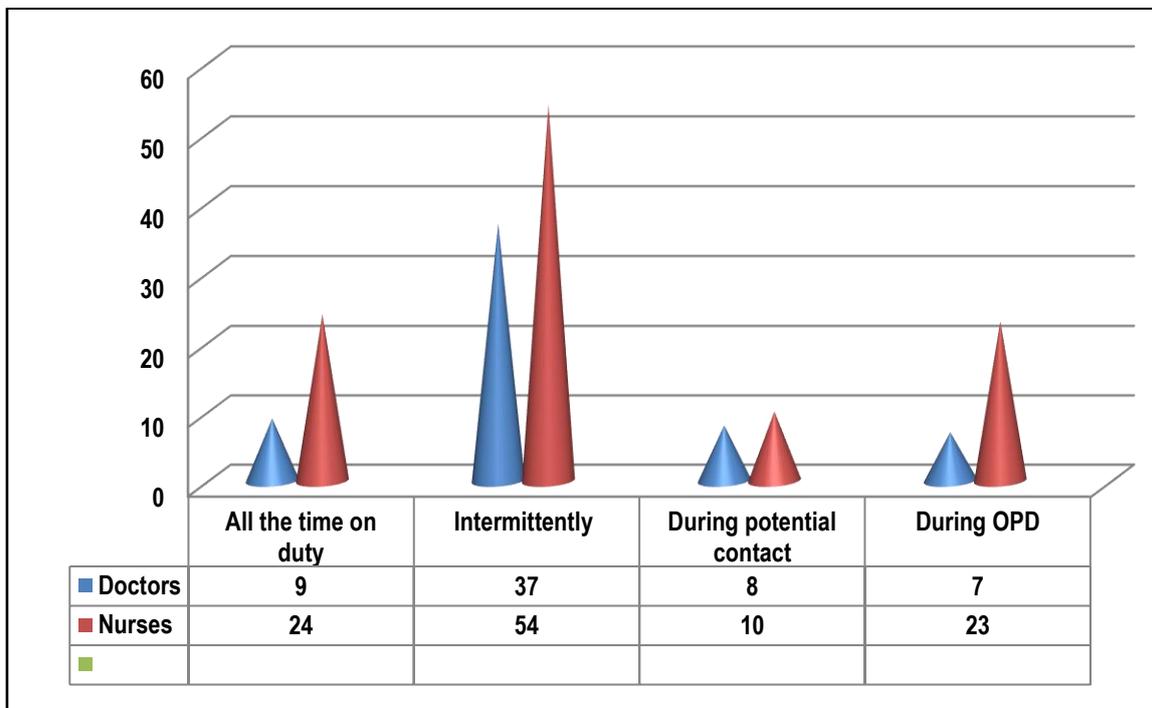


Fig.3: Pattern of use of mask.

Table-1: Results of cross tabulations with job category of health care providers:

Variables	Job category of HCP		Chi-square value	P value	
	Doctors	Nurses			
Knowledge about spread by droplets	Yes	76	120	2.75	0.03*
	No	0	8		
Knowledge about treatment	Yes	71	109	3.13	0.04*
	No	5	19		
Knowledge about PPES	Yes	60	70	12.14	0.000*
	No	16	58		
Knowledge about correct distance to be maintained	Yes	44	74	0.0183	0.892**
	No	32	54		

\*Significant and \*\*Not significant, HCP: Health care providers

Doctors had better knowledge about the mode of spread, treatment and PPE as compared with nurses, and this difference was statistically significant in table-1. The results of the present survey depicts a range of knowledge, attitudes and self-reported behavioural patterns concerning H1N1 among health care Providers of a teaching hospital. Influenza A viruses causes recurrent outbreaks at the local or global scale, with potentially severe consequences for human health and the global economy. Swine influenza virus infections in humans have been reported in the United States, Canada, Europe and Asia. There are no unique clinical features that distinguish swine influenza in humans from typical influenza. Although a number of the case patients have predisposing immunocompromising conditions, healthy persons are also clearly at risk for illness and death from swine influenza. Sporadic cases of swine influenza in humans, combined with sero-epidemiological studies demonstrating increased risk of swine influenza in occupationally exposed workers, highlight the crucial role that this group may play in the development of new strains of influenza virus. Persons who work with swine should be considered for sentinel influenza surveillance and may be an

important group to include in pandemic planning.[7] In the present study, 92.2.% doctors and 86.8% nurses had knowledge that the drug tamiflu is effective against swine flu. As per the Center for Disease Control and Prevention (CDC), tamiflu is very effective among swine flu-positive patients.<sup>8</sup> As expected, doctors had better knowledge as compared with nurses about swine flu due to their educational level. When it comes to practice the prevention against the disease, nurses are the front runners. Rubin *et al.* conducted a study among the general population to assess whether perceptions of the swine flu outbreak predicted changes in behavior among members of the public in England, Scotland and Wales.<sup>9</sup> Here, it had been seen that 37.8% of the participants reported performing any recommended behavior change over the past 4 days because of swine flu, whereas my study was conducted among a different group of the study population, where 52% of the study participants changed habits as a preventive step against the transmission of infection. Here, the percentage was high because in this study, the participants were health care providers and, therefore, they were expecting more knowledge about the preventive measures and also the first contact person

with swine flu-positive patients. Behavior modification is an important preventive strategy to contain the spread of H1N1 infection was demonstrated by a majority of the health care providers. Statistically significant differences were observed among doctors and nurses regarding knowledge of mode of spread of infection, PPEs, medicine for swine flu treatment and availability of vaccine. This study was a cross sectional survey and may not have been able to assess the true association between knowledge and practices. Thus, future study with different study design should be considered for validation.

## CONCLUSION

These findings suggest that the Knowledge regarding swine flu pandemic was low among study participants. Most of the participants had health seeking behavior, as many of them practiced hand washing. Creating awareness about pandemic through effective mass media is vital for containing the pandemic. Significant gaps observed between knowledge and actual practice of the health care providers regarding swine flu need to be filled by appropriate training. Data indicate that the health care providers are very intellectual, but they do not themselves practice what they preach.

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