

Knowledge, attitudes and behaviour of healthcare workers regarding influenza and vaccination in Salerno, Italy

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Abstract

Background: Influenza vaccination coverage among healthcare workers (HCWs) is unacceptably low despite the recommendations of health authorities.

Objective: The aim of the study is to assess the knowledge base of healthcare workers in Local Health Services (LHS) regarding influenza vaccination and to identify the factors that inhibit or motivate vaccination among HCWs.

Methods: A cross sectional study was carried out between July and October 2003 within the five Hospitals of the LHS "Azienda Sanitaria Salerno2", Salerno, Italy. In July 2003, we prepared a standardized anonymous questionnaire for a sample of 280 healthcare workers aimed at surveying their knowledge base and attitudes towards influenza and vaccination. The HCWs were recruited by random selection using the stratified layered sampling method. On the basis of the results of our survey, a hospital vaccination campaign was undertaken. Statistical analysis was carried out using the EpiInfo 6.06 program. Data were analyzed through frequency distribution. Statistical comparison was performed using the Chi-square tests and a p-value <0,05 was considered statistically significant*.

Results: During the 2003-2004 influenza season, 230 (81%) out of 280 employees answered the questionnaire. 31 respondents (13.5%) were physicians, 94 (40.9%) were nurses and 105 (45.6%) were workers employed in supporting services. The vaccination rate among Health Care workers of this Local Health Service (LHS) unit was about 15.0%. The reasons most frequently cited by HCWs for noncompliance with vaccination were confidence in their own personal health, the fear of adverse reactions to the vaccine and the doubt they had about vaccine efficacy.

Conclusions: We conclude that those responsible for influenza vaccination programs might consider a specifically tailored intervention strategy aimed at improving coverage. The answers collected can be used to refine the following season's campaign.

Key words: influenza, vaccination, healthcare workers, knowledge, attitudes

Background

Influenza is a highly contagious disease that every year affects millions of subjects and has significant consequences on society and health.

Influenza vaccination is internationally acknowledged to be the best tool to deal with this condition both in terms of cost - effectiveness and cost-benefit. This is especially effective when a good concordance is found between the strains present within the vaccine and the infective agent that is widespread in the population. In such a scenario, vaccination can reduce the incidence of the disease by between 70 to 90% in healthy adults, pneumonia hospitalization by 48-57%, hospitalization for any acute and chronic breathing conditions by 27-39%,

absences from work by 32-45% and the use of antibiotics by 25% with consequent savings in health and social expenses [1].

Among the categories to be recommended for influenza vaccination by the Italian Ministry of Health are persons assisting high risk subjects and those people carrying out basic and useful fundamental social jobs. Nevertheless, medical literature reports a very low compliance of healthcare workers to vaccination [2].

Vaccination among those workers has the twofold purpose to protect both the employee and the patient, because contact increases the risk of transmitting the influenza virus from the healthcare worker to patients at risk of



secondary complications and death [3,4].

Not of less importance is the economical and organizational aspect linked to the absence from work by service workers because of disease[5].

Between July and October 2003, we carried out a cross-sectional study within the five Hospitals of the LHS "Azienda Sanitaria Salerno2", Salerno, Italy. The aim of the study was to assess the knowledge base and attitudes of healthcare workers (including physician and non-physician staff) and to identify the factors that inhibit or motivate influenza vaccination. and to compare vaccination coverage rates during 2002-2003 season with the rate obtained during the 2003-2004 influenza season.

Methods

A cross sectional study was carried out from July to October 2003 within the five Hospitals of LHS "Azienda Sanitaria Salerno2", Salerno, Italy and the vaccination was offered to every healthcare worker starting from 20th October.

In July the protocol was shown to the Health Managers of the five LHS hospitals and the organization of the vaccination campaign was agreed upon. Every Health manager identified two referents within the hospital who were responsible for increasing awareness of the benefits associated with influenza vaccination and for encouraging members of their LHS to accept an influenza vaccination. They had the requisite training to administer the vaccination on site. The Public Relation Service and the Health Marketing Office carried out an information campaign using mass media and advertisements.

An anonymous and self-administered questionnaire was given to a sample of employees to survey their knowledge of and their attitude towards influenza and vaccination.

The total eligible population consisted of 2,079 HCW employees, both physicians and non-physicians, of the five LHS Hospitals and the sample was chosen from the list of the employees working there. For this study, 280 workers were recruited by random selection using the stratified layered sampling method. Every hospital represented a layer.

The sample dimension and statistical analysis was carried out using the EpiInfo 6.06 program. Data were analyzed through frequency distribution. The statistical comparison of data was performed using the Chi-square tests and a p-value <0,05 was considered statistically significant.

Results

During the 2003-2004 influenza season, 230 (81%) out of 280 employees answered the

questionnaire. 31 respondents (13.5%) were physicians, 94 (40.9%) were nurses and 105 (45.6%) were employees in supporting services. The mean age was 47.7 years (range 28-67), 65% were males and the mean duration of employment was 20.1 years (range 2 -35).

Fig. 1 shows the knowledge of HCWs regarding influenza and vaccination. 83.9 % of healthcare workers considered influenza a nontrivial disease (physicians 93.9 % vs nurses 80.4 %; $P = 0,16$); 70.9 % believed the protection offered by the vaccination to be high; 64.8 % thought that the most appropriate period to receive vaccination is between October and December.

A significant difference was seen between occupational category with regard to the information about influenza vaccination and specifically in those categories to which vaccination is highly recommended: 100% of physicians were informed and only 83.7 % nurses ($P < 0,05$).

As for the safety of the vaccination, it was associated to serious complications by only 1.3 % of the workers. Knowledge of side-effects was very poor both by physicians (51.5 %) and nurses (36.9 %).

Only 11.1 % out of all the participants were vaccinated against influenza in the 2002-2003 season though physicians got a relatively better coverage compared to nurses (19.3 % physicians vs 5.5 % nurses).

Such a poor adhesion was principally due to:

- the attitude that vaccination is useless when the disease to which the vaccination is recommended for is absent (41.3 %);
- the fear of adverse reactions (11.3%) and the doubt about vaccine effectiveness (6.1%);

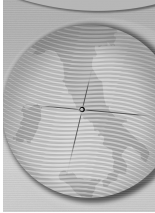
Despite such attitudes, vaccination was still recommended by 89.7 % of interviewees.

During the 2002 -2003 season, 31.7 % of respondents contracted influenza. In 16.5 % of the cases, the disease lasted from three to five days and in 10.4% the disease lasted more than five days. The workers were therefore forced to stay away from work according to the following percentages: more than three days 61.6 % and more than five days 24.6 %.

Finally, in 8.2 % of cases the disease brought breathing complications (pneumonia and bronchitis) and 60.3 % of sick people used antibiotics to recover (Figure 1).

Vaccination coverage during the 2003 - 2004 influenza season

The vaccination rate among the LHS SA2 healthcare workers during the 2003-2004 vaccination season was round about 15.0 %. The lowest level was registered in Oliveto Citra



Hospital and the highest in G. da Procida Hospital in Salerno ($P < 0,0005$) which, being a former "sanatorium", boasts a long tradition in the treatment of breathing diseases (Table 1).

The vaccination was administered to 19.8% of physicians, to 12.5% of nurses and to 16.6% of employees of supporting services. The highest vaccination rate was seen in males (73.4 %) and in the 40 -54 age bracket (63.7 %).

To be kept in mind that males and the above mentioned age bracket are the ones mostly represented in these hospitals.

In spite of promoting an information campaign, the vaccination rate among the LHS SA2 hospital healthcare workers during 2003-2004 season was only marginally higher than the estimated rate for the previous season 2002-2003, 15.5% vs 11.1%, ($P < 0,0005$). The vaccination rate had increased more among the nursing staff, increasing from 5.5% to 12.5% ($P < 0,0005$), whereas the

vaccination rate among the physicians increased from 19.3% to 19.8% (Table 2).

Discussion

The vaccination rate of less than 20% confirms what was pointed out by other studies referring to vaccination culture as a means of disease prevention for hospital workers[5]. Despite the awareness of the dangers related to the disease, the efficacy and tolerability of vaccination is still low [6,7].

The reason for such a low adherence to vaccination programs include:

distrust towards the validity of vaccination, especially when working in a low risk department; the fear of adverse reactions and the possible usefulness of vaccination in healthy people.

Vaccination is therefore believed to be an individual protection without considering its importance when it comes to reducing influenza risk among admitted hospitalized patients.

Figure 1. Options and attitudes of health care workers about influenza and vaccination.

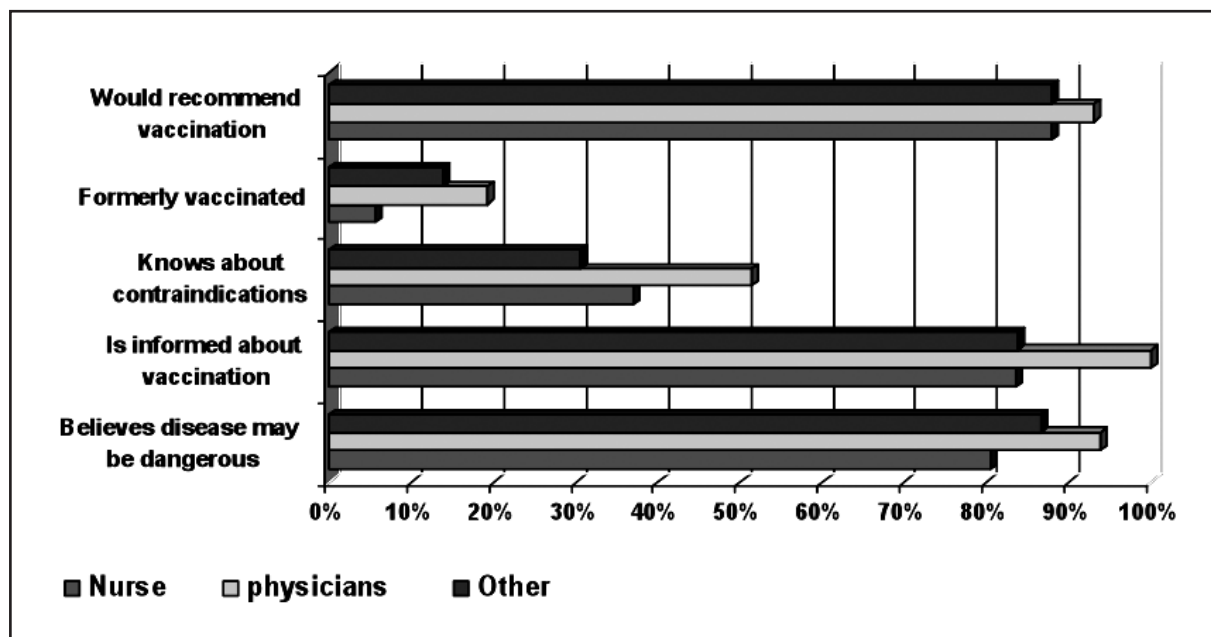
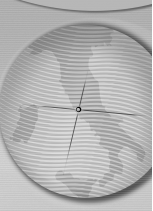


Table 1. Influenza vaccination rates among healthcare workers at the LHS SA 2 during 2003-2004 influenza season.

LHS Hospital	Number of employees	Number of vaccinated people	Vaccination coverage (%)
Oliveto Citra	323	10	3.1
Eboli	536	116	21.6
Battipaglia	531	61	21.6
Salerno	219	75	34.2
Mercato San Severino	470	60	12.8
ASL SA 2	2079	322	15.5

**Table 2. Influenza vaccination rates among healthcare workers at the LHS SA 2 according to their type of work (2003 – 2004 influenza season).**

<i>Working category</i>	<i>Hospital workers</i>		<i>Vaccination rate 2003 – 2004</i>	<i>Vaccination rate 2002 – 2003</i>
	<i>Number</i>	<i>Vaccinated 03-04</i>	<i>%</i>	<i>%</i>
Physicians	409	81	19.8	19.3
Nurses	880	110	12.5	5.5
Other	790	131	16.6	13.8
Total employees	2079	322	15.5	11.1

The erroneous notion that vaccination is inadvisable in lots of conditions of ill-health still plays a leading role where perhaps, on the contrary, patients suffering from these conditions would be highly recommended to receive vaccination.

In conclusion, influenza vaccination rate remains too low, due to three hurdles: distrust towards the validity of vaccination especially when working in a low risk department, the fear of adverse reactions and the possible usefulness of vaccination in healthy people. Influenza vaccination programs have not always been successful. The recent pandemic H1N1 influenza, despite having partially changed behaviour, has not increased vaccination rate in HCWs [8]. Yet, this pandemic alert has highlighted the importance of the use of several public health measures (information, surveillance, containment, vaccination...). The main advantage of influenza vaccination for these workers is that it ensures an adequate response of health services to infection [9]. Those responsible for influenza vaccination policies might consider adopting specific formative programs for the HCWs in order to correct the sometimes wrong ideas that persist about vaccination and the objectives of vaccination. It is worthwhile stating that vaccination protects not only the single

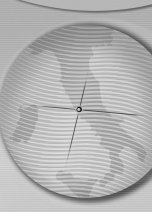
being, but the admitted hospitalized patient as well. Specific programs should be organized starting from the result of this study.

However, as emphasized in many studies [10,11], education alone will not achieve target vaccination rates because the provision of education does not ensure comprehension. The approach to influenza vaccination among HCWs could even use multiple interventions. These could include various methods to improve vaccination rates, such as easily accessible vaccines [12,13], information that highlights the importance of influenza vaccination, the use of informed declination forms, education that focuses on patient safety aspects, and audits of vaccination coverage among HCWs [14]. Moreover, if the percentage reached is lower than expected, they should be informed of the objectives of immunization and how and why an acceptable level of vaccination should be achieved. Those departments that have reached high levels of immunization coverage should receive public acknowledgement. Finally, the influenza vaccination rate among HCWs should be a measure of the quality of the care institution by them represented.

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