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Original Article

Effect of covid-19 on the flu vaccine coverage in the staff of the Hospital Universitario de Fuenlabrada (Spain)

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ABSTRACT

Introduction. The objectives were to know the influenza vaccination coverage among the staff of the Fuenlabrada University Hospital between 2006-2020 and its acceptance after Covid-19; and to analyze vaccination coverage by profession and year of vaccination, and to establish vaccination strategies to increase the adherence of hospital personnel.

Methods. A longitudinal descriptive study was carried out between 2006 and 2020 at the Fuenlabrada University Hospital, which had an average of 1,584 workers in the 11 years studied. Vaccine acceptance was measured through the data entered by the SPRL in the Sispal vaccination registry of the Community of Madrid. Study variables: Profession (Healthcare, Non-Healthcare) and number of vaccines administered.

Results. A total of 6,074 workers were vaccinated in the years from 2006-2020, with a general vaccination coverage rate of 24.56%. Total vaccination coverage was higher in 2020, the year after the Covid-19 Pandemic, where the vaccination rate was 68.15%) and in 2007 with the lowest vaccination record, with an Rate of 13.95%. By type of profession; non-healthcare personnel are vaccinated more (22.52%) than healthcare personnel (15.92%).

Conclusions. Vaccination coverage increases in the years in which specific epidemic waves appear, such as the one that occurred in 2020. The modification in the vaccination strategy, generating greater adherence of the professional, a specific education and facilitating the accessibility of schedules and going to Its units without the need for personnel displacement, has significantly helped increase the acceptance of vaccination.

Keywords: Flu vaccination: Covid-19 pandemic; vaccination coverage; health / non-health personnel.

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Introduction

The influenza virus is one of the main causes of respiratory infection (1), every year it infects an average of 10-15% of the population (2), which is why it has become a major Public Health problem, due to its high mortality in patients with chronic diseases and the elderly (1). Health workers are more susceptible than the general population to being infected with the influenza virus, due to direct contact with patients and because they are in a workplace where there is a risk of nosocomial infections, this being one of the most contagious routes of infection. important in this area, being able to cause outbreaks where both patients and health personnel are involved (3, 4). The flu is a disease that generates high health costs (S), so it is necessary to implement all the necessary measures to avoid its transmission, one of them is the flu vaccination of health workers, which prevents the contagion of both the patient towards the staff, as well as from the staff towards the patient (6). Although the efficacy of the vaccine is known, studies show that there is still a certain rejection among health personnel, among the main reasons we have: fear of adverse effects (20%) and doubts about vaccine efficacy (15%) (7, 8, 9).

In the year 2020, specifically, the general population highlighted in the survey the following reasons for flu vaccination: the possible protection that the flu vaccine could offer against COVID-19; prevent the flu from worsening your health if you catch the new virus; and help not to confuse the symptoms between both diseases.

For their part, the health workers did it to protect their health; prevent the collapse of the health system in the face of new outbreaks of COVID-19; or not infecting their patients.

The pandemic has had a positive impact on awareness of the need to protect oneself from the flu, a disease responsible for up to 50,000 hospitalizations and between 3,900 and 15,000 deaths in Spain in a normal year, mainly in those over 65 years of age. One of the main problems associated with this pathology is cardiovascular complications.

6 out of 10 vaccinated respondents have assured that they will maintain the habit in future campaigns. In fact, 71.6% of the healthcare professionals surveyed affirm that, once the pandemic is controlled, they will continue to be vaccinated. Likewise, 65.9% of the primary care physicians surveyed agree that vaccination should be mandatory among health professionals in future campaigns.

Although awareness has increased among health personnel with the need to prescribe the flu vaccine, risk groups must still continue to be made aware of the consequences of the flu, since only 17.3% of those surveyed perceive it as a serious and life-threatening illness.

On the other hand: A survey carried out in 2012 to 336 health workers in Spain, point out, ahead of the reasons mentioned above, the fact that they are not considered risk personnel. It is estimated that the percentage of vaccination necessary to generate group immunity and interrupt transmission in health centers is 80% (10). In the US by 2020, they target 90% health coverage within the Healthy People program (11). Spain has been a model for its high vaccination coverage in the pediatric population, thanks to the commendable work of years of different medical professionals, nurses and those responsible for Public Health, so it would be desirable to set a similar objective in the population of the healthcare field.

The main objective of this study: To know the flu vaccination coverage among the staff of the Fuenlabrada University Hospital and how Covid-19 has influenced it. As secondary objectives: i) To break down the analysis of vaccination coverage by: Profession (Health and Non-Health) and year of vaccination; ii) Establish vaccination strategies to increase the adherence of hospital staff

Methods

A longitudinal descriptive study was carried out between 2006 and 2020, at the Fuenlabrada University Hospital, with a study population of 23,767 workers; 19,396 health professions (doctors, nurses, technicians, nursing assistants, pharmacists ...) and 4374 non-health professions (orderlies, clerks, cleaning, kitchen ...), from this population the workers who were vaccinated against the flu. Among the variables under study of the vaccinated personnel are: qualitative as the type of profession

(health / non-health personnel), and quantitative as the number of vaccines administered.

The influenza vaccination information campaign directed at the staff was homogeneous for the thirteen seasons studied, and consisted of the publication in the internal computer system of the institution of an appeal for influenza vaccination, times and place of vaccination and as an exception in 2014 to 2020 vaccination was offered without schedule and a day was assigned to vaccinate in the Specialty Center. In 2016, we also attended the Adult, Pediatric and Gynecological Emergency Services. In 2017, in addition to the Emergencies, the Hospitalization Units were also visited. And in 2018 and 2019, in addition to all of the above; Vaccination rounds were made throughout the Hospital in addition to offering vaccination 1 day / week in the afternoon.

The vaccine was administered and registered in the SISPAL System and in the Occupational Health Service of the Hospital, and a day was assigned to vaccinate in the Specialty Center. The data recorded (2006-2020) in the registration system of the Community of Madrid were used as sources of information: SISPAL (Registry of vaccinated people by type of vaccine and place of administration, Vaccine management, Residence permits and External Centers) and the HR databases of the Fuenlabrada Hospital itself.

The vaccination coverage index was calculated for the total population of workers and for different study subgroups (depending on whether they were health and non-health: Index of vaccination coverage = number of people vaccinated / total number of the population considered x 100.

Excel databases were designed for registration and management, as well as descriptive graphics.

	TOTAL WORKERS	Total sanitary	% total sanitary	Total NO sanitary	% total NO sanitary	Total vaccinated	% of total vaccinated	TOTAL SANITARY vaccinated	NON-SANITARY vaccinated	sanitary vaccinated%	NON-sanitary VACCINATED %	COVERAGE INDEX(TOTAL sanitary facilities VACCINATED)	COVERAGE INDEX (TOTAL NON-sanitary VACCINES)%	TOTAL COVERAGE INDEX%
2006	1398	1189	85,05	209	14,95	238	17,02	177	61	74,37	25,63	14,89	29,19	17,02
2007	1398	1189	85,05	209	14,95	195	13,95	141	54	72,31	27,69	11,86	25,84	13,95
2008	1379	1088	78,90	291	21,10	271	19,65	202	69	74,54	25,46	18,57	23,71	19,65
2009	1379	1088	78,90	291	21,10	529	38,36	421	108	79,58	20,42	38,69	37,11	38,36
2010	1450	1157	79,79	293	20,21	248	17,10	176	72	70,97	29,03	15,21	24,57	17,10
2011	1570	1276	81,27	294	18,73	243	15,48	187	56	76,95	23,05	14,66	19,05	15,48
2012	1591	1292	81,21	299	18,79	256	16,09	174	82	67,97	32,03	13,47	27,42	16,09
2013	1604	1305	81,36	299	18,64	241	15,02	171	70	70,95	29,05	13,10	23,41	15,02
2014	1643	1336	81,31	307	18,69	251	15,28	165	86	65,74	34,26	12,35	28,01	15,28
2015	1644	1336	81,27	308	18,73	277	16,85	221	56	79,78	20,22	16,54	18,18	16,85
2016	1645	1347	81,88	298	18,12	315	19,15	241	74	76,51	23,49	17,89	24,83	19,15
2017	1655	1354	81,81	301	18,19	387	23,38	308	79	79,59	20,41	22,75	26,25	23,38
2018	1648	1364	82,77	284	17,23	479	29,07	393	86	82,05	17,95	28,81	30,28	29,07
2019	1735	1430	82,42	305	17,58	762	43,92	586	176	76,90	23,10	40,98	57,70	43,92
2020	2028	1645	81,11	386	19,03	1382	68,15	1145	237	82,85	17,15	69,60	61,40	68,15

Figure 1. Working population in the hospital (Excel databases)

Results

A total of 23,767 workers have been analyzed in fifteen seasons of the vaccination campaign, obtaining a general index of vaccination coverage of 24.56%; out of a total of 6,074 vaccinated. Vaccine coverage total was higher in 2020, which can be explained by the pandemic occurring that year Covid-19 observing a vaccination rate was 68.15%.

And the year with the lowest vaccination record was in 2007, with an Index of 13.95%.

By professional categories, non-healthcare personnel are vaccinated more (22.52%) than healthcare personnel (15.92%).

In 2016, an increase in adherence to influenza vaccination began to be observed by extending the schedule and the number of days the vaccination was offered, as well as the boarding areas; this being the first year where the highest coverage in sanitary ware is achieved than in previous years, even surpassing the non-healthcare personnel

Figure 2 shows the influenza vaccination coverage appears for all hospital personnel, where it is observed that in 2020 the percentage of coverage increases, reaching 68.15% of the total index. It is observed that the coverage index remains stable between the years 2010-2015, appreciating a rebound in the following years

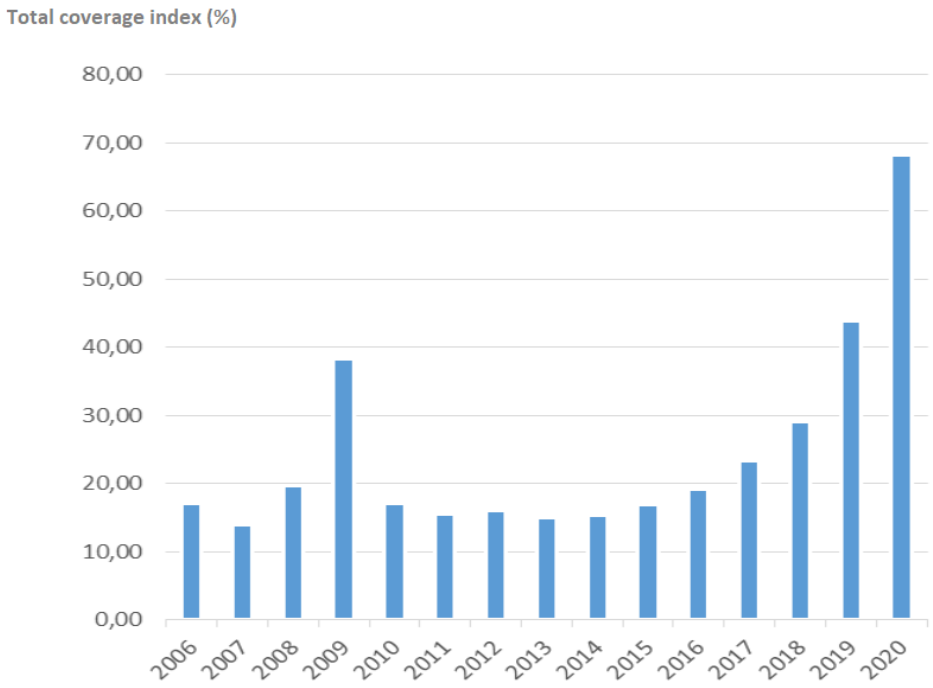

Figure 2. Flu vaccination coverage index (%)

Figures 3 shows the results for the group of hospital staff: health / non-health staff. It shows that non-healthcare personnel show greater acceptance of influenza vaccination than healthcare personnel, with results of 22.52% compared to a 15.92% coverage rate. With the exception of 2009 (Flu A) and 2020 (Covid-19) where there was a higher rate of vaccination coverage in health workers compared to non-health workers.

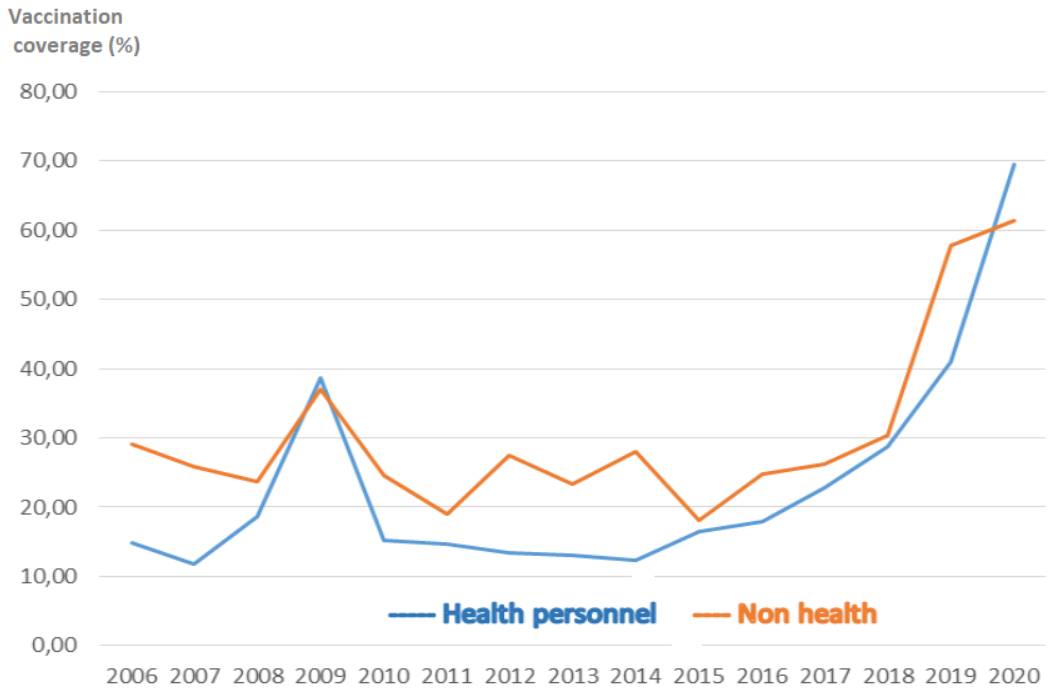

Figure 3. Flu vaccination coverage for health-personnel and non health-personnel

Discussion

There are numerous scientific evidences that make unquestionable the recommendation of vaccination against influenza in health personnel. The most important ones are summarized and grouped below in three fundamental arguments:

1. The need argument (self-protection in a more exposed group). "Medice, cure you ipsum." Sanitary, heal yourself. Numerous health survey studies agree that self-protection is the main reason for vaccination, even far ahead of patient protection (7, 8, 12, 13,14).

2. The ethical argument (the awareness of a possible transmitter source for patients in whom the flu can be expressed more severely and cause more frequent death). "Primum non nocere". First, do not hurt (Hippocrates). It is estimated that 30-50% of flu cases can be asymptomatic, which is why many health workers continue to work without knowing that they may be transmitting the flu to patients and close colleagues (15, 16).

3. The argument of exemplariness (the scientific conviction of its usefulness and safety by the health worker brings confidence) "Docendo discimus". We learn by teaching (Séneca). Our own vaccination will not only prevent us from getting sick and transmit the flu to our patients, as has been explained in the two previous sections, but it will help us to better understand this preventive tool and will mentalize ourselves to keep it in mind at the time of recommendation. On the other hand, our example will help the general population to become aware of the importance of vaccination and increase confidence in it as well as in ourselves because, in a recent study, up to 85% of the people surveyed considered vaccination of health personnel protects patients (12).

Despite the broad indication for systemic vaccination among the healthcare community, the coverage achieved is usually medium, ranging between 11.86% and 40.98% (17).

In 2009 we have observed an increase in flu vaccination coverage, which we think is influenced by the HlNl flu epidemic that made workers aware of more prevention.

In 2020, the increase in flu vaccination coverage is clearly influenced by the Covid-19 pandemic due to the fear of workers of suffering an increase in a more severe Covid in case of suffering a co-infection.

Limitations

The effectiveness of influenza vaccination in the population of H.U.F workers is not studied, but vaccination coverage. The modification in the vaccination strategy, generating greater adherence of the professional, a specific education and facilitating schedules and going to their units without the need for personnel displacement, will significantly help the increase in vaccine acceptance. lt is also necessary to carry out specific analyzes of temporary disabilities duet influenza and its impact on the hospital, in order to improve recruitment techniques

Conclusions

Vaccination coverage increases in the years in which specific epidemic waves appear, such as the one that occurred in 2020.

The modification in the vaccination strategy, generating greater adherence of the professional, a specific education and facilitating the accessibility of schedules and going to Its units without the need for personnel displacement, has significantly helped increase the acceptance of vaccination.

Conflict of interest. The authors declare no conflict of interest.

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