



## SCIENTIFIC LETTERS

### Influenza vaccination in risk groups. 2013–2014 season in the Community of Valencia<sup>☆,☆☆</sup>

### Vacunación antigripal en grupos de riesgo. Temporada 2013-14 en la Comunidad Valenciana

Dear Editor:

Influenza is a public health problem of global scale that results in a high number of hospital admissions due to both the infectious process and to complications that may derive from it, especially respiratory and cardiovascular.

Although this disease affects all age groups, it is more frequent in children: the frequency in children less than 4 years of age can even double that in the entire population.<sup>1</sup> For this reason, most European countries have implemented influenza vaccination strategies that address specific groups at high risk for complications, both in children and adults.<sup>2</sup> The Autonomous Community of Valencia has similar vaccination strategies against influenza.<sup>1</sup>

It is well known that the impact of vaccination programmes depends not only on vaccine effectiveness, but also on the coverage rates attained in the different subsets of the population. However, few studies have analysed the coverage rates by disease in children, and those that have, point at low coverage rates.<sup>3,4</sup> With this in mind, the aim of this study was to determine the coverage rate of vaccination against influenza in children aged less than 15 years with heart disease, respiratory disease or diabetes in the Autonomous Community of Valencia during the 2013–2014 season.

We conducted a retrospective descriptive study of the prevalence of the disease and the vaccine coverage, with

the corresponding 95% intervals, by age and sex and for each group of diseases under study. To do so, we used the information stored in the Sistema de Información Ambulatoria (Ambulatory Care Information System [SIA]), the primary care electronic medical records database that holds the active diagnostic codes of the patients (ICD9CM), and in the Sistema de Información Vacunal (Vaccine Information System [SIV]), that registers all vaccination acts by the name of the vaccine. From the SIA, we collected the data for patients aged 6 months–14 years with active diagnoses as of August 28, 2013 of heart disease (ICD 393–398, 402–404, 410–416, 424–429 and 746), chronic respiratory disease (490–496, 500–505, 515, 518, V46.2) or diabetes (250, V58.67); and from the SIV we collected and verified the vaccination status of the patients identified in the SIA. We obtained the data for the population aged less than 15 from the Instituto Nacional de Estadística (National Institute of Statistics).

For the purpose of the study, we considered individuals to be vaccinated if the SIV had records of them having received the vaccine between October 1, 2013 and February 28, 2014.

The statistical software used for data analysis was the SPSS<sup>®</sup> version 15.

Table 1 presents the estimated prevalence by age and sex for the three disease categories.

Fig. 1 shows the vaccination coverage rates achieved for each disease group. Overall, only 11.16% (10.41–11.91) of patients with heart disease, 7.27% (7.10–7.44) of patients with chronic respiratory disease and 24.88% (22.82–26.94) of patients with diabetes had been vaccinated.

The overall analysis by sex showed a higher vaccine coverage rate in males for the heart disease group (11.75%; 10.7–12.80) and the chronic respiratory disease group (7.61%; 7.39–7.83).

The analysis by sex and age group offered the following information about the highest coverage rates: in patients with heart disease it corresponded to girls aged 1–2 years (12.85%; 9.38–16.32); in patients with respiratory disease, boys aged 10–14 years (9.10%; 8.65–9.55); and in patients with diabetes, boys aged 3–4 years (34.29%; 18.56–50.02).

The prevalences of disease that we found were consistent with the prevalences expected based on the 2010 Autonomous Community of Valencia Health Survey,<sup>5</sup> which reduces the probability of having underestimated the coverage rates.

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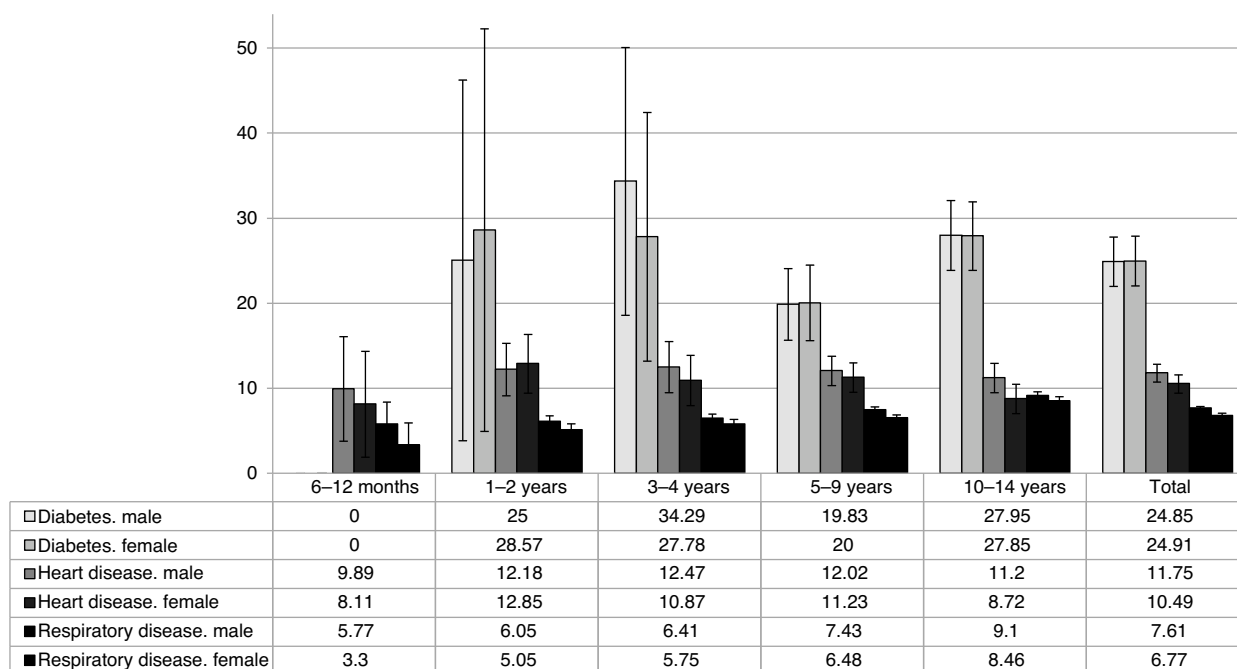
<sup>☆☆</sup> Previous presentation: The results of this study were partially presented at the second Jornada de Actualización en Vacunas, Novartis Vaccines, Valencia 2014.

**Table 1** Prevalence of disease by sex and age group. Autonomous Community of Valencia, 2013–2014 season.

Age group	Heart disease			Respiratory disease			Diabetes		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
<i>6–12 months</i>									
<i>N</i>	91	74	165	312	182	494	0	1	1
<i>Rate</i>	7.99	6.82	7.42	27.40	16.76	22.21	0.00	0.09	0.04
<i>CI</i>	(6.36–9.63)	(5.27–8.36)	(6.29–8.55)	(24.40–30.40)	(14.35–19.18)	(20.27–24.15)		(–0.09–0.27)	(–0.043–0.13)
<i>1–2 years</i>									
<i>N</i>	427	358	785	5.006	3.326	8.332	16	14	30
<i>Rate</i>	8.28	7.44	7.87	97.02	69.10	83.55	0.31	0.29	0.30
<i>CI</i>	(7.49–9.06)	(6.67–8.21)	(7.32–8.42)	(94.47–99.58)	(66.83–71.37)	(81.83–85.26)	(0.16–0.46)	(0.14–0.44)	(0.19–0.41)
<i>3–4 years</i>									
<i>N</i>	465	423	888	8.500	6.102	14.602	35	36	71
<i>Rate</i>	8.20	7.95	8.08	149.97	114.71	132.90	0.62	0.68	0.65
<i>CI</i>	(7.46–8.95)	(7.20–8.71)	(7.55–8.61)	(147.03–152.91)	(112.00–117.42)	(130.89–134.90)	(0.41–0.82)	(0.46–0.90)	(0.50–0.80)
<i>5–9 years</i>									
<i>N</i>	1.339	1.264	2.603	23.887	16.892	40.779	348	310	658
<i>Rate</i>	9.70	9.66	9.68	173.09	129.09	151.68	2.52	2.37	2.45
<i>CI</i>	(9.19–10.22)	(9.13–10.19)	(9.31–10.05)	(171.10–175.09)	(127.27–130.91)	(150.32–153.03)	(2.26–2.79)	(2.11–2.63)	(2.26–2.63)
<i>10–14 years</i>									
<i>N</i>	1.277	1.009	2.286	15.587	10.316	25.903	458	474	932
<i>Rate</i>	10.22	8.49	9.37	124.70	86.78	106.22	3.66	3.99	3.82
<i>CI</i>	(9.66–10.77)	(7.97–9.01)	(8.99–9.76)	(122.87–126.53)	(85.18–88.38)	(105.00–107.44)	(3.33–4.00)	(3.63–4.35)	(3.58–4.07)
<i>Total</i>									
<i>N</i>	3.599	3.128	6.727	53.292	36.818	90.110	857	835	1.692
<i>Rate</i>	9.41	8.64	9.03	139.27	101.73	121.02	2.24	2.31	2.27
<i>CI</i>	(9.10–9.71)	(8.34–8.89)	(8.82–9.25)	(138.17–140.37)	(100.75–102.72)	(120.28–121.76)	(2.09–2.39)	(2.15–2.46)	(2.16–2.38)

Rate per 100,000.

CI: 95% confidence interval; N: absolute frequency.



**Figure 1** Influenza vaccination coverage by disease, age group and sex. Autonomous Community of Valencia, 2013–2014 season.

As for vaccination coverage, the rates found were low: they did not reach 25% in any of the age, sex, or disease groups.

The results we obtained are consistent with those of other studies in our country,<sup>3,4</sup> which suggests that this situation is commonplace in all of Spain. This is a surprising fact considering the unanimous recommendations with regards to vaccination, and because coverage rates for childhood immunisation programmes are consistently high in Spain.<sup>6</sup>

In conclusion, despite the recommendations for vaccination against influenza aimed at high-risk groups in children and the existing knowledge of diagnoses in primary care, the achieved coverage rates are very low. We believe that the dissemination of coverage rate results, the explicit inclusion of chronic diseases in care protocols, vaccine recommendations and the use of the alert mechanisms available in many information systems could contribute to the improvement of coverage rates.

## References

- Portero Alonso A, Pastor Villalba E, Martín Ivorra R, Alguacil Ramos AM, López Maside A, Miralles Espí MT, et al. Prevención y vigilancia de la gripe en la Comunitat Valenciana. Temporada 2013–2014. Informe de Salud 145. Valencia: Generalitat. Conselleria de Sanitat; 2014. Available at: [http://www.sp.san.gva.es/biblioteca/publicacion\\_dgsp.jsp?cod\\_pub\\_ran=427357130&tacc=16](http://www.sp.san.gva.es/biblioteca/publicacion_dgsp.jsp?cod_pub_ran=427357130&tacc=16) [accessed 18.01.15].
- Mereckiene J, Cotter S, Nicoll A, Lopalco P, Noori T, Weber JT, et al., the VENICE project gatekeepers group. Seasonal influenza

immunisation in Europe. Overview of recommendations and vaccination coverage for three seasons: pre-pandemic (2008/09), pandemic (2009/10) and post-pandemic (2010/11). *Euro Surveill.* 2014;19:20780.

- Domínguez Cajal MM, de Arriba Muñoz A, Escosa García L, García Íñiguez JP, Biosca Pàmies M, García Sánchez N. Cobertura de vacuna antigripal en niños de riesgo durante 2007-2008 en un centro de Atención Primaria en España. *Rev Pediatr Aten Primaria.* 2009;11:399–411.
- González R, Campins M, Rodrigo JA, Uriona S, Vilca LM. Cobertura de vacunación antigripal en niños con condiciones de riesgo en Cataluña. *Enferm Infecc Microbiol Clin.* 2015;33:22–6.
- Conselleria de Sanitat. Generalitat Valenciana. Encuesta de Salud; 2010. Available at: <http://www.san.gva.es/documents/153218/167513/encuesta2010completo.pdf> [accessed 16.02.15].
- Ministerio de Sanidad, Servicios Sociales e Igualdad. Coberturas de vacunación. Datos estadísticos. Available at: <https://www.msssi.gob.es/profesionales/saludPublica/prevPromocion/vacunaciones/coberturas.htm> [accessed 02.03.15].

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