Anales de Pediatría xxx (xxxx) 504338

analesdepediatría

www.analesdepediatria.org

SPANISH ASSOCIATION OF PAEDIATRICS

What do those who vaccinate think? Perception of the flu among pediatrician and pediatric nursing professionals

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Received 20 May 2026; accepted 7 July 2026

KEYWORDS
Influenza;
Vaccination;
Pediatrics;
Pediatric nursing;

Abstract
Introduction: Childhood influenza represents a significant healthcare burden, in terms of both primary care and hospital emergency department visits, as well as in hospitalizations. The objective of this study was to analyze the perceptions of pediatricians and nurses working in pediatric settings regarding childhood influenza and influenza vaccination, as well as the perceived barriers, in order to identify new strategies to improve vaccination coverage.

DOI of original article: https://doi.org/10.1016/j.anpedi.2026.504338
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Risk perception;
Vaccination coverage

Materials and methods: Cross-sectional, observational, and descriptive study through a nationwide survey of pediatricians and pediatric nurses. We collected data on variables related to perceived severity, clinical burden, complications, vaccination, training, family reluctance to vaccinate, and preferred communication channels.
Results: A total of 2268 professionals responded: 1877 pediatricians and 391 nurses. Eighty-five percent of pediatricians believed influenza had a significant impact on their clinical practice, and 91% identified it as potentially serious in childhood. The most frequently perceived complications were otitis media, bronchitis/bronchiolitis, and pneumonia. Ninety-five percent of pediatricians supported vaccination against influenza for children aged 6–59 months of age (childhood vaccination), with chronic illnesses, or living with at-risk individuals, and 97% perceived its extension up to age 17 positively. However, 33% expressed uncertainty about vaccine effectiveness. Sixty-seven percent of pediatricians reported frequent reluctance among families, and 82% of nurses considered that families do not perceive influenza as a serious illness.
Conclusions: There is broad professional consensus regarding the clinical relevance of childhood influenza and the positive value of vaccination. The main barrier identified is the low risk perception among families, along with a need for training on vaccine effectiveness and communication with families. Strategies based on educational materials with visual contents, brief information, and a focus on the actual risk could improve both of these aspects.
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PALABRAS CLAVE
Gripe;
Vacunación;
Pediatría;
Enfermería pediátrica;
Percepción de riesgo;
Cobertura vacunal

¿Qué piensan quienes vacunan? Percepción de la gripe entre profesionales de pediatría y enfermería pediátrica

Resumen
Introducción: La gripe infantil representa una causa relevante de carga asistencial, tanto en visitas a atención primaria y urgencias hospitalarias como en hospitalización. El objetivo de este estudio fue analizar la percepción de médicos especialistas en pediatría y del personal de enfermería que trabaja en el ámbito pediátrico sobre la gripe infantil y la vacunación antigripal y las posibles barreras percibidas, con el fin de buscar nuevas estrategias para mejorar las coberturas.
Material y métodos: Estudio observacional, descriptivo y transversal mediante encuesta nacional dirigida a profesionales de pediatría y enfermería pediátrica. Se recogieron variables relacionadas con la percepción de gravedad, carga clínica, complicaciones, vacunación, formación, reticencia a la vacunación por las familias y canales de comunicación preferidos.
Resultados: Respondieron 2.268 profesionales: 1.877 pediatras y 391 enfermeras. El 85% de los pediatras consideró que la gripe tiene un impacto relevante en su práctica clínica y el 91% la identificó como potencialmente grave en la infancia. Las complicaciones percibidas con mayor frecuencia fueron otitis media, bronquitis/bronquiolitis y neumonía. El 95% de los pediatras apoyó la vacunación antigripal en niños de entre 6 y 59 meses (vacunación en la infancia), enfermos crónicos y los convivientes con personas de riesgo, y el 97% valoró positivamente su ampliación hasta los 17 años. Sin embargo, el 33% mostró incertidumbre sobre la efectividad vacunal. El 67% de los pediatras detectó reticencias frecuentes de las familias y el 82% de enfermería consideró que las familias no perciben la gripe como una enfermedad grave.
Conclusiones: Existe un amplio consenso profesional sobre la relevancia clínica de la gripe infantil y el valor positivo de la vacunación. La principal barrera identificada es la baja percepción de riesgo en las familias, junto con necesidades formativas en efectividad vacunal y comunicación con las familias. Las estrategias basadas en material divulgativo, con formatos visuales, breves y centrados en el riesgo real podrían mejorar estos dos aspectos.
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Introduction

Seasonal influenza continues to be a significant cause of pediatric morbidity that results in an increase in primary care and emergency department visits as well as hospitalizations during the season. Traditionally, there has been a focus on children with chronic illnesses; however, the available evidence shows that a significant proportion of complications and hospitalizations occur in previously healthy children and adolescents[1–4] (Table 1).

In recent years, recommendations for pediatric vaccination against seasonal influenza have been progressively expanded in several European countries.[1] In Spain, the consensus document of the Advisory Committee on Vaccines and Immunization of the Asociación Española de Pediatría (AEP, Spanish Association of Pediatrics), the Asociación Española de Vacunología (AEV, Spanish Association of Vaccinology) and the Sociedad Española de Infectología pediátrica (SEIP, Spanish Society of Pediatric Infectious Diseases) recommends routine vaccination against influenza for every child and adolescent aged 6 months to 17 years.[3]

However, the acceptability of vaccination does not depend solely on the availability of vaccines or official recommendations. The perception of risk among families, the confidence in the effectiveness and safety of vaccines, and the communication skills of health care professionals are key contributing factors.[3]

The objective of our study was to analyze the perceptions of pediatricians and pediatric nurses regarding childhood influenza, its clinical impact, vaccination against influenza, and the main perceived barriers to vaccination in real-world clinical practice.

Material and methods

We conducted a cross-sectional, observational, and descriptive study through a nationwide survey of pediatricians and another of pediatric nurses, both sponsored by their respective scientific societies (AEP and Asociación Española de Enfermería Pediátrica [AEEP, Spanish Association of Pediatric Nursing]) (Appendices B and C).

The surveys were conducted through two questionnaires, one including specific items for doctors specialized in pediatrics to assess their perceptions regarding vaccine hesitancy, and the other designed for nurses working in pediatric care settings to assess their beliefs regarding the extent to which families perceive influenza as a potentially serious disease. The sample included 2268 health care professionals, of whom 1877 were pediatricians and 391 were nurses.

We have expressed qualitative variables as absolute frequencies and percentages. Since the study had a descriptive design and was based on a survey of health care professionals to explore their perceptions, we did not conduct an inferential analysis.

Table 1 Main results of the survey.

Dimension	Result
Participating pediatricians (n)	1877
Participating nurses (n)	391
Pediatricians who perceived a significant impact of influenza	85%
Pediatricians who considered influenza could be serious	91%
Nurses who considered influenza a common condition	95%
Pediatric health care professionals supporting vaccination	95%
Positive perception of extension of vaccination to age 17 years	97%
Uncertainty regarding vaccine effectiveness	33%
Pediatricians who perceived hesitancy in families	67%
Nurses who reported families perceiving influenza as low-risk	82%

Ethical considerations

Participation in the survey was anonymous and voluntary, and we did not collect any personally identifiable information.

Informed consent

Since the study was a survey of health care professionals and did not include patient data, consent from patients or guardians was not required.

Results

Perception of influenza as a health problem

Eighty-five percent of pediatricians reported that influenza had a significant impact on their clinical practice. Additionally, 91% believed that influenza can be a serious illness in childhood. Among nursing professionals, 95% considered influenza a common condition.

Health care burden and complications

The most commonly observed complications were otitis media (reported by 40%), bronchitis or bronchiolitis (by 34%), and pneumonia (by 26%). In addition, 32% of pediatricians believed that at least one-quarter of influenza-related hospitalizations occur in previously healthy children.

Vaccination against influenza

Ninety-five percent of pediatricians supported vaccination against influenza for children between 6 and 59 months of age (vaccination in infancy and early childhood), individuals with chronic illnesses, and household contacts of at-risk individuals. In addition, 97% had a positive perception of the extension of the recommendation to vaccinate through age 17 years. However, while 54% thought the vaccine is more effective in children, 33% reported not knowing how effective it was.

Information and training of professionals

Eighty percent of pediatricians considered themselves well-informed about the flu and the flu vaccine, although nearly 20% expressed uncertainty. Among pediatric nurses, 90% were familiar with the recommendations, but 21% did not feel completely confident in addressing concerns raised by families.

Perceptions of families

Sixty-seven percent of pediatricians reported that families frequently expressed reservations about the flu vaccine. Furthermore, 82% of nurses believed that families do not perceive influenza as a serious disease.

Preferred communication channels

Pediatricians cited brochures and infographics (79%), waiting room materials (67%), the Advisory Committee on Vaccines and Immunizations website (52%), and webinars (48%) as their preferred resources. Among nurses, the preferred resources were infographics (selected by 82%), and bite-sized educational materials (selected by 52%).

Discussion

The survey results indicate broad professional consensus regarding the clinical significance of influenza in the pediatric population. Most pediatricians perceive influenza as a common, significant, and potentially serious illness. This perception is consistent with the current literature, which describes a significant disease burden in the pediatric population, including both children with risk factors and previously healthy children.[1,2,4,5]

The high level of support expressed by respondents for vaccination against influenza was a significant finding. The acceptability of the vaccine among health care professionals is essential for improving vaccination coverage (the ease of intranasal administration is also helpful), since an explicit recommendation from a health care provider has been found to be among the strongest predictors of vaccine acceptance in families.[4] However, the uncertainty regarding vaccine effectiveness underscores the need to strengthen continuing education among providers, particularly on practical aspects related to effectiveness, safety, and communication of individual- and community-level benefits of vaccination.

The main barrier identified in the nursing survey was the low risk perceived by families. This gap between the perceptions of health care providers and the general public may limit vaccine uptake, even when official recommendations are clear. Therefore, communication campaigns should focus not only on informing the public about the availability of the vaccine, but also on conveying clear information on the actual burden of childhood influenza, its complications, and the preventive role of vaccination.[6]

The role of nurses in the pediatric care setting is particularly significant. Due to their frequent contact with families and their involvement in preventive care activities, they play a key role in health education and vaccination promotion. The survey findings support the development of concise, standardized visual materials, such as infographics, posters, and bite-sized educational interventions.

Similar studies regarding vaccination of children against influenza show that health care professionals, especially pediatricians and pediatric nurses, largely support it. In Spain, a study conducted in the Region of Murcia during the first universal influenza vaccination campaign for children aged 6–59 months showed that 91.9% of health care professionals considered vaccination against seasonal influenza important or very important. In addition, the intranasal vaccine was perceived positively and preferred by most professionals for future campaigns, suggesting that this route of administration may facilitate acceptance of pediatric vaccination.[7]

A subsequent study conducted during the 2023–2024 season, also in Murcia, confirmed the high level of support for vaccination of children against influenza among pediatricians and nurses. This study underscored that, compared to the previous campaign, the experience with the intranasal vaccine was rated more favorably, in addition to an increased confidence of health care providers in school-based vaccination, with a lower proportion considering the presence of a medical doctor essential for its implementation.[8]

Together, these studies indicate that there is broad professional consensus regarding the value of pediatric vaccination against influenza. However, vaccination coverage may be limited by family-related barriers, doubts about vaccine effectiveness, the perception that influenza is a low-risk disease, and logistical challenges. Therefore, the most effective strategies appear to be those that combine a clear recommendation from health care professionals, brief and visual messages about the actual risk of childhood influenza, specific training, and measures to facilitate access to the vaccine.

The limitations of the study include its cross-sectional design, that it was based on a survey of perceptions, and the potential overrepresentation of health care professionals with a greater interest in vaccination. Furthermore, the results reflect the perceptions of health care professionals and do not allow for direct measurement of vaccination coverage or actual family attitudes.

Conclusions

Pediatricians and pediatric nurses view influenza as a common, significant, and potentially serious illness in the pediatric population. There is broad support for influenza vaccination in this population, including its extension to adolescents. The main areas of improvement are education on vaccine effectiveness, communication with families, and the development of visual and practical resources to help correct the low perception of risk in the general public (Appendix B).

Funding

The development of these recommendations (analysis of the published data, debate, consensus and publication) has not

been supported by any funding source outside of the logistic support provided by the AEP.

Declaration of competing interest

AVA has collaborated in educational activities funded by AstraZeneca, GlaxoSmithKline, Pfizer and Sanofi. He has collaborated as a researcher in vaccine clinical trials sponsored by GlaxoSmithKline, MSD, Sanofi and Pfizer.

JAA has collaborated in educational activities funded by AstraZeneca, GlaxoSmithKline, MSD, Pfizer, Sanofi and Seqirus, as a researcher in clinical trials for Novartis, GlaxoSmithKline and Sanofi and as a consultant in AstraZeneca, GlaxoSmithKline, MSD, Pfizer, Sanofi and Seqirus advisory boards.

FJAG has collaborated in educational activities funded by AstraZeneca, GlaxoSmithKline, MSD, Pfizer and Sanofi and as a consultant in GlaxoSmithKline, MSD, Pfizer and Sanofi advisory boards.

EGL has received funding to attend domestic educational activities and has participated in educational activities funded by GlaxoSmithKline, MSD, Pfizer and Sanofi, as a researcher in studies for GlaxoSmithKline and MSD and as an advisory board consultant for GlaxoSmithKline.

AIA has collaborated in educational activities funded by AstraZeneca, GlaxoSmithKline, MSD and Pfizer and as a consultant in GlaxoSmithKline and Pfizer advisory boards. He has also received funding from GlaxoSmithKline, MSD and Pfizer to attend educational activities.

LLG has collaborated in educational activities funded by AstraZeneca, GlaxoSmithKline, MSD, Moderna and Sanofi and as an advisory board consultant for MSD, Pfizer and Sanofi. She has also received funding from Pfizer and Sanofi to attend educational activities in Spain and abroad, and received grants sponsored by GlaxoSmithKline.

MLNG has collaborated in educational activities funded by Gilead, GlaxoSmithKline, Janssen, MSD, Pfizer and ViiV, as a consultant in Abbott, AstraZeneca, Novartis, Pfizer and ViiV advisory boards and as a researcher in clinical trials sponsored by GlaxoSmithKline, Pfizer, Roche and Sanofi. Coordinator and principal investigator of the CIBERINFEC group of the Instituto de Salud Carlos III and the Instituto de Investigación Gregorio Marañón (IiSGM).

VPS has received funding from MSD, Pfizer and Sanofi to attend educational activities in Spain and abroad, has collaborated in educational activities funded by AstraZeneca, GlaxoSmithKline, MSD, Pfizer and Sanofi and as a consultant in GlaxoSmithKline, Pfizer and Sanofi advisory boards.

IRC has collaborated in educational activities funded by GlaxoSmithKline, MSD, Pfizer and Sanofi, as a researcher in vaccine clinical trials for Ablynx, Abbott, Cubist, GlaxoSmithKline, Janssen, Medimmune, Merck, MSD, Novavax, Novartis, Pfizer, Roche, Regeneron, Sanofi, Seqirus and Wyeth and as a consultant in MSD, Pfizer and Sanofi advisory boards.

JRC has collaborated in educational activities funded by GlaxoSmithKline, MSD, Pfizer and Sanofi and as a researcher in clinical trials for GlaxoSmithKline and Pfizer.

ISC has collaborated in educational activities funded by GlaxoSmithKline, MSD, Moderna, Novavax, Pfizer, Sanofi and Seqirus, as a researcher in vaccine clinical trials for Abbott, Ablynx, Allergan, Almirall, Astra Zeneca, Biomedal, GlaxoSmithKline, Janssen, Lilly, Medimmune, Merck, MSD, Moderna, Nestlé, Novartis, Novavax, Nutricia, Pfizer, Regeneron, Roche, Sanofi, Seqirus and Wyeth and as a consultant in Astra Zeneca, GSK, MSD, Moderna, Novavax, Pfizer and Sanofi advisory boards.

PSM has collaborated in educational activities funded by GlaxoSmithKline and MSD, as a researcher in clinical trials for Sanofi and as a consultant in GlaxoSmithKline advisory board. He has also received funding from GlaxoSmithKline, MSD and Pfizer to attend educational activities in Spain and abroad, and received grants sponsored by GlaxoSmithKline.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.anpede.2026.504338.

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