



## Epidemiology and prevention of vaccine-preventable diseases

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involving public and private organizations from 20 countries. The project will end in July 2021.

In January 2020, a multicentre project coordinated by our team has begun, involving 24 hospitals in eight regions (FIS PI19/00354) about "Effectiveness of influenza and pneumococcal vaccination in preventing hospitalization in people aged <65 years with risk conditions". The project will end in December 2022.

### Doctoral thesis

In the last years have been read 6 thesis, in 2014: "State immunity against preventable diseases of health workers in Catalonia" and "Associated risk factors for invasive pneumococcal disease and impact of vaccination in children"; in 2015: "Epidemiology of pertussis in Catalonia", in 2016: "Epidemiology of pertussis from its study in different levels of health care", "Elimination program of measles, rubella and mumps in Catalonia. Epidemiological surveillance and vaccination strategies" and "Influence of the occupation on the risk of infection and hospitalization for influenza virus A (H1N1) pdm09"; in 2018: "Effect of influenza vaccination on the prognosis of patients hospitalized with influenza"; in 2019: "Epidemiology of community-acquired pneumonia that requires hospitalization in people ≥65 years. Risk factors and factors associated with readmission".

### Other publications

We have participated in the publication of the Guide Recommendations "Vaccines and Public Health" of the Royal Academy of Pharmacy of Catalonia, available on the web [www.rafc.cat](http://www.rafc.cat); the Guide Recommendations "Vaccination Manual of Catalonia", of the Public Health Agency of Catalonia, available on the web [http://salutpublica.gencat.cat/web/.content/minisite/aspcat/promocio\\_salut/vacunacions/00manual\\_de\\_vacunacions/Manual-de-vacunacions.pdf](http://salutpublica.gencat.cat/web/.content/minisite/aspcat/promocio_salut/vacunacions/00manual_de_vacunacions/Manual-de-vacunacions.pdf); and the document "Vaccination in risk groups of all ages and in certain situations" of the Interterritorial Council of the National Health System, available on the web [https://www.mscbs.gob.es/profesionales/saludPublica/prevPromocion/vacunaciones/VacGruposRiesgo/docs/VacGruposRiesgo\\_todas\\_las\\_edades.pdf](https://www.mscbs.gob.es/profesionales/saludPublica/prevPromocion/vacunaciones/VacGruposRiesgo/docs/VacGruposRiesgo_todas_las_edades.pdf).

### Abstract

This line aims to improve knowledge of the epidemiology of vaccine-preventable diseases and the impact of vaccination programs.

The appearance of severe influenza cases caused by the novel subtype A(H1N1)2009 in April 2009 provided a rationale to initiate a multicenter case-control study (project GR09/0030, Spanish Ministry of Science and Innovation) with 35 hospitals from seven Spanish Autonomous Regions participating. The aim was to investigate the risk factors associated with the most-severe forms of the disease, and the effectiveness of pharmaceutical and non-pharmaceutical measures. After the 2009-2010 pandemic activity, in the next two years we will investigate the effectiveness of these measures in seasonal epidemics.

In 2015 concluded another multicentre project coordinated by our team involving 19 hospitals in seven regions (FIS PI12 / 02079) to assess the effectiveness of the influenza vaccine and 23-valent polysaccharide vaccine in people aged 65 and over.

We have also participated in the FIS PI11/02345 "Efectividad de la vacuna 13-valente en la prevención de la enfermedad neumocócica invasiva. Estudio de casos y controles" that concluded in 2016.

We participated in the FIS PI11/02557 "Importancia de adolescentes y adultos en la transmisión de tos ferina en los domicilios" that it concluded in 2015.

We are participating in the project PI15/01348 "Efectividad de la vacuna contra la tos ferina en mujeres embarazadas en el tercer trimestre para prevenir la tos ferina: un estudio de casos y controles en Cataluña y Navarra", that will end in December 2018.

In August 2018, participation in the "Joint Action on Vaccination" began, the objective is to strengthen cooperation in vaccination policies at European level

### **Selected publications**

- S. Hernández, C. Muñoz-Almagro, P. Ciruela, N. Soldevila, C. Izquierdo, M.G. Codina, A. Diaz, F. Moraga-Llop, J.J. García-García, A. Domínguez. Invasive pneumococcal disease and influenza activity in pediatric population. Impact of PCV13 vaccination in pandemic and non-pandemic influenza periods. *Journal of Clinical Microbiology* **2019**; 57:e00363-19.
- P. Godoy, A. Romero, N. Soldevila, N. Torner, M. Jané, A. Martínez, J.A. Caylà, C. Rius, A. Domínguez and the Working Group on Surveillance of Severe Influenza Hospitalized Cases in Catalonia. Influenza vaccine effectiveness in reducing severe outcomes over six influenza seasons, a case-case analysis, Spain, 2010/11 to 2015/16. *Eurosurveillance* **2018**; 23: pii=1700732.
- A. Domínguez, A. Romero-Tamarit, N. Soldevila, P. Godoy, M. Jané, A. Martínez, N. Torner, J.A. Caylà, C. Rius, the Surveillance of Hospitalized Cases of Severe Influenza in Catalonia Working Group. Effectiveness of antiviral treatment in preventing death in severe hospitalized influenza cases over six seasons. *Journal of Infection* **2018**; 146:799-808.
- I. Casado, A. Domínguez, D. Toledo, J. Chamorro, J. Astray, M. Egurrola, M.A. Fernández-Sierra, V. Martín, M. Morales-Suárez-Varela, P. Godoy, J. Castilla; Project PI12/02079 Working Group. Repeated influenza vaccination for preventing severe and fatal influenza infection in older adults: a multicentre case-control study. *Canadian Medical Association Journal* **2018**; 190:E3-E12.
- A. Domínguez, N. Soldevila, J.A. Caylà, M. García-Cenoz, G. Ferrús, M.R. Sala-Farré, J. Álvarez, M. Carol, I. Barrabeig, N. Camps, L. Coronas, C. Muñoz-Almagro, P. Godoy; Transmission of Pertussis in Households Working Group. Assessment of clinical symptoms in household contacts of confirmed pertussis cases. *Journal of Infection* **2017**; 75: 426-432.

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