



# ANNUAL REPORT 2 0 1 4

*c*iberesp

*Centro de Investigación Biomédica en Red  
Epidemiología y Salud Pública*

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# 1. ORGANIZATION



## INTRODUCTION

The Centro de Investigación Biomédica en Red (CIBER) is a consortium dependent on the Instituto de Salud Carlos III (Ministry of Economy and Competitiveness). The CIBERESP (Epidemiology and Public Health) is formed by 48 reference research groups, located in different hospitals, universities and research centres in Spain.

Its specific purposes are:

- Conducting joint programmes for research, development and innovation in the line of Epidemiology and Public Health.
- Contributing to solving healthcare problems relating to said area.
- Promoting participation in national research activities and particularly activities included in the European Framework Programmes for R+D+I.
- Promoting the transfer of results derived from the research processes to society and particularly to the production sector.
- Promoting dissemination of its activities and training of competitive researchers in the field of Epidemiology and Public Health.

The creation process starts with the official publication of the regulatory framework (Ministerial Order SCO/806/2006) and of the relevant call for proposal (ISCIII Resolution, 30 March 2006), encompassed in the framework of the Ingenio 2010 Initiative, CONSOLIDER Programme. However, the Consortium has its roots in the earlier call for proposal (2002) with the creation of different group networks including some that particularly stand out: *Red de grupos de Infancia y Medio Ambiente (INMA)*, *Red de Centros de Epidemiología y Salud Pública (RCESP)*, *Red de RESEARCH GROUPS en Servicios Sanitarios (IRYSS)* and *Red de Medicina Basada en la Evidencia (EMB)*.

The CIBERESP, as a Consortium was formed on 29 December 2006 by signing the collaboration agreement for its creation (Official State Journal, 22 February 2011) between Instituto de Salud Carlos III, the Consejo Superior de Investigación Científica, certain research centres from the Spanish Regions of Andalusia, Catalonia, Valencia, Galicia, Madrid, Region of Murcia, Chartered Community of Navarre and the Basque Country, and other centres or institutions that are not affiliated with the Public Administrations and the approval of its Bylaws, which were amended in 2010 (Official State Journal, 22 February 2011). Said amendment was fully in force in 2011.

In 2013, effective effect 1 January 2014, within the framework of the public sector restructuring and rationalisation plan, the integration of CIBERESP, together with CIBER-BBN, CIBEREHD, CIBERER, CIBERES, CIBEROBN, CIBERDEM and CIBERSAM in a unique consortium named Centro de Investigación Biomédica en Red, CIBER, was approved.

## RESEARCH GROUPS AND CONSORTIUM INSTITUTIONS

In 2014, CIBERESP was formed by 32 different institutions representing 48 research groups in Epidemiology and Public Health making up the CIBER.

Its territorial implementation covers 9 Spanish Regions and different types of centres: research centres (32%), universities (32%), healthcare centres (18%), public administrations (15%), and schools of public health (3%).

Research groups and institutions

Group	PI Name	Institution
15	Abilleira Castells, Sonia	Agència de Qualitat i Avaluació Sanitàries de Catalunya (AQuAS)
9	Alonso Caballero, Jordi	ConSORCI Mar Parc Salut de Barcelona
41	Ballester Diez, Ferrán	Fundación para la Investigación Sanitaria y Biomédica de la Comunidad Valenciana (FISABIO)
33	Baquero Mochales, Fernando	Servicio Madrileño de Salud
6	Bolumar Montrull, Francisco	Universidad de Alcalá
43	Bonfill Cosp, Xavier	Instituto de Investigación del Hospital de la Santa Cruz y San Pablo
3	Borrell Thio, Carme	Agencia de Salud Pública de Barcelona
44	Bueno Cavanillas, Aurora	Universidad de Granada
4	Calderón Sandubete, Enrique José	Fundación Pública Andaluza para la Gestión de la Investigación en Salud de Sevilla
27	Casabona Barbara, Jordi	Fundación Instituto de Investigación Germans Trias i Pujol
11	Castilla Catalán, Jesús	Instituto de Salud Pública de Navarra
12	Cayla Buqueras, Joan Artur	Agencia de Salud Pública de Barcelona
46	Daponte Codina, Antonio	Escuela Andaluza de Salud Pública
16	Delgado Rodriguez, Miguel	Universidad de Jaén
1	Domínguez Garcia, Ángela	Universidad de Barcelona
28	Dorronsoro Iraeta, Miren	Asociación Instituto Biodonostia
13	Echevarría Mayo, Juan Emilio	Instituto de Salud Carlos III
39	Emparanza Knörr, José Ignacio	Asociación Instituto Biodonostia
22	Estivill Palleja, Xavier	Fundación Centro de Regulación Genómica
8	Ferreira González, Ignacio	Fundación Hospital Universitario Vall D'hebron - Institut De Recerca (VHIR)
21	Fuente De Hoz, Luis de la	Instituto de Salud Carlos III
47	García Benavides, Fernando	Universidad Pompeu Fabra
14	Gestal Otero, Juan Jesús	Universidad de Santiago de Compostela

Group	PI Name	Institution
23	Gómez de la Cámara, Agustín	Servicio Madrileño de Salud
26	Hernández Aguado, Ildefonso	Universidad Miguel Hernández
38	Kogevinas, Emmanouil	Centre de Recerca en Epidemiologia Ambiental (CREAL)
18	López Medina, María José	Agencia de Salud Pública de Barcelona
7	López-Abente Ortega, Gonzalo	Instituto de Salud Carlos III
20	Marcos Dauder, Ricardo	Universidad Autónoma de Barcelona
29	Menéndez Santos, Clara	Hospital Clínico y Provincial De Barcelona
32	Mateo Ontañón, Salvador de	Instituto de Salud Carlos III
17	Morales Suárez-Varela, M <sup>a</sup> Manuela	Universidad de Valencia
55	Moreno Aguado, Víctor	Instituto Catalan de Oncología
2	Moya Simarro, Andrés	Universidad de Valencia
24	Navarro Sánchez, Carmen	Fundación para la Formación e Investigación Sanitarias de la Región de Murcia (FFIS)
19	Olea Serrano, Nicolás	Fundación para la Investigación Biosanitaria en Andalucía Oriental (FIBAO)
35	Porta Serra, Miquel	Consorci Mar Parc Salut De Barcelona
25	Rodríguez Artalejo, Fernando	Universidad Autónoma de Madrid
5	Rodríguez Farré, Eduard	Agencia Estatal Consejo Superior de Investigaciones Científicas
50	Ruiz Pérez, Isabel	Escuela Andaluza de Salud Pública
51	Sáez Zafra, Marc	Universidad de Gerona
34	Sánchez Pérez, María José	Escuela Andaluza de Salud Pública
36	Sanjosé Llongueras, Silvia de	Instituto Catalan de Oncología
30	Schröder, Helmut	Consorci Mar Parc Salut De Barcelona
40	Sunyer Deu, Jordi	Centre de Recerca en Epidemiologia Ambiental (CREAL)
53	Tardón García, Adonina	Universidad de Oviedo
42	Zamora Romero, Javier	Servicio Madrileño de Salud
54 A	Amo Valero, Julia del*	Instituto de Salud Carlos III

\* Associated group

### Organizational Governance

#### BOARD OF TRUSTEES

The Board of Trustees is formed by three representatives from Instituto de Salud Carlos III and one institutional representative from each of the consortium entities. The Board is chaired by the Director of Instituto de Salud Carlos III with the participation of the CIBER Scientific Director and Manager, the latter of which acts as Secretary of the Board.

#### PERMANENT COMMISSION

It is formed by the President of the Board of Trustees, or another delegated person, the Scientific Director of the CIBER consortium, the Manager of the said CIBER consortium –who acts as secretary- and four members representing the Consortium Institutions.

#### EXTERNAL SCIENTIFIC ADVISORY COMMITTEE

CIBERESP includes an External Scientific Advisory Committee functioning as an advisory body. This committee, a general scientific support and advisory body to the Board of Trustees, is formed by internationally renowned scientists in the field of health sciences who have distinguished themselves through their professional or scientific work in line with the objectives of the Centre.

In December 2010, the Board of Trustees approved the current composition of the External Scientific Committee consisting of the following professionals:

- **Alejandro Jadad** (Professor, ehealthorganization, Canada) Committee Chairperson.
- **Francisco Javier Nieto** (Professor, U. de Wisconsin, USA)
- **Isabelle Romieu** (Service Manager, IARC, Lyon)
- **Ciro de Cuadros** (Vice-chairperson, Sabin Vaccine Institute, Washington, USA)
- **Naomar de Almeida Filho** (Professor and former Dean, U. de Bahía, Brazil)

## STEERING COMMITTEE

The Steering Committee is chaired by the Scientific Director and consists of the Assistant Director of CIBERESP, the coordinators of the seven research programmes, Training Programme coordinator and the Manager of CIBER.

Composition of the Steering Committee during 2014:

Name	Type	Programme
Delgado Rodríguez, Miguel	Scientific Director	
Domínguez García, Ángela	Assistant Director	
Rodríguez Artalejo, Fernando	Programme coordinator	P1. Epidemiology and prevention of chronic diseases
Caylà Buqueras, Joan Artur	Programme coordinator	P2. Communicable disease surveillance, prevention and control
Casabona Barbarà, Jordi	Programme coordinator	P3. Biological, Behavioural and Structural Determinants in the Contraction and Spread of Communicable Diseases in Vulnerable Populations (DAPET Programme)
Daponte Codina, Antonio	Programme coordinator	P4. Social Determinants of Health
Tardón García, Adonina	Programme coordinator	P5. Epidemiology and Prevention of Environment and Occupational Diseases
Abilleira Castells, Sonia	Programme coordinator	P6. Health Service Evaluation
De la Cruz Bertolo, Javier	Programme coordinator	P7. Clinical Epidemiology
García Benavides, Fernando	Programme coordinator	PF. Training Plan

## 2014 CIBERESP BUDGET

INCOME	
ISCI	2.916.660,00
Financial income	10.000,00
	<b>2.926.660,00</b>
EXPENSES	
Group	2.300.000,00
Programmes	340.000,00
Training	15.000,00
Technical Office	280.000,00
DEDIPAC	15.000,00
Group adjustments	15.000,00
Draft agreement royalty	65.000,00
Scientific Director	6.000,00
Scientific Meeting	40.000,00
<b>Total</b>	<b>3.076.000,00</b>
<b>DEFICIT AGAINST BALANCE LEFT OVER</b>	<b>149.340,00</b>
INCOME	
ISCI	2.916.660,00
Financial income	10.000,00
Agreements and contracts (forecast)	125.000,00
Total income	3.051.660,00
2013 committed transfer	1.137.036,74
CIBER balance left over transfer	350.843,55
<b>TOTAL</b>	<b>4.539.540,29</b>

## CIBERESP STAFF

Number of employees during the year to December 31 distinguishing by category and gender:

	MEN			Total MEN
	Indefinite	Work & service	Postdoctoral	
CIBERESP	13	6	1	20
PHD	3	2	1	6
Degree Holder	8	4		12
Diploma Holder	1			1
Technician	1			1
<b>Grand total</b>	<b>13</b>	<b>6</b>	<b>1</b>	<b>20</b>

	WOMEN			Total WOMEN
	Indefinite	Work & service	Postdoctoral	
CIBERESP	33	22	1	56
PHD	7	6	1	14
Degree Holder	16	12		28
Diploma Holder	9	1		10
Technician	1	3		4
<b>Grand total</b>	<b>33</b>	<b>22</b>	<b>1</b>	<b>56</b>

	Indefinite	Work & service	Postdoctoral	Grand total
CIBERESP	46	28	2	76
PHD	10	8	2	20
Degree Holder	24	16		40
Diploma Holder	10	1		11
Technician	2	3		5
<b>Grand total</b>	<b>46</b>	<b>28</b>	<b>2</b>	<b>76</b>

## 2. SCIENTIFIC PROGRAMMES





The validity of the Strategic Plan governing the scientific activity of CIBERESP since its creation ended in 2010. The amendment to the Bylaws together with the new challenges identified throughout the 2007-2010 period underlined the need to adapt the Multiannual Action Plan of the Consortium for the 2011-2014 period to the new detected needs.

CIBERESP operating as a networking centre is fully committed to intramural collaboration, both intra-programme and inter-programmes, having stable bridges of collaboration among the groups forming it. At the same time, reinforcing collaborations with other national and international research centres has been proposed, thus allowing large-scale research projects that would be difficult to conduct alone.

Similarly, in its new Strategic Plan CIBERESP expresses the need to reinforce its participation on an international level, both at the research project level and by means of participation in European policy decision-making forums, including an individualized internationalization plan for each programme.

CIBERESP also does not look overlook the need to disseminate and communicate the research results obtained, a basic activity for transferring the generated knowledge and for assessing R+D+I activity, reserving within each programme a section aimed particularly at communication and dissemination of these results.

Also, as a public centre, it is committed to promoting scientific culture, using the technical resources it possesses, and especially its web portal, and participating in initiatives aimed at the dissemination of the activity and scientific knowledge to society, such as the Semana de la Ciencia.

## P1.- EPIDEMIOLOGY AND PREVENTION OF CHRONIC DISEASES

### Programme description

The research programme in epidemiology and prevention of chronic diseases arises from the recognition that the risk and prognostic factors of primary diseases and other chronic health problems are, to a large extent, common.

The creation of this area also derives from the interest to optimize the research designs and resources, since one and the same study can generate information about the determinants of different diseases simultaneously.

The scientific knowledge generated in this area is useful to provide guidance both for clinical and public health strategies, to reduce the incidence of these diseases and to improve their prognosis, to control exposure to risk factors and to prevent initial exposure to said factor (primary prevention)

The large variety of factors determining these chronic health problems and the wide range of approaches necessary for studying them mean that collaborative research must be organized with other areas of the CIBER through transverse research actions, regardless of whether said actions are genetic research, population interventions or the development of new data analysis methods.

The main lines of research included in this programme are the following:

- Environmental and genetic determinants of cancer.
- Natural history of cardiovascular disease.
- Result reporting and transfer information systems.
- Eating behaviours and their effects on health.
- Epidemiology and prevention of traffic injuries.
- Other chronic disorders with a high social impact (environmental and genetic determinants of respiratory diseases and reproductive disorders).

### Objectives

The strategic objectives of the programme are:

- To generate scientific knowledge of direct relevance for controlling chronic diseases which are the main causes of loss of health and the use of healthcare services in Spain.
- To transfer this knowledge to clinical practice and to public health.

## Strategic subprogrammes

Different research subprogrammes are designed to implement these objectives laid out in the CIBERESP Multiannual Action Plan. Table 4 shows the twelve subprogrammes.

**PI. Epidemiology and prevention of chronic diseases**

<b>Multicentre study of population-based cancer cases and controls (MCC-Spain)</b>
<b>Mammographic density and breast cancer</b>
<b>Nutrition and cardiovascular risk study in Spain (ENRICA)</b>
<b>Contamination and cancer</b>
<b>DARIOS Study</b>
<b>FRESCO Study</b>
<b>EPIC (European Prospective Research into Cancer and Nutrition)</b>
<b>InterAct</b>
<b>Neuro-Epic</b>
<b>EPIC-CVD</b>
<b>EPIC-Rheumatoid Arthritis</b>
<b>Population cancer registry platform</b>

The strategic subprogramme entitled “Multicentre study of population-based cancer cases and controls” (MCC-Spain) remains the most promising initiative among the research programmes in epidemiology and prediction of chronic diseases. The objective of the subprogramme is to explore the influence of environmental factors, and the interaction with genetic factors, in five types of cancer in Spain (breast cancer, colorectal cancer, gastroesophageal cancer, prostate cancer and chronic lymphatic leukemia). The study is designed as a multi-case control study with a common control group, a large sample size (7,000 cases, 3,000 controls) and a single research protocol: questionnaire, biological sample collection and anthropometric measurements. The study was and is still externally funded: Transverse Action in Cancer, Specific Action in Mobility, FIS (ISCIII), European projects, autonomous community projects and an international project.

## Participating Groups

This programme involves the participation of 14 groups from eight Spanish Regions coordinated by Dr. Rodríguez Artalejo. The list of groups forming part of this programme is shown in this Table.

Group	Main Researcher
07	LÓPEZ-ABENTE ORTEGA, GONZALO
11	CASTILLA CATALÁN, JESÚS
14	GESTAL OTERO, JUAN JESÚS
16	DELGADO RODRÍGUEZ, MIGUEL
17	MORALES SUÁREZ-VARELA, M <sup>a</sup> MANUELA
24	NAVARRO SÁNCHEZ, CARMEN
25	RODRÍGUEZ ARTALEJO, FERNANDO
28	DORRONSORO IRAETA, MIREN
30	SCHRÖDER, HELMUT
34	SÁNCHEZ PÉREZ, MARÍA JOSÉ
35	PORTA SERRA, MIQUEL
38	KOGEVINAS, EMMANOUIL
44	BUENO CAVANILLAS, AURORA
55	MORENO AGUADO, VÍCTOR



### Programme description

The purpose of the programme is to develop collaborative and interdisciplinary research in the field of communicable disease surveillance, prevention and control having a large impact on the community, communicable diseases being understood as diseases that are caused by specific infectious agents or their toxins and can be transmitted from a human being, an animal or a non-living source to a susceptible human host.

The main lines of research of this programme are the following:

- Flu.
- Vaccine-preventable diseases having viral etiology (measles, rubella and mumps) or bacterial etiology (whooping cough, pneumococcal disease, meningococcal disease).
- Epidemic outbreaks.
- Viral hepatitis.
- Tuberculosis-HIV. Influence of smoking.
- Communicable diseases and other health problems in immigrant population.

### Objectives

The strategic objectives of the present programme are the following:

- To give special attention to diseases that require mandatory reporting, including epidemic outbreaks, which sometimes cause serious public health crises.
- To generate scientific knowledge about these communicable diseases so that they can be used as a means for supporting the actions performed by the Health Administration.
- The research included in the programme will aim at controlling these diseases and will endeavour to ensure that they can be used as a means for supporting the actions performed by the Health Administration.

### Strategic subprogrammes

The strategic subprogrammes defined within the framework of the communicable disease surveillance, prevention and control research programme are shown below:

P2. Communicable disease surveillance, prevention and control

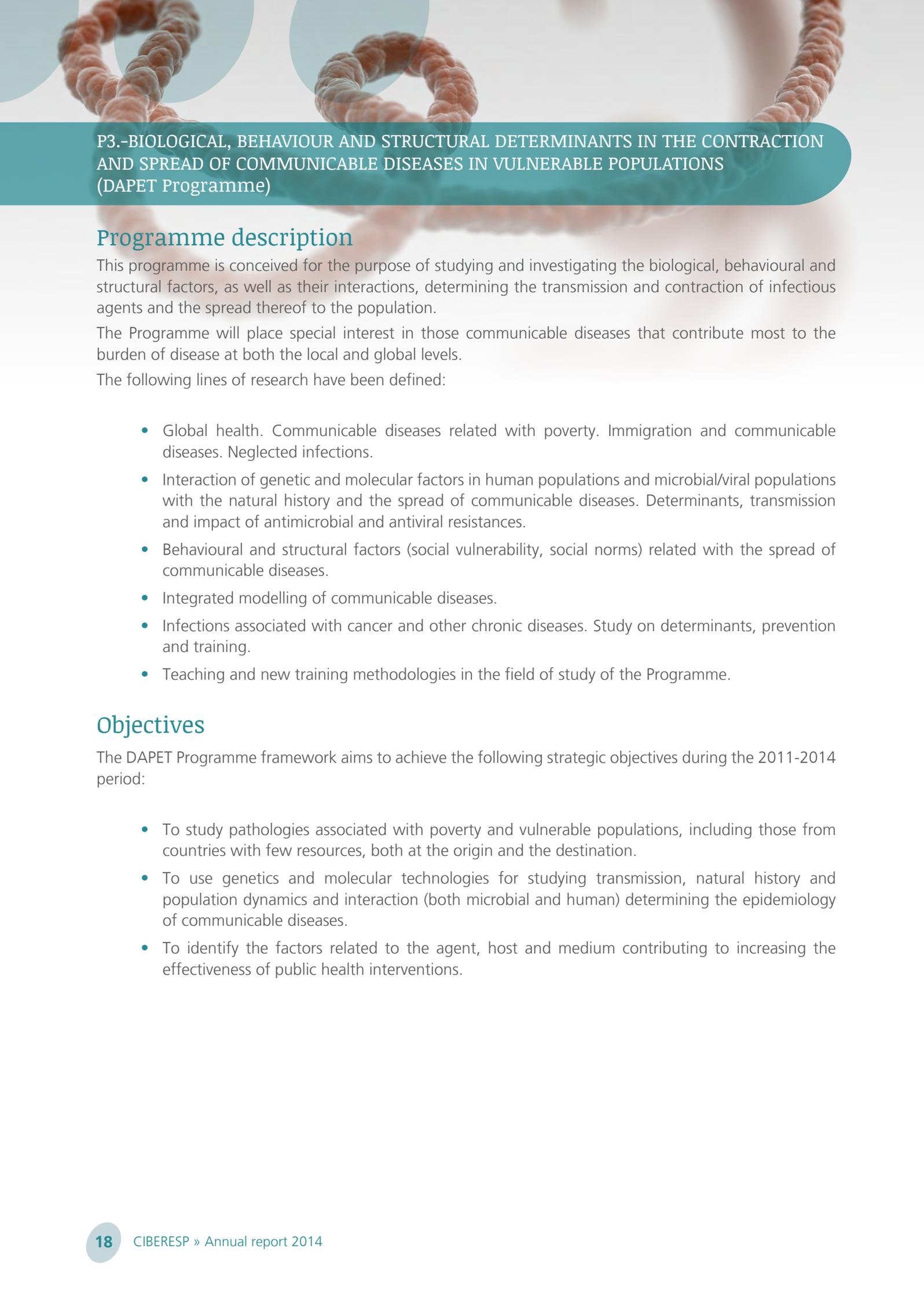
- Flu surveillance, prevention and control
- Vaccine-preventable diseases having viral etiology (measles, rubella and mumps) or bacterial etiology (whooping cough, pneumococcal disease, meningococcal disease)
- Epidemic outbreaks
- Tuberculosis (TB)-HIV-CANCER
- Viral hepatitis surveillance, prevention and control

## Participating Groups

This programme involves the participation of five research groups from Catalonia and the Community of Madrid led by Dr. Caylà and has, among others, the sole associated group.

Group	Main Researcher
01	DOMÍNGUEZ GARCÍA, ÁNGELA
12	CAYLA BUQUERAS, JOAN ARTUR
13	ECHEVARRÍA MAYO, JUAN EMILIO
32	DE MATEO ONTAÑÓN, SALVADOR
54 A	AMO, JULIA DEL





## P3.-BIOLOGICAL, BEHAVIOUR AND STRUCTURAL DETERMINANTS IN THE CONTRACTION AND SPREAD OF COMMUNICABLE DISEASES IN VULNERABLE POPULATIONS (DAPET Programme)

### Programme description

This programme is conceived for the purpose of studying and investigating the biological, behavioural and structural factors, as well as their interactions, determining the transmission and contraction of infectious agents and the spread thereof to the population.

The Programme will place special interest in those communicable diseases that contribute most to the burden of disease at both the local and global levels.

The following lines of research have been defined:

- Global health. Communicable diseases related with poverty. Immigration and communicable diseases. Neglected infections.
- Interaction of genetic and molecular factors in human populations and microbial/viral populations with the natural history and the spread of communicable diseases. Determinants, transmission and impact of antimicrobial and antiviral resistances.
- Behavioural and structural factors (social vulnerability, social norms) related with the spread of communicable diseases.
- Integrated modelling of communicable diseases.
- Infections associated with cancer and other chronic diseases. Study on determinants, prevention and training.
- Teaching and new training methodologies in the field of study of the Programme.

### Objectives

The DAPET Programme framework aims to achieve the following strategic objectives during the 2011-2014 period:

- To study pathologies associated with poverty and vulnerable populations, including those from countries with few resources, both at the origin and the destination.
- To use genetics and molecular technologies for studying transmission, natural history and population dynamics and interaction (both microbial and human) determining the epidemiology of communicable diseases.
- To identify the factors related to the agent, host and medium contributing to increasing the effectiveness of public health interventions.

## Strategic subprogrammes

The strategic subprogrammes defined within the framework of the DAPET programme are listed below.

<b>P3. DAPET Programme</b>	<b>Immigration and health</b>
	<b>Global health</b>
	<b>Role of infectious agents in chronic diseases</b>

## Scientific Objectives

- To improve and monitor knowledge concerning the state of health of immigrant population in the field of communicable and non-communicable diseases.
  - To update evidence concerning the state of health of immigrant population in relation to infectious diseases, non-communicable diseases and their determinants in Spain
  - To identify determinants related to health problems that are linked to communicable diseases in immigrant population
- To foment collaboration among groups from different fields of the Health and Immigration subprogramme
  - To boost the identification of collaborative projects among groups of the Health and Immigration subprogramme
  - To facilitate joint publications among groups of the subprogramme
- To evaluate Health and Immigration subprogramme results
  - To diversify and increase the number of identified sources of funding and the number of delivered projects
  - To maintain the number of scientific publications delivered to indexed journals from the subprogramme

The spheres of action and lines of research of the subprogramme are the following:

- Contextual determinants
  - Health Inequality (Rosa Puigpinós)
  - Occupational health (Fernando Benavides)
  - Health policies, systems and services (María Luisa Vázquez)
- Non-communicable diseases
  - Mental health and drug dependency (Teresa Brugal and Francisco Collazos)
  - Sexual and reproductive health (Paco Bolúmar)
  - Cancer prevention (Silvia de Sanjosé)
- Communicable diseases.
  - HIV and other sexually transmitted infections (Meritxell Sabidó)

- Tuberculosis and vaccine-preventable diseases (Joan Caylà)
- Imported diseases (Clara Menéndez and José Muñoz)
- Antibiotic resistances (Fernando Baquero)
- Molecular and genomic epidemiologies (Andrés Moya)
- Role of infectious agents in non-communicable diseases (Enrique Calderón)
- Methodological aspects
  - Health questionnaires (Carmen Navarro)

## Participating Groups

This programme consists of six research groups from four Spanish Regions. Dr. Casabona is responsible for coordinating the programme.

Group	Main Researcher
02	MOYA SIMARRO, ANDRÉS
04	CALDERÓN SANDUBETE, ENRIQUE JOSÉ
27	CASABONA BARBARÀ, JORDI
29	MENÉNDEZ SANTOS, CLARA
33	BAQUERO MOCHALES, FERNANDO
36	SANJOSÉ LLONGUERAS, SILVIA DE



### Programme description

Research groups participating in this programme focus their interest on generating cooperative research of excellence for all those socially determined relevant aspects for population health.

To that end, a broad perspective of the role of social determinants in health is adopted from a multidisciplinary approach. This ranges from individual characteristics, such as social class or gender, to aspects of the environment, such as neighbourhoods or cities; working conditions; and the social environment. Qualitative, quantitative or mixed methods are also used in the programme to fulfil the research objectives. Furthermore, from a strictly epidemiological viewpoint, the programme develops studies ranging from individual-based designs to ecological studies.

Finally, the interest of the programme includes the “social” production of risk factors, such as lifestyles, the environment, working conditions, immigration and social exclusion, etc., results in health, such as morbidity, mortality, disability or dependency, as well as social participation and evaluation of the efficacy, effectiveness and efficiency of health interventions, services and policies.

The scientific activity of the programme is defined in several lines of research among which the following stand out:

- Effect of social determinants on health.
- Health Inequality according to social class, gender, geographical variables, and the environment.
- Specific health problems relevant to public health and with social determinants and mechanisms playing a key role, such as HIV, gender-based violence, sexual health, mental health, addictions, cancer or cardiovascular diseases.
- The health of specific groups of populations, such as immigrant communities, socially excluded groups, women’s health problems, and problems related to aging, adolescence and puberty, or childhood.
- The development and evaluation of public health programmes and policies.
- Access to and quality of health services and the participation of patients and citizens.
- The development of useful theoretical frameworks for social determinants, of suitable research methodologies, and modelling of the complex interaction between different social and environmental factors.

### Objectives

The strategic objectives of the programme are the following:

- To identify and analyze all those socially determined and relevant aspects for population health.
- To favour the transfer of knowledge to NHS for designing and implementing health policies.
- To promote cooperative research of excellence among groups of the programme, collaboration between them and researchers, and to enhance the internationalization of activities.

## Strategic subprogrammes

This programme includes the development of three strategic subprogrammes defined on the basis of three groups of needs:

### P4. Social determinants of health

**Inequality according to social class, gender, the environment and geographical area.**

**Development and evaluation of public health programmes and policies.**

**Access to and quality of health services and the participation of patients and citizens.**

Among the foregoing, the MEDEA/INEQ-CITIES subprogramme stands out. The objective of this subprogramme is to investigate mortality patterns, distribution and causes in small areas of Spanish and European cities, as well as the link thereof with socio-economic and environmental factors.

It consists of three projects with competitive external funding: MEDEA I, MEDEA-II (Health Research Fund) which focus on studying the Spanish reality, and INEQ-CITIES (project funded by DG-Sanco) studying a selection of European cities. The project uses Bayesian methodologies in the study and mortality pattern analysis in small geographical areas. Five CIBERESP groups participate in this activity under the leadership of Dr. Carme Borrell (ASPB).

The Observatorio de Desigualdad (ODS) transverse programme is linked to this programme.

## Participating groups

This programme consists of the groups listed in Table which are distributed in two Spanish Regions and under the coordination of Dr. Daponte.

Group	Main Researcher
03	BORRELL THIÓ, CARMÉ
18	LÓPEZ MEDINA, MARÍA JOSÉ
21	DE LA FUENTE DE HOZ, LUIS
46	DAPONTE CODINA, ANTONIO
50	RUIZ PÉREZ, ISABEL
51	SAEZ ZAFRA, MARC



## Programme description

The physical, social and intellectual development of a child, from conception until the end of adolescence, requires an environment that is both protected from and protective of the child's health. The increase in diseases is related to unhealthy environments. Prenatal and early exposure, including diet, are associated with children's health and human development, and predispose them to subsequent effects in adulthood. Occupational health is built in a suitable working environment with healthy working conditions where the employees can carry out their activity without any risk to their health and where their participation to improve health and safety conditions is possible. Occupational risks must be monitored and controlled to prevent damaging health as a result of work.

## Objectives

The strategic objectives of the programme were the following:

- To evaluate the impact of environmental and occupational determinants on the health of children and adults in Spain.
- To disseminate knowledge concerning primary prevention of environment and disease associations to the general population and social and governmental organizations.
- To participate in preparing Guidelines providing advice about scientific primary prevention policies in Spain and Europe.

## Strategic subprogrammes

The "Epidemiology and environmental and occupational health prevention" programme includes four strategic subprogrammes:

P5. Epidemiology and environment and occupational health prevention

**INMA - Childhood and the Environment**

**Occupation and health**

**Endocrine disruption, development and health**

**Obesity, development and health. DEDIPAC Programme.**

The objective of the subprogramme entitled "Childhood and the Environment" (INMA) is to investigate the interaction between environmental factors and children's health and development. The study is based on monitoring seven cohorts in Ribera d'Ebre, Asturias, Valencia, Gipuzkoa, Menorca, Granada and Sabadell. INMA is a research network made up of Spanish groups created in 2004 for the purpose of studying the role of the most important environmental contaminants found in air, water and diet throughout pregnancy and in the early stages of life, and their effects on childhood growth and development.

The CIBERESP INMA subprogramme has three main OBJECTIVES:

- To describe the degree of individual prenatal exposures to environmental contaminants and the internal doses of these contaminants during pregnancy, child birth and during childhood in Spain.
- To evaluate the impact of pre- and postnatal exposure to different environmental contaminants on child growth, health and development from early fetal stages up to adolescence.
- To evaluate how genetic and nutritional factors can modify the effects of environmental contaminants on child growth.

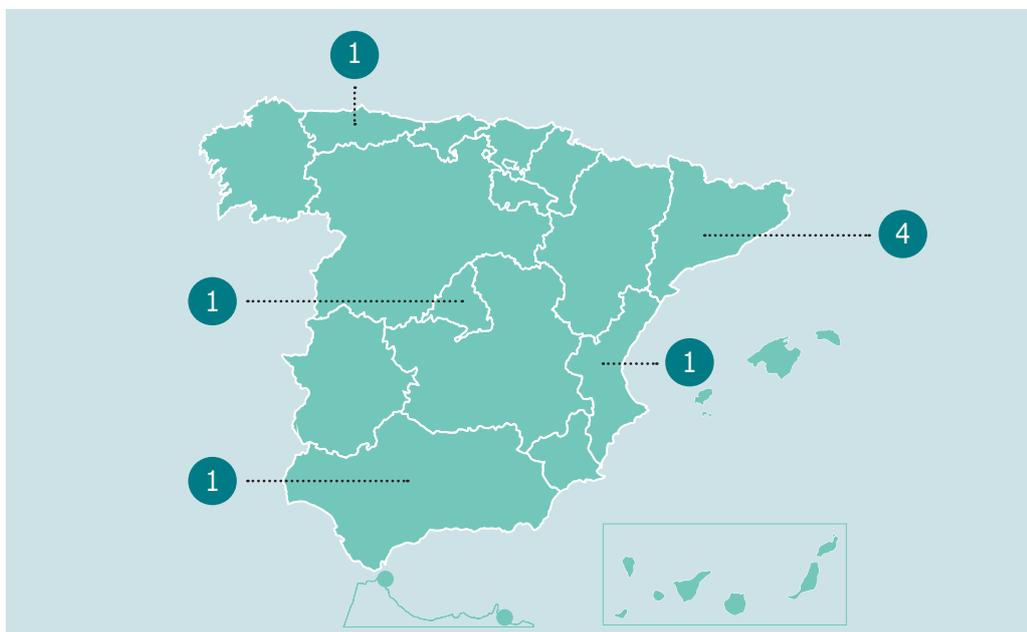
Since its creation, the subprogramme has been externally funded through competitive call for proposals for national research projects (CIBERESP, FIS, other regional agencies) and European research projects (ESCAPE, ENRIECO, CONTAMED, among others). It also has its own website: [www.projectinma.org](http://www.projectinma.org).

INMA includes seven CIBERESP groups and other six groups with active participation.

## Participating groups

The programme is a collaboration of 8 research groups distributed in five Spanish Regions. Dr. Tardón is responsible for coordinating the programme.

Group	Main Researcher
05	RODRÍGUEZ FARRÉ, EDUARD
06	BOLUMAR MONTRULL, FRANCISCO
19	OLEA SERRANO, NICOLÁS
20	MARCOS DAUDER, RICARDO
22	ESTIVILL PALLEJÀ, XAVIER
40	SUNYER DEU, JORDI
41	BALLESTER DÍEZ, FERRÁN
53	TARDÓN GARCÍA, ADONINA



## Programme description

The research groups attached to the Health Service Evaluation Programme have the same interest in conducting collaborative research of excellence in health service evaluation focusing on the priorities of the National Health System for the purpose of directly transferring their results to decision-making in health policy, in management, in clinical practice and in patient's decisions.

## Objectives

- To enhance new knowledge on the health and social burden of diseases, and the quality of healthcare services.
- To foment the collaboration among groups of the programme and other groups of the CIBER, RETICS and others.
- To transfer the scientific results of the programme and to develop strategies for improving the scientific skills of its researchers.

## Strategic subprogrammes

The development of this new subprogramme which results from previous strategic subprogrammes and includes the main common activity of the current groups of Programme 6 started in 2013 with the name Health and Social Burden of Chronic Diseases (BURDEN OF DISEASE).

### SCIENTIFIC OBJECTIVES:

- To estimate the health and social burden of chronic diseases based on the Continuous Work History Sample (CWHs) with mortality and temporary and permanent disability data for 2009.
- To develop and validate measuring instruments and indicators of disease burden (well-being, health, disability, loss of productivity and use/consumption of resources), transferring these instruments to professionals and researchers by means of a free access repository (BiblioPRO).
- To establish a strategy to link MCVL registries (Social Security members) with other sources containing health data (e.g., electronic clinical history) available for creating a permanent cohort of Social Security members and their contacts with the National Health System.

P6. Healthcare  
service evaluation

**Evaluation of the effectiveness, costs and quality of healthcare services in Spain**

**Measuring health and individual and social burden of diseases**

**Measuring and instruments for evaluating healthcare quality (benchmarking)**

**Health and social burden of chronic diseases (BURDEN OF DISEASE)**

The BiblioPro technology platform is also encompassed within this new research subprogramme.

## Participating Groups

Programme 6 is formed by three groups : Group 09 (Jordi Alonso, CONSORCIO MAR PARC DE SALUT DE BARCELONA- PSMAR) programme coordinator, Group 47 (Fernando García Benavides, UNIVERSIDAD POMPEU FABRA –CISAL-UPF-) and Group 15 (Abilleira Castells, Sonia, AGENCIA DE INFORMACIÓN, EVALUACIÓN Y CALIDAD EN SALUD –AIAQS-).

Group	Main Researcher
09	ALONSO CABALLERO, JORDI
15	ABILLEIRA CASTELLS, SONIA
47	GARCÍA BENAVIDES, FERNANDO



## Programme description

In the field of Epidemiology and Public Health, the Clinical Epidemiology programme specifically studies methods, processes and results related to population clinical care. It focuses on research and analysis of processes and determinants having diagnostic values both in healthy and diseased populations, those having prognosis capacity, as well as those affecting the effectiveness, efficiency and safety of health interventions.

The research conducted in the programme uses the advanced epidemiological method in primary and synthesis studies, leading to, reviewing or improving the development of new methodologies of knowledge, statistical techniques and result transfer for which it collaborates with other groups of the CIBERESP, RETICs, GuíaSalud and international entities, Cochrane, EU Framework Programme, GIN, among many others.

This programme also aims to conduct research on and to develop activities and methods for knowledge dissemination so that it can be more efficiently used by those participating in or receiving healthcare.

It is to be integrated into the objectives of comparing the effectiveness, efficacy, benefits and unwanted consequences for making scientifically informed and profitable decisions.

Therefore, it is consistent and collaborates with priority lines of the Ministry of Social Health Services and Equality and the Ministry of Economy and Competitiveness. The programme occupies a strategic position in the processes of translational medicine, basic or epidemiological research to the ideal patient or population. Interaction with clinical researchers and public health agents is essential to this programme, offering products that accelerate their incorporation into the fields of health action and activity, thus contributing to innovation.

Finally, the in-depth technical knowledge of the impact and adaptation of said processes with respect to population health and resource sustainability is transcendent and indispensable in the 21st century with free-of-charge health systems that provide universal coverage.

The main lines of research of this programme are summarized below:

- Evaluation of the efficacy of healthcare interventions and strategies.
- Evaluation of the effectiveness, efficiency and safety of healthcare interventions and strategies.
- Evaluation of the usefulness of diagnostic tests and prognostic model development.
- Developments and innovations in clinical- epidemiological research methodology.

## Objectives

The main objective of the programme is to see to the National Health System's needs for knowledge by conducting the most suitable and effective research in the field of healthcare contributing to maximum effectiveness, safety and sustainability.

- To analyze and identify the relevant determinants and processes in population clinical care.
- To identify new or emerging efficient health interventions with greater impact on population health by means of research and by using advanced epidemiological methods in and synthesis primary studies
- To review and to summarize the most suitable contemporary health research for the NHS's needs.
- To identify knowledge gaps, deficiencies and obstacles in current medical research and the needs of healthcare by developing new knowledge methodologies, statistical techniques and result transfer.
- To prepare training and coaching initiatives for imparting skills to new researchers and professionals with respect to the objectives described in this programme.
- To prepare initiatives for transferring and disseminating research findings among different healthcare agents and recipients.
- To prepare initiatives for the incorporation of opinions/participation of citizens in choosing the health knowledge of interest and in prioritizing and adapting the different actions.

## Strategic subprogrammes

P7. Clinical  
epidemiology

**Study of the clinical care and observed results (MAPAC)**

**Study of the efficacy and safety determinants of health interventions**

**Study of diagnostic test validity and usefulness**

**Methodology, clinical records and scientific dissemination**

## Participating groups

This programme is carried out with the active participation of seven research groups distributed in four Spanish Regions. The programme coordinator is Dr. Javier de la Cruz who is part of the group led by Dr. Gómez de la Cámara.

Group	Main Researcher
08	FERREIRA GONZÁLEZ, IGNACIO
23	GÓMEZ DE LA CAMARA, AGUSTÍN
26	HERNÁNDEZ AGUADO, ILDEFONSO
39	EMPARANZA KNÖRR, JOSÉ IGNACIO
42	ZAMORA ROMERO, JAVIER
43	BONFILL COSP, XAVIER



### 3. TRANSVERSAL PROGRAMS



## Call for proposals for aid for internships abroad in order to complete a phd with an international mention in the PhD.

### (PRE-PHD) RESEARCHER TRAINING.

The Epidemiology and Public Health CIBER annually make a call for proposals for aid for internships lasting at least 3 months in renowned international research centres for the purpose of contributing to obtaining an international mention in the PhD to PhD students or students attached to a research group of the centre.

After considering the applications received and assessing the requirements of the call for proposal and the merits of the candidates, the Evaluating Committee granted five aid packages in the 2014 call for proposals.

*Training programme DE14*

Doctorandos	Universidad de origen	País de Destino
<b>D. Ioar Lara Rivas</b>	Universidad Autónoma de Barcelona	Australia
<b>Dña. Margarita Triguero Más</b>	Universidad Pompeu Fabra de Barcelona	Inglaterra
<b>Dña. Mónica López Vicente</b>	Universidad Pompeu Fabra de Barcelona	Holanda
<b>Dña. Mónica Ubalde López</b>	Universidad Pompeu Fabra de Barcelona	Holanda
<b>D. Rubén Solano Silveira</b>	Universitat de Barcelona	República Dominicana

The maximum amount of aid is 3,000€ and it is intended to cover the travel expenses, accommodation expenses, accident and healthcare insurance, living expenses and other similar duly justified expenses related directly to the internship in the international research centre.

## Aid for “Encuentros para la excelencia”

The Epidemiology and Public Health CIBER training programme would like to foster the exchange of ideas, in an informal environment, between proven scientists and young scientists undergoing training, to debate their PhD dissertation projects. Not only does this exchange seek to improve projects, but it also deals with facilitating innovation in public health research and the inclusion of the health challenges of the 21st century.

**INTERNAL CALL FOR PROPOSALS FOR AID TO ATTEND “ENCUENTRO PARA LA EXCELENCIA DE LA INVESTIGACIÓN EN SALUD PÚBLICA”, ESCUELA DE VERANO DE SALUD PÚBLICA (LAZARETO DE MAÓ, MENORCA, 22 AND 23 SEPTEMBER 2014).**

### Beneficiarios 2014

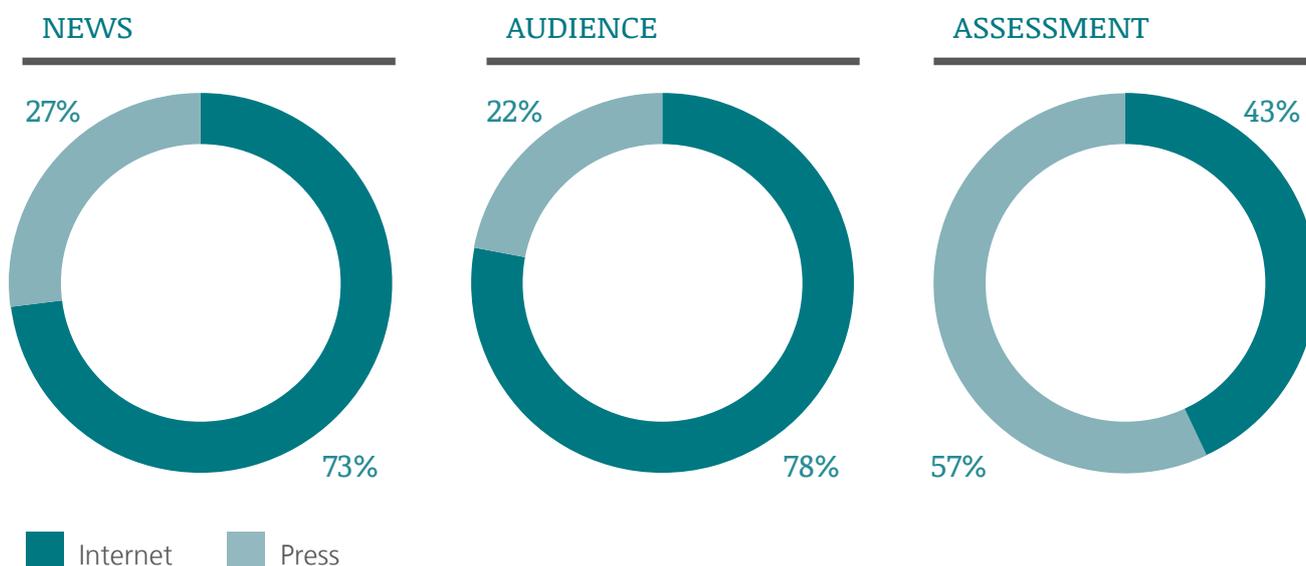
<b>Belén Alejos Ferreras</b>
<b>Ana Tauste Francés</b>
<b>Clara Caveró Carbonell</b>
<b>Daniel Giménez Monzó</b>
<b>Iván Martínez Baz</b>
<b>Marina Bosque Prous</b>
<b>Raquel Barbosa Lorenzo</b>
<b>Virginia Martínez Ruiz</b>

The objective of this encounter, which takes place within the frame work of the Escuela de Salud Pública de Menorca, between PhD students and senior researchers is to help improve the PhD dissertation projects underway and to generate new public health research ideas.

The selected candidates have to cover the accommodation expenses, living expenses and transport to Menorca. The encounter is certified by means of a diploma proving participation in the encounter. The participation consists of a 30-minute oral presentation from each student before the Evaluating Committee and the other selected students that can be given in Spanish or English. After the presentation, a debate will be initiated with the participants for another 30 minutes.

CIBERESP in the media:

	News	Audience	Economical Assessment*
INTERNET	333	41157500	411.827 €
PRESS	125	11540000	541.541 €
<b>total</b>	<b>458</b>	<b>52697500</b>	<b>953.368 €</b>



\* Consists of the monetary value of each appearance in a media outlet. It is calculated according to the space of the news in the media according to advertising rates.

MOST OUTSTANDING IMPACTS ON PRESS IN 2014:

Date	Headline/Subject Addressed	CIBERESP researcher mentioned	No. of hits
04/12/2014	Los hombres presentan más conductas de riesgo al volante que las mujeres		80
22/01/2014	Las cargas familiares y laborales excesivas empeoran la salud	Lucía Artazcoz	46
08/05/2014	Un estudio permite predecir la mejoría del dolor de espalda	Ana Royuela	42
06/12/2014	Varios estudios desmontan prejuicios sobre inmigración y sistema sanitario		19

Date	Headline/Subject Addressed	CIBERESP researcher mentioned	No. of hits
10/05/2014	Televisión, juventud y sedentarismo		16
20/09/2014	Radiografía del abuso de alcohol en España		16
05/07/2014	Críticas a las políticas europeas sobre calidad del aire en las ciudades		11
02/07/2014	Pasar largas horas sentado en el trabajo aumenta el riesgo cardiovascular		8
03/10/2014	Las mujeres podrían tener más riesgo de cáncer pulmón en la misma exposición a radón	López Abente	6
14/03/2014	Hospitales cobran por operar saltándose la lista de espera.	Carme Borrell	5

Press clipping comprising all appearances in the press monthly can be consulted on the CIBER intranet.

In 2014, the CIBERESP Twitter account was started up

[https://twitter.com/CIBER\\_ESP](https://twitter.com/CIBER_ESP):

	December 2014
Updates	144
Followers	231
Klout (level of influence, between 1 and 100)	42

Also, in mid 2014 the CIBER newsletter was started up, which includes relevant CIBERESP content as well as content that is relevant for the other subject areas. The newsletter is sent on a bimonthly basis through the Mailchimp platform to a total of 4,240 subscribers. In 2014, three CIBER newsletters were written and disseminated. <http://www.ciberisciii.es/comunicacion/boletines>.

## Other activities

### 2013 ANNUAL REPORT

CIBERESP's annual report of the previous period was written in 2014, and it is available on the website in interactive format (Flipbook) and pdf, in English and Spanish.

<http://www.ciberesp.es> (documentation section)

<http://www.ciberisciii.es/comunicacion/memorias-anauales>;

### WEBSITE

The CIBERESP website ([www.ciberesp.es](http://www.ciberesp.es)) is oriented to different types of specialised and general public user profiles and its content is periodically updated so as to reflect the activity and news of the centre.

Also, the most noteworthy news and events are included on the web page [www.ciberisciii.es](http://www.ciberisciii.es) together with the noteworthy news and events of the remaining CIBER subject areas.

The website also offers easy access to the CIBERESP structural and scientific organisation, to its activities, to the most noteworthy news and events and to consortium reference documents (Scientific Plan, Strategic Plan, and Annual Report).



The home page offers direct links to some Subprogramme web pages (INMA, Bibliopro, Observatorio Desigualdades en Salud, MCC Spain), other actions and activities.

## Participation in dissemination events

### SSEMANA DE LA CIENCIA. ACTIVITY: TAPACONCIENCIA.

CIBERESP participated in the dissemination activity "TapaConCiencia" in the Semana de la Ciencia in Madrid with 250 participants. In the activity 8 research projects corresponding to CIBER subject areas were disclosed and served as an inspiration to Chef Jorge Cuellar to design 8 elaborate "tapas".

Researcher Esther Sánchez represented CIBERESP in this activity, presenting the Observatorio de Desigualdades en la Salud (ODS), accompanied by a "Tosta de escalivada con boquerón y anchoa" prepared by the chef.

The event aroused great interest from the general public and from general media outlets as well as media outlets specializing in science and gastronomy that interviewed the researchers participating in the activity.

**ACTUALIDAD**

## Auténtica divulgación científica

Un biólogo y ocho investigadores biomédicos se subieron al escenario de la mágica sala de columnas del Círculo de Bellas Artes de Madrid el pasado 5 de noviembre. Su objetivo era muy ambicioso: mientras los investigadores trataban de transmitir a un entregado público y en apenas 10 minutos en qué se basaban sus estudios, el biólogo explicaba y cocinaba en directo unas tapas con ingredientes vinculados a esas investigaciones. Cada dos ponencias, un equipo de catering distribuía las clásicas tapas entre las casi 300 personas que asistieron al evento. Detrás de esta valiente fórmula, TapaConCiencia, en donde no podían suceder más cosas a la vez, está el Centro de Investigación Biomédica en Red (CIBER) del Instituto de Salud Carlos III.

Jorge Cuellar, investigador en biología y concursante del programa televisivo Masterchef que se hizo famoso por cocinar "chaperoninas", fue el encargado de dar forma a las ocho tapas inspiradas en los ocho proyectos de Investigación que se presentaron en este evento, enmarcado en la Semana de la Ciencia que se celebró en Madrid a comienzos de noviembre.

Cuellar y su equipo -Cristóbal, Miguel Ángel y Celia, algunos de sus compañeros de programa Masterchef- elaboraron las tapas al mismo tiempo que los científicos presentaban proyectos punteros de las ocho áreas temáticas del CIBER: salud mental, diabetes, nanomedicina, salud pública, enfermedades raras, respiratorias, hepáticas, obesidad y nutrición.

"Para favorecer la salud mental nada mejor que una tapa nutritiva y rica en ácidos grasos poliinsaturados (omegá 3), magnesio, calcio, hierro y vitaminas tipo D o B12", comentaba Jorge mientras elaboraba un delicioso tartar de salmón marinado con salsa coreana con base de aguacate, nuevas de anque y sésamo en donde todos esos componentes estaban presentes.

Los beneficios del aceite de oliva en forma de gazpachuelo

José López Miranda (CIBER de Fisiopatología de la Obesidad y la Nutrición, e IMIBIC) apoyó los múltiples beneficios del consumo de aceite de oliva virgen

enmarcado en un patrón de dieta mediterránea.

Propuesta gastronómica: Gazpachuelo virgen extra con moluscos, maníaco y brotes marinos.

Sardinias marinadas para la diabetes

Mariona Ballegó (CIBER de Diabetes y Enfermedades Metabólicas Asociadas, e IDIAPSI) divulgó el Proyecto Pichardus, que sugiere que una dieta rica en sardinias es beneficiosa para las personas con diabetes. Una parte fundamental de Pichardus ha sido el desarrollo gastronómico de productos a base de sardinias, que fueran apetecibles y suavizaran su sabor fuerte.

Propuesta gastronómica: Sardinias marinadas en jugo de cítricos con alioli de pera.

La representación del exoma con helices de plátano frito

Victor Martínez González (CIBER de Enfermedades Raras y Hospital La Paz) presentó el CIBER Exome Server, una base de datos con las variantes genéticas no patológicas más comunes en la población española, que será de gran utilidad en la investigación.

Propuesta gastronómica: Helices de plátano frito rellenas de lubina y queso fresco.

Jorge Cuellar preparó las propuestas

## RESEARCHERS' NIGHT. COMMHERE PROJECT

The COMMHERE European project (Communicating European Health Research) organised a dissemination activity within the context of the **European Researchers' Night**

(<http://www.madrimasd.org/lanochedelosinvestigadores/actividades>).

Under the title "**Cerveciencia**", the activity consisted of a directed artisan beer tasting to go along with the presentation of three European projects in the health area.

Davide Malmusi, researcher on the SOPHIE European project, coordinated in the Agencia de Salud Pública of Barcelona, shared with attendees the work done on this project on how structural policies, such as policies on housing, employment or macroeconomic planning, have an impact on health determinants

## 4. PLATFORMS



## Programme description

BiblioPRO is a virtual library with health-related quality of life instruments in Spanish which aims to become the Virtual Library of international scientific reference as regards patient reported outcome (PRO- Patient Reported Outcomes) questionnaires in Spanish.

It combines research with translational activities, making it a unique resource for research and clinical practice. The group is led by Dr. Alonso (Group 9) with the participation of groups 15 and 47 of CIBERESP and other CIBER researchers.

It allows the authors of the PRO questionnaires to disclose and assess the results of their research, and the users of those questionnaires to make an informed selection of same through its virtual platform

(<http://www.bibliopro.org/index.html>).

*Content of the virtual platform BiblioPRO*

## Objectives

The objectives of BiblioPRO are the following:

- To identify patient reported outcome (PRO) questionnaires and health-related quality of life (HRQoL) questionnaires in Spanish.
- To compile the highest possible number of instruments in a free-access virtual library to allow selecting the most suitable questionnaire.
- To facilitate legal access to these questionnaires, assessing conducted research results in Spanish.

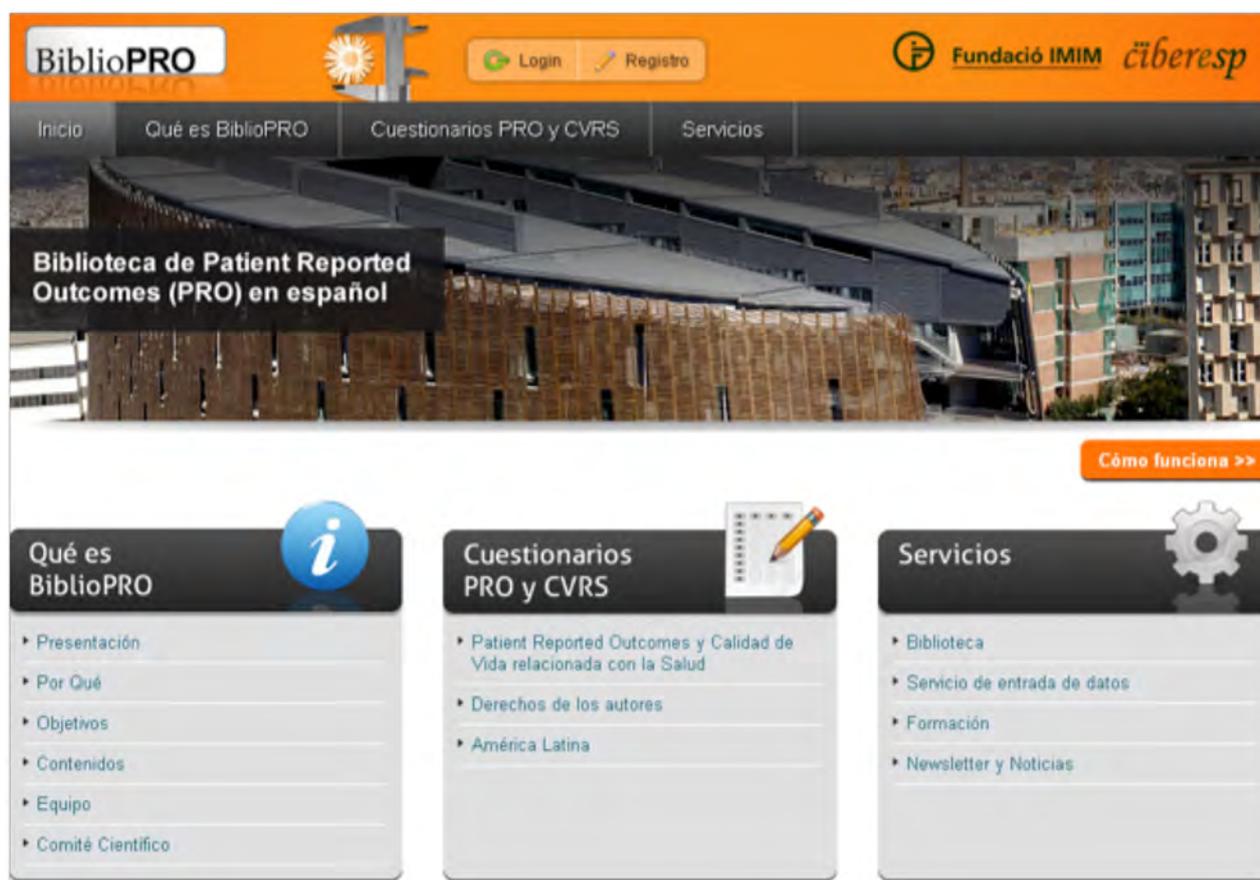
## Participating CIBERESP groups

Group	Main Researchers
09	ALONSO CABALLERO, JORDI
15	ABILLEIRA CASTELLS, SONIA
47	GARCÍA BENAVIDES, FERNANDO

## Resources

### GOODS AND SERVICES

BiblioPro has a virtual online platform allowing access to the questionnaires from anywhere with an Internet connection.



*BIBLIOPRO web portal*

## Indicators and results

In 2014, BiblioPRO has had the following achievements:

- **USERS:** 2,431 new users were registered and an average of 3,500 monthly visits were received.
- **SUBLICENSES:** 512 sublicense requests were received, and the applicants were: 70% academicians (students and universities), 23% from public administrations and 7% from private companies.

- **NEW INSTRUMENTS:** The 2011-2012 systematic literature review in which 495 new PRO instruments have been identified in Spanish was performed. Furthermore, about an additional 180 specific instruments on mental health were reviewed in the 2008- systematic review 2010, so the web will have information on about 1,400 instruments.
- **NEW CONTENTS:** The web links to the original articles and other articles adapted to Spanish in the technical files of about 500 instruments (approximately 70%) were included and corrected.
- **DISTRIBUTION AGREEMENTS:** Agreements for the distribution of several instruments like FACT-G (Functional Assessment of Cancer Therapy - General) and the specific versions of tumour localization (43 instruments), or EPIC (Expanded Prostate Index Composite) were entered into.
- **SCIENTIFIC CONFERENCE:** Preparation of the 2nd Bibliopro Scientific Conference (19 February 2015), accredited by the Consejo Catalán de Formación Continuada de las Profesiones Sanitarias (CCFCPS) with 0.6 credits. With conferences composed of international experts such as Professor Paul Kind from the University of Leeds, the PROs copyright expert Carolyn Anfray of the Mapi Group and Patricia Riera, president of CEDRO. The Scientific Committee selected 51 papers of the abstracts sent for different formats: standard poster (20), projected poster (8) and parallel oral communication sessions (23).
- **TRAINING:** In December a new edition of the course "Desarrollo y Uso de EMPRO: una herramienta para la evaluación estandarizada de medidas PRO" started. It was accredited by the Consejo Catalán de Formación Continuada de las Profesiones Sanitarias (CCFCPS) with 12.7 credits (75 h). The teachers were from the BiblioPRO scientific committee. The course has 20 researchers from different countries participating.
- **PUBLICATIONS:** 7 scientific articles were published in indexed magazines. Three articles report on the standardised evaluations with EMPRO of the quality of the measuring properties of the questionnaires. The articles evaluate the specific instruments for patients with: localised prostate cancer, heart failure; and pathology of the shoulder.
- Four other articles describe several studies on PRO specific validations. The pathologies include: bladder cancer, localised prostate tumour and genital prolapse, as well as new PRO online application formats for use during childhood and adolescence.

## Publication list:

- SCHMIDT S, GARIN O, PARDO Y, et al and the EMPRO Group. Assessing quality of life in patients with prostate cancer: a systematic and standardized comparison of available instruments. *Qual Life Res* 2014, 23(8): 2169-2181.
- GARIN O, HERDMAN M, VILAGUT G et al. Assessing health-related quality of life in patients with heart failure: a systematic, standardized comparison of available measures. *Heart Fail Rev.* 2014, 359-67.
- SCHMIDT S, FERRER M, GONZÁLEZ M, et al. & EMPRO Group. Evaluation of Shoulder-Specific Patient-Reported Outcome Measures: A Systematic, Standardized Comparison of Available Evidence. *Journal of Shoulder and Elbow Surgery* 2014, 23,3, 434-44.
- SCHMIDT S, RIEL R, FRANCES A, et al. Bladder cancer index: cross-cultural adaptation into Spanish and psychometric evaluation. *Health and Quality of Life Outcomes* 2014.
- ÁVILA M, PARDO Y, CASTELLS M, et al. Adaptation and validation of the Spanish version of the Patient-Oriented Prostate Utility Scale (PORPUS). *Qual Life Res* 2014 23(9): 2481-2487.
- FLORES-ESPINOZA C., ARAVAYA AX, PIZARRO-BERDICHEVSKY J, et al. Validation of the Spanish-language version of the ProlapseQuality of Life Questionnaire in Chilean women. *Int Urogynecol J.* 2014.
- RAJMIL, L., ROBLES, N., MURRILLO M, et al. Preferences in the format of questionnaires and use of the Internet by schoolchildren. *An Pediatr (Barc).* 2014.

### Description

The Observatorio de Desigualdades en la Salud (Observatory of Health Inequality) (ODS) is a free-of-charge and free-access scientific portal specializing in Health Inequality integrated within programme (P4) Social Determinants of Health of the Epidemiology and Public Health CIBER (CIBERESP). It can be found at <http://www.ods-ciberesp.org> and contains a wide range of information concerning published studies, reports, events, and other resources on the determinants of Health Inequality, with special emphasis on social class, gender, age, origin, and place of residence. The information is classified according to different inequality concepts: gender, social class, age, immigration/ethnic background and territory. The Observatory's web site is constantly updated with new resources, events, published studies and new scientific evidence on the health inequalities.

It is an initiative which is open for collaboration with all CIBERESP groups and particularly with the members of the inequality programme. It is under the scientific leadership of Dr. L. Artazcoz (ASPB), and as of 2013, Esther Sánchez Ledesma has been Project Manager.

In the last few years, a great effort has been made in order to find additional sources of funding for its maintenance.

### Objectives

The main objectives of ODS are:

- To manage a virtual information service in which is gathered systematically and spread information on the health inequalities, prioritising the studies conducted in developed countries and in the one conducted by CIBERESP researchers.
- To establish an electronic support platform for the scientific and professional community, particularly for those from CIBERESP.
- To develop contents and services aimed at the general population used for disseminating the results of the studies conducted in this field.

### Participating groups

This subproject is led by Dr. Lucía Artazcoz from Dr. Carme Borrell's group (Group 3).

### Resources

The ODS web page forms the basis of its operation, allowing access and dissemination of contents. As of May 2013, the ODS domain is:

<http://www.ods-ciberesp.org>.

### Indicators and results

In 2014, management of the ODS web portal as well as the communication and dissemination of its content, and of the ODS itself, through social networks and attendance to conferences and events, have been consolidated.

An evaluation process was conducted from October to December 2014, which aimed to assess specific aspects of ODS such as the usage, reach and quality of its web, the satisfaction of its users and the typology and the behaviour of said users in social networks. The result analysis was done in 2015 and will be disclosed through a technical report. The drafting of a scientific article is also expected for its dissemination.

## Web Uploads

ODS has close to 3.000 scientific resources on health inequalities available (reports, articles, statistics, manuals, programs, web pages...). In 2014 approximately 200 new resources were published, with a monthly average of 18 resources per month. Furthermore, the health inequality indicator section was updated by redefining 13 indicators and creating two new indicators with the TrendAnalyzer programme developed by Gapminder for Google.

## Web Analytics

The ODS web page has 275 records between scientific staff, students and various institutions

In 2014, 9,501 visits have been registered, with an average of 731 visits per month, and 29,490 pages have been viewed, according to Google analytics data. Close to 60% of the visits were done through search engines like Google and 18% through an organic search (by writing the complete domain). According to the geographical origin, most visits are from Spain (58.89%) and almost a third from Latin American countries such as Mexico (8%), Colombia (5%) or Argentina (3.4%). The sections that aroused the most interest are the Desigualdades (generic) (66%) and the Indicadores de Desigualdades en Salud (Gapminder) (43%) sections. The inequality concepts that have been consulted the most were those related to Gender (16%) and Social Class (8%).

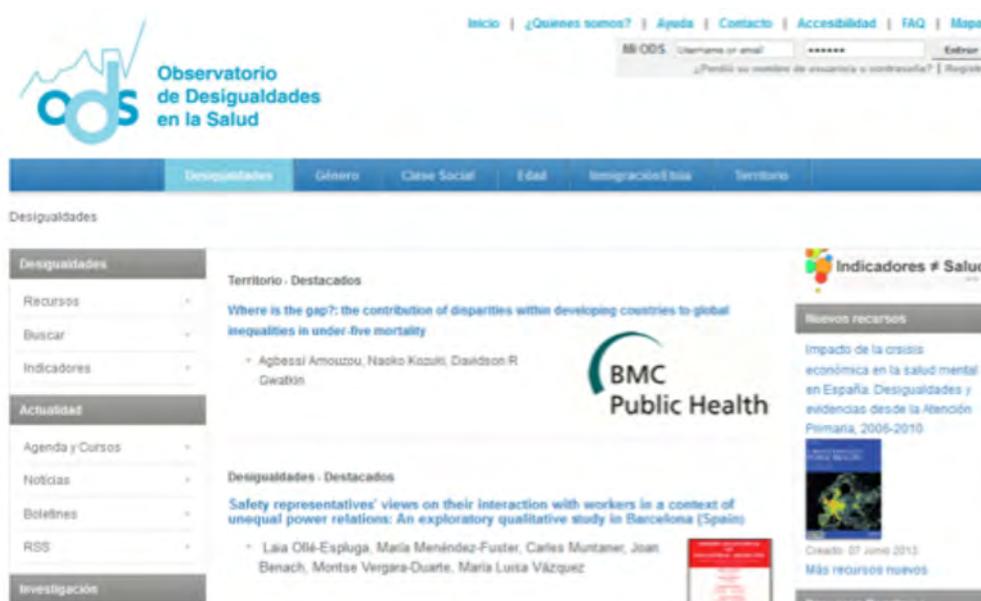
## Social Web

ODS is still very present in social networks. It has 653 people followers on Twitter and 467 ODS fan page followers on Facebook.

## ODS presence in scientific communication congresses and events

In 2014, ODS presented communications in the following events:

- September 2014: Presentation of the State of ODS for the CIBERESP Scientific Conference within the framework of the 8th Scientific Meeting of the Sociedad Española de Epidemiología (SEE).
- November 2014: Presentation of the project Indicadores de Desigualdades en Salud- Gapminder representing CIBERESP, in the event "Tapa Con Ciencia" (Semana de la Ciencia 2014) organised by CIBER.



Observatorio de Desigualdades web portal

## 5. RESEARCH GROUPS



## Group 15

Programme: P6. Health service evaluation



**Lead Researcher:** Abilleira Castells, Sonia

### Group Members

**STAFF MEMBERS:** Marinelli, Marcella

**ASSOCIATED MEMBERS:** Adam Bernad, Paula | Almazán Sáez, Caridad | Estrada Sabadell, M<sup>a</sup> Dolores | Gallofre López, Miquel | Kotzeva, Anna | Moharra Francés, Montserrat | Parada Martínez, Antonio | Pons Rafols, Joan María Vianney | Rajmil Rajmil, Luis Alberto | Salvat Plana, Merce | Serra Sutton, Victoria | Solans Domenech, Maite

**COLLABORATORS:** Martí Coma, Magda

### Main lines of research

HEALTH TECHNOLOGY ASSESSMENT (HTA).

To evaluate the efficacy, safety, effectiveness, efficiency, appropriateness and economic implications, organizational, legal, ethical and social issues of medical technologies, whether preventive, diagnostic, therapeutic, rehabilitative, organizational, etc. primarily through the review and synthesis of scientific knowledge (published data).

The technologies that most often are subject to evaluation:

Pharmaceuticals / Medical devices and procedures / Diagnostic Techniques / Information and Communication Technologies (ICT) for health

QUALITY OF HEALTHCARE ASSESSMENT

Evaluation of the safety, effectiveness and efficiency of health interventions and development of instruments for measuring and for improving the quality of health care to improve access, utilization and appropriateness of health services by unpublished data (primary or secondary).

**Sub-lines of research:**

- Quality Measures: Development and adaptation of indicators, instruments and measurement techniques of processes and outcomes of care.
- Development and adaptation of instruments for measuring Health Related Quality of Life (HRQOL) and Patient Reported Outcomes (PROM).
- Development of improvement strategies through tools / interventions to support clinical practice and health management to promote and ensure equity in access to and utilization of health services.

- Clinical effectiveness: designing strategies for monitoring quality in the provision of healthcare services by means of studies on medical practice variations, effectiveness, safety and efficiency of clinical practice.

#### ASSESSMENT OF THE SOCIAL IMPACT OF CLINICAL AND HEALTH SERVICES RESEARCH

Ex-post assessment of extramural research (projects, groups, centres, programs or plans), ie, research return to society by:

- The impact or return (primary, secondary and final) of the research carried out in a given area.
- Investment and outcomes (knowledge, publications, patent, applications, training of human resources, benefits for clinical practice and for health) of research in health sciences.

## Most relevant scientific articles

- RAJMIL L., ROBLES N., RODRÍGUEZ-ARJONA D., AZUARA M., CODINA F., RAAT H. et al. Comparison of the web-based and digital questionnaires of the Spanish and Catalan versions of the KIDSCREEN-52. *PLoS ONE*. 2014;9(12).
- RAJMIL L., DE SANMAMED M.-J.F., CHOONARA I., FARESIJO T., HJERN A., KOZYRSKYJ A. et al. Impact of the 2008 economic and financial crisis on child health: A systematic review. *International Journal of Environmental Research and Public Health*. 2014;11(6):6528-6546.
- RAJMIL L., HERDMAN M., RAVENS-SIEBERER U., ERHART M., ALONSO J. Socioeconomic inequalities in mental health and health-related quality of life (HRQOL) in children and adolescents from 11 European countries. *International Journal of Public Health*. 2014;59(1):95-105.
- KOTZEVA A., GUILLAMÓN I., GRACIA J., DÍAZ DEL CAMPO P., GICH I., CALDERÓN E. et al. Use of clinical practice guidelines and factors related to their uptake: A survey of health professionals in Spain. *Journal of Evaluation in Clinical Practice*. 2014;20(3):216-224.
- TEBE C., COMAS M., ADAM P., SOLANS-DOMENECH M., ALLEPUZ A., ESPALLARGUES M. Impact of a priority system on patients in waiting lists for knee arthroplasty. *Journal of Evaluation in Clinical Practice*. 2014.

## Highlights

Group 15 has national and international projects related to the evaluation of health technologies (e-health), quality of care and the social impact of research. Specifically, in 2014 we have produced: a) Clinical Practice Guidelines for the dissemination of scientific evidence to clinical practice and have developed algorithms and quality indicators for assessing implementation; b) Reports of the National Quality Plan and Reports of Pharmacy (areas: Primary Care and Hospital) including systematic reviews of the effectiveness of various procedures, medications and health interventions; c) Analysis of changes in medical practice procedures and health interventions; d) medical records to assess the effectiveness and quality of care; e) Research on comparative effectiveness of different reperfusion therapies for ischemic stroke patients and models of care for patients with chronic diseases; f) Development and validation of instruments perceived by patients and classification systems results.

In addition, we have led various projects to help improve transparency and accountability on the results of the health system in Catalonia. We have also participated in over 10 competitive public research projects, including: DECIPHER (1st EU PCP project in the field of mHealth, role: coordinator and leader of WP on evaluation); EpSOS (Role: Leader of WP on evaluation); Renewing Health (Role: Leader of assessment of a pilot in Catalonia); United4Health (Role: responsible for WP on Evaluation); INSPIRE (Role: Leader of WP on Broadcasting); ENIGMA (Role: Leader of PCP Deliverables Guidance, Monitoring and Evaluation); PEGASO (Role: Leader of WP on assessment of the platform and associated App); VISCERAL (Role: Leader of WP on providing data from radiological images); UNWIREDHEALTH (Role: Leader of WP on assessment of the PCP process).

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### Contact:

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## Group 9

Programme: P6. Health service evaluation



**Lead Researcher:** Alonso Caballero, Jordi

### Group Members

**STAFF MEMBERS:** García Forero, Carlos | Martín Morris, Luisa Aurea | Pardo Cladellas, Yolanda

**ASSOCIATED MEMBERS:** Ávila Pacheco, Mónica Marcela | Barbaglia Navarro, María Gabriela | Blasco Cubedo, María Jesús | Castellví Obiols, Pere | Ferrer Fores, Montserrat | Garín Boronat, Olatz | Hernández Pombo, María Gimnena | Olariu, Elena | Pont Acuña, Angels | Vilagut Saiz, Gemma

**COLLABORATORS:** Barbas López, Puri

### Main lines of research

- Health-Related Quality of Life (HRQL) Measurements. Development and evaluation of HRQL instruments in a cross-sectional research line (health services, public health and clinical research). We have adapted and validated more than 40 HRQL instruments, developing a standard guide for evaluating the quality of these instruments (EMPRO), and we have developed a "Method and system for evaluating an individual's Health-Related Quality of Life" (patent application No. P200600211). Collaboration in several European Union-funded projects: International Quality of Life Outcomes Database (IQOD), Measuring Health and Disability in Europe (MHADIE) and the KIDSCREEN project. We lead the technology platform BiblioPRO, a virtual library of HRQL questionnaires in Spanish.
- Estimation of the burden of mental disease. Research on frequency, risk factors, disabilities, and economic and social costs related to the most common mental disorders. Research performed in collaboration with World Mental Health (WMH) Surveys Consortium [<http://www.hcp.med.harvard.edu/wmh/>] in 29 countries, coordinated by Harvard University and WHO. Our group leads the 10 European countries with funding from the European Commission and other funds. Assessment of the burden of mental health problems in Europe and estimates on care needs. It also includes studies on specific populations (such as university students) carried out in several countries simultaneously. WMH Consortium's contributions are relevant to improve the knowledge on health care needs and are a more solid basis for decision-making and for developing and evaluating health policies.
- Evaluation of health services efficiency and effectiveness. Application of Health-Related Quality of Life (HRQL) measuring instruments as results in the evaluation of the efficacy, effectiveness and efficiency of medical procedures or health programs, specially cancer. It also comprises cost-effectiveness and cost-utility analysis (using psychometric or econometric tools to measure quality of life, respectively) to include an economic evaluation of health services. Research findings are expected to influence the doctors' and the government's decision-making and, therefore, contribute positively to the quality and efficiency of the national health system.

## Most relevant scientific articles

- ALONSO J., DE JONGE P., LIM C.C.W., AGUILAR-GAXIOLA S., BRUFFAERTS R., CALDAS-DE-ALMEIDA J.M. et al. Association between mental disorders and subsequent adult onset asthma. *Journal of Psychiatric Research*. 2014;59:179-188. [FI: 5,545. Posición 15 de 135: Q1; Categoría: Psychiatry].
- FORERO C.G., ADROHER N.D., STEWART-BROWN S., CASTELVI P., CODONY M., VILAGUT G., MOMPART A, TRESSERRES R, COLOM J, CASTRO JJ, ALONSO J\*. Differential item and test functioning methodology indicated that item response bias was not a substantial cause of country differences in mental well-being. *Journal of Clinical Epidemiology*. 2014;67(12):1364-1374. [FI: 5,478. Posición: 1 de 85: D1, Q1; Categoría: Health Care Science & Services.]
- FORERO C.G., ALMANSA J., ADROHER N.D., VERMUNT J.K., VILAGUT G., DE GRAAF R, HARO JM, ALONSO J. Partial Likelihood Estimation of IRT Models with Censored Lifetime Data: An Application to Mental Disorders in the ESEMeD Surveys. *Psychometrika*. 2014;79(3):470-488. [FI: 1,961. Posición: 16 de 95 : Q1; Categoría : Mathematics, Interdisciplinary applications]
- GARIN O., HERDMAN M., VILAGUT G., FERRER M., RIBERA A., RAJMIL L, VALDERAS JM, GUILLEMIN F, REVICKI D, ALONSO J, on behalf of EMPRO-HF Group. Assessing health-related quality of life in patients with heart failure: A systematic, standardized comparison of available measures. *Heart Failure Reviews*. 2014;19(3):359-367. [FI: 3,991. Posición: 28 de 125: Q1; Categoría: Cardiac & Cardiovascular System]
- SCHMIDT S., GARIN O., PARDO Y., VALDERAS J.M., ALONSO J., REBOLLO P, RAJMIL L, GARCÍA-FORERO C, FERRER M, the EMPRO Group. Assessing quality of life in patients with prostate cancer: a systematic and standardized comparison of available instruments. *Quality of Life Research*. 2014;23(8):2169-2181. [FI: 2,864. Posición: 17 de 85: Q1; Categoría: Health Care Sciences & Services].

## Highlights

In 2014, the Group published 44 articles in scientific journals-JCR (38 international, 68.75% in the 1st quartile). H-index: J. Alonso (72), M. Ferrer (33).

J. Alonso is the regional coordinator of WHO World Mental Health (WMH) Surveys Europe project and co-PI of PROMIS international group (Patient-Reported Outcomes Measurement Information System). M. Ferrer is scientific coordinator of BiblioPRO, transfer activity conducted by researchers from 4 groups CIBERESP: 1 CIBERSAM group, 1 CIBERNED group and REDISSEC.

The group developed five current research projects during 2014 with competitive funding:

ASTRO-LAB: Assessment of the safety of LABAs in asthma... CE HEALTH-F5-2011-282593 (2011-2015). Partner, IP: M. Ferrer. • EQ-5D: New version of EuroQol (EQ-5D)... ISCIII PI12 / 00772. (2013- 2015). PI coordinator: M. Ferrer. • UNIVERSAL: University and Mental Health. Predictive Models of suicidal ideation and behavior ... ISCIII PI13 / 00343. (2014-2016). PI J. Alonso. • CaPROST10: Long-term effectiveness: Follow-up to 10 years ... localized prostate cancer. ISCIII PI13 / 00412. (2014-2016). PI O. Garin. • PROMIS: PROMIS.es Mental Health: Calibration and Validation of a Computerized Assessment Tool ... in Mental Health. ISCIII PI13 / 00506. (2014-2016). IP: G. Vilagut.

**The group led collaborative transfer activity:** • Spanish National Health Survey. Mental Health and quality of life of 0-14 years old population 2011/2012 report. • VALIDA: Hypoglycemias recognition questionnaire validation. Ediciones Mayo S.A • BiblioPRO: Virtual Library of quality of life instruments... RECERCAIXA 2010ACUP 00158. (2011-2014). PI J. Alonso.

The group had 1 active predoctoral staff contract (AGAUR 2012FI\_B1 00177 grant), 1 postdoctoral contract (ISCIII CD12 / 00440) and AGAUR's help, to the Consolidated Research Group Exp. 2014 SGR 748.

G. Barbaglia and S. Schmidt defended their PhD dissertations. Three postgraduate dissertations were headed. The Master in Public Health UPF-UAB, in which steering committee are involved three members of the group, received the "International Master's Programme Distinctive Mention (AQU)".

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## Group 41

Programme: P5. Epidemiology and Prevention of Environment and Occupational Diseases



**Lead Researcher:** Ballester Díez, Ferrán

### Group Members

**STAFF MEMBERS:** Estarlich Estarlich, M<sup>ª</sup> Luisa

**ASSOCIATED MEMBERS:** Arnedo Pena, Alberto | Barona Vilar, Carmen | Bellido Blasco, Juan | Esplugues Cebrián, Ana | Ferrero Sanchís, Amparo | Fuentes Leonarte, Virginia | Íñiguez Hernández, Carmen | Llop Pérez, Sabrina | López Espinosa, María Jose | López Villarrubia, Elena | Marco Macián, Alfredo | Martínez Beneito, Miguel Ángel | Martos Jiménez, María del Carmen | Ramón Bonache, Rosa | Tenias Burillo, José María | Zurriaga Llorens, Óscar Ernesto

**COLLABORATORS:** Cases Català, Amparo

### Main lines of research

- Children and environmental health.
- Air pollution climatic factors and health.
- Public health surveillance.
- Epidemiology of infectious diseases.
- Mechanisms of development of asthma and allergic diseases .
- Inequalities in health.
- Rare diseases.
- Clinical epidemiology.
- Statistical methods for analysis of epidemiological and environmental data.
- Women's health.
- Environmental health impact assessment.
- Assessment of exposure to toxic compounds. Biomonitoring.

## Most relevant scientific articles

- VICEDO-CABRERA A.M., INIGUEZ C., BARONA C., BALLESTER F. Exposure to elevated temperatures and risk of preterm birth in Valencia, Spain. *Environmental Research*. 2014;134:210-217.
- LLOP S., MURCIA M., AGUINAGALDE X., VIOQUE J., REBAGLIATO M., CASES A. et al. Exposure to mercury among Spanish preschool children: Trend from birth to age four. *Environmental Research*. 2014; 132:83-92.
- ARNEDO-PENA A., ROMEU-GARCÍA M.A., BELLIDO-BLASCO J.B., PARDO-SERRANO F. The control of pertussis outbreaks in schools. *Enfermedades Infecciosas y Microbiología Clínica*. 2014;32(3):209.
- LLOP S., ENGSTROM K., BALLESTER F., FRANFORTE E., ALHAMDOW A., PISA F. et al. Polymorphisms in ABC transporter genes and concentrations of mercury in newborns - Evidence from two Mediterranean birth cohorts. *PLoS ONE*. 2014;9(5).
- TORRES-AVILES F., MARTÍNEZ-BENEITO M.A. Stanova: a smoothed-ANOVA-based model for spatio-temporal disease mapping. *Stochastic Environmental Research and Risk Assessment*. 2014;29(1):131-141.

## Highlights

During 2014 and coordinated by the Area of Environment and Health in FISABIO the main part of the visit of the nine years of the INMA (Childhood and Environment; [www.projectoinma.org](http://www.projectoinma.org)) has been developed. On this visit two novel aspects within the INMA project: the assessment of oral health and assessment of pubertal development of children participating in the INMA project have been evaluated.

Funding has been obtained from the Health Research Fund for three new projects for assessment of exposure and possible effects on health and development in childhood. At the same time we have continued with the participation of INMA project in various European research projects: DENAMIC, MedAll, CHICOS, GERÓNIMO, HELIX, ESCAPE ESCAPE and GEN-Hg.

In the line on the possible health effects of weather and climate, during 2014 the European project PHASE has been completed. This project aims to contribute to the knowledge of the relationship between meteorological factors on health and evaluate the best strategies to prevent its possible effects on health. Nationally, two researchers of the group participate as experts in Health and Climate Change Observatory

In the line of Inequalities in Health, coordinated by the Research Area of the same name in FISABIO, progress has been made in developing the PARENT project and the analysis of the magnitude and determinants of morbidity and mortality severe maternal in Valencia.

Among the research projects from the Rare Diseases line the participation in the Joint Action EUROCAT (Surveillance of Congenital Anomalies) and Network Records for Research on Rare Diseases (SpainRDR) has followed.

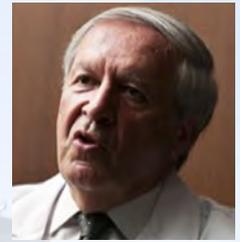
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### Contact:

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## Group 33

Programme: P3. Biological, Behavioural and Structural Determinants in the Contraction and Spread of Communicable Diseases in Vulnerable Populations (DAPET Programme)



**Lead Researcher:** Baquero Mochales, Fernando

### Group Members

**STAFF MEMBERS:** Moreno Bofarull, Ana | Torrecilla García, María Esther

**ASSOCIATED MEMBERS:** Coque González, Teresa | De Mulder Rougvie, Miguel | Galán Montemayor, Juan Carlos | Garcao Curiao, Tania Isabel | Garmendia Jorge, Leonor | González Alba, José María | Holguin Fernández, África | Pérez Díaz, José Claudio | Ripoll González, Aida | Rodríguez Domínguez, Mario José | Rodríguez Fernández, Irene | Sánchez Calvo, Juan Manuel | Sánchez Valenzuela, Antonio Jesús | Santos Tedim, Ana Sofía | Turrientes López, María del Carmen | Yebra Sanz, Gonzalo.

### Main lines of research

- Epidemiology and ecology of bacterial antibiotic resistance, in relation with antibiotic use, risk groups, and environmental changes.
- Research on mechanisms and dynamics of colonization and transmission of microorganisms among humans, and from animals to humans.
- Research on epidemiology of transmissible diseases, particularly HIV, HCV, LGV, respiratory and neurotropic viruses.
- Epidemiology of non-B HIV-1 subtypes in immigrant and pediatric populations.

## Most relevant scientific articles

- RIPOLL A., GALÁN J.-C., RODRÍGUEZ C., TORMO N., GIMENO C., BAQUERO F. et al. Detection of resistance to beta-lactamase inhibitors in strains with CTX-M beta-lactamases: A multicenter external proficiency study using a well-defined collection of escherichia coli strains. *Journal of Clinical Microbiology*. 2014;52(1):122-129.
- RODRÍGUEZ-DOMÍNGUEZ M., PUERTA T., MENÉNDEZ B., GONZÁLEZ-ALBA J.M., RODRÍGUEZ C., HELLIN T. et al. Clinical and epidemiological characterization of a lymphogranuloma venereum outbreak in Madrid, Spain: Co-circulation of two variants. *Clinical Microbiology and Infection*. 2014;20(3):219-225.
- YEBRA G., DELGADO R., PULIDO F., RUBIO R., GALÁN J.C., MORENO S. et al. Different trends of transmitted HIV-1 drug resistance in Madrid, Spain, among risk groups in the last decade. *Archives of Virology*. 2014;159(5):1079-1087.
- SÁNCHEZ P.R., HOLGUIN A. Drug resistance in the HIV-1-infected paediatric population worldwide: A systematic review. *Journal of Antimicrobial Chemotherapy*. 2014;69(8):2032-2042.
- BAQUERO F., COQUE T.M. Widening the spaces of selection: Evolution along sublethal antimicrobial gradients. *mBio*. 2014;5(6).

## Highlights

The Group CIBERESP G-33 was founded in 2014 by a Project of the EU Commission (EVOTAR--282004), and is integrated has an academic group in the 8th Call Innovative Medicines Initiative (IMI) - Programme ENABLE participating in the sub-projects MEDINA and TRN for the research on new antimicrobial agents targeting the antibiotic resistance problem in pathogens that play a key role in Public Health. Regarding Spanish funding this group has active four projects within the programme "Investigación en Salud" del ISCIII and one supported by the "Comunidad de Madrid" (PROMPT). The Group is part of the "Joint Programming Initiative on Antibiotic Resistance and participated in the elaboration the following report "WAAAR Declaration Against Antibiotic Resistance" (World Alliance Against Antibiotic Resistance) and EFSA Scientific Colloquium N°20. It also participated in the Cambridge Working Group of Harvard University (Dr. Baquero). The Cambridge Working Group, formed by an elite of EU and USA scientists and experts in legal, ethical and other dimensions of "Potential Pandemic Pathogens" that aims to coordinate the efforts in: i) enhancing the public's knowledge regarding the necessity and biosafety risks of "Potential Pandemic Pathogens" studies; ii) the evaluation and scrutiny of claimed scientific and public health benefits of said research, maximizing these goals. Dr. Baquero received the 2014 FENIN Award, for innovation in Public Health Technology. The group published 33 articles in peer reviewed journals and generated 50 communications and 23 invited lectures, highlighting the Key-Plenary Lecture (Dr. Baquero) of the 2014 European Conference of Clinical Microbiology and Infectious Diseases (ECCMID) entitled: "Knowledge and social norms shaping the discovery, use, and resistance trends of antimicrobial agents", the Ramón y Cajal Cochrane's Unit (IRYCIS) lecture entitled: "Epistemological thoughts about Cochrane's evidence-based actions" and a lecture in Pretoria South Africa entitle: "Phylogenomic Epidemiology of Bloodstream Bacterial Infections". The group's scientific activity is centred on tearing apart barriers finding new proposals for the struggle against antibiotic resistance, molecular epidemiology of respiratory, HIV and other sexual transmitted infections especially in developing countries.

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## RESEARCH GROUPS

### Group 6

Programme: P5. Epidemiology and Prevention of Environment and Occupational Diseases



#### Grupo 6 –CIBERESP

IP: F. BOLUMAR (FB)

IC: J VIOQUE (JV)

IC: M REBAGLIATO (MR)



**Lead Researcher:** Bolumar Montrull, Francisco

### Group Members

**STAFF MEMBERS:** Navarrete Muñoz, Eva María

**ASSOCIATED MEMBERS:** García de la Hera, Manuela | Quiles Izquierdo, Joan Manuel | Rebagliato Ruso, Marisa | Río Sánchez, Isabel | Vioque López, Jesús

### Main lines of research

- Analyze the effect of pre and postnatal exposure to environmental pollutants and diet on neurodevelopment, lung function, allergy, and respiratory health in the INMA cohort study. ([www.proyectoinma.org](http://www.proyectoinma.org))
- Identify associated factors in relation to overweight and obesity in adult and children of the INMA study. ([www.proyectoinma.org](http://www.proyectoinma.org); [www.bibliodieta.es](http://www.bibliodieta.es)).
- Evaluate the effect of diet on non-communicable diseases such as cancer, age-related macular degeneration and other metabolic diseases.

## Most relevant scientific articles

- BILAL U., FERNÁNDEZ E., BELTRAN P., NAVAS-ACIEN A., BOLUMAR F., FRANCO M. Validation of a method for reconstructing historical rates of smoking prevalence. *American Journal of Epidemiology*. 2014; 179(1):15-19.
- URQUIA M.L., GLAZIER R.H., GAGNON A.J., MORTENSEN L.H., NYBO ANDERSEN A.-M., JANEVIC T. et al. Disparities in pre-eclampsia and eclampsia among immigrant women giving birth in six industrialised countries. *BJOG: An International Journal of Obstetrics and Gynaecology*. 2014; 121(12):1492-1500.
- GARCÍA-ARENZANA N., NAVARRETE-MUNOZ E.M., LOPE V., MOREO P., VIDAL C., LASO-PABLOS S. et al. Calorie intake, olive oil consumption and mammographic density among Spanish women. *International Journal of Cancer*. 2014;134(8):1916-1925.
- LLOP S., MURCIA M., AGUINAGALDE X., VIOQUE J., REBAGLIATO M., CASES A. et al. Exposure to mercury among Spanish preschool children: Trend from birth to age four. *Environmental Research*. 2014;132:83-92.
- RODRÍGUEZ-BARRANCO M., LACASANA M., GIL F., LORCA A., ALGUACIL J., ROHLMAN D.S. et al. Cadmium exposure and neuropsychological development in school children in southwestern Spain. *Environmental Research*. 2014;134:66-73.

## Highlights

Research line of the INMA (Childhood and Environment) for 2014:

- Within the European Project DENAMIC “” Developmental neurotoxicity assessment of Mixtures in children “(7th Framework Programme 2011-2015; IP Group CSISP-FISABIO: M. Rebagliato), organophosphate pesticide levels are being analyzed in children and mothers from the INMA cohort in Valencia and other European cohorts. Preliminary results were presented in various scientific meetings, and are currently conducting an analysis of the effect of exposure to these pesticides in child neurodevelopment.
- Call 2014 Project Health Research Project: has obtained funding for the project entitled “Effects of socioeconomic status and family context in neuropsychological development in children aged 10-11 Cohort INMA-Valencia” (PI14 / 01687 ) (€ 91,500) (IP: Marisa Rebagliato)
- Europeristat Project (Harmonization of information systemes in perinatal health)

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## Group 43

Programme: P7. Clinical Epidemiology



**Lead Researcher:** Bonfill Cosp, Xavier

### Group Members

**STAFF MEMBERS:** Pardo Hernández, Héctor

**ASSOCIATED MEMBERS:** Alonso Coello, Pablo | Bolibar Ribas, Ignasi | Gich Saladich, Ignasi | Martínez Zapata, María José | Quintana Ruiz, María Jesús | Roque Figuls, Marta | Sola Arnau, Iván | Urrutia Cuchi, Gerard

**COLLABORATORS:** Girós Boixadós, Meritxell

### Main lines of research

- Evidence-based Medicine: Systematic reviews, clinical practice guidelines and clinical trials.
- Health service evaluations.
- Methodological research.

## Most relevant scientific articles

- MARTÍNEZ GARCÍA L., SANABRIA A.J., GARCÍA ÁLVAREZ E., TRUJILLO-MARTÍN M.M., ETXEANDIA-IKOBALTZETA I., KOTZEVA A. et al. The validity of recommendations from clinical guidelines: A survival analysis. *CMAJ*. 2014;186(16):1211-1219.
- CHAPMAN E., REVEIZ L., SANGALANG S., MANU C., BONFILL X., MUNOZ S. et al. A survey study identified global research priorities for decreasing maternal mortality. *Journal of Clinical Epidemiology*. 2014;67(3):314-324.
- SCHMIDT-HANSEN M., BALDWIN D.R., HASLER E., ZAMORA J., ABRAIRA V., ROQUE I FIGULS M. PET-CT for assessing mediastinal lymph node involvement in patients with suspected resectable non-small cell lung cancer. *The Cochrane database of systematic reviews*. 2014; 11.
- ARÉVALO-RODRÍGUEZ I., SEGURA O., SOLA I., BONFILL X., SÁNCHEZ E., ALONSO-COELLO P. Diagnostic tools for alzheimer's disease dementia and other dementias: An overview of diagnostic test accuracy (DTA) systematic reviews. *BMC Neurology*. 2014;14(1).
- TORREGO A., SOLA I., MUNOZ A.M., ROQUE I FIGULS M., YEPES-NUNEZ J.J., ALONSO-COELLO P. et al. Bronchial thermoplasty for moderate or severe persistent asthma in adults. *The Cochrane database of systematic reviews*. 2014;3.

## Highlights

The boost of research and dissemination of knowledge initiatives in the field of assessing practices and procedures, including the expansion of the website DianaHealth ([www.dianahealth.com](http://www.dianahealth.com)) of Dissemination of Initiatives to Analyse Appropriateness in Healthcare with more than 2.000 new recommendations about low value interventions in healthcare.

Active participation in many international non-commercial clinical trials and studies in collaboration with other leading global research academic institutions (where the group has acted as national coordinator and promoter in several of them, especially in the field of perioperative medicine), several of which have obtained competitive public funding and have generated high-impact publications.

Several researchers of the Group have participated in the elaboration of 9 clinical practice guidelines, including four of the Development Programme of clinical practice guidelines based on scientific evidence, to aid decision-making in the Sistema Nacional de Salud (Ministry of Health, Social Services and Equality): open-angle glaucoma, chronic kidney disease, contraception, and pregnancy. In collaboration with scientific societies, they have developed guidelines on metastatic breast cancer, patients on hemodialysis and management of perioperative patients in noncardiac surgery. Finally, they have participated in two WHO projects for the development of recommendations in chronic hepatitis B and pediatric treatment with oxygen.

The continuing participation in collaborative workgroups and networks, (Cochrane Collaboration, GRADE Working Group, Guiasalud, LatinCLEN) has meant the attendance to several international meetings during 2014, including the DECIDE International Conference (Edinburgh), to disseminate the results of the DECIDE project, or the 22nd Colloquium Cochrane (India).

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## Group 3

Programme: P4. Social Determinants of Health

**Lead Researcher:** Borrell Thio, Carme

### Group Members

**STAFF MEMBERS:** Camprubí Condom, Lluís | Gotsens Miquel, Mercè | Marí Dell Olmo, Marc | Marín González, Esther | Olabarria Sáez de Viguera, Marta | Palència Fernández, Laia

**ASSOCIATED MEMBERS:** Álvarez-Dardet Díaz, Carlos | Artazcoz Lazcano, Lucía | Cortes Franch, Immaculada | Díez David, Elia | Ferrando Belart, Josep | Gil González, Diana | Pasarin Rúa, María Isabel | Peiro Pérez, Rosana | Pérez Albarracín, Gloria | Pérez González, Catherine | Rodríguez Sanz, Maica | Rohlfs Barbosa, Izabella | Ruiz Cantero, María Teresa | Salvador Peral, Joaquín | Santamariña Rubio, Elena | Vives Cases, Carmen

**COLLABORATORS:** Altimira, Patricia

### Main lines of research

- Inequalities in health by social class, gender, immigration and geographical area.
- Development of theoretical frameworks and methodologies for the study of the intersections of social class, gender and country of origin on health inequalities.
- The social and political determinants of health and their effect on the construction of policies and interventions.
- Study of national and transnational influences on policies affecting health.

## Most relevant scientific articles

- SCHEMBARI A., NIEUWENHUIJSEN M.J., SALVADOR J., DE NAZELLE A., CIRACH M., DADVAND P. et al. Traffic-related air pollution and congenital anomalies in Barcelona. *Environmental Health Perspectives*. 2014;122(3):317-323.
- RIUS A., ARTAZCOZ L., GUIASOLA L., BENACH J. Visual impairment and blindness in Spanish adults: Geographic inequalities are not explained by age or education. *Ophthalmology*. 2014;121(1):408-416.
- UMANA-PENA R., FRANCO-GIRALDO A., ALVAREZ-DARDET C., RUIZ-CANTERO M.T., GIL-GONZÁLEZ D. Correction: Assessment of the association of health with the liberalisation of trade in services under the World Trade Organisation. *PLoS ONE*. 2014;9(11).
- UMANA-PENA R., FRANCO-GIRALDO A., DÍAZ C.A.-D., RUIZ-CANTERO M.T., GIL-GONZÁLEZ D., HERNÁNDEZ-AGUADO I. Assessment of the association of health with the liberalisation of trade in services under the World Trade Organisation. *PLoS ONE*. 2014;9(7).
- MEHDIPANAH R., RODRÍGUEZ-SANZ M., MALMUSI D., MUNTANER C., DIEZ E., BARTOLL X. et al. The effects of an urban renewal project on health and health inequalities: A quasi-experimental study in Barcelona. *Journal of Epidemiology and Community Health*. 2014;68(9):811-817.

## Highlights

The group has continued to lead the Sophie project of the Seventh Framework Programme. Currently the project already has 33 publications. On the other hand it has been further progress in the coordinated project which aims to analyze the impact of the crisis on health, having made a meeting of all groups the month of November 2014.

An Horizon 2020 project led by a group of the University of Coimbra has been obtained. Carme Borrell leads one of the work packages.

It has also been obtained a RecerCaixa project. Carme Borrell was intensified by ISCIII in 2014.

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## RESEARCH GROUPS

### Group 44

Programme: P1. Epidemiology and prevention of chronic diseases

**Lead Researcher:** Bueno Cavanillas, Aurora

### Group Members

**ASSOCIATED MEMBERS:** Amezcua Prieto, Carmen | Espigares García, Miguel | Espigares Rodríguez, Elena | Fernández-Crehuet Navajas, Milagros | Gálvez Vargas, Ramón | García Martín, Miguel | Guillén Solvás, José Francisco | Jiménez Mejías, Eladio | Jiménez Monleón, José Juan | Lardelli Claret, Pablo | Moreno Abril, Obdulia | Mozas Moreno, Juan

### Main lines of research

- Prevalent health problems.
- Accidental Injury Epidemiology.
- Health Services.

## Most relevant scientific articles

- SERRANO M., GONZALVO M.C., SÁNCHEZ-POZO M.C., CLAVERO A., FERNÁNDEZ M.F., LÓPEZ-REGALADO M.L. et al. Adherence to reporting guidelines in observational studies concerning exposure to persistent organic pollutants and effects on semen parameters. *Human Reproduction*. 2014;29(6):1122-1133.
- MOLINA-LEYVA A., ALMODÓVAR-REAL A., RUIZ-CARRASCOSA J.C., NARANJO-SINTES R., SERRANO-ORTEGA S., JIMENEZ-MOLEON J.J. Distribution pattern of psoriasis affects sexual function in moderate to severe psoriasis: A prospective case series study. *Journal of Sexual Medicine*. 2014;11(12):2882-2889.
- OLMEDO-REQUENA R., FERNÁNDEZ J.G., PRIETO C.A., MORENO J.M., BUENO-CAVANILLAS A., JIMÉNEZ-MOLEON J.J. Factors associated with a low adherence to a Mediterranean diet pattern in healthy Spanish women before pregnancy. *Public Health Nutrition*. 2014;17(3):648-656.
- MARTÍN-RODRÍGUEZ J.L., ARREBOLA J.P., JIMÉNEZ-MOLEÓN J.J., OLEA N., GONZÁLEZ-CALVIN J.L. Sonographic quantification of a Hepato-Renal Index for the assessment of hepatic steatosis in comparison with 3T proton magnetic resonance spectroscopy. *European Journal of Gastroenterology and Hepatology*. 2014;26(1):88-94.
- MARTÍN-MARTÍN L.M., VALENZA-DEMET G., JIMENEZ-MOLEÓN J.J., CABRERA-MARTOS I., REVELLES-MOYANO F.J., VALENZA M.C. Effect of occupational therapy on functional and emotional outcomes after hip fracture treatment: A randomized controlled trial. *Clinical Rehabilitation*. 2014;28(6):541-551.

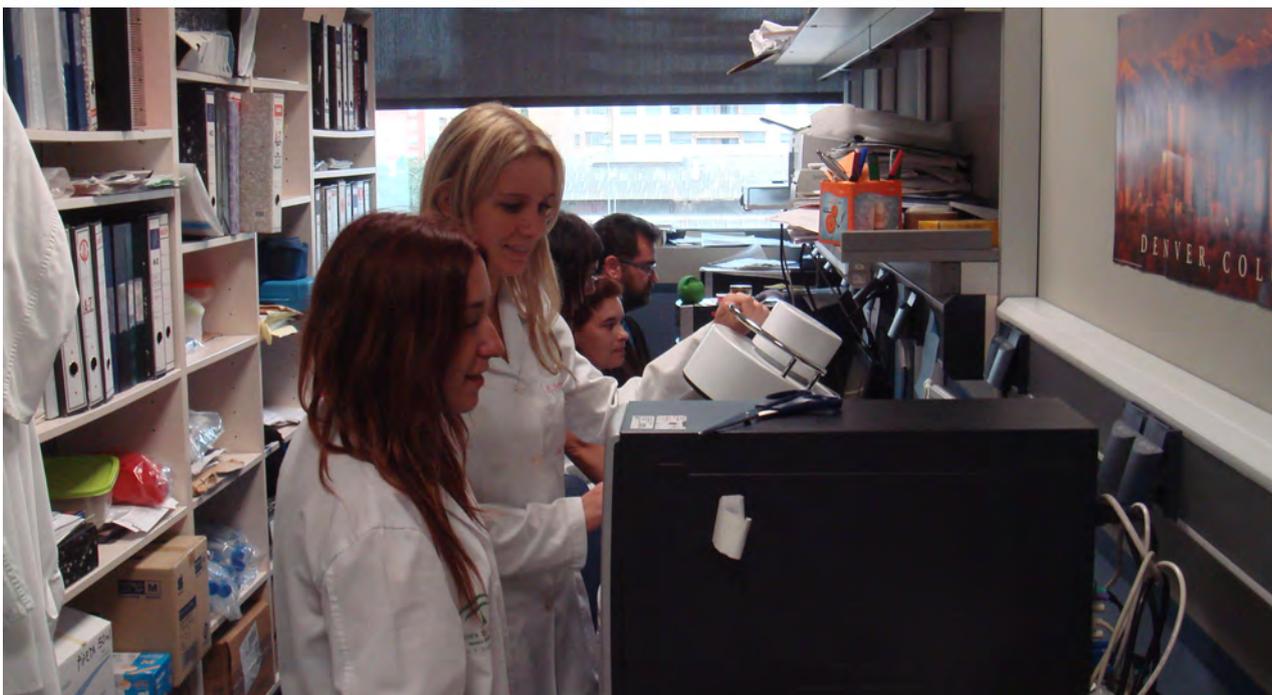
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## Group 4

Programme: P3. Biological, Behavioural and Structural Determinants in the Contraction and Spread of Communicable Diseases in Vulnerable Populations (DAPET Programme).  
P7. Clinical Epidemiology



**Lead Researcher:** Calderón Sandubete, Enrique José

## Group Members

**STAFF MEMBERS:** Friaza Ptiño, Vicente

**ASSOCIATED MEMBERS:** Briones Pérez de la Blanca, Eduardo | Horra Padilla, María del Carmen de la | Marín León, Ignacio | Medrano Ortega, Francisco Javier | Montes Cano, Marco Antonio | Pérez Lozano, María José | Varela Aguilar, José Manuel

## Main lines of research

- Epidemiology and physiopathology of the infection by *Pneumocystis jirovecii*.
- Role of infectious agents as determinants of noncommunicable chronic diseases.
- Development of methods for evaluation and improvement of clinical practice.

## Most relevant scientific articles

- MONROY-VACA E.X., DE ARMAS Y., ILLNAIT-ZARAGOZI M.T., TORANO G., DÍAZ R., VEGA D. et al. Prevalence and genotype distribution of pneumocystis jirovecii in cuban infants and toddlers with whooping cough. *Journal of Clinical Microbiology*. 2014;52(1):45-51.
- SOLA I., CARRASCO J.M., DIAZ DEL CAMPO P., GRACIA J., ORREGO C., MARTINEZ F. et al. Attitudes and perceptions about clinical guidelines: A qualitative study with spanish physicians. *PLoS ONE*. 2014;9(2).
- PEREIRA R.M., MULLER A.L., ZIMMERMAN R.A., ANTUNES D.B., ZINN V.F., FRIAZA V. et al. High prevalence of *Pneumocystis jirovecii* colonization among HIV-positive patients in southern Brazil. *Medical Mycology*. 2014;52(8):804-809.
- ESTEVES F, CALÉ SS, BADURA R, DE BOER MG, MALTEZ F, CALDERÓN EJ et al. Diagnosis of *Pneumocystis pneumonia*: evaluation of four serologic biomarkers. *Clinical microbiology and infection: the official publication of the European Society of Clinical Microbiology and Infectious Diseases*. 2014.
- QUINTANA J.M., ESTEBAN C., UNZURRUNZAGA A., GARCÍA-GUTIÉRREZ S., GONZÁLEZ N., BARRIO I. et al. Predictive score for mortality in patients with COPD exacerbations attending hospital emergency departments. *BMC Medicine*. 2014;12(1).

## Highlights

To organize the International Workshops on Opportunistic Protists (IWOP-13) and the II Ibero-American Conference on Pneumocystosis

To write the Evidence Based Clinical Guideline entitled "Guía de Práctica Clínica sobre Terapia Intravenosa con Dispositivos no Permanentes en Adultos". Ministerio de Sanidad, Servicios Sociales e Igualdad. Agencia de Evaluación de Tecnologías Sanitarias de Andalucía (AETSA); 2014. A Clinical Guideline of the Spanish Health System.

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## Group 27

Programme: P3. Biological, Behavioural and Structural Determinants in the Contraction and Spread of Communicable Diseases in Vulnerable Populations (DAPET Programme)



**Lead Researcher:** Casabona Bárbara, Jordi

### Group Members

**STAFF MEMBERS:** Hernando Rovirola, Cristina | López Corbeto, Evelin

**ASSOCIATED MEMBERS:** Agustí Benito, Cristina | Almeda Ortega, Jesús | Carnicer Pont, Dolors | Esteve Gómez, Anna | Fernández López, Laura | Ferrer Serret, Laia | Folch Toda, Cinta M | González Soler, María Victoria | Loureiro Varela, Eva | Lugo Colón, Rossie | Martro Catala, Elisa | Matas Andreu, Joana María Lourdes | Montoliu Giménez, Alexandra | Sabido Espin, Meritxell | Saludes Montoro, Verónica | Valles Casanova, Francesc Xavier | Vives Martín, Nuria

**COLLABORATORS:** Galdón Muñoz, Montserrat

### Main lines of research

- Modelling and new methods for monitoring the HIV and sexually transmitted infections (STIs).
- Evaluation of preventive interventions for HIV and STI and prevention and control measures.
- Implementation studies and operational research in the early diagnosis of HIV.
- Biological, behavioural and structural determinants in the acquisition and spread of communicable diseases in migrant population.
- Global Health. Design of Multilevel preventive interventions and monitoring of social networks and metrics applied to the study of HIV and STIs epidemics.
- Development and validation of new molecular techniques for STIs diagnosis, including Hepatitis C Virus (HCV).
- Study of molecular epidemiology of HCV, and implications of its genetic variability for treatment resistance and progression of hepatic fibrosis.

## Most relevant scientific articles

- ROSALES-STATKUS M.E., DE LA FUENTE L., FERNÁNDEZ-BALBUENA S., FIGUEROA C., FERNÁNDEZ-LÓPEZ L., HOYOS J. et al. Approval and Potential Use of Over-the-Counter HIV Self-Tests: The Opinion of Participants in a Street Based HIV Rapid Testing Program in Spain. *AIDS and Behavior*. 2014.
- IeDEA and ART Cohort Collaborations, AVILA D, ALTHOFF KN, MUGGLIN C, WOOLS-KALOUSTIAN K, KOLLER M et al. Immunodeficiency at the start of combination antiretroviral therapy in low-, middle-, and high-income countries. *Journal of acquired immune deficiency syndromes (1999)*. 2014;65(1):e8-16.
- FERRER L, FUREGATO M, FOSCHIA JP, FOLCH C, GONZÁLEZ V, RAMARLI D et al. Undiagnosed HIV infection in a population of MSM from six European cities: results from the Sialon project. *European journal of public health*. 2014;.
- SALUDES V., GONZÁLEZ V., PLANAS R., MATAS L., AUSINA V., MARTRO E. Tools for the diagnosis of hepatitis C virus infection and hepatic fibrosis staging. *World Journal of Gastroenterology*. 2014;20(13):3431-3442.
- LÓPEZ-CORBETO E., HUMET V., LEAL M.J., TEIXIDO N., QUIROGA T., CASABONA J. et al. Risk behaviours and Chlamydia trachomatis prevalence in prisoners by length of stay in prison. *Medicina Clínica*. 2014;143(10):440-443.

## Highlights

The European Project Euro HIV Edat (coordinated by CEEISCAT) has started in April 2014. Its purpose is to generate operational knowledge to better understand the role and impact of Community Based Voluntary Counselling and Testing services (CBVCTs), to explore the use of innovative strategies based on new technologies and to increase early HIV/STI diagnosis and treatment in Europe among the most affected groups. There are twelve associated partners from eight European countries and eighteen collaborating partners involved in the project.

In a national context, a pilot study for the implementation of the HIV rapid test in Catalan primary health (PH) services has started in April 2014. This project counts with the participation of PH centres from Barcelona metropolitan area. The aim of the study is to evaluate the profitability of testing offer in the context of PH, and to define guidelines and to elaborate recommendations for the introduction of the tests with the aim of improve HIV early diagnosis.

Regarding international cooperation, emphasize the delivering of the Mangua application to the Ministerio de Salud Pública y Asistencia Social de Guatemala (MSPAS). This application was specifically designed for the computerization of the HIV clinical records and for the consolidation of databases, not only in a hospital context but also a ministerial one that will allow MSPAS to get indicators to request funding for antiretroviral.

The Microbiology Service of the Hospital Universitari Germans Trias i Pujol has started a study financed by GILEAD Fellowship Programme 2014. Its purpose is to improve the early diagnosis of sexual transmitted HCV among vulnerable population in a Community Based Voluntary Counselling and Testing service (ONG Stop Sida) using alternative screening and confirmation methods (RNA detection of HCV in dried blood samples).

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### Contact:

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## Group 11

Programme: P1. Epidemiology and prevention of chronic diseases

**Lead Researcher:** Castilla Catalan, Jesús

### Group Members

**STAFF MEMBERS:** Burgui Pérez, Rosana | Delfrade Osinaga, Iosu | Etxeberría Andueza, Jaione

**ASSOCIATED MEMBERS:** Ardanaz Aicua, Eva | Arriazu Berastegui, María Teresa | Ascunce Elizaga, Nieves | Barricarte Gurrea, Aurelio | Echauri Ozcoidi, Marga | Ederra Sanz, María | Elizalde Soto, Lázaro | Erdozain Eguarás, Nieves | Floristán Floristán, María del Yugo | García Cenoz, Manuel | García López, Milagros | Guevara Eslava, Marcela del Pilar | Irisarri Zamarbide, Fátima | Marín Palacios, Pilar | Martínez Baz, Iván | Pérez Jarauta, María José | Vidan Alli, Juana

### Main lines of research

EPIDEMIOLOGY OF CHRONIC DISEASES, BY PARTICIPATION IN MULTICENTER COHORT STUDIES AND IN POPULATION-BASED REGISTERS OF CANCER AND ACUTE MYOCARDIAL INFARCTION:

- Cohort EPIC and associated projects EPIC-Heart, InterAct and Neuro-EPIC.
- Multicase-Control Study MCC-Spain
- Spanish Network of Population-based Cancer Registries REDECAN.
- Cardiovascular diseases and participation in the study FRESCO.
- Analysis of mortality, trends and analysis of socioeconomic inequalities (MEDEA).
- Studies on lifestyles and health.
- Rare Diseases Registry.

EVALUATION OF SCREENING PROGRAMMES:

- Impact of breast cancer screening programmes.
- Analysis of the probability of false-positive results in screening mammography.
- Relationship among false-positive, true positive and adherence to the screening programmes.
- Mammographic breast density in Spanish women coming to breast cancer screening programmes (DDM-Spain) and association with reproductive & lifestyle factors & genetic determinants (Var-DDM)

EPIDEMIOLOGICAL RESEARCH ON INFECTIOUS DISEASES AND EVALUATION OF THE EFFECTIVENESS AND IMPACT OF THE VACCINES:

- Effectiveness and impact of vaccines: influenza, pneumococcal, varicella, rotavirus, mumps, whooping cough, etc.
- Investigation of infectious diseases outbreaks.
- Evaluation of preventive interventions against HIV, tuberculosis, etc.

## Most relevant scientific articles

- CASTILLA J., MARTÍNEZ-BAZ I., NAVASCUÉS A., FERNÁNDEZ-ALONSO M., REINA G., GUEVARA M. et al. Vaccine effectiveness in preventing laboratory-confirmed influenza in Navarre, Spain: 2013/14 mid-season analysis. *Eurosurveillance*. 2014;19(6).
- GUEVARA M., EZPELETA C., GIL-SETAS A., TORROBA L., BERISTAIN X., AGUINAGA A. et al. Reduced incidence of invasive pneumococcal disease after introduction of the 13-valent conjugate vaccine in Navarre, Spain, 2001-2013. *Vaccine*. 2014;32(22):2553-2562.
- ETXEBERRÍA J., UGARTE M.D., GOICOA T., MILITINO A.F. Age- and sex-specific spatio-temporal patterns of colorectal cancer mortality in Spain (1975-2008). *Population Health Metrics*. 2014;12(1).
- CASADO I., MARTINEZ-BAZ I., BURGUI R., IRISARRI F., ARRIAZU M., ELIA F. et al. Household transmission of influenza A(H1N1)pdm09 in the pandemic and post-pandemic seasons. *PLoS ONE*. 2014;9(9).
- SPIJKERMAN A.M.W., VAN DER A D.L., NILSSON P.M., ARDANAZ E., GAVRILA D., AGUDO A. et al. Smoking and long-term risk of type 2 diabetes: The EPIC-InterAct study in European populations. *Diabetes Care*. 2014;37(12):3164-3171.

## Highlights

Contribution to the GIVE report (Global influenza Vaccine Effectiveness). This is a technical report to help the WHO for the decision making about the composition of the influenza vaccine. We participate in the report of February 2014, for the decision of the composition of the 2014-2015 seasonal influenza vaccine, and in the report of August to support the decision of the composition of the vaccine for the South hemisphere. For this reports have provide information the US CDC, the I-MOVE network led by the ECDC, the Public Health Institutes of Canada, United Kingdom, Australia, Spain, France, Denmark and the Public Health Institute of Navarra. For the participation, to provide just in time and reliable estimates of the influenza vaccine effectiveness is required.

Article Cancer survival in Europe 1999-2007 by country and age: results of EURO CARE--5-a population-based study. De Angelis R, Sant M, Coleman MP, Francisci S, Baili P, Pierannunzio D, Trama A, Visser O, Brenner H, Ardanaz E, Bielska-Lasota M, Engholm G, Nennecke A, Siesling S, Berrino F, Capocaccia R; EURO CARE-5 Working Group. *Lancet Oncol*. 2014 Jan;15(1):23-34.

Project funded in 2014: Efectos de la exposición a Bisfenol-A en la salud (cáncer y enfermedad coronaria isquémica) en el Estudio Prospectivo Europeo sobre Nutrición y Cáncer (EPIC-España). Navarra subproject. PI14/01880.

Contribution to the CONCORD study, about cancer survival, published in *Lancet*. 2014 Nov 26 entitled: Global surveillance of cancer survival 1995-2009: analysis of individual data for 25.676.887 patients from 279 population-based registries in 67 countries (CONCORD-2).

The Cancer Register of Navarra is member of the Spanish Network of Cancer Registers REDECAN. During 2014 the web: <http://redecn.org/es/index.cfm> was concluded.

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## Group 12

Programme: P2. Communicable disease surveillance, prevention and control



**Lead Researcher:** Cayla Buqueras, Joan Artur

### Group Members

**STAFF MEMBERS:** Casals Toquero, Martí | Solano Silveira, Rubén

**ASSOCIATED MEMBERS:** Benito Langa, Javier De | García de Olalla Rizo, Patricia | Manzanares Laya, Sandra | Martín Sánchez, Vicente | Millet Vilanova, Juan Pablo | Moreno Martínez, Antonio Vicente | Orcau Palau, Angels | Rius Gibert, Cristina | Rodrigo Sanz, María Teresa | Sánchez Martínez, Francisca

**COLLABORATORS:** Asensio, Joan | Serrano, Carmen

### Main lines of research

- Application of the new technologies to tuberculosis (TB) control: See the web page of the “TB Investigation Unit of Barcelona” (UITB): <http://www.uitb.cat>. The main objective of UITB is to produce scientific knowledge of relevance on the control, diagnosis, treatment and prevention of TB. Adherence to treatments and contact tracing are the priorities.
- Community health workers’ (CHW) role in the control of communicable diseases: With the massive immigration observed since 2000, we incorporated CHW in the prevention and control of infectious diseases. They act as a cultural mediators and as a translators.
- Studies about the increasing incidence of mumps, pertussis and sexually transmitted infections.
- Epidemic outbreaks.
- International Research:  
Clinical trials for TB: Our centre, which is the only such centre in Europe, is part of a network of international centres associated with the CDCs TB Trials Consortium, promoting international involvement in laying the therapeutic and strategic bases for the treatment of active and latent TB infection (LTBI). (See: “Sterling TR, et al. N Engl J Med. 2011). This paper has changed the treatment of LTBI. Now the recommendation is 3 months once weekly with rifapentine plus isoniazide.

Investigate the transmission of hepatitis B in autochthonous and immigrant populations: with several European groups with a grant from Executive Agency for Health and Consumers (Projecte Hepscreen. Screening for hepatitis B and C among migrants in the European Union).

- Translational Investigation: Significant international diffusion has been achieved with our web page. According to Google Analytics, every year we had 10.000-20.000 visits, most of them from Spain and Latin America. From the visits and discussion forum comments, it is clear that we continue to play a key role in Spain and in Latin America.

## Most relevant scientific articles

- MARCO A., GALLEGO C., CAYLA J.A. Incidence of hepatitis c infection among prisoners by routine laboratory values during a 20-year period. PLoS ONE. 2014;9(2).
- JIMÉNEZ-FUENTES M.A., MILAAGE C., GÓMEZ M.N.A., PEIRO J.S., DE SOUZA GALVAO M.L., MALDONADO J. et al. Screening for active tuberculosis in high-risk groups. International Journal of Tuberculosis and Lung Disease. 2014;18(12):1459-1465.
- MOZALEVSKIS A, MANZANARES-LAYA S, GARCÍA DE OLALLA P, MORENO A, JACQUES-AVIÑÓ C, CAYLÀ JA. Can we rely on the antiretroviral treatment as the only means for human immunodeficiency virus prevention? A Public Health perspective. *Enfermedades infecciosas y microbiología clínica*. 2014.
- BELLIDO-BLASCO J.B., PARDO-SERRANO F., BALLESTER-RODRÍGUEZ I., ARNEDO-PENA A., TIRADO-BALAGUER M.D., ROMEU-GARCIA M.T. et al. An Estimate of the Incidence of Influenza-Like Illness During the Influenza Pandemic of 2009. *Archivos de Bronconeumología*. 2014.
- SOLANO R., RIUS C., SIMON P., MANZANARES-LAYA S., ROS M., TOLEDO D. et al. Evaluation of reported cases of pertussis: Epidemiological study in a large city in Spain. *Journal of Medical Microbiology*. 2014;63:1688-1695.

## Highlights

Regarding projects, the TB clinical trials driven by the US CDC about TB treatments and a new tuberculin test trial promoted by the Staten Serum Institute in Copenhagen stand out. We have also participated in a European project of hepatitis (Hepscreen Project. Screening for hepatitis B and C Among migrants in the European Union). We have also conducted a pilot study about contact tracing in HIV-infected people. (General Directorate of Pharmacy and Health Products. Grants promoted for independent clinical research. Ministry of Health. "Efficacy of a pilot study based on proactive contacts of people infected by HIV program") and (PII12 FIS / 02573 "Screening of communicable diseases in the immigrant population of a neighborhood with low socioeconomic status: comparison of two strategies.").

About results, the effectiveness and feasibility of the study in HIV-infected contacts have been demonstrated (García de Olalla P et al. PLoS One 2015 in press). The final results of the clinical trial of the new tuberculin test will be available in 2-3 months approximately.

In respect of the screening of communicable diseases in immigrants study, it has been shown that the passive strategy (screening at the time of the visit in a primary care service) is very effective and the active strategy (screening in the immigrant group who do not use health services) can also work in a well organized previous meetings. Differences in the infection course has been detected according to country of origin. About the TB treatment clinical trials, we emphasize that in our country the adherence in the treatment of latent tuberculosis infection is better if the directly observed treatment is used, followed by SMS text messages reminders and followed by self-administered therapy.

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## Group 46

Programme: P4. Social Determinants of Health



**Lead Researcher:** Daponte Codina, Antonio

### Group Members

**STAFF MEMBERS:** Bernal Solano, Mariola | Cabrera León, Andrés | Danet, Alina

**ASSOCIATED MEMBERS:** Bolivar Muñoz, Julia | Escudero Carretero, María | March Cerda, Joan Carles | Mateo Rodríguez, Inmaculada | Prieto Rodríguez, Maria Angeles | Sánchez Villegas, Pablo | Suess, Amets

### Main lines of research

#### ENVIRONMENT AND HEALTH:

- Air-pollution and health.
- Exposure assessment and biomonitoring.
- Planning and Health.
- Working conditions and health.

#### PATIENTS, CITIZENSHIP AND HEALTH SERVICES:

- Citizen Expectations.
- Excluded and social exclusion: drugs and social exclusion.
- Immigration and health.
- Information needs of citizens.

#### SOCIAL INEQUALITIES IN HEALTH:

- Evictions and health.
- Gender inequalities in health.
- Gender and informal care.
- Social and gender inequalities in cardiovascular health.
- Productive-work, gender and health.

## Most relevant scientific articles

- DAPONTE A., BERNAL M., BOLIVAR J., MATEO I., SALMI L.-R., BARSANTI S. et al. Criteria for implementing interventions to reduce health inequalities in primary care settings in European regions. *European Journal of Public Health*. 2014; 24(6):980-990.
- GARCÍA-TOYOS N., ESCUDERO-CARRETERO M.J., SANZ-AMORES R., GUERRA-DE HOYOS J.-A., MELCHOR-RODRIGUEZ J.-M., TAMAYO-VELÁZQUEZ M.-I. Preferences of caregivers and patients regarding opioid analgesic use in terminal care. *Pain Medicine (United States)*. 2014;15(4):577-587.
- SUESS A, RUIZ PÉREZ I, RUIZ AZAROLA A, MARCH CERDÀ JC, DAPONTE-CODINA A. The right of access to health care for undocumented migrants: a revision of comparative analysis in the European context. *European journal of public health*. 2014;24(5):712-20.
- DANET A., MARCH J.C., ROMERA I.G. Communication, participation and leadership in the perception of the emotional climate in a university hospital in Andalusia, Spain. *Cadernos de Saude Pública*. 2014;30(3):546-558.
- SUESS A, RUIZ PÉREZ I, RUIZ AZAROLA A, MARCH CERDÀ JC. [Right of access to healthcare in the context of the Royal Decree-Law 16/2012: the perspective of civil society organizations and professional associations]. *Gaceta sanitaria / S.E.S.P.A.S*. 2014;28(6):461-9.

## Highlights

On research on social inequalities and vulnerable populations financing has been obtained for a new European project "Gender Specific-mechanisms in coronary artery disease (CAD) in Europe-GENCAD", from 2015 to 2017, to identify determinants of the adoption of practices for gender equality in cardiovascular disorders. Has started the project "Processes of eviction and Health", funded by the Regional Ministry of Equality, Health and Social Policies, of Andalusia; and has completed the first phase of the project "The Impact of Evictions in affected Population Health", developed by researchers from CIBERESP, University of Granada, the Andalusian School of Public Health, in collaboration with Stop-Evictions. In the field of health protection, has started the project "The impact of urban environments on health in Andalusia" funded by the Regional Ministry of Equality, Health and Social Policy of Andalucía, which will develop instruments to implement the Health Impact Assessment (HIA) in Andalusia. In this line of transfer of research results of the group, the School of Patients, project funded by the Regional Ministry of Equality, Health and Social Policy of Andalucía, has developed more than 120 training workshops for expert patients, there have been video-chats with experts, has organized the First National Expert Patients meeting, the II Summer Camp School Patients for children with diabetes, food allergies, celiac disease and asthma, and completed the research project "Results in the formation of patients health, quality of life and socio use of health services. " Finally, we have continued to disseminate the results of research of the group, highlighting "Inequalities in mortality in Spain", "Mapping European Policies prostitution", and the first results of the European project Addressing Inequalities in Regions-AIR.

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## Group 32

Programme: P2. Communicable disease surveillance, prevention and control



**Lead Researcher:** De Mateo Ontañón, Salvador

### Group Members

**STAFF MEMBERS:** Gómez Barroso, Diana Belén

**ASSOCIATED MEMBERS:** Barrasa Blanco, Alicia | Cano Portero, Rosa María | Delgado Sanz, María Concepción | Díaz Franco, Asunción | Díez Ruiz-Navarro, Mercedes | Fernández-Cuenca Gómez, Rafael | Hernández Pezzi, Gloria | Herrera Guibert, Dionisio José | Herrera León, Laura | Jiménez Jorge, Silvia | Larrauri Cámara, Amparo | León Gómez, Inmaculada | Llacer Gil De Ramales, Alicia | Martín De Pando, María Concepción | Martín Granado, Ascensión | Martínez de Aragón Esquivias, María Victoria | Martínez Pino, Isabel | Martínez Sánchez, Elena Vanessa | Masa Calles, Josefa | Oliva Domínguez, Jesús Ángel | Palmera Suárez, Rocío del Pilar | Rodríguez Valin, María Elena | Sánchez Serrano, Luisa Pilar | Sastre García, María | Simón Soria, Fernando | Tello Anchuela, Odorina | Torres de Mier, María de Viarce | Varela Martínez, María del Carmen

### Main lines of research

- Development of excellence networks for epidemiological surveillance at European level.
- Methodological research for health early warning.
- Evaluation of public health measures against vaccine preventable diseases.
- Spatio-temporal variability study of risk in acquiring and developing infectious diseases.
- Molecular methodology use for detection and control of epidemic outbreaks.
- Developing collaborative and interdisciplinary research in the field of disease surveillance, prevention and control.

## Most relevant scientific articles

- LÓPEZ-CUADRADO T., LLACER A., PALMERA-SUAREZ R., GÓMEZ-BARROSO D., SAVULESCU C., GONZÁLEZ-YUSTE P. et al. Trends in infectious disease mortality rates, Spain, 1980-2011. *Emerging Infectious Diseases*. 2014;20(5):783-789.
- JIMÉNEZ-JORGE S., POZO F., DE MATEO S., DELGADO-SANZ C., CASAS I., GARCÍA-CENOS M. et al. Influenza vaccine effectiveness in Spain 2013/14: Subtype-specific early estimates using the cycEVA study. *Eurosurveillance*. 2014;19(9).
- DÍEZ M., DÍAZ A., GARRIGA C., PONS M., TEN A., MARCOS H. et al. A low-cost, sustainable, second generation system for surveillance of people living with HIV in Spain: 10-year trends in behavioural and clinical indicators, 2002 to 2011. *Eurosurveillance*. 2014;19(20).
- SIZAIRE V., GARRIDO-ESTEPA M., MASA-CALLES J., MARTÍNEZ DE ARAGÓN M.V. Increase of pertussis incidence in 2010 to 2012 after 12 years of low circulation in Spain. *Eurosurveillance*. 2014;19(32).
- DÍEZ M., BLEDA M.J., VARELA J.A., ORDONANA J.R., AZPIRI M.A., VALL M. et al. Trends in HIV testing, prevalence among first-time testers, and incidence in most-at-risk populations in Spain: The EPI-VIH study, 2000 to 2009. *Eurosurveillance*. 2014;19(47).

## Highlights

We participated in nine national and three international projects in collaboration with other groups of CIBERESP.

The group 32 was involved in the development, approval and publication of the New Protocols of Notifiable Diseases for the National Epidemiological Surveillance Network.

We performed a systematic review to find, characterize and describe elements and practices of surveillance of healthcare associated infections and resistance. The goal was to incorporate into the proposal the results and evidence provided.

We made a study of the changes in trend of national pertussis contributed to update the national immunization policies and to recommend the vaccination in pregnancy.

Research on effectiveness of influenza vaccine contributed to GIVE 2014 reports (The Global Influenza Vaccine Effectiveness Collaboration). GIVE is a synthesis of scientific international evidence on effectiveness of influenza vaccine, with the aim to support WHO's two annual selection processes flu strains included in the influenza vaccine virus following influenza season.

We are working in estimating epidemiological parameters from different information sources to determine the continuity of care for people infected with HIV. This strategy includes the milestones from HIV infection to viral suppression. It aims to improve the control of HIV infection and care for these patients.

In response to public health crises, our group participated actively in the development of the Protocol of Prevention and Control Guidance for Ebola virus disease (EVE) in Spain, in risk communication to the Spanish population and in the organization and coordination of the Health Training Course for EVE, by mandate of the Special Interministerial Committee for management in Spain of EVE.

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## Group 16

Programme: P1. Epidemiology and prevention of chronic diseases



**Lead Researcher:** Delgado Rodríguez, Miguel

### Group Members

**STAFF MEMBERS:** Ortiz Ruiz, María Ángela

**ASSOCIATED MEMBERS:** Dierssen Sotos, Trinidad | Gómez Acebo, Inés | Gómez Mata, María Luisa | Llorca Diaz, Javier | Martínez Galiano, Juan Miguel | Prieto Salceda, María Dolores | Quindós Poncela, Luis Santiago

### Main lines of research

- Epidemiological methods.
- Reproductive health epidemiology.
- Cancer epidemiology.
- Clinical epidemiology on rheumatic diseases.

## Most relevant scientific articles

- BROWNSTEIN CA, BEGGS AH, HOMER N, MERRIMAN B, YU TW, FLANNERY KC et al. An international effort towards developing standards for best practices in analysis, interpretation and reporting of clinical genome sequencing results in the CLARITY Challenge. *Genome biology*. 2014;15(3):R53.
- LOPEZ-MEJÍAS R., GENRE F., CORRALES A., GONZÁLEZ-JUANATEY C., UBILLA B., LLORCA J. et al. Investigation of a PON1 gene polymorphism (rs662 polymorphism) as predictor of subclinical atherosclerosis in patients with rheumatoid arthritis. *Annals of the Rheumatic Diseases*. 2014;73(9):1749-1750.
- GONZÁLEZ-GAY M.A., GONZÁLEZ-JUANATEY C., LLORCA J. The influence of inflammation in the development of subclinical atherosclerosis in psoriatic arthritis: Comment on 'Cardiovascular comorbidities in patients with psoriatic arthritis: A systematic review' by Jamnistki et al. *Annals of the Rheumatic Diseases*. 2014;73(5).
- GENRE F., LÓPEZ-MEJÍAS R., MIRANDA-FILLOY J.A., UBILLA B., CARNERO-LÓPEZ B., GOMEZ-ACEBO I. et al. Antitumour necrosis factor  $\alpha$  treatment reduces retinol-binding protein 4 serum levels in non-diabetic ankylosing spondylitis patients. *Annals of the Rheumatic Diseases*. 2014;73(5):941-943.
- CORRALES A., GONZÁLEZ-JUANATEY C., PEIRO M.E., BLANCO R., LLORCA J., GONZÁLEZ-GAY M.A. Carotid ultrasound is useful for the cardiovascular risk stratification of patients with rheumatoid arthritis: Results of a population-based study. *Annals of the Rheumatic Diseases*. 2014;73(4):722-727.

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## RESEARCH GROUPS

### Group 1

Programme: P2. Communicable disease surveillance, prevention and control



**Lead Researcher:** Domínguez García, Ángela

### Group Members

**STAFF MEMBERS:** Crespo Fernández, Inmaculada | Soldevila Pidemunt, Nuria

**ASSOCIATED MEMBERS:** Batalla Clavell, Joan | Borrás López, Eva | Cardenosa Marín, Nieves | Godoy García, Pere | Jansa Vallado, Josep María | Martínez Mateo, Ana | Muñoz García, Pilar | Plans Rubio, Pedro | Salleras Sanmartí, Luis | Torner Gracia, Nuria

### Main lines of research

- Preventable diseases of viral etiology (measles, mumps and rubella) or bacterial etiology (pertussis, pneumococcal disease, meningococcal disease).
- Epidemic outbreaks of communicable diseases.
- Influenza.
- Viral hepatitis.
- Effectiveness and efficiency of vaccination programs.

## Most relevant scientific articles

- SALA M.R., BRONER S., MORENO A., ARIAS C., GODOY P., MINGUELL S. et al. Cases of acute gastroenteritis due to calicivirus in outbreaks: Clinical differences by age and aetiological agent. *Clinical Microbiology and Infection*. 2014; 20(8):793-798.
- PLANS P, ÁLVAREZ E, DE ORY F, CAMPINS M, PAYÀ T, BALFAGÓN P et al. Prevalence of antibody to *Bordetella pertussis* in neonates and prevalence of recent pertussis infection in pregnant women in Catalonia (Spain) in 2003 and 2013. *The Pediatric infectious disease journal*. 2014;33(11):1114-8.
- MORALES-SUÁREZ-VARELA M., GONZÁLEZ-CANDELAS F., ASTRAY J., ALONSO J., CASTRO A., CANTÓN R. et al. Pandemic influenza A (H1N1) in non-vaccinated, pregnant women in Spain (2009-2010). *Maternal and Child Health Journal*. 2014;18(6):1454-1461.
- SABRIA A., PINTO R.M., BOSCH A., BARTOLOMÉ R., CORNEJO T., TORNER N. et al. Molecular and clinical epidemiology of norovirus outbreaks in Spain during the emergence of GII.4 2012 variant. *Journal of Clinical Virology*. 2014;60(2):96-104.
- URBIZTONDO L., BORRAS E., BAYAS J.M., BAYAS J.M., BORRAS E., DOMINGUEZ A. et al. Varicella-zoster virus immunity among health care workers in Catalonia. *Vaccine*. 2014;32(45):5945-5948.

## Highlights

The milestone of the group in 2014 is the Guide of Vaccination and Public Health. It is edited in Spanish and Catalan edited by The Royal Academy of Pharmacy of Catalonia (RAFC).

Authors: José María Bayas<sup>1,2</sup>, Ángela Domínguez<sup>2,3,4</sup>, José Marés<sup>5</sup>, Fernando Moraga<sup>6,7</sup>, Luis Salleras<sup>2,3,4</sup>, Tomás Pumarola<sup>7,8</sup>, José Vaqué<sup>7,8</sup>

1. Clinic Hospital of Barcelona. / 2. University of Barcelona. / 3. CIBER Epidemiology and Public Health. / 4. RAFC academic. / 5. Marés Riera Pediatric Institute of Blanes. / 6. Catalan Society of Pediatrics / 7. University Hospital Vall d'Hebrón. / 8. Autonomous University of Barcelona.

Ángela Domínguez and Luis Salleras, both CIBERESP researchers, were involved in the writing of the document. Ángela Domínguez was the coordinator.

Divulgarion: 1000 copies edited in paper and it is also available online in the following webs:

Royal Academy of Pharmacy of Catalonia / Catalan Society of Pediatrics / Spanish Vaccinology Association / Spanish Pediatric Association / Spanish Preventive Medicine, Public Health and Hygiene Association / Catalan Society of Infectious Diseases and Clinical Microbiology / Catalan Society of Public Health

The guide presents a compilation of 27 specific recommendations addressed to healthcare workers. Its aim is to improve the training to answer clearly the possible challenges and questions that are made repeatedly from some and groups people of the community, no professionals, and also from some health care professionals. The guide sum up the debate process and considerations generated in a multidisciplinary team with experts from several areas as Public Health, Pediatrics, Primary Care, Microbiology, and Preventive Medicine. It is written in chapters about the following topics: a) Importance of vaccines in Public Health; b) Safety in vaccines; c) Systematic vaccination schedules; d) Herd immunity; e) Healthcare workers vaccination; f) Strategies to improve vaccination coverage in the community.

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## Group 28

Programme: P1. Epidemiology and prevention of chronic diseases

**Lead Researcher:** Dorronsoro Iraeta, Miren

### Group Members

**STAFF MEMBERS:** Echezarreta Olariaga, Nerea

**ASSOCIATED MEMBERS:** Aldasoro Unamuno, Elena | Altzibar Arotzena, Jone Miren | Amiano Etxezarreta, Pilar | Arriola Larrarte, Larraitz | Basterrechea Irurzun, Mikel | Goñi Irigoyen, J Fernando | Ibarluzea Maurolagitia, Jesus | Larrañaga Larrañaga, Nerea | Santa Marina Rodríguez, Loreto

### Main lines of research

The team has developed different investigation projects. These projects have been generated inside the proper group or in collaboration with other national or international institutions. These are the two principle lines followed:

- Epidemiology and control of chronic diseases.
- Epidemiology and prevention environmental diseases during childhood.

The investigation lines spread and interact with other group's programs. We take part in collaborative national projects, that have been strategic projects -MCC Spain and INMA- and cycEVA and international projects - EPIC-cancer, EPIC-Heart, INTERACT and LEAKAGE, MEDALL, HELIX - together with other CIBER groups. In terms of research of environmental exposures we are also collaborating with the European project GERoNiMO (Generalised EMF Research using Novel Methods – an integrated approach: from research to risk assessment and support to risk management) and REMBRANDT (Radiofrequency ElectroMagnetic fields exposure and Brain Development: from exposure assessment to dose-response assessment).

## Most relevant scientific articles

- ALTZIBAR J, TAMAYO-URIA I, DE CASTRO V, AGINAGALDE X, ALBIZU M, LERTXUNDI A et al. Epidemiology of asthma exacerbations and their relation with environmental factors in the Basque Country. *Clinical and experimental allergy: journal of the British Society for Allergy and Clinical Immunology*. 2014.
- AMIANO P., MACHON M., DORRONSORO M., DOLORES CHIRLAQUE M., BARRICARTE A., SÁNCHEZ M.-J. et al. Intake of total omega-3 fatty acids, eicosapentaenoic acid and docosahexaenoic acid and risk of coronary heart disease in the Spanish EPIC cohort study. *Nutrition, Metabolism and Cardiovascular Diseases*. 2014;24(3):321-327.
- BASTERRECHEA M., LERTXUNDI A., ÍÑIGUEZ C., MÉNDEZ M., MURCIA M., MOZO I. et al. Prenatal exposure to hexachlorobenzene (HCB) and reproductive effects in a multicentre birth cohort in Spain. *Science of the Total Environment*. 2014;466-467:770-776.
- AURREKOETXEA J.J., MURCIA M., REBAGLIATO M., FERNANDEZ-SOMOANO A., CASTILLA A.M., GUXENS M. et al. Factors associated with second-hand smoke exposure in non-smoking pregnant women in Spain: Self-reported exposure and urinary cotinine levels. *Science of the Total Environment*. 2014;470-471:1189-1196.
- ABETE I., ARRIOLA L., ETXEZARRETA N., MOZO I., MORENO-IRIBAS C., AMIANO P. et al. Association between different obesity measures and the risk of stroke in the EPIC Spanish cohort. *European Journal of Nutrition*. 2014.

## Highlights

- Integrated Project for Excellence PIE13 / 00048 Blood-based cancer detection: Development of an economical, sensitive and rapid paper-based device to detect nucleic acids cell free (Collaboration).  
Objectives: 1) To develop a simple and inexpensive alternative to current laboratory techniques providing improved patient management, 2) provide a diagnostic tool for use in screening programs in public health biomarker.
- Effects of exposure to Bisphenol-A on health (cancer and ischemic heart disease) in the European Prospective Investigation into Cancer and Nutrition (EPIC-Spain). (Leading Gipuzkoa Subproject).  
Objectives: 1) To determine the prevalence of exposure to Bisphenol A (BPA) and congeners in biological samples of 4,000 participants from 4 centers EPIC-Spain on recruitment and today, 2) Establish the contribution of diet and other exposure variables BPA and congeners, and 3) analyze the association between BPA and congeners with the risk of developing hormone-dependent (prostate and breast) cancer and ischemic heart disease (IHD).
- Characterization of exposure to electromagnetic fields from non-ionizing radiation on children in the cohort INMA-Gipuzkoa (PI13 / 02187) in collaboration with the European Geronimo project "Novel Generalised using EMF Research Methods - an integrated approach: from research to risk assessment and support to risk management".  
Objectives: 1) To assess the possible effects of EMF exposure in children and adults (neurodevelopment, cancer and reproductive effects) 2) Understanding the mechanisms involved in the biological effects associated with CEM 3) Collect data on population exposure and improve assessing health risks 4) Support the development of policies regarding electromagnetic fields in Europe.
- Impact Assessment Health regeneration of two interventions in the Bay of Pasaia.  
Objective: To assess the impact of both projects in the health of the surrounding population and issue recommendations on effective public health.

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## Group 13

Programme: P2. Communicable disease surveillance, prevention and control



**Lead Researcher:** Echevarría Mayo, Juan Emilio

### Group Members

**STAFF MEMBERS:** Fernández García, Aurora

**ASSOCIATED MEMBERS:** Castellanos Nadal, Ana | Guisasaola Gorriti, María Eulalia | Mosquera Gutiérrez, María del Mar | Ory Manchón, Fernando de | Sanz Moreno, Juan Carlos

### Main lines of research

- Vaccine preventable diseases.

The group of the National Center of Microbiology is the national reference laboratory for measles and rubella as recognized in the corresponding national plans for elimination and accredited by the WHO. Moreover, diagnostic techniques for other vaccine preventable diseases (mumps, pertussis or chickenpox) were studied in the context of specific programs of microbiological surveillance. Additionally to this official activity, the group currently keeps research activity in the following aspects:

- Development and evaluation of diagnostic methodologies for measles virus (MeV, mumps virus MuV) and Rubella virus (RuV), and Bordetella pertussis.
- Sero-epidemiology of MeV, RV and MuV.
- Molecular epidemiology of MeV, MuV and RV.
- Sero-epidemiology of pertussis.
- Sero-epidemiology of influenza

- Rabies and another bat-associated viruses.

The group of the National Center of Microbiology is officially recognized as national reference laboratory for several zoonoses, including rabies in humans and suspected animals. Additionally to this

official activity, the group currently keeps research activity in the following aspects.:

- Development and evaluation of diagnostic methodologies for rabies.
- Molecular Epidemiology of canine rabies in Ceuta and Melilla.
- Epidemiology and pathogenesis of bat rabies.
- Search of new potentially emergent viruses in bats.
- Efficiency of rabies vaccines.
- Neurological Diseases of viral etiology. Etiology of meningitis and encephalitis in Spain.
- Polyomavirus disease in the immune-compromised.

## Most relevant scientific articles

- BÁRCENA-PANERO A., DE ORY F., CASTELLANOS A., ECHEVARRÍA J.E., JOAN A.C., DOMÍNGUEZ A. et al. Mumps-associated meningitis and encephalitis in patients with no suspected mumps infection. *Diagnostic Microbiology and Infectious Disease*. 2014;79(2):171-173.
- GARCÍA-PÉREZ R., IBÁÑEZ C., GODINEZ J.M., ARECHIGA N., GARIN I., PÉREZ-SUÁREZ G. et al. Novel papillomaviruses in free-ranging Iberian bats: no virus-host co-evolution, no strict host specificity, and hints for recombination. *Genome biology and evolution*. 2014;6(1):94-104.
- GARCÍA-ESQUINAS E., ARAGONÉS N., FERNÁNDEZ M.A., GARCÍA-SAGREDO J.M., DE LEÓN A., DE PAZ C. et al. Newborns and low to moderate prenatal environmental lead exposure: Might fathers be the key? *Environmental Science and Pollution Research*. 2014;21(13):7886-7898.
- LODI S., DEL AMO J., MORENO S., BUCHER H.C., FURRER H., LOGAN R. et al. Opportunistic infections and AIDS malignancies early after initiating combination antiretroviral therapy in high-income countries. *AIDS*. 2014;28(16):2461-2473.

## Highlights

During 2014 we have executed two projects, one on the virological and epidemiological analysis of the viruses included in the MMR vaccine (FIS PI12/02006) and other on the search and characterization of potentially emerging viruses on Iberian bats (MINECO: SAF2013-47194-P). Among the most relevant results we have shown the presence of mumps virus meningitis without mumps symptoms associated in the context of high vaccine coverage. Also the surveillance of measles at the level of genotypic variant has been incorporated as a request of the measles and rubella elimination verification Committee based on our research results. Indeed, a doctoral thesis on the molecular epidemiology of rubella in Spain and a master work on the molecular epidemiology of measles genotype D4 in Spain have been presented. In the research line of rabies, we have diagnosed a human case imported in Madrid which has been monitored during an experimental treatment administrated by the staff of the Valdemoro Hospital under the supervision of the Children's Hospital of Milwaukee. The visibility of the rabies group has been noted through the organization of an international workshop with participation of the most relevant research groups.

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## Group 39

Programme: P7. Clinical Epidemiology

**Lead Researcher:** Emparanza Knörr, José Ignacio

### Group Members

**ASSOCIATED MEMBERS:** Ansuategui Zengotitabengoa, Eukene | Aranegui Lasuen, Pedro | Arteche Ocasar, José María | Martínez Galarza, Amaya | Ojembarrena Martínez, Enrique | Pijoan Zubizarreta, José Ignacio | Urreta Barallobre, Iratxe | Zaballa Íñiguez, Manuel | Zubeldia Caminos, José Javier

### Main lines of research

- Evidence Based Medicine.
- Diagnosis.
- Clinical prediction rules.
- Effectiveness and efficiency (RCT and SR).

## Most relevant scientific articles

- SARDON O., CORCUERA P., ALDASORO A., KORTA J., MINTEGUI J., EMPARANZA J.I. et al. Alveolar nitric oxide and its role in pediatric asthma control assessment. *BMC Pulmonary Medicine*. 2014;14(1).
- SCHMIDT S., RIEL R., FRANCES A., LORENTE GARÍN J.A., BONFILL X., MARTÍNEZ-ZAPATA M.J. et al. Bladder cancer index: Cross-cultural adaptation into Spanish and psychometric evaluation. *Health and Quality of Life Outcomes*. 2014;12(1).
- MEJUTO G., CALLEJA-GONZALEZ J., LEKUE J.A., LEIBAR X., GÁRATE R., EMPARANZA J.I. et al. Hematological changes in an elite climber over 18 years. *High Altitude Medicine and Biology*. 2014;15(3):407-411.
- GUTIÉRREZ S.G., QUINTANA J.M., BARICOT M., BILBAO A., CAPELASTEGUI A., EGUILUZ C.G.C. et al. Predictive factors of severe multilobar pneumonia and shock in patients with influenza. *Emergency Medicine Journal*. 2014;31(4):301-307.
- URKAREGI A., MARTÍNEZ-INDART L., PIJOAN J. Balancing properties: A need for the application of propensity score methods in estimation of treatment effects. *SORT*. 2014;38(2):271-284.

## Highlights

- Leadership of the MAPAC (Improving the Appropriateness of Clinical Practice) strategy at the Guipúzcoa health area. This is a 'Right Care' initiative, whose purpose is to maximize those high-value activities and minimize low-value ones. In other words we try to maximize the effectiveness and efficiency of health care.

To do this we led a committee that evaluates clinical activities that have been previously prioritized by the clinicians of our hospital. Current practice or activities are described, evidence that confirms or refutes the observed practice is searched and critically appraised. Then, a recommendation is made in conjunction with those services involved. An implementation plan is developed and the change is monitored (before and after design).

During 2014 we have elaborated 4 recommendations: Pharmacological treatment of osteoporosis in menopausal women, Exercise in the osteoporosis in menopausal women, Need for anesthetic consultation prior to colonoscopy after positive screening of colorectal cancer and Preventive treatment of VTE after abdominal surgery.

- Evaluation of clinical results from clinical databases. It is an activity of Big Data Analysis (Business Intelligence), for which we try to obtain indicators of clinical outcome from our computerized management system. So far the system of our hospital only offers indicators of health care process (average stay, etc ...) not relevant to the patient.

Traditionally, clinical researchers have used databases developed ad hoc using Access, Excel, SPSS, etc., duplicating the data from the e-medical record. These databases do not meet basic standards of confidentiality, anonymity or custody of the Data Protection Act (LOPD). With this activity we intend to overcome these disadvantages and continue to allow clinical research.

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## Group 22

Programme: P5. Epidemiology and Prevention of Environment and Occupational Diseases



**Lead Researcher:** Estivill Palleja, Xavier

### Group Members

**STAFF MEMBERS:** Escaramís Babiano, Geòrgia

**ASSOCIATED MEMBERS:** Bañez Coronel, Mónica | Docampo Martínez, Elisa | Domenech, Laura | Kagerbauer, Birgit | Martí Puig, Eulalia | Montfort Roca, Magda | Morell Oriol, Marta | Prasad, Aparma | Puig Sola, Anna | Rabionet Janssen, Raquel | Sarria Trujillo, Yaris

**COLLABORATORS:** Carbonell García, Rut | Ponisch, Stefan

### Main lines of research

- Genetic variants and liability to common traits and complex disease.
- Longitudinal and comprehensive analysis of mental diseases.
- Profiles of non-coding RNAs in neurodegenerative disorders.
- Environmental modulators of genetic factors in human disease.

## Most relevant scientific articles

- DOCAMPO E., ESCARAMIS G., GRATACOS M., VILLATORO S., PUIG A., KOGEVINAS M. et al. Genome-wide analysis of single nucleotide polymorphisms and copy number variants in fibromyalgia suggest a role for the central nervous system. *Pain*. 2014; 155(6):1102-1109.
- MATEU-HUERTAS E., RODRÍGUEZ-REVENGA L., ÁLVAREZ-MORA M.I., MADRIGAL I., WILLEMSSEN R., MILA M. et al. Blood expression profiles of fragile X premutation carriers identify candidate genes involved in neurodegenerative and infertility phenotypes. *Neurobiology of Disease*. 2014; 65:43-54.
- TRUJILLANO D., PÉREZ B., GONZÁLEZ J., TORNADOR C., NAVARRETE R., ESCARAMIS G. et al. Accurate molecular diagnosis of phenylketonuria and tetrahydrobiopterin- deficient hyperphenylalaninemias using high-throughput targeted sequencing. *European Journal of Human Genetics*. 2014; 22(4):528-534.
- FRIEDLANDER M.R., LIZANO E., HOUBEN A.J.S., BEZDAN D., BANEZ-CORONEL M., KUDLA G. et al. Evidence for the biogenesis of more than 1,000 novel human microRNAs. *Genome Biology*. 2014;15(4).
- GONZÁLEZ J.R., CÁCERES A., ESKO T., CUSCO I., PUIG M., ESNAOLA M. et al. A common 16p11.2 inversion underlies the joint susceptibility to asthma and obesity. *American Journal of Human Genetics*. 2014; 94(3):361-372.

## Highlights

Our lab performs experimental and bioinformatics research in medical genomics. The group explores how different types of genetic variants contribute to human diseases, mostly neuropsychiatric, neurodegenerative and inflammatory disorders. The interaction of genetic factors with environmental conditions is one of the main areas of research of the group and is addressed by integrating epidemiological and clinical data with genetics information. This interaction can be evaluated throughout a longitudinal approach in the clinical course of each human disorder. We study very well characterized cohorts of patients and use high-throughput genomic platforms and functional studies, including longitudinal investigations of patients at different time-points and cohorts in which exposure to environment has been monitored. Different activities of the group are coordinated towards translational and precision medicine.

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## Group 8

Programme: P7. Clinical Epidemiology



**Lead Researcher:** Ferreira González, Ignacio

### Group Members

**STAFF MEMBERS:** Ribera Sole, Aída

**ASSOCIATED MEMBERS:** Cascant Castello, Purificación | Marsal Mora, Josep Ramón | Permanyer Miralda, Cayetano

### Main lines of research

- La Unidad de epidemiología se dedica fundamentalmente a la evaluación de resultados y al estudio de la efectividad de intervenciones en el ámbito cardiovascular.

### Most relevant scientific articles

- KASENDA B., VON ELM E., YOU J., BLUMLE A., TOMONAGA Y., SACCILOTTO R. et al. Prevalence, characteristics, and publication of discontinued randomized trials. *JAMA - Journal of the American Medical Association*. 2014;311(10):1045-1051.
- MARTÍNEZ-SELLES M., GÓMEZ DOBLAS J.J., CARRO HEVIA A., GARCÍA DE LA VILLA B., FERREIRA-GONZÁLEZ I., ALONSO TELLO A. et al. Prospective registry of symptomatic severe aortic stenosis in octogenarians: A need for intervention. *Journal of Internal Medicine*. 2014;275(6):608-620.
- GARCÍA-DORADO D., GARCÍA-DEL-BLANCO B., OTAEGUI I., RODRÍGUEZ-PALOMARES J., PINEDA V., GIMENO F. et al. Intracoronary injection of adenosine before reperfusion in patients with ST-segment elevation myocardial infarction: A randomized controlled clinical trial. *International Journal of Cardiology*. 2014;177(3):935-941.
- GARÍN O., HERDMAN M., VILAGUT G., FERRER M., RIBERA A., RAJMIL L. et al. Assessing health-related quality of life in patients with heart failure: A systematic, standardized comparison of available measures. *Heart Failure Reviews*. 2014;19(3):359-367.
- PONS J.M.V., PERMANYER-MIRALDA G., CAMI J., RODES J. Animal experimentation and progress in medicine. *Medicina Clínica*. 2014;143(10):448-454.

## Highlights

### RESULTS

- Collaboration: The publication in JAMA is an international collaboration that we believe represents an advancement of scientific knowledge in methodology.
- Clinical Advancement: The publication in J Int Med has helped to increase awareness of aortic stenosis in the elderly and a clinical trial has shown little use of an intervention in IAM.

### INTERNATIONAL CONGRESS

1 ISPOR 2014 Montreal: Aida Ribera Com-oral : 'Cost-utility of transcatheter...

2 ESC 2014 Barcelona: Ignacio Ferreira.

- Session: 'Who should not have a TAVI in 2014?'
- Session: 'Impact of age...'
- Oral-com: 'Neurological damage after TAVI...'
- Oral-com: Cost-utility of transcatheter.

### PROJECTS

- Project FIS-PI10/00369: Completion of this project that has potential relevance in health decision making in times of crisis and incorporating economic analysis techniques to their business. Drafting of the manuscript published in January 2015 in the International Journal Cardiology
- Neurological Project: Completion of the project and writing a manuscript that is currently under review in the journal European Heart Journal.
- Endocarditis project: Completion of the project and writing a manuscript that is currently under review in the European Heart Journal.
- Project FIS PI13/00399: Ongoing.

### OTHER ACTIVITIES

- Drafting of the manuscript about a project completed in 2011 (FIS-PI09 / 90598-PI07 / 90031) which is currently under review by the Rev Esp Cardiol.
- Master 2013-2014. UB on-line training in Clinical Research Methodology.  
I Ferreira: co-director and responsible for the management-organization of the master (approach, selection of professional and 3 modules) coordinator.  
G. Permanyer: responsible for the drafting of a lesson (Module 1).  
A. Ribera, JR Marsal and I. Ferreira: responsible for writing several lessons (Module 5).  
This master represents a formal collaboration of the group 08-CIBERESP with two Scientific Societies (Cardiology and Internal Medicine) and UB.
- Advisor of 2 doctoral thesis: Ongoing.

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## Group 21

Programme: P4. Social Determinants of Health



**Lead Researcher:** Fuente de Hoz, Luis de La

### Group Members

**STAFF MEMBERS:** Fernández Balbuena, Sonia | Hoyos Miller, Juan | Pulido Manzanero, Jose

**ASSOCIATED MEMBERS:** Belza Egozcue, María José | Bravo Portela, María José | Espelt Hernández, Albert | Otero García, Laura | Regidor Poyatos, Enrique | Rosales Statkus, María Elena | Sanz Barbero, Belén | Sordo Del Castillo, Luis | Vallejo Ruiz De León, Fernando

**STAFF MEMBERS:** Ruiz García, Mónica

### Main lines of research

- Epidemiology and patterns of drug consumption and associated health problems, with especial attention to infectious diseases, psychiatric comorbidities, injuries and excessive mortality.
- Epidemiology of sexual risk behaviours and associated infections, especially the development of HIV diagnosis policies to promote the control of the epidemic and decrease delayed diagnosis.
- Study of the social determinants of behaviours, health related problems and mortality with especial attention to the socioeconomic position both contextual and individual.
- Impact of social, economic and health policies on health inequalities and the mortality risk by cause of death, with especial attention to the most socially vulnerable groups (migrants, drug consumers, sex workers etc.)

## Most relevant scientific articles

- SORDO L., INDAVE B.I., BARRIO G., DEGENHARDT L., DE LA FUENTE L., BRAVO M.J. Cocaine use and risk of stroke: A systematic review. *Drug and Alcohol Dependence*. 2014;142:1-13.
- ROSALES-STATKUS M.E., DE LA FUENTE L., FERNÁNDEZ-BALBUENA S., FIGUEROA C., FERNÁNDEZ-LÓPEZ L., HOYOS J. et al. Approval and Potential Use of Over-the-Counter HIV Self-Tests: The Opinion of Participants in a Street Based HIV Rapid Testing Program in Spain. *AIDS and Behavior*. 2014.
- REGIDOR E., BARRIO G., BRAVO M.J., DE LA FUENTE L. Has health in Spain been declining since the economic crisis?. *Journal of Epidemiology and Community Health*. 2014;68(3):280-282.
- PULIDO J., MOLIST G., DOMINGO-SALVANY A., BRUGAL M.T., SÁNCHEZ-NIUBO A., BARRIO G. et al. Predictors of change in cocaine use in a street-recruited cohort of young cocaine users. *Addiction*. 2014;109(6):954-964.
- BOSQUE-PROUS M., ESPELT A., GUITART A.M., BARTROLI M., VILLALBI J.R., BRUGAL M.T. Association between stricter alcohol advertising regulations and lower hazardous drinking across European countries. *Addiction*. 2014.

## Highlights

In the international context, our group has been participating in projects integrated in the Seventh EU Framework Programme for Research and Innovation, a Joint Action and an Action Cost as well as projects of the Consumers, Health and Food executive Agency and national Institutes of Health (USA). We have been hired by the European Monitoring Center for Drugs and Drug Addiction (EMCDDA) and the European Centre for Disease Control and Prevention (ECDC) for the assessment and analysis of their epidemiological information.

In Spain, we have led several research projects of the Health Strategic Action, of the State Research, development and innovation Programme oriented to Society Challenges (2013-2016) and its previous versions, research projects-contracts of national public organisms (The Drug National Plan, The Ministry of health, The woman institute, General Traffic Directorate, etc.), public-private (Spanish Foundation for the Research on HIV(FIPSE)) and exclusively private (Mutua Madrileña, Spanish Association for the Fight against Cancer, Health Sciences Foundation etc.), among which the projects related to the Itinere cohort should be highlighted

We contribute to the training of new researchers by receiving resident physicians, pre and post doc contracts etc.

We have been applying our experience and the findings of our epidemiology and public health research participating as experts in both international (EMCDDA) and national organisms (DGT, national and regional HIV and drug plans), for the development of methodological tools for data collection and for the training of professionals in this field. We have translated our experience, training and research results to the design of epidemiological data collection systems both national and regional (National health survey, The Spanish House-based survey on alcohol and drugs, State based survey on drug use in secondary education, Evolution of the health indicators in Spain, etc) as well as the national and regional prevention and assistential plans and guides.

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## Group 47

Programme: P6. Health service evaluation



**Lead Researcher:** García Benavides, Fernando

### Group Members

**STAFF MEMBERS:** López Gómez, María Andree | López Ruiz, Maria | Ubalde López, Mónica

**ASSOCIATED MEMBERS:** Delclos Clanchet, Jordi | Durán Jordà, Xavier | García Garcia, Ana María | Gimeno Ruiz de Porras, David | Martínez Martínez, José Miguel | Ramada Rodilla, José María | Ronda Pérez, Elena | Serra Pujadas, Consol | Vargas Prada Figueroa, Sergio

**COLLABORATORS:** Garrido Salmerón, Sandra

### Main lines of research

- OCCUPATIONAL HEALTH PROBLEMS  
In addition to work-related illnesses and workplace injuries, we are also interested in studying sickness absence, whether temporary or permanent, especially due to musculoskeletal and mental disorders, and the prognosis (duration) to return to work.
- OCCUPATIONAL SAFETY AND HEALTH POLICIES  
The development of the Labour Risk Prevention Law (1995), through the Labour risk prevention management and the implementation of the Planes de Actuación Preferente (Priority Action Plans), developed by most of the Spanish Autonomous Communities in 2000, has managed to provide the development of most resources devoted to occupational health in the country. The CiSAL is contributing to assess the quality of such policies and to evaluate their effectiveness.
- OCCUPATIONAL HEALTH INFORMATION SYSTEMS  
The targets of the CiSAL are to have better information, of higher quality and organized so that it can be used appropriately. Whom develop projects of methodological character to improve the utility of

the Work and Health Conditions Surveys, as well as the creation of a useful employment-exposition matrix for the investigation of new risks and the labour risk prevention management.

- OCCUPATIONAL HEALTH INEQUALITIES

The existence of the highest rates of temporary employment in the European Union, as an indicator of precariousness, and the incorporation of a large number of workers born in countries outside the EU in the last 15 years, are research priorities at CISAL, in order to provide the best information available to help adopt more effective policies to protect the health of these workers.

## Most relevant scientific articles

- BENAVIDES F.G., WESSELING C., DELCLOS G.L., FELKNOR S., PINILLA J., RODRIGO F. Working conditions and health in Central America: A survey of 12 024 workers in six countries. *Occupational and Environmental Medicine*. 2014;71(7):459-465.
- LÓPEZ-RUIZ M., MARTÍNEZ J.M., PÉREZ K., NOVOA A.M., TOBIAS A., BENAVIDES F.G. Impact of road safety interventions on traffic-related occupational injuries in Spain, 2004-2010. *Accident Analysis and Prevention*. 2014;66:114-119.
- GIMENO D., BULTMANN U., BENAVIDES F.G., ALEXANDERSON K., ABMA F.I., UBALDE-LÓPEZ M. et al. Cross-national comparisons of sickness absence systems and statistics: Towards common indicators. *European Journal of Public Health*. 2014;24(4):663-666.
- RAMADA J.M., SERRA C., AMICK III B.C., ABMA F.I., CASTANO J.R., PIDEMUNT G. et al. Reliability and Validity of the Work Role Functioning Questionnaire (Spanish Version). *Journal of Occupational Rehabilitation*. 2014;1-10.
- ROBERT G., MARTÍNEZ J.M., GARCÍA A.M., BENAVIDES F.G., RONDA E. From the boom to the crisis: Changes in employment conditions of immigrants in Spain and their effects on mental health. *European Journal of Public Health*. 2014;24(3):404-409.

## Highlights

The group 47 (CISAL-UPF) has participated in 8 national projects: Cohort ICAMS, ITSAL, the Cross-cultural adaptation of the Work Role Functioning Questionnaire to Spanish, Effect of multimorbidity on the incidence and duration of temporary sickness absence, funded by FIS (ISCIII); the Occupational Disease Unit funded by Parc Salut MAR, EDADES funded by the National Plan on Drugs (PNSD), ERGOPAR by COIB, INMA-SL by CIBERESP; and 3 international projects, E-Capacity8 funded by the European Commission, ModerNet by the European Cooperation in Science and Technology and Latin American ECTS by the OISS.

CISAL-UPF has obtained new funding sources for the project LTT by the Directorate General of Traffic (DGT) and from FIS for The EBISA project, which is a continuation of ICAMS; INTEVAL-Spain cohort and the project Work, immigration and health in a cohort of immigrants in Spain "ITSAL".

In addition, over the course of the year, the group has received recognition and financial support from the AGAUR-Generalitat de Catalunya for the period 2015-2017.

The result of this activity has generated 28 articles published in indexed scientific journals, produced 4 doctoral thesis, 9 master's dissertations and the presentation of 18 communications in national and international conferences. In terms of quality projects results, we highlight the dissemination of outcomes of the E-capacit8 project, which has held meetings in Barcelona (UPF), Madrid (ISIII) and Avilés (Spanish Society of Ergonomics) and the Latin American ECTS which have held Workshops in San José de Costa Rica (March) and Buenos Aires (November).

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## Group 14

Programme: P1. Epidemiology and prevention of chronic diseases



**Lead Researcher:** Gestal Otero, Juan Jesús

### Group Members

**STAFF MEMBERS:** Piñeiro Lamas, María

**ASSOCIATED MEMBERS:** Barros Dios, Juan Miguel | Caamaño Isorna, Francisco | Figueiras Guzmán, Adolfo | Montes Martínez, Agustín | Pérez Ríos, Mónica | Ruano Raviña, Alberto | Saulyte, Jurgita | Smyth Chamosa, Ernesto | Takkouche Souilamas, El Bahi | Taracido Trunk, Margarita

### Main lines of research

- **Banal diseases.** This research line aims to analyze the role of environmental and genetic exposure factors, as well as the interaction of both the increased risk of disease or very frequent symptoms, without extreme gravity but with high impact on quality of life and economy. Among these pathologies are the common cold, aphthous stomatitis, headaches, allergic rhinitis, dysmenorrhea and premenstrual syndrome. The objective in the next years is to study the determinant of the most common symptom: pain.
- **Cancer Epidemiology.** Our group has made significant progress in the cancer epidemiology in recent years, especially in cancers related to environmental factors. We intend to determine whether exposure to residential radon influences other cancers apart from lung cancer and on the biological mechanisms through what the residential radon can cause lung cancer. We intend to go deeper and broader in the national multicenter study LCRINS (Lung Cancer Risk in Never Smokers) and to maximize the services of the Radon Laboratory of Galicia, the only residential radon laboratory recognized by the Nuclear Safety Council of northwest of Spain.
- **Pharmacoepidemiology.** Research line has identified important determinants for prescribing, dispensing, and reporting of adverse drug reactions. Currently we have implemented three large-scale community trials to identify and to modify associated factors with poor prescribing/dispensing/use of antibiotics in order to reduce their resistances. We are also developing studies to further identify the genetic factors of adverse reactions to drugs most relevant from the point of view of public health, such as gastrointestinal bleeding.
- **Technology assessment and health services.** Our group aims to provide support within a consolidated evaluation activity such as technology assessment, services and health interventions through various mechanisms, one

of them being the systematic reviews and the meta-analysis. The level of evidence derived from the meta-analysis is the highest and exceeds the experimental design. The objective in the following years is to propose a free-use package software that allows the non specialized scientific community to perform intuitively and with a minimal advice a meta-analysis from the first steps to the final proposal. This project is in a very advanced state of development. Also, the methodological elements will be investigated, such as heterogeneity and publication bias, and these methodological knowledge will be used to apply to specific meta-analysis, collaborating with the clinical services interested.

## Most relevant scientific articles

- SAULYTE J., REGUEIRA C., MONTES-MARTÍNEZ A., KHUDYAKOV P., TAKKOUCHE B. Active or Passive Exposure to Tobacco Smoking and Allergic Rhinitis, Allergic Dermatitis, and Food Allergy in Adults and Children: A Systematic Review and Meta-Analysis. *PLoS Medicine*. 2014;11(3).
- TORRES-DURÁN M., RUANO-RAVINA A., PARENTE-LAMELAS I., LEIRO-FERNÁNDEZ V., ABAL-ARCA J., MONTERO-MARTINEZ C. et al. Lung cancer in never-smokers: A case-control study in a radon-prone area (Galicia, Spain). *European Respiratory Journal*. 2014;44(4):994-1001.
- RUANO-RAVINA A., PEREYRA M.F., CASTRO M.T., PÉREZ-RÍOS M., ABAL-ARCA J., BARROS-DIOS J.M. Genetic susceptibility, residential radon, and lung cancer in a radon prone area. *Journal of Thoracic Oncology*. 2014;9(8):1073-1080.
- ZAPATA-CACHAFEIRO M, GONZÁLEZ-GONZÁLEZ C, VÁZQUEZ-LAGO JM, LÓPEZ-VÁZQUEZ P, LÓPEZ-DURÁN A, SMYTH E et al. Determinants of antibiotic dispensing without a medical prescription: a cross-sectional study in the north of Spain. *The Journal of antimicrobial chemotherapy*. 2014;69(11):3156-60.
- IGLESÍAS-REY M., BARREIRO-DE ACOSTA M., CAAMANO-ISORNA F., RODRÍGUEZ I.V., FERREIRO R., LINDKVIST B. et al. Psychological factors are associated with changes in the health-related quality of life in inflammatory bowel disease. *Inflammatory Bowel Diseases*. 2014;20(1):92-102.

## Highlights

Currently the group is running four competitive projects, in three of these our researchers are IPs: the continuation of the project EMPHOGEN, through the new determinants gastrointestinal bleeding project associated with consumption of AAS as antiplatelet, a study on how the residential radon could see mediated its effect on lung cancer through different genetic polymorphisms in DNA repairing genes and the consolidation in 2014 as a competitive reference group (GRC) recognized by the Xunta de Galicia (on competitive basis). The other project is collaboration with the University of Cantabria department of geography, town and territorial planning.

Being a GRC means a funding of 50,000 € per year for four years. This funding has allowed hiring an employee with a degree in Pharmacy, Masters in Public Health, to engage in cross-sectional support activities to the different lines of the group.

A group member has obtained a Fulbright scholarship (senior researchers) for a research stay at the Public Health School at Brown University for three months during 2015. The award has been made on a competitive basis by the Ministry of Education in collaboration with the Department of Education of the United States Government. Only 30 scholarships are granted in Spain to all areas of knowledge.

In 2014 the group presented the results of their research at national and international forums. So they have been invited to lecture at the Catalan Institute of Oncology, Hospital Puerta de Hierro and the Portuguese Medicines Agency, among others.

In addition, several members are part of the editorial board of journals indexed in SCOPUS / Web of Science such as Drug Safety (first quartile) and BioMed Research International (second quartile), among others.

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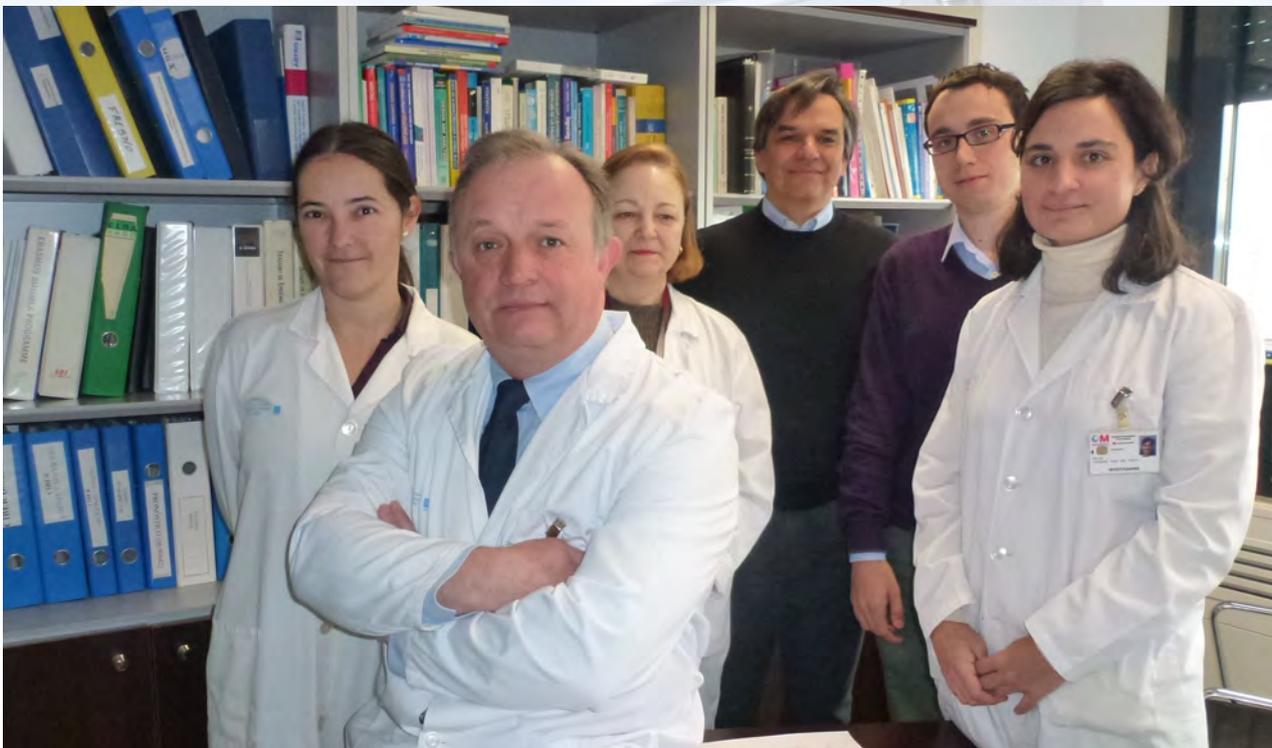
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## RESEARCH GROUPS

### Group 23

Programme: P7. Clinical Epidemiology



**Lead Researcher:** Gómez de la Cámara, Agustín

### Group Members

**STAFF MEMBERS:** Vázquez Fernández del Pozo, Silvia

**ASSOCIATED MEMBERS:** Andrés Esteban, Eva | Cruz Bertolo, Javier de la | Lora Pablos, David | Ruiz López, Pedro Miguel

### Main lines of research

This is the CIBERESP Group 23 located in the Hospital 12 de Octubre in Madrid.

Research areas:

- Development and validation of CLINICAL PREDICTION RULES

This group has been coordinator THEME COOPERATIVE RESEARCH NETWORK 03/090 for the development of methodologies for the implementation and management of knowledge in clinical practice and this node responsible for the line of research prognostic development of clinical prediction rules.

Since 1995 develops the research methodology in prognostic studies on predictive methods and conducting projects on clinical prediction rules in cardiovascular diseases, oncology, rheumatology [FIS96/1809], [FIS02/0242], [P-FIS03/248], [FIS03/0046], FIS04/019].

Participation and collaboration in the following projects:

FIS Project PS07/0945 "Prediction of mortality in patients hospitalized for heart failure: building predictive models." The results are published in Cardiology Journal "Role of biological and non biological

factors in Congestive Heart Failure mortality: PREDICE-SCORE, a Clinical Prediction Rule" (J Cardiol 2012;19, 6:578-585).

FIS Project 05/1862" Validation of clinical prediction rules in recurrent stroke." Publication: Recurrence after a first-ever ischemic Stroke Development of a Clinical Prediction Rule. Research in Neurology: An International Journal Vol 2013 (2013) Article ID264063.

- CHRONIC DISEASE

FIS IntraSalud10/02123 projects." Study DRECE V. (Diet and Cardiovascular Risk in Spain.) 20 years of monitoring of a Spanish cohort." [PI10/02123].

Study DRECE V (Diet and Risk of Cardiovascular Disease in Spain), which aims are to determine the association between diet and overall mortality and cardiovascular in Spain. Describe patterns and nutritional study of cardiovascular risk factors and their association with mortality.

## Most relevant scientific articles

- FERNÁNDEZ-RUIZ M., AGUADO J.M., ALMIRANTE B., LORA-PABLOS D., PADILLA B., PUIG-ASENSIO M. et al. Initial use of echinocandins does not negatively influence outcome in Candida parapsilosis bloodstream infection: A propensity score analysis. Clinical Infectious Diseases. 2014;58(10):1413-1421.
- FAYED N., OLIVAN-BLAZQUEZ B., HERRERA-MERCADAL P., PUEBLA-GUEDEA M., PÉREZ-YUS M.-C., ANDRÉS E. et al. Changes in metabolites after treatment with memantine in fibromyalgia. A double-blind randomized controlled trial with magnetic resonance spectroscopy with a 6-month follow-up. CNS Neuroscience and Therapeutics. 2014;20(11):999-1007.
- LEÓN-LATRE M., MORENO-FRANCO B., ANDRÉS-ESTEBAN E.M., LEDESMA M., LACLAUSTRA M., ALCALDE V. et al. Sedentary lifestyle and its relation to cardiovascular risk factors, insulin resistance and inflammatory profile. Revista Espanola de Cardiologia. 2014;67(6):449-455.
- MARRUGAT J., SUBIRANA I., RAMOS R., VILA J., MARÍN-IBÁÑEZ A., GUEMBE M.J. et al. Derivation and validation of a set of 10-year cardiovascular risk predictive functions in Spain: The FRESCO Study. Preventive Medicine. 2014;61:66-74.
- SCHMIDT S., RIEL R., FRANCES A., LORENTE GARÍN J.A., BONFILL X., MARTINEZ-ZAPATA M.J. et al. Bladder cancer index: Cross-cultural adaptation into Spanish and psychometric evaluation. Health and Quality of Life Outcomes. 2014;12(1).

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## RESEARCH GROUPS

### Group 26

Programme: P1. Epidemiology and prevention of chronic diseases



**Lead Researcher:** Hernández Aguado, Ildefonso

### Group Members

**ASSOCIATED MEMBERS:** Aranaz Andrés, Jesús | Lumbreras Lacarra, Blanca

**COLLABORATORS:** García Aldeguer, Joaquín

### Main lines of research

- Clinical epidemiology, evaluation of health technologies, assesment of diagnostic test and screening tests.
- Health services research, patient security and health care quality.
- Preventive medicine.
- Active aging.
- Politics and health policies, health governance.

## Most relevant scientific articles

- UMANA-PENA R., FRANCO-GIRALDO A., DIAZ C.A.-D., RUIZ-CANTERO M.T., GIL-GONZÁLEZ D., HERNÁNDEZ-AGUADO I. Assessment of the association of health with the liberalisation of trade in services under the World Trade Organisation. PLoS ONE. 2014;9(7).
- GÓMEZ-SAEZ N., GONZÁLEZ-ÁLVAREZ I., VILAR J., HERNÁNDEZ-AGUADO I., DOMINGO M.L., LORENTE M.F. et al. Prevalence and variables associated with solitary pulmonary nodules in a routine clinic-based population: A cross-sectional study. European Radiology. 2014;24(9):2174-2182.
- LODI S., DEL AMO J., MORENO S., BUCHER H.C., FURRER H., LOGAN R. et al. Opportunistic infections and AIDS malignancies early after initiating combination antiretroviral therapy in high-income countries. AIDS. 2014;28(16):2461-2473.
- HERNÁNDEZ AGUADO I., LUMBRERAS LACARRA B. Crisis and the independence of public health policies. SESPAS report 2014. Gaceta Sanitaria. 2014;28(S1):24-30.
- LIMÓN-RAMÍREZ R., GEA-VELÁZQUEZ DE CASTRO M.T., ARANAZ-ANDRÉS J.M. Design of a multimodal strategy including health marketing for the improvement of hand hygiene fulfillment. Medicina Clinica. 2014;142(11):505-511.

## Highlights

We have completed several phases of the ongoing projects with relevant results. Some of the results have been incorporated to public recommendations in transdisciplinary cooperation.

We have been able to determine the risk of lung cancer in patients diagnosed of solitary pulmonary nodule detected through routinely clinical health care. We have ascertained the incremental risk in those patients compared to a cohort of patients without nodules and we have also explained which patient characteristics better predict lung cancer.

In the health politics arena, we have cooperated in developing recommendation on good governance in order to reduce undue influences on health policies. These recommendations have been included in a report of Transparency International.

In research on security of patients we have shown how marketing tools are useful in increasing hand hygiene in health care.

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## Group 38

Programme: P1. Epidemiology and prevention of chronic diseases



**Lead Researcher:** Kogevinas, Emmanouil

### Group Members

**STAFF MEMBERS:** Arjona Camí, Lourdes | Gracia Lavedan, Esther

**ASSOCIATED MEMBERS:** Bosch de Basea, Magda | Cardis Mersch, Elisabeth | Carrasco Turigas, Gloria | Carretero García, Gemma | Casas Sanahuja, María Isabel | Cirach Pradas, Marta | Cole-Hunter, Thomas Anthony | Dadvand, Payam | Donaire González, David | Eastman, Chelsea | Esnaola Acebes, Mikel | Espinosa Morano, Ana | Figuerola Alquezar, Jordi | Font Ribera, Laia | González Ruiz, Juan Ramón | Grellier, James | Kubesch, Janet Nadine | Nieuwenhuijsen, Mark | Ocallaghan Gordo, Cristina | Papantoniou, Kyriaki | Pedersen, Marie | Rojas Rueda, David | Schembari, Ana | Triguero Mas, Margarita | Van Gent, Diana | Vila Rodríguez, Francisco Javier | Villanueva Belmonte, Cristina | Zock, Jan Paul

**COLLABORATORS:** Ferrer de Molina, M<sup>a</sup> del Mar

### Main lines of research

The main research of the group is focused in environmental, occupational and genetic factors related to cancer, respiratory disease and child health. Among the main exposures, the group is focused on radiations (smartphones, UV, ionizing), water pollutants (disinfection by-products in drinking water and swimming pools), air pollution, transport and green spaces in urban areas, hormonal disruption, life style (diet, passive smoking), as well as occupational studies in cleaning workers and shift-work and circadian cycle disruption. In the last years we have applied new technologies to assess the exposure (e.g. Smartphones), extensively used new biomedical technologies (Exposome, biomarkers, genomics, epigenetics, metabolomics) and implemented complex statistics and bioinformatics methods. The group has an important international reputation and devotes considerable efforts in education, dissemination and knowledge transfer. Research of the group is funded by grants from FIS, FP7 (EU), and Horizon2020.

## Most relevant scientific articles

- GRELLIER J., RAVAZZANI P., CARDIS E. Potential health impacts of residential exposures to extremely low frequency magnetic fields in Europe. *Environment International*. 2014; 62:55-63.
- GONZÁLEZ J.R., CÁCERES A., ESKO T., CUSCO I., PUIG M., ESNAOLA M. et al. A common 16p11.2 inversion underlies the joint susceptibility to asthma and obesity. *American Journal of Human Genetics*. 2014; 94(3):361-372.
- BEELEN R., RAASCHOU-NIELSEN O., STAFOGGIA M., ANDERSEN Z.J., WEINMAYR G., HOFFMANN B. et al. Effects of long-term exposure to air pollution on natural-cause mortality: An analysis of 22 European cohorts within the multicentre ESCAPE project. *The Lancet*. 2014;383(9919):785-795.
- VILLANUEVA C.M., KOGEVINAS M., CORDIER S., TEMPLETON M.R., VERMEULEN R., NUCKOLS J.R. et al. Assessing exposure and health consequences of chemicals in drinking water: Current state of knowledge and research needs. *Environmental Health Perspectives*. 2014;122(3):213-221.
- DADVAND P, VILLANUEVA CM, FONT-RIBERA L, MARTÍNEZ D, BASAGAÑA X, BELMONTE J et al. Risks and benefits of green spaces for children: a cross-sectional study of associations with sedentary behavior, obesity, asthma, and allergy. *Environmental health perspectives*. 2014;122(12):1329-35.

## Highlights

During this period the group has obtained a stable structure, currently formed by 56 persons (7 PIs, 8 post-doctoral). The main study with CIBERESP is the MCC-Spain study coordinated by the group and the ISCIII. It is the study in Spain evaluating the largest number of cancer cases including common cancers (prostate, breast, colon, stomach, chronic lymphatic leukemia) and population controls. There are 10.137 subjects enrolled in 12 provinces. The group has implemented a large portfolio of international research, leading 4 international projects (PHENOTYPE, GERONIMO, MOBI-KIDS, INTEROCC), having a key role in 10 projects funded by the EC including EPI-CT, EXPOSOMICS, and HELIX. The outcome of this research period includes 115 research papers in PubMed. There is an extensive collaboration with many Spanish groups in the areas of epidemiology, exposure assessment and laboratory work (CISC, CRG, ISCIII, CNIO) and international groups (NCI, USA; INSERM, France; Imperial College, London; IRAS, Utrecht; Crete University, Greece). Dissemination is an important aspect for the group, including the press, social media and news on our website. The work of the group has a significant impact in the media (press, TV, radio, online publications) that published more than 360 articles related to the group's research. The group has a community activity agenda including regular visits of schools to CREAL and frequent participation in activities open to the public. The main course of Postgraduate studies is taught in the Master of Public Health (UPF) and also in other national and international courses such as the European Educational Programme in Epidemiology (Florence) and Master of Global Health (CRESIB/ISGlobal/UB). During 2014, there have been 5 doctoral theses successfully defended under the direction of group members. Group members participate in several national and international expert committees such as IARC Monographs in the evaluation of carcinogenic risks in humans and are members of Editorial Boards of journals such as *Environmental Health Perspectives* and *Occupational & Environmental Medicine*.

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## Group 18

Programme: P4. Social Determinants of Health



**Lead Researcher:** López Medina, María José

### Group Members

**STAFF MEMBERS:** León Pujadas, Gabriel | Sánchez Martínez, Francesca

**ASSOCIATED MEMBERS:** Ariza Cardenal, Carlos | Casas Segala, Conrad | Centrich Escarpenter, Francesc | Fontcuberta, Mireia | García Altes, Anna | Muñoz Guzmán, Gloria | Pérez Giménez, Anna | Puigpinos Riera, Rosa | Serral Cano, Gemma | Villalbi Hereter, Juan Ramón

### Main lines of research

The main research line of the group is the evaluation of public health policies and programmes, which includes:

- Monitoring of behaviours and other health risk factors such as environmental exposures;
- Process, impact and economic evaluation of public health policies and programmes
- Innovative topics on evaluation, such as the evaluation related to the use of Information and Communication Technologies (ICT) in public health.

## Most relevant scientific articles

- SUREDA X., MARTÍNEZ-SÁNCHEZ J.M., FU M., PÉREZ-ORTUNO R., MARTÍNEZ C., CARABASA E. et al. Impact of the Spanish smoke-free legislation on adult, non-smoker exposure to secondhand smoke: Cross-sectional surveys before (2004) and after (2012) legislation. *PLoS ONE*. 2014;9(2).
- BOSQUE-PROUS M., ESPELT A., GUITART A.M., BARTROLI M., VILLALBI J.R., BRUGAL M.T. Association between stricter alcohol advertising regulations and lower hazardous drinking across European countries. *Addiction*. 2014.
- BOSQUE-PROUS M., ESPELT A., GUITART A.M., BARTROLI M., VILLALBI J.R., BRUGAL M.T. Response to Jernigan & Ross (2014): Alcohol advertising and hazardous drinkers. *Addiction*. 2014;109(10):1645-1646.
- MARTÍNEZ-SÁNCHEZ J.M., SUREDA X., FU M., PÉREZ-ORTUNO R., BALLBE M., LÓPEZ M.J. et al. Secondhand smoke exposure at home: Assessment by biomarkers and airborne markers. *Environmental Research*. 2014;133:111-116.
- LLORENTE-MIRANDES T., CALDERÓN J., CENTRICH F., RUBIO R., LÓPEZ-SÁNCHEZ J.F. A need for determination of arsenic species at low levels in cereal-based food and infant cereals. Validation of a method by IC-ICPMS. *Food Chemistry*. 2014;147:377-385.

## Highlights

During 2014 three researchers from our group have been PI of the following research projects funded by the ISCIII:

- Randomized clinical trial to evaluate the effectiveness of memory training workshops in older people (65-80 years) (PI11 / 02060)
- Exposure to environmental tobacco smoke in children under 12 years: prevalence and measurement of markers in homes and vehicles (PI13 / 02734)
- Influence of social determinants, lifestyle, emotional wellbeing and use of unconventional therapies in the development of breast cancer in a cohort of women diagnosed in Barcelona (PI13 / 01977)

One of the achievements of the Group in 2014 has been to be upgraded from “Emerging Research Group” to “Consolidated Research Group” in Evaluation of Public Health Policies and Programs (2014 SGR 1373) by the Agency for Administration of University and Research Grants (AGAUR), Generalitat de Catalunya.

Also noteworthy is the high number of communications presented at scientific conferences, as well as, lectures at relevant institutions in public health like the Johns Hopkins University (Baltimore, USA).

Researchers from the group are also teachers in official masters (Master of Public Health at the Universitat Pompeu Fabra, Master of Tropical Medicine and International Health at the Autonomous University of Barcelona). In addition, some of them are directors of PhD thesis dissertations in progress. Furthermore, the group leader is associated editor of the scientific journal *Gaceta Sanitaria*.

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## Group 7

Programme: P1. Epidemiology and prevention of chronic diseases



**Lead Researcher:** López-Abente Ortega, Gonzalo

### Group Members

**STAFF MEMBERS:** Cervantes Amat, Marta | González Palacios, Ángel | Lanza Martínez, María

**ASSOCIATED MEMBERS:** Aragonés Sanz, Nuria | Boldo Pascua, Elena Isabel | Castello Pastor, Adela | Fernández Navarro, Pablo | Ferreras Barrera, Eva | García Pérez, Javier | González Sánchez, Mario | Linares Gil, Cristina | Lope Carvajal, Virginia | Marín Rodríguez, María | Nuñez, Olivier | Pastor Barriuso, Roberto | Pérez Gómez, Beatriz | Pollan Santamaría, Marina | Ramis Prieto, Rebeca | Sierra Oliva, María Ángeles

### Main lines of research

The activities of the Environmental Epidemiology and Cancer Unit of the National Center of Epidemiology (CNE) continue and broaden the experience of the Cancer Epidemiology Unit, established in 1991. The group mainly works on three research lines: 1) Surveillance of cancer burden in Spain, where our unit is considered a national reference in the study of the spatial and temporal distribution of this group of diseases, 2) environmental, occupational and life style epidemiology research, exploring the impact of environmental exposures in cancer both from an ecological point of view -possible effects of industrial pollution or physical agents- as well as using individual measurements of exposure in case-control and cohort studies; those projects related with biomonitoring in general population can also be included in this research line and 3) genetics and molecular cancer epidemiology, especially in breast cancer. Accordingly, the activities of the Unit, therefore, cover a wide range of topics in etiological research of different types of cancer and in the development of innovative methods of study design and data analysis. Most of the activities integrate researchers and groups external to the ISCIII from different disciplines.

## Most relevant scientific articles

- LÓPEZ-ABENTE G., VIDAL-OCABO E., TELLO-ANCHUELA O., ARAGONÉS N., GARCÍA-PÉREZ J., PASTOR-BARRIUSO R. et al. Exposure to ionising radiations arising from the operation of nuclear installations and cancer mortality. *International Journal of Environmental Science and Technology*. 2014;11(1):97-110.
- BOLDO E., LINARES C., ARAGONÉS N., LUMBRERAS J., BORGE R., DE LA PAZ D. et al. Air quality modeling and mortality impact of fine particles reduction policies in Spain. *Environmental research*. 2014;128:15-26.
- LÓPEZ-ABENTE G., ARAGONÉS N., PÉREZ-GÓMEZ B., POLLAN M., GARCÍA-PÉREZ J., RAMIS R. et al. Time trends in municipal distribution patterns of cancer mortality in Spain. *BMC Cancer*. 2014;14(1).
- CASTELLÓ A., POLLAN M., BUIJSSE B., RUIZ A., CASAS A.M., BAENA-CANADÁ J.M. et al. Spanish Mediterranean diet and other dietary patterns and breast cancer risk: case-control EpiGEICAM study. *British journal of cancer*. 2014;111(7):1454-1462.
- GARCÍA-ARENZANA N., NAVARRETE-MUNOZ E.M., LOPE V., MOREO P., VIDAL C., LASO-PABLOS S. et al. Calorie intake, olive oil consumption and mammographic density among Spanish women. *International Journal of Cancer*. 2014;134(8):1916-1925.

## Highlights

During 2014, the members of the Environmental Epidemiology and Cancer Unit collaborated in 13 research projects funded in competitive concurrency, participation and leadership in collaborative studies can be highlighted in the following projects: 1) Project MCC-Spain, multicentric multicase-control study on the role of environmental factors in the etiology of the most prevalent cancers in Spain; 2) DDM studies on mamographic density as intermediate phenotype for breast cancer; 3) Industrial pollution and cancer in Spain; and 4) Mobikids project (radiofrequency and brain cancer in teenagers and young adults). In the last five years (from 2009 to 2014) the scientific production of the group has evolved from 32 publications (24 in international journals) to 39 (35 in international journals), which represent an increase close to 45% at international level. In addition, the Unit has incorporated 10 researchers thanks to research project funds. In 2014 we got three new projects: "Personalized medicine in Oncology: researching a model capable of improving and predicting the result treatment based in molecular mechanisms, tumor biology, images, IT, and murine model", "Geochemical composition of soil and geographical distribution of cancer in Spain (project GEOCANCER)", "Influence of industrial pollution on biomarkers of exposure to metal ions/dioxins, and mercury pollution epigenetic effects (project CIBIO-EPIGEN)". The group investigators were also involved in various scientific committees, and have maintained an intense teaching activity.

The memory of the group in 2014 can be found at:

<http://www.isciii.es/ISCIII/es/contenidos/fd-servicios-cientifico-tecnicos/fd-vigilancias-alertas/fd-epidemiologia-ambiental-y-cancer/memoria-area-2014.pdf>

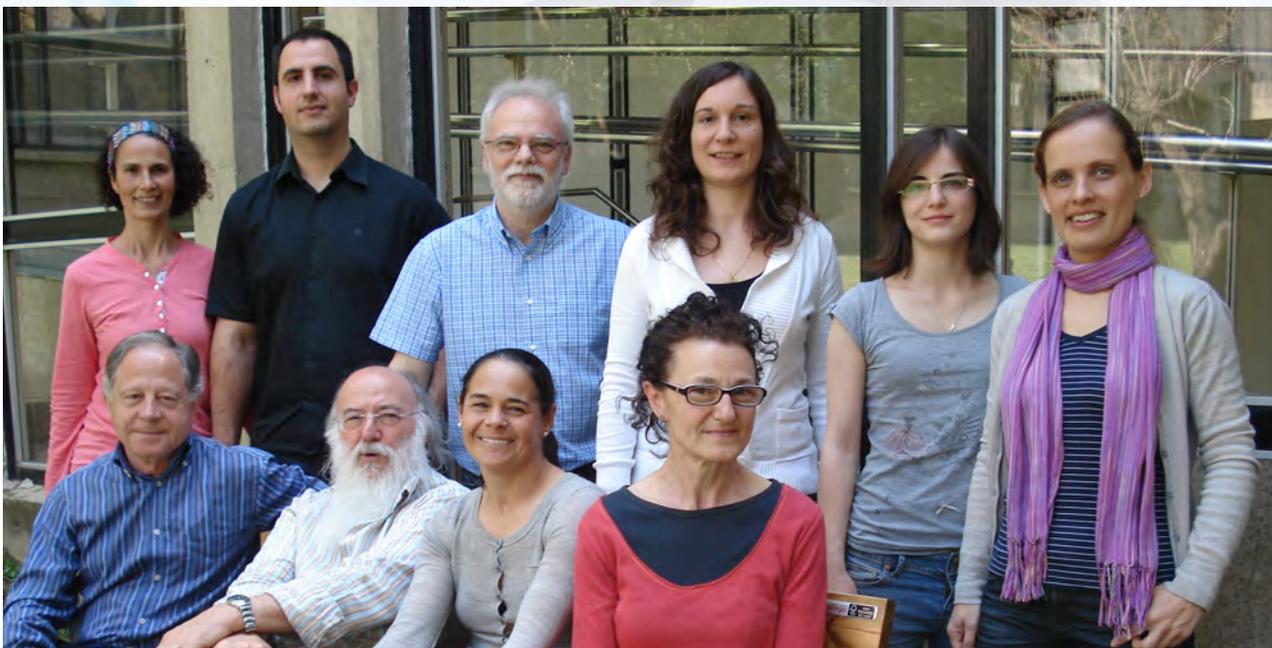
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 Website: <http://www.isciii.es/ISCIII/es/contenidos/fd-servicios-cientifico-tecnicos/fd-vigilancias-alertas/epidemiologia-ambiental-y-cancer.shtml>

## Group 20

Programme: P5. Epidemiology and Prevention of Environment and Occupational Diseases



**Lead Researcher:** Marcos Dauder, Ricardo

### Group Members

**STAFF MEMBERS:** Pastor Benito, Susana

**ASSOCIATED MEMBERS:** Alarcón Sánchez, Lourdes | Baida Gil, Aída | Creus Capdevilla, Amadeu | Guilla-met Cros, Emma | Hernández Bonilla, Alba | López Castel, Arturo | Soriano Tarraga, Carolina | Velázquez Henar, Antonia | Xamena López, Noel

### Main lines of research

- **GENOTOXIC/CARCINOGENIC MECHANISMS OF ARSENIC.**  
This research field involves both in vitro and biomonitoring studies with exposed populations. The most interesting recent results can be summarized as:  
In the human populations studied (Chile and Mexico), the exposed people (never mind if they are occupationally or environmentally exposed) present high levels of genetic damage.  
We have found a new polymorphism of the AS3MT gene (Met287Thr) acting as an important modulator of the genetic risk. Individuals carrying such variant accumulate the metabolite MMA(III) that is the arsenic specie showing the highest genotoxic potentiality.  
We have generated a wide set of in vitro tools to evaluate the carcinogenic potential of arsenic.  
We have demonstrated for first time that oxidative damage plays an important role in both the genotoxicity and carcinogenicity of arsenic.
- **RISK FACTORS IN PATIENTS WITH THYROID PATHOLOGIES.**  
The most important goals reached in this research line can be summarized as follows:  
We have found a region in chromosome 1p12 showing a strong association with thyroid cancer. In this region there is a new gene (WDR3) responsible of the observed association  
We have found associations between different genes involved in the repair of DNA (OGG1, XRCC1, XRCC2 and

XRCC3) and the metabolism of thyroid (TG) and the thyroid cancer.

In a wide study of all the genome (GWA), carried out with samples from four European populations we have found a strong association with the rs6759952 polymorphism of the DIRC3 gene.

Finally, in a collaborative study with Italian groups we have shown for first time that the thyroperoxidase gene (TPO) is involved in the risk of suffering thyroid cancer.

- RISK FACTORS IN PATIENTS WITH KIDNEY THYROID PATHOLOGIES

The most important recent goals of this research line are as follows:

We have found that patients with chronic renal failure (CRF) present high levels of genetic damage at both primary and fixed level.

The CRF patients are characterized by genomic instability. This supposes that these patients are extremely sensitive to the environmental genotoxicants.

CRF patients present high mortality, but not specific causes have been found.

DNA oxidative damage and its inability to repair it is an important factor explaining why these patients show high levels of genetic damage.

- GENOTOXIC MECHANISMS OF NANOMATERIALS.

This is a recent research line aiming to determine the risk that can suppose the presence of these new materials in our near environment.

The obtained results until now indicate that

Silver in its nanoparticulated form is able of induce genotoxic damage in vivo as we have demonstrate in Drosophila.

We have detected several nanomaterials such as titanium dioxide and zinc oxide modulate the genotoxic effects induced by UV light.

Long-term exposures to sub-toxic doses of cobalt nanoparticles induce cell transformation as well as other markers of tumoral processes.

Cerium nanoparticles pose antioxidant potential both in vivo and in vitro.

## Most relevant scientific articles

- DEMIR E., AKCA H., KAYA B., BURGUCU D., TOKGUN O., TURNA F. et al. Zinc oxide nanoparticles: Genotoxicity, interactions with UV-light and cell-transforming potential. *Journal of Hazardous Materials*. 2014; 264:420-429.
- MERLO D.F., AGRAMUNT S., ANNA L., BESSELINK H., BOTSIVALI M., BRADY N.J. et al. Micronuclei in cord blood lymphocytes and associations with biomarkers of exposure to carcinogens and hormonally active factors, gene polymorphisms, and gene expression: The newgeneris cohort. *Environmental Health Perspectives*. 2014;122(2):193-200.
- BACH J., SAMPAYO-REYES A., MARCOS R., HERNÁNDEZ A. Ogg1 genetic background determines the genotoxic potential of environmentally relevant arsenic exposures. *Archives of Toxicology*. 2014;88(3):585-596.
- FIGLIOLI G., KOHLER A., CHEN B., ELISEI R., ROMEI C., CIPOLLINI M. et al. Novel genome-wide association study-based candidate loci for differentiated thyroid cancer risk. *Journal of Clinical Endocrinology and Metabolism*. 2014;99(10):E2084-E2092.
- PEREMARTÍ J., RAMOS F., MARCOS R., HERNÁNDEZ A. Arsenic exposure disrupts the normal function of the FA/BRCA repair pathway. *Toxicological sciences: an official journal of the Society of Toxicology*. 2014;142(1):93-104.

## Highlights

Perhaps one of the most important results achieved during 2014 has been obtained in patients suffering from chronic kidney diseases. In such patients we have shown that they are characterized by the presence of genetic instability. This instability is present in the first stages of the pathology. Thus, high levels of DNA damage and bad response to genotoxic agents are main characteristics of these patients. Accordingly, the presence of genomic instability became a good prognosis biomarker to determine the potential risk to develop kidney pathologies.

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## Group 29

Programme: P3. Biological, Behavioural and Structural Determinants in the Contraction and Spread of Communicable Diseases in Vulnerable Populations (DAPET Programme)



**Lead Researcher:** Menéndez Santos, Clara

### Group Members

**STAFF MEMBERS:** Jiménez Morera, Alfons

**ASSOCIATED MEMBERS:** Alonso Fernández, Pedro Luis | Aponte Varón, John Jairo | Arnaiz Gargallo, Joan Albert | Ascaso Terren, Carlos | Bardaji Alonso, Azucena | Bassat Orellana, Enrique | Bayas Rodríguez, José María | Carne Cladellas, Francisco Javier | Dobaño Lázaro, Carlota | González Álvarez, Raquel | Guinovart Florensa, Caterina | Lahuerta Sanau, María | Letang Jiménez de Anta, Emilio Ángel | Mayor Aparicio, Alfredo Gabriel | Nanche, Denise | Ordi Maja, Jaume | Pons Casellas, María Jesús | Quinto Domech, Llorenç | Roca Aparicio, Anna | Rovira Vallbona, Eduard | Sanz Bravo, Sergi | Serra Casas, Elisa | Trilla Garcia, Antonio de Padua

**COLLABORATORS:** Llamas, Alicia | Merino, M<sup>a</sup> José | Plasencia, Antoni | Vicente, Gonzalo

### Main lines of research

- Maternal, Child and Reproductive Health, especially focused on Malaria in Pregnancy, Causes of Mortality and Human Papillomavirus (HPV)
- Malaria control and elimination: from Basic research in pathophysiology and immunology of the disease to clinical development of new tools for the prevention or treatment of malaria, including vector control, drugs and vaccines and social and economic issues, with a special focus now on malaria elimination strategies.
- HIV/AIDS: current focus in acute HIV infection and HIV-induced immune activation in the both HIV-infected adults and infants.

## Most relevant scientific articles

- AGUILAR R., MARROCCO T., SKOROKHOD O.A., BARBOSA A., NHABOMBA A., MANACA M.N. et al. Blood oxidative stress markers and Plasmodium falciparum malaria in non-immune African children. *British Journal of Haematology*. 2014;164(3):438-450.
- AGUILAR R., MORALEDA C., ACHTMAN A.H., MAYOR A., QUINTO L., CISTERO P. et al. Severity of anaemia is associated with bone marrow haemozoin in children exposed to Plasmodium falciparum. *British Journal of Haematology*. 2014;164(6):877-887.
- AGUILAR R., MAGALLÓN-TEJADA A., ACHTMAN A.H., MORALEDA C., JOICE R., CISTERO P. et al. Molecular evidence for the localization of plasmodium falciparum immature gametocytes in bone marrow. *Blood*. 2014;123(7):959-966.
- NHABOMBA A.J., GUINOVRT C., JIMÉNEZ A., MANACA M.N., QUINTO L., CISTERO P. et al. Impact of age of first exposure to Plasmodium falciparum on antibody responses to malaria in children: A randomized, controlled trial in Mozambique. *Malaria Journal*. 2014;13(1).
- MANACA M.N., GRIMALT J.O., SUNYER J., MANDOMANDO I., GONZÁLEZ R., SACARLAL J. et al. Effects on pregnancy and breastfeeding on DDT residues warrant further attention. *Chemosphere*. 2014;114:348.

## Highlights

Main results from the group researchers during 2014 were:

- Results from an FP6 funded project lead by Dr. P Alonso (AgeMal) showed that the age at which infants were first exposed to Plasmodium falciparum infection did not influence the acquisition of antibody responses to the antigens examined.
- Results from a large-scale Phase III trial published at PLOS Medicine, show that the most clinically advanced malaria vaccine candidate, RTS, S, continues to protect young children and infants from clinical malaria up to 18 months after vaccination.
- The results of two large randomized controlled trials conducted in Africa and lead by Dr. Clara Menéndez (published in PLoS Medicine) conclude that mefloquine cannot be recommended as an alternative drug for malaria prevention in HIV-negative and HIV-positive pregnant women.

Main projects lead by group researchers during 2014:

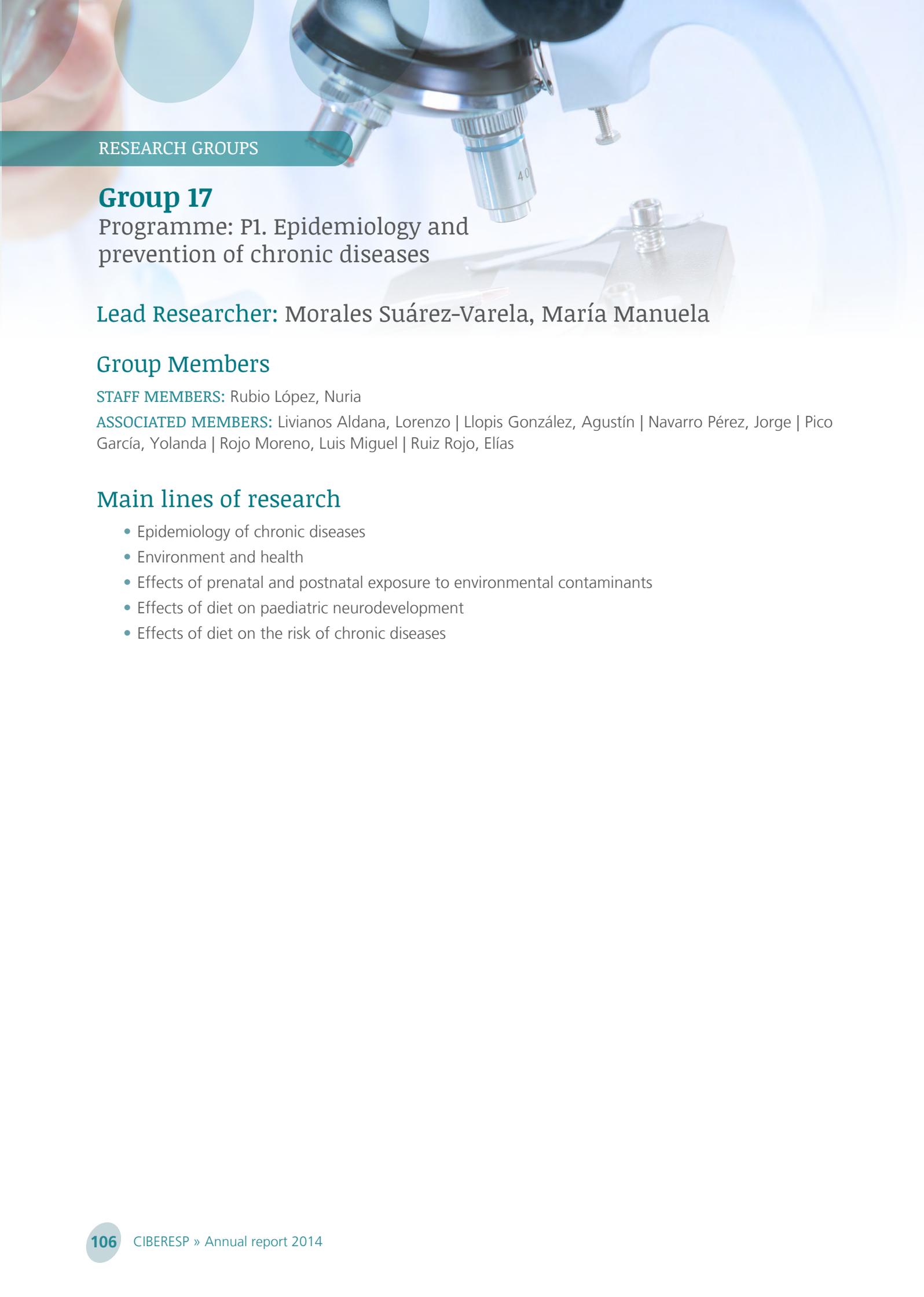
We are leading several international research consortiums on the main lines of research:

- Causes of Mortality: Validation of the Minimally Invasive Autopsy (MIA) tool for cause of death investigation in developing countries. PI's: Dr. C Menéndez, Dr. Q. Bassat and Dr. J Ordi. Funder Bill and Melinda Gates Foundation (1.4 M\$).
- Mechanisms of Immunity to Malaria Vaccine Candidates: Understanding RTS,S malaria vaccine-induced protection through integrated analysis of antibody, B Cell and T Cell immune responses. PI Dr. C Dobaño. Funder NIH (3M\$) and Identifying correlates of protection to accelerate vaccine trials: systems evaluation of two models of experimentally-induced immunity to malaria. PI Dr. C.Dobaño. Funder: FP7 (2.8 M€)
- HIV/AIDS: Development of novel gastrointestinal biomarkers for use in HIV incidence determination in a sub-Saharan African setting. PI Dr. D Nanche. Funder: Bill and Melinda Gates Foundation (1M\$)

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A background image of a microscope with a blue and silver body, positioned over a slide. The slide contains a small, clear object, possibly a microorganism or a cell. The lighting is soft and focused on the microscope's lens.

## RESEARCH GROUPS

### Group 17

Programme: P1. Epidemiology and prevention of chronic diseases

**Lead Researcher:** Morales Suárez-Varela, María Manuela

### Group Members

**STAFF MEMBERS:** Rubio López, Nuria

**ASSOCIATED MEMBERS:** Livianos Aldana, Lorenzo | Llopis González, Agustín | Navarro Pérez, Jorge | Pico García, Yolanda | Rojo Moreno, Luis Miguel | Ruiz Rojo, Elías

### Main lines of research

- Epidemiology of chronic diseases
- Environment and health
- Effects of prenatal and postnatal exposure to environmental contaminants
- Effects of diet on paediatric neurodevelopment
- Effects of diet on the risk of chronic diseases

## Most relevant scientific articles

- MORALES-SUÁREZ-VARELA M., GONZÁLEZ-CANDELAS F., ASTRAY J., ALONSO J., CASTRO A., CANTÓN R. et al. Pandemic influenza A (H1N1) in non-vaccinated, pregnant women in Spain (2009-2010). *Maternal and Child Health Journal*. 2014;18(6):1454-1461.
- MARI-BAUSET S., LLOPIS-GONZÁLEZ A., ZAZPE I., MARI-SANCHÍS A., MORALES-SUÁREZ-VARELA M. Anthropometric measures of Spanish children with autism spectrum disorder. *Research in Autism Spectrum Disorders*. 2014;9:26-33.
- SUÁREZ-VARELA M.M., REGUERA-LEAL P., GRANT W.B., RUBIO-LÓPEZ N., LLOPIS-GONZÁLEZ A. Vitamin D and Psoriasis pathology in the mediterranean region, Valencia (Spain). *International Journal of Environmental Research and Public Health*. 2014;11(12):12108-12117.
- CUTILLAS-MARCO E., MARQUINA-VILA A., GRANT W.B., VILATA-CORELL J.J., MORALES-SUÁREZ-VARELA M.M. Vitamin D and cutaneous lupus erythematosus: Effect of vitamin D replacement on disease severity. *Lupus*. 2014;23(7):615-623.
- LLOPIS-GONZÁLEZ A., SÁNCHEZ A.L., REQUENA P.M., SUÁREZ-VARELA M.M. Assessment of the microbiological quality of groundwater in three regions of the Valencian community (Spain). *International Journal of Environmental Research and Public Health*. 2014;11(5):5527-5540.

## Highlights

Our group forms part of the University of Valencia and the Mixed Nutrition Research Unit (FISABIO-CSISP-UVEG), Generalitat Valenciana.

We participate in many projects, and as Principal Investigator in some (Assessing and predicting effects on water quantity and quality in Iberian rivers (SCARCE) (CDS2009-00065); Evaluating emerging contaminants in River Turia Basin: Basic Research into applying environmental forensics (CGL2011-29703-C02-02); Influence of pregnancy and giving birth on the risk of development of children and adolescents with Autism Spectrum Disorders (ASD) stratified according to CIE-10 and DSM-IV-TR classifications (SMI 19/2014).

Our group collaborates with other CIBER groups: Effectiveness of 23-valent polysaccharide antifu and antipneumococcic vaccination in people aged 65 years and over (PI12/02079); Analysing and improving the degree of adaptation of scheduled surgery for abdominal aortic aneurysm (PI12/02530); Risk factors of adverse results of 3-5 years in patients with colorectal cancer. Multicentre study CARESS-CCR II (FIS13/0013), and in the Danish Cohort of university students to study drug and other addictions (National Drugs Plan, 2013-2016)

Three doctoral theses have been defended in 2014 entitled: "Emotional processing in bipolar disorder: behavioural and eye-movement evidence"; "Genetic and environmental determinants in teasing experience. A twin study" and "Studying the follow-up of vitamin D levels in patients with cutaneous lupus erythematosus and the correlation with disease severity".

We work with the Valencian Oncology Institute on studies into breast cancer and diet to help patients recover better.

We participate in studies of child obesity and in Promotional Child Health Programmes in the Valencian Community, and we collaborate with the Public Health Laboratory of the Valencian Community within the FISABIO framework.

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## Group 55

Programme: P1. Epidemiology and prevention of chronic diseases



**Lead Researcher:** Moreno Aguado, Víctor

### Group Members

**STAFF MEMBERS:** Atencia Rojas, Carmen Rosa | Paré Brunet, Laia

**ASSOCIATED MEMBERS:** Berenguer Llergo, Antonio | Binefa Rodríguez, Gemma | Cordero Romera, David | Crous Bou, Marta | Guino Domenech, Elisabet | López-Doriga Guerra, Adriana | Mila Díaz, Nuria | Rodríguez Moranta, Francisco | Sanz Pamplona, Rebeca | Sole Acha, Xavier

**COLLABORATORS:** López Círcoles, Olga

### Main lines of research

- Genetic Epidemiology

Our research in the field of genetic epidemiology is focused primarily on identifying genetic polymorphisms as susceptibility markers of cancer risk associated with the study of drug consumption, colorectal cancer, and development of a predictor of individual risk based on the combination of multiple genetic polymorphisms associated with cancer. In this line we also develop new biostatistical and bioinformatics methods.

- Molecular diagnosis of cancer

Within the area of molecular diagnosis of cancer, our research focuses on the identification of biomarkers useful for the early diagnosis of colorectal cancer. The domains of interest include genomics, proteomics and epigenetics. We believe that genomic regulatory networks are useful for the identification of new markers.

- Prognostic markers and therapeutic response prediction

We have series of colorectal cancer patients well characterized from a clinical point of view, with a long follow-up and prospective data collection. These series are useful to identify prognostic markers,

prediction of therapeutic response and toxicity of chemotherapy and radiotherapy.

- Identification of new therapeutic targets

We use of bioinformatics tools for the identification of genes involved in cancer. This is a complex task since it requires in vivo and in vitro validation of hypotheses generated by bioinformatics models using genomic and proteomic data.

## Most relevant scientific articles

- SANZ-PAMPLONA R., BERENGUER A., CORDERO D., MOLLEVI D.G., CROUS-BOU M., SOLE X. et al. Aberrant gene expression in mucosa adjacent to tumor reveals a molecular crosstalk in colon cancer. *Molecular Cancer*. 2014;13(1).
- CLOSA A., CORDERO D., SANZ-PAMPLONA R., SOLE X., CROUS-BOU M., PARE-BRUNET L. et al. Identification of candidate susceptibility genes for colorectal cancer through eQTL analysis. *Carcinogenesis*. 2014;35(9):2039-2046.
- CORDERO D., SOLE X., CROUS-BOU M., SANZ-PAMPLONA R., PARE-BRUNET L., GUINO E. et al. Large differences in global transcriptional regulatory programs of normal and tumor colon cells. *BMC Cancer*. 2014;14(1).
- SOLÉ X, CROUS-BOU M, CORDERO D, OLIVARES D, GUINÓ E, SANZ-PAMPLONA R et al. Discovery and validation of new potential biomarkers for early detection of colon cancer. *PLoS one*. 2014;9(9):e106748.
- SEGUI N., NAVARRO M., PINEDA M., KOGER N., BELLIDO F., GONZÁLEZ S. et al. Exome sequencing identifies MUYH mutations in a family with colorectal cancer and an atypical phenotype. *Gut*. 2014.

## Highlights

### RESEARCH PROJECTS GRANTED

- H2020: MotriCOlor: Molecularly guided trials with specific treatment strategies in patients with advanced newly molecular defined subtypes of colorectal cancer. The PI is Dr. J. Tabernero, and Dr. V. Moreno leads the WP4 bioinformatics analysis.
- FIS: Identification of genetic susceptibility markers useful for designing customized screening strategies. The IP is Dr. V. Moreno. This project also involves CIBEResp researchers from Leon and Cantabria. Identification and Functional Characterization of New Therapeutic Targets in Malignant Pleural Mesothelioma. The PI is Dr. E. Nadal. D. Cordero from our group participates as bioinformatics expert.

### AWARDS

- Award to two researchers from the group for the best senior paper presented at the XXXII Scientific Meeting of the Spanish Society of Epidemiology: García M, Mila N, Binefa G, Benito L, Moreno V and group work EACC. "Cumulative risk of having a false positive result in screening for colorectal cancer, 2000-2012".
- Hinnovar Award to Dr. G. Binefa in the "Impact in cancer patients" category for the project "Screening program for colorectal cancer, prevent, cure and save". Awarded by Sedisa, ESADE and Novartis.

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## Group 2

Programme: P3. Biological, Behavioural and Structural Determinants in the Contraction and Spread of Communicable Diseases in Vulnerable Populations (DAPET Programme)



**Lead Researcher:** Moya Simarro, Andrés

### Group Members

**STAFF MEMBERS:** Gosalbes Soler, María José

**ASSOCIATED MEMBERS:** Bracho Lapiedra, Maria Alma | Comas Espada, Iñaki | D'auria, Giusepe | Dhunkova, María | Francino Puget, María Pilar | García López, Rodrigo | González Candelas, Fernando | Isaac, Sandrine | Jiménez Hernández, Nuria | Latorre Castillo, Amparo | López Labrador, Francisco Javier | Patiño Galindo, Juan Ángel | Pérez Brocal, Vicente | Pérez Cobas, Ana Elena | Sánchez Buso, Leonor | Silva Moreno, Francisco José | Ubeda Morant, Carles | Vázquez Castellanos, Jorge Francisco

### Main lines of research

Development of new methods for genomic, metagenomic, epidemiological and evolutionary analysis to apply to the research on infectious diseases or dysbiotic microbiota, and also the regular study of them, particularly in the Comunidad Valenciana. Our group research focuses on microorganisms concerning the human health, in order to propose guidelines to the health administration in relation to certain pathogens, diseases related to the microbiota alteration and outbreaks.

The objective of the studies in genomics, metagenomics, molecular epidemiology and evolution of organisms and / or microbial communities is their identification, sequencing and comparative and evolutionary analysis. The specific objectives aim to identify the genetic and metabolic factors associated with pathogenesis, to determine the genes or accessory elements responsible for the virulence, for the antigenic features relevant for vaccination or for the resistance to different treatments, as well as the evaluation of transmission routes, etc.

## Most relevant scientific articles

- SÁNCHEZ-BUSO L., COMAS I., JORQUES G., GONZÁLEZ-CANDELAS F. Recombination drives genome evolution in outbreak-related *Legionella pneumophila* isolates. *Nature Genetics*. 2014;46(11):1205-1211.
- VALLES Y., ARTACHO A., PASCUAL-GARCÍA A., FERRUS M.L., GOSALBES M.J., ABELLÁN J.J. et al. Microbial Succession in the Gut: Directional Trends of Taxonomic and Functional Change in a Birth Cohort of Spanish Infants. *PLoS Genetics*. 2014;10(6).
- VÁZQUEZ-CASTELLANOS JF, SERRANO-VILLAR S, LATORRE A, ARTACHO A, FERRÚS ML, MADRID N et al. Altered metabolism of gut microbiota contributes to chronic immune activation in HIV-infected individuals. *Mucosal immunology*. 2014.
- BRACHO M.A., SENTANDREU V., ALASTRUE I., BELDA J., JUAN A., FERNÁNDEZ-GARCÍA E. et al. Emerging trends in CRF02-AG variants transmission among men who have sex with men in Spain. *Journal of Acquired Immune Deficiency Syndromes*. 2014;65(3).
- PÉREZ-COBAS A.E., ARTACHO A., OTT S.J., MOYA A., GOSALBES M.J., LATORRE A. Structural and functional changes in the gut microbiota associated to *Clostridium difficile* infection. *Frontiers in Microbiology*. 2014;5(JULY).

## Highlights

During 2014, our group has been funded by 8 grants both national and regional (SAF2012-31187, PROMETEOII/2014/065, SAF2011-29458, SAF2013-43521-R, SAF2013-49788-EXP, GVACOMP\_2014-229, GVACOMP\_2014-012, FPA/2014/125). Also, we have participated in the Iberoamerican Pneumocystosis Network led by Dr. Enrique Calderon, IP of group 4 from CIBERESP. During this year, the project "Identification of novel modulators of chronic inflammation in prevalent diseases: unveiling divergent mechanisms of disease" (PIE14/00045) has received funding and Prof. Andrés Moya is leader of workpackage. Furthermore, we maintain close partnerships with different national and international research groups and also with hospitals located in the Comunitat Valenciana and Spain to work in the field of human microbiome and infectious pathogens. Our group is developing a European patent in collaboration with Dr. Andreumont from the University of Paris (France).

In 2014 the FISABIO-University of Valencia Academic Chair has been created, being named as director Prof. Andrés Moya.

During 2014 a doctoral thesis (Resistance to new direct acting antivirals in clinical isolates of hepatitis C virus) has been defended, and another 6 theses are ongoing. Also, during this year we received various students from both national and international universities.

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## Group 24

Programme: P1. Epidemiology and prevention of chronic diseases



**Lead Researcher:** Navarro Sánchez, Carmen

### Group Members

**STAFF MEMBERS:** Huerta Castaño, José María | Salmerón Martínez, Diego

**ASSOCIATED MEMBERS:** Chirlaque López, María Dolores | Cirera Suárez, Lluís | García Fulgueiras, Ana María | García Ortuzar, Visitación | García Pina, Rocío | Gavrilá Chervase, Diana | Guillén Pérez, José Jesús | López Rojo, Concepción | Mendiola Olivares, Jaime | Navarro Mateu, Fernando | Pérez Flores, Domingo | Tormo Díaz, María José | Torres Cantero, Alberto Manuel

**COLLABORATORS:** Ríos Molina, M<sup>a</sup> Esperanza

### Main lines of research

- **CANCER EPIDEMIOLOGY.**  
The group has consolidated a research line on cancer over the last two decades by taking part in the cohort study European Prospective Investigation into Cancer and Nutrition (EPIC), focused on diet, cancer, and lifestyle and genetic interactions. Also recently, the group has joined the Spanish multi-center case-control population study (MCC-Spain), developed within the CIBERESP, aimed at investigating the effect of the environment and its interaction with genetic factors on high-incidence tumours in Spain. Furthermore, the group has an active participation in several national and international projects on cancer survival (EUROCARE, CONCORD, RARECARE), and information systems and cancer registries (EUROCHIP, REDEPICAN, REDECAN).
- **EPIDEMIOLOGY OF CARDIOVASCULAR DISEASE, DIABETES, AND OTHER CHRONIC DISEASES.**  
In the field of other chronic diseases, the group participates in the DARIOS and FRESCO studies, on cardiovascular risk functions for the Spanish population, and in the EPIC-CVD study, conceived to perform a joint study of the effect of genetic factors, biomarkers, and life styles, on coronary heart disease and stroke in Europe. On diabetes, the group takes part in the European case-cohort InterAct study on the interaction between genetic and modifiable life-style factors (particularly diet and physical activity), and has designed and developed the DINO study (study on diabetes, nutrition, and obesity in the Region of Murcia). It is also noteworthy the participation in an interesting project to analyse whether the presence of specific antibodies for rheumatoid arthritis could be able to predict the onset of the disease, and what are the related factors (genetic and environmental) that could affect this process. Other specific objective of the group is to estimate the burden of infectious diseases in Spain with a special focus on hepatitis B and C. Finally, the group has research interests in the epidemiology of neurological disorders such as Parkinson or Alzheimer disease, and dementia, and it is currently leading the PEGASUS-Murcia study (study on health and quality of life in the Region of Murcia), a population-based survey to know the prevalence of mental disorders, co-morbidity patterns and related factors, in the general population.

- ENVIRONMENTAL HEALTH, REPRODUCTIVE HEALTH, LIFE STYLES, AND DIET.  
The group works in this research line on food and nutrient patterns, physical activity, and other life style factors, in relation to health and development of chronic diseases. Other research interest focuses on reproductive health of young adults, and the study of its related factors, both endogenous and environmental (hormonal and developmental factors, diet, sedentarism, environmental pollutants, heavy metals).
- SOCIAL DETERMINANTS OF HEALTH. INEQUALITY, IMMIGRATION AND GENDER.  
Through the project 'Health and Cultures' the group has carried out the study of the health of the immigrant population in Murcia and its determinant factors, in order to identify the specific health needs of such a minority and the barriers that limit their health care. Other research lines of the group involves the study of social problems such as the domestic violence, or the double workload (paid work and domestic labors) of women and its health consequences. Furthermore, within the MEDEA project, the group takes part in the study of economic and environmental inequalities on the morbidity and mortality in small areas of large cities in Spain.

## Most relevant scientific articles

- FEDIRKO V., DUARTE-SALLES T., BAMIA C., TRICHOPOULOU A., ALEKSANDROVA K., TRICHOPOULOS D. et al. Prediagnostic circulating vitamin D levels and risk of hepatocellular carcinoma in European populations: A nested case-control study. *Hepatology*. 2014.
- ROULLAND S., KELLY R.S., MORGADO E., SUNGALEE S., SOLAL-CELGNY P., COLOMBAT P. et al. t(14;18) translocation: A predictive blood biomarker for follicular lymphoma. *Journal of Clinical Oncology*. 2014;32(13):1347-1355.
- SIERI S., CHIODINI P., AGNOLI C., PALA V., BERRINO F., TRICHOPOULOU A. et al. Dietary fat intake and development of specific breast cancer subtypes. *Journal of the National Cancer Institute*. 2014;106(5).
- KYRO C., OLSEN A., LANDBERG R., SKEIE G., LOFT S., AMAN P. et al. Plasma alkylresorcinols, biomarkers of whole-grain wheat and rye intake, and incidence of colorectal cancer. *Journal of the National Cancer Institute*. 2014;106(1).
- KESSLER R.C., ROSE S., KOENEN K.C., KARAM E.G., STANG P.E., STEIN D.J. et al. How well can post-traumatic stress disorder be predicted from pre-trauma risk factors? An exploratory study in the WHO World Mental Health Surveys. *World Psychiatry*. 2014;13(3):265-274.

## Highlights

Through 2014, our group has published over 85 original papers in high-impact national and international journals (sum of IF > 470). The group develops own research lines in diabetes (determinants of glycated hemoglobin-HbA1c- concentrations among non-diabetics, influence of socio-economic position on diabetes onset), cardiovascular disease (coronary heart disease associated to HbA1c), male infertility (determinants of low seminal quality), or mortality (preventive ability of household and recreational physical activity). Within the context of the EPIC Study, and in cooperation with other CIBERESP and European international centres, the group has participated in studies of great scientific relevance, such as the analysis of the association between serum Vitamin D concentration and hepatocellular carcinoma (Fedirko et al., *Hepatology*), or the study of the t(14;18) translocation as predictive biomarker of follicular lymphoma (Roulland et al., *J. Clin. Oncol.*), among others. The group leads or actively participates in several research projects (Salud y Culturas, PEGASUS-Murcia, EPIC-InterAct, EPIC-CVD, IN3CA) and has recently received funding from the Instituto de Salud Carlos III through the AES 2014 programme for the project: "Effect of exposure to Bisphenol-A on human health (cancer and ischaemic coronary heart disease) in the European Prospective Investigation into Cancer and Nutrition (EPIC-Spain) study" (PI14/01716, PI: María Dolores Chirlaque), active until 2017. This important study will assess the prevalence and the determinants of serum concentrations of this plastic component, and it will analyse its effect on the incidence of hormone-dependent tumours and coronary heart disease. Finally, the group holds the lead of a European Partnership in Murcia, within the European Innovation Partnership on Active and Healthy Ageing (EIP AHA) initiative, with the objective to address the social challenge of ageing, both in preserving health and active living as much as it is possible.

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## Group 19

Programme: P5. Epidemiology and Prevention of Environment and Occupational Diseases



**Lead Researcher:** Olea Serrano, Nicolás

### Group Members

**ASSOCIATED MEMBERS:** Arrebola Moreno, Juan Pedro | Campoy Folgoso, Cristina | Fernández Cabrera, Mariana Fatima | Freire Warden, Carmen | Guirado Lorente, Damián | Nuñez Torres, María Isabel | Villalobos Torres, Mercedes

### Main lines of research

Multidisciplinary group created to investigate environmental causes of disease, particularly, malignant tumors and its basic and clinical aspects, with a strong character translational and applied to clinical practice. Both the epidemiology of malignant tumor disease as the diagnosis and treatment has been and are the object of attention. Especially:

- Research on environmental factors related to exposure to hormonally active chemical contaminants (endocrine disruption) and physical agents (ionizing and non-ionizing radiation).
- The diagnosis of tumor disease in its early stages and subsequent evolution by radiological techniques and molecular imaging.
- A holistic approach to the concept of health and environment based on: i) markers of exposure; ii) development of biomarkers combined effect; iii) research focused on mechanisms of gene-environment interaction; and iv) actions in prevention.

## Most relevant scientific articles

- SERRANO M., GONZALVO M.C., SÁNCHEZ-POZO M.C., CLAVERO A., FERNÁNDEZ M.F., LÓPEZ-REGALADO M.L. et al. Adherence to reporting guidelines in observational studies concerning exposure to persistent organic pollutants and effects on semen parameters. *Human Reproduction*. 2014;29(6):1122-1133.
- VILAHUR N., FERNÁNDEZ M.F., BUSTAMANTE M., RAMOS R., FORNS J., BALLESTER F. et al. In utero exposure to mixtures of xenoestrogens and child neuropsychological development. *Environmental Research*. 2014; 134:98-104.
- ARREBOLA J.P., OCANA-RIOLA R., ARREBOLA-MORENO A.L., FERNÁNDEZ-RODRÍGUEZ M., MARTÍN-OLMEDO P., FERNÁNDEZ M.F. et al. Associations of accumulated exposure to persistent organic pollutants with serum lipids and obesity in an adult cohort from Southern Spain. *Environmental Pollution*. 2014;195:9-15.
- CALVENTE I., DÁVILA-ARIAS C., OCON-HERNÁNDEZ O., PÉREZ-LOBATO R., RAMOS R., ARTACHO-CORDÓN F. et al. Characterization of indoor extremely low frequency and low frequency electromagnetic fields in the INMAGranada cohort. *PLoS ONE*. 2014;9(9).
- ARREBOLA J.P., FERNÁNDEZ M.F., MARTÍN-OLMEDO P., MOLINA-MOLINA J.M., SÁNCHEZ-PÉREZ M.J., SÁNCHEZ-CANTALEJO E. et al. Adipose tissue concentrations of persistent organic pollutants and total cancer risk in an adult cohort from Southern Spain: Preliminary data from year 9 of the follow-up. *Science of the Total Environment*. 2014;500:243-249.

## Highlights

In 2014, we followed our clinic and epidemiological studies focused in the demonstration of the association between exposure to persistent and non-persistent environmental chemicals with endocrine disrupting properties (ED) and the risk of neurodevelopmental diseases in children and diabetes, obesity and cancer in adults. Studies centered in the use of placenta tissue as a target for environmental exposures (Total Effective Xenoestrogens Burden, TEXB) and its relationships with gene expression have been of the main interest. Preliminary results in the field of obesogens are very interesting for the group objectives, because its implication in the etiology of obesity, diabetes and metabolic syndrome and because of the development of a bioassay for obesogens identification.

Competitive financial support from international, national and regional agencies (FIS PI13/02406; PI13/02406; PI11/00610 and JA PI-0513-2012) allowed us to follow with our works and to widen the scope of research (PI14/00067) that now includes the well-known EPIC-Spain cohort in which we are investigating the historic exposure to bisphenol-A (BPA) and the risk of development of hormone dependent cancer (breast, prostate) and cardiovascular diseases.

A new research line on the assessment of children exposure to non-ionizing radiation has been implemented, providing the Spanish Infant and Environment (INMA) cohort with new instruments for environmental risk assessment

Two EU expert reports were released: BPA in medical devices signed by N. Olea and Criteria for ED identification signed by MF Fernandez as a member of the ED Expert Advisory Group EAG of the European Commission.

Finally, the consolidation of the Institute for Biomedical Research *ibs.GRANADA* in which the Group 19 CIBERESP was integrated in the top category and Prof N. Olea is the Scientific Director and responsible for its accreditation, it is a milestone among this year activities.

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## Group 35

Programme: P1. Epidemiology and prevention of chronic diseases



**Lead Researcher:** Porta Serra, Miquel

### Group Members

**STAFF MEMBERS:** Pumarega Rodríguez, José Antonio

**ASSOCIATED MEMBERS:** Alguacil Ojeda, Juan | Casamitjana Abella, Montserrat | Collet Divi, Immaculada | Gasull Panades, Magdalena | Larrea Kilinger, Cristina | López Jiménez, Tomás | Morales Bartolomé, Eva

**COLLABORATORS:** Rovira Pons, Yolanda

### Main lines of research

- Clinical and molecular epidemiology of exocrine pancreatic cancer, chronic pancreatitis and cancer of the extrahepatic biliary system. This line of work is fundamentally focused on two projects, the PANKRAS I and PANKRAS II studies. They are a joint collaboration with research units of the cancer research programme of IMIM, as well as with other organizations such as CSIC, Centro Nacional de Investigaciones Oncológicas (CNIO), University Miguel Hernandez from Elx-Alacant, the Harvard School of Public Health and the National Institute of Child Health and Human Development de USA.
- Analysis of out patient and inpatient phases of the "Symptom to treatment interval" (STI) and its impact on survival. Early detection of breast cancer. This line of work is based on the Tumour Registry Working Group at the Hospital del Mar and on the "Breast Cancer Prevention Program" (IMAS/SCS).
- Concentrations of Persistent Organic Pollutants in the general population. This line of work is fundamentally focused on two projects, *Blood concentrations of Persistent Organic Pollutants in the population of Catalonia*, a joint collaboration with Departament de Salut of Generalitat de Catalunya, and *Blood concentrations of Persistent Organic Pollutants in the population of Barcelona*, a joint collaboration with Agència de Salut Pública de Barcelona.

## Most relevant scientific articles

- LÓPEZ T., PUMAREGA J.A., POLLACK A.Z., LEE D.-H., RICHIARDI L., JACOBS D.R. et al. Adjusting serum concentrations of organochlorine compounds by lipids and symptoms: A causal framework for the association with K-ras mutations in pancreatic cancer. *Chemosphere*. 2014;114:219-225.
- PORTA M., PUMAREGA J., GASULL M., LÓPEZ T. Contamination from Endocrine Disruptors of the General Population at Low and High Concentrations. *Vitamins and Hormones*. 2014;94:167-192.
- AYLWARD L.L., GREEN E., PORTA M., TOMS L.-M., DEN HOND E., SCHULZ C. et al. Population variation in biomonitoring data for persistent organic pollutants (POPs): An examination of multiple population-based datasets for application to Australian pooled biomonitoring data. *Environment International*. 2014;68:127-138.
- LEE D.-H., PORTA M., JACOBS JR. D.R., VANDENBERG L.N. Chlorinated persistent organic pollutants, obesity, and type 2 diabetes. *Endocrine Reviews*. 2014;35(4):557-601.
- VINEIS P., STRINGHINI S., PORTA M. The environmental roots of non-communicable diseases (NCDs) and the epigenetic impacts of globalization. *Environmental Research*. 2014;133:424-430.

## Highlights

GRECMC is and strives to be a research group with a global and local scholarly influence and recognition. We conceive, develop, and execute this influence mainly through research, teaching, and knowledge transfer, which includes a regular activity in global and local academic institutions, international media, networks, and advocacy forums. In 2014 we published in journals ranging from *Nature Genetics* and *Endocrine Reviews* to journals internationally recognised in the fields of molecular, clinical, and environmental epidemiology: such a broad integration of basic, clinical and epidemiologic knowledge is one of our signs of identity worldwide. *A Dictionary of Epidemiology* (Oxford University Press, 2014) reflects as well our aims, approaches, and accomplishments.

Our knowledge transfer activities are often reflected not only on Spanish media but also globally. For example, the article we published with Mucke et al. (Food packaging and migration of food contact materials) had a worldwide media impact (BBC, The Guardian, The Times, El País, Daily Express, Huffington Post UK, Independent, Metro London, Medical News Today, CTV News, The Mirror, MSN news, Times of India, etc); this put the article in the top 5% of all articles (n=2,192,789) ever monitored by Altmetric ([http://www.altmetric.com/details.php?domain=jech.bmj.com&citation\\_id=2130896](http://www.altmetric.com/details.php?domain=jech.bmj.com&citation_id=2130896)).

In 2014 we started the study on plasma concentrations of organochlorine compounds, life styles and conditions, and pancreatic cancer risk in the EPIC cohort, funded with more than 400,000€ by FIS/ISCIII and Marató de TV3.

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## Group 25

Programme: P1. Epidemiology and prevention of chronic diseases



**Lead Researcher:** Rodríguez Artalejo, Fernando

### Group Members

**ASSOCIATED MEMBERS:** Banegas Banegas, José Ramón | García García-Esquinas, Esther | Graciani Pérez-Regadera, María Auxiliadora | Guallar Castillon, Pilar | Gutiérrez Fisac, Juan Luis | López García, Esther | Pérez Tasigchana, Raúl Francisco | Valencia Martín, José Lorenzo

### Main lines of research

Our strategic objective is to produce relevant information to support clinical and population-based policies aimed at controlling CVD. The results of our studies have been explicitly incorporated into the National Strategy for Ischemic Heart Disease Control, the National Strategy for Obesity Prevention and Control, and the National Strategy on Disease Prevention and health Promotion, elaborated by the Ministry of Health. Moreover, our research results have also supported the development of clinical guidelines in this field; specifically, the guidelines of the Spanish Society for Arterial Hypertension, and guidelines of the Spanish Society of Family Medicine, the leading society devoted to primary health care in Spain.

Our main research themes are:

- Determinants and consequences of frailty in the older adult.
- Improvement of diagnosis and prognosis of the patient with hypertension and heart failure.
- Diet and physical activity as determinants of obesity and cardiovascular risk in the elderly

## Most relevant scientific articles

- RODRÍGUEZ-ARTALEJO F., RODRÍGUEZ-MANAS L. The frailty syndrome in the public health agenda. *Journal of Epidemiology and Community Health*. 2014;68(8):703-704.
- LEÓN-MUNOZ L.M., GUALLAR-CASTILLÓN P., LÓPEZ-GARCÍA E., RODRÍGUEZ-ARTALEJO F. Mediterranean Diet and Risk of Frailty in Community-Dwelling Older Adults. *Journal of the American Medical Directors Association*. 2014;15(12):899-903.
- PADRÓN A., GALAN I., RODRÍGUEZ-ARTALEJO F. Second-hand smoke exposure and psychological distress in adolescents. A population-based study. *Tobacco Control*. 2014;23(4):302-307.
- SOLER-VILA H., GALAN I., DONADO-CAMPOS J., SÁNCHEZ-ALFONSO F., VALENCIA-MARTÍN J.L., MORILLA F. et al. Three-year changes in drinking patterns in Spain: A prospective population-based cohort study. *Drug and Alcohol Dependence*. 2014.
- LÓPEZ-GARCÍA E., RODRÍGUEZ-ARTALEJO F., LI T.Y., FUNG T.T., LI S., WILLETT W.C. et al. The mediterranean-style dietary pattern and mortality among men and women with cardiovascular disease. *American Journal of Clinical Nutrition*. 2014;99(1):172-180.

## Highlights

During the last year, our group has characterized the patterns of alcohol consumption in the Spanish population, particularly among the older adults. Moreover, we have contributed to place the frailty syndrome among the higher ranks of the research agenda in public health; we have also identified the role of the Mediterranean diet in frailty as well as in cardiovascular disease, which is a main cause of frailty. Lastly, we have characterized a new clinical phenotype of hypertension, the “masked uncontrolled hypertension (MUCH)”, which corresponds to 30% of hypertensive patients with (apparently) controlled blood pressure.

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## Group 05

Programme: P5. Epidemiology and Prevention of Environment and Occupational Diseases



**Lead Researcher:** Rodríguez Farré, Eduard

### Group Members

**STAFF MEMBERS:** Martí Perales, Elisenda

**ASSOCIATED MEMBERS:** Briz Herrezuelo, Víctor | Olguín Alderete, Nair Temis | Palou Serra, Aina | Suñol Esquirol, Cristina

### Main lines of research

- Neurotoxicity of environmental pollutants
- Biomarkers of exposure to mercury and persistent organochlorine pollutants
- Endocrine disruption induced by environmental pollutants in the central nervous system

## Most relevant scientific articles

- PALOU-SERRA A., MURCIA M., LÓPEZ-ESPINOSA M.-J., GRIMALT J.O., RODRÍGUEZ-FARRÉ E., BALLESTER F. et al. Influence of prenatal exposure to environmental pollutants on human cord blood levels of glutamate. *NeuroToxicology*. 2014;40:102-110.
- MORAL-VICO J., SÁNCHEZ-REDONDO S., LICHTENSTEIN M.P., SUNOL C., CASAN-PASTOR N. Nanocomposites of iridium oxide and conducting polymers as electroactive phases in biological media. *Acta Biomaterialia*. 2014;10(5):2177-2186.
- CARRETERO N.M., LICHTENSTEIN M.P., PEREZ E., CABANA L., SUNOL C., CASAN-PASTOR N. IrOx-carbon nanotube hybrids: A nanostructured material for electrodes with increased charge capacity in neural systems. *Acta Biomaterialia*. 2014;10(10):4548-4558.

## Highlights

### CLINICAL GUIDES

- The safety of dental amalgam and alternative dental restoration materials for patients and users. Authors: Eduard Rodríguez-Farre, Ellen Bruzell, Wim De Jong, Arne Hensten, Gottfried Schmalz, Mogens Thomsen, Wolfgang Dekant, Philippe Grandjean.  
©European Commission, DG SANCO, Public Health, Luxembourg 2014. 105 pp. [ISBN: 978-92-79-35605-6; ISSN: 1831-4783; doi: 10.2772/42641]. Also available in the Internet at:  
[http://ec.europa.eu/health/scientific\\_committees/policy/index\\_en.htm](http://ec.europa.eu/health/scientific_committees/policy/index_en.htm)
- The safety of medical devices containing DEHPplasticized PVC or other plasticizers on neonates and other groups possibly at risk (2014 update). Authors: Philippe HARTEMANN, Eduardo RODRIGUEZ-FARRE, Emanuela TESTAI, Suresh RASTOGI, Ulrike BERNAUER, Wim De JONG, Hans GULLIKSSON, Aldert H. PIERSMA, G. LATINI, Richard SHARPE, Habil Dirk SCHUBERT.  
©European Commission, DG SANCO, Public Health, Luxembourg 2014. 105 pp. [ISBN: 978-92-79-35605-6; ISSN: 1831-4783; doi: 10.2772/42641]. Also available in the Internet at:  
[http://ec.europa.eu/health/scientific\\_committees/policy/index\\_en.htm](http://ec.europa.eu/health/scientific_committees/policy/index_en.htm)

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## RESEARCH GROUPS

### Group 50

Programme: P4. Determinantes sociales de la salud



**Lead Researcher:** Ruiz Pérez, Isabel

### Group Members

**STAFF MEMBERS:** Martín Baena, David

**ASSOCIATED MEMBERS:** Bermúdez Tamayo, Clara | Escriba Aguir, Vicenta | Hernán García, Mariano | Lacasaña Navarro, Marina | Maroto Navarro, Gracia | Montero Piñar, María Isabel | Olry de Labry Lima, Antonio | Soto Blanco, José Manuel

### Main lines of research

- Social Inequalities, Gender Violence, Women's Health, Mental health, Crisis and Health

## Most relevant scientific articles

- RODRÍGUEZ-BARRANCO M., LACASANA M., GIL F., LORCA A., ALGUACIL J., ROHLMAN D.S. et al. Cadmium exposure and neuropsychological development in school children in southwestern Spain. *Environmental Research*. 2014;134:66-73.
- RICCI-CABELLO I., RUIZ-PÉREZ I., ROJAS-GARCÍA A., PASTOR G., RODRÍGUEZ-BARRANCO M., GONCALVES D.C. Characteristics and effectiveness of diabetes self-management educational programs targeted to racial/ethnic minority groups: A systematic review, meta-analysis and meta-regression. *BMC Endocrine Disorders*. 2014;14.
- ROJAS-GARCIA A., RUIZ-PÉREZ I., GONCALVES D.C., RODRÍGUEZ-BARRANCO M., RICCI-CABELLO I. Healthcare Interventions for Perinatal Depression in Socially Disadvantaged Women: A Systematic Review and Meta-Analysis. *Clinical Psychology: Science and Practice*. 2014;21(4):363-384.
- ARTAZCOZ L., CORTES I., PUIG-BARRACHINA V., BENAVIDES F.G., ESCRIBA-AGUIR V., BORRELL C. Combining employment and family in Europe: The role of family policies in health. *European Journal of Public Health*. 2014;24(4):649-655.
- GONZÁLEZ-ALZAGA B., LACASANA M., AGUILAR-GARDUNO C., RODRÍGUEZ-BARRANCO M., BALLESTER F., REBAGLIATO M. et al. A systematic review of neurodevelopmental effects of prenatal and postnatal organophosphate pesticide exposure. *Toxicology Letters*. 2014;230(2):104-121.

## Highlights

- Stay 3 researchers abroad (University of Malmo, York University and Mount Sinai School of Medicine. New York.)
- Home work camp Gender Violence during pregnancy and postpartum.
- Completion of Effectiveness trial of two interventions in patients with low educational level with diabetes to reduce inequalities in self-care behavior.

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## Group 51

Programme: P4. Social Determinants of Health

P7. Clinical Epidemiology

P1. Epidemiology and prevention of chronic diseases



**Lead Researcher:** Sáez Zafra, Marc

### Group Members

**STAFF MEMBERS:** Serra Saurina, Laura

**ASSOCIATED MEMBERS:** Barceló Rado, María Antonia | Capó Artigues, Aina María | Coenders Gallart, Germa | Coll de Tuero, Gabriel | Coromina Soler, Lluís | González Raya, Sonia | Ivina No, Olga | Maynou Pujolras, Laia | Osa Gelis, Gemma | Puig Vives, Montserrat | Renart Vicens, Gemma | Saurina Canals, Carme | Xabadia Palmada, María Ángela

### Main lines of research

- HEALTH ECONOMETRICS
  - Effects of the economic crisis on health:  
Use of health services / Self-perception of health / Prevalence and incidence of metabolic syndrome / Suicides.
  - Evaluation of public policies.
  - Evaluation of health technologies.
- EPIDEMIOLOGY
  - Socioeconomic inequalities in health.
  - Environmental inequalities in health.
  - Clinical epidemiology.
  - Cardiovascular Risk Factors.
  - Epidemiology of cancer.
  - Delinquency as a public health problem.

## Most relevant scientific articles

- MAYNOU L., SÁEZ M., BACARIA J., LÓPEZ-CASASNOVAS G. Health inequalities in the European Union: an empirical analysis of the dynamics of regional differences. *The European Journal of Health Economics*. 2014.
- HOFFMANN R., BORSBOOM G., SÁEZ M., MARI DELL'OLMO M., BURSTROM B., CORMAN D. et al. Social differences in avoidable mortality between small areas of 15 European cities: An ecological study. *International Journal of Health Geographics*. 2014;13.
- BORRELL C., MARI-DELL'OLMO M., PALENCIA L., GOTSSENS M., BURSTROM B.O., DOMÍNGUEZ-BERJON F. et al. Socioeconomic inequalities in mortality in 16 European cities. *Scandinavian Journal of Public Health*. 2014;42(3):245-254.
- COLL-DE-TUERO G., GONZÁLEZ-VÁZQUEZ S., RODRÍGUEZ-PONCELAS A., BARCELÓ M.A., BARROT-DE-LA PUENTE J., PENEDO M.G. et al. Retinal arteriole-to-venule ratio changes and target organ disease evolution in newly diagnosed hypertensive patients at 1-year follow-up. *Journal of the American Society of Hypertension*. 2014;8(2):83-93.
- MAYNOU L., SÁEZ M., LÓPEZ-CASASNOVAS G. Has the economic crisis widened the intraurban socioeconomic inequalities in mortality? The case of Barcelona, Spain. *Journal of Epidemiology and Community Health*. 2014.

## Highlights

Without publications, the most important was the participation in a patent 'Model diagnosis of pancreatic cancer. Combinatorics of clinical biomarkers CA19.9, cea, igf-1 and albumin to improve the diagnosis of pancreatic cancer versus chronic pancreatitis' (Number of patent application P 2014 31022, July 8, 2014) and, clearly, work on the project 'Effects of the crisis in health' (Subprogramme CIBER, 'Health and Crisis', Subprogramme 4), which has already generated some communications, presentations and in a short term, some publications.

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## Group 34

Programme: P1. Epidemiology and prevention of chronic diseases



**Lead Researcher:** Sánchez Pérez, María José

### Group Members

**STAFF MEMBERS:** Molina Montes, María Esther | Molina Portillo, Elena

**ASSOCIATED MEMBERS:** García Gutiérrez, José Francisco | Martínez García, Carmen | Sánchez-Cantalejo Ramírez, Emilio

### Main lines of research

The Granada Cancer Registry (GCR), since its startup in 1985, has developed research projects produced by the GCR itself or in collaboration with other national or international institutions, along three main research lines:

- Descriptive epidemiology of cancer:

Temporal trends of cancer incidence in Granada for adults, children and adolescents / Survival of cancer in Granada / Estimates of cancer incidence and prevalence in Andalusia and Spain / Rare malignant tumors (RDR Spain): definition, incidence and survival. / Risk of second primary multiple tumors

- Risk factors for cancer and other chronic diseases, especially in the Framework of the EPIC project (European Prospective Investigation into Cancer and Nutrition).

Studies on the association between lifestyle factors, diet and other environmental factors with risk of cancer and other chronic diseases (diabetes, cardiovascular diseases...) / Studies on the association between biomarkers of exposure (antioxidants, inflammation, oxidative stress, etc.) with risk of cancer and other chronic diseases. / Studies on gen\*environment and gen\*gen interactions and their association with risk of cancer and other chronic diseases.

- Health care and outcomes assessment in cancer patients.

Survival and patterns of care in cancer and variability in clinical practice (diagnostic methods, stage, treatment, tumor markers, second primary cancers, recurrences): differences between countries and geographical areas (EUROCARE, CONCORD and EMPARO-CU projects). / Surveillance and control of rare tumors in Spain and Europe (EUROCARE project).

- Mapping of the European funding in cancer research activities: bibliometric and health impact assessment (MAPPING\_NCD project).

## Most relevant scientific articles

- MOLINA-MONTES E., REQUENA M., SANCHEZ-CANTALEJO E., FERNANDEZ M.F., ARROYO-MORALES M., ESPIN J. et al. Risk of second cancers cancer after a first primary breast cancer: A systematic review and meta-analysis. *Gynecologic Oncology*. 2014.
- MOLINA-MONTES E., PEREZ-NEVOT B., POLLAN M., SANCHEZ-CANTALEJO E., ESPIN J., SANCHEZ M.-J. Cumulative risk of second primary contralateral breast cancer in BRCA1/BRCA2 mutation carriers with a first breast cancer: A systematic review and meta-analysis. *Breast*. 2014;23(6):721-742.
- ARREBOLA J.P., FERNANDEZ M.F., MARTIN-OLMEDO P., MOLINA-MOLINA J.M., SANCHEZ-PEREZ M.J., SANCHEZ-CANTALEJO E. et al. Adipose tissue concentrations of persistent organic pollutants and total cancer risk in an adult cohort from Southern Spain: Preliminary data from year 9 of the follow-up. *Science of the Total Environment*. 2014;500:243-249.
- GILBERSON T., PELUSO M.E.M., MUNIA A., LUJAN-BARROSO L., SANCHEZ M.-J., NAVARRO C. et al. Aromatic adducts and lung cancer risk in the European Prospective Investigation into Cancer and Nutrition (EPIC) Spanish cohort. *Carcinogenesis*. 2014;35(9):2047-2054.
- AMIANO P., MACHON M., DORRONSORO M., DOLORES CHIRLAQUE M., BARRICARTE A., SANCHEZ M.-J. et al. Intake of total omega-3 fatty acids, eicosapentaenoic acid and docosahexaenoic acid and risk of coronary heart disease in the Spanish EPIC cohort study. *Nutrition, Metabolism and Cardiovascular Diseases*. 2014;24(3):321-327.

## Highlights

- Participation as Group 34 CIBERESP in the InterCIBER comprehensive study of excellence from the Instituto de Salud Carlos III- ISCIII (CIBERESP, CIBERDEM, CIBEREHD, CIBEROBN): Identification of novel modulators of chronic inflammation in prevalent diseases: unveiling divergent mechanisms of disease.
- Coordination of the only project financed in Andalusia by the ISCIII through the ERA-NET call on Translational Cancer Research (TRANSCAN): High Resolution Project on Prognosis and care of cancer patients
- Coordination of multicentric project: Effect of the exposure to Bisphenol-A on health (cancer and ischemic heart disease) within the European Prospective Investigation into Cancer and Nutrition (EPIC-Spain), financed by the FIS (Health Research Fund), with 4 participating CIBERESP research groups.
- Coordination of WP5 Cancer "Mapping Chronic Non-Communicable Diseases Research Activities and their Impact (MAPPING\_NCD)", funded under the EU Seventh Framework Programme
- Integration of a consolidated research group to the Institute for Bio-Health Research of Granada (ibs. Granada), to coordinate one of its 5 scientific areas, Cancer Area, and take part in the management bodies, various commissions (research, training and postgraduate education) and in the Disease Registry and Biobank Platform, via Granada Cancer Registry.
- Authorship of CIBERESP Group 34 in the preparation of the "Estimates of cancer incidence and survival in Spain and situation in Europe" report, within the framework of the Spanish Network for Cancer Registries (REDECAN), for the National Cancer Strategy and the Ministry of Health, Social Services and Equality. 3 additional CIBERESP groups have co-authored this report.

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## Group 36

Programme: P1. Epidemiología y prevención de enfermedades crónicas; P5. Epidemiology and Prevention of Environment and Occupational Diseases



**Lead Researcher:** Sanjosé Llongueras, Silvia de

### Group Members

**STAFF MEMBERS:** Alarcón Moral, Francesc | Casabonne, Delphine

**ASSOCIATED MEMBERS:** Albero Abril, Ginesa | Alemany Vilches, María Eulalia | Benavente Moreno, Yolanda | Domingo Domenech, Eva | Klaustermeier, Jo Ellen | Roura Fornells, Esther

### Main lines of research

- Epidemiology, etiology and prevention of cancers related to Human Papilloma Virus (HPV).  
Studies of prevalence and HPV type distribution in cancers of the vulva, penis, vagina, anus, oral cavity, oro-pharynx and larynx (HPVVAPO study).  
Evaluation of cervical cancer screening program in Catalonia.  
Phase III and phase IV studies of new generation vaccines.  
Assessment of the burden of HPV-related diseases worldwide (HPV Information Center).  
Cost-effectiveness models of cervical cancer prevention.  
Training and elearning programs on HPV associated cancer prevention (e-oncology).
- Epidemiology and etiology of lymphoid neoplasms.  
Epidemiology of chronic lymphocytic leukaemia (CLL) (MCC-Spain study).
  - Evaluation of environmental and occupational exposures.
  - Genetic susceptibility.
  - Sero-epidemiology of Epstein-Barr virus and poliovirus infections.
- Evaluation of the association between human and viral miRNA in plasma and CLL.

Study of endemic Burkitt lymphoma and Epstein-Barr virus.

International consortiums (InterLymph, Internacional Multiple Myeloma Consortium, Hodgkin Lymphoma Consortium).

- Comprehensive evaluation of risk factors and different histologic lymphoma subtypes within an international consortium (InterLymph NHL Subtype Project).
- Evaluation of hormonal and reproductive factors in multiple myeloma etiology (Internacional Multiple Myeloma Consortium).
- Gene and environment interaction studies.
- GWAS studies on follicular lymphoma, Hodgkin lymphoma and other subtypes.

## Most relevant scientific articles

- CERHAN J.R., BERNDT S.I., VIJAI J., GHESQUIERES H., MCKAY J., WANG S.S. et al. Genome-wide association study identifies multiple susceptibility loci for diffuse large B cell lymphoma. *Nature Genetics*. 2014; 46(11):1233-1238.
- NDIAYE C., MENA M., ALEMANY L., ARBYN M., CASTELLSAGUE X., LAPORTE L. et al. HPV DNA, E6/E7 mRNA, and p16INK4a detection in head and neck cancers: A systematic review and meta-analysis. *The Lancet Oncology*. 2014;15(12):1319-1331.
- HALEC G., ALEMANY L., LLOVERAS B., SCHMITT M., ALEJO M., BOSCH F.X. et al. Pathogenic role of the eight probably/possibly carcinogenic HPV types 26, 53, 66, 67, 68, 70, 73 and 82 in cervical cancer. *Journal of Pathology*. 2014;234(4):441-451.
- HOULIHAN C.F., DE SANJOSE S., BAISLEY K., CHANGALUCHA J., ROSS D.A., KAPIGA S. et al. Prevalence of human papillomavirus in adolescent girls before reported sexual debut. *Journal of Infectious Diseases*. 2014;210(6):837-845.
- CASTELLSAGUE X., PAWLITA M., ROURA E., MARGALL N., WATERBOER T., BOSCH F.X. et al. Prospective seroepidemiologic study on the role of Human Papillomavirus and other infections in cervical carcinogenesis: Evidence from the EPIC cohort. *International Journal of Cancer*. 2014;135(2):440-452.

## Highlights

Within our studies on the etiology of lymphomas, during 2014 we have completed some GWAS analysis of the international study of lymphomas (EPILYMPH-INTERLYMPH) and we have been actively participating in the publication of monograph on him JNCI epidemiology of various large groups of lymphomas.

We have completed the MCC Spain study on CLL and we are now in the position to start submitting some specific analysis on the potential causes of the disease.

In the field of human papillomavirus research we have completed a series of studies in Tanzania on the natural history of the HPV infection in girls / young women and we have identified an extremely high prevalence of the infection at around age 20.

Further, this year we have finalized and published the analysis of the EPIC prospective study on HPV seroresponse identifying the high level of antibodies are present years before the clinical development of cervical-uterine cancer.

During this period we have published the Guidelines for the Prevention of Cervical Cancer coordinated by seven scientific societies in which the group has participated in a relevant way. These guidelines are the basis for the remodeling of the population protocols performance.

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## Group 30

Programme: P1. Epidemiology and prevention of chronic diseases



**Lead Researcher:** Schröder, Helmut

### Group Members

**STAFF MEMBERS:** Cabañero Marimón, Marta | Subirana Cachinero, Isaac

**ASSOCIATED MEMBERS:** Baena Díez, José Miguel | Funtikova, Anna | Marti Soler, Helena | Molina Ferragut, Luis | Vila Domenech, Juan Salvador

**COLLABORATORS:** Gómez Pires, Esmeralda

### Main lines of research

- Impact of diet on cardiometabolic health.  
Diet plays an important role in the prevention of chronic diseases. We have determined the association between diet (foods/beverages/nutrients/dietary patterns) and cardiovascular risk factors, such as dislipemia, lipid oxidation, and obesity in children and adults.
- Development and validation of short assessments tools.  
An urgent need in dietary and physical activity assessment is the development of short tools that provide valid assessments of dietary quality for use in time-limited settings. Therefore, we developed and validated 3 short screeners for dietary quality assessment in adults. Currently we are validating a short physical activity screener in 150 boys and girls aged 6 to 10 year.
- Prevalence and impact of obesity on cardiometabolic health.  
The obesity epidemic is one of the biggest current challenges for health policy. Surrogate measures of general and abdominal adiposity have been related to cardiometabolic risk in children, adolescents, and adults. We have analyzed the prevalence and trends in general and abdominal obesity in adults and children. Furthermore, we have determined the impact of adiposity on cardiovascular risk factors. Currently we are analyzing the impact of obesity on cardiovascular events in 50.000 Spaniards.
- Effect of a community based intervention program to prevent childhood obesity.  
The rapid growth of childhood obesity is a serious problem for public health worldwide. Spain has one of the highest prevalence rates of childhood overweight and obesity among OECD countries. A recent study reported 25,3% of Spanish children aged 8-13 were overweight and 9.6% were obese [6]. Childhood obesity has a

multifactorial aetiology. Unhealthy lifestyle such as inadequate diet and low physical activity is strongly related with weight gain.

Community Based Interventions programs (CBI) are a holistic approach to prevent childhood obesity. CBI act from all key sectors that influence childhood development (family, school, health professionals, sports, media, stores and food markets). However, there is limited information on the efficacy of CBI in Europe. Currently we are performing a parallel intervention study including 2249 children aged 8 to 10 years from 4 Spanish towns to determine the efficacy of a CBI on the prevention of childhood obesity and modification of lifestyle.

## Most relevant scientific articles

- SCHRODER H., SALAS-SALVADÓ J., MARTÍNEZ-GONZÁLEZ M.A., FITO M., CORELLA D., ESTRUCH R. et al. Baseline adherence to the Mediterranean diet and major cardiovascular events: Prevención con dieta mediterránea trial. *JAMA Internal Medicine*. 2014;174(10):1690-1692.
- SCHRODER H., RIBAS L., KOEBNICK C., FUNTIKOVA A., GÓMEZ S.F., FITO M. et al. Prevalence of abdominal obesity in Spanish children and adolescents. Do we need waist circumference measurements in pediatric practice?. *PLoS ONE*. 2014;9(1).
- SCHRODER H., MENDEZ M.A., RIBAS L., FUNTIKOVA A.N., GÓMEZ S.F., FITO M. et al. Caloric beverage drinking patterns are differentially associated with diet quality and adiposity among Spanish girls and boys. *European Journal of Pediatrics*. 2014;173(9):1169-1177.
- FUNTIKOVA A.N., BENITEZ-ARCINIEGA A.A., GÓMEZ S.F., FITO M., ELOSUA R., SCHRODER H. Mediterranean diet impact on changes in abdominal fat and 10-year incidence of abdominal obesity in a Spanish population. *British Journal of Nutrition*. 2014;111(8):1481-1487.
- GRAU M., SUBIRANA I., VILA J., ELOSUA R., RAMOS R., SALA J. et al. Validation of a population coronary disease predictive system: The CASSANDRA model. *Journal of Epidemiology and Community Health*. 2014.

## Highlights

Our group published results of the Enkid study which underline the importance of including, in addition to the weight and height, waist measurement in Pediatric clinical practice. In this representative study of Spanish children and adolescents we found apart from a high prevalence of abdominal obesity (21% and 14.3% in children and adolescents, respectively), a substantial proportion of normal- and overweight children and adolescents with abdominal obesity (7.5% and 49.2%, respectively). This news has been broadcast by 69 media including TVE1, TV3, TV Catalonia and Tele 5.

We have finished data collection of the POIBC study. This study aimed to determine the effect of a community based intervention program to prevent overweight and obesity in 2240 children aged 8 to 10 years. Within this study we have developed software that facilitates data collection of childhood obesity determinants such as quality of sleep, physical activity, and dietary habits. By using this software, the children's motivation to respond to the questions was increased, and overall evaluation time substantially reduced. The most innovative part of this software is a food picture portion size supported 24 hour dietary recall.

Within our research line of development and validation of short dietary assessment instruments we determined the ability of the short PREDIMED Mediterranean diet adherence questionnaire to predict cardiovascular events. These results were published in *JAMA Internal Medicine*. Furthermore we participated in the development of the new guidelines "Cholesterol and Coronary risk: Clinical Practice Guide". Additionally the expert committee included our questionnaire "the short diet quality screener" in this new guideline which will be published shortly on the website of the Catalan Institute of Health and subsequently in the Clinical Practice Guidelines.

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## Group 40

Programme: P5. Epidemiology and Prevention of Environment and Occupational Diseases



**Lead Researcher:** Sunyer Deu, Jordi

### Group Members

**STAFF MEMBERS:** Cirugeda Bolós, Lourdes | Delgado Llobet, Ana | García Esteban, Raquel | Gros Monné, Susana | Murcia Hinarejos, Mario Jesús

**ASSOCIATED MEMBERS:** Agis Cherta, David | Aguilera Jiménez, Immaculada | Anto Boque, Josep María | Arbillaga Etxarri, Ane | Basagaña Flores, Xavier | Benet Mora, Marta | Borrás Santos, Alicia | Bouso Castillo, Laura | Bustamante Pineda, Mariona | Casas Ruiz, Lidia | Damaskini, Valvi | Fochs Casas, Silvia | Foraster Pulido, María | García Aymerich, Judith | Gascón Merlos, Mireia | Gimeno Santos, Elena | Guxens Junyent, Mónica | Julvez Calvo, Jordi | López Vicente, Mónica | Persavento, María Cecilia | Pey Rosell, Nuria | Pinart Gilberga, Mariona | Rivas Lara, Ioar | Serra Pons, Ignasi | Torrent Quetglas, Matías | Vafeiadi Marina, Vafeiadi Marina | Vilahur Chiaraviglio, Nadia | Vrijheid, Martine

### Main lines of research

Pre and post-natal life are critical periods in the origins of chronic diseases, such as obesity, the metabolic syndrome, cognitive development, and the origins of asthma and allergy.

The major scientific objective is: To perform epidemiological studies on the early life origins of the neurodevelopment, the obesity and metabolic syndrome and allergy and asthma.

Scientific objectives:

- To discover the effects of early life environmental factors (i.e., traffic, indoor air pollution, fish intake) on brain function, lung function and asthma/allergy.
- To investigate the role of environmental agents (i.e., DDE, BPA, PFCs, endocrine disruptors) on obesity and metabolic syndrome, and on asthma and the immune system.
- To identify early epigenetic markers of neurodevelopment, obesity and growth, and asthma, as well as the gene-environmental interactions related to asthma and COPD progression.
- To develop methods on omics in child health studies and methods on the statistical analysis of these data.
- To extend the program to a global health agenda following collaboration on risk balance of indoor residual spraying and indoor biofuel mass combustion.
- To assess the effects of physical activity and diet in asthma/allergy, obesity and COPD. To assess the phenotypic heterogeneity and the comorbidities of respiratory and allergic diseases and COPD.

## Most relevant scientific articles

- GIMENO-SANTOS E., FREI A., STEURER-STEY C., DE BATLLE J., RABINOVICH R.A., RASTE Y. et al. Determinants and outcomes of physical activity in patients with COPD: A systematic review. *Thorax*. 2014;69(8):731-739.
- DADVAND P., NIEUWENHUIJSEN M.J., AGUSTÍ A., DE BATLLE J., BENET M., BEELEN R. et al. Air pollution and biomarkers of systemic inflammation and tissue repair in COPD patients. *European Respiratory Journal*. 2014;44(3):603-613.
- SCHEMBARI A., NIEUWENHUIJSEN M.J., SALVADOR J., DE NAZELLE A., CIRACH M., DADVAND P. et al. Traffic-related air pollution and congenital anomalies in Barcelona. *Environmental Health Perspectives*. 2014;122(3):317-323.
- GUXENS M., GARCÍA-ESTEBAN R., GIORGIS-ALLEMAND L., FORNS J., BADALONI C., BALLESTER F. et al. Air pollution during pregnancy and childhood cognitive and psychomotor development: Six european birth cohorts. *Epidemiology*. 2014;25(5):636-647.
- PINART M., BENET M., ANNESI-MAESANO I., VON BERG A., BERDEL D., CARLSEN K.C.L. et al. Comorbidity of eczema, rhinitis, and asthma in IgE-sensitised and non-IgE-sensitised children in MeDALL: A population-based cohort study. *The Lancet Respiratory Medicine*. 2014;2(2):131-140.

## Highlights

Pre and post-natal life are critical periods in the origins of chronic diseases, such as obesity, the metabolic syndrome, cognitive development, and the origins of asthma and allergy. However, our current understanding of how chronic diseases develop during fetal life and childhood is still very limited. Still few isolated risk factors have been assessed and its causal mechanisms are poorly understood. We propose that: 1. The epidemiological studies by applying birth cohorts from the general population is a successful strategy for unraveling the complex multicausal origins of chronic disease. 2. Potentially harmful environmental and behavioral factors should be assessed at a much wider scale through a better integration of the omics. This has been significantly consolidated with the leadership (PI M Vrijheid) of the Helix Project to develop the exposome in birth cohorts and the leadership of J Garcia-Aymerich developing new methods for unsupervised statistics. 3. The integration of imaging together with the 'exposome' in epidemiological studies opens new opportunities for understanding the underlying mechanisms. An area of particular interest in our group is the understanding of which and how environmental risks play a detrimental role on neurodevelopment during the fetal and first years of life, an effort promoted by the ERC-Adv Breathe project (PI J Sunyer). 4. The alliance with CRESIB under the ISGlobal opens opportunities to enlarge studies to a global context. 5. The environmental determinants of respiratory diseases are leading causes of DALYs worldwide: particulate matter, physical inactivity and low physical activity occupational particulate matter, gasses and fumes, ozone pollution and occupational asthmogens. Increasing research shows that asthma and COPD are complex phenotypes whose definitions and classification need to be reconsidered. We have consolidated as scientific leaders in these fields, by leading and participating in large national and international projects.

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## Group 53

Programme: P5. Epidemiology and Prevention of Environment and Occupational Diseases



**Lead Researcher:** Tardón García, Adonina

### Group Members

**STAFF MEMBERS:** Fernández Somoano, Ana

**ASSOCIATED MEMBERS:** Arias Díaz, María Cristina | Ezama Coto, Esteban | Riaño Galán, Isolina | Rivas del Fresno, Manuel | Souto García, Ana

### Main lines of research

- **CAPUA STUDY (LUNG CANCER in ASTURIAS).** It is the largest epidemiological study in Spain in lung cancer research with 880 incident cases and 844 controls with demographic data, history of cancer and potential risk factors, and 24 SNPs genotyped.  
In 2010 is integrated into the International Lung Cancer Consortium of the International Agency for Research on Cancer. It has also been incorporated into the SYNERGY project, which brings together several European case-control studies to analyze the effects of exposure to occupational carcinogens in the development of lung cancer.
- **SPANISH BLADDER CANCER STUDY.** In Asturias it was initiated in 1997 as a collaborative project of the IMIM, DCEG INC in USA, and the University of Oviedo for assessing the risk of bladder cancer in relation to environmental and occupational exposures, lifestyle, genetic susceptibility and its interaction with environmental exposure. It is also evaluating molecular genetic and clinical factors associated with survival.
- **INMA PROJECT - Childhood and Environment.** It was created with the aim of studying the role of the most important environmental pollutants in air, water and diet during pregnancy and early

life, and its effects on infant growth and development. Asturias INMA Cohort in the III health area, begins in 2004 and follows 485 pregnant women from the 12th week of pregnancy and their children up to 7-8 years.

- MCC SPAIN. Poblational multicase-control study that was initiated in 2008 with funding from the Transversal Action in Cancer, to investigate the influence of environmental factors and their interaction with genetic factors in common or with peculiar epidemiologic characteristics tumors in our country (colorectal, breast, stomach, prostate and chronic lymphatic leukemia).

## Most relevant scientific articles

- VIZCAÍNO E., GRIMALT J.O., FERNÁNDEZ-SOMOANO A., TARDÓN A. Transport of persistent organic pollutants across the human placenta. *Environment International*. 2014;65:107-115.
- VIZCAÍNO E., GRIMALT J.O., GLOMSTAD B., FERNÁNDEZ-SOMOANO A., TARDÓN A. Gestational weight gain and exposure of newborns to persistent organic pollutants. *Environmental Health Perspectives*. 2014;122(8):873-879.
- FERNÁNDEZ-SOMOANO A., TARDÓN A. Socioeconomic status and exposure to outdoor NO<sub>2</sub> and benzene in the Asturias INMA birth cohort, Spain. *Journal of Epidemiology and Community Health*. 2014;68(1):29-36.
- FU Y.-P., KOHAAR I., MOORE L.E., LENZ P., FIGUEROA J.D., TANG W. et al. The 19q12 bladder cancer GWAS signal: Association with cyclin E function and aggressive disease. *Cancer Research*. 2014;74(20):5808-5818.
- MACINTYRE E.A., GEHRING U., MOLTER A., FUERTES E., KLUMPER C., KRAMER U. et al. Air pollution and respiratory infections during early childhood: An analysis of 10 European birth cohorts within the ESCAPE project. *Environmental Health Perspectives*. 2014;122(1):107-113.

## Highlights

In 2014 the Group publishes the results of the concentration of persistent organic pollutants (POPs) in pregnant women of the INMA Asturias cohort results which demonstrate for the first time transfer of these compounds of the mother to the child through the placental barrier in relation to maternal weight gain in the *Environment International* and *Environmental Health Perspectives* journal. These results have had high impact media and subject to regional publication in print, radio and television.

Group publishes the Magazine *Journal of Epidemiology and Community Health*, the association between exposure to air pollution by NO<sub>2</sub> and benzene with the socio-economic status of families. This is signed a collaboration agreement in the group with the Plan of Control of Quality of air of the Government of the Principality of Asturias., which will be the hiring of two people over the next five years.

In May of the year 2014, we were invited for our work in the study of CAPUA, to performing the editorial [Genetic polymorphisms and lung cancer risk], for *Medicina Clinica* magazine.

The SYNERGY project, which designed the matrix SYNERGY, to Reanalyze the occupational exposures in lung cancer. The use of the SYNERGY matrix, has yielded results of definitive association between occupational exposure to aromatic hydrocarbons policíclicos and lung cancer. The risk of lung cancer in workers in the welding of metal and construction consolidated also consistently.

The group participates in the Guide Clinic recommendations about nutrition with iodine in the preconception stage, pregnancy and lactation. Technical report.

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## Group 42

Programme: P7. Clinical Epidemiology



**Lead Researcher:** Zamora Romero, Javier

### Group Members

**STAFF MEMBERS:** Royuela Vicente, Ana

**ASSOCIATED MEMBERS:** Muriel García, Alfonso | Plana Farras, María Nieves

### Main lines of research

- Evaluation of clinical practice and health technologies, covering a wide range of research objectives, all oriented to the analysis of clinical practice, health outcomes and health technology assessment, with special emphasis on the diagnosis.
- Multivariate models and research on prognosis, which is dedicated to the study of multivariate regression models and its extension to particular situations as longitudinal studies or cluster studies in which the units of analysis have several degrees of aggregation.

## Most relevant scientific articles

- MURIEL A., JIMÉNEZ D., AUJESKY D., BERTOLETTI L., DECOSUS H., LAPORTE S. et al. Survival effects of inferior vena cava filter in patients with acute symptomatic venous thromboembolism and a significant bleeding risk. *Journal of the American College of Cardiology*. 2014;63(16):1675-1683.
- ROYUELA A., KOVACS F.M., CAMPILLO C., CASAMITJANA M., MURIEL A., ABRAIRA V. Predicting outcomes of neuroreflexotherapy in patients with subacute or chronic neck or low back pain. *Spine Journal*. 2014;14(8):1588-1600.
- PATHAK N., DODDS J., ZAMORA J., KHAN K. Accuracy of urinary human papillomavirus testing for presence of cervical HPV: Systematic review and meta-analysis. *BMJ (Online)*. 2014;349.
- JIMÉNEZ D., MURIEL A., MONREAL M., YUSEN R.D. Reply: Immortal time bias and the use of IVC filters. *Journal of the American College of Cardiology*. 2014;64(9):955-956.
- SCHMIDT-HANSEN M., BALDWIN D.R., HASLER E., ZAMORA J., ABRAIRA V., ROQUE I FIGULS M. PET-CT for assessing mediastinal lymph node involvement in patients with suspected resectable non-small cell lung cancer. *The Cochrane database of systematic reviews*. 2014;11.

## Highlights

In January 2014, it was presented the Cochrane Collaborating Centre in Madrid (CCC-CAM). The Clinical Biostatistics Unit of the Hospital Ramón y Cajal hosts this Centre by means of a contract agreement between the Institute Ramón y Cajal for Health Research (IRYCIS) and the Rey Juan Carlos University in Madrid. The CCC-CAM pursued as a primary goal to promote, support and provide methodological advice to people who wish to participate in the activities of the Cochrane Collaboration in Madrid Region. As a result of the activities of the Collaborating Centre in Madrid during its first year of operation, We have promoted a number of Review Titles, Protocols and some on-going Reviews have been finalized. This is an important achievement for our group and surely will boost our capacity to perform important transfer activities bringing scientific medical evidence into Clinical Practice.

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