



*isc*  
report  
2014

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## I N T R O D U C T I O N



The Institute of Health Carlos III/ ISCIII (in Spanish) comes under the Ministry of Economy and Competitiveness / MINECO (in Spanish) (Royal Decree 345/2012, of 10 February), through the National Secretariat for Research, Development and Innovation, and reports to the Ministry of Health, Social Services and Equality/MSSSI (in Spanish) (Royal Decree 200/2012 of 23 January). Reporting to both ministries is coordinated through the MINECO/ISCIII-MSSSI Mixed Committee (approved in a session of the Council of Ministers held on 23 November, 2012) to ensure collaboration in various fields of expertise.

The ISCIII is the main public entity for research in our country in the field of Health Sciences and also the Scientific and Technical Support body for the National Health System (NHS). In this sense, one of the functions of ISCIII is to promote health and welfare of the Spanish Society, specifically contributing to the structuring of research in the National Health System (NHS) (as provided in Article 48 of the Law 16/2003 May 28, on NHS Cohesion and Quality), primarily through the accreditation of health research institutes and the establishment of research networks. Similarly, among its functions it is to enhance coordination between health research and basic and applied research, as well as to enhance epidemiological and public health research.

The main activity of ISCIII aimed at promoting biomedical research in Spain is achieved through the Strategic Action in Health's (AES in Spanish), in the framework of the State Program of Scientific, Technical Research and Innovation oriented to the challenges of society. Actions convened in 2014 have not only continued those of previous years, but have also included developments aimed at promoting research at the Health Research Institutes. The Action Plan for the promotion of clinical and translational research, the contracts for the management of health research and technological development projects in health are important examples of this. Also, the integrated excellence projects in the Biomedical Research Networking Centres / CIBER (in Spanish) with the goal of establishing synergies between researchers from different themes to address major health problems and funding for independent clinical research projects in priority areas strategically by the European infrastructure ECRIN.

Throughout this year 2014, our institute has conducted the incorporation of health innovation, for the dynamic element of translational research, addressing the programs of

innovation coordination of the different centres and institutions belonging to ISCIII and collaboration with regional and local authorities in the field of innovation in health and life sciences, to improve the quality of care provided by the NHS.

Among the scientific and technical activities, I would like to highlight the role carried out by the ISCIII in the outbreak of the Ebola virus disease, especially since August 2014, when the WHO stated the Ebola outbreak in West Africa constituted a public health emergency of international concern. The reference laboratory at a national level, located in the ISCIII, processed samples of suspected cases declared in Spain as well as a 24/7-alert system, providing a quick response in the diagnosis of this serious public health problem in our country.

At the same time, the National School of Health in collaboration with the Brigade of Military Health, Ministry of Defense and the Coordinator Alert and Emergency Centre of the Ministry of Health organized a series of workshops and training courses for the Ebola virus disease, in which NHS 1.200 professionals have been formed in disease management and personal protection equipment.

In 2014 the Joint Institute for Research on "National School of Health" (IMIENS) started, launched jointly by the ISCIII and the University of Distance Education (UNED) to generate and disseminate knowledge in Biomedicine and Health, through the joint implementation of academic, research, advice and consultancy activities.

The ISCIII with the Ministry of Health, Social Services and Equality initiated in 2014, the leadership of the first Joint Action CHRODIS-JA Chronic Disease, launched by the European Commission, to identify good practices in the management of chronicity in countries of its scope, with Cardiovascular Disease, Stroke and Diabetes type 2 major chronic diseases subject matter of this action.

Finally, these and many other projects and action lines have been made possible, thanks to the work and dedication of all the professionals of this institution, and to the support of administrative and health authorities.

To all of them, my sincere thanks

**Jesús Fernández Crespo**  
Director





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## Organisation

## 1.1 Governing Bodies

The Institute of Health Carlos III is a Public Research Organisation (OPI in Spanish) legally autonomous, under the Ministry of Economy and Competitiveness (MINECO) through the Secretary of State for Research, Development and Innovation, which aims to develop and provide scientific-technical services of highest quality to the National Healthcare System (NHS) and to society.

In accordance with the Fifth Additional Provision of Royal Decree 345/2012, dated February 10, which developed the basic organic structure of the Ministry of Economy and Competitiveness, the ISCIII has a dual functional dependence on the Ministries of Health, Social Services and Equality, and Economy and

Competitiveness, through the Secretary of State for Research, Development and Innovation in the scope of their respective competencies.

Functionally depends on the Ministry of Health, Social Services and Equality (MSSSI) for conducting activities that develop health care and planning, in cooperation with the Ministry of Economy and Competitiveness, and with other organizations together with the National Health System (SNS in Spanish).

The ISCIII is associated with SNS Research Centres to contribute to the structuring of research, accreditation of Institutes and Cooperative Research Networks to focus on intended objectives and promote excellence, facilitating its own investigative resources.

## 1.2 Centres, Units, Schools and Foundations

### Centres and Units

The ISCIII Centres and Units of national and international reference, develop research activities in the fields of biomedicine, environmental and public health. In each area of research programmes are designed to investigate diseases from a diagnostic, therapeutic and preventive perspective in collaboration with multidisciplinary researchers and technologists programs. Their thematic priorities include the diseases research mainly in the following: infectious, chronic, rare, neurodegenerative, tropical, professional and healthcare and acquire disease, telemedicine, epidemiology, environmental and public health and healthcare.

The ISCIII also provides advanced scientific and technical services of national reference, with full incorporation of new technologies to improve health and social welfare. These are oriented to: reference laboratories, monitoring and alerts, scientific-technical training health education, scientific information and documentation, advice concerning transfer of the research results, and the evaluation of technologies and procedures applicable to clinical practice.

- National Microbiology Centre (CNM in Spanish)
- National Epidemiology Centre (CNE in Spanish)
- National Centre for Environmental Health (CNSA in Spanish)
- National Center for Tropical Medicine (CNMT in Spanish)
- Research Institute for Rare Diseases (IIER in Spanish)
- Research Unit for Congenital Anomalies (CIAC in Spanish)
- Telemedicine Research Unit
- Nursing and Healthcare Research Unit (Investén-ISCIII in Spanish)
- Functional Unit for Research in Chronic Diseases (UFIEC in Spanish)
- Biological Alert Laboratories Network (RE-LAB in Spanish)
- Health Technology Assessment Agency (AETS in Spanish)
- National Library of Health Sciences (BNCS in Spanish)
- UCM-ISCIII Joint Centre for Human Evolution and Behaviour Research

### Schools

Through the National Public Health and Occupational Medicine, the ISCIII conducts training, development and specialization of staff, both medical and non-medical, in the fields of health administration and management, as well as the development of methodological disciplines, social and economic sciences applied to health. All of these are subject to the competencies of other public organisations.

### Foundations

In order to implement activities concerning the scientific research and technological development and innovation, as well as providing technical services related to the public interest and financial support, ISCIII includes the following foundations: National Cancer Research Centre (CNIO in Spanish), National Centre for Cardiovascular Research Carlos III, (CNIC in Spanish), and National Centre for Research on Neurodegenerative Diseases (CIEN in Spanish). These foundations are responsible for cancer research, cardiovascular diseases and neurological diseases

## 1.3 Human Resources

In recent years there has been a declining trend in the staffing of the ISCIII. As of 2014, the total number of personnel was 1.008. This includes 580 civil servants, 206 permanent personnel and 222 temporary personnel (209 of them assigned to projects) which correspond to 58 %, 20% and 22 %, respectively.

Staff distribution is as follow: 171 scientists, 349 technologists, 133 support personnel for research and 355 management personnel, corresponding to 17%, 35%, 27% and 30%, respectively.

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Organisation

### Human Resources Evolution (2010-2014)

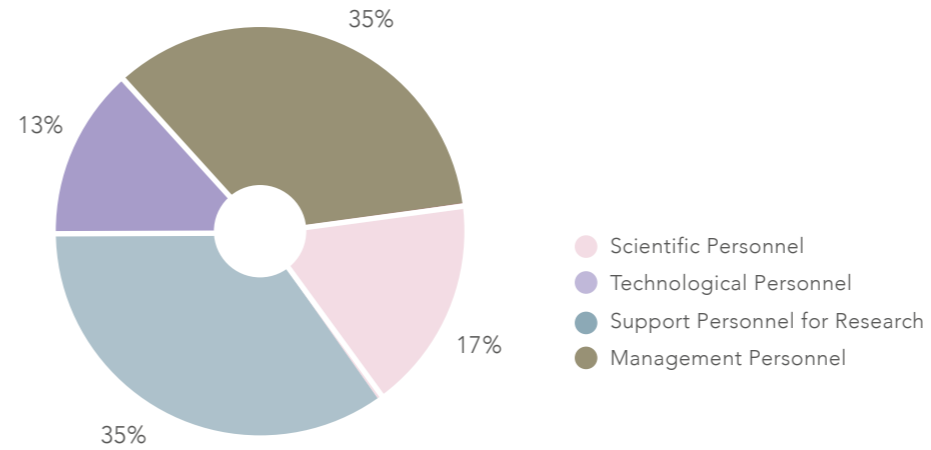
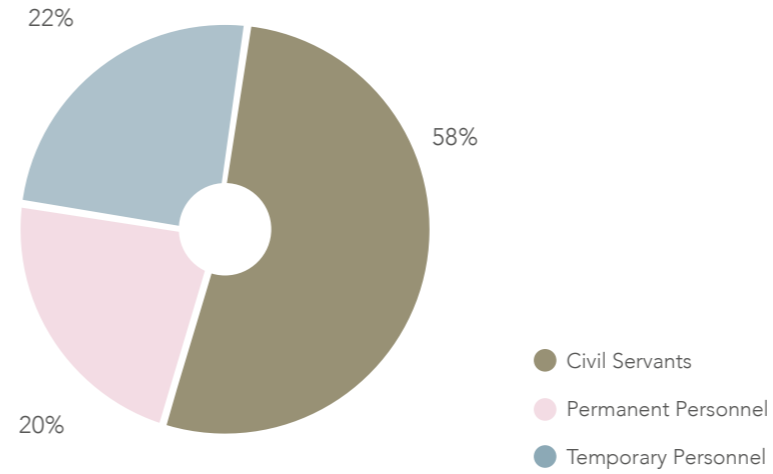
| Institute of Health Carlos III<br>Personnel Evolution 2010-2014 |              | 2010        |            |             | 2011        |            |             | 2012        |            |             | 2013        |            |             | 2014        |            |               | % Evolution<br>2010-2014 |
|---|--------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|---------------|--------------------------|
|   |              | F           | M          | Total       | F           | M          | Total       | F           | M          | Total       | F           | M          | Total       | F           | M          | Total         |                          |
| Civil Servants  | A1/G1        | 167         | 130        | 297         | 167         | 130        | 297         | 166         | 123        | 289         | 167         | 124        | 291         | 165         | 124        | 289           | - 2,69                   |
|   | A2/G2        | 82          | 27         | 109         | 79          | 24         | 103         | 76          | 24         | 100         | 71          | 23         | 94          | 71          | 21         | 92            | -15,60                   |
|   | C1/G3        | 109         | 26         | 135         | 105         | 25         | 130         | 97          | 26         | 123         | 93          | 25         | 118         | 91          | 23         | 114           | -15,56                   |
|   | C2/G4        | 89          | 23         | 112         | 81          | 21         | 102         | 76          | 23         | 99          | 71          | 20         | 91          | 63          | 19         | 82            | -26,79                   |
|   | E/G5         | 1           | 2          | 3           | 1           | 2          | 3           | 1           | 2          | 3           | 1           | 2          | 3           | 1           | 2          | 3             | 0,00                     |
|   | <b>Total</b> | <b>448</b>  | <b>208</b> | <b>656</b>  | <b>433</b>  | <b>202</b> | <b>635</b>  | <b>416</b>  | <b>198</b> | <b>614</b>  | <b>403</b>  | <b>194</b> | <b>597</b>  | <b>391</b>  | <b>189</b> | <b>580</b>    | <b>-11,59</b>            |
| Permanent<br>Personnel  | A1/G1        | 10          | 1          | 11          | 12          | 1          | 13          | 12          | 1          | 13          | 10          | 1          | 11          | 10          | 1          | 11            | 0,00                     |
|   | A2/G2        | 5           | 0          | 5           | 4           | 0          | 4           | 4           | 0          | 4           | 4           | 0          | 4           | 4           | 0          | 4             | -20,00                   |
|   | C1/G3        | 71          | 28         | 99          | 70          | 27         | 97          | 65          | 26         | 91          | 64          | 25         | 89          | 62          | 25         | 87            | -12,12                   |
|   | C2/G4        | 36          | 13         | 49          | 34          | 13         | 47          | 33          | 13         | 46          | 33          | 13         | 46          | 28          | 11         | 39            | -20,41                   |
|   | E/G5         | 52          | 19         | 71          | 53          | 19         | 72          | 50          | 18         | 68          | 50          | 17         | 67          | 47          | 18         | 65            | -8,45                    |
|   | <b>Total</b> | <b>174</b>  | <b>61</b>  | <b>235</b>  | <b>173</b>  | <b>60</b>  | <b>233</b>  | <b>164</b>  | <b>58</b>  | <b>222</b>  | <b>161</b>  | <b>56</b>  | <b>217</b>  | <b>151</b>  | <b>55</b>  | <b>206</b>    | <b>-12,34</b>            |
| Temporary<br>Personnel  | A1/G1        | 4           | 3          | 7           | 4           | 3          | 7           | 4           | 2          | 6           | 3           | 3          | 6           | 5           | 2          | 7             | 0,00                     |
|   | A2/G2        | 0           | 0          | 0           | 0           | 0          | 0           | 0           | 0          | 0           | 0           | 1          | 1           | 0           | 0          | 0             |                          |
|   | C1/G3        | 7           | 0          | 7           | 10          | 0          | 10          | 7           | 1          | 8           | 4           | 0          | 4           | 2           | 0          | 2             | -71,43                   |
|   | C2/G4        | 4           | 2          | 6           | 2           | 0          | 2           | 2           | 0          | 2           | 1           | 0          | 1           | 1           | 0          | 1             | -83,33                   |
|   | E/G5         | 1           | 3          | 4           | 2           | 2          | 4           | 4           | 2          | 6           | 4           | 2          | 6           | 1           | 2          | 3             | -25,00                   |
|   | <b>Total</b> | <b>16</b>   | <b>8</b>   | <b>24</b>   | <b>18</b>   | <b>5</b>   | <b>23</b>   | <b>17</b>   | <b>5</b>   | <b>22</b>   | <b>12</b>   | <b>6</b>   | <b>18</b>   | <b>9</b>    | <b>4</b>   | <b>13</b>     | <b>-45,83</b>            |
| Temporary<br>Personnel<br>assigned to<br>Projects               | A1/G1        | 126         | 48         | 174         | 120         | 47         | 167         | 126         | 38         | 164         | 110         | 38         | 148         | 102         | 36         | 138           | -20,69                   |
|   | A2/G2        | 14          | 2          | 16          | 15          | 2          | 17          | 13          | 2          | 15          | 8           | 3          | 11          | 6           | 3          | 9             | -43,75                   |
|   | C1/G3        | 73          | 14         | 87          | 75          | 17         | 92          | 70          | 6          | 76          | 55          | 7          | 62          | 56          | 6          | 62            | -28,74                   |
|   | C2/G4        | 0           | 0          | 0           | 0           | 0          | 0           | 0           | 0          | 0           | 0           | 0          | 0           | 0           | 0          | 0             |                          |
|   | E/G5         | 0           | 0          | 0           | 0           | 0          | 0           | 0           | 0          | 0           | 0           | 0          | 0           | 0           | 0          | 0             |                          |
|   | <b>Total</b> | <b>213</b>  | <b>64</b>  | <b>277</b>  | <b>210</b>  | <b>66</b>  | <b>276</b>  | <b>209</b>  | <b>46</b>  | <b>255</b>  | <b>173</b>  | <b>48</b>  | <b>221</b>  | <b>164</b>  | <b>45</b>  | <b>209</b>    | <b>-24,55</b>            |
| TOTAL   | A1/G1        | 307         | 182        | 489         | 303         | 181        | 484         | 308         | 164        | 472         | 290         | 166        | 456         | 282         | 163        | 445           | -9,00                    |
|   | A2/G2        | 101         | 29         | 130         | 98          | 26         | 124         | 93          | 26         | 119         | 83          | 27         | 110         | 81          | 24         | 105           | -19,23                   |
|   | C1/G3        | 260         | 68         | 328         | 260         | 69         | 329         | 239         | 59         | 298         | 216         | 57         | 273         | 211         | 54         | 265           | -19,21                   |
|   | C2/G4        | 129         | 38         | 167         | 117         | 34         | 151         | 111         | 36         | 147         | 105         | 33         | 138         | 92          | 30         | 122           | -26,95                   |
|   | E/G5         | 54          | 24         | 78          | 56          | 23         | 79          | 55          | 22         | 77          | 55          | 21         | 76          | 49          | 22         | 71            | -8,97                    |
|   | <b>Total</b> | <b>851</b>  | <b>341</b> | <b>1192</b> | <b>834</b>  | <b>333</b> | <b>1167</b> | <b>806</b>  | <b>307</b> | <b>1113</b> | <b>749</b>  | <b>304</b> | <b>1053</b> | <b>715</b>  | <b>293</b> | <b>1008</b>   |                          |
| <b>Total</b>  |              | <b>1192</b> |            |             | <b>1167</b> |            |             | <b>1113</b> |            |             | <b>1053</b> |            |             | <b>1008</b> |            | <b>-15,44</b> |                          |
|   |              | <b>2010</b> |            |             | <b>2011</b> |            |             | <b>2012</b> |            |             | <b>2013</b> |            |             | <b>2014</b> |            |               |                          |



## Organisation

| Staff Type          | Total | Gender | Partial |
|---------------------|-------|--------|---------|
| Civil Servants      | 580   | ♀      | 391     |
|                     |       | ♂      | 189     |
| Permanent Personnel | 206   | ♀      | 151     |
|                     |       | ♂      | 55      |
| Temporary Personnel | 222   | ♀      | 173     |
|                     |       | ♂      | 49      |
|                     | 1.008 |        | 1.008   |

| Staff Type                     | Total | Gender | Partial |
|--------------------------------|-------|--------|---------|
| Scientific Personnel           | 171   | ♀      | 100     |
|                                |       | ♂      | 71      |
| Technological Personnel        | 349   | ♀      | 275     |
|                                |       | ♂      | 74      |
| Support Personnel for Research | 133   | ♀      | 95      |
|                                |       | ♂      | 38      |
| Management Personnel           | 355   | ♀      | 245     |
|                                |       | ♂      | 110     |
|                                | 1.008 |        | 1.008   |



# 1 Organisation

## 1.4 Economic Resources

### 1.4.1 Budget approved for 2014

The budget approved for the Institute of Health Carlos III for 2014 is 286,762.84 thousand euros; this is higher than the previous year budget of 6,796.92 euros, which represents a 2.43% increase.

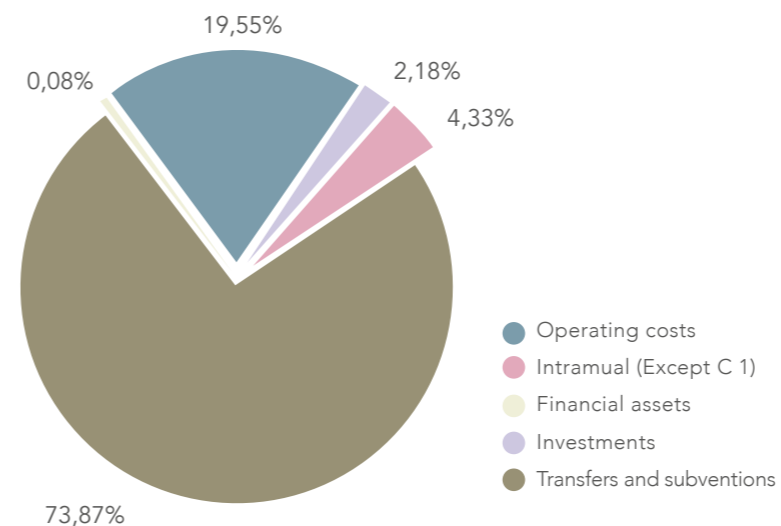
### Expenditure

| Chapter                                     | 2013              | 2014              | Difference      | %           |
|---|-------------------|-------------------|-----------------|-------------|
| 1 Personnel costs                           | 36.455,60         | 36.455,60         | -               | -           |
| 2 Current expenditure on goods and services | 18.249,17         | 19.601,07         | 1.351,90        | 7,41        |
| 4 Current transfers                         | 102.174,64        | 96.062,96         | -6.111,68       | -5,98       |
| 6 Real investments                          | 12.310,32         | 17.755,34         | 5.445,02        | 44,23       |
| 7 Capital transfers                         | 110.550,19        | 116.661,87        | 6.111,68        | 5,53        |
| 8 Financial assets                          | 226,00            | 226,00            | -               | -           |
| <b>TOTAL</b>                                | <b>279.965,92</b> | <b>286.762,84</b> | <b>6.796,92</b> | <b>2,43</b> |

The increase in budget is due to the removal of commercial operations in 2014, as a result of an effort to comply with the amendment introduced by the Fourteenth final disposition of the State General Budgets Law for 2013.

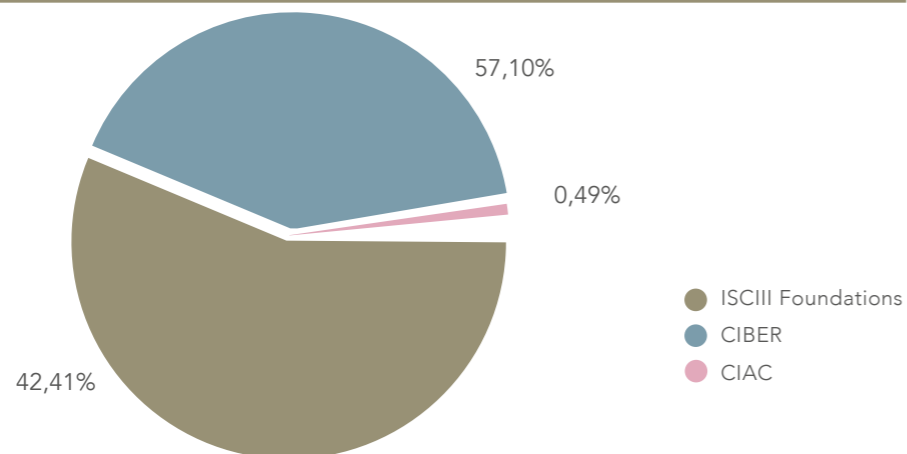
Distribution and justification by chapters is as follows:

2014 Budget Expenditure Distribution

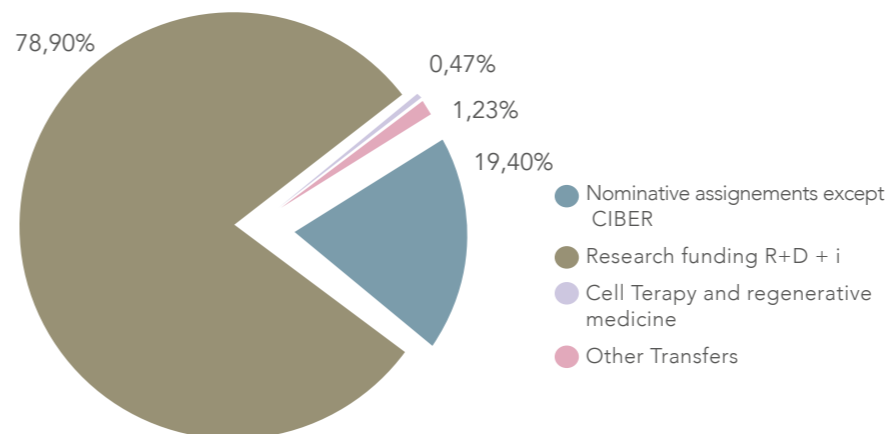


## Organisation

**Budget 2014  
Expenses  
Registered Assignments Distribution**



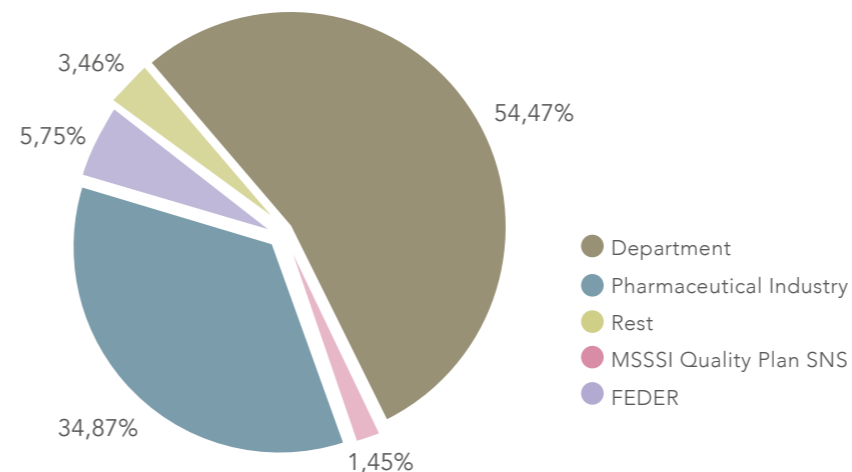
**Budget 2014  
Expenses  
Transfers and Subventions Distribution**



**Income**

| Source  | 2013              | 2014              | Difference      | %           |
|---|-------------------|-------------------|-----------------|-------------|
| Fees, public prices and other income                                | 1.500,00          | 2.902,92          | 1.402,92        | 93,53       |
| Ministry of Economics and Competitiveness                           | 138.187,49        | 156.187,49        | 18.000,00       | 13,03       |
| Ministry of Health, Social Services e Equality. Quality Plan of SNS | 4.149,51          | 4.149,51          | -               | -           |
| Pharmaceutical Industry   | 110.000,00        | 100.000,00        | -10.000,00      | -9,09       |
| FEDER   | 16.500,00         | 16.500,00         | -               | -           |
| Research subventions  | 0,00              | 6.796,92          | 6.796,92        |             |
| Trading Operations Outcome  | 1.310,00          | -                 | -1.310,00       | -100,00     |
| Remaining Cash  | 8.067,72          | -                 | -8.067,72       | -100,00     |
| National Research Institute and Agricultural and Food Technology    | 25,20             | -                 | -25,20          | -           |
| Chapter 8   | 226,00            | 226,00            | -               | -           |
| <b>TOTAL</b>  | <b>279.965,92</b> | <b>286.762,84</b> | <b>6.796,92</b> | <b>2,43</b> |

**Butget 2014  
Income  
Funding Distribution**

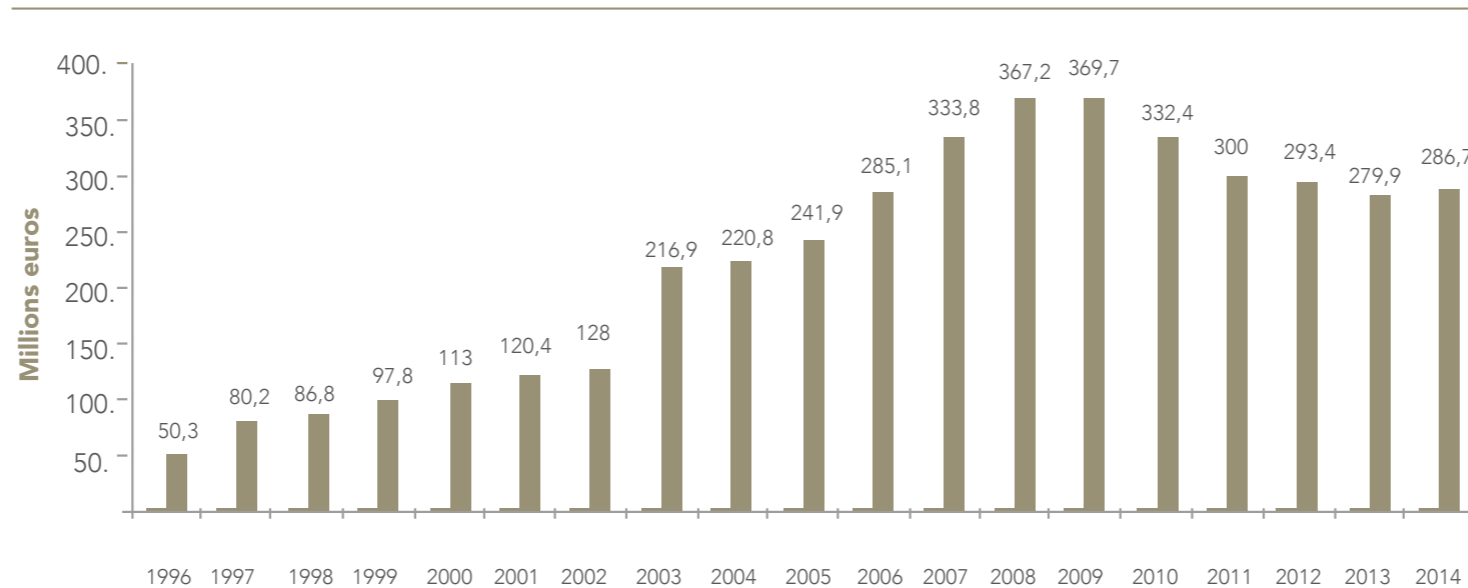


**Organisation**

The proposed credits in the Financial Statements are financed by transfers from Department in a 54.47% and 34.87% with revenues from the execution of the provisions of the Sixth Additional Disposition of Law 29/2006, dated July 26th, referring to grants and rational use of medicines and health products. In 2013, the numbers were 49.36% and 39.29%, respectively.

Finally, the evolution of the approved budget for this organisation, in the period 1996-2014, is shown below.

**Institute of Health Carlos III  
Approved Budget Evolution 1996-2014**



## Organisation

## 1.4.2 Liquidation of approved budget for 2014

### Expenditure

| Chapter                                     | Initial Credit        | Modifications       | Definitive Credit     | Net Recognized Liabilities (ORN) | %ORN / CD    | Remaining Credit     | %/ CD       |
|---|-----------------------|---------------------|-----------------------|----------------------------------|--------------|----------------------|-------------|
| 1 Personnel costs                           | 36.455.600,00         | 61.000,00           | 36.516.600,00         | 34.506.423,54                    | 94,50        | 2.010.176,46         | 5,50        |
| 2 Current expenditure on goods and services | 19.601.070,00         | 106.180,03          | 19.707.250,03         | 14.132.484,36                    | 71,71        | 5.574.765,67         | 28,29       |
| 4 Current transfers                         | 96.062.970,00         | 3.242.261,00        | 99.305.231,00         | 95.579.132,66                    | 96,25        | 3.726.098,34         | 3,75        |
| 6 Real investments                          | 17.755.340,00         | -399.246,00         | 17.356.094,00         | 11.171.790,42                    | 64,37        | 6.184.303,58         | 35,63       |
| 7 Capital transfers                         | 116.661.860,00        | 4.899.246,00        | 121.561.106,00        | 116.475.301,66                   | 95,82        | 5.085.804,34         | 4,18        |
| 8 Financial assets                          | 226.000,00            |                     | 226.000,00            | 111.969,26                       | 49,54        | 114.030,74           | 50,46       |
| <b>Total</b>                                | <b>286.762.840,00</b> | <b>7.909.441,03</b> | <b>294.672.281,03</b> | <b>271.977.101,90</b>            | <b>92,30</b> | <b>22.695.179,13</b> | <b>7,70</b> |

### Income

| Source   | Initial Estimation    | Modifications       | Initial Estimation    | Net Recognized Rights | %             | %     |
|--|-----------------------|---------------------|-----------------------|-----------------------|---------------|-------|
| Transfer from Department   | 156.187.490,00        |                     | 156.187.490,00        | 156.187.489,96        | 100,00        | 44,11 |
| Transfer from Department. For needs resulting from Ebola outbreak in Spain.  |                       | 870.000,00          | 870.000,00            | 870.000,00            |               | 0,25  |
| Transfer from Ministry of Health, Social Services and Equality, for developing the Quality Plan SNS.                           | 4.149.510,00          |                     | 4.149.510,00          | 4.149.510,00          | 100,00        | 1,17  |
| Sixth Additional Disposition of Law 29/2006, dated 26 of July, of guarantees and rational use of medicines and health products | 100.000.000,00        |                     | 100.000.000,00        | 120.677.198,42        | 120,68        | 34,08 |
| Transfer from Ministry of Health, Social Services and Equality, for CIBER  |                       | 2.500.000,00        | 2.500.000,00          | 2.500.000,00          |               | 0,71  |
| Transfer from Ministry of Health, Social Services and Equality, for Clinical Research  |                       | 4.500.000,00        | 4.500.000,00          | 4.500.000,00          |               | 1,27  |
| European Regional Development Fund   | 16.500.000,00         |                     | 16.500.000,00         | 49.018.840,66         | 297,08        | 13,84 |
| Other Income   | 9.925.840,00          | 39.441,03           | 9.965.281,03          | 16.203.972,80         | 162,60        | 4,58  |
| <b>Total</b>   | <b>286.762.840,00</b> | <b>7.909.441,03</b> | <b>294.672.281,03</b> | <b>354.107.011,84</b> | <b>120,17</b> |       |



## Organisation



ISC

2

**Management  
of Research And  
Scientific Activities**

## 2. Management of Research and Innovation Activities

The Institute of Health Carlos III is the Public Research Organisation (OPI) that promotes, support and evaluates biomedical research in Spain through the Strategic Action in Health (AES in Spanish) under the 2013-2016 National Plan for Scientific and Technical Research and Innovation.

### 2.1. Strategic Action in Health

The National Plan for Scientific and Technical Research and Innovation (hereinafter the National Plan for R&D&I) includes four National Programmes, implemented through Sub-programmes and two Strategic Actions that are integrated into the fourth of the identified programmes: the National Programme for R&D&I, oriented to the challenges in society.

The first one of these challenges, the Health, Demographic Change and Welfare Challenge, totally aligned with Horizon 2020, includes the Strategic Action in Health 2013-2016. It aims to contribute to promoting health and welfare for citizens and to develop preventive, diagnostic, healing, rehabilitation and palliative care for diseases, reinforcing and increasing the international competitiveness in R&D&I of the National Health System (SNS in Spanish) and other related companies, to position Spain at a forefront scenario in which health is the fundamental axis for economic and social development.

To fulfill these objectives, the AES proposes a set of complementary instrumental actions and synergies that fall within the National Programmes and Sub-Programmes within the National Plan for R&D&I. Each of them is developed through one or more actions.

Relevant news in 2014 referring to actions taken in previous years, are: 1) Pre-doctoral contracts for training in research, 2) Contracts for health research management in accredited Health Research Institutions (IIS) and 3) Scholarships for further studies, within the National Programme for the Promotion of Talent and its Employability. The National Programme for Fostering Excellence in Scientific and Technical Research includes: 1) Integrated projects of excellence in CIBER, 2) Health technological development projects, 3) Independent clinical research projects, 4) Complementary actions and 5) Action plan for the promotion of clinical and translational research.

## Strategic Action in Health 2014

### National Programme for the Promotion of Talent and its Employability

National Sub-Programme for Training:

- Pre-doctoral contracts for training in research
- Training aids for health research management (FGIN in Spanish)
- Río Hortega contracts

National Sub- Programme for Incorporation:

- Contracts for health research management in accredited Health Research Institutes (IIS)
- Miguel Servet contracts types I y II
- Sara Borrell contracts
- Juan Rodés contracts
- Contracts for increasing the research activity in the National Health System

National Sub- Programme of Mobility:

- Scholarships for further studies (BAE in Spanish)

### National Programme for Fostering Excellence in Scientific and Technical Research

National Sub- Programme for Knowledge Generation

Integrated Projects for Excellence:

- Integrated projects for excellence in the accredited Health Research Institutes (IIS)
- Integrated projects for excellence in CIBER

Health Research Projects

- Health research projects
- Health technological development projects

Independent clinical research projects

Complementary actions

National Sub- Programme for Institutional Strengthening:

- Action plan for the promotion of clinical and translational research

## A) State Programme for Talent Training and Employability

### A.1. National Sub- Programme for Training

#### A.1.1. Pre-doctoral contracts for training in research

The purpose of this action has been to fund contracts for initial training of researchers in health science and technology, by undertaking a doctoral thesis in one of the following disciplines:

- PFIS Contracts: Pre-doctoral Health Research Training Contracts (PFIS in Spanish).
- i-PFIS Contracts: Doctorate Contracts in IIS-Health Science and Technology Companies.

The duration of these contracts is 4 years.

#### A.1.2. Grants for training in health research management

These grants comprise scholarships to develop an activities plan for training in management of Health Science and Technology in the ISCIII. Total amount of admitted applications was 18 (15 women and 3 men), and the total financed was 12 (9 women and 3 men).

#### A.1.3. Río Hortega contracts

The purpose of this call is to provide funding for the recruitment of healthcare practitioners that have completed their Specialized Health Training period. The duration of this contract is 2 years, with an endowment from the ISCIII of € 20,600 per year for FSE nursing professionals and € 26.866 per year for all others.

## PFIS contracts - Distribution by Autonomous Regions (Amounts for the first year)

| Autonomous Regions          | N of applicants |           | N of concessions |          | Approved<br>(thousand €) |
|-----------------------------|-----------------|-----------|------------------|----------|--------------------------|
|                             | Female          | Male      | Female           | Male     |                          |
| Andalusia                   | 16              | 15        | 1                | 1        | 41,20                    |
| Aragon                      | 6               |           |                  |          |                          |
| Asturias (Principality)     | 3               | 1         | 1                |          | 2,60                     |
| Balearic Islands            | 4               |           |                  |          |                          |
| Canary Islands              | 2               | 2         |                  |          |                          |
| Cantabria                   | 3               |           |                  |          |                          |
| Castille and Leon           | 7               | 2         | 1                |          | 2,60                     |
| Castille - La Mancha        | 1               | 2         |                  |          |                          |
| Catalonia                   | 55              | 22        | 8                | 4        | 247,20                   |
| Region of Valencia          | 28              | 5         | 4                |          | 82,40                    |
| Extremadura                 | 1               |           |                  |          |                          |
| Galicia                     | 9               | 3         | 2                |          | 41,20                    |
| Madrid (Region)             | 30              | 8         | 5                | 2        | 144,20                   |
| Murcia (Region)             | 3               | 3         |                  |          |                          |
| Navarre (Autonomous Region) | 7               | 1         |                  |          |                          |
| Basque Country              | 13              |           | 1                |          | 2,60                     |
| Rioja                       | 1               |           |                  |          |                          |
| <b>Total</b>                | <b>189</b>      | <b>64</b> | <b>23</b>        | <b>7</b> | <b>618,00</b>            |

### Health Research Management contracts - Distribution by Autonomous Communities

(Amounts for the first year)

| Autonomous Regions          | N of applicants |          | N of concessions |          | Approved (thousand €) |
|-----------------------------|-----------------|----------|------------------|----------|-----------------------|
|                             | Female          | Male     | Female           | Male     |                       |
| Andalusia                   | 1               | 1        |                  | 1        | 20,60                 |
| Aragon                      |                 |          |                  |          |                       |
| Asturias (Principality)     |                 |          |                  |          |                       |
| Balearic Islands            |                 |          |                  |          |                       |
| Canary Islands              |                 |          |                  |          |                       |
| Cantabria                   |                 |          |                  |          |                       |
| Castille and Leon           |                 |          |                  |          |                       |
| Castille - La Mancha        |                 |          |                  |          |                       |
| Catalonia                   | 1               | 2        | 1                | 1        | 41,20                 |
| Region of Valencia          | 1               | 1        | 1                | 1        | 41,20                 |
| Extremadura                 |                 |          |                  |          |                       |
| Galicia                     |                 | 1        |                  | 1        | 20,60                 |
| Madrid (Region)             | 5               | 2        | 4                | 1        | 103,00                |
| Murcia (Region)             |                 |          |                  |          |                       |
| Navarre (Autonomous Region) |                 |          |                  |          |                       |
| Basque Country              | 1               |          |                  |          |                       |
| Rioja                       |                 |          |                  |          |                       |
| <b>Total</b>                | <b>9</b>        | <b>7</b> | <b>6</b>         | <b>5</b> | <b>226,60</b>         |

Most grants were for Internal Medicine (14.28%), Neurology, Gastroenterology and Paediatrics (9.52% for the three); 80.95% of the grants were for graduates or Medical doctors.

### Rio Horteiga contracts - Distribution by Autonomous Regions

(Amounts for the first year)

| Autonomous Regions          | N of applicants |           | N of concessions |           | Approved (thousand €) |
|-----------------------------|-----------------|-----------|------------------|-----------|-----------------------|
|                             | Female          | Male      | Female           | Male      |                       |
| Andalusia                   | 22              | 11        | 3                | 3         | 161,20                |
| Aragon                      | 1               | 1         | 1                |           | 26,87                 |
| Asturias (Principality)     | 2               |           |                  |           |                       |
| Balearic Islands            | 1               |           | 1                |           | 26,87                 |
| Canary Islands              | 1               |           |                  |           |                       |
| Cantabria                   | 2               | 1         |                  |           |                       |
| Castille and Leon           | 7               | 1         | 2                |           | 53,73                 |
| Castille - La Mancha        | 1               |           |                  |           |                       |
| Catalonia                   | 48              | 15        | 14               | 5         | 510,45                |
| Region of Valencia          | 10              | 4         | 1                | 1         | 26,87                 |
| Extremadura                 |                 |           |                  |           |                       |
| Galicia                     | 14              | 1         |                  |           |                       |
| Madrid (Region)             | 27              | 8         | 4                | 4         | 214,93                |
| Murcia (Region)             | 3               | 1         |                  | 1         | 26,87                 |
| Navarre (Autonomous Region) | 3               | 1         | 1                |           | 26,87                 |
| Basque Country              | 5               | 1         |                  | 1         | 26,87                 |
| Rioja                       |                 |           |                  |           |                       |
| <b>Total</b>                | <b>147</b>      | <b>45</b> | <b>27</b>        | <b>15</b> | <b>1.101,53</b>       |

## A.2. National Sub- Programme for Incorporation

### A.2.1. Contracts for Health Research Management in accredited Health Research Institutes

The purpose of this call is to hire personnel to support management of R&D&I in accredited IIS, to improve the management capacity of management units, and to support management initiatives and valorisation of innovation in these institutions.

#### Health Research Management contracts - Distribution by Autonomous Regions (Amounts for the first year)

| Autonomous Regions          | N of applicantss |          | N of concessions |          | Approved (thousand €) |
|-----------------------------|------------------|----------|------------------|----------|-----------------------|
|                             | Female           | Male     | Female           | Male     |                       |
| Andalusia                   | 2                | 0        | 2                |          | 53,73                 |
| Aragon                      |                  |          |                  |          |                       |
| Asturias (Principality)     |                  |          |                  |          |                       |
| Balearic Islands            |                  |          |                  |          |                       |
| Canary Islands              |                  |          |                  |          |                       |
| Cantabria                   |                  |          |                  |          |                       |
| Castille and Leon           | 2                |          | 1                |          | 26,87                 |
| Castille - La Mancha        |                  |          |                  |          |                       |
| Catalonia                   | 5                | 2        | 4                | 2        | 161,20                |
| Region of Valencia          | 2                | 1        | 1                | 1        | 53,73                 |
| Extremadura                 |                  |          |                  |          |                       |
| Galicia                     | 2                |          | 1                |          | 26,87                 |
| Madrid (Region)             | 8                | 4        | 5                | 3        | 214,93                |
| Murcia (Region)             |                  |          |                  |          |                       |
| Navarre (Autonomous Region) |                  |          |                  |          |                       |
| Basque Country              | 2                |          | 1                |          | 26,87                 |
| Rioja                       |                  |          |                  |          |                       |
| <b>Total</b>                | <b>23</b>        | <b>7</b> | <b>15</b>        | <b>6</b> | <b>564,20</b>         |

## A.2.2. Miguel Servet contracts

This call allows hiring doctors with a long track-record in research, to work in centres within the realm of the National Health System, also receiving supplementary funding from research project. Two types are considered:

Miguel Servet contracts - type I: researchers who were awarded doctoral degree between 1 January, 1999 and 31 December, 2009, or having completed the Rio Hortega training program. The duration of these contracts is 1 year, and may be extended up to a maximum of 5 years.

#### Miguel Servet contracts - type I - Distribution by Autonomous Regions (Amounts for the first year)

| Autonomous Regions          | N of applicantss |           | N of concessions |           | Approved (thousand €) |
|-----------------------------|------------------|-----------|------------------|-----------|-----------------------|
|                             | Female           | Male      | Female           | Male      |                       |
| Andalusia                   | 13               | 17        | 1                | 5         | 948,37                |
| Aragon                      | 1                | 3         |                  |           |                       |
| Asturias (Principality)     |                  |           |                  |           |                       |
| Balearic Islands            | 2                | 1         |                  |           |                       |
| Canary Islands              | 1                | 1         |                  |           |                       |
| Cantabria                   | 1                | 1         |                  |           |                       |
| Castille and Leon           | 7                | 1         | 2                |           | 324,00                |
| Castille - La Mancha        | 2                |           |                  |           |                       |
| Catalonia                   | 23               | 14        | 5                | 4         | 1.457,38              |
| Region of Valencia          | 10               | 4         |                  |           |                       |
| Extremadura                 |                  |           |                  |           |                       |
| Galicia                     | 2                | 6         |                  | 1         | 162,00                |
| Madrid (Region)             | 21               | 12        | 5                | 1         | 972,00                |
| Murcia (Region)             | 2                |           | 1                |           | 162,00                |
| Navarre (Autonomous Region) | 1                | 1         | 1                |           | 162,00                |
| Basque Country              | 3                | 1         |                  | 1         | 162,00                |
| Rioja                       | 1                | 1         |                  |           |                       |
| <b>Total</b>                | <b>90</b>        | <b>63</b> | <b>15</b>        | <b>12</b> | <b>4.349,75</b>       |

Miguel Servet contracts -type II: research practitioners who are in their final year or have finished a full programme of researcher contracts with the National Health System- Miguel Servet under the National Plans prior to the one currently in force. The duration of these contracts is 1 year and may be extended up to a maximum of 3 years. The economic endowment provided by the ISCIII, is € 45,000 or € 40.500 € per year, according to evaluation results. The ISCIII finances 100% for first year, 75% for second year and 50% for the third.

**Miguel Servet type II contracts - Distribution by Autonomous Regions**  
(Amounts for the first year)

| Autonomous Regions | N of applicants |           | N of concessions |           | Approved (thousand €) |
|--------------------|-----------------|-----------|------------------|-----------|-----------------------|
|                    | Female          | Male      | Female           | Male      |                       |
| Andalusia          | 3               | 1         | 3                | 1         | 171,00                |
| Aragon             | 1               |           |                  |           |                       |
| Cantabria          |                 | 1         |                  | 1         | 40,50                 |
| Catalonia          | 4               | 6         | 4                | 6         | 436,50                |
| Region of Valencia | 2               | 1         | 2                | 1         | 135,00                |
| Galicia            | 2               |           | 2                |           | 90,00                 |
| Madrid (Region)    | 5               | 5         | 5                | 4         | 387,00                |
| <b>Total</b>       | <b>17</b>       | <b>14</b> | <b>16</b>        | <b>13</b> | <b>1.260,00</b>       |

A.2.3. Sara Borrell contracts

These types of contracts are destined for doctors recently graduated in the field of health science and technology, to improve their training in centres within the realm of the National Health System, including an internship in foreign centres of international prestige. The duration of these contracts is 1 year and may be extended up to a maximum of 3 years.

**Sara Borrell contracts - Distribution by Autonomous Regions**  
(Amounts for the first year)

| Autonomous Regions          | N of applicants |           | N of concessions |           | Approved (thousand €) |
|-----------------------------|-----------------|-----------|------------------|-----------|-----------------------|
|                             | Female          | Male      | Female           | Male      |                       |
| Andalusia                   | 28              | 3         | 1                | 2         | 80,60                 |
| Aragon                      |                 | 1         |                  |           |                       |
| Asturias (Principality)     |                 |           |                  |           |                       |
| Balearic Islands            | 1               | 1         |                  |           |                       |
| Canary Islands              | 1               | 1         |                  |           |                       |
| Cantabria                   |                 | 1         |                  |           |                       |
| Castille and Leon           | 3               | 1         |                  |           |                       |
| Castille - La Mancha        |                 |           |                  |           |                       |
| Catalonia                   | 49              | 18        | 6                | 4         | 268,67                |
| Region of Valencia          | 22              | 2         | 3                |           | 80,60                 |
| Extremadura                 |                 |           |                  |           |                       |
| Galicia                     | 7               | 3         | 2                | 1         | 80,60                 |
| Madrid (Region)             | 32              | 15        | 2                | 4         | 161,20                |
| Murcia (Region)             | 4               | 2         |                  |           |                       |
| Navarre (Autonomous Region) | 3               | 1         |                  |           |                       |
| Basque Country              | 5               | 2         |                  |           |                       |
| Rioja                       | 2               |           |                  |           |                       |
| <b>Total</b>                | <b>157</b>      | <b>51</b> | <b>14</b>        | <b>11</b> | <b>671,67</b>         |

A.2.4. Juan Rodés contracts

The purpose of this aid is to hire medical personnel with experience in health sciences and technologies research to work in the medical centres under the National Health System that are classed as accredited Healthcare Research Institutes. Applicants must have completed the Rio Hortega research training program. The duration of these contracts is 1 year, and may be extended up to a maximum of 3 years. The 73.68% of the contracts have been assigned to medical doctors.

**Juan Rodés contracts - Distribution  
by Autonomous Regions**  
(Amounts for the first year)

| Autonomous Regions | N of applicantss |          | N of concessions |          | Approved<br>(thousand €) |
|--------------------|------------------|----------|------------------|----------|--------------------------|
|                    | Female           | Male     | Female           | Male     |                          |
| Andalusia          | 3                |          | 1                |          | 45,00                    |
| Castille and Leon  | 1                |          | 1                |          | 45,00                    |
| Catalonia          | 11               | 2        | 5                | 2        | 315,00                   |
| Region of Valencia | 2                |          |                  |          |                          |
| Galicia            | 1                |          |                  |          |                          |
| Madrid (Region)    | 11               | 5        | 6                | 4        | 450,00                   |
| Basque Country     | 1                |          |                  |          |                          |
| <b>Total</b>       | <b>30</b>        | <b>7</b> | <b>13</b>        | <b>6</b> | <b>855,00</b>            |

A.2.5. Contracts for increasing the research activity in the National Health System

These aids are intended to hire medical specialist, university graduate or nursing graduates to work in the centres under the National Health System, to part of the clinical care professional activity, while developing research activities. The personnel linking will be set in a labor contract in 2015, for a time equivalent to the release of 50% of annual healthcare period candidate to be replaced.

The economic endowment is € 30,000 per year for medical staff and € 15,000 per year for nursing staff. 91.13% of the grants were for Medical doctors.

**Contracts for intensification of research activity  
at NHS - Distribution by Autonomous Regions**  
(Amounts for the first year)

| Autonomous Regions          | N of applicantss |            | N of concessions |           | Approved<br>(thousand €) |
|-----------------------------|------------------|------------|------------------|-----------|--------------------------|
|                             | Female           | Male       | Female           | Male      |                          |
| Andalusia                   | 1                | 23         | 1                | 11        | 360,00                   |
| Aragon                      | 3                | 3          | 2                |           | 60,00                    |
| Asturias (Principality)     | 1                | 3          |                  | 3         | 90,00                    |
| Balearic Islands            |                  | 2          |                  | 1         | 30,00                    |
| Canary Islands              |                  | 5          |                  | 3         | 90,00                    |
| Cantabria                   |                  | 2          |                  | 1         | 30,00                    |
| Castille and Leon           | 1                | 5          | 1                | 2         | 90,00                    |
| Castille - La Mancha        | 2                | 4          |                  | 1         | 30,00                    |
| Catalonia                   | 9                | 28         | 4                | 16        | 600,00                   |
| Region of Valencia          | 5                | 11         | 2                | 4         | 180,00                   |
| Extremadura                 |                  | 2          |                  | 1         | 30,00                    |
| Galicia                     | 1                | 7          |                  | 4         | 120,00                   |
| Madrid (Region)             | 8                | 30         | 4                | 14        | 540,00                   |
| Murcia (Region)             |                  | 5          |                  | 2         | 60,00                    |
| Navarre (Autonomous Region) | 2                | 3          |                  | 1         | 30,00                    |
| Basque Country              | 3                | 3          |                  | 1         | 30,00                    |
| Rioja                       |                  | 2          |                  |           |                          |
| <b>Total</b>                | <b>36</b>        | <b>138</b> | <b>12</b>        | <b>67</b> | <b>2.370,00</b>          |

A.3. National Sub -Programme of Mobility

A.3.1. Scholarships for Extension Studies

The purpose of this call is to fund internships of NHS health professionals and researchers, for learning or improvement of techniques, technologies or pro-

cedures in research, technological development and innovation in biomedicine, in national or foreign prestigious institutions. These stays last between 2 and 6 months, with an economic aid of € 2,500 per month if attending a Spanish centre and € 3,500 per month when it is a foreign centre.

**Scholarships for extension studies - Distribution by Autonomous Regions**  
(Amounts for the first year)

| Autonomous Regions          | N of applicants |           | N of concessions |           | Approved (thousand €) |
|-----------------------------|-----------------|-----------|------------------|-----------|-----------------------|
|                             | Female          | Male      | Female           | Male      |                       |
| Andalusia                   | 1               |           |                  |           |                       |
| Aragon                      |                 |           |                  |           |                       |
| Asturias (Principality)     |                 |           |                  |           |                       |
| Balearic Islands            |                 | 1         |                  | 1         | 7,00                  |
| Canary Islands              |                 | 1         |                  |           |                       |
| Cantabria                   |                 |           |                  |           |                       |
| Castille and Leon           | 1               | 1         | 1                | 1         | 36,00                 |
| Castille - La Mancha        |                 |           |                  |           |                       |
| Catalonia                   | 5               | 4         | 4                | 4         | 109,50                |
| Region of Valencia          |                 | 1         |                  | 1         | 10,50                 |
| Extremadura                 |                 |           |                  |           |                       |
| Galicia                     | 1               |           | 1                |           | 21,00                 |
| Madrid (Region)             | 8               | 2         | 5                | 2         | 89,50                 |
| Murcia (Region)             |                 | 1         |                  | 1         | 21,00                 |
| Navarre (Autonomous Region) | 1               | 2         |                  | 2         | 35,00                 |
| Basque Country              | 1               | 1         |                  | 1         | 7,00                  |
| Rioja                       |                 |           |                  |           |                       |
| <b>Total</b>                | <b>18</b>       | <b>14</b> | <b>11</b>        | <b>13</b> | <b>336,50</b>         |

## B. National Programme for Fostering Excellence In Scientific and Technical Research

### B.1. National Sub- Programme for Knowledge Generation

This sub programme includes the aids for integrated projects for excellence, health research projects, independent clinical research projects and complementary actions.

| Action   | Requested    | Granted    | Amount (thousand €) | % Success |
|--|--------------|------------|---------------------|-----------|
| Health Research Projects (PI in Spanish)                         | 1,638        | 537        | 55,460.85           | 33        |
| Complementary Actions (AC in Spanish)                            | 22           | 19         | 1,386.02            | 86        |
| Integrated Projects for Excellence (PIE in Spanish) CIBER        | 7            | 3          | 1,999.80            | 43        |
| Integrated Projects for Excellence (PIE) IIS                     | 35           | 5          | 3,025.00            | 14        |
| Projects of Technological Development in Health (DTS in Spanish) | 97           | 14         | 999.90              | 14        |
| Independent Clinical Research Projects (ICI in Spanish)          | 246          | 20         | 2,927.01            | 8         |
| <b>TOTAL</b>   | <b>2,045</b> | <b>598</b> | <b>65,798.58</b>    | <b>29</b> |

**Admitted and granted applications for grants of the State  
Subprogram for Generation of Knowledge - Distribution  
by Autonomous Regions**

| Autonomous Regions          | PI               |                       | AC               |                     | PIE CIBER        |                     | PIE_IIS          |                     | DTS              |                     | ICI              |                     |
|-----------------------------|------------------|-----------------------|------------------|---------------------|------------------|---------------------|------------------|---------------------|------------------|---------------------|------------------|---------------------|
|                             | N of concessions | Approved (thousand €) | N of concessions | Amount (thousand €) | N of concessions | Amount (thousand €) | N of concessions | Amount (thousand €) | N of concessions | Amount (thousand €) | N of concessions | Amount (thousand €) |
| Andalusia                   | 52               | 5,639.32              | 1                | 53.87               | 0                | 0.00                | 1                | 605.00              | 2                | 200.20              | 2                | 366.63              |
| Aragon                      | 9                | 1,036.79              | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                |
| Asturias (Principality)     | 8                | 575.48                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                | 1                | 48.40               |
| Balearic Islands            | 8                | 589.57                | 2                | 75.02               | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                |
| Canary Islands              | 9                | 542.80                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                |
| Cantabria                   | 4                | 421.68                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                |
| Castille - La Mancha        | 3                | 148.83                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                |
| Castille and Leon           | 7                | 641.54                | 1                | 49.61               | 0                | 0.00                | 1                | 605.00              | 0                | 0.00                | 0                | 0.00                |
| Catalonia                   | 204              | 21,598.56             | 8                | 607.67              | 0                | 0.00                | 2                | 1,210.00            | 4                | 198.55              | 11               | 1,855.19            |
| Region of Valencia          | 39               | 3,838.30              | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                | 2                | 169.40              | 0                | 0.00                |
| Extremadura                 | 2                | 147.85                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                |
| Galicia                     | 26               | 2,780.16              | 1                | 149.99              | 0                | 0.00                | 0                | 0.00                | 2                | 114.40              | 0                | 0.00                |
| Madrid (Region)             | 120              | 13,141.24             | 4                | 324.86              | 3                | 1,999.80            | 1                | 605.00              | 2                | 146.30              | 6                | 656.79              |
| Murcia (Region)             | 6                | 556.84                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                |
| Navarre (Autonomous Region) | 21               | 2,043.02              | 1                | 75.00               | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                |
| Basque Country              | 19               | 1,758.86              | 1                | 50.00               | 0                | 0.00                | 0                | 0.00                | 2                | 171.05              | 0                | 0.00                |
| Rioja                       | 0                | 0.00                  | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                | 0                | 0.00                |
| <b>Total</b>                | <b>537</b>       | <b>55,460.85</b>      | <b>19</b>        | <b>1,386.02</b>     | <b>3</b>         | <b>1,999.80</b>     | <b>5</b>         | <b>3,025.00</b>     | <b>14</b>        | <b>999.90</b>       | <b>20</b>        | <b>2,927,01</b>     |

### B.1.1. Integrated Projects for Excellence

This aid is aimed to fund research projects with innovative approaches and methods of proven quality, representing a significant advance in the field of health science and technology in two ways:

- Integrated projects for excellence in accredited Health Research Institutes
- Integrated projects for excellence in CIBER

Projects can be linked to companies and public or private organisations interested in their development and outcome. The following table summarizes applications, concessions and the financed amount for each project.

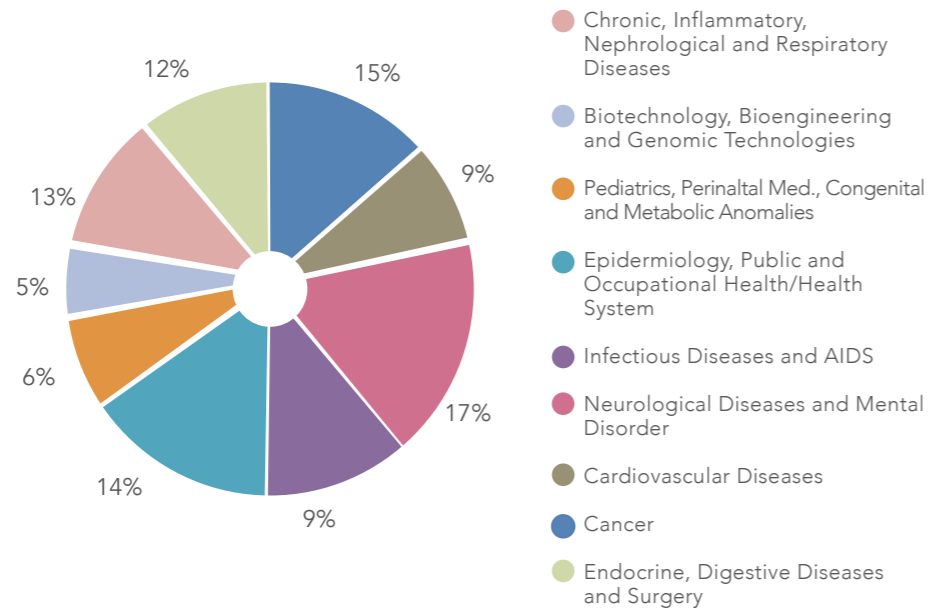
| Centre   | Autonomous Region  | N of admitted applications | N of concessions | Approved (thousand €) |
|--|--------------------|----------------------------|------------------|-----------------------|
| CIBER (Biomedical Research Networking Centres)   | Madrid (Region)    | 7                          | 3                | 1,999.80              |
| <b>Total PIE_CIBER</b>   |                    | <b>7</b>                   | <b>3</b>         | <b>1,999.80</b>       |
| IBIS (Institute of Biomedicine of Sevilla)   | Andalusia          | 2                          |                  |                       |
| IMIBIC (Maimonides Biomedical Research Institute of Cordoba)                           | Andalusia          | 2                          | 1                | 605.00                |
| IIS La Fe (La Fe University Hospital's Research Foundation)                            | Region of Valencia | 2                          |                  |                       |
| INCLIVA (Valencia Clinical Hospital's Research Foundation's Health Research Institute) | Region of Valencia | 1                          |                  |                       |
| IBSAL (Biomedical Research Institute of Salamanca)                                     | Castille and Leon  | 2                          | 1                | 605.00                |
| IDIBAPS (August Pi y Sunyer Biomedical Research Institute)                             | Catalonia          | 2                          | 1                | 605.00                |
| IDIBELL (Biomedical Research Institute of Bellvitge)                                   | Catalonia          | 2                          | 1                | 605.00                |
| IGTP (Germans Trias I Pujol Health Sciences Research Institute)                        | Catalonia          | 2                          |                  |                       |
| IIB Sant Pau (Biomedical Research Institute of Sant Pau)                               | Catalonia          | 2                          |                  |                       |
| IMIM (Hospital del Mar Medical Research Institute)                                     | Catalonia          | 2                          |                  |                       |
| IRB Lerida ( Biomedical Research Institute of Lerida)                                  | Catalonia          | 1                          |                  |                       |
| IR-HUVH (Vall d'Hebrom University Hospital's Research Institute)                       | Catalonia          | 2                          |                  |                       |
| IDIS (Health Research Institute of Santiago de Compostela)                             | Galicia            | 2                          |                  |                       |
| I+12 (12 de Octubre Hospital's Research Institute)                                     | Madrid (Region)    | 1                          |                  |                       |
| IDIPAZ (La Paz Hospital's Health Research Institute)                                   | Madrid (Region)    | 1                          |                  |                       |
| IDISSC (San Carlos Clinical Hospital's Health Research Institute)                      | Madrid (Region)    | 2                          |                  |                       |
| IISFJD ((Jiménez Díaz Foundation's Health Research Institute)                          | Madrid (Region)    | 2                          |                  |                       |
| IISGM (Gregorio Marañón Health Research Institute)                                     | Madrid (Region)    | 1                          |                  |                       |
| IIS-Princesa (La Princesa University Hospital's Health Research Institute)             | Madrid (Region)    | 1                          |                  |                       |
| Puerta de Hierro Health Research Institute   | Madrid (Region)    | 1                          | 1                | 605.00                |
| Irycis (Ramón y Cajal Health Research Institute)                                       | Madrid (Region)    | 1                          |                  |                       |
| IIS Biodonostia (Biodonostia Health Research Institute)                                | Basque Country     | 1                          |                  |                       |
| <b>Total PIE_IIS</b>   |                    | <b>35</b>                  | <b>5</b>         | <b>3,025.00</b>       |

### B.1.2. Health Research Projects

The types of projects financed in 2014 were:

- **Health research projects.** Checked quality projects, with objectives such as: a) Transfer and application of scientific-technical knowledge for the improvement of prevention, diagnosis and treatment of diseases and for activities of promotion of public health and of healthcare services, and b) encourage synergies, promote talent and employability and strengthen governance structures that incorporate the scientific-technical capabilities of NHS health centres.  
1,638 admitted applications were received, and 537 of them were financed with a total amount of 55,460.85 thousand euros.

**Financing of Health Research Projects  
by Area 2014**



Regions with major project requests were: Catalonia (31.44%), Madrid (19.84%) and Andalusia (13.79%). The funding had the same order: 37.98%, 22.34% and 9.68%, respectively.

Of all financed projects, 37.05% (199 projects) were led by women.

- **Technological development projects in health.** Coordinated development projects based on proven preliminary experiences at SNS centres, boosting them in the development phase.

97 applications were received, and 14 of them were financed, with a total amount of 999.9 thousand euros, distributed in the following regions: Catalonia, Basque Country, Region of Valencia, Andalusia, Galicia and Madrid.

### B.1.3. Independent Clinical Research Projects

These aids were convened in 2014 for the first time to promote clinical research in human-use medicines, with financing of projects not promoted by the pharmaceutical industry, and with contents referred to priority areas included in strategic priorities within the European Clinical Research Infrastructure Network (ECRIN).

246 successful applications were received, and 20 were financed with a total of 2,927.01 thousand euros.

### B.1.4. Complementary Actions

These actions were convened for the first time in 2014 to fund collaborative research projects in health with an international dimension, in the context of transnational consortia in the European Research Area (ERA), in which the ISCIII has committed to supporting relevant cooperative projects, with participation of Spanish research teams along with teams from other countries.

International calls of concurrency within the complementary actions were:

- Active Assisted Living Joint Programme (AAL)
- ERA-Net on Rare diseases (E-RARE)
- EUROpean network for trans-national collaborative RTD projects in the field of NANOMEDicine (EuroNanoMed)
- Joint Programming Initiative on Antimicrobial Resistance (JPIAMR)

- Joint Programme – Neurodegenerative Disease Research (JPND). Topic 1
- Joint Programme – Neurodegenerative Disease Research (JPND). Topic 2
- ERA-NET on Translational Cancer Research (TRANSCAN)
- European & Developing Countries Clinical Trials Partnership (EDCTP)
- Joint Programming Initiative «More Years, Better Lives» (JPI MYBL)

22 applications were received, 19 of them were financed, with a total of 1,386.02 thousand euros. The 19 research teams financed include a total of 70 researchers.

| Program      | N financed projects | N researchers | Amount (€)      |
|--------------|---------------------|---------------|-----------------|
| AAL          | 1                   | 5             | 75,00           |
| E-RARE       | 2                   | 12            | 224,99          |
| EURONANOMED  | 5                   | 25            | 292,78          |
| JPIAMR       | 1                   | 1             | 72,75           |
| JPND-TOPIC 1 | 3                   | 4             | 199,61          |
| JPND-TOPIC 2 | 2                   | 10            | 92,16           |
| TRANSCAN     | 5                   | 13            | 428,73          |
| <b>TOTAL</b> | <b>19</b>           | <b>70</b>     | <b>1.386,02</b> |

## B.2. National Sub- Programme for Institutional Strengthening

This sub-programme called aids of the Action Plan for clinical and translational research promotion, to promote the Strategic Program of the accredited Health Research Institutes.

### B.2.1. Action Plan to Promote Clinical and Translational Research

The purpose of this call was the subventions concessions to fund services, infrastructures and personnel necessary to implement a clinical and translational research in accredited IIS.

The 22 applications received were financed, with a grant from 150 thousand to 250 thousand euros per accredited IIS, and a total amount for the plan of 4.499 thousand euros.



## 2.2. CIBER



[www.ciberisciii.es](http://www.ciberisciii.es)

The Institute of Health Carlos III is tasked with the coordination, evaluation, monitoring and promotion of the Biomedical Research Networking Centres (CIBER), which have been emerged as state- run public consortia that area legal entities in themselves.

As a result of public sector restructuring measures, from January 1st, 2014, eight of the nine CIBER corporations subscribed to ISCIII have merged into a single consortium called CIBER, developing activities in the fields of: Rare Diseases (CIBERER in Spanish), Respiratory Diseases (CIBERES in Spanish), Mental Health (CIBERSAM in Spanish), Epidemiology and Public Health (CIBERESP in Spanish), Bioengineering, Biomaterials and Nanomedicine (CIBERBBN in Spanish), Physiopathology of Obesity and Nutrition (CIBEROBN in Spanish), Liver and Digestive Diseases (CIBEREHD in Spanish), Diabetes and Metabolic Diseases (CIBERDEM in Spanish); and maintaining the research on Neurodegenerative Diseases (CIBERNED in Spanish).

In 2014, the major milestones of the CIBER were:

CIBERER launched Epidisease S.L., the first spin-off resulting from the activity in this area, specialized in epigenetics applied to the development of biomarkers for diagnostic purposes. Likewise, it is worth highlighting its contribution as sponsor for a new orphan drug for anaemia by pyruvate kinase deficiency in the erythrocytes, based on gene therapy.

CIBERES researchers developed international clinical guides such as "Revised ESTS guidelines for preoperative mediastinal lymph node staging for non-small-cell lung cancer"; "Specific inhalation challenge in the diagnosis of occupational asthma: consensus statement" or "An official American Thoracic Society/European Respiratory Society statement: update on limb muscle dysfunction in chronic obstructive pulmonary disease". In addition, as a consequence of CIBERES's work, five new patents were requested as co-owners, among them: "Micellar nanoparticles containing anti-tumour glycosides", "Methods and agents related to lung diseases"

and “Method for predicting response to continuous positive air pressure treatment”.

CIBERSAM researchers, proved for the first time in teenage populations the efficacy of cognitive rehabilitation and psycho-education during first psychotic episodes.

In CIBERESP, researchers participated in the development of the report “Global influenza Vaccine Effectiveness”, a WHO (World Health Organisation) document have supported the decision of the composition of the influenza vaccine, as well as the drafting of new protocols for diseases of compulsory declaration of the National Epidemiological Surveillance Network, in which the procedures for monitoring health problems are adjusted to European regulations. Moreover, it is remarkable to mention its participation in developing a new method for the early molecular diagnosis to detect all variants of HIV-1 in children under 18 months, using only two drops of blood, which contributes decisively to the establishment of a policy for the use of anti-retrovirals in affected populations, and to the optimization of individual treatment.

The platforms program “NANBIOSIS” of CIBERBBN was acknowledged as Scientific and Technical Singular Infrastructure (ICTS in Spanish) in the National Map of ICTS. Also, CIBERBBN now forms part of the Graphene Flagship consortium, one of the emblematic programs of the European Union, through the project “Neurographene”.

The most relevant lines of CIBEROBN in 2014, were “Intervention studies to determine the effect of diet or dietary constituents on health or disease, and the implied mechanisms” and the “Diet, nutrition and disease prevention” with results published in prestigious journals such as *Annals of Internal Medicine* or *Circulation*.

CIBERDEM research groups launched a study to define the Incidence of Diabetes in Spain (Dia@betes2) after obtaining a coordinated project of Health Research and three Integrated Projects of Excellence in the AES 2014 call for projects of ISCIII. This study will also allow defining associated genetic and environmental factors and the prevalence of monogenic Diabetes in Spain.

The most notable published articles in 2014 were:

## CIBERER

- Hoegg-Beiler MB, Sirisi S, Orozco IJ, Ferrer I, Hohensee S, Auberson M, Gödde K, Vilches C, de Heredia ML, Nunes V, Estévez R, Jentsch TJ. Disrupting MLC1 and GlialCAM and CIC-2 interactions in leukodystrophy entails glial chloride channel dysfunction. *Nat Commun.* 2014; 19(5):3475. doi: 10.1038/ncomms4475. PubMed PMID: 24647135
- Tenorio J, Mansilla A, Valencia M, Martínez-Glez V, Romanelli V, Arias P, Castrejón N, Poletta F, Guillén-Navarro E, Gordo G, Mansilla E, García-Santiago F, González-Casado I, Vallespín E, Palomares M, Mori MA, Santos-Simarro F, García-Miñaur S, Fernández L, Mena R, Benito-Sanz S, del Pozo Á, Silla JC, Ibañez K, López-Granados E, Martín-Trujillo A, Montaner D; SOGRI Consortium, Heath KE, Campos-Barros Á, Dopazo J, Nevado J, Monk D, Ruiz-Pérez VL, Lapunzina P. A new overgrowth syndrome is due to mutations in RNF125. *Hum Mutat.* 2014; 35(12):1436-41. doi: 10.1002/humu.22689. PubMed PMID: 25196541
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## CIBERES

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- Balch, J, Sznajder i, Budinger S, et al “Malformed Protein Structure and Proteostasis in Lung Diseases”, et al. Malformed protein structure and proteostasis in lung diseases. *Am J Respir Crit Care Med.* 2014 Jan 1;189(1):96-103. doi: 10.1164/rccm.201306-1164WS. PubMed PMID: 24033344

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- Schizophrenia Working Group of the Psychiatric Genomics Consortium. Biological insights from 108 schizophrenia-associated genetic loci. *Nature*. 2014 Jul 24;511(7510):421-7. doi: 10.1038/nature 13595. Pubmed PMID: 25055661
- De Wit SJ, Alonso P, Schweren L, Mataix-Cols D, Lochner C, Menchón JM. Multicenter voxel-based morphometry mega-analysis of structural brain scans in obsessive-compulsive disorder. *Am J Psychiatry*. 2014 Mar 1;171(3):340-9. doi: 10.1176/appi. ajp.2013. 13040574. Pubmed PMID: 24220667.
- De Rubeis, Silvia; He, Xin; Goldberg, Arthur P.; et ál. Synaptic, transcriptional and chromatin genes disrupted in autism. *Nature*. 2014 Nov. 13. 515(7526): 209-2119 doi: 10.1038/nature 13772. Pubmed PMID: 25363760

## CIBERBBN

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## CIBEROBN

- Salas-Salvado, J; Bullo, M; Estruch, R; Ros, E; Covas, MI;Ibarrola-Jurado, N; Corella, D; Aros, F; Gomez-Gracia, E; Ruiz-Gutierrez, V; Romaguera, D; Lapetra, J; Lamuela-Raventos, RM; Serra-Majem, L; Pinto, X; Basora, J; Munoz, MA; Sorli, JV; Martinez-Gonzalez, MA. Prevention of diabetes with mediterranean diets: A subgroup analysis of a randomized trial. *Ann Intern Med*. 2014 Jan 7;160(1):1-10. doi: 10.7326/M13-1725.PubMed PMID:24573661
- Martinez-Gonzalez, MA; Toledo, E; Aros, F; Fiol, M; Corella, D; Salas-Salvado, J; Ros, E; Covas, MI; Fernandez-Crehuet, J; Lapetra, J; Munoz, MA; Fito, M; Serra-Majem, L; Pinto, X; Lamuela-Raventos, RM; Sorli, JV; Babio, N; Buil-Cosiales, P; Ruiz-Gutierrez, V; Estruch, R; Alonso, A. Extravirgin olive oil consumption reduces risk of atrial fibrillation: The PREDIMED (Prevencción con Dieta Mediterránea) trial. *Circulation*. 2014 Jul 1;130(1):18-26. doi: 10.1161/CIRCULATIONAHA.113.006921. PubmedPMID:24787471

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NEURODEGENERATIVE  
DISORDERS

[www.ciberned.es](http://www.ciberned.es)

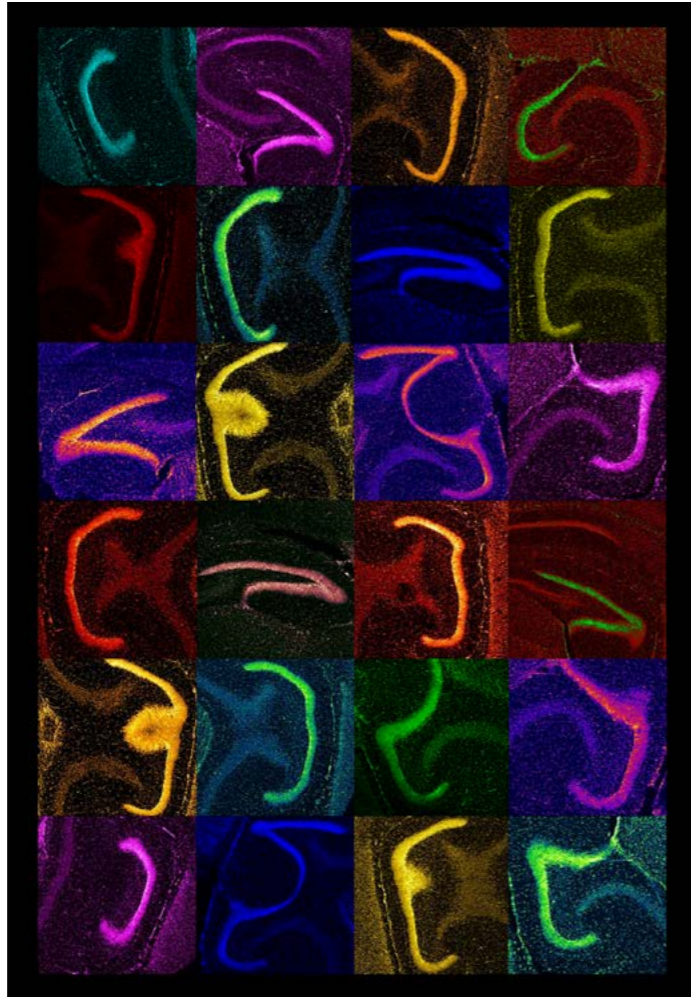
In 2014, CIBERNED increased its scientific productivity, by publishing 18 clinical trials and 4 clinical guides: "Correspondence between neuro-physiological and clinical measurements of chemotherapy-induced peripheral neuropathy: secondary analysis of data from the CI-PeriNomS study" (CIBERNED participant group: Xavier Navarro Acebes); "CPG Development Group on the comprehensive care of people with Alzheimer's disease and other dementias. Clinical Practice Guideline on the Comprehensive Care of People with Alzheimer's disease and other Dementias" (CIBERNED participant group: Isidro Ferrer Abizanda); "Clinical Practice Guideline for Digestive Nursing of Patients with Parkinson Disease, carriers of levodopa pump in intra-duodenal infusion" (CIBERNED participant group: Jaime Kulisevsky Bojarski), and "Therapeutical Guide of the Catalan Neurology Society" (CIBERNED participant group: Jaime Kulisevsky Bojarski).

The highlighted CIBERNED publications this year were:

- Sousa-Victor P, Gutarra S, Garcia-Prat L, Rodriguez-Ubreva J, Ortet L, Ruiz-Bonilla V, Jordi M, Ballestar E, Gonzalez S, Serrano AL, Perdiguero E, Munoz-Cano P. Geriatric muscle stem cells switch reversible quiescence into senescence. *Nature* 2014 Feb 20;506(7488):316-21. doi: 10.1038/nature13013. PubMed PMID:24522534
- Platero-Luengo A, Gonzalez-Granero S, Duran R, Diaz-Castro B, Piruat JI, Garcia-Verdugo JM, PArdal R, López-Barneo J. An O2-sensitive glomus cell-stem cell synapse induces carotid body growth in chronic hypoxia. *Cell* 2014 Jan 16;156(1-2):291-303. doi: 10.1016/j.cell.2013.12.013. PubMed PMID:24439383

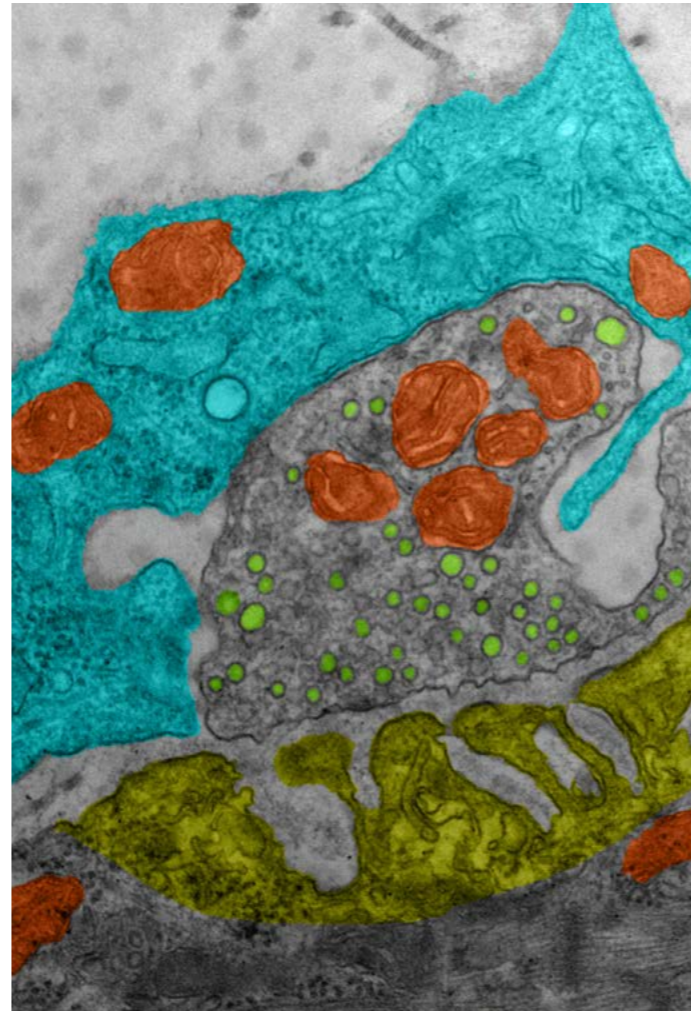
- Fernandez-Nogales M,Cabrera JR,Santos-Galindo M,Hoozemans JJ,Ferrer I,Rozemuller AJ,Hernández F,Avila J,Lucas JJ. Huntington's disease is a four-repeat tauopathy with tau nuclear rods. Nat Med 2014 Aug;20(8):881-5. doi: 10.1038/nm.3617. PubMed PMID:25038828

Also, it is to note the consolidation of the internationalization program: three Pathfinder projects of the International Network of Excellence Centres in Neuro-degeneration (COEN) and 4 projects within the EU Joint Program calls in this research field.



*Warholian hippocampus*

Doctor Jesús Ávila de Grado Group  
Centre of Molecular Biology Severo Ochoa (CBMSO-UAM)



*Neuromuscular junction of a mouse CSP*

Doctor Rafael Fernández Chacón Group  
Institute of Biomedicine of Seville (IBIS)



### 2.3. RETICS

Thematic Networks for Cooperative Research (RETICS in Spanish) ) are organisational structures composed by the association of various biomedical research centres and groups, of multidisciplinary character, subscribed to different public or private administrations and belonging to a minimum of four Autonomous Regions, with the general objective to promote collaboration between NHS research groups, working on related topics and, at the same time, facilitating the structuring of developing research.



THEMATIC NETWORK OF  
COOPERATIVE RESEARCH INTO  
CANCER (RTICC in Spanish)

[www.rticc.org](http://www.rticc.org)

The groups that form part of the Thematic Network of Cooperative Research into Cancer (RTICC) published during 2014, a total of 922 articles in indexed journals, 75% of which were in high-impact journals. In 33% of these articles 2 or more networking groups have collaborated, another 10% of the articles were originated from the collaboration with other RETICS and an additional

25% were the result of cooperation with CIBERs, and therefore reaching an elevated collaboration between groups assigned to RTICC with other cooperative research structures financed by ISCIII. Total IF of published articles by affiliated groups to RTICC was 5.840, with an average IF of 5.841 per article.

Among the 131 granted projects to the groups of the network in 2014, it is worth to highlight the two multi-year projects (€ 1.5 M each) of Spanish Association of Cancer (AECC in Spanish) granted to groups of programs for lung cancer and molecular mechanisms, and the 17 European projects granted in that period with a total funding of € 10.9 M.

Likewise, it is worth to mention the 43 contracts of transference and collaboration with private foundations and biopharmaceutical companies, the request of 12 patents, the development of several spin-off companies (Transbiomed, Haptenic and Green Molecular), the 19 published clinical practice guidelines, the 17 medical innovations incorporated to SNS developed by groups affiliated to RTICC and 626 clinical trials in which groups attached to RTICC participate, promoted in 70% by the pharmaceutical industry.



NETWORK ON  
CEREBROVASCULAR  
DISEASES (INVICTUS  
in Spanish)

[www.redinvictus.es](http://www.redinvictus.es)

In 2014, the INVICTUS network achieved the publication of three clinical practice guidelines on: the prevention of stroke and transient ischemic attacks, the treatment of acute ischemic stroke and intra-cerebral haemorrhage management.

There are several clinical studies in progress, such as GLIA, H-ATOMIC, HERO, TLR4, ESTOICA and AMASCIS. In addition, the network completed the recruitment of two large population cohorts of patients with neurovascular sub-clinical disease with affected small and large cerebral arteries to assess the risk of stroke within next years ("Silent cerebro-vascular injuries in the Spanish population (ISSYS)") (n=1.000 HTA persons) and "Barcelona-Asymptomatic Intracranial Atherosclerosis (ASIA)-II." (n= 933)). Both are among the most extensive cohorts in the world for this kind of pathology. It also initiated the pre-commercial development of the drug CBG000592 (protected by patent) and oxaloacetate as new neuro-protective treatment for acute ischemic stroke.



MOTHER-CHILD HEALTH AND  
DEVELOPMENT NETWORK  
(SAMID in Spanish)

[www.redsamid.net](http://www.redsamid.net)

The Mother-Child Health and Development Network production has increased, with a total of 485 impact publications in last three years, and with a very significant scientific production increase compared to the first term.

On the other hand, the SAMID network has become part of the European network EnpreMa to facilitate the participation of Spanish hospitals in coordinated international and multi-centre studies within the framework of the European Union.



NETWORK FOR RESEARCH  
INTO INFECTIOUS  
DISEASES (REIPI in Spanish)

[www.redinvictus.es](http://www.redinvictus.es)

In 2014, six groups of the REIPI network became partners and leaders of WP of the IMI European projects (7PF and EFPIA): "COMBACTE-CARE" and "COMBACTE-MAGNET".

The REIPI produced three patents in 2014 and seven clinical guidelines (three of them were European).

Three publications of this network were awarded with an editorial comment in the reference journal of the field of INFECTIOUS DISEASES (Clinical Infectious Diseases) and select among the 27 most influential by The Society of Infectious Diseases Pharmacist of USA (Significant publications on infectious diseases pharmacotherapy in 2013., Am J Health Syst Pharm. 2014 Nov 15;71(22):1974-88. doi: 10.2146/ajhp140148. PubMed PMID:25349243)

Remarkable REIPI publications in 2014 were:

- Fernández-Ruiz M, Aguado JM, Almirante B, Lora-Pablos D, Padilla B, Puig-Asensio M, Montejo M, García-Rodríguez J, Pemán J, Ruiz Pérez de Pipaón M, Cuenca-Estrella M; CANDIPOP Project; GEIH-GEMICOMED (SEIMC); REIPI. Initial use of echinocandins does not negatively influence outcome in Candida parapsilosis bloodstream infection: a propensity score analysis. Clin Infect Dis. 2014 May;58(10):1413-21. doi: 10.1093/cid/ciu158. PubMed PMID: 24642553.
- Lanza VF, de Toro M, Garcillán-Barcia MP, Mora A, Blanco J, Coque TM, de la Cruz F. Plasmid Flux in Escherichia coli ST131 Sublineages, Analyzed by Plasmid Constellation Network (PLACNET), a New Method for Plasmid Reconstruction from Whole Genome Sequences. PLoS Genet. 2014 Dec 18;10(12):e1004766. doi: 10.1371/journal.pgen.1004766. Pubmed PMID:25522143.
- Petty NK, Ben Zakour NL, Stanton-Cook M, Skippington E, Totsika M, Forde BM, Phan MD, Gomes Moriel D, Peters KM, Davies M, Rogers BA, Dougan G, Rodriguez-Baño J, Pascual A, Pitout JD, Upton M, Paterson DL, Walsh TR, Schembri MA, Beatson SA. Global dissemination of a multidrug resistant Escherichia coli clone. Proc Natl Acad Sci U S A. 2014 Apr 15;111(15):5694-9. doi: 10.1073/pnas.1322678111. PubMed PMID:24706808.



RESEARCH NETWORK FOR  
INFLAMMATION AND RHEUMATIC  
DISEASES (RIER in Spanish)

[www.red-rier.org](http://www.red-rier.org)

The most important milestone of the RIER network was the diffusion of several national and international multi-centre studies in genetics of rheumatoid arthritis and their co-morbidity.

Among all RIER publications in 2014, the following must be highlighted:

- Okada Y, Wu D, Trynka G et al. Genetics of rheumatoid arthritis contributes to biology and drug discovery. *Nature*. 2014 Feb 20;506(7488):376-81. doi: 10.1038/nature12873. PubMed PMID:24390342.
- Soler Palacios B, Estrada-Capetillo L, Izquierdo E et al. Macrophages from the synovium of active rheumatoid arthritis exhibit an activin A-dependent pro-inflammatory profile. *J Pathol*. 2015 Feb;235(3):515-26. doi: 10.1002/path.4466. PubMed PMID: 2531955. Epub 2014 Dec 18. This publication is the first study of the polarization of macrophages in rheumatoid synovial tissue.



TROPICAL DISEASES  
COLLABORATIVE RESEARCH  
NETWORK  
(RICET in Spanish)

[www.ricet.es](http://www.ricet.es)

During 2014, the performance of the following clinical trials is notable: STOP-CHAGAS (Oral Posaconazole activity in the treatment of asymptomatic chronic Chagas disease; Promoter: Merck, Sharp & Dome); Trial for controlling infection by *L. infantum* with Virbac company, by developing the vaccine Cani-Leish; Multinational clinical trial of STRONG TREAT 1 to 4 to compare a single dose of ivermectin versus multiple doses of ivermectin to treat Strongyloidiasis, sponsored by COHEMI (Coordinating resources to assess and improve health status of migrants from Latin America).

It can also be mentioned the international project sponsored by the European Commission (FP7): "Development of pan-Leishmania vaccines based on anti-

genic proteins recognized by the sera from VL patients", the research contract signed with the company Biokilab S.L. to carry out the BIOTCHAGAS project and the use of biomarkers for treatment and monitoring of Chagas disease, and the development of two patents.



COLLABORATIVE RESEARCH NETWORK  
ON AGEING AND FRAILTY (RETICEF  
in Spanish)

[www.reticef.es](http://www.reticef.es)

The most important scientific activities of the RETICEF network were: implementation and follow-up of three different cohorts of elderly persons (Toledo Study for Healthy Ageing, FRADEA Cohort in Albacete and Peñagrande Cohort in Madrid) with the main objective of studying the fragility, the conditions, the physio-pathological basis and prognostic markers. Due to this action, the number of publications reached 30. The Spanish Group of Centenaries, led by Prof. J Viña began operations in order to study the factors associated to extreme longevity.

The coordination of six European projects focused on fragility (FOD-CC; MID-FRAIL; FRAILOMIC, FRAILCLINIC, FRAILTOOLS, VIVIFY), three of them within the FP7, two within DGSANTE and one in the ERASMUS+ Convocatory.

Participation in the European program development within the European Innovation Partnership-Active Healthy Ageing and of JPI More Years Better Lives and in the Knowledge Innovation Communities with Innolife project (KIC).



CELLULAR  
THERAPY NETWORK  
(TERCEL in Spanish)

[www.red-tercel.com](http://www.red-tercel.com)

In 2014, 16 new clinical trials of cell therapy were launched, and a clinical commission was created for cell therapy with joint collaboration of the Spanish Agency for Medicines and Health Products, to inform the public about ethical use and to report fraudulent use of these medications.

In addition, the most relevant published articles in 2014, related to basic science and clinical trials, have been:

- Villa Del Campo C, Clavería C, Sierra R, Torres M. Cell competition promotes phenotypically silent cardiomyocyte replacement in the Mammalian heart. Cell Rep. 2014 Sep 25;8(6):1741-51. doi: 10.1016/j.celrep.2014.08.005. PubMed PMID:25199831.
- Orozco L, Munar A, Soler R, Alberca M, Soler F, Huguet M, Sentís J, Sánchez A, García-Sancho J. Treatment of knee osteoarthritis with autologous mesenchymal stem cells: two-year follow-up results. Transplantation. 2014 Jun 15;97(11):e66-8. doi: 10.1097/TP.000000000000167. PubMed PMID: 24887752.



NETWORK ON ADDICTIVE  
DISORDERS  
(REDRTA in Spanish)

[www.redrta.es](http://www.redrta.es)

The REDRTA network has developed two integrated projects of major social importance. The first one, which explores consequences of alcoholism, has created a cohort for monitoring patients going to a first-time medical consultation for alcoholism (CohRTA). In this CohRTA 11 centres are participating from Spain, registered in a specialized biomedical application ([www.rtaregistro.org](http://www.rtaregistro.org)) developed by the company CORESOFT Clinic. It is estimated that 1,000 patients will be registered by June 2015. Additionally, new targets for alcoholism treatment have been explored, deeply studied in animal models, the pathogenesis of related co-morbidities, including psychiatric. In the second project, which fo-

cused on psychiatric co-morbidity associated with cocaine addiction, preclinical models were developed to explore neurobiology and studies were made with cohorts of patients addicted to this psycho-stimulant in three public centres. In these cohorts the presence of biochemical and inflammatory biomarkers was investigated, associated to the presence of a double diagnosis of addiction/psychiatric pathology.

In addition, 208 studies were published in indexed journals, two European projects and several national and regional collaborative projects were achieved, and three therapeutic procedures patented.



CARDIOVASCULAR  
RESEARCH NETWORK  
(RIC in Spanish)

[www.redcardiovascular.com](http://www.redcardiovascular.com)

The most remarkable milestone in 2014 of the RIC network was the use of funds for network coordination for the calling and resolution of an aid program for research, with the award of a 2 two-year contract for young researchers: one post-doctoral and the other one for a researcher who has completed the MIR/FIR/BIR medical training. This unprecedented initiative opened a new stage in thematic networking history, which also becomes an additional instrument for the promotion of young researchers in Spain.



NETWORK FOR THE OCULAR  
PATHOLOGY OF AGEING,  
VISUAL QUALITY AND QUALITY  
OF LIFE (OFTARED in Spanish)

[www.oftared.com](http://www.oftared.com)

As notable milestones of the OFTARED network, six clinical guidelines published can be mentioned, with an impact on SNS welfare activities, the naming of a coordinator for clinical trials and the establishment of preferential relations with a CRO that will try to value the experimental models of the network groups as well as the ability for patients recruitment.



THEMATIC  
NETWORK OF  
COLLABORATIVE  
RESEARCH  
ON ADVERSE  
REACTIONS TO  
ALLERGENS AND  
DRUGS IN SPAIN  
(RIRAAF in Spanish)

<https://chirimoyo.ac.uma.es/riraaf/>

During 2014, there were important advances in understanding the processes of metabolism for different drugs (BL, dipyron and ibuprofen) as well as the candidate carrier proteins, which will be incorporated to improve the diagnose test. Studies in non-immediate reactions to drugs have confirmed the role of co-factors for reaction induction and how their inclusion amplifies the specific response in vitro. Additionally, the role of Gal-9-Tim-3 axis in regulation of this type of reactions has been proved, meaning that it could be a biomarker for this pathology. The methodology for detection of hidden allergens has been developed and tuned (patent presented) and it will result essential for detecting of allergens traces in processed foods, contributing in food handling and safety. There is an immunotherapy based on an immunoactive peptide of Pru p 3 and dendrimeric structures are under patent request.

The collaboration with companies aiming to the transference of results must be highlighted: the patent is currently in operation with DIATER Laboratories, collaboration with Indoor Biotechnologies, BIAL Aristegui, INMUNAL, ALK-ABELLO, response to allergens studies with ALLERGOPHARMA, Diater Laboratories and ALK-Abelló, agreements on technology transfereces with BIOESTEVEVA and AMGENOMICS, and prototyping and results visualization interfaces in biomedicine and bioinformatics, Integromics S.L. and IBM Austria.



RESEARCH NETWORK  
ON ACTIVITIES IN  
PREVENTION AND  
HEALTH PROMOTION  
(REDIAPP in Spanish)

[www.rediapp.org](http://www.rediapp.org)

In 2014, a total of 257 publications were made (FI=750,129), with 73 being a joint work. The REDIAPP network currently has 14 active projects, with 2 or more participating groups. Among them, the network nuclear project, EIRA project, with the purpose to evaluate multi-risk interventions in primary care to encourage health-promoting behaviours of the population between 45 and 75 years old. Several innovative aspects were also achieved, such as the development of the depression risk equation PREDICT, the development of psychotherapy computer programs, the creation of APP EVIDENT for improving diet and physical exercise, and creation of the SIDIAP database with a wide range of clinical information of nearly 6 million people, supporting multiple projects.



AID RESEARCH  
NETWORK  
(RIS in Spanish)

[www.retic-ris.net](http://www.retic-ris.net)

The RIS network developed 54 non-commercial clinical trials, including more than 1.500 patients, and over 25 publications about the results of these studies, in journals of first quartile. The HIV-infected patients cohort (CoRIS), recruited over 10.000 patient samples in the BioBanco (Biobank), in collaboration with CASCADE, HIV-CASUAL, EuroCoord and ART-Collaboration, and updated the databases of satellites ENOS, hepatitis and resistances. CoRIS published 5 articles. It constructed two cohorts of patients with extreme phenotypes: Long Term non-progressors (260 patients) and Elite Controllers (450 patients). These are participating in the developing of projects related to lymphocyte destruction mechanisms and genetic factors of HIV infection resistance. In the line of vaccines, new immunogens were created and they have performed the first clinical trials of preventive and therapeutic vaccines to stand against HIV phase I in Spain.



RENAL RESEARCH  
NETWORK (REDINREN  
in Spanish)

[redinren.org](http://redinren.org)

In 2014, REDINREN launched the European clinical trial STARMEN to evaluate the pattern of Tacrolimus rituximab in primary membranous glomerulonephritis, the independent clinical trial of the European consortium FP7-Biodrim to customize the immuno-suppression based on immunological risk stratified using biomarkers and led by REDINREN researchers and two multi-centre collaborative projects (Genomic Study of IgA nephropathy and non-related family Nephropathies). The participation in the European project Eurocryst, and the creation of PROGRESER cohort on new progression factors of Chronic Kidney Disease in diabetic and non-diabetic patients must be highlighted. In the transplant program, milestones related to customization of immuno-suppression. The network was involved in the drafting of document of the International Consensus on Diabetes de Novo Post-transplant (Am J Transplant). REDINREN has characterized the natural history and risk factors for the development of Post-Transplant Diabetes (DPT) through a multi-centre study of the network and two multi-centre randomized clinical trials comparing immuno-suppression strategies to prevent DPT development. A Registry of Tumours Post-Renal Transplantation was developed.

work developed 67 active projects financed with national convocations, 14 of which are new and were obtained in convocations that year. In addition, 217 articles have been published including the REDISSEC brand. During this period, it launched the plan for mobility of network researchers as well as the design of the training plan, through a higher degree in collaboration with IMIENS. During this year, they have also promoted: the RECH web (Spanish Network of Hospital Costs), the CAMISS project web (Health Services Research in Breast Cancer), PYDeSalud web maintenance, the continuing of the ATLAS of Variations of Medical Practice in the NHS, and the development of several software focused to aid in decision-making, and the creation of new applications by working together with several companies.



RESEARCH NETWORK ON  
HEALTHCARE SERVICES IN  
CHRONIC DISEASE  
(REDISSEC in Spanish)

[www.redissec.com](http://www.redissec.com)

Currently, the research groups of the REDISSEC network participates in 31 European projects, and leads or coordinates 11 of them. During 2014, the net-



SPANISH NETWORK OF  
MULTIPLE SCLEROSIS  
(REEM in Spanish)

[www.reem.es](http://www.reem.es)

The Spanish Network of Multiple Sclerosis published 28 articles, in collaboration with various network members and other groups, in different scientific journals of high impact.

It has obtained a patent with the results of research carried out in the network context and has published two clinical practice guidelines: "Consensus definitions and application guidelines for control groups in cerebrospinal fluid biomarker studies in multiple sclerosis" and "Guidelines for uniform reporting of body fluid biomarker studies in neurological disorders".

## 2.4. Platforms



BIOMOLECULAR AND  
BIOINFORMATICS RESOURCES  
PLATFORM (PRB2 in Spanish)

[www.prb2.org](http://www.prb2.org)

In the field of proteomics, ProteoRed published in 2014, 175 articles in peer-reviewed journals (average impact factor: 5.69), and also organized the World Congress of the Human Proteome Organization (HUPO 13th Congress) and its V Scientific Meeting on Clinical Proteomics.

In the field of genomics (CeGen), 151 service requests have been issued requested by 115 researchers of 77 different institutions, including 9 foreign (Chile, Brazil, Portugal, Italy, France, United Kingdom and The Netherlands) and 3 private centres. CeGen participates in 15 projects financed by national agencies and 6 projects financed by the European Union, among them: HELIX, EUROFORGEN - NoE and COGS. As a result of participation in these projects more than 60 articles were published, mostly in journals in the first quartile.

In bioinformatics, the pilot project ELIXIR was launched, comprising the installation and maintenance of The European Genome-Phenome Archive (EGA). An infrastructure for storage and analysis of samples from patients with rare diseases was developed, which will host, among other samples from different countries, 300 exomes of Spanish patients. It participated in more than 45 publications in journals of high impact.

The Carlos III National DNA Bank (BDADN-ISCIII in Spanish) has provided researchers a collection of DNA and RNA samples from more of 700 donors, extracted from pure cell populations (purity average over 98%), neutrophils, monocytes, T helper lymphocytes (CD4 +), cytotoxic T lymphocytes (CD8 +) and B lymphocytes of peripheral blood, purified from samples of healthy individuals (controls) and with various haematological diseases. Moreover, it concluded the third phase of the 1.000 genomes

international project, in which Spain has participated through BNADN-ISCIII, with the complete sequencing of 2.000 individuals from 26 human populations differentiated by their geographical origin.



PT13/0002 – SPANISH  
CLINICAL RESEARCH  
NETWORK (SCREN  
in Spanish)

[www.SCReN.es](http://www.SCReN.es)

The Spanish Clinical Research Network composed by a total of 29 units, has provided cross-cutting services to 30 large multi-centre clinical trials (25% international), with an average of 11 Spanish centres participating in each study.

Due to the structuration of the programs, the platform has been provided with:

- An information system for providing centralized services of pharmaco-vigilance in clinical trials and characterization of the network in relation to available and useful computerized records (databases) for active pharmaco-epidemiology and pharmaco-vigilance projects.
- High-quality technological tools for designing CRFs and data analysis, allowing individual design for each study developed by highly experienced professionals.

All activities are supported by the coordination program and have internationalization possibilities through ECRIN conveyed by the National Hub.



MEDICAL TECHNOLOGY  
INNOVATION PLATFORM  
(ITEMAS in Spanish)

[www.itemas.org](http://www.itemas.org)

In 2014, the main milestones of the ITEMAS Platform were:

- Obtaining over 500 projects in development or transfer phase, 150 of which have reached the market due to the work developed by the Innovation Support Units in ITEMAS hospitals.
- Including nearly 100 new collaborative entities in the platform (companies, administration, academia), with 55 of them already participating with member hospitals in the 12 working groups sponsored by ITEMAS. These groups are aimed to share best practices to stimulate the knowledge transfer from hospitals and to overcome some existing barriers in this regard. Some of these are "Innovative Public Purchase", "Legal Framework for Innovation in the Hospital Sector", "Internationalization" and "Training on Innovation".

NATIONAL  
BIOBANKS  
NETWORK

**Red Biobancos**

Instituto de Salud Carlos III

[www.redbiobancos.es](http://www.redbiobancos.es)

During this first year, the National Biobanks Network conducted an exercise for an internal adaptation in its organisation in order to guarantee its functioning. The main milestones are: the development of a governance model, internal rules and work procedures and the design of an integral management tool for the platform, including a Platform Management Plan.

17 multi-centre projects have been managed and five own projects of R&D&I have been activated, focused on sample treatment and data for research.

The V National Biobanks Congress was held in Palma de Mallorca, as well as 2 courses and 6 workshops.

Additionally, the III edition of the Masters degree in Biobanks 2014-2015 has started.

## 2.5. Health Research Institutes (IIS in Spanish)

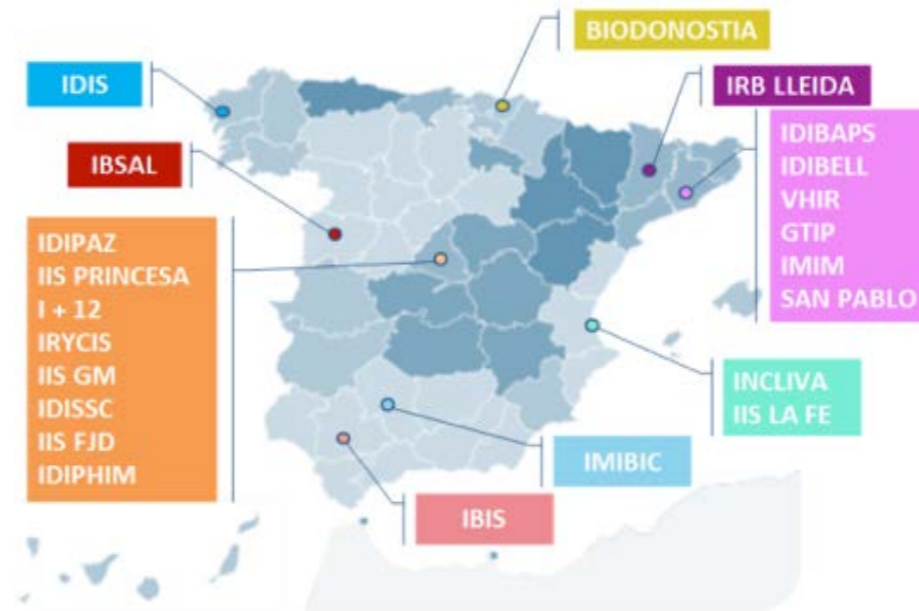
In January 2014, the Accreditation Evaluation Commission approved the accreditation requests of the following institutes, according to the Royal Decree 339/2004:

- IMIM, Hospital del Mar Biomedical Research Institute, accredited on February 17, 2014
- IBSAL, Biomedical Research Institute of Salamanca, accredited on February 17, 2014
- IRB Lleida, Biomedical Research Institute of Lerida, accredited on February 25, 2014
- IDIPHIM, Health Research Institute of Puerta de Hierro, accredited on May 25, 2014

The new audit guide for re-accreditation of institutes with over five years accreditation, according to Royal Decree 339/2004, was approved in January. The following institutes were audited and renewed their accreditation in 2014: IDIBAPS, IBIS, IDIBELL, VHIR, GTIP and IIS La Fe.

Meanwhile, the Technical Assessment and Accreditations Commission (CTEA-IIS in Spanish) which advises in the process of accreditation of the candidate institutes, held a meeting with auditors in January 2014, to review the process of re-accreditation and the guide.

During 2014, the CTEAIIIS has advised to IMIB, IIS BIOCRUCES and IBIMA, performing a previous visit in preparation for the subsequent audit. It also made previous visit to IDIVAL *Biomedical Research Institute of Marqués de Valdecilla* (IDIVAL in Spanish), IBS GRANADA, and IIS Aragon.



Accredited Health Research Institutes up to December 31, 2014

## 2.6. Foundations

The Institute of Health Carlos III takes part in the planning, coordination, follow up and scientific evaluation of the following Foundations:

### CNIC FOUNDATION



NATIONAL  
CARDIOVASCULAR  
RESEARCH CENTRE

[www.cnic.es](http://www.cnic.es)

The Spanish National Cardiovascular Research Centre Foundation (CNIC in Spanish) is a public-private initiative of the Institute of Health Carlos III and the Pro-CNIC Foundation under the Ministry of Economy and Competitiveness, whose aim is to promote the cardiovascular health of people through basic research, translational medicine and training, thus contributing to the progress of scientific knowledge in the field of cardiovascular health and transfer of this knowledge intended for prevention, diagnosis and treatment of cardiovascular diseases.

## Scientific production

During 2014, the National Cancer Research Centre (CNIO in Spanish) published 210 articles, 196 with impact index. In this period, CNIC developed a major effort to increase its international collaboration network, with 68% of the articles based on collaborative studies with foreign institutions, 26% with Spanish institutions and only 6% of them were made entirely by researchers of the CNIC. 59% of all publications had a CNIC scientist as main author. The average impact of the articles was 7,386.

## Fundraising

From 2009 to 2014, over € 30 M were obtained from the National Plan for Scientific and Technical Research and Innovation, with a success rate of over 60% of granted projects.

The high scientific level of the CNIC researchers has been proved by obtaining ERC projects, destined to highlight the excellence of the research work. In first H2020 convocations (Horizon 2020), three ERC projects have been approved (1 Starting Grant and 2 Consolidator).

In 2014, the final review of the Translational Research Project of CNIC 01-2009 was done, obtaining a positive evaluation, and another project 08-2009 was monitored.

37 new agreements were signed, not including annexes related to training, that allow the development of different research projects, national and international, and providing coverage to new programs of training and researchers exchange.

Three researchers were hired in the postdoctoral level, in the Co-fund Program of the European Union, the "CNIC International Postdoctoral Programme".

## Patents

In 2014, the CNIC had 21 active patent families. Four new international Patent Cooperation Treaty applications were introduced, 7 European patent applications and 1 US patent application. Also in 2014, a licensing agreement for use and commercial exploitation of one of these patent families was signed, and worked to implement support procedures to businesses creation. On the other hand, two scientific cooperation agreements were signed (RCAs), 78 material transference agreements (MTAs) and 27 confidentiality agreements (CDAs).

## Training

The centre's training activities are coordinated through the Global Training Plan, known as CNIC-JOVEN (CNIC- Youth), which is designed to encourage interest in biomedical research among young people and create a group of high-quality young researchers in the field of cardiovascular health.

In 2014, the CNIC had 556 participants in different training programs and sessions: undergraduate level "Approach Programme", grade level "Cicerone Programme", postgraduate level (Master Programme, Pre-doctoral and Post-graduate Programme), medical professionals level (FICNIC Programme, INVESMIR and Res@CNIC).

The training offer was completed with a Continuing Education Program, in which the Cicerone Day Course, the Course of Cardiovascular Physiopathology and the Vascular Biology Course were organized.

## CNIO FOUNDATION



NATIONAL CANCER  
RESEARCH CENTRE

[www.cnio.es](http://www.cnio.es)

In 2014, innovation in the National Cancer Research Center (CNIO in Spanish) was encouraged, with the approval of Instruction for Royalties Sharing between CNIO researchers that have contributed to the transference of the research results to the health system and to society in general.

The Marcelino Botín Foundation and the Santander Bank have renewed the support commitment in Transference matters, to doctor M. Blasco and Doctor M. Serrano, extending their support to a third researcher, Doctor Fernández-Capetillo.

Also in 2014, the portfolio of commercialized products increased, reaching a total of 25, which means net royalties are over € 300.000, and collaborations have been established with first class academic partners, such as Flemish Biotechnology Institute), with which the CNIO has closed two agreements for co-development of drugs.

CNIO signed new agreements with Santander Bank Foundation, University of Barcelona, the European University of Madrid, University of Zaragoza, Complutense University of Madrid, University of Valladolid, Pompeu Fabra University and the Foundation for Medical Studies Molina del Segura, thus increasing the total number of partnerships to 12.

In 2014, the journal Cell included Oscar Fernández Capetillo, chief of the Genomic Instability group of CNIO, as one of the top 40 researchers under 40 years old in the world.

Under the slogan "More research, less cancer", the CNIO launched a new philanthropic mode, CNIO Friends, to involve individuals or legal entities (associations, foundations, companies) sensitized to the need of supporting cancer research (<http://www.cnio.es/es/colaborar/comocolaborar.asp>). The platform seeks financial support but also aims to share the knowledge generated at CNIO.

## Scientific Production

During 2014, the CNIO published a total of 249 articles, 44 of them in journals with impact factors between 10 and 15, and 21 in journals with an impact factor higher than 15. It is worth noting that the scientific production level of excellence of CNIO has continued increasing compared to previous years, despite personnel reductions since 2010. The comparison of the 5.100 biomedicine institutions from all around the world (World SIR 2013, SCImago), has shown that CNIO is one of the main centres for cancer research at international level, being ranked 18 in health area, and fourth among the major cancer research centres in the world.

## Fundraising

The CNIO funds a substantial part of its research through competitive projects by national and international institutions, as well as from private entities. In 2014, it obtained financing for 134 projects, 27 of which were international corporations, 4 of them led by CNIO and 30 consortiums with other Spanish groups.

- International Consortiums: 1 project funded by AXA Research Fund; 19 projects by the EU 7FP; 5 projects financed by the Massachusetts Institute of Technology (MIT); 1 by the Melanoma Research Alliance (MRA); 1 by NIH.
- International Individual Projects: 3 by the International Association for Cancer Research (WCR, previous AICR); 1 Bayer HC; 4 Marie Curie Actions; 6 by the European Research Council (ERC); 1 by the European Foundation for Study of Diabetes (EFSD); 1 Howard Hughes Medical Institute (HHMI) International Early Career Award; 1 by NIH.
- National Collaborative Projects: 9 by the Autonomous Community of Madrid; 10 by the Institute of Health Carlos III (ISCIII); 9 by MINECO; 2 by MSSSI.
- National Individual Projects: 1 by BBVA Foundation; 1 by the Community of Madrid; 1 by the Group of Neuro-endocrine Tumours (GETNE in Spanish); 15 of ISCIII; 29 of MINECO; 2 of Mutua Madrileña Foundation; 2 of the Ramón Arece Foundation; 1 of the Spanish Association against Cancer (AECC in Spanish); 1 of the Spanish Society of Medical Oncology (SEOM in Spanish); 1 of the Volkswagen Foundation; 3 of the La Marató TV3 Foundation; 1 of the Prostate Cancer Foundation; 3 of the Botín Foundation.

In addition, in 2014 the CNIO received € 5 M from the pharmaceutical industry for collaborative research, which represents a 200% increase compared to previous years. More than half of these revenues come from collaborations with foreign companies (Eli Lilly, Roche and Pfizer Hofmann).

## Patents

The patent portfolio was restructured, closing the year with a portfolio of 22 patent families, many of which are extended to various countries. Three new inventions have been a subject for patent request this year.

## Training

The CNIO has a postdoctoral training program sponsored by the Santander Bank Foundation, aiming to attract scientists who have developed part of their scientific career in England or USA. Additionally, there is the possibility of a management and business administration course through the IE Business School Programme, to bring scientists into the market. During 2014, the CNIO had 55 postdoctoral students.

There are three continuous education programs for medical residents developed through three months stays in CNIO research groups. In this year, the CNIO had 14 medical residents from different hospitals.

In 2014, two laboratory practice programs were conducted, taught every year for university graduate students. There were 73 students, 3 of whom were incorporated as pre-doctoral students.

In the training program organized through agreements with nine secondary schools, 21 Professional Training Technicians participated, 4 of them were later hired as laboratory technicians at CNIO.

## Clinical Research

During 2014, the Clinical Research Program grew due to an agreement with the 12 de *Octubre Hospital*, leading to the creation of two new clinical research units, led by hospital oncologists. With the incorporation of these new units, the CNIO studies the most relevant cancer types.

Through the Clinical Unit for Familiar Cancer, the CNIO has provided genetic counselling to 163 patients and conducted 871 genetic tests, including the determination of 40 genes.

## CIEN FOUNDATION



CENTRO DE INVESTIGACIÓN  
DE ENFERMEDADES  
NEUROLÓGICAS

[www.fundacioncien.es](http://www.fundacioncien.es)

The Research Centre for Neurological Diseases Foundation (CIEN in Spanish) is a public sector non-profit foundation, of regional scope and jurisdiction. Currently, it is under the Ministry of Economy and Competitiveness through the Institute of Health Carlos III.

The CIEN is one of the best examples of public and private collaboration for research in Spain. Since its establishment, it manages and coordinates the Alzheimer Project Research Unit (UIPA in Spanish) created by the Queen Sofia Foundation and located in the centre that bears her name.

In 2014, it launched the Platform of the National Biobank Network, funded by the ISCIII, where the Tissue Bank of CIEN Foundation (BT-CIEN in Spanish) participates. Alberto Rábano, Director of BT-CIEN, became a member of the Directive Committee of the Platform and a member of ELSA Committee of the Human Brain Project, financed by the European Union. He was also elected Secretary of the Spanish Society of Neurology and Pathology, and joined the CIBERNED research group led by José Ramón Naranjo Orovio.

Also in 2014, two major researchers of CIEN were awarded for their work: the scientific director of CIEN Foundation, Jesús Ávila, the International Prize:

“Friendly Hand Alzheimer Leon”, especially evaluating its research on the role of microtubular proteins in neurodegenerative processes. The Doctor Rábano received “A to your health” award, given by the newspaper La Razón, as researcher of the year, for the stimulation of the BT-CIEN brain bank in helping to a major understanding of neurodegenerative diseases like Alzheimer.

## Scientific Production

In 2014, the CIEN Foundation researchers published 48 scientific articles, 39 of which (a 81, 25%) in journals of the same category, classified as first and second quartile.

## Fundraising

For the third consecutive year, CIEN researchers area participating in European translational research projects called by the Joint Programme in Neurodegenerative Diseases (JPND).

CIEN Foundation promotes a multi-centre research project with the Associations Alzheimer Leon and Alzheimer Soria for detecting the TAU protein in tears, as a potential biomarker for Alzheimer’s disease.

In 2014, the fourth assessment visits for the “Vallecas Project” began. In total 1.213 people will participate in this study for five years. By the end of the year the third evaluation of nearly 44% registered volunteers had already been made.

The BT-CIEN has participated in the research project, granted in 2014 by the BBVA Foundation, “Genome wide analysis of splice variants in Huntington’s disease”, directed by J.J. Lucas Lozano (Centre of Molecular Biology Severo Ochoa, CSIC).

## Patents

Throughout 2014, CIEN Foundation collaborated as co-applicant in 3 patent applications, both for national and international application processes.

## Other activities

The Neuroimaging department performed nearly 6.000 MRI scans on 987 individuals.

In September 2014, the second International Congress on Research and Innovation in Neurodegenerative Diseases (CIIEN in Spanish) was held, which is set as the International Congress of Reference in our country in the neurodegenerative diseases area.

In December 2014, during the holidays, the "Memory Tree" was launched at the Alzheimer Centre the Queen Sofia Foundation. And thanks to the support of the District Board of Villa de Vallecas, the Director General of Major of the Community of Madrid and the Municipal Market of Villa de Vallecas, CIEN Foundation maintained this tree at the previously mentioned market until December 31.

For the second year in a row, it has celebrated on 21 february, the institutionalized Vallecas Projects's Volunteer Day, in recognition of their selfless collaboration in favour of research. In addition, during 2014, with the collaboration of the Queen Sofia Foundation and the Spanish Railway Foundation, two free cultural activities were launched for volunteers of the Vallecas Project: guided tours to Fernán Núñez Palace and to the Railway Museum in Madrid.

### FIPSE FUNDATION



The Institute of Health Carlos III is part of the Board of the Foundation for Health Innovation and Prospective in Spain (FIPSE in Spanish), a non-profit private organisation for health and social research, which aims: to establish collaboration channels between enterprises of health science and technology, the Ministry of Health, Social Services and Equality, and the activities of R&D&i carried out in the context of the NHS, and support projects of translational character to motivate technological and knowledge transference, allowing to value the R&D in health and fill the gap in existing innovation instruments, bringing results of promising projects to the society, with the citizens health improvement as the ultimate goal.

The FIPSE activities, in which the ISCIII actively participates through the General Subdirection of International Research Programs and Institutional Relations, are about the identification and selection of R&D projects in the field of NHS with translational potential, for self-financing or with funds from third parties, intended to accelerate these projects through public and private investment, and the subsequent transfer of results to the market, in the form of products, processes and services.

Additionally, its activity is focused on providing scientific and technical services, valorisation, transference and support to SNS innovation structures, implementing models based on best practices in the development of training and education activities in health science and technologies, as well as spreading the innovation culture among professionals and prospective development of information systems, which contain and integrate the information generated by the various actors involved in health innovation.

Funding by FIPSE in 2014 included:

#### - FIPSE-Río Hortega Program

Two 2-year aids for professionals with research profile who successfully completed the Specialized Health Training in the field of HIV, for incorporation into clinical care teams.

Beneficiary centres have been the Foundation for Health Research Institute of Puerta de Hierro, and the Foundation for Ramon y Cajal Health Research Institute.

The professional activity of the Foundation for Health Research Institute of Puerta de Hierro has focused its activity on the characterization of the cohort of patients infected with HIV and its co-morbidities, with special attention to co-infection by hepatotropic viruses such as VHC, VHB and VHD. The Foundation for Ramon y Cajal Health Research Institute has based its activity mainly in the rotation through the units of HIV and viral hepatitis, and inter-consultations area of infectious diseases.

#### - Feasibility studies for health innovation 2014

Financing of 10 grants of € 25,000 each, destined to IIS to develop feasibility studies for projects based on the scientific results of health research projects.

A total of 33 applications were received for the 19 Health Research Institutes (IIS). Of the 33 applications, 21 were men and 12 women.

During 2014, the design of a services portfolio began, to promote innovation management processes, and transfer of results to the market. The ultimate goal is placing successful applications (products, technologies and innovative services) in the market through the corresponding diffusion processes, undertaking a series of actions that include from the transformation of an idea into a

project up to the commercialization, elaborating an economic and functional feasibility analysis, and the demonstration processes, among others.

The design of a financial instrument, or a project acceleration fund, supported from FIPSE, in order to overcome the existing gap after the R&D phase of a research project with promising results and the development of a communication plan for the New FIPSE, including designing and implementation of the new corporate website, completing the set of actions undertaken by the Foundation.

### Feasibility studies for health innovation granted in 2014

| Area   | Centre   | Project  |
|--|--|--|
| Biotechnology, bioengineering and genomic technologies             | Ramon y Cajal Health Research Institute                              | Business plan and feasibility study for the creation of a spin-off aimed for the identification of new diagnostic devices based on mirnas: initial project of mirnas asdi agnostic method and/or predicting acute renal failure. |
| Cancer   | Institute of Biomedical Research of Cordoba                          | Polymorphisms of the angiotensin converting enzyme to predict or forecast the response to anti-angiogenic therapy of cancer.   |
| Biotechnology, bioengineering and genomic technologies             | Hospital del Mar Biomedical Research Institute Foundation            | Thermoseal-Plvs: advanced energy-based system for laparoscopic sealing of blood vessels  |
| Biotechnology, bioengineering and genomic technologies             | Gregorio Marañón Health Research Institute                           | New integrated radiography system  |
| Epidemiology, public and ocupacional health                        | Institute of Biomedicine of Sevilla                                  | Burn Analysis Imaging System (BAI)   |
| Endocrine, digestive diseases and surgery                          | Health Research Institute of Vall d´ Hebron                          | Collyrium for the treatment of diabetic retinopathy  |
| Cancer   | Ramón Domínguez Foundation   | Development of marketing plan for the 2KLIC device for quality control of advanced radiotherapy techniques   |
| Neurological diseases and mental disorders                         | Intitut d´ Investigació en Ciències de la Salut GermansTrias i Pujol | Identifying genetic biomarkers for diagnosis (preco cious/early and/or differential) of dementia with Lewy bodies  |
| Neurological diseases and mental disorders                         | Institut d´ Investigaciones Biomédicas August Pi y Sunyer (IDIBAPS)  | I-CORTEX: immersive-cerebral and ortho pedic rehabilitation and training exercises   |
| Pediatrics, perinatal medicine, congenital and metabolic anomalies | Health Research Institute ( INCLIVA)                                 | Development of a transference plan of a prototype for cardiorespiratory ability analysis and its application in prevention and treatment of childhood obesity.   |

## 2.7. Agreements

### 2.7.1. Co-funding agreements with Autonomous Regions to promote research in related fields

The Institute of Health Carlos III, as part of its mission to “promote, assess, coordinate and monitor research into cell therapy and regenerative medicine, in the National Health System and the rest of science and technology system”, has, since 2004, maintained collaboration agreements with several Autonomous Regions.

In 2014, new agreements were signed with bodies from the following Autonomous Regions with the Institute of Health Carlos III funding contributions listed below:

|           |           |
|-----------|-----------|
| Catalonia | 600.000 € |
| Andalusia | 400.000 € |

### 2.7.2 Agreements for collaboration with Autonomous Regions for developing activities in technologies assessment

In 2014, the Institute of Health Carlos III signed cooperation agreements with autonomous institutions for developing activities of technologies assessment within the framework of the Spanish Network of Assessment Agencies for Public Health Technologies and Performance of NHS. These are detailed below, as well as the funding from the ISCIII:

|  |           |
|--|-----------|
| Aragon Health Sciences Institute   | 700.000 € |
| Canary Island Health Service   | 555.000 € |
| Basque Government Health Department  | 555.000 € |
| Department of Equality, Health and Social Policy of the regional government of Andalusia | 555.000 € |
| Ministry of Health of the Community of Madrid  | 100.000 € |
| Galician Healthcare Service  | 555.000 € |
| Quality and Evaluation Health Agency of Catalonia  | 555.000 € |

### 2.7.3 Other Agreements

Among the other agreements signed by the ISCIII in 2014, the following are highlighted: the agreement with Foundation for AIDS Research and Prevention in Spain (FIPSE In Spanish) for the promotion of translational research, with a funding of € 300.000 and the agreement with Spanish Foundation for International Cooperation, Health and Social Policy (FCSAI in Spanish) for institutional reinforcement of the mother and child health, with an economic endowment of € 110.721.



## Scientific and Tecnical Activities

3

### 3. Technical- Scientific Activities

#### 3.1. Centres and Units

The most relevant scientific and technical activities of the Institute of Health Carlos III during 2014 are detailed below, in the Centres and Units that conform it.

#### NATIONAL MICROBIOLOGY CENTRE

The mission of the National Microbiology Centre (CNM) is to provide scientific- technical support to the Central Government, to the Autonomous Regions and the National Health System (NHS) in the prevention, diagnosis and treatment of infectious diseases.

The major milestones in 2014 were:

Appointment as a reference laboratory in imported cases suspected of suffering the disease by Ebola virus, related to the Guinea outbreak. In the CNM facilities, samples of suspected cases declared in Spain were inactivated and processed (including the patients repatriated from Liberia). Over 300 samples from 55 suspected cases were studied (resulting 3 positives and 52 negatives). The CNM alert system has worked 24 hours a day, 7 days a week.

- Participation in the study of the epidemic outbreak of the Chikungunya fever declared in the Dominican Republic in July and then extended to other countries of the Caribbean, Central America and South America, with over one million cases and tens imported to Spain.
- Coordination of the microbiological monitoring programs for infections of major importance for public health. In 2014, more than 25 microbiological monitoring programs were developed for many other infectious diseases of public health interest, improving the epidemiological knowledge on these infections and developing more efficient control measures.

#### Technical- scientific activities

- The CNM maintains several research programs that count on funding from competitive calls, agreements and contracts with public and private institutions, and relations with the business sector. The total number of active projects, contracts and agreements in 2014, was higher than 120. As a result of these programs, the CNM published more than 150 papers in national and international journals, participated in hundreds of conferences, plus several patents and useful models.
- In 2014, the number of laboratory tests performed by the CNM was 180,000, including all activities of providing services to the SNS, even tests billed for services portfolio, alerts, outbreak and programs, as well as contracts with institutions or companies and for researching projects. The total packages with biological samples received and processed were more than 13,000.

#### Scientific production

1. Bongers G, Ochando J, Lira SA. Interplay of host microbiota, genetic perturbations, and inflammation promotes local development of intestinal neoplasms in mice. *J Exp Med*. 2014;211:457-72. *J Exp Med*. 2014 Mar 10;211(3):457-72. doi: 10.1084/jem.20131587. PubMed PMID:24590763.
2. Cortegano I, Melgar P, Gaspar ML, de la Pompa, JL. Notch1 regulates progenitor cell proliferation and differentiation during mouse yolk sac hematopoiesis. *Cell Death Differ*. 2014 Jul;21(7):1081-94. doi: 10.1038/cdd.2014.27. PubMed PMID: 24583642.
3. Fernández-Ruiz M, Aguado JM, Cuenca-Estrella M; CANDIPOP Project; GEIH-GEMICOMED (SEIMC); REIPI. 2014. Initial use of echinocandins does not negatively influence outcome in *Candida parapsilosis* bloodstream infection: a propensity score analysis. *Clin Infect Dis*. 2014 May;58(10):1413-21. doi: 10.1093/cid/ciu158. PubMed PMID:24642553.
4. Fortún J, Buitrago MJ, Cuenca-Estrella M. Clinical validation of a multiplex real-time PCR assay for detection of invasive candidiasis in intensive care unit patients. *J Antimicrob Chemother*. 2014 Nov;69(11):3134-41. doi: 10.1093/jac/dku225. PubMed PMID:24970743.

5. Swanson KA, Balabanis K, Melero JA. A monomeric uncleaved respiratory syncytial virus F antigen retains prefusion-specific neutralizing epitopes. *J. Virol* 2014 Oct;88(20):11802-10. doi: 10.1128/JVI.01225-14. Pub Med PMID: 25078705.
6. Lorenzo-Redondo R, Delgado S, Lopez-Galindez C. Realistic three dimensional fitness landscapes generated by self organizing maps for the analysis of experimental HIV-1 evolution. *PLoS One*. 2014 Feb 28;9(2):e88579. doi: 10.1371/journal.pone.0088579. PubMed PMID:24586344.
7. Martín-Galiano AJ, Yuste J, de la Campa AG. Inspecting the potential physiological and biomedical value of 44 conserved uncharacterised proteins of *Streptococcus pneumoniae*. *BMC Genomics*. 2014 Aug 5;15:652. doi: 10.1186/1471-2164-15-652. PubMed PMID:25096389.
8. García-Álvarez M, Pineda-Tenor D, Resino S. Relationship of vitamin D status with advanced liver fibrosis and response to hepatitis C virus therapy: a meta-analysis. *Hepatology*. 2014 Nov;60(5):1541-50. doi: 10.1002/hep.27281. PubMed PMID: 24975775.

### Fundraising

- The Units of Genomics and Bioinformatics are participating in the Global Microbial Identifier (GMI) project, an international initiative formed by 146 members from 31 countries, for standardization of new massive sequencing techniques in microbiological identification. Its lifetime is until 2018.
- Participation in the 3rd Health Program (Call: HP-JA-2014) with the project "EMERGE Efficient response to highly dangerous and emerging pathogens at EU level", designed to develop techniques in detection y rapid response. Period 2014-2017.

### Training

There have been several teaching and educational activities emphasizing the Official Master of Public Health Microbiology and Infectious Diseases Research coordinated with the University of Alcalá de Henares and the CNM, in which 60 teachers of the centre have participated. In addition, a total of 182 external rotating and national and international visitors were trained in the CNM in 2014.

## NATIONAL EPIDEMIOLOGY CENTRE

The mission of the National Epidemiology Centre (CNE) is to analyze the public health and the impact of health policies in Spain. It does so mainly through epidemiological surveillance of diseases, their risk factors and their impact on health. The CNE is responsible for: 1) The National Epidemiological Surveillance Network (RENAVE in Spanish), in collaboration with the Ministry of Health, Social Service and Equality (MSSSI in Spanish) and Autonomous Regions (CCAA in Spanish) 2) Education and training of experts and researchers in epidemiology. 3) Epidemiological research and 4) Representation of Spain before European institutions, mainly the ECDC, contributing to European surveillance with RENAVE.

### Scientific and technical activities

- Supporting the MSSSI in all activities, plans and actions for control, prevention and/or eradication of diseases.
- Communicable diseases and risk behaviours:
- Development of the web platform for notification (SIVIES).
- Reporting cases to ECDC, WHO and EFSA, and point of contact for diseases subject to VE.
- Program for tuberculosis and daily mortality elimination (WHO).
- Monitoring of vaccine-preventable diseases.
- Plans for disease prevention and control.
- Creating a Monitoring System for infections associated to Health Care.
- Strategic Plan for Control of Antimicrobial Resistance.
- Collaboration with the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) for epidemiological analysis of drug injectors.
- Collaboration with the Traffic General Directorate rate and national plans.

### Scientific Production

1. Almazán-Isla J, Comín-Comín M, Damián J et al. Analysis of disability using WHODAS 2.0 among the middle-aged and elderly in Cinco Villas, Spain. J; DISCAP-ARAGON Research Group. *Disabil Health J*. 2014 Jan;7(1):78-87. doi: 10.1016/j.dhjo.2013.08.004. PubMed PMID:244115114
2. Boldo E, Linares C, Aragonés N et al. Air quality modeling and mortality impact

of fine particles reduction policies in Spain. *Environ Res*. 2014 Jan;128:15-26. doi: 10.1016/j.envres.2013.10.009. PubMed PMID: 24407475.

3. Díez M, Bleda MJ 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. *Euro Surveill*. 2014 Nov 27;19(47):20971. PubMed PMID:25443036.
4. Jiménez-Jorge S, F Pozo, S de Mateo et al. Influenza vaccine effectiveness in Spain 2013/14: subtype-specific early estimates using the cycEVA study. *Euro Surveill*. 2014 Mar 6;19(9). pii: 20727. PubMed PMID:24626206.
5. Llácer A, Fernández-Cuenca R, Martínez-Navarro F. Crisis económica y patología infecciosa. Informe SESPAS 2014. *Gac Sanit*. 2014 Jun;28 Suppl 1:97-103. doi: 10.1016/j.gaceta.2014.02.015. PubMed PMID:24863999.
6. Lodi S, et al. Delayed HIV diagnosis and initiation of antiretroviral therapy: inequalities by educational level COHERE in EuroCoord. *AIDS*. 2014 Sep 24;28(15):2297-306. doi: 10.1097/QAD.0000000000000410. PubMed PMID:25313585.
7. López-Abente G, Aragonés N, Pérez-Gómez B et al. Time trends in municipal distribution patterns of cancer mortality in Spain. *BMC Cancer*. 2014 Jul 24;14:535. doi: 10.1186/1471-2407-14-535. PubMed PMID:25060700.
8. Padrón A, Galán I, Rodríguez-Artalejo F. Second-hand smoke exposure and psychological distress in adolescents. A population-based study. *Tob Control*. 2014 Jul;23(4):302-7. doi: 10.1136/tobaccocontrol-2012-050548. PubMed PMID:23002180.
9. Pulido J, Molist G, Domingo-Salvany A et al. Predictors of change in cocaine use in a street-recruited cohort of young cocaine users. *Addiction*. 2014 Jun;109(6):954-64. doi: 10.1111/add.12503. PubMed PMID:24520923.

### Fundraising

In 2014, the CNE participated in a total of 28 national and 9 international projects, generating 164 scientific publications (21 national and 143 international).

Some of the active projects to mention are:

- Project FIS PI11/00871. Cohort effects, period and turning points in trends in mortality by cancer in Spain and elaboration of high-resolution maps with detection of possible groupings. PI: Gonzalo López-Abente. 2012-2014.
- Project FIS PI12/00488. Impact of established risk factors for breast cancer in Spain. New risk factors and their potential consequences in our country. MCC-Spain study. PI: Marina Pollán. 2013-2015.

- Project FIS PI11/01276. Impact of the law of health measures against smoking in hospital admissions for cardiovascular and respiratory diseases in Spain. PI: Ignacio Galan Labaca. 2012-2014.
- Joint Action financed by DG SANCO. The impact on maritime transport of health threats due to biological, chemical and radiological agents, including communicable diseases (SHIPSAN Act). PI: Carmen Varela. 2013-2016.
- FIS Project. Implementation of a sustainable strategy for the evaluation of a generalized public health intervention: influenza vaccination in Spain. PI: Amparo Larrauri. 2014.
- Project FIS PI13/02300. Estimates of HIV prevalence and undiagnosed fraction in Spain: comparison using different methods. PI: Mercedes Díez Ruiz-Navarro. 2013-2015.
- Eurocoord - European Network of HIV/AIDS cohort studies to coordinate at European and international level clinical research on HIV/AIDS. UE 7 PM. PI: Julia del Amo. 2014.
- Rapid HIV testing in Spain: program description, impact assessment and analysis of its potential as a strategy to promote early diagnosis. PI: Luis de la Fuente de Hoz. 2011-2014.

## Training

- Field Program on Applied Epidemiology (PEAC): led by the CNE since 1994. During 2014, 11 epidemiologists were formed, participating in three epidemic outbreaks and 20 epidemiological studies. Internationally, PEAC worked with GOARN in 9 support missions to the Philippines after Yolanda Hurricane and responded to the Ebola epidemic in Africa. In addition, the PEAC Program hosts the MEDIPIET European project, led by the Spanish consortium ISCIII-FIAPP. The PEAC participated in 4 projects, generating 8 international and 6 national publications.
- The CNE has participated in 98 seminars, in 85 educational programs, has trained 13 MIR, directed 18 Doctoral Theses and has participated in 11 Theses Courts.

## NATIONAL CENTRE FOR ENVIRONMENTAL HEALTH

The National Centre for Environmental Health (CNSA) is the scientific- technical organisation under the Institute of Health Carlos III, specialises in health-related issues caused by environmental contamination. Its fundamen-

tal aim is to identify the risk that the population faces in potential cases of environmental pollution.

## Technical- scientific activities

- Preparing 140 international reports for the European Food Safety Authority (EFSA).
- Organisation, as a National Reference Laboratory for Air Quality (Royal Decree 102/2011), of the two "in situ" inter-comparison exercises of the sulphur dioxide and the mass of atmospheric particles captured in filters, with the collaboration of regional governments, Portugal and industrial organisations.
- Collaboration with the office of WHO-Europe as experts on human bio-monitoring, preparing the Mid-Term Review (MTR) of the European Environment and Health process to be held in Haifa, Israel in April 2015.
- Participation as a member of the Management Council of the National Platform for R&D on Radiological Protection (PEPRI) and of the group for the Action COST "EMF-MED" (Network of European cooperation in research and technology on beneficial biological effects of electromagnetic fields).
- Assessment of air quality for total gaseous mercury in Gijón (Asturias, Spain).
- Performance of the Emergency Unit of the CNSA, in the exercise of national interest held in Luñol organized by the Military Emergency Unit of the Ministry of Defense.
- For the first time in Spain, publication of the values of polychlorinated biphenyls in serum of the adult working population nationwide (in collaboration with the CNE).
- Participation in the "TAIEX" program of the European Commission for staff specialization of the Ministry of Health of the former Republic of Macedonia for the analysis of metals in human samples.

## Scientific Production

1. O. Huetos, M. Bartolomé, N. Aragones et al. Serum PCB levels in a representative sample of the spanish adult population: the BIOAMBIENT. ESes Project. *Sci Total Environ.* 2014 Sep 15;493:834-44. doi: 10.1016/j.scitotenv.2014.06.077. PubMed PMID:25000579.

2. Cañas, A.I., M Cervantes-Amat, M Esteban et al. Blood lead levels in a representative sample of the Spanish adult population: *Int J Hyg Environ Health*. 2014 Apr-May;217(4-5):452-9. doi: 10.1016/j.ijheh.2013.09.001. PubMed PMID:24095590
3. Bartolomé M, Gallego-Picó A, Huetos O. et al. High-performance liquid chromatography with diode-array detection cotinine method adapted for the assessment of tobacco smoke exposure. *J Sep Sci*. 2014 Jun;37(12):1404-10. doi: 10.1002/jssc.201301259. PubMed PMID:24668723.
4. Schindler BK, Esteban M, Koch HM, et al. The European COPHES/DEMOCOPHES project: towards transnational comparability and reliability of human biomonitoring results. *Int J Hyg Environ Health*. 2014 Jul;217(6):653-61. doi: 10.1016/j.ijheh.2013.12.002. PubMed PMID: 24405937.
5. Becker, M Seiwert, L Casteleyn, R Joas, A Joas, P Biot, D Aerts, A. Castaño, et al. DEMOCOPHES consortium. A systematic approach for designing a HBM Pilot Study for Europe. *Int J Hyg Environ Health*. 2014 Mar;217(2-3):312-22. doi: 10.1016/j.ijheh.2013.07.004. PubMed PMID:23928002.
6. Pirard, C.; G Koppen, K. De Creme, I Van Overmeire, E. Govarts, MC Dewolf, E Van De Mierop, D Aerts, P Biot, L Casteleyn, M Kolossa-Gehring, G Schwedler, J Angerer, H M. Koch, BK. Schindler, A Castaño, et al. Hair mercury and urinary cadmium levels in Belgian children and their mothers within the framework of the COPHES/DEMOCOPHES projects. *Sci Total Environ*. 2014 Feb 15;472:730-40. doi: 10.1016/j.scitotenv.2013.11.028. PubMed PMID: 24333995.
7. Cullen E, Evans DS, Davidson F, Burke P, Burns D, Flanagan A, Griffin C, Kellegher A, Mannion R, Mulcahy M, Ryan M, Biot P, Casteleyn L, Castaño A, et al. Mercury Exposure in Ireland: Results of the DEMOCOPHES Human Biomonitoring Study. *Int J Environ Res Public Health*. 2014 Sep 17;11(9):9760-75. doi: 10.3390/ijerph110909760. PubMed PMID: 25233018.

## Fundraising

- European Monitoring Evaluation Programme / Comprehensive Atmospheric Monitoring Program. Agreement on trans-boundary atmospheric pollution over long distances. National Meteorological Agency. 2011-2016.

- Research on the presence of persistent organic pollutants and endocrine disruptors in the Spanish population. Management entrustment of the Ministry of Agriculture, Food and Environment (MAGRAMA in Spanish) - ISCIII 2010-2015.
- Ambient air- measurement of NO<sub>3</sub><sup>-</sup>, SO<sub>4</sub><sup>2-</sup>, Cl<sup>-</sup>, NH<sub>4</sub><sup>+</sup>, Na<sup>+</sup>, K<sup>+</sup>, Mg<sup>2+</sup>, Ca<sup>2+</sup> in PM<sub>2,5</sub>. CEN/TC 264/WG34. Contract item: 2012-11.2.2. 2014-2017. Nederlands Normalisatie Institute.
- Examination and evaluation in the field of toxicology and metabolism of active substances in phyto-sanitary products. INIA-ISCIII Agreement 2009-2014.
- IB-BIOALERTNET. Iberian network of laboratories for biological alert. Workpackage "Accreditation of procedures for detection of highly pathogenic agents". EU DG HOME. 2013-2015.
- Development of a measurement system for the dielectric characterization of organisms of toxicological trials. Ministry of Economy and Competitiveness. AES . 2013-2015.
- Program of Advanced Technologies in Health Surveillance - Objective 1. Detection of residues drug, phytosanitary and heavy metals in food and environment in contact with animals and humans. DGUI Madrid Region. 2014-2018.

## Training

- Coordination of a module of atmospheric pollution in the master of environmental pollution at the Rey Juan Carlos University.
- Online course organisation and teaching in collaboration with ENMT on indoor air quality.
- Organisation and teaching of specialized theoretical and practical courses on risk assessment of phyto-sanitary products for humans, for technicians of MAGRAMA.

## NATIONAL CENTRE FOR TROPICAL MEDICINE

The National Centre for Tropical Medicine (CNMT) provides its services to the NHS in diagnosis, reference and study of diseases related to tropical medicine and international health. It also carries out teaching activities in fields related to tropical diseases and encourages coordination among tropical medicine specialists in Spain, promoting and establishing collaboration agreements with public and private organisations, at national and international level.

The CNMT coordinates the Tropical Disease Cooperative Research Network (RICET in Spanish) as part of the Strategic Action in Health ([www.ricet.es](http://www.ricet.es)).

## Scientific Production

1. Herrador Z, Sordo L, Gadisa E et al. Micronutrient deficiencies and related factors in school-aged children in Ethiopia: across-sectional study in Libo Kemkem and Fogera districts, Amhara Regional State. *PLoS One*. 2014 Dec 29; 9(12):e112858. doi: 10.1371/journal.pone.0112858. eCollection 2014. PubMed PMID: 25546056; PubMed Central PMCID: PMC4278675.
2. Herrador Z, Sordo L, Gadisa E, et al. Cross-sectional study of malnutrition and associated factors among school aged children in rural and urban settings of Fogera and Libo Kemkem districts, Ethiopia. *PLoS One*. 2014 Sep 29; 9(9):e105880. doi:10.1371/journal.pone.0105880. eCollection 2014. PubMed PMID: 25265481; PubMed Central PMCID: PMC4179248.
3. Cordon-Obras C, Cano J, Knapp J et al. *Glossina palpalis palpalis* populations from Equatorial Guinea belong to distinct allopatric clades. *Parasit Vectors*. 2014 Jan 17; 7:31. doi: 10.1186/1756-3305-7-31. PubMed PMID: 24438585; PubMed Central PMCID: PMC3898820.
4. López-Perea N, Sordo L, Gadisa E et al. Knowledge, attitudes and practices related to visceral leishmaniasis in rural communities of Amhara State: a longitudinal study in northwest Ethiopia. *PLoS Negl Trop Dis*. 2014 Apr 17; 8(4):e2799. doi: 10.1371/journal.pntd.0002799. eCollection 2014 Apr. PMID:24743328.

## Fundraising

- TRPY 1389/12 Prevention and control of imported tropical and re-emerging diseases of high impact. AES: 31/12/2012 - 31/12/2015.
- TRPY 1008/10 AES: Cohort study of the effectiveness of artesunate/amo-diaquine in adults co-infected with HIV-malaria in Equatorial Guinea: determinant factors associated with the parasite and the host. June 2011 to June 2014.
- PTDC/SAU-EPI/113326/2009. Factors affecting dynamics of plasmodium concomitant infections in a malaria endemic area: analysis through a new modelling approach. Fundação para a Ciência e Tecnologia (Portugal): March 2011 march 2014.

- TRVE 1063/10: Agreement under the activities related to tropical diseases. Spanish Agency of International Cooperation and Development: 23/03/2010 - 23/03/2015.
- TRVE 1216/11: Agreement for the development of projects in Ethiopia. Ethiopian Health and Nutrition Research Institute: 01/09/2011 - 01/09/2016.
- TRVI 1032/13: Development of research and cooperation activities in the field of neglected tropical diseases. Mundo Sano Foundation: 16/04/2013 - 16/04/2016.
- TREG 1199/14: Entrustment project in Equatorial Guinea for the control of endemic diseases and maternal and child health. Spanish Agency of International Cooperation for Development. 21/07/2014 - 21/07/2015.
- TREG 1200/14: Development of the control of endemic diseases and maternal and child health project in Equatorial Guinea. International Cooperation Foundation of Health and Social Policy. 21/11/2014 - 21/11/2015.
- Contract with the National Institute of Health, USA. National Institute of Allergy and Infectious Diseases. R01AI114685. "Hit-to-lead discovery for sleeping sickness via industry-academic partnership".

## Patents

- Patent "Treatment of Chagas disease. Application number: SE-1350703-3. Merk, Sharp & Dome Spain financed and supported to Medina Foundation.

## RESEARCH INSTITUTE FOR RARE DISEASES

The role of the Research Institute for Rare Diseases (IIR) involves diagnosis, research and recording of rare diseases, including congenital abnormalities, autistic spectrum disorders and toxic oil syndrome.

## Technical- scientific activities

- The National Biobank for Rare Diseases (BioNER in Spanish) has consolidated its linking to the new Biobanks Platform of the ISCIII, and also in the European networks, Eurobiobank and RD-CONNECT, by contributing to several projects with the provision of 132 samples.



- The genetic diagnosis unit has maintained activated its services portfolio of genetic diagnosing for rare and alpha-1 antitrypsin childhood tumours. It also has incorporated the program for rare diseases undiagnosed and has assumed the work of BioNER. This year have practiced 2.475 trials on 445 cases. It has kept the agreement with the Spanish Registry of Patients with Alpha-1 antitrypsin Deficit (REDAAT in Spanish).
- System consultation patients and organisations: 660 inquiries have been received, of which 330 are related to rare diseases and the rest to toxic oil syndrome.
- Monitoring of the Toxic Oil Syndrome cohort in a total of 14.730 cases, having identified 225 cases of deceased during 2014.
- Collaboration in the development of the population-based screening program for early detection of TEA (Autistic Spectrum Disorders, ASD) in the provinces of Salamanca and Zamora, in cooperation with the University of Salamanca, with more than 12,000 screened children since its inception.
- The IIER, from the Cellular Biotechnology unit, participates in a Phase I Clinical Trial (EudraCT: 2008-000364-16; clinicaltrial.gov number: NCT01844661).
- The National Register of Rare Diseases (RNER in Spanish), through Spain-RDR (Spanish Rare Diseases Registries Research Network) project under the International Rare Diseases Research Consortium (IRDIRC), has established a collaboration with the Autonomous Regions and scientific societies, and with the Spanish Federation for Rare Diseases (FEDER in Spanish) <http://spainrdr.isciii.es/>
- SpainMDB. Database of germinal line mutations. The first meeting with experts was held to present the methodology of the germ line mutations database called SpainMDB. <http://spainmdb.isciii.es/>.

### Scientific Production

1. Rachel Thompson et al RD-Connect: An Integrated Platform Connecting Databases, Registries, Biobanks and Clinical Bioinformatics for Rare Disease Research. *J Gen Intern Med.* 2014 Aug;29Suppl 3:S780-7. doi: 10.1007/s11606-014-2908-8. PubMed PMID: 25029978.
2. García-Primo P et al. Screening for autism spectrum disorders: state of the art in Europe. *Eur Child Adolesc Psychiatry.* 2014 Nov;23(11):1005-21. doi: 10.1007/s00787-014-0555-6. PubMed PMID: 24913785.
3. M Villa-Morales, et al. FAS system deregulation in T-cell lymphoblastic lymphoma. *Cell Death Dis.* 2014 Mar 6;5:e1110. doi: 10.1038/cddis.2014.83. PubMed PMID:24603338.

4. B Lara, et al. Severe Alpha-1 Antitrypsin Deficiency in composite heterozygotes carrying a new splicing mutation QOMadrid. *Respir Res.* 2014 Oct 7;15:125. doi: 10.1186/s12931-014-0125-y . PubMed PMID:25287719.
5. Isabel Mirones, et al. Dopamine mobilizes mesenchymal progenitor cells into peripheral blood through D2-class receptors and their PI3K/AKT pathway. *Stem Cells.* 2014 Sep;32(9):2529-38. doi: 10.1002/stem.1745. PubMed PMID: 24806705.
6. Luis Antonio Mariñas-Pardo et al. Adipose-derived mesenchymal stem cells regulate airway contractile tissue remodeling in experimental asthma. *Allergy.* 2014 Jun;69(6):730-40. doi: 10.1111/all.12392. PubMed PMID: 24750069.
7. R Rubio et al\*. Bone environment is essential for osteosarcoma development from transformed mesenchymal stem cells. *Stem Cells.* 2014 May;32(5):1136-48. doi: 10.1002/stem.1647. PubMed PMID: 24446210.
8. Á Vicente López et al. Mesenchymal stromal cells derived from the bone marrow of acute lymphoblastic leukemia patients show altered BMP4 production: Correlations with the course of disease. *Plos One.* 2014 Jan 6;9(1):e84496. doi: 10.1371/journal.pone.0084496. eCollection 2014. Pub Med PMID: 24400095
9. Castro R et al. "CCR7 Is Mainly Expressed in Teleost Gills, Where It Defines an IgD+IgM- B Lymphocyte Subset". *J Immunol.* 014 Feb 1;192(3):1257-66. doi: 10.4049/jimmunol.1302471. PubMed PMID: 24353268.

## Fundraising

- RD-CONNECT. Agency: DG Research. FP7. 2012- 2018.
- Platform for sharing best practices for management of rare diseases. PI: Manuel Posada of ISCIII. DG Research. FP7: 2012- 2016.
- Spanish Rare Disease Registries Research Network (SpainRDR). PI: Manuel Posada. ISCIII-IRDiRC SpainRDR- IR-11-RDR. 2011-2014.
- Role of microRNAs as biomarkers for early diagnosis of hereditary breast cancer. Expression profiles in tumours, blood and serum FIS 2011. 2012-2015.
- Regulation of the polarization of tumour associated macrophages by the

ARF gene and its functionality on tumour angiogenesis. Alfonso Luque Jiménez. FIS. TPY-M 1068/13: 2013-2016.

- Identification of mosaicism in patients with retinoblastoma by massive sequencing and molecular characterization of retinomas and retinoblastomas: Therapeutic implications. PI: Javier Alonso. FIS. PI12/00816. 2013-2015.
- Cell biology of osteosarcoma. PI: Javier García Castro. FIS. PI11/00377: 2012-2014.
- Re-educating the macrophages. Role of ARF tumour suppressor gene in polarization of tumour associated macrophages. PI: Sonsoles Hortelano. FIS. PI11/0036: 2012-2015.
- Thematic Network for Cooperative Research in Cancer. Program 7, paediatric and other tumours. WP 7.2. PI: Javier García Castro FIS. RD12/0036/0027. 2013-2016.

## Training

- Contribution to postgraduate education of professionals in the field of rare diseases and autism, including master's degrees.
- On-line course for Rare Diseases, with more than 300 students enrolled.
- "Investiga I+D" (R&D Research) Training Programme of the San Patricio Foundation with the topic of genetic diagnosis in the XXI century.

## RESEARCH UNIT FOR THE STUDY OF CONGENITAL ANOMALIES

The Research Unit Centre for the Study of Congenital Anomalies (CIAC) under the Institute of Health Carlos III, carries out its ECEMC activity (scientific group of ASEREMAC – Spanish Association for Registration and Study of Congenital Malformations) under the framework agreement reached with the Institute Health Carlos III, following the creation of the ISCIII-ASEREMAC Joint Centre. The ECEMC (Spanish Collaborative Study on Congenital Malformations) is a programme of clinical and epidemiological research on birth defects, with a multidisciplinary and translational approach. It functions on the basis of a per-

manent registration system of newborn with case- control birth defects, based in hospitals. The purpose of the ECEMC is researching the causes of congenital anomalies for prevention. The ECEMC has a Clinical Network of over 400 doctors (mainly pediatricians). The group is part of the Centre for Biomedical Network Research on Rare Diseases (CIBERER) since its constitution in 2006, and is also composed by the following international networks: ICBDSR (International Clearinghouse for Birth Defects Surveillance and Research –www.icbdsr.org), EUROCAT (European Surveillance of Congenital Anomalies –www.eurocat-network.eu), and ENTIS (European Network of Teratology Information Services –www.entis-org.eu).

### Technical- scientific activities

- Maintenance of the ECEMC Clinical Network (more than 400 medical doctors from all over Spain).
- Clinical and dysmorphic evaluation of 757 newborns with birth defects (DC) in Spain.
- Cytogenetic study (high resolution and molecular): 215 samples of ECEMC environment.
- Attention to 538 medical consultations to SITTE (Spanish Telephone Information Service on Teratology) and 3,988 consultations to SITE (Telephone Information Service for Pregnant Women).
- Epidemiological surveillance for DC in Spain.
- European surveillance for DC in the EUROCRAT environment (www.eurocat-network.eu).
- World epidemiological surveillance for DC in the ICBDSR environment (www.icbdsr.org).
- Continuation of work developed in the WP7 of “EUROCAT Joint Action (2011-2013)”, EAHC, EU Health Programme 2008-2013.
- Development of project: Research on the clinical and etiological aspects of congenital atypical craniofacial cracks. PI: E. Bermejo-Sanchez. PI12/00759.
- Vice-President of the Executive Committee of ICBDSR.
- Publication of 5 “Propositus: ECEMC Fact Sheet” with a total of 16,613 downloads (<http://www.fundacion1000.es/boletines-ecemc>).
- Organisation of: “The ECEMC’s 37th Annual Meeting” and “Update Course on the Investigation of DC” in Toledo, 23-25 October 2014 [2,2 credits CFCPS Madrid-SNS. Exp. 07-AFOC-04934.1/2014].
- Participation in the organisation of the “41st Annual Meeting of the International

al Clearinghouse for Birth Defects Surveillance and Research”, held in Helsinki (Finland), from 14 to September 16, 2014.

### Scientific production

1. Martínez-Frías ML, Ocejo-Vinyals JG, Arteaga R, Martínez-Fernández ML, Macdonald A, Pérez-Belmonte E, Bermejo-Sánchez E, Martínez S. Interstitial deletion 14q22.3-q23.2: genotype-phenotype correlation. *Am J Med Genet A*. 2014 Mar; 164A(3):639-47. doi: 10.1002/ajmg.a.36330. Epub 2013 Dec 19. PubMed PMID: 24357464.
2. Martínez-Fernández ML, Bermejo-Sánchez E, Fernández B, MacDonald A, Fernández-Toral J, Martínez-Frías ML. Haploinsufficiency of BMP4 gene may be the underlying cause of Frías syndrome. *Am J Med Genet A*. 2014 Feb; 164A (2):338-45. doi: 10.1002/ajmg.a.36224. Epub 2013 Dec 5. Review. PubMed PMID: 24311462.
3. Taruscio D, Arriola L, Baldi F, Barisic I, Bermejo-Sánchez E, Bianchi F, Calzolari E, Carbone P, Curran R, Garne E, Gatt M, Latos-Bieleńska A, Khoshnood B, Irgens L, Mantovani A, Martínez-Frías ML, Neville A, Reißmann A, Ruggeri S, Wellesley D, Dolk H. European recommendations for primary prevention of congenital anomalies: a joined effort of EUROCAT and EUROPLAN projects to facilitate inclusion of this topic in the National Rare Disease Plans. *Public Health Genomics*. 2014; 17(2):115-23. doi: 10.1159/000360602. Epub 2014 Apr 3. PubMed PMID: 24714026.
4. Tenorio J, Mansilla A, Valencia M, Martínez-Glez V, y cols. (Martínez-Frías ML y Martínez-Fernández ML as collaborators). A new overgrowth syndrome is due to mutations in RNF125. *Hum Mutat*. 2014 Dec; 35(12):1436-41. doi: 10.1002/humu.22689. PubMed PMID: 25196541.

### Training

- Education in the Official Master “Current Knowledge on Rare Diseases”. International University of Andalusia.
- Education in the “Expert Course in Childhood Disability”, own title of the Complutense University of Madrid.
- Four editions of the Conference on Clinical Teratology requested accreditation for the training. Organized by the Training Service of DG of Human Resources and Public Health Observatory of the DG of Public Health of the Ministry of Castile and Leon, and the CIAC. Held in Valladolid, León, Burgos and Segovia.



## TELEMEDICINE RESEARCH UNIT

The Telemedicine and e-Health Research Unit's mission is to promote and foster research and development, training and innovation actions in the field of Information and Communications Technologies (ICT) applied to Health.

Its main lines of research are as follows: mobile Health (m-Health); Ambient Assisted Living (AAL); information system in healthcare; standardisation and semantic interoperability in electronic health record (EHR); personal health records (PHR) and archetypes; development of an open platform for monitoring patients (chronic patients, elderly persons and dependants); telemedicine applications safety and assessment of new mobile telehealth and its integration into the public health system.

### Technical- scientific activities

- Development and deployment of an interoperability framework for PITES-ISA project.

In 2014, the Unit developed the following platforms:

- 'Open-source' architecture for supporting environments of collaborative research in m-Health service ecosystems.

- Platform Central Node.
- Platform for Innovation in new services of Telemedicine and e-Health for patients with chronic diseases or dependency.
- Telemedicine services platform, to support laboratory and deployment in real environments of concept testing, pilots and clinical trials.
- Management platform of experimental studies, for methodological support of pilot and clinical trials.
- Platform of interoperability based on the standard UNE-EN ISO 13606 [<https://hce13606.telemedicina.isciii.es:8443/interServer/>].
- Anonimizador of the clinical standardized information. Local Installable module for clients.
- LABTIC. Research laboratories in Telemedicine and e-Health: laboratory for AAL technologies, and analysis of signals and events.

### Scientific production

1. Monteagudo JL, Salvador CH, Kun L. Envisioning patient safety in Telehealth: a research perspective. *Health Technol (Berl)*. 2014;4:79-93. doi: 10.1007/s12553-014-0078-7 Pub Med PMID: 25152849.
2. Solanas A, Patsakis C, Conti M et al. A Context-Aware Health Paradigm within Smart Cities. *IEEE. Commun. Mag* 2014; 52 (8): 74-81. doi 10.1109/MCOM.2014.6871673.

3. Somolinos R, Muñoz A, Hernando ME et al. Service for the pseudonymization of electronic healthcare records based on ISO/EN 13606 for the secondary use of information. *IEEE J Biomed Health Inform.* 2014 Sep 26. doi:10.1109/JBHI.2014.2360546 PubMed PMID: 25265637.
4. Monteagudo JL, Salvador CH, Muñoz A, et al. Innovation platform in new services based on telemedicine and e-health for chronic and dependent patients. In: Monteagudo JL, Salvador, CH, coords. PITES: Telemedicine and e-health Innovation platform. Madrid: Instituto de Salud Carlos III; 2014. p. 9-38. NIPO en línea: 725-14-014-7. Disponible en: <http://publicaciones.isciii.es>

## Fundraising

- FISPI12/00508 - DGPY 1005/13, 2013-2015. PITES-ISA: Platform for innovation in new Telemedicine and e-Health services: definition, design and tools development for interoperability, patient safety and aid in decision-making PI: Carlos Hernández Salvador.
- FISPI12/01476 - DGPY1006/13, 2013-2015. Continuity of care standards-based technology and knowledge: technologic architecture for primary and secondary uses of information. PI: Adolfo Muñoz Carrero.
- COST BM 1309. European network for innovative uses of EMFs in biomedical applications (EMF-MED). PI: Victoria Ramos González.
- AAL-2012-5-239 - FISPI12-03105 - DGPY 1008/13, 2013-2015. i-Carer: Intelligent care guidance and learning services platform for informal careers of the elderly. PI: Mario Pascual Carrasco.
- FISPI12/00389 - DGPY1009/13, 2013-2015. Implementation and assessment of a service based on telemedicine, to support cardiac phase II rehab program in e-monitoring regime. PI: Mario Pascual Carrasco.
- FT-DGPY 1301-08-1, 2014-2015. Central Node. Networking platform for Telemedicine development in Spain. PI: Carlos Hernández Salvador.
- RD12-0001-0016. 2013-2015. REDISSEC- Research Network for Health Services in Chronic Diseases.
- 101/2011/100/049. TA2G: Aid system in elderly or dependent people homes based on new technologies: Tele-assistance II generation. (Spanish Red Cross).
- CHRODIS-JA INTPTY/103014-2. 2014-2016. Joint Action addressing chronic diseases and promoting healthy ageing across the life cycle.
- CIP-ICT-PSP-2013-7. PPI-621013. 2014-2017. STOPandGO. Sustainable Technology for Older People – Get Organised. PI: Carlos Hernández Salvador.

## Training

- Direction of the I Master in Management of Systems and Technologies for Information and Communications in Health.
- Direction of VIII Meeting for e-Health and Telemedicine: Digital habitats and connected health at the International University of Menéndez Pelayo (UIMP in Spanish). Santander, 2 to July 4, 2014.
- Co-Management of the Course on European trends in digital health: technologies, education and e-care. SUMMEX2014 International Summer School University of Extremadura.

## NURSING AND HEALTHCARE RESEARCH UNIT (INVESTEN)

The mission of the Nursing and Healthcare Research Unit (Investen-isciii) consists in developing a nationwide strategy to promote and coordinate translational and multidisciplinary research in healthcare, fostering its integration in day-to-day clinical practice in order to improve the quality of healthcare and care base it on valid and reliable results from research in the field.

## Technical- scientific activities

- Developing Nursing Award 2014 in the category of Tv Nursing to Teresa Moreno.
- Specific collaboration agreement between the University of Vic, the Universities of Jaén and Lleida, and ISCIII, for carrying out the PhD in "Care and Health Services".
- Development of the Strategic Plan for the 2014-2015 period.
- Agreement with the Complutense University of Madrid to carry out: 1) External academic practices in the subject of Scientific Evidence of the Master in Health Care Research, 2) Informative conference "Research in health care within the framework of H2020", 3) Online courses and specialized training workshops and 4) Organisation of external rotations of nursing residents, of the Community Nursing specialty.
- In 2014, 16 projects were advised through an online system (<http://investigacionencuidados.es/asesoria/>).
- Agreement between the ISCIII and different regional governments for the establishment of the Spanish Collaborative Centre of the Joanna Briggs Institute, which aims to promote the practice based on evidence.
- International collaboration with the European Innovation Partnership on

Active and Healthy Ageing in the following groups: ACTION PLAN A2 on Specific Action on innovation in support of 'Personalized health management, starting with a Falls Prevention Initiative' and ACTION PLAN B3 on 'Replicating and tutoring integrated care for chronic diseases, including remote monitoring at regional levels'.

## Scientific production

1. Abad Corpa E, Gonzalez María E, & Moreno Casbas T. Del fomento de la investigación en cuidados a la implantación de resultados en la práctica clínica. *Rev. Cient. Soc. Esp. Enferm. Neurol.* 2014; 39 (1), 2-4. doi 10.1016/j.sedene.2014.07.002.
2. Aiken LH, Sloane DM, Bruyneel L et al. Nurse staffing and education and hospital mortality in nine European countries: a retrospective observational study. *Lancet.* 2014 May 24;383(9931):1824-30. doi: 10.1016/S0140-6736(13)62631-8. PubMed PMID: 24581683.
3. Ausserhofer D, Zander B, Busse R et al. RN4CAST consortium. Prevalence, patterns and predictors of nursing care left undone in European hospitals: results from the multicountry cross-sectional RN4CAST study. *BMJ Qual Saf.* 2014 Feb;23(2):126-35. doi: 10.1136/bmjqs-2013-002318. PubMed PMID: 24214796.
4. Chirveches-Pérez E, Roca-Closa J, Puigoriol-Juventeny E, Úbeda-Bonet I, Subirana-Casacuberta M, Moreno-Casbas MT. Cuidados e implicaciones en los cuidadores de pacientes quirúrgicos en el domicilio. *Enferm Clin.* 2014 Nov-Dec;24(6):330-8. doi: 10.1016/j.enfcli.2014.07.005. PubMed PMID: 25240988.
5. Gómez García T, Moreno Casbas T, González María E, et al. Relación entre la carga de enfermedad y la financiación en investigación a través del Fondo de Investigación Sanitaria en España. *Enferm Clin.* 2014 Jul-Aug;24(4):219-32. doi: 10.1016/j.enfcli.2014.04.001. PubMed PMID: 24819151.
6. González María E. Centros Comprometidos con la Excelencia en Cuidados o BPSO® España. *NURE invest.* 2014 Jul;71. Disponible en: [http://www.nureinvestigacion.es/firma\\_obj.cfm?id\\_firma=99&ID\\_FIRMA\\_INI=1](http://www.nureinvestigacion.es/firma_obj.cfm?id_firma=99&ID_FIRMA_INI=1).
7. Moreno Casbas MT, Ruzafa Martinez M, Rol MA, et al.. The SYCE Network. Sleepiness in Spanish nursing staff - influence of chronotype and care unit in circadian rhythm impairment: research protocol. *J Adv Nurs.* 2014 Jan;70(1):211-9. doi: 10.1111/jan.12200. PubMed PMID: 23834526.

8. Squires A , Finlayson C, Gerchow L, et al. Methodological considerations when translating "burnout". *Burn Res.* 2014 Sep 1;1(2):59-68. PubMed PMID: 25343131.
9. Orts cortes, MI, Abad Corpa E, Ruzafa Martinez M, Ramos Morcillo AJ, Salas Medina, P Lopez Iborra, L Mena Tudela D. *Práctica basada en la evidencia (Cuidados de salud avanzados).* Barcelona: Elsevier; 2014.

## Fundraising

- Aid granting from the Ministry of Economy and Competitiveness for the project: Implementation of a system for monitoring and analysis of circadian rhythm to prevent co-morbidities in elderly people).
- Concession of the project "Joining Excellence: best practices implementing"). PI14CIII/00044.
- Participation in RETICEF (Collaborative Research Network on Ageing and Frailty), in the group "RETICEF-evidence".
- Functioning of the circadian system, working environment and Organisation of nursing care in hospitals of the NHS (FIS Project Spanis).
- Effectiveness of an intervention for implementing a Best Practice Guidelines on care and ostomy management, fall prevention and resulting injuries, and breastfeeding (FIS Project Spanis).
- Chronic diseases and promoting healthy ageing across the life cycle (CHRODIS-JA) (European project).
- Prevention of Falls Network for Dissemination (ProFouND) (European project).

## FUNCTIONAL UNIT FOR RESEARCH INTO CHRONIC DISEASES

The Functional Unit for Research into Chronic Diseases (UFIEC) has the specific mission of conducting basic and translational research, differential diagnosis and training in chronic diseases, thus becoming a source of scientific and technical support for the prevention, diagnosis and treatment of the most prevalent chronic diseases in the context of the National Health System. The UFIEC's aim is to become a Reference Centre for Biomedical Research into Chronic Diseases at national and international level. Currently, the UFIEC consists of 12 units, all directed by OPI Titular Researchers, a technical unit (Histology Unit, providing service to the entire ISCIII campus in Majadahonda), and a Supportive Unit to the Management.

## Technical- scientific activities

- Reference molecular diagnosis of human prionopathies (diseases included within the surveillance program of the ECDC).
- Creation of biotechnology companies (spin-off HAPTENIC S. L) in collaboration with the National Microbiology Centre.
- Transverse support services for research, such as the Histology Unit and the Luminex platform and teams in structural analysis of proteins that provide technical support to all ISCIII.

## Scientific production

1. Zahonero C, Sánchez-Gómez P. EGFR-dependent mechanisms in glioblastoma: towards a better therapeutic strategy. *Cell Mol Life Sci.* 2014 Sep;71(18):3465-88. doi: 10.1007/s00018-014-1608-1. PubMed PMID: 24671641.
2. González-Gómez P, Anselmo NP, Mira H. BMPs as therapeutic targets and biomarkers in astrocytic glioma. *Biomed Res Int.* 2014;2014:549742. doi: 10.1155/2014/549742. PubMed PMID: 24877113.
3. Vilar M, Sung TC, Chen Z, Garcia-Carpio I, Fernandez E, Xu J, Riek R, Lee KF. Heterodimerization of p45-p75 Modulates p75 Signaling: Structural Basis and Mechanism of Action Injury. *PLoS Biol.* 2014 Aug 5;12(8):e1001918. doi: 10.1371/journal.pbio.1001918. PubMed PMID: 25093680.
4. Ortiz, S., Lopez, V., Martinez-Suarez, J. V. Control of *Listeria monocytogenes* contamination in an Iberian pork processing plant and selection of benzalkonium chloride-resistant strains. *Food Microbiol.* 2014 May;39:81-8. doi: 10.1016/j.fm.2013.11.007. PubMed PMID: 24387856.
5. Riesco-Eizaguirre G, Leoni SG, Mendiola M, Gallego MI, Estevez-Cebrero MA, Rendondo A, Hardisson D, Santisteban P, and De la Vieja A. The Sodium Iodide Symporter (NIS) mediated uptake in female reproductive tract and is a poor prognostic in ovarian cancer. *J Clin Endocrinol Metab.* 2014 Jul;99(7):E1199-208. doi: 10.1210/jc.2013-4249. PubMed PMID: 24708099.
6. García-Jiménez C, Garcia-Martinez JM, Chocarro-Calvo A, and De la Vieja A. A new link between diabetes and cancer: enhanced Wnt/beta-catenin signaling by high glucose. *J Mol Endocrinol.* 2014 Feb 19;52(1):R51-66. doi: 10.1530/JME-13-0152. PubMed PMID: 24049067.
7. Leon G, Sanchez-Ruiloba L, Perez-Rodriguez A, Gragera T, Martinez N, Her-

nandez S, Anta B, Calero O, Garcia-Dominguez CA, Dura LM, Peña-Jimenez D, Castro J, Zarich N, Sanchez-Gomez P, Calero M, Iglesias T, Oliva JL, Rojas JM. Shc2/Sur8 protein regulates neurite outgrowth. *Plos One.* 2014 Dec. 16; 9 (12): e 0114837. doi: 10.1371/journal.pone.0114837. PubMed PMID: 25514808.

8. de Pedro-Cuesta J, Mahillo-Fernandez I, Calero M, Rábano A, Cruz M, Siden Á, Martínez-Martín P, Laursen H, Ruiz-Tovar M, Mølbak K; EUROSUR-GYCJD Research Group. Towards an age-dependent transmission model of acquired and sporadic Creutzfeldt-Jakob disease. *PLoS One* 2014, Oct. 3; 9 (10): e109412. doi: 10.1371 / journal. pone 0109412. PubMed PMID: 25279832.
9. Rábano A, Rodal I, Cuadros R, Calero M, Hernández F, Ávila J. Argrophilic grain pathology as a natural model of tau propagation. *J Alzheimers Dis.* 2014;40 Suppl 1:S123-33. doi: 10.3233/JAD-132288. PubMed PMID: 24577470.
10. Sánchez-Molina S, Estarás C, Oliva JL, Akizu N, Asensio-Juan E, Rojas JM, Martínez-Balbás MA. Regulation of CBP and Tip60 coordinates histone acetylation at local and global levels during Ras-induced transformation. *Carcinogenesis.* 2014 Oct;35(10):2194-202. doi: 10.1093/carcin/bgu111. PubMed PMID: 24853677.

## Fundraising

- FIS P112/0173. Role of autophagy and its modulation in fibroblasts from patients with Amyotrophic Lateral Sclerosis (ALS) and in the NSC-34 cell model in a context of normal and hyperglycemia 2013-2015. PI: Dr. Yolanda Campos.
- FIS P112/00101. Involvement of the hippocampal neurogenesis and changes in microRNAs in Alzheimer disease late onset 2013-2015 PI: Dra. Helena Mira.
- FIS P112/00775. DYRK1A role in the formation of gliomas and in its resistance to chemotherapy and radiotherapy. 2013-2015 PI: Dra. Pilar Sánchez.
- DEMTEST: "Biomarker based diagnosis of rapid progressive dementias – optimization of diagnostic protocols". JPND Transnational Call: "Neurodegenerative Diseases – a call for European research projects for the optimization of biomarkers and harmonization of their use between clinical centres". 2013-2015.
- FIS P113/00703. Role of Spry2 and Sur8 proteins in colon and skin (non-melanoma) cancer. 2014-2017. PI: Dr. José María Rojas.
- MINECO, Modalidad Excelencia (BFU2013-42746-P). Trans-membrane domain



role in the activation and regulation of neurotrophin receptors: a novel therapeutic target 2014-2016. PI: Dr. Marçal Vilar.

## BIOLOGICAL ALERT LABORATORIES NETWORK (RE-LAB)

The Biological Alert Laboratories Network (RE-LAB) was created by the Ministerial Order PRE/305/2009, dated February 10, as an infrastructure of scientific and technical nature for operative supporting of the National System for Handling Crisis Situations, in response to threats by dangerous biological agents.

### Technical- scientific activities

- Coordination of laboratory response to alerts by postal mailings containing possible aggressive biological agents, registered throughout the year in various public and private institutions of the country.
- The ISCIII, as RE-LAB coordinator, is part of the national working group for implementation of the Action Plan for Chemical, Biological, Radiological and Nuclear (CBRN) of the European Union, coordinated by the Department of National Security for the Presidency of Government. The ISCIII also leads the national working subgroup for Biological Affairs of the CBRN Action Plan. In this regard, a representative of the RE-LAB Management Unit

has participated as national representative at meetings of the Biological Subgroup of the CBRN and Explosives Advisory Group of the European Commission.

- A representative of the RE-LAB Management Unit is part of the Inter-ministerial Group for the Biological and Toxin Weapons (GRUPABI in Spanish) coordinated by the General Subdirectorate of Non-proliferation and Disarmament, of the Ministry of Foreign Affairs and Cooperation. The representative has participated in group meetings and coordinated the information provided by the RE-LAB laboratories for the Spanish declaration of measures for trust promotion of the Convention on the Prohibition of Biological Weapons. In addition, the ISCIII has collaborated in the development of the national matrix for compliance of Resolution 1540 of the United Nations Security Council.

### Fundraising

The ISCIII, through the RE-LAB Management Unit coordinates the project "Iberian network of laboratories of biological alert. Accreditation of methods for detection of highly pathogenic agents", IB-BIOALERT-NET, financed by the General Direction of Internal Affairs (DG HOME) of the European Commission, 2013-2015.

## Training

It participated in various specialization courses in TEDAX-CBRN, organized by Forces and Bodies of National Security.

## HEALTH TECHNOLOGY ASSESMENT AGENCY

The Health Technology Assessment Agency caters for the information and scientific evidence needs of the National Health System in relation to the definition of its policies for providing healthcare and improving quality and efficiency. Therefore, it provides objective assessments of the health, social, ethical, organisational and economic impact of health techniques, procedures and practices in order to provide a scientific basis for decision-making by the authorities and other healthcare agents.

### Technical- scientific activities

Scientific and technical support for the Ministry of Health:

- Benefits Commission
- Commission for designation of CSUR

Reports for Technology and Health Benefits Evaluation:

- Protocols for emergency care of rare diseases
- Costs of non-safety of healthcare.
- Effectiveness and safety of the UROLIF® system for treating the symptoms of benign prostatic hyperplasia
- Effectiveness and safety of molecular biology techniques for detecting the human papillome virus.
- Radiotherapy hypo-fractionated in prostate cancer. Safety, effectiveness and efficiency.
- Efficacy and safety of stem cell treatment for avascular necrosis of the hip.
- Central venous catheters peripherally inserted (PICC) in cancer patients: assessment of the clinical safety, impact on quality of life and economic analysis.
- Impact of the implementation of a population screening program for cervical cancer.

- Program of colorectal cancer screening for population with high familiar risk.

Technical sheets of new and emerging health technologies:

- Urolift® system for treating the symptoms of benign prostatic hyperplasia.
- Deep Brain Stimulation (DBS) as a new therapeutic procedure for refractory anorexia nervosa.

Reports for new and emerging identified Health Technologies :

- DNA non-invasive test in stool for the early detection of precancerous lesions and colorectal cancer.
- RePneu spiral System for lung volume reduction in patients with emphysema.
- Bionic hand with sensors to restore the sense of touch in amputees.
- Magnetically controlled growing rods to treat scoliosis (MAGEC® system)
- Trans-cranial magnetic stimulation (TMS) to improve tactile perception.
- Hypo-fractionated radiotherapy versus conventional radiotherapy for the prostate cancer treatment.

Reports of Technologies Assessment :

- "Evaluation of EndoBarrier® device for treatment of morbid obesity with or without diabetes mellitus type II". Madrid: Agency for Health Technology Assessment - ISCIII, 2014.
- "Organisation and operation of the Regional Evaluation Committees of drugs". Madrid: Agency for Health Technology Assessment - ISCIII, 2014.

### Scientific production

1. Imaz I, Rubio B, Cornejo AM, González-Enríquez J. Budget Impact and Cost-Utility Analysis of Universal Infant Rotavirus Vaccination in Spain. *Prev Med.* 2014 Apr;61:116-21. doi: 10.1016/j.ypmed.2013.12.013. PubMed PMID: 24360847.
2. Sanchez-Piedra CA, Prado-Galbarro FJ, Garcia-Perez S, Sarría Santamera A. Factors associated with patient satisfaction with primary care in Europe: results from the EUprimecare project. *Qual Prim Care.* 2014;22(3):147-55. PubMed PMID: 24865342.
3. Sarría-Santamera A, Prado-Galbarro FJ, Martín-Martínez MA, Carmona R, Gamiño Arroyo AE, Sánchez-Piedra C, Garrido Elustondo S, Del Cura González I. Survival of patients with heart failure in primary care. *Aten Primaria.*



- 2014 Dec 5. pii: S0212-6567(14)00363-1. doi: 10.1016/j.aprim.2014.03.017. PubMed PMID: 25487462.
4. Bouza C, López-Cuadrado T, Saz-Parkinson Z, Blanco J. Epidemiology and recent trends of severe sepsis in Spain: a nationwide population-based analysis (2006-2011). *BMC Infect Dis.* 2014 Dec 21;14:3863. doi: 10.1186/s12879-014-0717-7. PubMed PMID: 25528662.

## Fundraising

- Joint Action on Chronic Diseases and promoting healthy ageing across the life cycle (CHRODIS-JA). WP 7 "Diabetes: a case study on strengthening health care for people with chronic diseases".
- Hospital emergency services: determinants of saturation and effects on patients. FIS. PI: Antonio Sarría Santamera. 2013-2015.
- FIS PI13/00648. "Characterization of the self-perceived health and estimated earnings through the new version of EQ-5D questionnaire in patients with depressive disorders, or hip or knee osteoarthritis".
- Thematic Network for Cooperative Research (REDISSEC) "Network for Research on Health Services in Chronic Diseases". ISCIII network. 2013-2016.
- "EUnetHTA Joint Action 2 - European Network for Health Technology Assessment". Joint action of the Member States of the European Union financed by the Program of Community Action in Public Health. 2012-2015.
- "Fixed Dose Combination drugs for Secondary Cardiovascular Prevention

- FOCUS". Project financed by the EU in its VII Framework Program. Grant agreement n°: 241559.
- FIS PI 11/00798. Clinical trial randomized by clusters of 2 RCV educational strategies in children. "Heartsaver Project".
- Effect of oral nitrates on pulse pressure and arterial elasticity in patients of 65 years and older with isolated systolic hypertension refractory. EC11-111.

## Other relevant activities

Technical advice for the Ministry of Public Health of Ecuador in Health Technologies Evaluation of the Public Health Ministry. Program under the Memorandum of Understanding subscribed between the Andean Health Organisation - Hipólito Unanue Agreement and the Institute of Health Carlos III.

## NATIONAL LIBRARY OF HEALTH SCIENCES

The National Library of Health Sciences (BNCS in Spanish), established as a National Centre of the Institute of Health Carlos III on August 2, 1996 (Royal Decree 1893/1996), acts as a management and coordination hub for all the libraries of the institute. Moreover, the BNCS assists the National Health System by providing documentary support and serving as reference centre on a wide range of topics

related to scientific health information for all health administrative units at central government and regional level.

## Virtual Health Library

The Virtual Health Library of Spain (BVS) is part of the Virtual Health Library project, coordinated by BIREME (Latin American Caribbean Centre on Health Sciences), which includes over 90 national, thematic and institutional virtual libraries from 30 countries in Latin America, Africa and Europe.

The BVS-Spain provides access to the following documentary products:

- Spanish Bibliographic Index of Health Sciences (IBECS in Spanish). The only public bibliographic database, which includes indexed literature of Spanish Health Sciences journals. It consists of 228 journals (12 new titles added in 2014), 131,324 articles and 21,857 links to full text of articles included in SciELO Spain.
- Scientific Electronic Library Online (SciELO). The contents of this platform are: 57 journals (3 new added titles in 2014), more than 27,000 full-text articles (html and pdf). In 2014 it had over 9 million visits and over 25 million pages downloaded. Incorporation to the Web of Science (WoS) through SciELO Citation Index. Presence in Google Scholar. Presence in open access directories: Hispana/DOAJ/OAISTER/ROAR. Rank 16 in the world ranking of the portals, Webometrics DOI 1.230 items deposited in Cross-Ref in 2014.
- Health Information Locator (LIS-Spain: Healthy Sites) Spain: Healthy Sites). The database has 2,345 records in LIS-Spain for information for professionals and 1,915 records in LIS-Spain for information for citizens.
- Health Sciences Descriptors (DeCS in Spanish). The BNCS in collaboration with BIREME/PAHO/WHO and the National Library of Medicine (NLM) have been carried out the translation of 310 new terms and 25 terms modified as well as the revision of the translation of 2,583 existing terms during 2014.

## National Union Catalogue of Health Sciences (CNCS)

The Institute of Health Carlos III, through the National Library of Health Sciences, promoted in 2012 the creation of a national union catalogue of publications relating to health sciences for public and open access. The new cat-

alogue aims to promote a stable organisation, which includes all the Spanish health sciences libraries, to enhance the level of services and library infrastructure in this domain. Its launch is pending for 2015.

In 2014, the National Union Catalogue of Health Sciences database has 140,000 bibliographic records; information has been integrated from 17,433 journals and 68,497 printed collections and 361,926 electronic collections from 287 libraries of the main hospitals, universities, health offices, laboratories and research centres in Spain.

## Library Services

Services offered during 2014:

- Collections. The library handled 41,195 bibliographic holdings (0.94% higher than 2013). The books catalogued were 520 copies and 363 loaned books. The titles of subscribed journals have been 345. Online access to 912 titles (ISCIII/CNIO/CNIC agreement) and over 70,000 full-text access.
- Bibliographic searches and access to databases. In 2014, 52,240 direct searches were performed in databases subscribed: Web of Science (75%), SCOPUS (12%), and Journal Citation Reports (11%).
- Inter-library loans and document requests: 5,786 documents requested and 6,496 supplied documents.
- Library 2.0. The broadcasting channels of the library are: corporative BNCS Twitter, opened in June 2014 (@BNCSisciii, 84 followers), Twitter SciELO Spain (@scielospain, 2.8K followers, 22.3% more than 2013), Twitter BVS Spain (@bvs\_spain, 2K followers, 9.5% more than 2013), Facebook BVS Spain ([www.facebook.com/BVSSpain](http://www.facebook.com/BVSSpain)), 400 followers and one blog (<http://biblioisciiiteca.wordpress.com/>).

## Publishing Programme

During 2014 16 monographs, 2 periodical publications and printed brochures of the Serier collection were edited. The publications portal of the ISCIII has open access (<http://publicaciones.isciii.es>) and a system of alerts to registered users.



## Collaborations

- Latin American and Caribbean Centre on Health Sciences (BIREME), of the Pan American Health Organisation-World Health Organisation (PAHO/WHO).
- Foundation for Research Support of the State of São Paulo (FAPESP). Coordinates the SciELO.org portal with BIREME.
- Ministry of Health, Social Services and Equality. Development of a virtual library of information resources in health sciences.
- Spanish Foundation for Science and Technology (FECYT). Participation in the technical committee for negotiation of national licenses on information resources.
- Official College of Medical Doctors of Madrid. Organisation of the XV National Conference on Information and Documentation in Health Sciences (Bibliosalud 2014) and the corresponding web. Madrid, 23 and 24 May.

## Museum of Health and Public Hygiene

The Museum of Health and Public Hygiene is a national public property and part of the Institute of Health Carlos III. Recently, the Integrated System of Documentation and Museums Management Domus was implemented, developed by the Ministry of Education, Culture and Sports and it has joined

the Digital Network for Collections of Museums of Spain. This network has an online collective catalogue, CER.ES (<http://ceres.mcu.es>), which gathers information and images from participant museums. At this time, the Museum of Health and Public Hygiene has 69 objects/documents accessible through CER.ES. It also has catalogued 1,374 bibliographic documents, which are available online through the catalogue of the National Library of Health Sciences.

The Museum of Health and Public Hygiene maintains a volunteer program which participates in works of documentation and guided tours. Since its linking to the National Library of Health Sciences in March 2014, it has performed 5 guided tours for groups of professionals and students related to biomedical sciences and health.

## RESEARCH AND KNOWLEDGE TRANSFER OFFICE

The Office for Research and Knowledge Transfer Office (OTRI in Spanish) has carried out the following activities in 2014:

### Processing of patents

The number of processed records is 34, 18 national and 16 international. 14 Spanish patents were abandoned.

Patent concessions in Spain:

- ES 2396106B1: "Infrared analysis of peripheral blood fractions to indicate cognitive development associated with Alzheimer disease".

European patent concessions:

- EP2267161B1 "Primers, probes and kits for the detection of bacterial species belonging to the genus Bartonella"
- EP2267162B1 "Primers, probes and kits for the detection of bacterial species belonging to the genus Rickettsia"

The license for exploitation of the patent "BACM-15 Highly inducible dual promoter lentiviral test-on system", was granted; its ownership is shared with the Andalusian Public Foundation for Health and Progress.

### Organisation of Conferences and Courses on Transference and Innovation:

- "Innovation in Technology and Health Products for the Diagnosis of Infectious Diseases" in collaboration with the Spanish Federation of Healthcare Technology Companies (FENIN) held on January 21.
- "Forum of Therapies Transference for Pain" in collaboration with FENIN, held on July 11.
- "Strategy on Public Health Innovation: Transfer or Relocation? Meeting held at the School of Public Health of Mahon, on 22-23 September and organized by OTRI-ISCIII.

Promotion of Technological Activities: attendance to fairs and congresses:

- The OTRI has actively participated in TRANSFIERE, European Forum for Science, Technology and Innovation celebrated in Malaga, by disseminating the scientific and technical offer of the institute in an informative stand. At the same time, different meetings with companies of the sector were held.
- It has also participated with an informative stand at the Spain Start-up the South Summit, held in Madrid from 8 to 10 October.

## NATIONAL CELL LINE BANK

The Sub-directorate of Cellular Therapy and Regenerative Medicine host the Directorate, the President's Office and Secretariat of the Technical Commission (Royal Decree 590/2005, of 20 May, which amended the Statute of the Institute of Health Carlos III). The National Cell Line Bank (BNLC in Spanish) is a biobank network, with hubs in Granada, Barcelona, Valencia and San Sebastian, and provides the scientific community with information about all of the stem cells lines created in Spain.

### Technical- scientific activities

- During 2014 seven induced pluripotent lines (iPS) were deposited in the BNLC, one of them by the Barcelona node, 3 by the Basque country and 3 by the Josep Carreras Research Institute.
- The transfer of 24 cell lines for 9 projects of 5 researchers were requested and approved.
- Embryonic and foetal lines: 9 lines (VAL-9 (2), VAL-3, VAL 4 (2), AND-2, SS2, SS3, SS5) for 4 projects.
- iPS lines: 5 lines ([GD], FiPS-4F-21c, FiPS-3F-1, CBiPS1sv-4F-5, CBiPS1sv-4F-40, CBiPS6-2F-4, CBiPS30-4F-3, CBiPS32-3F-10, KiPS3F-7, KiPS4F-1, KiPS4F-8, HKiPS4F, XF-iPSF44-3F-1, XF-iPSF44-3F-2) for three projects.
- Adult cell lines: 2 (mesenchymal stem cells from human adipose tissue and bone marrow) for 2 projects.

### Fundraising

The National Cell Line Bank has participated in the European projects:

- hESCreg (European Human Embryonic Stem Cell Registry, whose scientific coordination is represented by members of the Technical Commission of BNLC).
- SATORI - Stakeholders Acting Together On the ethical impact assessment of Research and Innovation. EU. DG for Research and Innovation - FP7- Science in Society.
- European Bank for induced pluripotent Stem Cells (EBiSC). 8th Innovative Medicines Initiative (IMI).

## UCM-ISCI III JOINT CENTRE FOR HUMAN EVOLUTION AND BEHAVIOR RESEARCH

The UCM-ISCI III Joint Centre for Human Evolution and Behaviour Research operates in three areas: Human Evolution, ancient DNA and Cognitive Neuroscience. In addition to researches developed in the centre, the team excavates at the sites: Atapuerca (Burgos), Pinilla del Valle (Madrid), Cueva de la Zarzamora (Segovia) and Olduvai (Tanzania).

### Technical- scientific activities

#### Ancient DNA

Obtaining mitochondrial DNA in 2013 of one of the human fossils from the Chasm has allowed continuing the paleo-genetic work, later oriented towards nuclear DNA. These investigations are the only ones being carried out with human populations of this age (from around 450,000 years), and the so far results have opened new perspectives in the human phylogenetic tree and can be used to understand the uniqueness of the human species.

The Holocene populations of the site of Portalón de Atapuerca have also been investigated, searching for diverse information on the change process towards crop and livestock economy. A very interesting article was written about lactose intolerance. Surprisingly, adults from fully agro-pastoralist populations, with minor activities in both herds of sheep as vaccine, were lactose intolerant in the Bronze Age. That information is reflected in the next publication.

- Sverrisdóttir, Oddný Ó.; Timpson, A.; Toombs, J., Lecoœur, C.; Froguel, P.; Carretero, J.M.; Arsuaga Ferreras, J.L.; Götherström, A.; Thomas M.G. Direct estimates of natural selection in Iberia indicate calcium absorption was not the only driver of lactase persistence in Europe. *Molecular Biology and Evolution*, 31(4):975–983. doi:10.1093/molbev/msu049. 2014.

The investigation of wildlife ancient DNA has also continued (for example lynx, horse or goat) with the purpose of resolving issues concerning conservation and domestication.

## Cognitive Neuroscience

The main lines of research developed in 2014 were the semantic and syntactic aspects of language, aesthetic perception and religious thoughts. As the main pathology of human beings, it has been studied schizophrenia for their implications referring to many human own behaviours. Through the pathology and normality it has approached the neuro-physiological mechanisms of properly human behaviour, in order to understand its origins, development and evolution, and avoid any possible changes.

To achieve this, some of the most advanced techniques in brain imaging have been used, such as Magnetic Resonance Imaging (MRI) or mainly the study of brain electrical activity.

It has collaborated with: La Laguna University, Juan Carlos King University, (Psychobiology Department) of the Humboldt Universität (Berlin), Georg-August de Göttingen and Colorado University in Colorado Springs (USA).

Main publications in 2014 are:

- Díez, A.; Suazo, V.; Casado, P.; Martín-Loeches, M.; Perea, M.V.; Molina, V. (2014). Frontal gamma noise power and cognitive domains in schizophrenia. *Psychiatry Res.* 2014 Jan 30;221(1):104-13. doi: 10.1016/j.psychres.2013.11.001. PubMed PMID: 24300084.
- Schacht, A.; Sommer, S.; Shmuilovich, O.; Casado, P.; Martín-Loeches, M. (2014) Differential task effects on N400 and P600 elicited by semantic and syntactic violations. *PLoS One.* 2014 Mar 10;9(3):e91226. doi: 10.1371/journal.pone.0091226. PubMed PMID: 24614675.
- Martín-Loeches, M.; Hernández-Tamames, J.J.; Martín, A.; Urrutia, M. (2014) Beauty and ugliness in the bodies and faces of others: An fMRI study of person aesthetic judgement. *Neuroscience.* 2014 Sep 26;277:486-97. doi: 10.1016/j.neuroscience.2014.07.040. PubMed PMID: 25086316.

## Human Evolution

The taxonomic and phylogenetic revision of human fossils from the Chasm Bone's has allowed, among the twenty-five published articles, to remark the publication in Research Articles section, reserved for the most outstanding works in each issue of the prestigious international journal *Science*. This article presents the reconstruction of 17 skulls, belonging to the only human group found of the Middle Pleistocene, recovered in Sima de los Huesos.

- Arsuaga JL, et al. Neandertal roots: Cranial and chronological evidence from Sima de los Huesos. *Science* 2014 344 (6190):1358-1363. doi: 10.1126/science.1253958.

During 2014, research has continued on paleo-demography, development, sexual dimorphism, size, shape and body proportions, estimated the weight of the skeleton and its influence on body weight, establishing inferences from these data on energy spending of hominids from the Chasm Bone`s.

The centre has also studied the patterns of fracture in human fossils from the Chasm Bone`s (including taxonomic aspects) to understand the origin of the accumulation in the site and the human behaviour, and developed a new methodology for estimating death age from the shape of the femoral distal epiphysis.

The study of a complete skeleton of a 6 years-old boy (Portalón, Atapuerca) has provided important information regarding living conditions and health in the Chalcolithic, and it was reflected in the following publication:

- Castilla M, Carretero JM, Gracia A, Arsuaga JL. Evidence of Rickets and/or Scurvy in a Complete Chalcolithic Child Skeleton from the El Portalón Site (Sierra de Atapuerca, Spain). *J Anthropol Sci.* 2014;92:257-71. doi: 10.4436/JASS.92005. PubMed PMID: 25020019.

### 3.2. Intramural Research

Intramural Research is carried out within the ISCIII's Centres and Units, though the development and implement of competitive research projects, commissioned research and collaboration agreements. Funding resources of these competitive projects are diverse: National Plan Programmes, Strategic Action in Health programmes defined in the National Plan ISCIII's Intramural Research Programme and other national, regional and international public and/or private calls. This item presented data on the scientific production of the ISCIII's centres and schools through different studies and indicators: analysis of scientific publications, technology transfer, research projects, agreements, commissioned research and contracting of research and support staff.

This information has been collected and analyzed by the Research Coordination Area

#### Research Coordination Area

The aim of the Research Coordination Area (ACI in Spanish) is to manage and coordinate research-related activity conducted at the Institute of Health Carlos III in the context of national and international research calls.

It comes under the Sub-Directorate General for Applied Services, Training and Research, and is primarily in charge of the following:

- Promotion of calls for grants to fund projects and hire staff from public and private funding agencies, along with advices for researchers to help them prepare and submit their proposals.
- Management of national and international projects, agreements, contracts and commissioning requests. Monitoring and justification.
- Monitoring and justification of grants to hire research staff.
- Economic monitoring and statistical analysis of the situation of intramural research.
- Management of the ISCIII's Research Committee.

### Projects Granted in 2014 Calls by Programme

| Financing        | Programme                 | Total Projects | Financing           |                     |
|------------------|---------------------------|----------------|---------------------|---------------------|
|                  |                           |                | Total               | 2014                |
| External Funding | International Agreements* | 18**           | 5.752.760,64        | 1.704.965,17        |
|                  | Nacional R+D+I Plan       | 11             | 841.281,75          | 238.267,77          |
|                  | Other                     | 1              | 39.425,00           | 39.425,00           |
| ISCIII Funding   | Health Research Funds     | 23             | 2.268.478,00        | 601.327,89          |
|                  | Other                     | 5              | 97.091,00           | 83.827,36           |
| <b>Total</b>     |                           | <b>58</b>      | <b>8.999.036,39</b> | <b>2.667.813,19</b> |

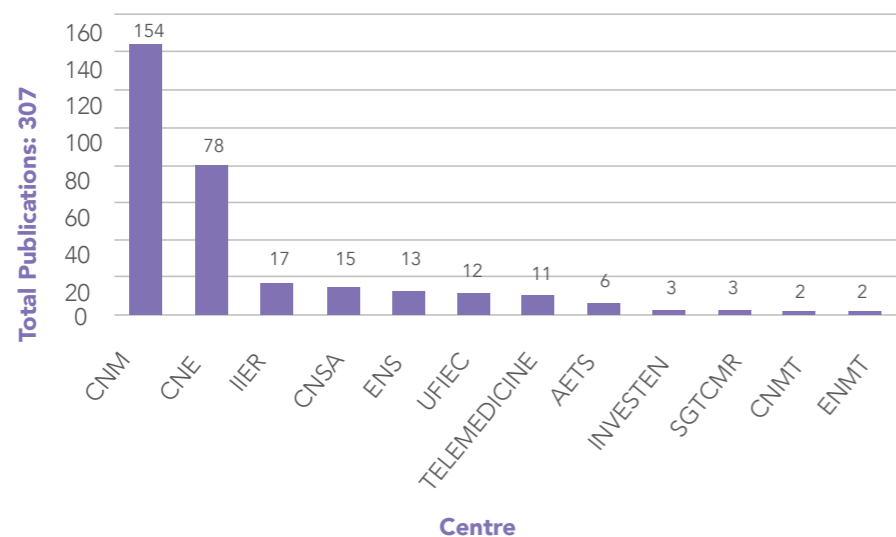
\* EU, ECDC, etc.  
\*\* 13 projects y 5 subprojects

### Current Projects for 2014 by Program

| Funding          | Programme                 | Number of Projects | Funding              |                      |
|------------------|---------------------------|--------------------|----------------------|----------------------|
|                  |                           |                    | Total                | 2014                 |
| External Funding | International Agreements* | 58**               | 11.739.386,33        | 6.828.896,63         |
|                  | Nacional R+D+I Plan       | 30                 | 4.513.377,83         | 744.042,87           |
|                  | Ministry of Health        | 9                  | 627.574,00           | 0,00                 |
|                  | Autonomous Regions        | 8                  | 413.502,67           | 102.482,73           |
|                  | Other                     | 8                  | 249.058,07           | 72.194,58            |
| ISCIII Funding   | Health Research Funds     | 96                 | 11.747.343,04        | 1.865.499,74         |
|                  | Networks                  | 21                 | 2.257.903,86         | 910.712,35           |
|                  | Other                     | 41                 | 1.705.668,46         | 530.746,16           |
|                  | <b>Total</b>              | <b>271</b>         | <b>33.253.814,26</b> | <b>11.054.575,06</b> |

\* EU, WHO, ECDC, NIH, etc.  
\*\* 45 projects y 13 subprojects

### Publications 2014



### Publications and Theses 2014

| Center       | Publications | Theses    |
|--------------|--------------|-----------|
| AETS         | 6            | -         |
| CNE          | 78           | 8         |
| CNM          | 145          | 7         |
| CNMT         | 2            | -         |
| CNSA         | 15           | -         |
| ENS          | 13           | -         |
| ENMT         | 2            | -         |
| IIER         | 17           | 1         |
| INVESTEN     | 3            | -         |
| TCMR-ISCIII  | 3            | -         |
| TELEMEDICINE | 11           | -         |
| UFIEC        | 12           | -         |
| <b>Total</b> | <b>307</b>   | <b>16</b> |

**Projects Granted by Thematic  
2014 Period**

| Thematic Area   | Granted Projects | Current Projects |
|---|------------------|------------------|
| Cell Biology And Development  | 1                | 3                |
| Cell Biotechnology  | 0                | 4                |
| Air Pollution   | 5                | 7                |
| Infectious Diseases: Bacteriology   | 2                | 18               |
| Infectious Diseases: Mycology   | 3                | 11               |
| Infectious Diseases: Parasitology   | 4                | 22               |
| Infectious Diseases: Virology   | 3                | 16               |
| Neurologic Diseases   | 1                | 9                |
| Rare Diseases   | 1                | 16               |
| Tropical Diseases   | 0                | 6                |
| Epidemiology of Infectious Diseases   | 2                | 3                |
| Cancer Epidemiology   | 0                | 9                |
| Epidemiology of HIV/AIDS  | 2                | 10               |
| Health Technologies Assessment  | 2                | 5                |
| Genomics, Microscopy and Bioinformatics   | 2                | 8                |
| Immunology  | 8                | 23               |
| Cancer Research   | 1                | 13               |
| Research on Infectious Diseases   | 0                | 2                |
| Nursing Research  | 3                | 6                |
| Public Health Research  | 3                | 10               |
| Research on HIV/AIDS  | 5                | 20               |
| Others (National School of Health, European<br>Project Office, Biobanks, Bioethics) | 7                | 29               |
| Molecular Pathology   | 1                | 10               |
| Telemedicine  | 2                | 9                |
| Environmental Toxicology  | 0                | 2                |
| <b>Total</b>  | <b>58</b>        | <b>271</b>       |

**Human Resources Calls 2014  
Total Granted Contracts per Center**

| Centre       | AES       | MECD     | Other    | Total     |
|--------------|-----------|----------|----------|-----------|
| CNM          | 6         | 0        | 0        | 6         |
| CNE          | 3         | 1        | 1        | 5         |
| CNSA         | 0         | 0        | 0        | 0         |
| ENS          | 0         | 0        | 0        | 0         |
| IIER         | 1         | 0        | 0        | 1         |
| UFIEC        | 0         | 0        | 0        | 0         |
| <b>Total</b> | <b>10</b> | <b>1</b> | <b>1</b> | <b>12</b> |



Training  
Activities

4



## 4. Training Activities

### 4.1 National School of Health

The National School of Health (ENS in Spanish) specialises in postgraduate and continuous training in the field of Public Health, Health Administration and Management, International Health, Research Management and other related fields. It conducts research, technical studies, and provides consultancy services, as well as other services in this field, for different public administrations and scientific, and healthcare organisations in addition to development cooperation organisations.

#### Activity Highlights

-In response to the International Public Health Emergency created by the recent Ebola virus disease outbreak in Western Africa, the National School of

Health, in collaboration with the Brigade of Military Health of the Ministry of Defence and the Alerts and Emergencies Coordinating Centre of the Ministry of Health, organized a series of health training workshops and courses for Ebola virus disease, where 1,200 NHS professionals were formed in the disease management and in handling the personal protective equipment. The 6-hours workshops had a practical orientation, forming groups of 3 students per instructor for practicing in the use of Personal Protective Equipment. The courses for trainers, with a more ambitious approach, is considered the basic premises for the training in the disease by Ebola virus (Epidemiology, Clinics and Diagnosis, Risk Control and Assessment), the NHS acting protocol and other aspects related to systems of protection and bio-safety. In the clinical practice for handling personal protective equipment, the use of invasive techniques is included with the equipment.

- Constitution of the Governing Council of the Joint Research Institute National School of Health (IMIENS in Spanish) and signing the agreement between the UNED and the ISCIII, adapting the July 2010 agreement of with the creation of IMIENS (Order PRE / 1952/2013 of October 17).

### Regulated Teaching ENS 2014

|                               | 2014 | 2013 | 2012 | 2011 | 2010 |
|-------------------------------|------|------|------|------|------|
| Master's degree               | 5    | 6    | 7    | 4    | 4    |
| Diplomas                      | 5    | 4    | 6    | 6    | 8    |
| Short courses                 | 49   | 40   | 36   | 48   | 81   |
| Class hours                   | 5183 | 5398 | 5379 | 5035 | 5815 |
| Equivalence ECTS <sup>1</sup> | 210  | 240  | 239  | 224  | 258  |
| Students                      | 1649 | 553  | 545  | 896  | 1079 |

1.ECTS: European Credit Transfer System

### Training Services

| Training Courses Offered 2014   | Workload<br>(hours of training) |
|---|---------------------------------|
| Master's Degree in Public Health  | 1000 (750)                      |
| Master's Degree in International Public Health                                      | 1000 (400)                      |
| University Master's Degree in Healthcare Administration                             | 1500 (750)                      |
| Master's Degree in R&D&I Administration and Management in Health Sciences 2012-2014 | 1500 (500)                      |
| Master's Degree in Bioinformatics and Computational Biology (2013-2014)             | 900 (250)                       |
| Advanced Diploma in Health Promotion  | 400                             |
| Advanced Diploma in Food, Nutrition and Public Health                               | 400                             |
| Advance Diploma in International Public Health                                      | 400 (300)                       |
| Specialised Diploma in Healthcare Law and Bioethics (online)                        | 120                             |
| Specialised Diploma in Public Health and Gender                                     | 160                             |
| Continuous face- to- face training courses (including MSP optional courses)         | 1153                            |

| Training Global Indicators                                | 2014 | 2013 | 2012 |
|---|------|------|------|
| Total number of MIR trainee doctors (R1, R2, R3, R4)      | 8    | 7    | 6    |
| Number of students in Master's Degree and Diploma courses | 221  | 200  | 257  |
| Number of students on continuous training programmes      | 1428 | 353  | 282  |
| Total Students  | 1649 | 553  | 545  |

## 4.2. National School of Occupational Medicine

The National School of Occupational Medicine (EMMT in Spanish) is an ISCIII specialised Centre in the field of Occupational Health Knowledge and Nursing, which aims to contribute, together with other National General Administration Agencies, Autonomous Regions and social partners, to contribute towards the strengthening of the preventive systems and improving worker's health.

The National School of Occupational Medicine is the National Reference Centre of the International Centre for Information on Occupational Safety and Health (CIS in Spanish) of the International Labour Organisation.

| <b>Training Courses Offered 2014</b>  | <b>Hours</b> | <b>Credits</b> |
|---|--------------|----------------|
| Advanced Course of Occupational Medicine 2013 – 2014  | 800          | -              |
| II Scientific Conference on Occupational Health Review Studies  | 10           | -              |
| Master's Degree in Medical Assessment of the Labor Disability and Dependence                              | 420          | 60             |
| Labor Dermatology Update  | 5            | 1,1            |
| Cardiovascular Health in the Workplace  | 25           | 4,5            |
| Introduction to Planning Interventions for Health Promotion in the Company                                | 25           | 4,5            |
| Introduction to Dermoscopy for Occupational Doctors   | 7            | 1,1            |
| Practical Application Protocols for Health Surveillance   | 25           | 4,5            |
| Conference for Improvement Opportunities in Medical Assessment of Labor Disability                        | 5            | -              |
| Introduction to Systematic Reviews and Meta-Analysis  | 25           | 3,5            |
| Introduction to Pneumoconiosis in the Workplace: Silicosis and Pneumoconiosis of Coal Miners              | 25           | 4,3            |
| Mental Health in the Workplace: Clinical and Preventive Management  | 50           | 4,3            |
| Management of Returning to Work after Leave due to Musculoskeletal Conditions                             | 30           | 5,3            |
| Occupational Disease for Primary Care Doctors   | 40           | 6,9            |
| Advanced Course on Occupational Health 2014-2015  | 800          | -              |
| Update on Hearing Loss by Occupational Exposure to Noise  | 6            | 0,9            |
| Ergo Ophthalmology: Detection of Visual Disturbances in Workers with PVD: Evidence of New Clinical Trials | 5            | 0,8            |
| Diploma in Assessment on Labor Disability and Body Damage (Miguel Hernández University)                   | 35           | -              |
| II National Conference on Education and Professional Development of Occupational Nursing                  | 9            | 1,0            |
| Training of Professionals to Promote the Occupational Health of Older Workers                             | 5            | -              |
| Update on the Diagnosis of Pathology by Exposure to Asbestos and the Professional Contingency Management  | 5            | 0,8            |
| Medical Disability Assessment   | 350          | -              |
| Psychosocial Intervention in the workplace by the Occupational Health Unit                                | 40           | 5,2            |
| Update on Functional Tests  | 40           | 4,2            |
| Introduction to Epidemiological Studies and Addressing Outbreaks in Occupational Health                   | 50           | 6,4            |
| Vaccination in the Workplace  | 40           | 5,5            |
| Indoor Air Quality  | 25           | -              |

### Global Training Indicators

|  | 2014         | 2013         | 2012         | 2011         | 2010         |
|--|--------------|--------------|--------------|--------------|--------------|
| Total number of MIR in training (R1, R2, R3, R4)                       | 138          | 149          | 160          | 165          | 155          |
| Number of students in continuous face-to face training                 | 406          | 509          | 682          | 476          | 242          |
| Number of students undergoing online training                          | 390          | 236          | 494          | 308          | 150          |
| Number of students in continuous training through education agreements | 62           | 53           | 197          | 215          | 170          |
| <b>Total class hours taught</b>  | <b>2.072</b> | <b>3.729</b> | <b>3.613</b> | <b>4.211</b> | <b>3.101</b> |

### Global Indicators Research, Scientific Activity and Scientific Spreading

|  | 2014 | 2013 | 2012 | 2011 | 2010 |
|--|------|------|------|------|------|
| Research projects associated to educational programs                             | 75   | 83   | 69   | 52   | 48   |
| Publications in scientific journals  | 10   | 9    | 12   | 14   | 15   |
| Communications/Presentations   | 21   | 11   | 19   | 23   | 19   |
| New articles in the Journal of Occupational Medicine and Safety at Work Magazine | 58   | 32   | 35   | 36   | 30   |

| Best Practices Guidelines 2014   | Financing Entity   |
|--|--|
| Guideline for Clinical Decision in Professional Diseases of Respiratory Nature | National Institute for Occupational Safety and Health (INSH in Spanish)                  |
| Best Practices Guide for Workers Occupationally Exposed to Cytostatic Agents   | Madrid Association of Occupational Medicine in the Field of Health (AMMTAS in Spanish)   |
| Aptitude Criteria Guide for Workers in the Health Field                        | National Association of Occupational Medicine in the Field of Health (ANMTAS in Spanish) |



5

Internationalisation

## 5. Internationalisation

The international strategic planning undertaken by the Institute of Health Carlos III (ISCIII) was characterised by a greater contribution to the creation of the European Research Area under the National Plan for Scientific and Technical Research and Innovation for the 2013-2016 period, which is set as priority measure towards the “Internationalisation and Promoting of International Leadership of the Spanish Science, Technology and Innovation System (EECTI in Spanish) 2013-2020.

### 5.1. Research and work with Horizon 2020 and its complementary instruments

#### 5.1.1. Promotion and participation in the Framework Programme for Research and Innovation Horizon 2010 (H2020)

2014 was a period where the sensitization and presentation of news from H2020 condensed most of the promotion activity. The European Research Projects Office of the ISCIII organized 14 courses or workshops, cooperating in another 8 educational actions. Also, 17 informative conferences on open calls were organized and it collaborated in 29 additional sessions organized by other entities.

Moreover, 2014 was an exceptional year for Spain in the health field, both in terms of participation and of leadership success. Spain currently leads 16 projects, 10 of them coordinated by the ISCIII or the National Health System (SNS in Spanish), obtaining funds for a total of € 51.1 M. This represents a return of 9.4% of the EU 28 financing, which places Spain for the first time above 8% in this field, becoming the estimated budget that contributes to the European stock market, and therefore stopping to be a ‘net contributor’. This milestone placed Spain in the fourth position in the health area, just behind UK (17.43%), The Netherlands (14.07%), Germany (13.62%) and ahead of France (8.66%).

In 2014, the ISCIII consolidated its position in terms of projects and increased nearly 15% of the funding received in the H2020 field, exceeding the threshold of two million euros.

#### Participation of Centres, Coordinated and Support Actions of ISCIII in FP7 and H2020

|  | 2014       | 2013       | 2012       | Total      |
|--|------------|------------|------------|------------|
| Number of Projects                       | 8          | 10         | 9          | 27         |
| Number Coordinated                       | 1          | 1          | 1          | 3          |
| Allocated funding ISCIII (million euros) | 1.617.954  | 1.800.264  | 2.159.650  | 5.577.868  |
| Allocated funding global (million euros) | 24.118.278 | 27.390.000 | 37.053.800 | 88.562.078 |

#### 5.1.2. Coordination and Support Actions financed by Horizon 2020

The ISCIII participates in coordinated and supporting actions of different nature, obtaining direct funding of almost € 3.5 M.

##### 5.1.2.1. ERA-net: Programme coordination and financing for R&D&I between European countries and regions.

Currently, the ISCIII is involved and/or funding the following ERA-net:

- E-RARE-2. ERA-Net for Rare Diseases Research (2010-214)
- TRANSCAN. ERA-Net for Translational Research of Cancer (2011-2014)
- NEURON II. ERA-Net for Neuroscience Research (2012-2015)
- EURONANOMED II. ERA-Net for Nanomedicine Research (2012-2016)
- ERASysAPP. ERA-Net for Applications of the Biology of Systems (2013-2015)
- Infect-ERA. ERA-Net for Infectious Diseases Research (2013-2016)
- ERANET LAC (2013-2017).

### 5.1.2.2. Initiatives for promoting research policies in the framework of the strategy for international cooperation and the EU political dialogue with other regions.

- EU LAC Health (2010-2016). Project financed by the European Commission and coordinated by the ISCIII, aiming to promote cooperative research between research groups from EU and Latin-American countries. The obtained funding has produced a return of 805.892 euros.

### 5.1.2.3. Initiatives for researchers support and for the development of the European Research Area (ERA) and international consortia research.

The ISCIII participates supporting or coordinating multiple initiatives and/or networks of strategic relevance for the UE, such as:

- NANOMED2020 "Enabling the European Nanomedicine Area until 2020".
- PERMED "Personalized Medicine 2020 and beyond".
- EURAXESS. Platform of the European Commission for the development of research careers and the mobility of European researchers. The ISCIII takes part in the working group for benchmarking (comparison) along with the main European institutions for research.
- IRDiRC, "International Rare Diseases Research Consortium".

### 5.1.3. Joint Programming Initiatives (JPIS)

The ISCIII is involved as part of the directive and management board, or by coordinating some of the initiatives mentioned below. In 2014, has provided funding of 1,3 million euros.

- JP MYBL. "More years – Better Lives".
- JP ND. "Neurodegenerative Disease Research". The CIBER for Rare Diseases (CIBERNED) represents to the ISCIII in the International Network of Excellence Centres in Neuro-degeneration (CoEN), peer initiative of JP ND.
- JP HDHL "A Healthy Diet for a Healthy Life". The ISCIII is responsible for the Secretariat of the Advisory Committee of Groups of Interest (SHAB in Spanish), and the Secretariat of the Working Groups, conformed by financing agencies

to develop the content of the Joint Actions calls. It also participates in the task-force on specific policies for technology transference, intellectual copyright and diffusion of results.

- JP AMR. "Antimicrobial Resistance Antibiotics". The ISCIII leads the evaluation working group.

Additionally, the ISCIII contributes to funding the following joint actions: DEDIPAC (Determinant Factors on Diet and Physical Exercise), BioNH (Biomarkers in Nutrition and Health) and ENDAPASI (European Initiative for Data Exchange in the Assessment of the Nutritional Phenotype).

### 5.1.4. Initiative for promotion of Joint Calls (ERA-nets)

The ISCIII contributes in promoting the Joint Calls for projects, among several EU countries to influence on a common interest challenge.

**Funding contributed by the ISCIII 2014 in European calls**

| European Call  | Total projects financed by ISCIII | Total spanish partners projects | Funding by ISCIII  |
|----------------|-----------------------------------|---------------------------------|--------------------|
| AAL JP         | 1                                 | 1                               | 75.000 €           |
| ENMII JTC2014  | 3                                 | 5                               | 292.760 €          |
| ERARE JTC 2014 | 2                                 | 2                               | 225.000 €          |
| JP-AMR         | 1                                 | 1                               | 74.998 €           |
| JPND_CD        | 3                                 | 3                               | 199.607 €          |
| JPND-PS        | 2                                 | 2                               | 94.211 €           |
| TRANSCAN 2014  | 4                                 | 5                               | 428.704 €          |
| <b>Total</b>   | <b>16</b>                         | <b>19</b>                       | <b>1.390.280 €</b> |

### 5.1.5. Initiatives according to the Article 185 of the Treaty on the Functioning of the EU

The initiatives under Article 185 are established with the objective that participating Member States may integrate their research efforts to define and commit to a joint research programme for the EU. The ISCIII is involved in the following initiatives:

- Ambient Assisted Living (AAL JP)  
The main milestones achieved in 2014 were: the approval by the European Parliament and Council Decision No 554/2014/ EU of May 15, 2014, extending the program to the period 2014-2020 and the launch of the trans-national call 2014: "Care for the Future". The ISCIII contributed 200,000 euros, which helped finance a project within the NHS.
- European and Developing Countries Clinical Trials Partnership (EDCTP2)  
The main milestones achieved in 2014 were: the adoption by the European Parliament and Council Decision No 556/2014/ EU of May 15, 2014, which extended the lead in 2014-2020 and thematic content or neglected diseases poverty.

### 5.1.6. Infrastructures for Research, including e-Infrastructures

In September 2014, the updating process of the "European Roadmap for Research Infrastructures" strategic plan was launched. It also published the report: "Updated Report and Recommendations for Pre-implementation EC funding in H2020". The ISCIII participated in the working group for strategic planning in the domain of health and nutrition of ESFRI (Health Food Strategic Working Group) and the implementation of the following projects of European high-quality infrastructures in biomedicine:

- ELIXIR: European Life-science Infrastructure for Biological Information.
- BBMRI: Biobanking and Biomolecular Resources Research Infrastructure.
- ECRIN-ERIC: European Clinical Research Infrastructures Network. In 2014, the ISCIII was voted to become the president of the decision-making body of ECRIN-ERIC (the assemblies of countries).
- EATRIS-ERIC: European Advanced Translational Research Infrastructure in Medicine.
- ERINHA: European Research Infrastructure on highly pathogenic agents.

- Eurobioimaging: Research Infrastructure for Imaging Technologies in Biological and Biomedical Sciences.
- EU-Openscreen: European Infrastructure of Open Screening Platforms for Chemical Biology.

## 5.2. Actions within the framework of research on the international public health and global health

### 5.2.1. Health Programme of the General Directorate for Health and Consumers of the EC convened by the Consumers, Health, Agriculture and Food Executive Agency

- **CHRODIS.** The ISCIII is the Coordinator of this Joint Action, with 26 participating countries and 67 partners, financed by the Commission under the 2nd Action Program of the Community in the field of Health 2008-2013. The Ministry of Health, Social Services and Equality (MSSSI) participates leading the activities with other Ministries of Health of the participating countries, to explore sustainability mechanisms for the project once it is finished.

### 5.2.2. Multinational Organisations or International Forums in the field of Global Public Health and the International Cooperation for Health and Development

- The ISCIII through the General Subdirectorate of International Programmes (SGPPII in Spanish) and MSSSI delegation collaborates with the World Observatory for Monitoring of Research and the Coordination in Neglected Infectious Diseases, coordinated by the WHO.
- The ISCIII is a member of the General Assembly of the Ibero-American Ministerial Network for Learning and Research in Public Health (RIMAIS) formed by 17 Ibero-American countries.
- The ISCIII is part and participates in the International Association of Public Health Institutes (IANPHI), to ensure that every country in the world has the capacity to deliver essential public health activities established by WHO.
- The ISCIII through SGPPII participates in the Governing Board of the Special Program of WHO/UNDP/UNICEF and the World Bank to promote operational research on diseases affecting the most vulnerable countries (TDR).

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- The ISCIII is part of the Advisory Committee for Health Research of the Pan American Health Organization.
  - The ISCIII participates in the Global Health Policy Forum, organized by the General Directorate for Development and Cooperation of the EC that seeks to improve the coherence of the EU policies in International Cooperation for Development.
  - The ISCIII participates in the activities and programs developed by the International Agency for Research on Cancer (IARC) of WHO.
  - The ISCIII is in constant coordination with the Spanish Agency for International Cooperation to develop and harmonize aid policies in the field of science and technology.



6

Regulations,  
Ethics

## 6. Regulations & Ethics

### 6.1. Spanish Bioethics Committee

The Spanish Bioethics Committee attached to the ISCIII, conducted the following activities in 2014:

- Participation in the following national and international events:
  - Sixth meeting for International Dialogue on Bioethics of the European Group on Ethics (EGE), celebrated in Brussels, in October.
  - 20th NEC Forum, celebrated in Rome, Italy, in November.
  - V Conference of Ethical Aspects on Biomedical Research, organized by the Committee for Research Ethics and Animal Welfare of the ISCIII, held in Madrid, in November.
  - Report of the Spanish Bioethics Committee on the Draft Organic Law for the Protection of the Unborn Life and the Rights of Pregnant Women.
- Report of the Spanish Bioethics Committee on the Draft Project which regulates the authorization to establish, operate, organize and registration of biobanks in Murcia Region.

### 6.2. Committee for Research Ethics and Animal Welfare (CElyBA)

#### Evaluation Activities

74 research projects related to human beings and 265 animal procedures were evaluated, both from the own ISCIII centres and Foundations, as well as other external centres to ISCIII, representing a total of 339 evaluations.

### Training and Dissemination Activities

Planning and hosting the “V Conference on Ethical Aspects of Biomedical Research: Autonomy and Information Management”, held at the ISCIII, 21 and 22 November 2014.

### 6.3. Guarantees Commission for Donation and Use of Human Cells and Tissues and National Register of Research Projects

During 2014, a total of 19 research projects were reported in the three commission meetings, on 25 February, 8 April and 6 November.

### 6.4. Biobanks

The Institute of Health Carlos III coordinates the activity of the National Register of Biobanks, through the General Sub-Directorate for Research in Cell Therapy and Regenerative Medicine.

The recording actions commenced in 2012 were increased in 2014, having registered 81 collections and 2 biobanks.



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