



STRATEGIC PLAN 2014-2017

November 2014



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1. METHODOLOGY

This Strategic Plan for 2014-2017 of the Institute Foundation of the Hospital de la Santa Creu i Sant Pau (IRHSCSP) follows on from first Strategic Plan for 2009-2013 and represents an important step forward towards consolidation as an accredited institute.

As is standard with strategic plans, the task was organized in sequential phases:

1. The current situation of IRHSCSP is analysed in the European, Spanish and Catalan biomedical research contexts, along with IRHSCSP's evolution during the period of the Strategic Plan 2009-2013.
2. On the basis of these internal and external analyses we reviewed the Strengths-Weaknesses-Threats-Opportunities (SWOT) matrix as a pointer to strategic objectives to achieve and lines to pursue over the next four years. We also updated IRHSCSP's mission, vision and values.
3. For each strategic objective we defined the corresponding action plan and described the tasks reflected in each.
4. On the basis of our objectives and action plans we drew up financial forecasts for the four-year period.
5. Finally, we defined indicators aimed at monitoring plan implementation during the four-year period of the plan.

This process is depicted in the figure.

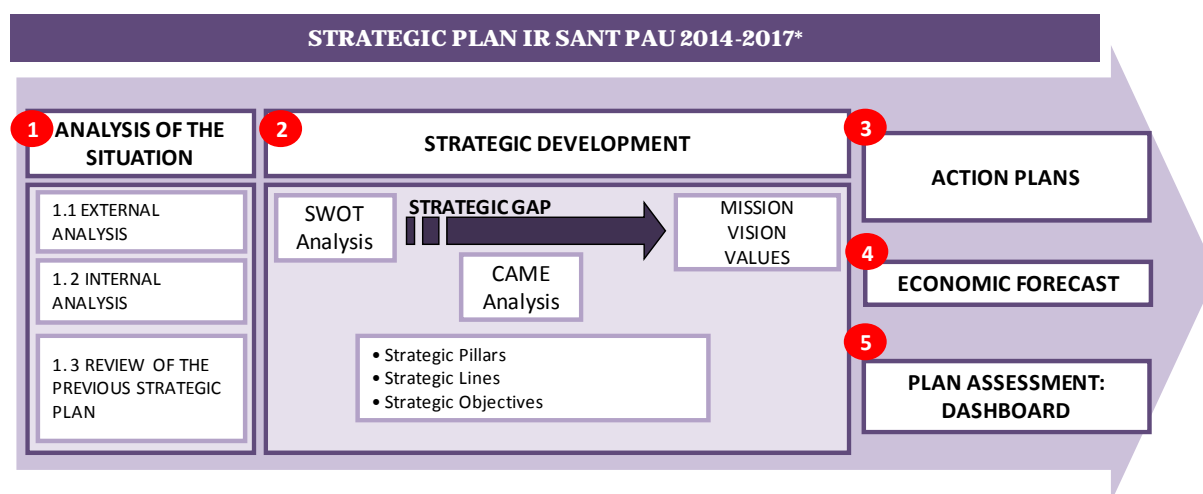


Figure 1: Strategic plan preparation methodology.

2. SITUATIONAL ANALYSIS

2.1. External analysis

The research performed at the Hospital Santa Creu i Sant Pau (HSCSP) is framed within different scientific policies in force in Europe, Spain and Catalonia. These policies are reviewed below, most particularly those with the greatest impact on our institute. As will be seen in more detail, biomedical research in Catalonia broadly speaking faces the following challenges:

- Reduced public and private financing of R+D+I and, consequently, greater competition, greater demands for research excellence and greater internationalization.
- Greater demands on accredited centres including annual evaluations, more indicators, more interdisciplinary cooperation, the development of a Human Resources Strategy for Researchers (HRS4R), etc.
- Growing emphasis on the generation of value-added results that can be transferred to the productive sector (industry and trade) and resulting in better care through improved clinical practice and healthcare processes.
- Reduced funding is forcing the development of new models of R+D+I funding, mainly through public-private partnerships and reduced drug spending is enhancing the pharmaceutical industry's interest in exploiting cooperation agreements aimed at maintaining R+D and developing innovative medicines.



Much of the EU's research and innovation activities take place under the umbrella of its framework programmes, currently titled Horizon 2020 (H2020). In the period 2014-2020, the goal is to focus on three particular strategic objectives: reinforce the excellence of European science, promote European industrial leadership and contribute to tackling the main societal challenges. The EU has earmarked a budget amounting to 76,880 million euros for H2020.

H2020 integrates, for the first time, all phases from knowledge generation to more marketlike activities, including basic research, technological development, demonstration projects, pilot production lines, social innovation, technology transfer, proof of concept, standardization, support for pre-commercial public procurement, venture capital and guarantee systems.

The three strategic objectives of the H2020 programme are as follows:

a) Create a **science of excellence** that will strengthen the position of the EU in the global science arena. To do this:

Funding has been increased for the European Research Council (ERC), which subsidizes European researchers at the highest level, and the field of future technologies has been expanded to cover all future and emerging technologies (FET).

Marie Curie Actions in support of the training, mobility and qualification of researchers and research infrastructures are to be maintained.

b) To develop technologies and applications that enhance European competitiveness.

Significant investments are planned for key technologies for industry, such as the information and communication technologies (ICT), nanotechnology, biotechnology and advanced manufacturing and space technology. Companies will also have at their disposal funding from the SME Instrument for concepts including viability analyses, concept development, demonstration and manufacture.

c) To research the major issues affecting European citizens.

The focus is on six areas essential to a better life, namely, **health**, food and agriculture including the marine sciences, energy, transportation, climate, raw materials, inclusive societies and security.

The results are aimed at solving the specific problems of citizens, such as population ageing, data protection and the transition to an efficient economy with reduced carbon emissions.

As can be observed, biomedical research as performed at IIB Sant Pau falls under two of three H2020 strategic priorities: **improving health, wellbeing as a social challenge and scientific excellence**. H2020 thus offers a number of specific opportunities to IIB Sant Pau:

1. The possibility of increasing its share of funds
2. Favourable financial conditions:
 - 100% of eligible costs for any kind of action and work package
 - 25% of eligible direct costs, excluding subcontracting costs

Note that FGS-HSCSP staff is considered a financial cost and not an income.



The Spanish Plan for Scientific Research, Technology and Innovation (PEICTI) 2013-2016 is responsible for developing and funding actions described in the Spanish Strategy for Science, Technology and Innovation 2013-2020, aimed at addressing the regulatory, normative, administrative and financing reforms necessary to enhance the efficiency and flexibility of the Spanish Science, Technology and Innovation System (SECTI) and to facilitate results development and optimization.

The actions contained in the PEICTI are organized in four programmes corresponding to its four major strategic objectives:

SPANISH STRATEGY FOR SCIENCE, TECHNOLOGY AND INNOVATION 2013-2020	SPANISH PLAN FOR SCIENTIFIC RESEARCH, TECHNOLOGY AND INNOVATION 2013-2016
PROMOTING TALENT AND EMPLOYABILITY	SPANISH PROGRAMME FOR PROMOTING TALENT AND EMPLOYABILITY
PROMOTING EXCELLENCE	SPANISH PROGRAMME FOR PROMOTING SCIENTIFIC AND TECHNICAL RESEARCH EXCELLENCE
FOSTERING BUSINESS LEADERSHIP	SPANISH PROGRAMME FOR FOSTERING BUSINESS LEADERSHIP IN R+D+I
PROMOTING R+D+I AIMED AT SOCIETAL CHALLENGES	SPANISH PROGRAMME FOR R+D+I AIMED AT SOCIETAL CHALLENGES

Of particular relevance to IRHSCSP are the specific objectives listed below, along with some issues related to their achievement:

1. Promote the **training and employment** of human resources in R+D+I activities in both public and private sectors.
(a) Poor SECTI capacity to incorporate these human resources; (b) unequal distribution of R+D+I staff between the public and private sectors and little mobility between them, making knowledge transfer difficult; (c) insufficient numbers of R+D+I technical experts and managers in SECTI; (d) limited international mobility and reduced capacity to attract international human resources.
2. Increase the **quality of scientific and technical research** to achieve the highest level of excellence and impact, contributing to international scientific and technological leadership by SECTI agents.
(a) Increase critical mass; (b) promote stable cooperation between specialist research groups; (c) promote interdisciplinary R+D projects; (d) raise private sector participation in the funding of basic research through new forms of patronage and CSR; (e) expand Spanish participation in international R+D projects, especially in the European Research Area.
3. Strengthen the **capacity** and international leadership of institutions conducting scientific and technical research.
Identify institutes that stand out for their leadership and strengthen their capacities.
4. Facilitate access to scientific and technological infrastructures and scientific equipment.
5. Promote business leadership in R+D+I.
6. Foster the creation and growth of technology-based companies and of efficient networks that facilitate access to new forms of financing for R+D+I activities.
(a) Support the creation of technology-based companies; (b) promote venture capital initiatives covering different stages of development.
7. Increase **public-private partnerships** in R+D+I.
(a) Implement R+D+I projects in cooperation between public and private sector agents to improve the connectedness of R+D+I and develop new products, services and technologies; (b) develop exchange and communication structures that facilitate effective cooperation; (c) promote the assessment and evaluation of results and of their capacity for transfer to the productive sector and to improve competitiveness.
8. Stimulate R+D+I aimed at responding to the **challenges of society**.
Develop instruments for scientific and technical specialization, bring together the scientific, technical and innovative capacities of all agents in the system and develop strategic actions in order to respond to society's challenges.

9. Promote the internationalization of R+D+I by SECTI agents and their active participation in the European Research Area.
10. Enhance **a culture of science, technology and innovation in Spanish society** and disseminate the results of publicly funded scientific and technical research and innovation.
11. Further explore R+D+I policies according to demands as they arise.
Adopt an innovative approach to public procurement.



R+D+I policies of the Department of Health of the Generalitat are currently defined in the Strategic Plan for Research and Innovation in Health 2012-2015. With the overall aim of improving health and encouraging economic growth in Catalonia through R+D+I, it has the following strategic aims:

- A. Optimize the structure of the biomedical research sector and promote enterprise management that optimizes investment, knowledge transfer and the application of results.
- B. Promote innovation in health.

These objectives have been grouped into five areas (strands) described below along with planned actions, some of which (indicated in bold) have a particular impact on the operations of IRHSCSP:

STRAND	ACTIONS
Strand 1: Integrate research and innovation policies in health with those already in place	<ul style="list-style-type: none"> • Establish common governance and funding criteria for health institutes. • Coordinate actions aimed at innovation in health. • Create and actively foster an advisory council for research and innovation in health. • Develop a health sciences research information system (SIRECS).
Strand 2: Invest efficiently in research excellence in health	<ul style="list-style-type: none"> • Establish results-based criteria to determine the allocation of funds (financing polynomial). • Strengthen leadership of accredited research institutes by adequate results-based funding and by facilitating governance that meets needs. • Monitor the yield on results (SIRECS). • Evaluate CERCA centres using CERCA. • Implement the CERCA Centre Integration Programme (SUMA). • Map research and health research infrastructures in Catalonia. • Increase the number of health professionals undertaking research and innovation. • Implement measures and instruments to increase participation in EU calls.
Strand 3: Promote the BioRegion	<ul style="list-style-type: none"> • Promote patronage and public-private partnerships. • Other actions.
Strand 4: Promote knowledge transfer and evaluate the impact of research	<ul style="list-style-type: none"> • Incorporate evaluation and transfer indicators in resource allocation criteria. • Post a call for translational type 2 research projects. • Encourage participation in the development of international and local clinical practice guidelines. • Facilitate use of infrastructures such as medical records and biobanks. • Strengthen structures and human resources supporting value creation and transfer to the productive sector. • Develop a system of ex-post evaluation, i.e., measure the social return to research. • Promote social communication initiatives for research and innovation.
Strand 5: Encourage innovation in healthcare bodies	Several measures aimed at identifying innovation opportunities in the health area, innovation management observatories, best practices in regulatory frameworks for innovation, innovation evaluation, innovative public procurement, etc.

2.2. Internal analysis

The Carlos III Health Institute (ISCIII) evaluation report regarding Sant Pau Biomedical Research Institute (IIB Sant Pau) accreditation — like the CERCA evaluation — very clearly indicated strengths and weaknesses, very much taken account of in this strategic plan.

The ISCIII accreditation report for IIB Sant Pau of November 2010 drew the following conclusions:

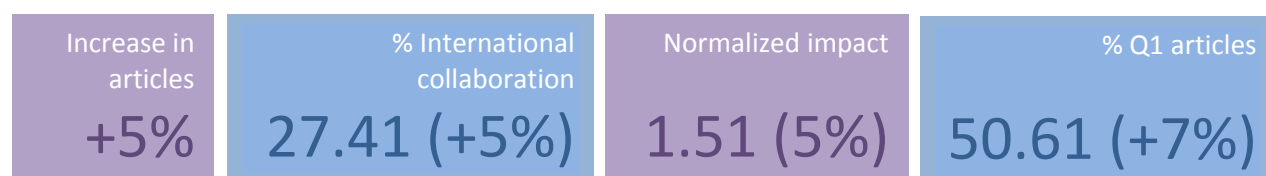
Strengths	Weaknesses
<ul style="list-style-type: none">• Scientific track record• Progress in bibliometric production• Defined research areas• Translational research environment• Participation in networks• Clear future projection of the principles of a biomedical research institute• FP-HSCSP involvement in the future of the institute/new building• Top-level External Scientific Committee• Having a brand-new hospital• Management and institutional commitment by signatory entities• Active and involved scientific management• Qualified and experienced professionals	<p>Improvements needed as follows:</p> <ul style="list-style-type: none">• Strengthen and update management structures• Give a genuine impetus to the integration of institutions and groups• Strengthen communication and dissemination channels• Improve laboratory infrastructures• Develop the training plan and its visibility• Foster a more agile Internal Scientific Committee• Create a management intranet• Promote e-learning• Improve corporate image elements in access areas and spaces• Build a culture of cooperation in improvement teams• Develop management by processes
Overall evaluation of IIB Sant Pau <ul style="list-style-type: none">• A great strength is its scientific track record and its position of national leadership.• A genuine effort to improve the integration of institutions and groups is necessary.• The new hospital and research centre will greatly facilitate future operations.• Its future is assured if all the planned actions in the strategic plan are implemented.• To sum up, the current IIB Sant Pau project is at an early growth stage and needs to improve mechanisms of integration.	

Similar observations are reflected in the CERCA evaluation of the IRHSCSP of October 2012:

- Dependence on the HSCSP is excessive.
- The cancellation of the new buildings is a serious barrier to research progress and remains an absolute priority.
- A new strategic plan needs to be developed with clear targets for enhancing scientific excellence.
- A business plan should be drawn up.

- There is an imbalance between national and European funding. Greater efforts to internationalize need to be made.
- There is a lack of contracts financed by Europe (ERC/Marie Curie) and of ICREA positions, most especially of postdoc researchers.
- An open, objective and public procedure is recommended for the evaluation of individual researchers, associated, if possible, with an incentive plan.
- There should be closer cooperation with the Autonomous University of Barcelona (UAB) to obtain more PhD students.
- A thorough cost-benefit analysis is necessary for each platform to assess their effectiveness, with proposed alternatives for those that have to be cancelled.
- The knowledge transfer unit should be diversified to enhance monitoring of research groups and strengthen agreements with industry.
- A Centre for Drug Research (CIM) business plan needs to be developed.
- A communication plan is recommended with two arms: external communications with the public and internal communications aimed at fostering cooperation between groups.

The ISCIII evaluation highlighted the scientific progress achieved by IIB Sant Pau. For instance, Scimago bibliometric indicators for 2007 to 2011 (the latest year available) show the following:



Source: Scimago Institutions Ranking 2007-2011.

Not only has scientific production and its quality increased in recent years, it has also done so cost effectively. At a cost of 17,017 euros per article and of 3,456 euros per impact factor (IF) point, IIB Sant Pau is one of the most cost-effective article publishers among Catalan research institutes:

BIOMEDICAL RESEARCH INSTITUTES			
Data in €	Cost per article	Cost per IF	Funding per investigating doctor
IDIAP Jordi Gol	18,741.9	7,015.1	30,157.5
IDIBAPS	32,970.9	6,342.5	52,446.7
IDIBELL	18,760.4	3,941.7	43,649.6
IDIBGi	14,080.1	2,845.1	N.A.
IISPV	7,121.2	1,943.7	N.A.
IGTP	15,764.4	3,689.9	24,883.1
IMIM	21,456.2	3,898.3	74,048.7
IRBLleida	23,547.2	4,291.3	34,012.6
IRHSCSP	17,017.0	3,456.0	66,077.7
VHIO	56,314.8	5,592.3	161,755.4
VHIR	51,886.8	8,841.9	152,261.8

Source: Results Centre - Health Science Research - Data for 2012.

External evaluations, meanwhile, point to the need to strengthen researcher training. Indeed, data from the Results Centre - Health Science Research (attached to the Agency for Healthcare Quality and Assessment, AQUAS) indicate that the proportion of trainee researchers in our institute is substantially lower than in other similar research centres in Catalonia:

	HSCSP	IDIBAPS	VHIR	IDIBELL	IMIM
% trainee researchers (R1 and R2)	6%*	31%	62%	33%	35%

*13% from updated internal data. Source: Results Centre - Health Science Research - Data for 2012

Not only is there room for improvement in the training of researchers, the same can be said regarding internationalization. According to SIRECS data from 2012, only 2% of researchers in the HSCSP are from outside Spain, compared to 8% for the Vall d'Hebron Research Institute (VHIR) and 10% for the Hospital del Mar-Municipal Institute for Medical Research (IMIM); furthermore, the HSCSP employs no ICREA researchers (compared to two in each VHIR and IMIM) or researchers benefiting from European scientific excellence and mobility programmes (ERC/Marie Curie).

The low level of internationalization is also evident in funding from the European Commission's 7th Framework Programme (7FP), again lower than in equivalent institutes:

	7FP		
Cooperation projects: Cooperation Programme, Capacities & Marie Curie (not individual), JTI, JUs, PPPs	2007-2010 (A)	2011-2013 (B)	Annual average 7FP (A+B)/7
Approved projects	6	5	1,57
Coordinated projects	0	0	0
EU contribution (€)	561,333	406,354	138,241
Ideas Programme projects – ERC projects	2007-2010 (A)	2011-2013 (B)	Annual average 7PM (A+B)/7
Approved Projects	0	0	0
EU contribution (€)	0	0	0

Source: Internal data.

The best placed Catalan research centres not only are highly diversified and internationalized in terms of competitive funding. They are also capable of generating a high level of non-competitive financing through the provision of services and partnerships with industry. The IRHSCSP, in particular, occupies a good position among Catalan health research institutes regarding the mix of competitive and non-competitive funding, as shown in the following table:

BIOMEDICAL RESEARCH INSTITUTES	FUNDING (€)	Generalitat	Competitive	Non-competitive
	IDIAP Jordi Gol	735,000.0	651,398.6	1,363,284.3
	IDIBAPS	5,578,398.1	24,187,027.4	8,440,689.1
	IDIBELL	4,665,058.7	12,373,838.9	4,516,162.3
	IDIBGi	350,000.0	1,094,065.2	1,179,051.6
	IISPV	350,000.0	1,861,375.2	824,822.9
	IGTP	342,969.0	3,651,447.0	2,184,490.0
	IMIM	3,292,800.0	8,482,687.9	6,431,562.8
	IRBLleida	350,000.0	470,225.5	2,165,035.4
	IRHSCSP	387,733.0	3,922,487.9	4,825,914.0
	VHIO	1,003,591.6	4,776,184.4	4,610,751.6
	VHIR	1,479,800.0	10,169,727.4	18,406,190.6

Source: Results Centre - Health Science Research - Data for 2012.

Contributing decisively is the contribution by clinical trials. As can be seen in the figure, clinical research activity in IIB Sant Pau is comparatively high, both in terms of the number of active trials per year and in relation to the proportion of studies per researcher underway.

	HSCSP	IDIBAPS	VHIR	IDIBELL	IMIM
Active clinical trials	726	565	893	516	454
Active clinical trials/investigator	1.48	0.60	0.79	0.82	1.00

Clinical trials and services 2012 (M€)

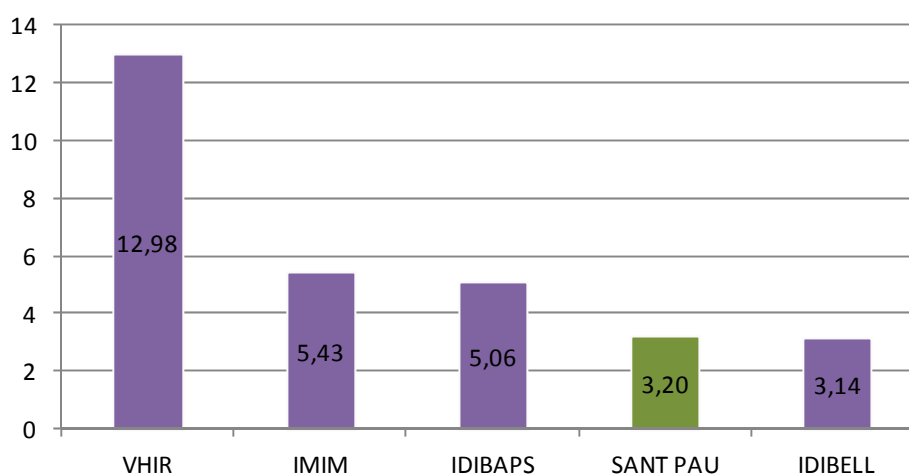


Figure 2: Clinical trial revenues in health research institutes in Barcelona. Source: SIRECS 2012 and Results Centre - Research in Health Sciences - Data for 2012.

To these satisfactory non-competitive revenue indicators can be added the activities of the Scientific and Technical Services platforms (PSCTs). Since 2010, revenues have

grown to the point that the platforms are approaching breakeven and so almost self-sustainable, as indicated in the table:

<i>Data in €</i>	2010	2011	2012	2013
Scientific-Technical Service Platforms	186,489	384,498	360,857	436,974
Animal Experimentation Service	676	351	489	15,292
Biobank	71,452	87,008	87,503	310,905
Tumour Bank	-	-	-	-
Structural income	258,618	471,857	448,849	763,171
Scientific-Technical Service Platforms	448,879	569,812	555,384	629,326
Animal Experimentation Service	171,669	180,085	182,011	210,111
Biobank	23,601	78,569	117,450	154,202
Tumour Bank	42,165	46,558	38,614	12,939
Structural expenditure	686,314	875,025	893,459	1,006,578
Deficit or surplus	-427,696	-403,167	-444,610	-243,407

Source: IRHSCSP Administrative and Economic Management Unit

In recent years, the platforms have consolidated in terms of coordination, procedures and have also developed fee structures and communication materials for external marketing.

Conversely, some of the platforms have not been entirely successful, whether due to a lack of definition in their portfolio of services (the bioinformatics platform) or organizational complexity (the imaging platform).

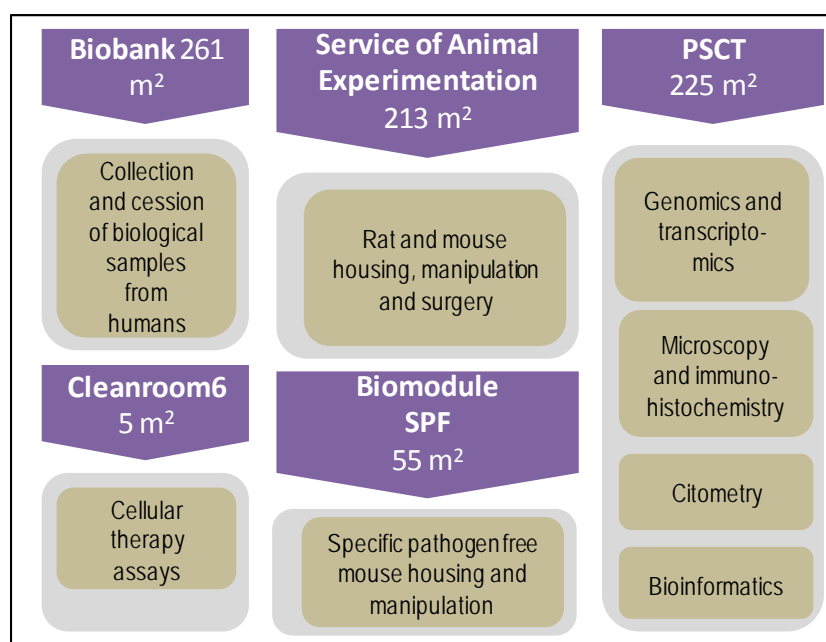


Figure 3: IRHSCSP PSCTs.

In regard to non-competitive revenue generation, the coming years pose an important challenge in transferring IRHSCSP knowledge and exploiting its intellectual property. Since 2010, thanks to funding from the ITEMAS network of the ISCIII, the institute has a Transfer and Innovation Unit, responsible for promoting technological innovation in cooperation with industry and launching European projects and other corporate development projects. With a culture more focused on innovation and the transfer, our scientific capacity will boost the number of commercially exploited patents and the creation of entrepreneurial projects and so improve on current indicators.

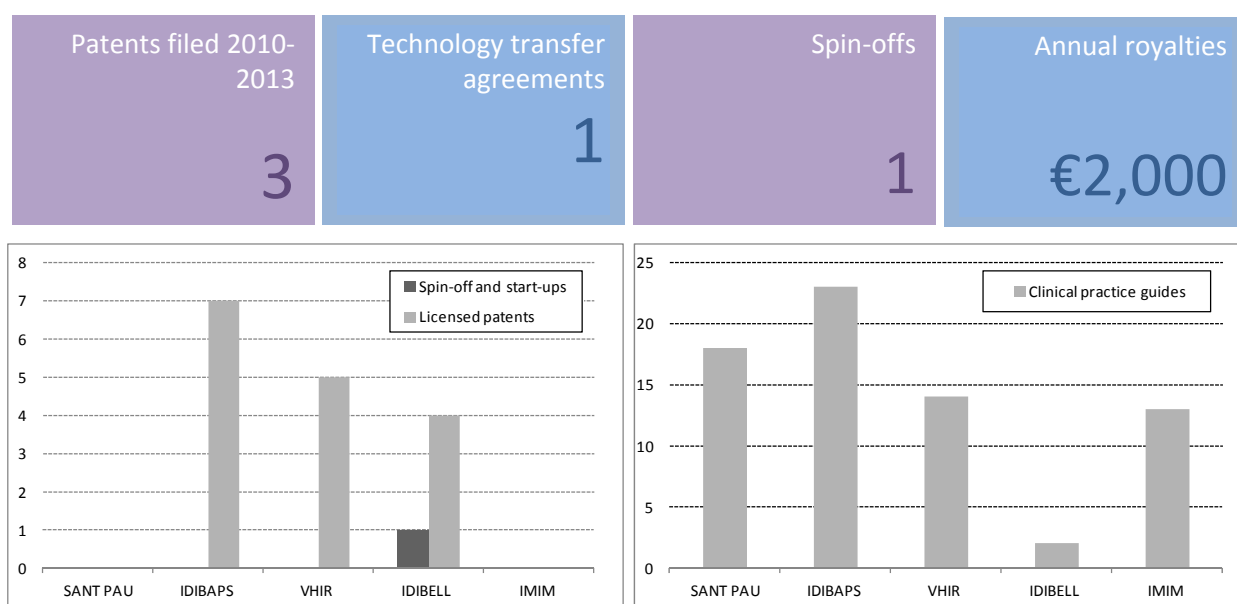


Figure 4: Comparison of innovation and transfer initiatives by health research institutes in Barcelona.
Source: Results Centre - Health Science Research - Data for 2012.

With regard to revenues, of note is the limited contribution of non-specific grants by the government aimed at supporting the activities of the institute. Despite accreditation by ISCIII and CERCA, subsidies received since 2011 both remain well below those for equivalent institutes (see table on page 12) and well below the amount which corresponds to it according to the model for financing research institutes prepared by the Department of Health.

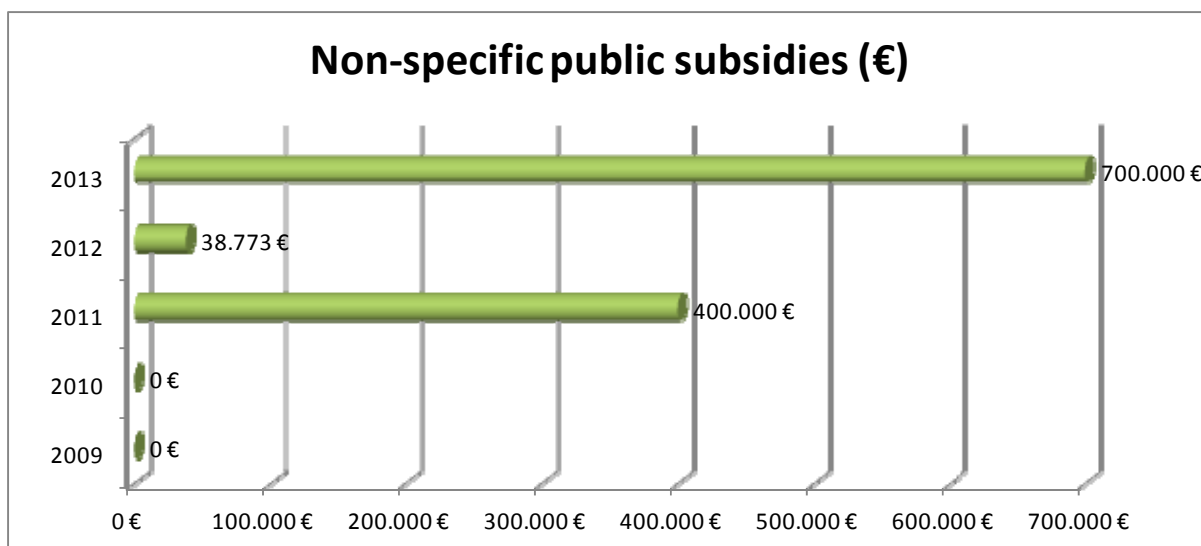


Figure 5: Non-specific public subsidies. Source: IRHSCSP Administrative and Economic Management Unit.

In fact, the revenue item that has suffered most from the negative economic situation of recent years has been subsidies in general, dropping more than a million euros between 2009 and 2013. However, this decline was more than offset by the growth in services and cooperation agreements of over two million euros in the same period. Consequently, revenues from activities (excluding financial income) grew by one million euros.

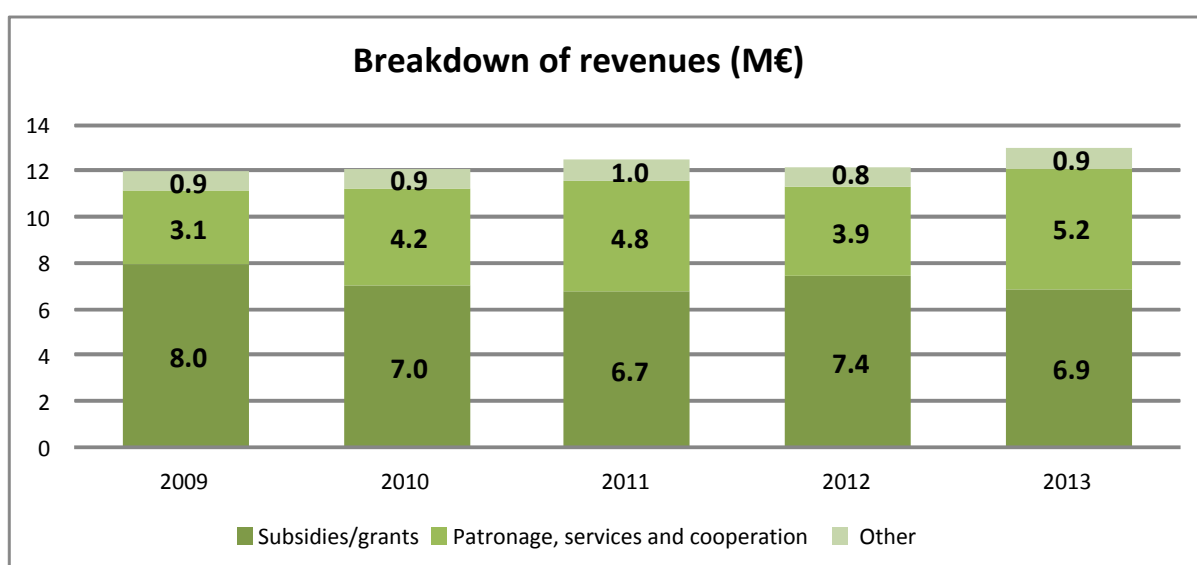


Figure 6: Itemized revenues 2009-2013. Source: IRHSCSP Administrative and Economic Management Unit.

As for operating costs, staffing costs have increased considerably, despite containment measures implemented in recent years. The savings of 2012 and especially 2013 were most evident in the supplies and external services items.

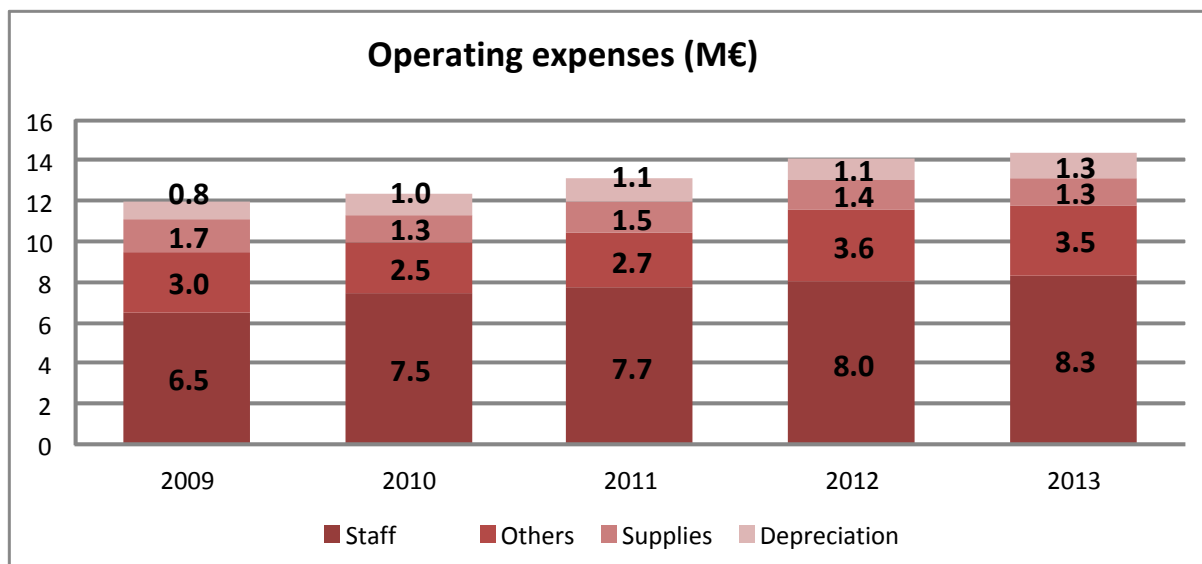


Figure 7: Itemized expenditure 2009-2013. Source: IRHSCSP Administrative and Economic Management Unit.

As a result of this uneven evolution of revenues and expenditures, the institute has concluded the last two financial years with a significant imbalance, although a major effort was implemented in 2013 to try to address the situation.

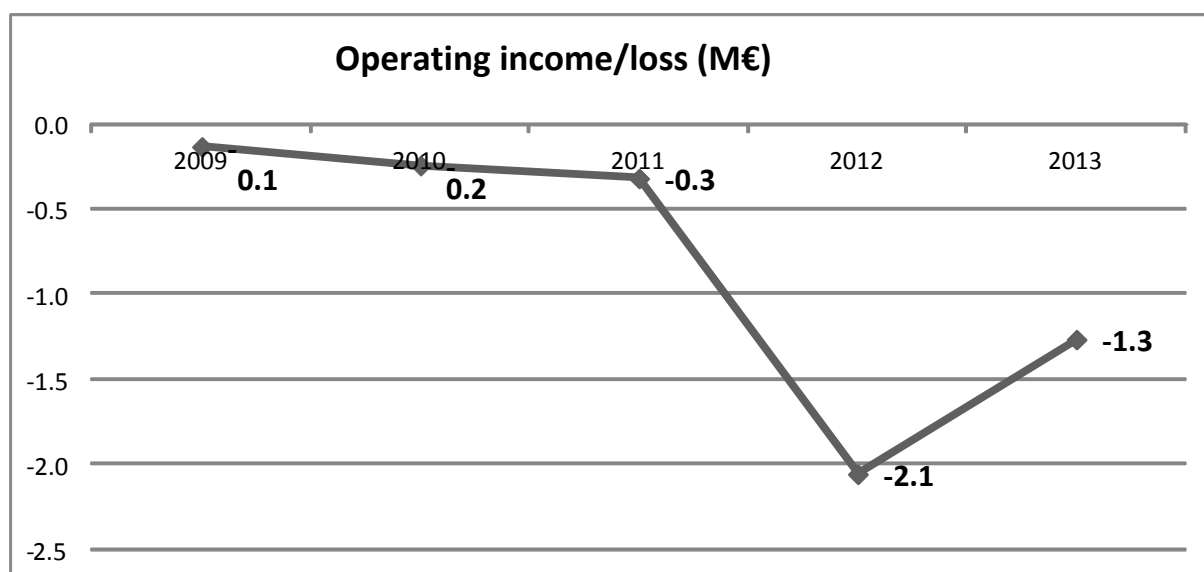


Figure 8: Operating income/loss 2009-2013. Source: IRHSCSP Administrative and Economic Management Unit.

To sum up, the reasons for these difficulties are many, but are above all linked to the economic crisis:

- As already mentioned, formal accreditation has not been accompanied by the expected structural funding. Furthermore, funding associated with accreditation as a CERCA centre has been paid at below the percentage calculated in the 'Research Polynomial' estimates developed in 2012 by the Department of Health and not as yet implemented.

- It was possible to balance accounts up to 2011 largely due to the resources contributed as subsidies for operations by the FGS-HSCSP, now discontinued.
- The considerable growth in non-competitive resources, increased revenues from clinical trials, services and other agreements and the commencement of billing by platforms have not managed to offset the drop in funding for research projects. This drop is the outcome of a resource crisis in the two main sources of funding for health research: ISCIII and the pharmaceutical industry.

The viability and sustainability of IRHSCSP is therefore the main priority set out in this strategic plan.

2.3. Strategic Plan 2009-2013 review

The IRHSCSP Strategic Plan 2009-2013 had as its primary goal the constitution of an effective biomedical research institute, its accreditation by the ISCIII and the Generalitat and the inauguration of a new building as a research home for the HSCSP.

Although accreditation was expected to provide a financial boost regarding the scientific structure of the institute, this was not entirely the case given the adverse economic environment. Nonetheless, IRHSCSP managed to achieve its strategic objectives, essential for its future development. The same economic crisis of recent years have meant that the new building project has not advanced as scheduled, although the agreements of 2014 between HSCSP and other stakeholders would indicate that the new building will become a reality during the period of this strategic plan.

Recent years have also witnessed the achievement of many objectives of the previous strategic plan, as illustrated in the figure.

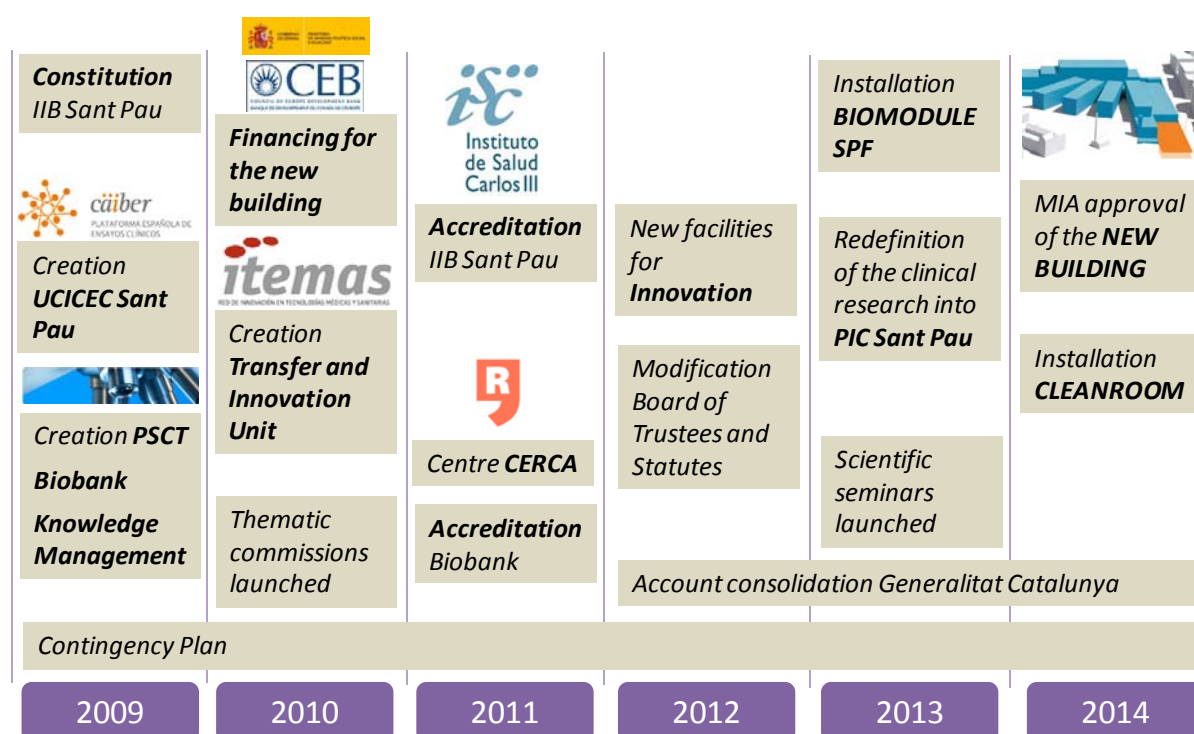


Figure 9: IRHSCSP achievements during the period of the Strategic Plan 2009-2013.

The following table shows the degree of achievement of different action plans described in the Strategic Plan 2009-2013:

		Completed	Partially/totally outstanding
Resources	Premises and infrastructures	<ul style="list-style-type: none"> Needs identification 	<ul style="list-style-type: none"> Viability plan New building construction
	Research fundraising	<ul style="list-style-type: none"> Researcher support office Researcher information system Intranet 	
	Contract programme	<ul style="list-style-type: none"> Agreement of measurable targets Contract programme signed 	<ul style="list-style-type: none"> Quantities related with productivity indicators
Organization	Research area reorganization	<ul style="list-style-type: none"> Composition of areas 	<ul style="list-style-type: none"> Coordination within and between fields
	Structural upgrade of management body	<ul style="list-style-type: none"> Study of needs Development of new areas 	<ul style="list-style-type: none"> Mapping process review
	Internal communication plan	<ul style="list-style-type: none"> Regular meetings Intranet 	<ul style="list-style-type: none"> Communication impact assessment system Proximity of groups and meeting areas Intramural cooperative projects programme
	Quality and improvement	<ul style="list-style-type: none"> Needs analysis and definition 	<ul style="list-style-type: none"> Improvement plan Quality plans and manual
Scientific quality	Results evaluation	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Definition of evaluation procedures, areas and objectives
	Support plan for emerging groups	<ul style="list-style-type: none"> Definition of emerging group and inclusion criteria 	<ul style="list-style-type: none"> Preparation and implementation of the tutorship plan
	Results transfer promotion	<ul style="list-style-type: none"> Prior analysis Transfer procedure Seminars 	<ul style="list-style-type: none"> Specific grants OTRI* registration denied Technological surveillance system <p>* Research Results Transfer Office</p>
	Research training	<ul style="list-style-type: none"> Training supply and needs analysis Training coordinator Training plan definition, implementation and evaluation 	
	Cooperative science project		<ul style="list-style-type: none"> Definition, development, implementation and evaluation of a cooperative science project
Dissemination	Dissemination plan	<ul style="list-style-type: none"> Corporate website Annual scientific report 	<ul style="list-style-type: none"> Preparation and implementation of the communication plan
	External cooperation promotion		<ul style="list-style-type: none"> Benchmarking models Alliances Internal analysis Contacts to explore cooperation models

3. STRATEGIC DEVELOPMENT

3.1. SWOT analysis

The SWOT analysis was performed on the basis of the findings of the situational analysis regarding health research internally in IRHSCSP and externally in its environment. Its implementation took into account the views expressed by leading researchers, management and administration staff at IRHSCSP.

WEAKNESSES <ul style="list-style-type: none">• Financial deficit in the last two years (need for a viability and sustainability plan)• Unsuitable physical spaces• Poor international research visibility• Low level of national and international talent (predocs and postdocs).• Lack of resources to attract talent.• Rigid employment framework for stimulating and evaluating research• Improvable innovation and transfer culture• Need to improve communication and outreach to society• Insufficient presence in Europe	THREATS <ul style="list-style-type: none">• Reduction in public and private funding for research• Higher operating costs due to the FGS-HSCSP assuming fewer costs• Re-accreditation evaluation• Financial uncertainties regarding the merging of CERCA centres• Competitiveness with other biomedical research centres in Barcelona• Maintaining a high level of funding for groups
STRENGTHS <ul style="list-style-type: none">• HSCSP clinical and researcher tradition• Recognition as an accredited institute and CERCA centre• Critical mass• Good research indicators (impact factor, competitive public projects)• Well organized, suitably sized and experienced management team• Well-equipped platforms	OPPORTUNITIES <ul style="list-style-type: none">• New building construction• H2020 and other international competitions• Closer collaboration with the UAB• Collaboration with industry• Patronage• Clinical research promotion• Information systems for efficient and comprehensive management• Introduction of a policy of incentives for research based on scientific excellence

3.2. CAME analysis

A Correct-Address-Maintain-Exploit (CAME) analysis processes SWOT findings so as to define the strategy to be pursued by the institute from both the internal and external perspectives. The objective of a CAME analysis is to correct weaknesses, address threats, maintain strengths and exploit opportunities.

The four strategies are as follows:

- a) Reorientation strategies consider the weaknesses of the institute in terms of taking advantage of opportunities presented by the environment (C for 'correct').
- b) Survival strategies aim to deal with both internal weaknesses and threats from the environment (A for 'address').
- c) Defensive strategies rely on internal strengths to deal with threats from the environment (M for 'maintain').
- d) Offensive strategies take advantage of the strengths of the organization and the opportunities in the environment (E for 'exploit').

<p>CORRECT</p> <ul style="list-style-type: none"> • The limited international visibility of researchers and projects • The lack of private finance and patronage • The problem of premises • Poor information flows internally through the intranet and other information systems (strengthen thematic committees) • Professional motivation (through the opportunities offered by the new building, new labour framework, H2020, etc). 	<p>ADDRESS</p> <ul style="list-style-type: none"> • Viability plan that includes a contingency analysis • Implement transversality agreements with IIB Sant Pau clinical centres • Full application of the polynomial proposed by the Generalitat • IRHSCSP and ICCC* integration • Active communication of HSCSP research, using a differentiated and effective image. <p>* Catalan Cardiovascular Sciences Institute</p>
<p>MAINTAIN</p> <ul style="list-style-type: none"> • Efficient management of costs and processes, with emphasis on projects, procurement, quality and information systems • Control over fulfilment of undertakings as an accredited institute and CERCA centre • Groups, structures and platforms with favourable scientific evaluations 	<p>EXPLOIT</p> <ul style="list-style-type: none"> • Innovation and transfer to the productive sector • Clinical research • The use of platforms • Partnerships with state and regional research agencies • Partnerships with industry

3.3. *Mission, vision and values*

Mission

The mission as stated in the Strategic Plan 2009-2013 was as follows:

"To promote, develop, manage and disseminate research in the health sciences area. To promote closer relations and knowledge exchanges between researchers and research groups belonging to different centres, and promote cooperation with other institutes and public and private organizations, prioritizing activities to strengthen partnerships aimed at conducting translational research with repercussions for clinical activities. We also manage resources earmarked for research as entrusted by various institutions and organizations."

This is updated and simplified as follows:

IRHSCSP has as its mission to improve the health and quality of life of people through the production and dissemination of scientific knowledge, the training of researchers of an international standard, innovation in health and the application of advances to clinical practice and health policies.

This newly stated mission aims to emphasize some key issues for the development of the institute:

- People's health and quality of life
- The production and dissemination of knowledge
- Researcher training
- Healthcare innovations
- The application of advances to clinical care practices and health policies.

Vision

Vision — referring to what we want to achieve in the future and what we aspire to — has also been modified slightly to include the necessary internationalization of our activities. Thus, even though the former vision was regarded as a reference for biomedical research in Catalonia, the new vision states as follows:

The vision of IRHSCSP is to become an international leader in translational biomedical research.

Values

The Strategic Plan for 2009-2013 excluded corporate values as guidelines for the institute and its members. Now is the time to consider the commitment of the institute to certain principles fundamental to any research centre.

Excellence

Scientific excellence and excellent people management

Collaboration and multidisciplinary

Teamwork within the organization and with other public and private organizations

Transparency

Accountability and openness to evaluation by trustees and funders

Efficiency

A culture of viability and sustainability for all our activities.

Ethical and social commitment

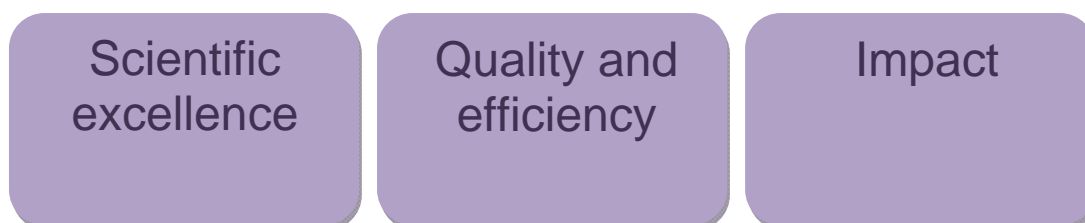
Research placed at the service of society by an entity that belongs to the public sector

Ongoing improvement and innovation

Flexibility and adaptability. Application of generated knowledge.

3.4. *Strategic pillars and objectives*

European scientific projects are evaluated on the basis of their scientific excellence, quality of implementation and capacity to have an impact on society. Similarly, the strategic pillars that will sustain the future development of IRHSCSP are as follows:



From these pillars, and bearing in mind the situational analysis, we defined a number of strategic priorities to be used to define objectives for the coming years and action plans to achieve these objectives:

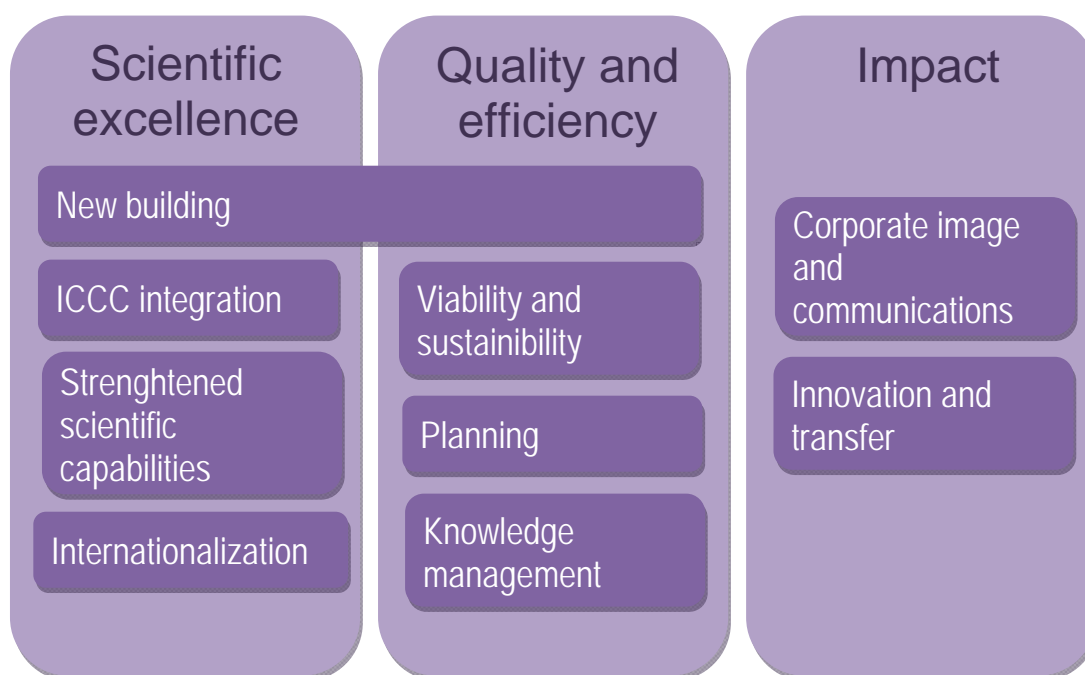


Figure 10: IRHSCSP strategic priorities.

The strategic objectives are as follows:

Strategic objectives

SCIENTIFIC EXCELLENCE

New building	<ul style="list-style-type: none"> • Inauguration of new building • Financial viability of the new spaces
Integrate with the ICC	<ul style="list-style-type: none"> • Viable and sustainable integration
Strengthen scientific capacities	<ul style="list-style-type: none"> • More and better science and productivity • More researchers in training • Incorporation of leading international researchers
Internationalize	<ul style="list-style-type: none"> • More European projects, with priority to coordinated projects • Higher proportion of foreign staff • Adoption of Marie Curie Actions

QUALITY AND EFFICIENCY

New building	<ul style="list-style-type: none"> • See above
Ensure viability and sustainability	<ul style="list-style-type: none"> • Moderate growth in competitive and non-competitive funding • Structural cost containment • Financial equilibrium and sustainability • Platform sustainability
Plan management and services	<ul style="list-style-type: none"> • Quality processes accredited by external agents • Enhanced management of business units (clinical trials and platforms)
Manage knowledge	<ul style="list-style-type: none"> • Implementation of all features planned for the intranet • Comprehensive computerized management of clinical trials • Automated management of financial and scientific indicators

IMPACT

Develop external image and communications	<ul style="list-style-type: none"> • Own brand image • Greater media exposure for our research and for our researchers • Visibility in Europe • Better links with the educational system in our catchment area • Improved internal communication
Innovate and transfer	<ul style="list-style-type: none"> • More filed patents • Exploitation of intellectual property • Creation of spin-offs from viable business projects

In addition to these objectives, three upcoming dates are of special significance:

2015	<ul style="list-style-type: none"> • CIM re-accreditation
2016	<ul style="list-style-type: none"> • CERCA evaluation • Re-accreditation by ISCIII as a health research institute

4. ACTION PLANS

Described below are action plans envisaged for each strategic priority, specifying also the tasks to be implemented in each case over the next four years.

4.1. New research building

1. SCIENTIFIC EXCELLENCE & 2. QUALITY AND EFFICIENCY

Strategic priority 1.1.		NEW RESEARCH BUILDING
OBJECTIVES		<ul style="list-style-type: none"> • New building inauguration • Quality premises, services and equipment • Financial viability of the new spaces
ACTIONS	1.1.1. Draft and approve the functional plan (basic and executive projects)	• Bearing in mind current and future needs and ensuring maximum flexibility for spaces.
	1.1.2. Monitor the new building tender and construction processes	• Coordination with the FP-HSCSP (owner of the building).
	1.1.3. Develop a new building and premises policy and management	• Staffing forecast and development of a flexible policy for allocating spaces according to, among others, active projects.
	1.1.4. Develop a viability and operational plan for the new building	• Forecasted versus actual operating expenses and contingency plan

The basic design of the building, by the Pich-Aguilera and 2BMFG architectural firms, was presented in June 2014 with the following layout:

Floor	Built m2	Functional units
-1	1,559	Platforms and general services
0	1,581	Platforms, management and administration
1	1,805	Platform for Clinical Research (PIC Sant Pau), neurophysiology, Phase II/III clinical unit, platforms and labs
2	1,805	Labs
3	1,050	Labs and offices for clinical groups
4	99	Office

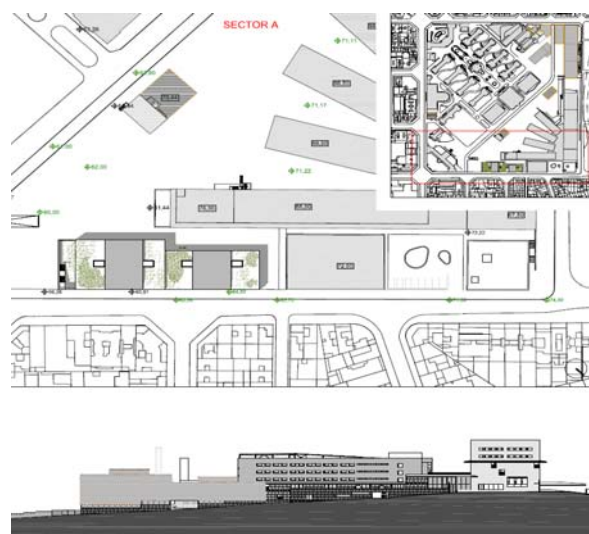


Figure 11: Functional plan for new research building.

A total of 7,278 m² of useful floor space is planned, of which 2,175 m² is allocated to laboratories, 844 m² to platforms and 869 m² to clinical research.

The functional plan has the following components and time schedule:

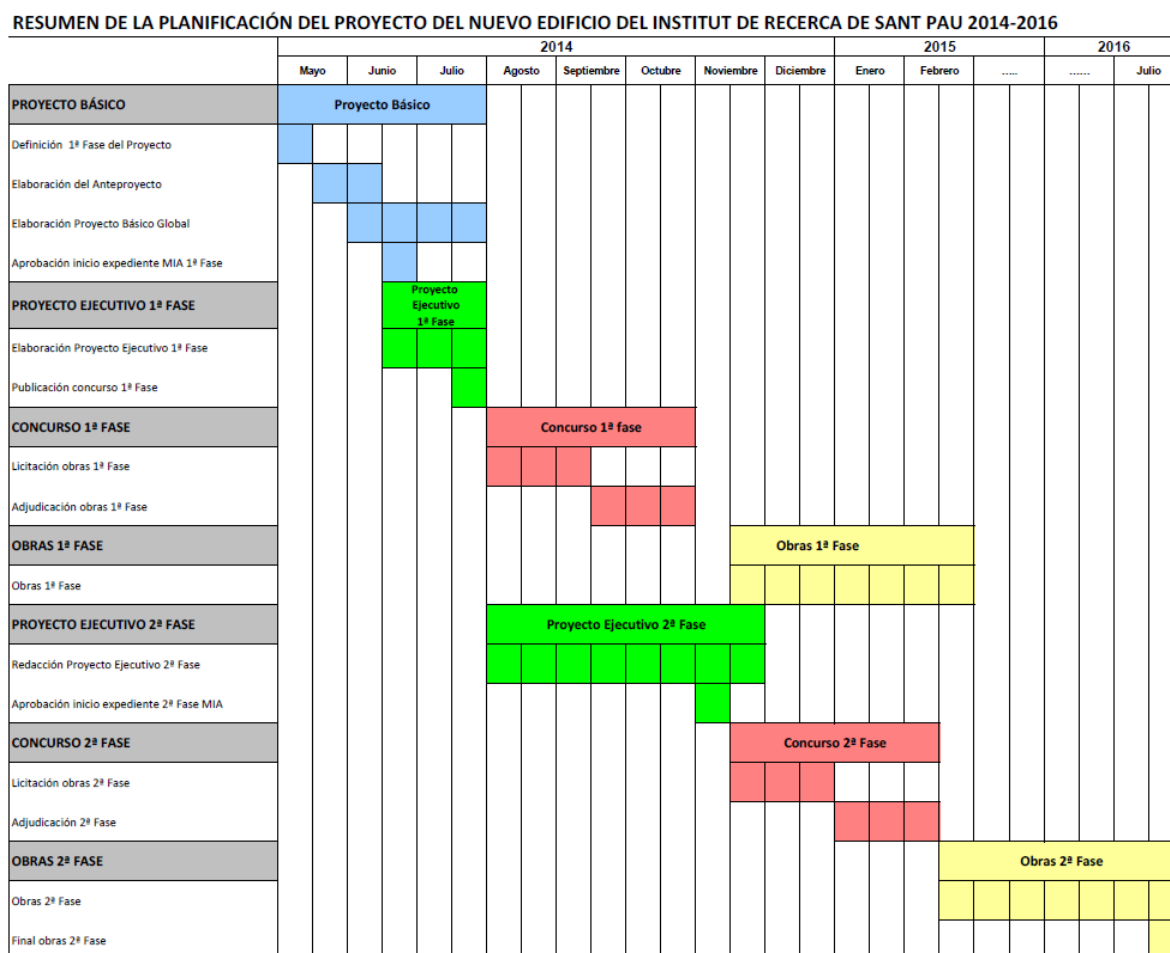


Figure 11: Functional plan for the new research building

4.2. ICCC integration

1. SCIENTIFIC EXCELLENCE		
Strategic priority 1.2.		ICCC INTEGRATION
OBJECTIVES	• Viable and sustainable integration of the ICCC	
ACTIONS	1.2.1. Analyse existing entities and plan the new entity	<ul style="list-style-type: none"> • Study of operational synergies • Characterization of integration costs • Economic and financial forecasts
	1.2.2. Negotiate the terms of integration with the Catalan administration	<ul style="list-style-type: none"> • Provision of financial assistance for restructuring costs to ensure viability of the operation and of the resulting entity (e.g., from SUMA funds). • Contribution of the CERCA programme must cover funding needs to obtain a balanced budget throughout the period
	1.2.3. Implement integration	<ul style="list-style-type: none"> • Integration of animal facilities, service platforms and the Animal Experimentation Ethics Committee and the radioisotope service • Integration of information and documentation systems • Accounting integration • Integration of teams

Given the synergies between the IRHSCSP and the ICCC regarding their activities, the proximity of their premises and the occasional sharing of resources, it is proposed that the ICCC integrates within the IRHSCSP 1) for stability and financial sustainability reasons and 2) to strengthen scientific excellence derived from a bigger critical mass.

The lines for reorganizing the scientific project of the two organizations are as follows:

- Maintain the ICCC research lines, all its groups currently within the IRHSCSP and the ICCC brand image, but within the legal structure of the IRHSCSP.
- Harness the existence of support structures for research that can be shared by researchers from both institutions.
- Integrate ICCC administrative and research support staff in the IRHSCSP to optimize resources and achieve economies of scale in structural costs and project management costs.
- Encourage the transfer of research results by strengthening the communications area and the projects office.
- Develop aspects of high strategic value, mainly through internationalization, innovation and knowledge transfer as well as fundraising.

Expected impact of ICCC integration with IRHSCSP

IRHSCSP governance

It is not anticipated that changes will occur as a result of ICCC integration in IRHSCSP either a) in the original foundational aim as expressed in IRHSCSP bylaws, since its aims already reflect the activities of the ICCC (research activities in the cardiovascular area) or b) in the composition of its governing body, the IRHSCSP Board of Trustees.

Scientific project

The cardiovascular disease area is one of the most important areas in IRHSCSP in terms of scientific production and the integration project aims to maintain and even strengthen this area. Therefore, the ICCC research groups will integrate within a strategic cardiovascular diseases department in the IRHSCSP in their own research programme, with their own scientific coordination mechanisms, research groups, brand and image (ICCC) and communication policies, but always in coordination with the IRHSCSP management.

Support platforms

Within the process, ICCC support platforms currently within the IRHSCSP will be integrated so as to optimize the structure as proposed in the following table:

Platform	IR Sant Pau Staff	ICCC Staff	IR Sant Pau + ICCC
Animal Experimentation Service	4	4	5
Scientific Platforms	8	4	9
Clinical Research Platform	4.5	0	4.5
Cardiovascular Platform	1	17	15
	17.5	25	33.5

* Due to its size, the ICCC program will hold a cardiovascular platform to meet current commitments with national and international research funding agencies, public and private.

Structure

The aim is to optimize, by 1 January 2016, the cost structure of the IRHSCSP once the ICCC has been integrated, as follows:

Area	IR Sant Pau Staff	ICCC Staff	IR Sant Pau + ICCC
Heads of Research Groups	11	5	16
Management and Administration	24.5	5	26.5
	35.5	10	42.5

We foresee an additional staff of 240 researchers and technicians hired through research grants: IRHSCSP 216 and 24 of the ICCC.

The proposed organization chart of IRHSCSP after the integration is:

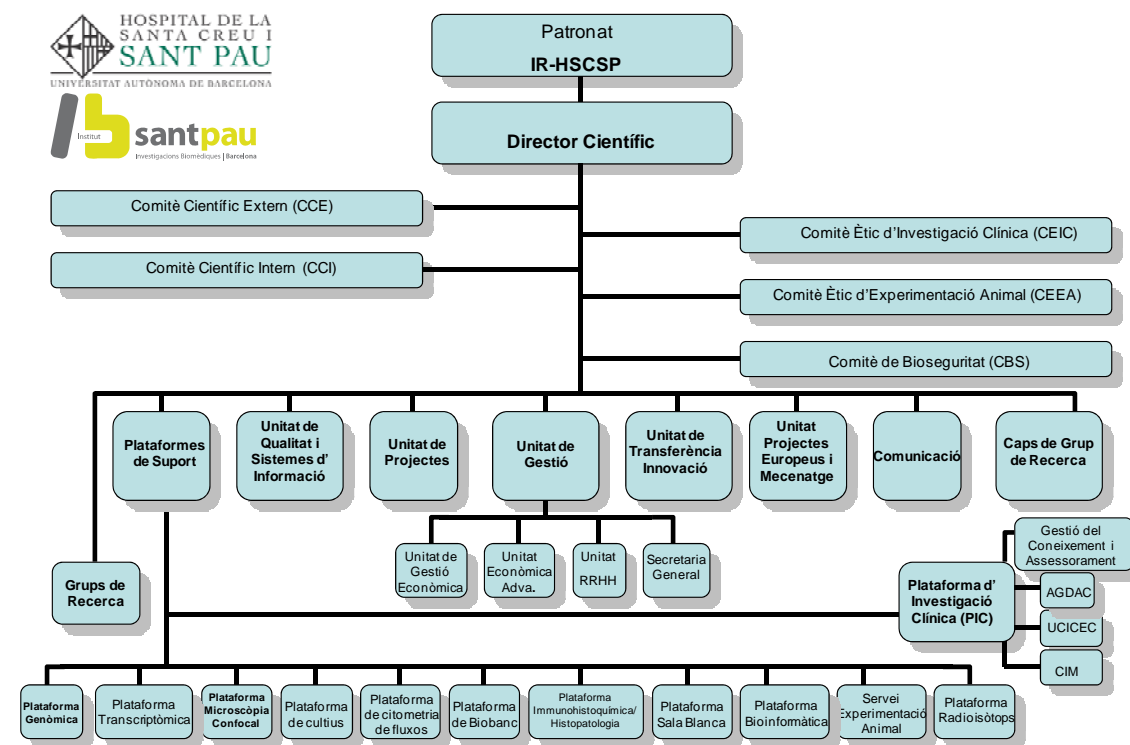


Figure 12: IRHSCSP Organization chart after integrating the ICCC

Savings

Below are some observations regarding the contemplated adjustments arising from the planned integration.

(a) Integration adjustments for the IRHSCSP:

- With regard to staff costs, savings amounting to 121,938 euros are expected as a result of planned actions during the integration. Taken into account are restructuring costs (compensation) amounting to 155,830 euros.

(b) Integration adjustments for the ICCC:

- With regard to staff costs, savings amounting to 193,083 euros are expected as a result of planned actions during the integration. Taken into account are restructuring costs (compensation) amounting to 155,949 euros.

An increase in the supplies item is anticipated if the Spanish National Research Council (CSIC) stops assuming payment for this item as a result of the integration.

In regard to contracts for supplies and services entered into by the ICCC, although they are not expected to have any impact during the transitional integration period (until 31 December 2015), possible duplications with those entered into by the IRHSCSP and alternatives for optimization will be analysed. Not included, however, is an estimate of possible savings.

It reckons the amount of 216,979 euros for voluntarily reduced payroll to ICCC staff during 2012 (5%), 2013 (7.14%) and 2014 (7.14%). Thus, the IRHSCSP shall

provide the budget before a possible claim, in case of failing to meet the repayment of these amounts.

It also contemplates 50,000 Euros of legal advice and representation during integration.

(c) Adjustments in the ICCC agreement:

- On the basis of calculations from the legal labour report on absorption of the ICCC by the IRHSCSP, as prepared by the Human Resources Department, the expected increase in staff costs is 33,297 euros.

Budget

During the transitional integration period (to 31 December 2015), the IRHSCSP and ICCC will need to have sufficient financial resources to ensure the sustainability of their respective activities and, simultaneously, to tackle the restructuring processes described in this plan or that may arise from the integration process.

(a) Integration adjustments for the IRHSCSP:

- Restructuring costs estimated at 155,830 euros.

(b) Integration adjustments for the ICCC:

- Restructuring costs estimated at 422,928 euros.

4.3. *Scientific development plan*

1. SCIENTIFIC EXCELLENCE		
Strategic priority 1.3.		SCIENTIFIC DEVELOPMENT PLAN
OBJECTIVES	<ul style="list-style-type: none"> • More and better science and productivity • More researchers in training • Incorporation of leading international researchers 	
ACTIONS	1.3.1 Promote research among young people	<ul style="list-style-type: none"> • Collaboration with the UAB for the incorporation of predocs and postdocs • Creation of a PhD committee • Support policy for emerging groups • Procedure for the effective supervision and feedback of researchers in their training phase by their coordinators • Mobility and networking plan for Europe (see internationalization plan)
	1.3.2 Develop scientific careers	<ul style="list-style-type: none"> • Implementation of a new classification of researchers and their scientific careers • Ongoing self-assessment for groups and consolidation of external periodic evaluations of researchers, groups and support structures • Competitive grants policy for consolidated groups • Implementation of the European Commission's HRS4R programme • Ombudsman for the researcher • Designing training pathways for researchers in the Annual Training Plan
	1.3.3 Strengthen scientific coordination	<ul style="list-style-type: none"> • Evaluation, prioritization and revitalization of research areas • Creation of research lines within groups and monitoring of continuity over time. • Strengthened figure of the research area coordinator in the Internal Scientific Committee • Research area coordinator with continuous development and career advice assistance functions. • Prioritization of research call applications under co-financing schemes according to the scientific evaluation of the applicant group and the financial resources of the entity
	1.3.4 Promote clinical and translational research	<ul style="list-style-type: none"> • Research intensification of clinical groups leaders with better scientific evaluation to boost research and strengthen links between groups • Strengthened role for the clinical co-investigator • Deployment of the new PIC Sant Pau. • Implementation of computer systems for clinical and

		epidemiological project management <ul style="list-style-type: none"> • Web portal for recruiting volunteers and patients in on-going clinical trials • CIM external audit
	1.3.5 Promote scientific cooperation between groups	<ul style="list-style-type: none"> • Cooperative science project • Consolidation and organization of regular internal and external scientific seminars
	1.3.6 Develop research support staff careers	<ul style="list-style-type: none"> • Career plan for research technicians • Inclusion of the research manager as a professional category in new collective agreements • Job descriptions and skill profiles according to updated professional categories

Regarding scientific career development, note that the collective agreement for 2011-2014 — approved at the meeting of the IRHSCSP Board of Trustees of 16 June 2014 — redefines professional researcher categories to adapt them to those recommended by the European Commission. Details are as follows:

RESEARCH STAFF

Level R1. Predoctoral researcher

Level R2. Postdoctoral researcher

R2A. Junior postdoc

Researcher with a doctorate degree who read their thesis within the last five years.

R2B. Senior postdoc

May commence acting as PI or co-PI for research projects and may sign papers as the main author.

*Mandatory evaluation by the External Scientific Committee: **No** (voluntary, for promotion purposes).*

R2C. Emerging group head

May act as PI for his/her own research project and as the head of an Emerging Group accredited as such by the External Scientific Committee.

Level R3. Established researcher

R3A. Senior researcher

Has own funding as PI and signs documents as the main author.

R3B. Group leader

Acts as consolidated group leader and is accredited as such by the External Scientific Committee.

Level R4. Leading researcher

Manages and coordinates research lines and leads research groups.

*Mandatory
evaluation
by the
External
Scientific
Committee:*

Yes

The new collective agreement also stipulates that changes and transitions between occupational categories will be made according to evaluation results by the External

Scientific Committee. Evaluations performed by the External Scientific Committee or external agencies — like the Catalan Agency for Administration of University and Research Grants (AGAUR) — are governed by a specific evaluation regulation. In the case of researchers aiming for promotion, the quality of the proposed project will also play an important role. A draft research evaluation regulation may be proposed based on evaluation criteria as approved by the Internal Scientific Committee of IRHSCSP on 21 September 2012:

Draft research evaluation regulation. Proposal for agreement and approval.

	R2B	R2C	R3A	R3B	R4
A) ACTIVITY EVALUATION (LAST 4 YEARS)					
<i>For R2C, R3B and R4 Researches the evaluation will be of the whole group</i>					
Scientific production					
Evaluation of researcher publications under the following criteria: Q1, scientific leadership and international cooperation	50%	40%	30%	30%	25%
Competitive fundraising					
Evaluation of research competitive project participation or leadership in national and, mainly, international programmes	20%	25%	30%	30%	25%
Non-competitive resources and knowledge transfer					
Evaluation of patents granted, resources obtained through agreements with companies, entrepreneurship and any other relevant activity in this area	5%	10%	15%	15%	20%
Participation in networks					
Assessment of results obtained from participation in national and international research networks		5%	5%	10%	15%
Research and scientific disclosure visibility					
Participation in national and international congresses, conferences, seminars, etc			5%	10%	15%
Activities to raise scientific awareness in society					
Training of researchers					
Activities aimed at the development of researches capabilities Includes stays in other research centres, preferably international	10%	5%	5%	5%	
Total A	85%	85%	90%	100%	100%
B) FUTURE PROJECTS					
<i>In the case of researchers who aspire to higher research categories</i>					
Scientific project					
Scientific activities planned for the upcoming years and the expected results, focusing on improving weaknesses and internationalization	15%	15%	10%		
Total B	15%	15%	10%	0%	0%
Total A+B	100%	100%	100%	100%	100%

Also regarding scientific career development, work commenced during 2014 on implementation of the European Commission's HRS4R programme. Mandatory for CERCA centres, this project involves multidisciplinary review of the adoption of the 40 principles reflected in the Charter for Researchers and the Code of Conduct for the Recruitment of Researchers (Charter & Code, C&C) and the development of a four-year action plan to rectify any deficiencies identified. European Commission approval would mean awarding of the label "HR Excellence in Research", which would contribute to the international visibility of the institute and help attract international talent.

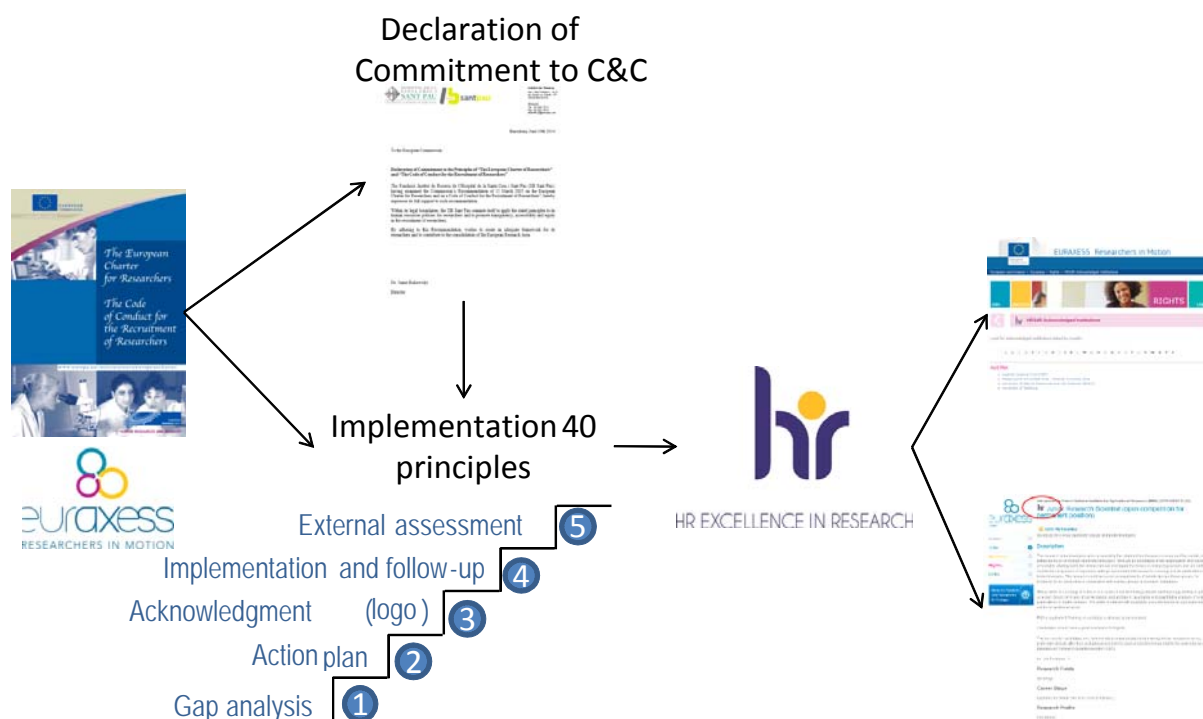


Figure 13: Roadmap for HRS4R adoption.

A third aspect of note in the scientific development plan is the provision for a **Grants Policy for Emerging Groups and Consolidated Groups** aimed at promoting research by young people and the development of scientific careers. In the absence of official approval, the broad outlines of this policy are as follows:

- An intramural temporary structural subsidy policy for groups will be established (in the form of research technicians) through group evaluations and the application of scientific criteria of competitiveness and participation in strategic research lines.
- Technical staff in consolidated research groups will no longer be subsidized.
- The resources available for active scientific capacity development policies will go to emerging groups, or, in the case of consolidated groups, be assigned via the corresponding intramural competitive tenders.
- The resources (205,576 euros) will come from savings obtained by discontinuing subsidies to groups in accordance with the financial viability plan (PlaVE), along with other resources to be released from the item "Provision for activity operations + Human resource subsidies to research groups."

- This policy is planned to be implemented once the foundation's financial situation permits, probably from 2016.

The scientific development plan considers evaluation, prioritization and revitalization of research areas. During 2014 AGAUR evaluated IIB Sant Pau research groups overall using scores from 1 to 7, with 5 as the score indicating a nationally competitive viable scientific proposal, but without significant contributions. By aggregating scores for all groups in different research areas we can determine the average evaluation for each area and identify the number of groups in each area that score above 5, as shown in the figures.

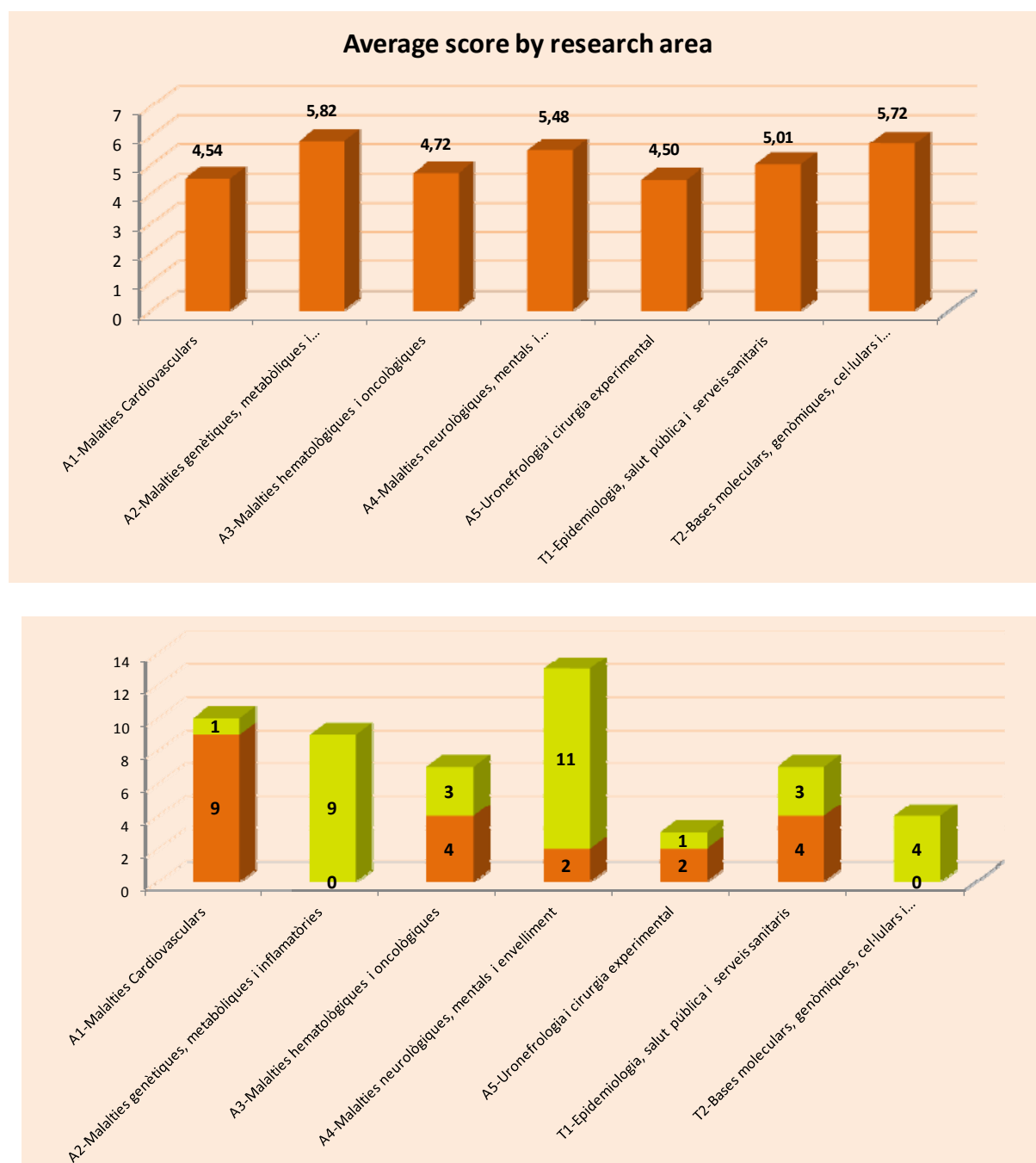


Figure 14: Evaluation of IIB Sant Pau research areas by AGAUR

On the basis of this external review, the Internal Scientific Committee will decide priority areas, which, on a preliminary basis, may be based on the following proposals:

Maintain Genetic, metabolic and inflammatory diseases / Neurological, mental disorders and ageing / Molecular, genomic, cellular and kinetic-dynamic bases....
Prune Haematological and oncological diseases / Epidemiology, public health and healthcare services
Develop / Prune Cardiovascular diseases
Eliminate / Reorganize Uronephrology and experimental surgery

This evaluation of groups is also the basis for some of the actions envisaged to enhance translational research. Specifically, with regard to the top clinical research groups, intensification policies are envisaged in order to strengthen their scientific activity and simultaneously reinforce partnerships between groups.

4.4. Internationalization plan

1. SCIENTIFIC EXCELLENCE		
Strategic priority 1.4.		INTERNATIONALIZATION PLAN
OBJECTIVES	<ul style="list-style-type: none"> • More European projects, with priority to coordinated projects • Higher proportion of foreign staff • Adoption of Marie Curie Actions 	
ACTIONS	1.4.1. Develop international visibility	<ul style="list-style-type: none"> • Partnerships for external promotion: presence at infodays, brokerage events and other networking spaces in Europe • Improved corporate communication materials, especially the website
	1.4.2. Develop stimulus policies for European projects	<ul style="list-style-type: none"> • Use of criteria such as freely assignable resource, recognition in scientific evaluation, etc • Active H2020 training by the Transfer and Innovation Unit and Projects Unit
	1.4.3. Strengthen European project management capacities	<ul style="list-style-type: none"> • Incorporation of experts in the management of European projects once awarded coordinated projects • Alliances for the coordination of new proposals • New agreement IRHSCSP-FGSHSCSP to grant that hospital personnel dedication to EU projects is an eligible cost
	1.4.4. Foster mobility	<ul style="list-style-type: none"> • Promotion of Marie Curie Actions for: <ul style="list-style-type: none"> ○ Researcher mobility to 1) improve training and 2) create opportunities for cooperation in European projects ○ Incorporation of European researchers

The strategic objectives of the internationalization plan are as follows:

1. Make IRHSCSP more visible internationally as a centre of excellence for biomedical research.
2. Facilitate the coordination and leadership of large international projects.
3. Promote excellence and internationalization of research staff.
4. Encourage networking between research groups and platforms.
5. Internationalize and professionalize the recently created support structure for innovation and transfer, facilitating mobility and exchanges with equivalent landmark European structures.

For the implementation of this plan we expect support in the form of a “Europa Redes y Gestores” grant from the Ministry of the Economy and Competitiveness.

4.5. Viability and sustainability plan

2. QUALITY AND EFFICIENCY		
Strategic priority 2.1.		VIABILITY AND SUSTAINABILITY PLAN
OBJECTIVES		<ul style="list-style-type: none"> • Moderate growth in competitive and non-competitive funding • Structural cost containment • Financial equilibrium and sustainability • Platform sustainability
ACTIONS	2.1.1. Implement PlaVE	<ul style="list-style-type: none"> • Reduction in staff costs: a) elimination of the subsidy to technical staff in consolidated groups; b) early retirement; c) synergies with FGS-HSCSP and with FP-HSCSP • Other operational savings
	2.1.2. Implement sustainability plan	<ul style="list-style-type: none"> • Increased competitive funding for trainee researchers and more European projects • Non-competitive private fundraising: <ul style="list-style-type: none"> ○ Promotion of clinical trials ○ Promotion of patronage ○ Review of overheads • Platform sustainability plan <ul style="list-style-type: none"> ○ Financial study of platforms and elimination of non-sustainable platforms ○ Annual evaluation of active and possible new platforms ○ Active marketing by coordinating collaboration with the Transfer and Innovation Unit ○ CIM business plan. Market-oriented management • Management of transversal services: expansion and streamlining of services • Evaluation of new scientific investments using efficiency criteria: <ul style="list-style-type: none"> ○ Viability pre-analysis of new scientific and support structures ○ Prioritization of research call applications under co-financing schemes according to the scientific evaluation of the applicant group and the financial resources of the entity

4.5.1. Viability plan

To rebalance results, ensure future sustainability and ensure future competitiveness and growth a financial viability plan (PlaVE) is proposed for an initial phase covering 2014 and 2015. The following measures are defined:

1. Immediate human resource measures (structural)

2. Mid-term human resource measures
3. Measures to optimize external services and products
4. Measures to support research by the FP-HSCSP Board of Trustees (MIA).

The implementation of these measures takes into account a savings target of almost a million euros in 2014. The impact of these measures on the income statement is as follows:

	Structural 2013	Adjust. PlaVE 2014	Structural 2014	Adjust. PlaVE 2015	Structure 2015
A) OPERATIONS					
1. Income from activities	3.438.765	500.000	3.733.388	-500.000	3.233.388
7. Staffing	-2.332.110	-110.813	-2.221.297	78.557	-2.142.740
8. Other costs	-1.892.919	-301.144	-1.591.775		-1.591.775
A.1) PROFIT/LOSS	-1.266.267	911.957	-549.222	-421.443	-970.665

Source: IRHSCSP Administrative and Economic Management Unit

With regard to PlaVE adjustments for the IRHSCSP, the budget for 2015 takes two adjustments into account:

1. A decrease of 500,000 euros corresponding to an FP-HSCSP contribution provided exclusively for 2014 that will not be repeated in future years.
2. Savings of 78,557 euros in staff costs as a result of staff cutbacks resulting from the IRHSCSP financial viability plan.

4.5.2. Sustainability plan

Besides the adjustments associated with the PlaVE and ICCC integration, the financial scenario for 2014-2017 is expected to unfold as follows:

- For 2016 and 2017, costs will increase by 1% per year, except for items that are not expected to be affected by price increases.
- In the case of the ICCC, costs will also increase by 1% per year, except for items that are not expected to be affected by price increases.
- The current contribution of the Generalitat to operating costs of 2.2 million euros, equivalent to the joint contribution by the two entities for 2013, will be maintained.

Given the uncertainties that still affect the Catalan scientific scenario, the sustainability plan includes modest growth forecasts, even despite the implementation of various action plans as included in this strategic plan, such as the scientific development plan and the internationalization plan.

Note, however, that the PlaVE provides for the withdrawal, from 2015, of the subsidy of half a million euros from the FP-HSCSP Board of Trustees (MIA).

Finally, one of the proposals put forward in the sustainability plan is to review policy regarding institute overheads, bearing in mind that IRHSCP structural costs in relation to total expenditure in 2013 were 36% (34% after the PlaVE), far above the modest 20% charged to scientific cooperation agreements with industry.

4.6. *Management and services plan*

2. QUALITY AND EFFICIENCY

Strategic priority 2.2.

MANAGEMENT AND SERVICES PLAN

OBJECTIVES

- Quality processes of the institute accredited by external agents
- Enhanced management of business units (clinical trials and platforms)

ACTIONS

2.2.1. Accredite the quality of research processes

- Implementation of ISO 9001
- GCP compliance programme
- GMP compliance programme
- Implementation of GLP-based quality systems in research laboratories
- Adaptation of innovation procedures to accreditation by ITEMAS

2.2.2. Implement process and customer-oriented management

- Annual survey of researchers' satisfaction with support structures.
- Process management and process map with assigned responsibilities
- Use of project management systems
- Further development of multidisciplinary committees and creation of new committees if necessary
- Dynamic participation in improvement teams

2.2.3. Consolidation of a training plan

- Improvement of the detection process for training needs, involving the end recipient.
- Designing training pathways for researchers in the Annual Training Plan
- Creation of a PhD committee

4.7. Knowledge management plan

2. QUALITY AND EFFICIENCY

Strategic priority 2.3.

KNOWLEDGE MANAGEMENT PLAN

OBJECTIVES

- Implementation of all features planned for the intranet
- Comprehensive computerized management of clinical trials
- Automated management of financial and scientific indicators

ACTIONS

2.3.1. Deploy new intranet functionalities	<ul style="list-style-type: none"> • Consolidation of existing modules and implementation of scientific module (publications repository + researcher CV) • Development of new functionalities: e.g., contract management and communications management
2.3.2. Computerize clinical trials management	<ul style="list-style-type: none"> • Integration of the clinical trials module in the intranet • Deployment of new functionalities (e.g., research management and pharmacy management) • Integration of CIM tools
2.3.3. Consolidate ICT tools for indicator and evaluation management	<ul style="list-style-type: none"> • Development of the intranet as the main control panel for scientific activity • Implementation of ISCIII indicators (SIECT*) • Connection of the intranet with other internal (e.g., Fundanet) and external (e.g., FECYT**) tools. <p>* Science and Technology Information and Evaluation System</p> <p>**Spanish Science and Technology Foundation</p>

Of all the tasks described in this action plan, meriting special mention is the development of the intranet. After three years, the IRHSCSP intranet is ready to become a vehicle for efficient and integrated research and processes and able to comply with the requirements of funders regarding indicators.

Figure 15: IRHSCSP Intranet

The research management intranet is, for IRHSCSP, an indispensable tool to improve its competitive position and consolidate its reputation for research excellence. The implementation of the intranet pursues different objectives:

- A cultural change more oriented to teamwork, excellence and transparency
- More efficient management of internal processes supporting research
- Provision of better services to researchers that empowers them and positively reflects on their activity
- Faster and better compilation of indicators as required by funding bodies
- Greater cohesion between science management units.
- Reinforced translational research, with greater focus on innovation and technology transfer
- Dissemination of content via the corporate website
- Strengthened internal cooperation and greater sense of community.

The added value of this project is its capacity for functional integration, as no application on the market integrates processes and content distribution.

Current intranet content for researchers is as follows:

- a) A module for requesting and managing purchases charged to their projects
- b) A module for the announcement of new offers of grants and for applications for projects associated with these grants
- c) A module for tracking the updated financial status of active grants
- d) A module for reserving platforms
- e) A directory of current staff with updated contact and other information
- f) A repository with relevant documentation and internal regulations.

These modules are currently being piloted with 12 selected groups.

The intranet also allows integrated management of staff, with updated data on collaborators and functional areas, the possibility of generating indicators, etc.

The implementation of a management intranet is a stimulus for ongoing improvement. In recent months an internal working group has defined the functional requirements of

an extended intranet. The proposed improvements defined and prioritized for this working group are as follows:

1. Scientific activity and researcher curriculum. Development of a central and updated repository of publications of the institute that — along with other sections already in operation (grants) or in the pipeline — will automatically update the curricula of researchers. This curriculum (in a standardized CVN format) will be validated by FECYT automatically for the application of new grants.
2. Innovation and technology transfer management. Management of innovation projects throughout the value chain, from the initial idea of the inventor to transfer to the marketplace. Patents and spin-offs management. Feeding of content relevant to the curricula of researchers.
3. Management of contracts and donations. Functional integration of all units involved in the processing and maintenance of contracts with third parties. Financial monitoring of these contracts. Feeding of content relevant to the curricula of researchers (cooperation with businesses).
4. Staff. Expansion of the staff module for better management of holidays, employment opportunities, etc.
5. Corporate communications. Development of a module for automatic feeding of content and integration with communication tools such as the annual scientific report and the website.
6. Internal communications. Creation of an internal module as a cooperation community, in accordance with web 2.0 principles, and selective release of communications depending on X's user profile (e.g., new research grants only to researchers).
7. Scorecard. Available to management, with leading activity and management indicators and achievement of objectives set.

4.8. Communication plan

3. IMPACT		
Strategic priority 3.1.		COMMUNICATION PLAN
OBJECTIVES	<ul style="list-style-type: none"> • Own brand image • Greater media exposure for our research and our researchers • Better links with the educational system in our catchment area • Improved internal communication 	
ACTIONS	3.1.1. Build the IRHSCSP brand	<ul style="list-style-type: none"> • Agreement regarding a vision for the institute • Application of the storytelling concept and adoption of a slogan that connects with society • Identification of audiences, movers and shakers, selection of the best channels and active presence in the social media • Media campaign to increase prestige
	3.1.2. Improve the corporate website	<ul style="list-style-type: none"> • Integration with intranet to provide updated information on groups, projects and articles • HRS4R content
	3.1.3. Communicate actively in support of European projects	<ul style="list-style-type: none"> • Active participation in disseminating the H2020-coordinated projects package • Support for Marie Curie fellows in fulfilling European Commission disclosure requirements
	3.1.4. Assess the impact of projects	<ul style="list-style-type: none"> • Monitoring of project results (articles, agreements, patents, etc)
	3.1.5. Develop closer links with society	<ul style="list-style-type: none"> • Popularization of science in the education system • Links with patient associations
	3.1.6. Internal communication	<ul style="list-style-type: none"> • More availability of rules and other internal procedures to personnel through employee book, intranet, etc.

The current communication plan has great potential for deployment beyond participation in a handful of educational programmes and media management. Apart from the news generated by our research and investigators, the main activities in 2013 to promote our research were as follows:

- Department of Education training programme for secondary school teachers
- Research centre stay for an Extraordinary Baccalaureate Award student
- Escolab (aimed at secondary and post-secondary pupils)
- School visit
- Participation in Exporecerca Jove 2013
- Cooperation in research exchanges with the Association of Health Science Students
- Undergraduate student stays from different universities.

The IRHSCSP has grounds to aspire to a brand image for its research that reaches beyond national and international frontiers, as do other organizations that base their growth on an R+D+I strategy.



Positioning the IRHSCSP is not the only challenge for the coming years. Another challenge to be faced is insufficient staffing levels in the communications department.

This plan focuses only on external communication. Regarding the equally important issue of internal communications, we refer to activities already covered elsewhere in this plan, such as the intranet (which will facilitate contacts and exchanges between research groups and will feed website content) and improvements associated with HRS4R.

4.9. Innovation and transfer plan

3. IMPACT		
Strategic priority 3.2.		INNOVATION AND TRANSFER PLAN
OBJECTIVES	<ul style="list-style-type: none"> • More filed patents • Exploitation of intellectual property • Creation of spin-offs from viable business projects 	
ACTIONS	3.2.1. Foster an internal culture of innovation and the generation of new ideas and opportunities	<ul style="list-style-type: none"> • Implementation of innovation training as part of the IRHSCSP training plan. Transparency of rules and procedures for innovators. • Capturing innovative ideas: ad hoc activities and group/project monitoring • Recognition of transfer in the evaluation of researchers and groups • Alignment with hospital management and strategy • Protection of research results and their evaluation
	3.2.2. Consolidate the organizational framework for innovation and transfer	<ul style="list-style-type: none"> • Adaptation of innovation procedures to accreditation by ITEMAS • Implementation of an innovation and transfer management system • Consolidation of tools for technological surveillance • Approved rules for spin-offs • Visibility of the IRHSCSP's technology portfolio • Activation of the Innovation Committee in regard to new policies and approval of new patents.
	3.2.3. Encourage innovation from the business sector	<ul style="list-style-type: none"> • Connection with the business fabric so that their innovation projects are implemented in HSCSP
	3.2.4. Internationalize and professionalize the support structure for innovation and transfers	<ul style="list-style-type: none"> • Enhancing mobility and exchanges with equivalent European structures of reference

This plan should also take into account QUALITY AND EFFICIENCY Action 2.2.1 (see section 4.6): “Accredit the quality of research processes — Adaptation of innovation procedures to accreditation by ITEMAS.”

The long term objective of the innovation and transfer plan is to develop a structure that will, in time, become self-sustaining in terms of revenues from the exploitation of intellectual property. The IRHSCSP needs to take advantage of an opportunity to obtain value from the quality scientific knowledge that it is now generating annually. The

fragility of the Transfer and Innovation Unit, however, needs to be considered, dependent as it is on the decisions and the financial contributions of the ITEMAS network, contributions, which, to date, have affected the recruitment of junior staff and caused high turnover.

LIST OF ABBREVIATIONS

7FP	7th Framework Programme
AGAUR	Agency for Administration of University and Research Grants
AQuAS	Agency for Healthcare Quality and Assessment
CERCA	Catalan Research Centres
CIM	Centre for Drug Research
CSIC	Spanish National Research Council
ERC	European Research Council
FECYT	Spanish Science and Technology Foundation
FET	Future and emerging technologies
FGS-HSCSP	Healthcare Management Foundation of the HSCSP
FP-HSCSP	Private Foundation of the HSCSP
H2020	Horizon 2020
HRS4R	Human Resources Strategy for Researchers
HSCSP	Hospital Santa Creu i Sant Pau
ICCC	Catalan Cardiovascular Sciences Institute
ICT	Information and communication technologies
ICREA	Catalan Research and Advanced Studies Institute
IDIBAPS	August Pi i Sunyer Institute of Biomedical Research
IDIBELL	Bellvitge Biomedical Research Institute
IF	Impact factor
IIB Sant Pau	Sant Pau Biomedical Research Institute
IMIM	Hospital del Mar-Municipal Institute for Medical Research
IRHSCSP	Research Institute Foundation of the HSCSP
ISCI	Carlos III Health Institute
ITEMAS	Innovation in Medical Technologies and Healthcare Platform/Network
MIA	FP-HSCSP Board of Trustees
OTRI	Research Results Transfer Office
PEICTI	Spanish Plan for Scientific Research, Technology and Innovation
PIC	Platform for Clinical Research (PIC Sant Pau)
PlaVE	Financial viability plan
PSCT	Scientific-Technical Service Platform
SECTI	Spanish Science, Technology and Innovation System
SIECTI	Science and Technology Information and Evaluation System
SIRECS	Health Sciences Research Information System
SUMA	CERCA Centre Integration Programme
UAB	Autonomous University of Barcelona
VHIR	Vall d'Hebron Research Institute