



Annual Report Catalan Health Institute

2011



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CEO, ICS

For the first time since I took over as CEO of the Catalan Health Institute (ICS), it is my pleasure to present this 2011 Annual Report. These twelve months will certainly be remembered for the complexity of the economic context and the effort made to achieve a 10% reduction in expenses and thereby meet the budget approved by the Catalan Parliament.

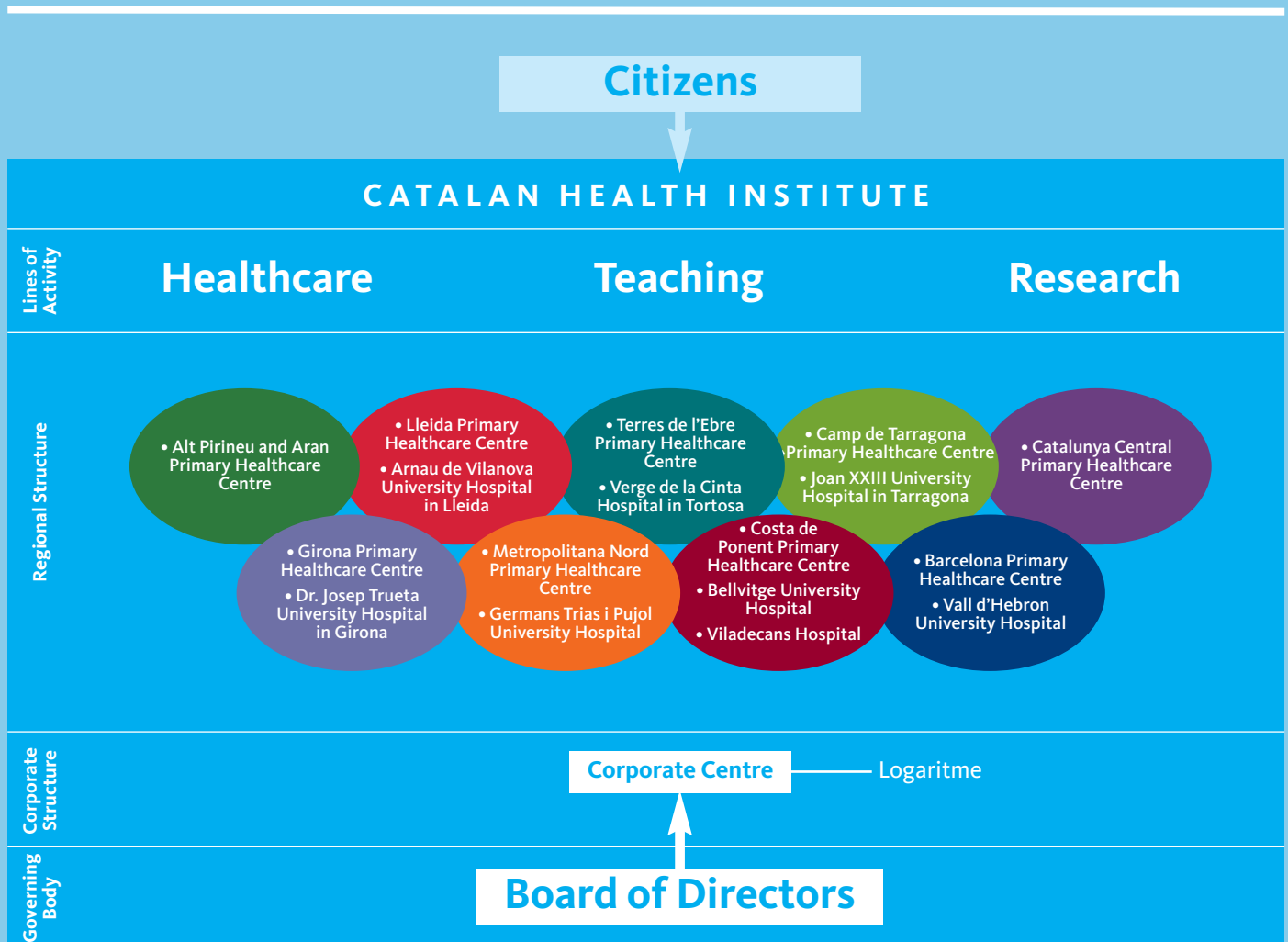
In 2011, we made some tough financial decisions aimed at staying within budget and some structural decisions designed to improve the organization's efficiency and long-term sustainability.

Some of the particularly relevant actions taken last year included the reorganization of continuous care, the enhancement of specialized outpatient care, a reduction in the average stay of admitted patients, a strategic change in the purchase of electricity and other utilities, a reduction in pharmacy expenses, the streamlining of complementary tests and the agreements with suppliers on price reductions on purchases of material. The consolidation of these strategic measures allows us to confront 2012 with confidence, though we know it will be another very complicated year.

In 2011, we also took the first steps towards a new governance model that should allow the institution to act as a true public healthcare services company fully adapted to the Catalan healthcare model.

It is our aim to ensure that the ICS evolves and becomes much more expeditious, fully decentralized, efficient, sustainable, competitive, adaptable to changes and in touch with the healthcare needs of the general public. It should be a public company with the same management tools as other public institutions in the industry so that it can continue to be the healthcare, teaching and biomedical research leader in Catalonia, just as it has been for nearly three decades.

This document contains a description of all the activity carried out in 2011, based on the criteria of transparency in our actions and also highlighting the work done by all the ICS employees who, despite difficulties, perform their day-to-day jobs as excellent professionals to provide a top-quality public healthcare system.



Throughout Catalonia

With an executed budget in 2011 of €2.783 billion and a staff of 39,500 professionals, the Catalan Health Institute (ICS) is the largest public healthcare services company in Catalonia and provides healthcare to nearly six million users, a figure that represents 75.1% of all people with healthcare coverage in Catalonia.

The ICS currently manages eight referral hospitals in the public hospital network; 288 primary healthcare teams, 3 of which are the result of strategic alliances; 31 speciality outpatient centres; 20 regional continuous and emergency primary healthcare units (ACUT) providing service through 165 facilities; 25 sexual and reproductive healthcare services; 10 clinical analysis services, 5 of which are housed in regional facilities with a referral hospital; 30 diagnostic imaging services; 16 outpatient rehabilitation units; 14 units of the homecare and support-team programme (PADES), and 8 mental health units, 2 for infants and children and 2 for drug-dependence treatment and monitoring; 3 occupational health services; and 9 international health units.

Besides healthcare activity, the ICS carries out a great deal of scientific activity through seven research institutes at primary healthcare hospital centres. Three of these institutes, Vall d'Hebron Research Institute, Bellvitge Biomedical Research Institute and Germans Trias i Pujol Health Sciences Research Institute, have been certified by the Carlos III Health Institute since 2008. The recognition of these institutes as excellence centres places them in a leading position in Spain in the field of biomedical research.

In the area of education, the ICS trains 2400 residents in 50 different health sciences specialities at its centres each year. It also accepts more than 5000 undergraduate students in medical, nursing, dentistry and other programmes. Moreover, the ICS works intensively to provide continuous training for all its professional groups.

- 8 hospitals
- 288 primary healthcare teams (EAP),
3 of which are the result of strategic alliances
- 20 regional continuous and emergency primary healthcare units (ACUT), with 165 facilities:
 - 13 emergency primary healthcare centres (CUAP)
 - 135 continuous healthcare centres (PAC)
 - 17 isolated / mountain facilities
- 25 sexual and reproductive healthcare services (ASSIR)
- 16 rehabilitation services
- 10 clinical laboratory services
- 30 diagnostic imaging services
- 31 speciality outpatient centres
- 14 units of the homecare and support-team programme (PADES)
- 8 mental health services
- 3 occupational health services
- 9 international health units

Human Resources¹

Primary healthcare

Physicians	6,399
Nurses and other healthcare professionals	7,249
Residents	705
Management and services	5,528

Hospitals

Physicians	3,247
Nurses and other healthcare professionals	10,214
Residents	1,567
Management and services	4,252

Corporate Centre	364
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Total professionals	39,525
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1. Staff equivalent to one full day in 2011. Includes permanent, interim and temporary staff.



Structural Resources

Alt Pirineu and Aran

- 6 primary healthcare teams (EAP)
- 1 regional continuous and emergency primary healthcare unit (ACUT)
 - 10 isolated / mountain facilities
 - 2 continuous healthcare centres (PAC)
- 1 sexual and reproductive healthcare service (ASSIR)

Lleida

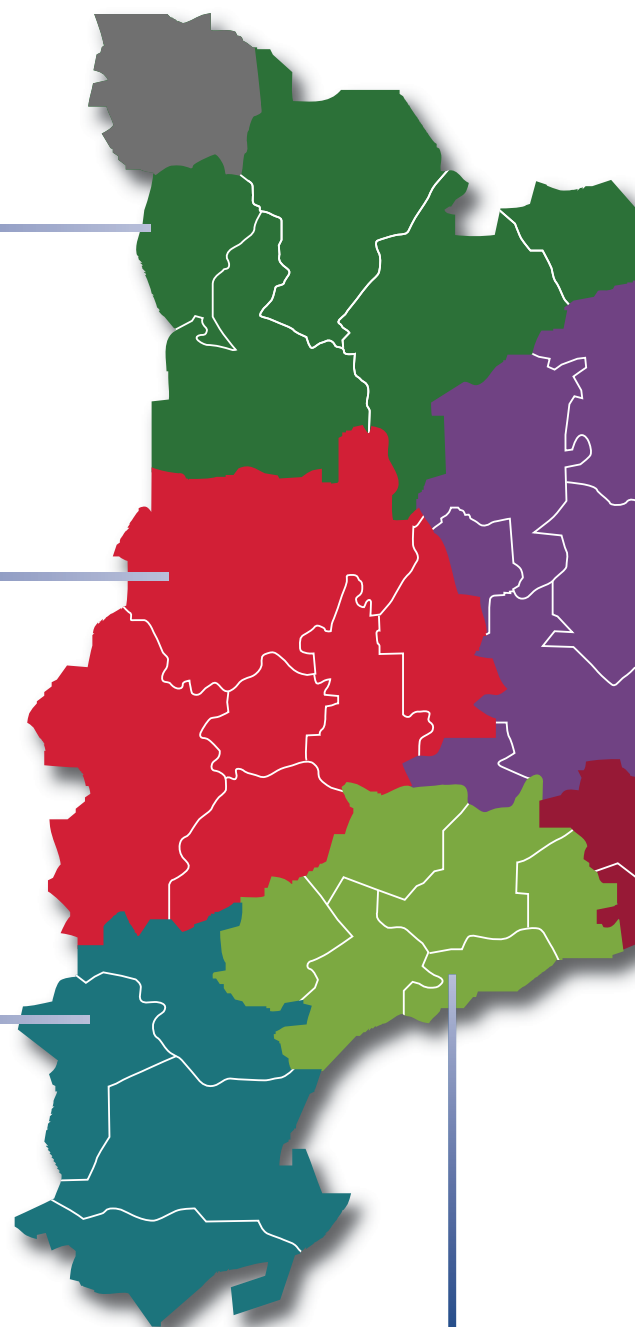
- Arnau de Vilanova University Hospital in Lleida
- 22 primary healthcare teams (EAP)
- 1 regional laboratory service
- 3 regional continuous and emergency primary healthcare units (ACUT)
 - 1 emergency primary healthcare centre (CUAP)
 - 13 continuous healthcare centres (PAC)
 - 4 isolated / mountain facilities
- 1 sexual and reproductive healthcare service (ASSIR)
- 1 international health unit

Terres de l'Ebre

- Verge de la Cinta Hospital in Tortosa
- 11 primary healthcare teams (EAP)
- 1 regional laboratory service
- 1 diagnostic imaging service
- 1 regional continuous and emergency primary healthcare unit (ACUT)
 - 1 emergency primary healthcare centre (CUAP)
 - 14 continuous healthcare centres (PAC)
- 1 speciality outpatient centre
- 1 sexual and reproductive healthcare service (ASSIR)
- 1 rehabilitation service
- 1 international health unit

Camp de Tarragona

- Joan XXIII University Hospital in Tarragona
- 20 primary healthcare teams (EAP)
- 1 regional laboratory service
- 3 diagnostic imaging services
- 2 emergency primary healthcare centres (CUAP)
 - 8 continuous healthcare centres (PAC)
- 3 speciality outpatient centres
- 3 sexual and reproductive healthcare services (ASSIR)
- 3 rehabilitation services
- 1 occupational health service



Catalunya Central

- 32 primary healthcare teams (EAP)
- 1 laboratory service
- 3 diagnostic imaging services

- 3 regional continuous and emergency primary healthcare units (ACUT)
- 1 emergency primary healthcare centre (CUAP)
- 22 continuous healthcare centres (PAC)
- 3 isolated / mountain facilities

- 4 speciality outpatient centres
- 4 sexual and reproductive healthcare services (ASSIR)
- 2 units of the homecare and support-team programme (PADES)
- 2 international health units

Girona

- Dr. Josep Trueta University Hospital in Girona
- 26 primary healthcare teams (EAP)
- 1 regional laboratory service
- 1 diagnostic imaging service
- 3 regional continuous and emergency primary healthcare units (ACUT)
- 22 continuous healthcare centres (PAC)

- 1 speciality outpatient centre
- 1 sexual and reproductive healthcare service (ASSIR)
- 1 unit of the homecare and support-team programme (PADES)
- 1 occupational health service
- 1 rehabilitation service

Metropolitana Nord

- Germans Trias i Pujol University Hospital
- 64 primary healthcare teams (EAP)
- 1 laboratory service
- 8 diagnostic imaging services
- 5 regional continuous and emergency primary healthcare units (ACUT)
- 2 emergency primary healthcare centres (CUAP)
- 23 continuous healthcare centres (PAC)

- 9 speciality outpatient centres
- 7 sexual and reproductive healthcare services (ASSIR)
- 5 units of the homecare and support-team programme (PADES)
- 3 mental health services
- 1 rehabilitation service
- 1 international health unit

Barcelona

- Vall d'Hebron University Hospital
- 51 primary healthcare teams (EAP)
- 2 primary healthcare teams (EAP) managed by the Primary Healthcare Consortium of the Eixample (ICS - Hospital Clínic)
- 2 laboratory services

- 6 diagnostic imaging services
- 2 emergency primary healthcare centres (CUAP)
- 8 continuous healthcare centres (PAC)
- 9 speciality outpatient centres
- 4 sexual and reproductive healthcare services (ASSIR)

- 1 unit of the homecare and support-team programme (PADES)
- 4 mental health services
- 2 rehabilitation services
- 2 international health units

Metropolitana Sud

- Bellvitge University Hospital
- Viladecans Hospital
- 53 primary healthcare teams (EAP)
- 1 primary healthcare team (EAP) managed by the Consortium of Health Agents of Castelldefels (ICS - Castelldefels Town Council)
- 1 laboratory service
- 3 diagnostic imaging services

- 3 regional continuous and emergency primary healthcare units (ACUT)
- 4 emergency primary healthcare centres (CUAP), 1 of which is managed by the Consortium of Health Agents of Castelldefels (ICS - Castelldefels Town Council)
- 21 continuous healthcare centres (PAC)
- 5 speciality outpatient centres
- 3 sexual and reproductive healthcare services (ASSIR)

- 5 units of the homecare and support-team programme (PADES)
- 1 mental health service
- 3 rehabilitation services
- 1 occupational health service
- 2 international health units

Healthcare Activity

Stratification of the assigned population treated by ICS primary healthcare teams in 2011

Clinical risk groups (CRGs) provide a patient classification system that makes it possible to classify each treated patient in a set of homogeneous group categories based on key information such as age, sex, diagnosis and clinical procedures performed.

CRGs represent a tool for classifying patients in one mutually exclusive morbidity category based on morbidity patterns. Once comorbidity is determined, CRGs can also help indicate the level of seriousness.

CRGs are therefore more specific and provide more information than traditional categories of age and sex

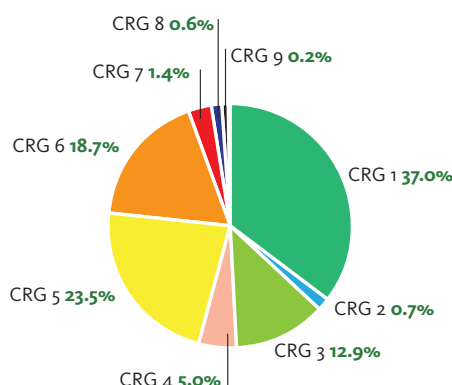
when trying to explain variations in the level of morbidity and the use of resources (appointments and pharmacy expenses) in two or more patient populations.

Groups 5, 6 and 7, which correspond to chronic patients, represent nearly 44% of the assigned population treated at ICS primary healthcare facilities in 2011. This population percentage generates 84% of pharmacy expenses and, in general, uses the most healthcare resources. Therefore, in accordance with the 2011-2015 Catalonia Health Plan, ICS primary healthcare places special emphasis on monitoring these patients.

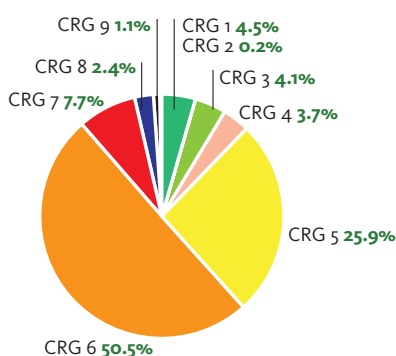
CRG	Assigned Population ¹		Pharmacy Expenses		Pharmacy Expenses (euros per person)	Patients with Two or More Emergency Admissions	
1. Healthy individuals	1,431,721	37.0%	50,145,079	4.5%	35.02	3,491	11.5%
2. Acute disease	27,688	0.7%	1,966,517	0.2%	71.02	347	1.2%
3. Minor chronic disease	497,881	12.9%	44,803,312	4.1%	89.99	1,039	3.4%
4. Multiple minor chronic diseases	192,385	5.0%	40,813,750	3.7%	212.15	463	1.5%
5. Dominant chronic disease	910,381	23.5%	285,903,041	25.9%	314.05	5,096	16.8%
6. Two dominant chronic diseases	723,098	18.7%	558,692,703	50.5%	772.64	13,280	43.8%
7. Three dominant chronic diseases	52,356	1.4%	84,881,462	7.7%	1,621.24	4,073	13.4%
8. Neoplasms	24,483	0.6%	26,127,760	2.4%	1,067.18	2,023	6.7%
9. Catastrophic illnesses	7,982	0.2%	12,114,263	1.1%	1,517.70	493	1.6%
Total	3,867,975	100.0%	1,105,447,887	100.0%		30,305	100.0%

1. The population in question is assigned and treated members of the population who had at least one appointment in the year with family medicine, paediatrics or nursing services.

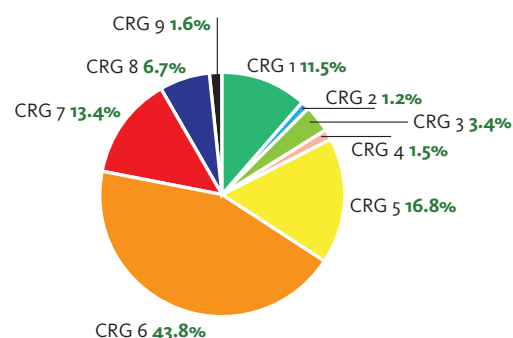
Assigned, Treated Population



Pharmacy Expenses

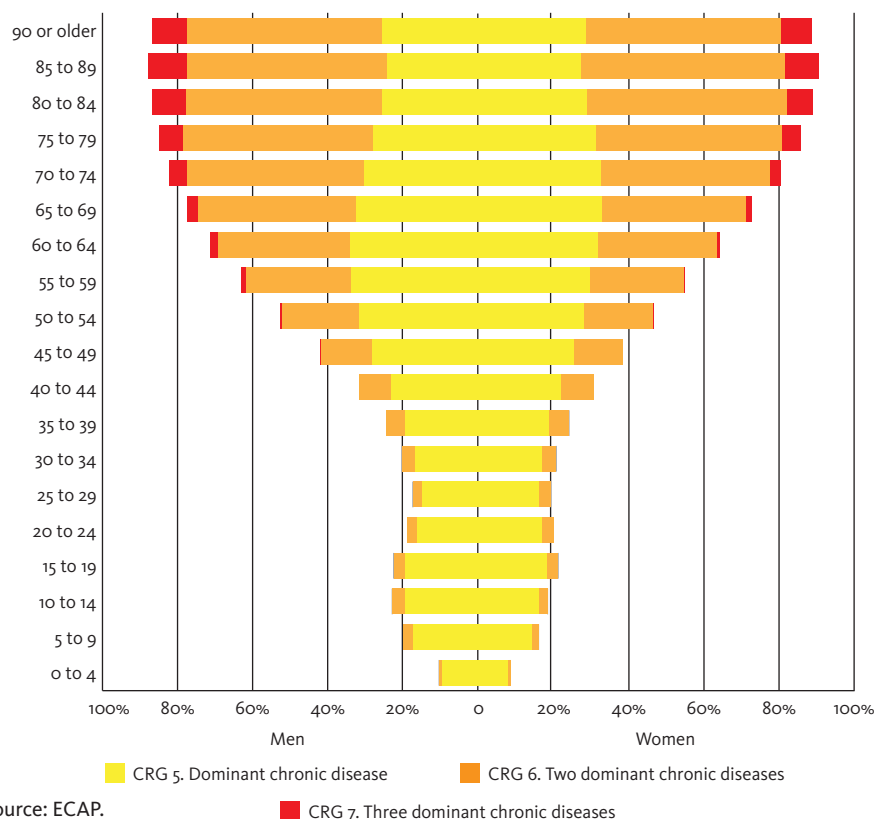


Patients with Two or More Emergency Admissions



Source: ECAP and CatSalut.

Prevalence of Major Chronic Diseases by Age and Sex



The prevalence of chronic diseases increases with age and is highly common in men and women of advanced age. There is also a high prevalence of chronic multimorbidity, i.e. people with more than one chronic disease at the same time.

As shown in the figure, more than 80% of the population aged 70 or older treated at ICS centres suffered from at least one major chronic disease, such as diabetes, high blood pressure, asthma, chronic obstructive pulmonary disease or heart failure. In this population, it is more common to suffer from two or more chronic diseases at the same time than just one.

Primary Healthcare Activity

	Total	% variation 2011/2010
EAP appointments	36,585,949	-4.7
Family medicine	19,260,739	-5.0
At centre	18,943,474	-5.0
At home	317,265	-7.0
Telephone consultations ¹	1,520,288	90.4
Paediatrics	3,803,133	-1.3
At centre	3,801,943	-1.3
At home	1,190	-8.1
Telephone consultations ¹	139,976	23.8
Nursing	12,184,313	-5.3
At centre	11,473,486	-5.6
At home	710,827	-0.2
Telephone consultations ¹	624,629	39.1
Dentistry	1,036,846	-4.3
Social work	300,918	1.2
At centre	281,949	1.6
At home	18,969	-4.2
Telephone consultations ¹	87,869	99.7

	Total	% variation 2011/2010
Continuous and emergency care appointments	2,536,399	-0.0
At centre	2,413,868	-0.3
At home	122,531	5.9
Telephone consultations ¹	82,996	25.1
ASSIR appointments²	1,322,314	5.8
First appointments	243,923	-4.7
Subsequent appointments	1,078,391	8.9
Telephone consultations ¹	75,217	91.1
Mental health appointments	32,005	1.3
First appointments	3,568	20.9
Subsequent appointments	28,437	-0.7
PADES appointments	63,242	2.6
Doctor's surgeries³	379,217	19.3

Source: SIAP.

1. Telephone consultations are included in appointments at centre.

2. Includes only midwives and obstetrician-gynecologists visits.

3. Includes bone-density tests, colonoscopies, gastric endoscopies, electromyograms, evoked potential studies, electrocardiograms, electroencephalography tests (EEGs), audiometric tests, impedance audiometric tests, pulmonary function tests, ergometric tests, Holter monitor tests, biopsies, cytology tests, electrooculograms and electroretinograms, among others.

Healthcare Activity

Assessment indicators of the Healthcare Quality Standard

Presented here are the most representative clinical indicators of the 62 included in the ICS's Healthcare Quality Standard (EQA), a tool used to assess the quality of the healthcare provided to patients by the organization's primary healthcare teams. The table includes a description

of the ailment with the number of cases treated successfully, the percentage it represents of the total number of patients with the clinical condition described and the difference compared to the previous year in terms of a percentage of variation in successfully treated cases.

	Cases treated successfully	% of total cases	% variation 2011/2010
Control of chronic diseases			
Control of acceptable blood pressure in patients with high blood pressure or risk pathologies	844,197	61.79%	6.11%
Type 2 DM < age 80 with acceptable control of HbA1C	159,933	62.41%	0.62%
Stroke with antiplatelet therapy	73,272	92.78%	8.93%
Stroke with acceptable control of LDL-cholesterol	37,591	47.60%	12.22%
Ischemic heart disease with beta blocker therapy	70,706	62.72%	6.58%
Ischemic heart disease with antiplatelet therapy	106,218	94.23%	2.64%
Ischemic heart disease with acceptable control of LDL	63,053	55.94%	4.90%
Atrial fibrillation / cardiac arrhythmia with suitable antiplatelet / anticoagulant therapy	62,268	80.89%	9.38%
Heart failure with treatment with ACE inhibitor / angiotensin II receptor antagonist	36,413	75.48%	6.03%
Heart failure with beta blocker therapy	24,143	50.05%	14.57%
Preventive activities			
Systemic vaccination in children	693,718	88.55%	1.40%
Influenza vaccination > age 59	612,239	53.75%	-2.00%
Influenza vaccination, ages 15-59 with risk factors	65,363	23.48%	19.87%
Influenza vaccination < age 15 with risk factors	12,502	28.83%	-0.70%
Tetanus vaccination in adults	2,367,907	58.90%	3.75%
Screening for harmful habits in teens	32,416	71.90%	3.38%
Screening for alcohol consumption (ages 15-79)	1,757,734	47.13%	2.20%
Quitting smoking in the previous 12 months	56,278	7.32%	10.20%

Source: SISAP.



Hospital Activity

	Total	% variation 2011/2010
Beds	3,682	-7.33
Patient discharges	193,305	-7.82
Standard discharges	156,133	-6.54
Discharges after major outpatient surgery	37,172	-12.85
Total discharges + emergencies of more than 24 hours	200,357	-8.28
Mean weight of discharges	1.965	3.2
Admissions	156,048	-7.11
Emergency admissions	103,701	-3.94
Scheduled admissions	52,347	-12.83
Hospital stays	1,105,826	-8.20
Home hospitalization	5,231	-0.27
Surgery	166,915	-4.42
Surgery with scheduled admission	41,687	-14.58
Surgery with emergency admission	19,143	-0.16
Major outpatient surgery without admission	35,951	-12.75
Minor outpatient surgery	70,134	7.16
Emergencies	716,556	-5.25
Emergencies without hospitalization	621,050	-5.60
Emergencies with hospitalization	95,506	-2.91

	Total	% variation 2011/2010
Ambulatory services	2,757,755	-3.15
Hospital ambulatory services	2,004,135	-4.58
First appointments	565,201	-6.26
Subsequent appointments	1,438,934	-3.90
Primary healthcare ambulatory services	753,620	0.87
First appointments	390,909	0.95
Subsequent appointments	362,711	0.79
Telemedicine (appointments)	58,737	102.26
Day hospital sessions	212,074	9.27
Doctors' surgeries¹	770,386	13.65

Indicators

	Total	% variation 2011/2010
Average stay (standard discharges) (days)	7.08	-1.78
Occupation rate (%)	89.62	4.99
Emergency admissions (%)	66.45	3.42
Emergencies/day	1,963.17	-5.25
Repeat rate	1.88	0.47
Major outpatient surgery substitution rate	84.66	2.45

Source: SAP-BI.

1. Includes bone-density tests, colonoscopies, gastric endoscopies, electromyograms, evoked potential studies, electrocardiograms, electroencephalography tests (EEGs), audiometric tests, impedance audiometric tests, pulmonary function tests, ergometric tests, Holter monitor tests, biopsies, cytology tests, electrooculograms and electroretinograms, among others.



Healthcare Activity

Cas mix

The eight ICS hospitals form part of the Public Hospital Network of Catalonia (XHUP). These centres act as basic general and referral hospitals for the population in their area of influence. They are equipped with high-tech services and exceptional professional expertise for treating health problems that require advanced techno-

logical resources and specialized practice. Vall d'Hebron, Bellvitge and Germans Trias i Pujol Hospitals are also certified as tertiary hospitals. In 2011, all the organization's hospitals maintained the volume of tertiary activity (more complex DRG table).

Most Common Medical DRGs

DRG	Description	2011 Discharges	DRG Weight
373	Vaginal delivery without complications	5,895	0.58
541	Pneumonia and other respiratory disorders, except bronchitis and asthma, with major complications	5,792	2.34
372	Vaginal delivery with complications	3,226	0.70
544	Congestive heart failure and cardiac arrhythmia with major complications	2,981	3.42
127	Heart failure and shock	2,946	1.42
187	Tooth extractions and replacements	2,389	0.75
629	Newborn, weight over 2499 g, without significant surgery	2,246	0.24
088	Chronic obstructive pulmonary disease	1,870	1.15
014	Stroke and myocardial infarction	1,727	1.88
533	Other disorders of the nervous system, except transitory ischemic attack, convulsions and headache, with major complications	1,375	4.43
557	Hepatobiliary and pancreatic disorders, with major complications	1,346	3.77
243	Back problems	1,315	0.79
589	Bronchitis and asthma, under age 18, with major complications	1,248	1.74
569	Disorders of the kidney and urinary tract, except renal failure, with major complications	1,241	1.74
125	Circulatory disorders, except acute myocardial infarction, with catheterization, without complicated diagnosis	1,225	0.88

Most Common Surgical DRGs

DRG	Description	2011 Discharges	DRG Weight
039	Crystalline lens surgery with or without vitrectomy	7,991	0.92
359	Uterine and adnexal surgery due to nonmalignant carcinoma <i>in situ</i> , without complications	1,975	1.10
371	Caesarean section, without complications	1,718	0.87
266	Skin grafting or debridement, except for skin ulcer/cellulite, without complications	1,552	1.43
042	Intraocular surgery, except retina, iris and crystalline lens	1,550	1.07
381	Abortion with dilation, curettage, aspiration or hysterotomy	1,543	0.59
055	Miscellaneous surgery of the ear, nose, mouth and throat	1,518	0.76
116	Other permanent cardiac pacemaker implantations	1,361	3.59
808	Percutaneous coronary interventions (angioplasty) with acute myocardial infarction, cardiac arrest or shock	1,350	2.70
311	Transurethral interventions, without complications	1,305	0.80
040	Extraocular surgery, except orbit, age 17 and older	1,259	0.82
158	Anal surgery and enterostomy, without complications	1,196	0.66
818	Hip replacement, except for complications	1,170	3.61
229	Hand or wrist surgery, except major joint surgery, without complications	1,162	0.88
162	Inguinal and femoral hernia surgery, age 17 and older, without complications	1,122	0.74

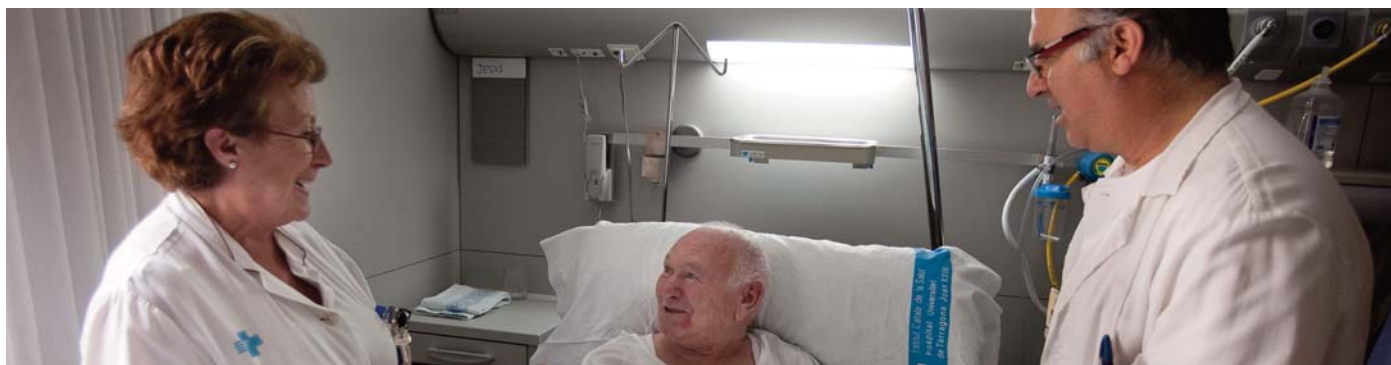
Source: CMBD-HA.

Most Complex DRGs¹

DRG	Description	2010 Discharges	2011 Discharges	DRG Weight
877	Extracorporeal membrane oxygenation or tracheotomy with mechanical ventilation for more than 96 hours	471	540	48.41
103	Heart transplant or implantation of a cardiac assist system	20	29	37.91
606	Newborn, weight at birth 1000-1499 g, with significant surgery	30	29	34.04
795	Lung transplant	64	48	34.04
480	Liver transplant and/or intestinal transplant	82	111	31.82
604	Newborn, weight at birth 750-999 g, alive at discharge	73	69	31.16
878	Tracheotomy with mechanical ventilation for more than 96 hours or without main tracheotomy diagnosis	263	268	29.82
803	Allogeneic bone marrow transplant	47	55	23.65
609	Newborn, weight at birth 1500-1999 g, with significant surgery, with multiple major problems	19	14	18.99
615	Newborn, weight at birth 2000-2499 g, with significant surgery, with multiple major problems mayores	18	11	17.66
605	Newborn, weight at birth 750-999 g, death	6	11	16.64
804	Autologous bone marrow transplant	65	63	15.32
545	Heart valve surgery with major complications	432	366	14.13
547	Other cardiothoracic surgery, with major complications	45	37	12.73
622	Newborn, weight at birth > 2499 g, with significant surgery, with multiple major problems	84	71	11.09
530	Craniotomy with major complications	305	323	11.00
850	Defibrillator implant with cardiac catheterization, without acute myocardial infarction	27	15	10.93
881	Respiratory system diagnosis with mechanical ventilation	166	150	10.75
793	Surgery due to significant multiple trauma except craniotomy with major complications	75	90	10.43
302	Kidney transplant	185	297	10.34
549	Major heart surgery with major complications	424	408	10.07
851	Defibrillator implant without cardiac catheterization	83	100	9.47
546	Coronary bypass surgery with major complications	188	123	9.24
579	Surgery for lymphoma, leukemia and myeloproliferative diseases	112	96	9.23
104	Surgery on heart valves and other major cardiothoracic surgery	74	43	8.73
879	Craniotomy with implant of antineoplastic device or agent	171	180	8.63
759	Multi-channel cochlear implants	17	11	8.12
555	Surgery of the pancreas, liver and bile duct with major complications	247	242	7.95

Source: CMBD-HA.

1. For the selection of tertiary care, hospital discharges with a DRG weight greater than or equal to 7.95 are included. A high DRG weight indicates the need for more healthcare resources for patients. The most complex DRGs with at least 10 discharges are shown.



Satisfaction is the subjective feeling of the person receiving the service and has great value for management. Quantifying satisfaction makes it possible to assess the acceptability of the work done in the areas of service planning and provision, and to complement data on efficiency and effectiveness. For the Catalan Health Institute, being aware of the level of satisfaction of the patients treated each day is fundamental, since the results of surveys help identify areas that need improvement so they can be included in the organization's strategic objectives.

The opinions and satisfaction of the users of ICS hospitals form part of the 2011 CatSalut Satisfaction Survey Plan for People with Healthcare Coverage (PLAENSA©) for the service areas of emergency hospital care and specialized outpatient care. In the case of emergency hospital care, the surveys were answered by people over age 15 who were users of the emergency services at different ICS hospitals. In the area of specialized outpatient care, the surveys were answered by people over age 15 who were users of ICS primary healthcare centres and hospitals.

The comparison of the results obtained in 2011 at ICS hospitals with the latest satisfaction data on emergency services, dating from 2008, shows a general positive trend: four of the eight centres boasted more positive assessments compared to 2008, three showed the same satisfaction levels and one showed less positive assessments.

When the same comparison is made regarding the area of ambulatory services, the results indicate that six of the eight hospitals showed higher scores compared to the 2008 results and two showed less positive results compared to 2008.

When the results of the hospitals are compared to the average overall satisfaction level in the area of emergencies in Catalonia in 2011, four of the eight hospitals showed more positive assessments, one stayed at the same level and three showed less positive results. Likewise, in the area of ambulatory services, five of the eight hospitals obtained scores above the average satisfaction level in Catalonia in 2011, one showed a very similar value and two were below the average.



Satisfaction indicators in specialized outpatient care

	Germans Trias i Pujol Hospital	Bellvitge Hospital	Vall d'Hebron Hospital	Arnau de Vilanova Hospital	Dr. Josep Trueta Hospital	Joan XXIII Hospital	Verge de la Cinta Hospital	Viladecans Hospital
Convenience (%)	63.8	86.3	73.3	69.0	74.4	57.6	78.5	64.3
Healthcare continuity (%)	72.3	81.1	75.0	71.2	76.3	64.7	70.1	66.7
Loyalty (%)	93.8	87.6	86.4	90.8	89.0	81.4	81.3	77.1
Satisfaction	8.3	8.3	8.0	8.3	8.5	7.8	7.7	7.2

Satisfaction indicators in emergency hospital care

	Germans Trias i Pujol Hospital	Bellvitge Hospital	Vall d'Hebron Hospital	Arnau de Vilanova Hospital	Dr. Josep Trueta Hospital	Joan XXIII Hospital	Verge de la Cinta Hospital	Viladecans Hospital
Convenience (%)	59.7	65.5	53.5	58.6	62.0	73.1	53.8	64.7
Information (%)	75.6	77.8	81.0	75.6	75.6	78.6	74.4	71.4
Healthcare continuity (%)	72.5	77.6	82.1	68.6	69.5	70.4	67.3	71.7
Loyalty (%)	91.5	90.4	80.7	84.0	94.1	83.1	82.7	75.0
Satisfaction	7.8	7.6	7.4	7.9	7.9	7.4	7.8	7.2

Healthcare Innovation and Improvements

All eight ICS hospitals boast pioneering IT system for managing nursing care

All eight ICS hospitals have successfully completed the installation of a new computerized workstation that facilitates the entry of data on the assessment and evolution of hospitalized patients, while offering support for the process of providing nursing care and the administration of medications within the framework of the ARGOS Project for Electronic Health Records.

This platform represents a major improvement in the availability of information on the care provided by ICS nurses and assistant nurses and, above all, it represents a decisive step towards comprehensive, individualized nursing care for patients. It helps prevent the deterioration of health, while promoting self-care, improved wellbeing and symptom control, and the prevention and early detection of infectious, nutritional, critical and psycho-emotional complications, among others.

All of the ICS's short-term, high-complexity hospitalization units, intermediate care units and home hospitalization units are using this work platform, which facilitates collaboration between professionals, patients and family members, while making it possible to achieve better results in patient health.

The ICS completes digitization of all diagnostic imaging tests

The process for including all radio-diagnostic tests in computerized health records began in 2008 at Germans Trias i Pujol University Hospital and ended in June 2011 at the primary healthcare centres in the city of Barcelona and Catalunya Central.

To implement this digitization plan, the ICS invested in technology in the more than 700 diagnosis rooms at the eight hospitals and 48 primary healthcare centres that have a diagnostic imaging service, and, in 2011, more than 7,500 X-rays, ultrasound exams, CT scans and other diagnostic

tests were digitized and shared on a daily basis.

This technological advance ensures improved accessibility to patient information from any ICS hospital and primary healthcare centre, which results in better quality healthcare, as well as improvements in management, economic efficiency and sustainability.

First ICS pharmacotherapeutic guide published

With the aim of improving the quality of medication prescribing by the healthcare professionals who work at the institution, the ICS has published the first Pharmacotherapy Guide for primary and specialized healthcare. It is a consensus document that contains a list of recommended drugs to help with decision making.

This tool was created with the aim of sharing criteria on prescribing medication between different healthcare levels and includes a list of



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drugs selected as the most suitable based on comparisons of the efficacy, safety, convenience and cost effectiveness of different drugs used for the same health problem.

It provides a standard for use and was created to improve the quality of the medication prescribing done by professionals and to promote the use of the best possible option for each person, given the wide range of drugs available on the market and the great amount of scientific information currently published.

This guide is the result of the work done in 2008 by a 35-person multi-disciplinary team made up of members of the ICS Pharmacotherapy Committee and the Catalan Oncology Institute (ICO) that included managers and professionals in family medicine, pharmacy and pharmacology.

More than 1000 patients participate in ICS Expert Patient Programme

The Catalan Health Institute Expert Patient Programme (PPE-ICS), which was started up five years ago, now has a total of 1162 participants, of which 108 are expert patients. Moreover, in 2011, the ICS opened new activity areas by organizing groups of patients who are experts on the chronic phase of Chagas disease, quitting smoking, fibromyalgia and anxiety. The entire project revolves around the figure of expert patients, who suffer from a chronic disease and are able to take responsibility for their condition and care for themselves.

The scientific assessment of the programme reflects its effectiveness. Of the patients who took part, 85% said they had gained information about their disease. The same percentage of people admitting having a better idea about how to care for themselves and noted an improvement in their



quality of life. Other positive effects in the people participating in groups of specific diseases included a reduction in the number of appointments made at primary healthcare centres and emergency services, and a reduction in hospital admissions.

ICS participates in technical forum on exchange of knowledge between Catalonia and the Basque Country on challenges of chronic disease

The Ministry of Health, the Catalan Health Institute and the Basque Healthcare Service (*Osakidetza*) formalized the creation of a technical forum for collaboration between the two regional health services to regularly exchange experiences on handling chronic diseases and implementing their respective strategies. A joint technical team was created to implement projects and strategies for dealing with the main challenge that all healthcare systems will face in the future (i.e. chronic diseases) in three specific areas: the coordina-

tion of health and social health services, the stratification of the population and the promotion of expert/active patients. At the ceremony to formalize the collaboration agreement, a schedule of meetings and a working agenda for the following year were drawn up with the aim of ensuring the forum will meet in person at least three times, though permanent contact will also be maintained using digital platforms.

RedICS clinical, pharmaceutical and laboratory database created

RedICS is an anonymous database created in 2011 with the aim of gathering information from the 21 databases of the primary healthcare clinical station (ECAP) and on laboratory results and pharmacy invoicing for use in research and management. Besides containing additional information on clinical risk groups (CRGs), it is also expected to include information from hospitals.

In terms of research, it is currently one of the largest clinical databases

because it contains clinical information on more than six million people. The information is very valuable because it combines data on prescriptions with other data on health problems, laboratory results, clinical variables (blood pressure, smoking, etc.) and the results of diagnostic tests. In this database, data identifying the patient are kept separate from clinical data, but it is possible to identify the final study population and notices can be sent to the medical or nursing service where the patient is assigned.

RedICS is a tool for internal use by the corporate information services that work on the analysis and combination of indicators and send the results to healthcare professionals to help improve their diagnoses.

Consolidation of continuous and emergency care model

In 2006, the ICS took measures to improve continuous and emergency care that took the form of a substantial revamping and the creation of a new model of regional continuous and emergency primary healthcare units (ACUT) that included the creation of new, more expeditious facilities geared towards regional needs. The model of these facilities is the emergency primary healthcare centre (CUAP). This model has become consolidated over the years as new facilities have been created. In a particularly difficult year like 2011, it was possible to consolidate the ACUT regional structure even more and the model became more widely recognized. The 13 CUAP operating in different areas of Catalonia have shown their effectiveness, given that they have contributed to reducing hospital emergencies and have positioned themselves as key healthcare facilities in the CatSalut strategy for continuous and emer-

gency care in the Catalan healthcare system.

One of the basic conditions for the success of these facilities is the networking and collaboration with other facilities, such as primary healthcare teams, Emergency Medical Services (SEM) and hospital services. Emergency healthcare facilities provide quality, expeditious care near patients' homes, thereby helping significantly reduce the number of people who go to hospital emergency rooms to treat minor health problems and guaranteeing a high resolution level of acute diseases and cases of decompensation in chronic disorders.

New paediatric intensive care unit opened at Vall d'Hebron Hospital

In July 2011, Vall d'Hebron University Hospital opened the new 1170-m² paediatric intensive care unit (UCIP), which is twice the size of the previous one. The new UCIP was designed in terms of structure and organization by taking into consideration children and their families. The ratio of private rooms to care stations has been improved: there are now four care sta-

tions and 12 large 20-m² private rooms, four of which can become double rooms. The rooms have a television set and an MP3 connection. A parent lounge was created with a refrigerator, a microwave oven and a shower so parents can stay with their children at all times.

The UCIP is currently the most technological advanced facility of its kind in Europe. It boasts centralized monitoring, a camera on each bed for visual monitoring and a continuous programmable infusion pump centre. Each care station has a computer and a technology station. All the rooms are negative pressure rooms and haemodialysis can be performed at all care stations.

The new UCIP is prepared to handle the increased complexity and technological needs of admitted patients, given that Vall d'Hebron Hospital is one of the five Spanish hospitals where heart transplants are performed, and one of the three that perform liver and lung transplants. Ventricular assist devices and extracorporeal membrane oxygenation (ECMO) are used to replace the function of the heart and lungs.



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Specialists at Vall d'Hebron University Hospital (HUVH) use pioneering technique to operate on foetus with spina bifida

A team of paediatric surgeons and obstetricians in the HUVH Foetal Surgery Programme, with the collaboration of the Spina Bifida Unit, operated on a 24-week foetus with spina bifida. The operation involved opening the uterus as if performing a C-section to expose the foetus' back so the foetal defect could be corrected. The uterus was then closed.

Myelomeningocele or spina bifida is a congenital disorder that affects the central nervous system and produces paralysis of the lower extremities, thus causing incontinence and making it difficult or impossible for the patient to walk. Classic treatment involves closing the defect shortly after birth. However, this does not solve the problem, as the nerves have become deteriorated and no longer function. The surgery performed by the specialists at Vall d'Hebron University Hospital is a pioneering method in Catalonia and was done using a new technique that was conceived and developed by the Paediatric Bioengineering, Orthopaedics and Surgery Group at the Vall d'Hebron Research Institute. The technique reduces foetus handling time and is less aggressive. It is the result of years of surgical experimentation on animal models.

Germans Trias i Pujol Hospital uses new biomarker in patients with heart failure

Healthcare professionals in the Cardiology and Biochemistry services are using a new biomarker that performs complex analysis to detect the concentration in the blood of a

protein called ST2, which is produced in large quantities when the cardiac muscle is under stress. When used in conjunction with existing tools, the biomarker is more reliable in its identification of patients at risk of death, thus making it possible to intensify monitoring and treatment in more suitable ways. The ST2 protein was identified more than a decade ago and has been studied by researchers at the Germans Trias i Pujol University Hospital and Institute, who have concluded that it is useful for identifying patients with heart failure and a high risk of death. The research is now used in clinical application and the professionals at Germans Trias i Pujol Hospital are using the ST2 biomarker for the first time in the world in daily healthcare practice.

Consultation service opened at Vall d'Hebron Hospital to treat postpartum pelvic floor dysfunctions

Vall d'Hebron University Hospital has started up a monographic pelvic floor consultation service where different specialists work on pelvic floor dysfunctions (from diagnosis to rehabilitation). A circuit coordinated with primary healthcare services has been established so that women who have had difficult deliveries can make

appointments to visit the service six weeks after delivery. The main pelvic floor dysfunctions are urinary incontinence, pelvic organ prolapse (drop of the uterus, urinary bladder and rectum through the vagina) and faecal incontinence. After vaginal delivery, especially when forceps are used, the incidence of these lesions can increase as much as 65% to 90%. For this reason, the key to this service is early diagnosis and the prevention of future lesions.

Bellvitge Hospital first in world to use interactive video game as therapeutic tool

The video game *Islands* was developed between 2007 and 2010 by the Playmancer Consortium, made up of scientists and technicians from six European countries working within the framework of a project financed by the European Union and the Carlos III Health Institute.

Eating disorders and problem gambling are, for the most part, impulse-based behaviour. The main objective of this new tool is therefore to help users learn to control their impulses and react by using self-control and serenity in situations of stress and frustration. The objective of the video game is to get off an island. The game uses biosensors to detect the



user's facial expressions, voice and physiological reactions and these emotional reactions affect the development of the game. The user can only make progress towards getting off the island by reacting with self-control in the situations that arise.

A preliminary study on how the video game worked in a group of 60 people produced the results the scientists expected: more physiological reactions and emotional expression in patients diagnosed with these disorders.

Germans Trias i Pujol Hospital uses new technology with platelet gel to restore breast volume

Surgery professionals at Germans Trias i Pujol University Hospital and the Germans Trias i Pujol Institute, as well as family medicine professionals from the Blood and Tissue Bank, are successfully using an experimental treatment based on a platelet gel to restore breast volume at the same time a tumour is removed. The treatment is a new surgical technique that does not require subsequent reconstructions or breast



implants to replace the tissue removed.

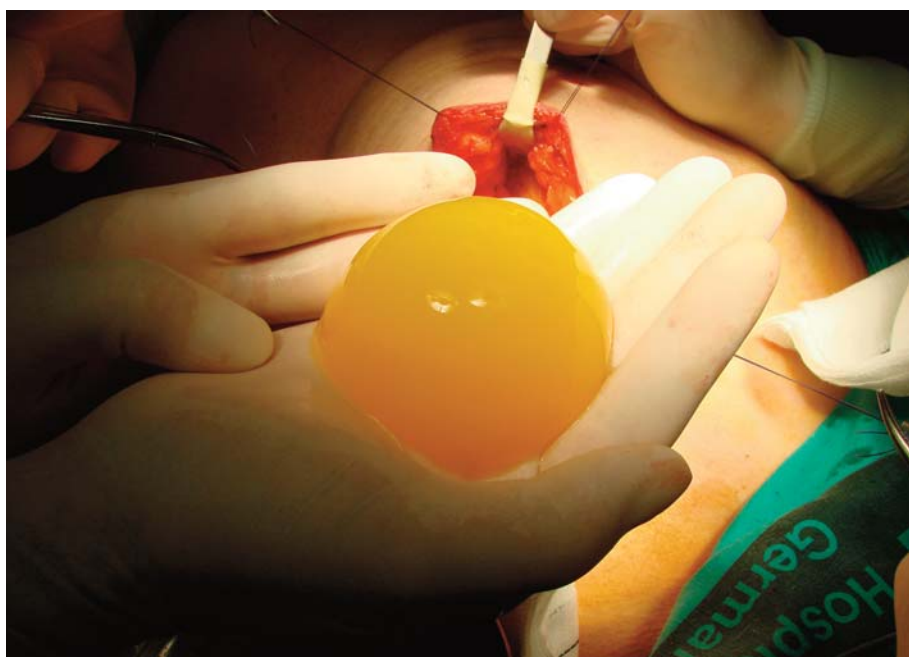
What makes the use of platelet gel special is that it is applied during the operation to remove the tumour without using tissue from the patient, which avoids subsequent surgery over the short and medium terms, not to mention the psychosocial effects on the woman of having what she sees as a deformed chest. The use of the new surgical technique began at the end of 2008 and has now been tested on about fifty women with very good results in virtually all cases, given that the

breast maintained its shape and volume for one to two years after surgery. The researching surgeons believe that the new technology will make it possible over the medium term to reduce the mastectomy rate and increase the rate of lumpectomies in the treatment of breast cancer.

The new technology is patented for the application of refilling defects left after the removal of breast tumours and to fill other parts of the human body. The technology has received assessment and marketing funding through a VALOR grant from ACCIÓ. Moreover, this experimental treatment to restore breast volume using platelet gel won the 2010 Manuel Corachán Award from the Catalan Surgery Society.

Bellvitge Hospital positions itself as European leader in gynaecological robotics

This area of innovation started at Bellvitge University Hospital when the da Vinci surgical system was set up in October 2009. Progress was made in 2011 with the continuity of robotic surgery in the areas of urology, gynaecology and rectal cancer. The first operations performed on cancers of the ear, nose and throat



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were pioneering in Spain, and the gastric applications using laparoscopy were the first of their kind done anywhere in the world.

The excellent results achieved by the hospital professionals in the application of robotic surgery when they performed a para-aortic lymphadenectomy were reflected in the 3rd Meeting of the Society of European Robotic Gynaecological Surgery (SERGS). The fact that the leader of this group of professionals is on the SERGS Management Committee means that the professionals in the group set the standard in the teaching and development of robotic surgery using the da Vinci system. It also opens doors to them in terms of collaboration and leading new applications on an international, multidisciplinary team.

Dr. Josep Trueta University Hospital performs first awake brain surgery

For the first time, the innovative technique of brain mapping was used in the Girona area. The brain tumour surgical procedure involves locating the areas of the brain that perform vital functions (language, mobility, sight, memory, etc.) so they can be avoided and not damaged while the tumour is being removed with the least of risk of sequelae. Therefore, before removing the tumour, the doctor asks the patient to speak while brain areas are stimulated to avoid damaging functions such as comprehension and speaking. The operation took nearly eight hours and was performed by a multidisciplinary team made up of neurosurgeons, neuroanaesthesiologists, neuropsychologists and nurses at Dr. Josep Trueta University Hospital in Girona, who had received specific training and done internships at pioneering centres around the world.



ICS Healthcare Continuity Unit created in Girona

With the aim of further enhancing healthcare continuity between Dr. Josep Trueta University Hospital and ICS primary healthcare in Girona, the Healthcare Continuity Unit (UCA) was created in June 2011. It has an Interdisciplinary Social Health Functional Unit (UFISS), a Project for Care and Support Upon Discharge (PiSA) for chronic ailments (heart failure and chronic respiratory disease), a Social Work Unit and a wound therapy nurse. In late December, a unit of the Homecare and Support-Team Programme (PADES) was added. In the first six months of operation, the UCA treated 1185 patients, 66.37% of which have returned home.

With regard to primary healthcare, the EAP Girona-2 primary healthcare team developed a case management pilot model based on the figure of the case management nurse with the aim of guaranteeing the healthcare continuity of patients with a high degree of complexity and fragility, and the figure of the clinical

management nurse, who performs chronic disease management and complex acute treatments. The restructuring of the organizational model of primary healthcare has also begun with the stratification of the population and the identification of fragile patients.

Oncohaematology and multipurpose day hospitals opened at Arnau de Vilanova University Hospital in Lleida

In the first phase of remodelling the ground floor of the hospital building at Arnau de Vilanova University Hospital in Lleida, more than €2 million has been spent on improving and remodelling a total area of 1115 m². The new 293-m² oncohaematology day hospital is larger and better prepared for oncology patients. It now has four closed examining beds and 16 treatment stations. Arnau Hospital administers 10,000 oncohaematology treatments a year to nearly 1000 patients. The 522-m² multipurpose day hospital, which will make it unnecessary to admit some patients for medical and surgical treatment

for which a suitable structure was not previously available, has four closed examining beds and 21 treatment stations. Arnau de Vilanova Hospital provides 14,000 treatments of this kind a year.

The new day hospitals at Arnau de Vilanova Hospital are the result of the assessment of healthcare needs carried out by the centre's professionals and users, as expressed in the Functional Plan drawn up in 2009. This plan identifies medical reasons for the need to separate oncohaematology patients (many in immunosuppression situations) from patients receiving other medical and surgical treatments. For this reason, two distinct functional areas were defined in the building itself: an oncohaematology day hospital and a separate multipurpose day hospital. Both have separate access circuits and nursing controls. The common technical areas are also shared with the Home Hospitalization Outpatient Unit.

Dr. Josep Trueta University Hospital in Girona is home to FatBank, the first biobank in Spain specializing in adipose tissue

In 2011, Spain's first biobank specializing in adipose tissue, the FatBank biobank technological platform, was opened at Dr. Josep Trueta Hospital in Girona. The project was designed by the Biomedical Network Research Centre in the Physiopathology of Obesity and Nutrition (CIBERObn) and now forms part of the hospital structure as a technical support unit for translational research. The FatBank was created with the aim of providing a public service and specializes in gathering adipose samples with the necessary associated clinical data for the study, prevention and treatment of highly prevalent disor-

ders such as obesity and diabetes. Designed as a technical unit of scientific excellence, the FatBank is staffed by specialized personnel and uses standardized procedures and protocols which, along with advanced ICT management applications, guarantee sample traceability.

Through the FatBank biobank technology platform, a collection of adipose tissue will be obtained that is one of its kind in Spain and the world for carrying out excellence research. This will place the CIBERObn in a leading position in the world.

Joan XXIII University Hospital performs 150th bone marrow transplant

Joan XXIII University Hospital has now performed 150 bone marrow transplants and the Catalan Transplant Organization (OCATT) has renewed its certification of the hospital's Haematology Service. Joan XXIII University Hospital performs between 15 and 20 transplants a year and is the only authorized hospital in the Province of Tarragona to perform this treatment on haematology patients.

The treatment involves gathering progenitor cells and freezing them until the transplant is performed. This helps patients tolerate more intensive chemotherapy.

Joan XXIII University Hospital applies non-invasive technique to drain subdural haematomas

The Neurosurgery Service at Joan XXIII University Hospital has applied a unique technique in Tarragona for treating chronic subdural haematomas, i.e. to remove haematomas from patients who have suffered head trauma. The technique involves making a 5-mm

incision in the skull to introduce a 3-mm catheter for drainage. The surgery is performed with local anaesthesia on the awake patient, who is able to communicate with the doctors so they can immediately check the effects of the procedure, given that the patient begins to recover the skills that were lost due to haematoma compression. Early detection of this problem is possible with a cranial CT scan.

This kind of surgery is less aggressive because it does not touch the brain, which means there are fewer complications. It also involves less post-operative care so the patient can go home the day after the operation once a control CT scan is performed and the catheter is removed.

Joan XXIII University Hospital is the referral hospital in the Province of Tarragona for this kind of operation and handles nearly 50 cases a year. Performance of this technique is on the rise due to population ageing. The neurosurgery team has published its results with this technique in *Acta Neurochirurgica*, the official journal of the European Association of Neurosurgical Societies (EANS).

First multidisciplinary heart failure unit in Spain celebrates ten-year anniversary

Germans Trias i Pujol University Hospital commemorated the ten-year anniversary of its Heart Failure Unit, which was created in 2001 as a multidisciplinary unit, thus making it a pioneer in Spain. Professionals in different specialities (cardiology, internal medicine, psychiatry, rehabilitation, geriatrics, social work and nursing) treat patients and contribute to their education, thus cutting readmissions in half. The unit's main benefits are an increased knowledge of the disease, improved quality of life

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for patients, better treatment and fewer hospital admissions. The role of nurse educators is key, because they provide patients with information, visit them regularly and are available to answer any questions and deal with any discomfort, not only when the patient feels ill or visits the hospital emergency room.

In ten years, the Heart Failure Unit at Germans Trias i Pujol Hospital has treated more than 1300 patients through more than 22,000 nursing appointments and about 17,000 doctor appointments. It has also been very active in research and education.

Service technology and complexity increased at Germans Trias i Pujol Hospital

Germans Trias i Pujol Hospital offers complex high-tech services to the people living in the Barcelonès Nord and Maresme areas. These services are also provided in certain disease areas in Girona and El Vallès. In 2011, a room for cardiac electrophysiology and electric stimulation for arrhythmias was opened in the Heart Treatment Area, thus positioning Germans Trias i Pujol Hospital at the forefront of this field in Catalonia. Moreover, the Kidney and Pancreas Transplant Unit closed the year 2011 with record figures (twice as much activity as in 2010), thus recording, along with the rest of the transplant hospitals, the highest number of transplants in the history of Catalonia. In the neurosciences, the role of the hospital as a tertiary centre for stroke treatment was confirmed through the 179 neurosurgeries performed in 2011 and the ongoing promotion of strategic alliances with other healthcare centres in the Metropolitana Nord area. In 2011, Germans Trias i Pujol Hospital started up the first Neurofibromatosis

Type II Unit in Spain dedicated to comprehensive care of patients with this disease, which affects the development of nerve tissue. The unit combines different specialities and has become a reference for the diagnosis and treatment of phakomatosis, a group of diseases that includes neurofibromatosis type II.

Magnetic resonance imaging using open scanners performed 24 hours a day at Viladecans Hospital

Since 12 December 2011, the open MRI scanners at Viladecans Hospital have been operating 24 hours a day from Monday to Friday within the framework of a Metropolitana Sud Regional Management project to optimize resources and shorten waiting lists. The use of low-field MRI with open scanners is indicated for patients with claustrophobia and morbid obesity and has mainly made it possible to perform examinations of the musculoskeletal and neurological systems. Until December 2011, the hospital had been handling the examinations of Viladecans Hospital and regional primary healthcare centres during the day, as well as referrals from Bellvitge University Hospital. With the extension of the night shift

within the framework of the optimization of resources and the reduction of regional costs, the hospital was assigned most of the activity that had been outsourced to different institutions by Bellvitge University Hospital. This kind of MRI scanner was first used in a public centre in Catalonia in July 2009 at Viladecans Hospital. Besides representing an alternative for patients who cannot use traditional closed scanners due to claustrophobia and morbid obesity, the scanner also provides advantages for children because they do not need to be sedated.

Prediction model for fragile and complex patients successfully implemented in Terres de l'Ebre region

In 2011, a prediction model was introduced for fragile and complex patients as a tool for improving patient care and managing healthcare resources. The aim of the model is to acquire an accurate, global perspective on these patients so their situation can be improved and proactive action can be taken instead of simply reacting to health problems.

Professionals at different healthcare levels have tools to develop the model, such as clinical management (priori-





tization, fragility test, etc.), the request for an alert system (ECAP and SAP), monitoring indicators and improving algorithms.

In 2011, 839 fragile and complex patients were treated in the Terres de l'Ebre region. At 31 December 2011, 758 were active, 75 had died and six were transferred to their homes. The profile of this kind of patient is a man (58% of cases) with a mean age of 67.2 years.

ICS hospitals formalize strategic alliances with other institutions to enhance healthcare and research

The schedule of meetings between the Bellvitge University Hospital management teams and professionals and their counterparts at hospital centres in their area of influence that had begun in 2010 moved forward in 2011 with new meetings and agreements with Sant Joan Hospital in Reus, Joan XXIII Hospital, Verge de la Cinta Hospital, the Garraf Healthcare Consortium, Igualada Hospital, Sant Joan de Déu Hospital and the Consorci Sanitari Integral.

These agreements guarantee coordination of and collaboration on different healthcare processes and establish flows of patients and professionals to consolidate Bellvitge University Hospital as a tertiary referral hospital.

Moreover, strategic alliances were further consolidated in 2011 between Germans Trias i Pujol Hospital and Esperit Sant Hospital in Santa Coloma de Gramenet for neonatal/paediatric care, which has resulted in a spectacular increase in the number of deliveries at Esperit Sant Hospital, which rose from nearly 700 in 2005 to 1323 in 2011. Between the two hospitals, more than 3000 babies are born each year. Above all, this alliance represents a suitable response to the current needs of neonatal/paediatric hospital care in the region, with flows of neonatal referrals to a tertiary centre where all newborns who need it can be provided top-quality medical care.

Arnau de Vilanova University Hospital in Lleida signed an agreement with Hospital Clínic in Barcelona in the area of electrophysiology with the aim of defining the terms of collab-

oration between the two hospitals in the programme of specific actions in the context of heart disease. In order to maintain the electrophysiology healthcare facilities operating at Arnau Hospital and achieve the maximum level of clinical excellence with full optimization of resources, the hospital now handles device implants, ablations and monitoring patients with heart arrhythmias. The collaboration agreement continues in operation between Sant Joan de Déu Hospital and Arnau de Vilanova Hospital to participate in a ophthalmatic telemedicine network for premature babies.

Vall d'Hebron University Hospital and Vall d'Hebron Research Institute entered into several alliance agreements with companies. Within the context of research and development and innovation (R&D&I), they signed a collaboration agreement with Telstar to develop joint research and innovation projects in the areas of science and technology applied to the healthcare industry and biomedical research. The collaboration with Roche Diagnostics S.L. will result in the project "Study of quasispecies of the hepatitis B and C viruses (HBV and HCV) of genomic polymorphisms associated to the response to antiviral treatment using pyrosequencing". The two Vall d'Hebron centres also aim to sign collaboration agreements with Cedars-Sinai Hospital in the areas of technology transfer, research and innovation, and to promote knowledge generation and exchange through research projects and other activities.

Joan XXIII University Hospital in Tarragona set up major, wide-ranging alliances in 2011 with two hospitals in the Camp de Tarragona region and the company GiPSS, which manages Francolí Social Health Hospital at Joan XXIII Healthcare Park. Joan XXIII University Hospital shares man-

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agement of the Cardiac Haemodynamics Unit with Sant Joan Hospital in Reus. The unit is the referral centre for ten counties of Tarragona Province. Joan XXIII University Hospital integrated its laboratory with Pius Hospital in Valls in the ICS Camp de Tarragona Clinical Laboratory. Joan XXIII University Hospital also collaborates with the cardiology, rheumatology, haematology, urology, anatomical pathology and nephrology services of Pius Hospital. GiPSS and Joan XXIII Hospital share acute hospital, at-home hospitalization, diagnostic imaging, pharmacy and other non-healthcare services.

The Regional Laboratory of Verge de la Cinta Hospital in Tortosa collaborates with Amposta County Hospital on the performance of analyses generated by Amposta specialists and other complementary tests. Hospital de la Santa Creu de Jesús also collaborates with UFISS and PADES to coordinate primary healthcare patient discharges and referrals from Verge de la Cinta Hospital to the social health centre through the case manager.

Dr. Josep Trueta University Hospital in Girona has alliances with Cam-

pdevàdol Hospital and Santa Caterina Hospital in Salt. These three hospitals share a clinical laboratory, which provides a coordinated response to the needs of all three centres. Moreover, Dr. Josep Trueta University Hospital and Santa Caterina Hospital also share and coordinate urology and plastic surgery services.

CASAP expands management of healthcare services

The Consortium of Health Agents of Castelldefels (CASAP) won the public tender for the management of the ABS Castelldefels 2 primary healthcare services, which include the EAP Can Bou and the CUAP Castelldefels.

Moreover, in 2011, the CUAP Castelldefels was opened to the public. It was designed to be a high-resolution facility that forms part of the regional continuous and emergency primary healthcare units (ACUT) and as a service that responds to the urgent needs of the city of Castelldefels and neighbouring population in basic health areas. It is equipped with basic radiology services, a slit lamp and biochemical and

haematology analysers that pass results onto the primary healthcare clinical station (ECAP).

Primary healthcare teams in city of Barcelona improve diagnostic and treatment resolution capacity

As techniques for improving treatment resolution, the City of Barcelona Primary Healthcare Area opened the cryotherapy consultation service, which has treated 3310 patients who did not have to be referred to specialists. Another innovative technique now in use is the non-mydriatic camera. In 2011, more than 10,000 fundus photographs were taken of diabetics in Barcelona, which helped prevent 40% of the referrals to specialized ophthalmology care services. In terms of diagnostic tests that also improve treatment resolution, outpatient blood pressure monitoring consultation services were opened. In 2011, a total of 720 people were monitored and 940 vascular Doppler tests were performed at nursing consultation services.



ICS bolsters presence on social networks

In 2011, the ICS increased its presence on social networks by opening a Twitter account (@icscat), a channel on YouTube for videos and a channel on SlideShare for presentations. These new channels were added to the ICS's corporate Facebook page, which was opened in December 2010. Other ICS centres and services have also shown an interest in participating in social networks by opening their own thematic and regional profiles, where they can provide information on their specific, local services.

In light of this growing activity on social networks, the ICS drew up its Usage Guide and Recommendations, which is based on the [Catalan government's Guide to Usage and Style on Social Networks](#). The ICS guide presents the inspirational principles and objectives to be achieved, and provides a detailed description of each channel and its specific features. The guide also establishes the ICS's strategic approach to managing the accounts to be opened by centres

and services, as well as the communication guidelines they should follow. It also specifies how to manage the channel's own content, third-party content and comments by visitors and followers to ensure the institutional profile works as well as possible.

In 2011, the ICS presence on social networks took the form of five Facebook and Twitter profiles: ICS (FB and TW), Vall d'Hebron Library (FB and TW), ICS Catalunya Central (FB and TW), SAP Badalona (FB and TW) and CAP Rambla Ferran (FB and TW); five regional and services groups (EAP Alt Berguedà, Meeting to Exchange Experiences, SAP Badalona, Nutrition Badalona-Sant Adrià, CAP Rambla Ferran); a YouTube channel; and a corporate SlideShare channel.

Appointment scheduling page is most visited on ICS website

With a total of 4,086,561 visits in 2011, the ICS website received half a million more than in the previous year. The page for [scheduling ap-](#)

[pointments](#) for family medicine, paediatric, nursing, dentistry and social work services was the most visited on the website and was consolidated as one of the most commonly used ways to make a primary healthcare appointment. In 2011, 1,756,853 appointments were scheduled this way, a figure that represents a 45% increase over the previous year. Moreover, 2241 users changed their primary healthcare centre on the website (12% more compared to 2010) and 9927 people changed their primary healthcare team at their centre (9% fewer than in 2010). The other pages with the most visitors included the job placement page and the page on ICS job positions.

Metropolitana Nord Regional Management creates Health 2.0 Programme

In 2011, implementation began on the Health 2.0 Programme at Metropolitana Nord Regional Management with the support of the Catalan Agency for Health Information, Assessment and Quality and the ICT Health Foundation.

The Health 2.0 Programme aims to be active on social networks and other 2.0 tools such as information and communication channels, and to help provide information to promote health. It also aims to create virtual practice communities (CoP) to share information and knowledge between professionals in a collaborative website environment. In 2011, the following projects were started up and consolidated: the Tool for Online Communication Between Primary Healthcare and Hospital Care (ECOPIH), the e-Professionals CoP (for personnel at SAP Badalona-Sant Adrià to deal with nonclinical topics), the CoP for professionals at the Barcelonès Nord and Vallès Oriental Clinical Laboratory, and the Resident

Physician (MIR) Teaching Unit at the Metropolitana Nord Family and Community Medicine Centre. Another objective of the programme is to create online consultation services for patients as an additional communication tool with leading health professionals.

In this context, the ECOPIH has been implemented at eight health centres. This virtual community, whose aim is to solve clinical cases and share knowledge, helps increase the resolution of primary healthcare cases, improve communication between different healthcare levels and even reduce referrals to specialized care.

In the period since it was first started in 2010, when the ECOPIH began operating at the CAP La Salut, until March 2011, the tool was implemented at eight other centres. More specialists now participate, given that the database has been consulted nearly two thousand times and holds clinical cases on 18 different specialities. Consultations have been made on more than seventy clinical cases, with 65% obtaining a response from a specialist within the following two days.

EndoDiab joins virtual communities sharing knowledge on pulmonology and nutrition

ICS professionals in Lleida continue developing different network communication tools to promote the exchange of knowledge between professionals and users.

Started up in 2011, EndoDiab is a new virtual collaborative environment designed for people with type 1 diabetes mellitus with input from professionals in the Endocrinology and Nutrition Service at Arnau de Vilanova Hospital. Besides providing information on the disease, the tool

promotes self-care and knowledge through such things as a mobile application so patients can note down the carbohydrates they eat and the dose of insulin they take each day. In other words, the tool is a virtual notebook that can be consulted at any time. By the end of 2011, about sixty patients were using EndoDiab to share experiences and knowledge on the disease. EndoDiab has joined the virtual communities already operating: Endobloc and Pneumobloc.

New telemedicine experiences in endocrinology begin in Girona

In 2011, consultations without the patient present began with hospital and primary healthcare physicians in the speciality of endocrinology. This pilot programme has been implemented with the care area (ABS) in Salt and the ABS in Sant Feliu de Guíxols. The physicians in the two areas hold a telematic clinical session with two screens: one which displays the patient's hospital health records and the other which displays the patient's primary care records. The sessions began in September 2011 and are scheduled once a month for each basic care area. The aim of the project is to improve the management of professionals' time so they have more time for care and to prevent unnecessary patient travel.

Virtual appointments in cardiology, endocrinology and paediatrics started up in Terres de l'Ebre

With the aim of improving coordination between healthcare levels in Terres de l'Ebre, virtual appointments and consultations have been started using technological advances such as computerized health records and the digitization of diagnostic tests. Thanks to permanent contact be-

tween primary healthcare and specialized care, any professional in family medicine can first consult the specialist at Verge de la Cinta Hospital in Tortosa instead of referring the patient to an appointment or a test. Because specialists have access to all the patient's clinical information, they can assess the case and the problems involved and send a report to the professional who requested it.

Virtual appointments are now available in the cardiology, endocrinology and paediatric services, and are expected to be progressively included in other services and units, such as ophthalmology and dermatology.

ICS extends teledermatology to all primary healthcare centres (CAP) in Bages

The ICS extended its teledermatology service to all its primary healthcare centres in Bages after confirming the success of the experience at the CAP Plaça Catalunya in Manresa. The objective is for users to be able to receive fast and efficient treatment



for minor dermatology problems at their own centre with the support of a specialist. For some disorders, such as psoriasis and acne, patients are still treated in person by a dermatologist. Teledermatology is possible thanks to advances in communication technologies and good coordination between primary health-care and specialized care professionals. The experience of the CAP Plaça Catalunya indicates that up to 60% of referrals to a specialist doctor can be avoided and that the level of patient satisfaction is still high.

Primary Healthcare Consortium of Eixample (CAPSE) opens new website

The year 2011 was a year of consolidation of projects begun in previous years, such as the acute pathology project in nursing, the use of screens to communicate with the referral population and the consolidation of the regional project linked to specialized care (Comprehensive Health Area - Barcelona Esquerra, AISBE). Work was also done on new projects to enhance external and internal communication, including the design of a new **website** and an intranet.

Vall d'Hebron University Hospital successfully applies telemedicine to dialysis

Thanks to the telemedicine system, which was consolidated in 2011, patients with chronic kidney disease who live outside Barcelona can be remotely monitored from Vall d'Hebron University Hospital, thus making it unnecessary for them to travel. Professionals can use videoconferencing to treat patients, respond to their consultations and change treatments. About 30% of the patients who have to do peritoneal dialysis every day can benefit from the system. Until now, these patients, many



who have mobility problems, had to go to the hospital for their routine checkups, put now, through a programme of scheduled consultations and a patient-management software program, patients can see their doctor by videoconference in their own homes. At the appointed time on the scheduled day, the hospital uses the computer to call the videoconference system in the patient's home. During the teleconsultation, the professional can remotely upload the results of the patient's dialysis sessions from the magnetic storage device in the automated dialysis cyclor. These results are stored in the hospital database so professionals can analyse them. The cyclor programme that administers the dialysis can even be changed remotely over the telephone line.

Telemedicine in Camp de Tarragona

The primary healthcare teams (EAP) in Alt Camp and La Conca de Barberà are collaborating with the Dermatology Service at Pius Hospital in Valls to clear up questions and receive diagnostic and therapeutic guidance in this speciality by sending images from their family medicine services.

Moreover, the Ophthalmology Service at Sant Joan Hospital in Reus shares a virtual working platform with ICS primary healthcare professionals in Reus-Altebrat with the aim of improving the eye screening service (fundus photography, tonometry and visual acuity) for patients in the region.

Push given to teleophthalmology in Berguedà

Thanks to new technologies, a screening system was set up at the Berga primary healthcare centre (CAP) for early detection of diabetic retinopathy. The Berga centre now provides the entire county with treatment of this eye disease, which is common among people with diabetes and is the most frequent cause of blindness in developed countries. Four doctors at the Berga CAP assess the results of tests with the supervision of a specialist ophthalmologist from the county hospital in Berga. The results obtained in this first experience indicate that, with the support of ophthalmologists, family doctors can perform screening for diabetic retinopathy with a full guarantee of success.

ICS primary healthcare teams assess quality of own healthcare

In 2011, all ICS primary healthcare teams (EAP) carried out an assessment of the quality of the healthcare they provided with the aim of including the concepts of continuous improvement and patient safety in their daily practice, and as an exercise prior to the EAP certification currently being prepared by the Catalan Ministry of Health. The primary healthcare teams were able to perform the assessment using two different tools: the ICS tool or the Ministry of Health's Primary Healthcare Certification Model (MADS). Both assessment tools are inspired by the European Foundation for Quality Management (EFQM) quality model and also by some of the features of the Joint Commission. They assess nine criteria such as leadership, politics and strategy, management of EAP personnel, alliances and resources, processes, results in the general public, results in EAP personnel, results in society and key results.

Self-assessment formed part of the 2011 agreement on the management of all primary healthcare teams. However, the area of management independence was treated differently from the other areas in terms of the results to be achieved by the teams. Whereas most teams had obtained an overall result that was greater than or equal to 40% in the other areas, the teams were expected to obtain an overall result of 60% in management independence and had to obtain over 40% in each of the new criteria areas assessed.

To help them achieve these self-assessment levels, the ICS Quality and Patient Safety Committee worked on a total of 26 documents, which are the result of the benchmark between the different regional areas.

Vinyets primary healthcare team earns best score on Healthcare Quality Standard

In 2011, the primary healthcare team (EAP) that obtained the highest score on the Healthcare Quality Standard (EQA) was the EAP Vinyets, with a

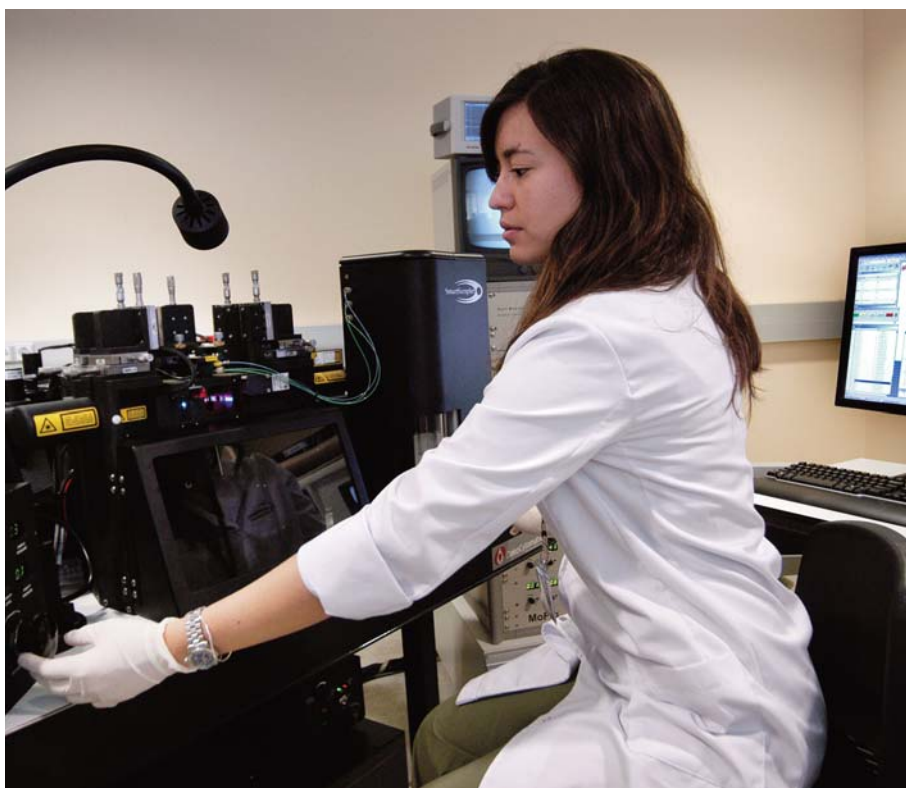
total of 893 points out of 1000. The winning team was followed by EAP Camps Blancs (878), EAP Viladecans-2 (877), EAP Fondo (846), EAP Gorg (836), EAP Trinitat Nova/Chafarinas (827), EAP Santa Rosa (823), EAP La Mina (821), EAP Nord (820) and EAP El Serral (814).

ICS earns two new ISO quality certifications

In 2011, the Hepatology Unit at Germans Trias i Pujol University Hospital was certified for kidney studies, and the Jordi Gol Primary Healthcare Research Institute (IDIAP) earned quality management certification for its advice and support activities in the management of research projects in primary and community health. With this increase in the number of ISO quality certifications, the ICS has become the public healthcare services company with the most certifications in primary healthcare and hospital care in all activity areas of healthcare services, such as clinical laboratories, radiology/diagnostic imaging services, radiation therapy, anatomical pathology, pharmacy, public healthcare units and research.

Bellvitge and Arnau de Vilanova Hospitals ranked in TOP 20

Of the 41 hospitals included in the Spanish-level TOP 20 Hospital Programme in 2011, 18 were Catalan healthcare centres. Bellvitge University Hospital was included in the 2011 top 20 list in the category of large regional and national referral hospitals and received awards in the Respiratory Area and Hospital Management. In the category of hospitals with referral specialities, Arnau de Vilanova University Hospital in Lleida (in Hospital Management) also made the list.



Dr. Josep Trueta Hospital achieves excellent results in the prevention of catheter-associated bacteraemia

The Intensive Care Medicine Service at Dr. Josep Trueta University Hospital in Girona has achieved excellent results in the prevention of catheter-associated bacteraemia since 2009, with rates of bacteraemia below the average in Catalonia. Whereas the average rate of bacteraemia in Catalonia is around 2.42 for every 1000 days with a catheter (2.66 in Spain), at Dr. Josep Trueta Hospital the figure is 0.51. These good results were recognized by the Zero Bacteraemia Advisory Council of Catalonia.

These results were possible thanks to the hard work done to introduce and apply tools for improving patient safety. Basically, six measures have been permanently included in the protocol since the project began to reduce the bacteraemia rate: strict hand washing, skin antisepsis with chlorhexidine, maximal sterile barrier precautions during insertion of the catheter, subclavian puncture except in the femoral artery, daily review of the need for the catheter and re-

moval when possible, and hygienic catheter management.

Bellvitge Primary Healthcare Centre wins award from Avedis Donabedian Foundation

Within the framework of the New Year's Healthcare Concert held at the Palau de la Música Catalana, the Avedis Donabedian Foundation awarded the Bellvitge Primary Healthcare Centre (CAP) the FAD Award for Excellence in Primary Healthcare Quality.

The project presented by the Bellvitge CAP addressed the simplification and optimization of resources within the organization as a fundamental tool for providing optimal quality management. The award organization highlighted the excellent presentation of the project, which is applied to the management of support material in consultation services.

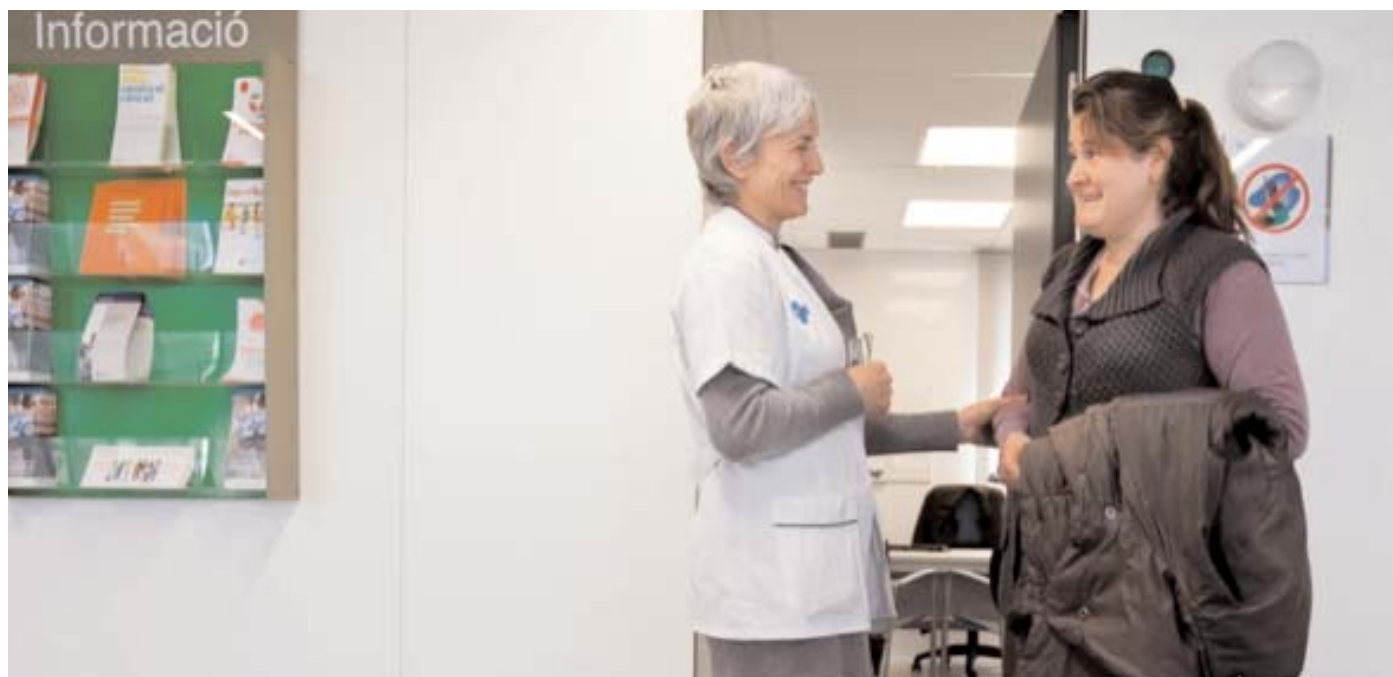
ICS receives Blanquerna Health Award

Each year, the Blanquerna-Universitat Ramon Llull School of Nursing, Physiotherapy and Nutrition (EUIFN)

awards its Blanquerna Health Award to the institutions that collaborate with the centre to promote scientific research and health. In 2011, in the diploma programmes in Nursing and Physiotherapy, the ICS received the award in the area of primary healthcare for 15 years of collaboration with the EUIFN, the excellent training the students receive and its key collaboration on the research project being carried out on immigration and health.

Vall d'Hebron University Hospital certified as NIDCAP training centre

Vall d'Hebron University Hospital is the first Spanish hospital to be certified as a training centre of the Newborn Individualized Developmental Care and Assessment Programme (NIDCAP). This recognition is due to the hospital's extensive experience in this field as a leading paediatric centre, especially in the treatment of high-risk pregnancies and care for premature births. This training programme is targeted at professionals in nursing, neonatology, psychology and other fields who treat high-risk infants and their families.





Eight ICS research projects on acquired spinal cord and brain injuries financed by TV3 2010 Marathon

Among the funding recipients, the Biomedical Research Institute of Lleida will receive funding for a project on the prevention of stroke (cerebral infarction). The aim of the Predictus project is to discover biomarkers that can improve the diagnosis and prognosis of patients who have suffered from a transient ischemic attack.

Vall d'Hebron University Hospital earned funding for three projects: "Effectiveness of psycho-emotional support for patients with acute spinal cord injuries", "New therapeutic strategy for acute damage to the central nervous system" and "Genetic contribution to functional prognosis and disability after a stroke".

Bellvitge University Hospital was awarded funding for the project "Ear-

ly-stage non-invasive neurophysiological surgery in acute brain and spinal cord injuries". The IDIBELL projects that received funding included "Alterations in DNA methylation at genomic level during neural differentiation of adult stem cells: implications for regenerative medicine" and "Protection against cerebral infarction caused by neuronal damage resulting from autophagy inhibition". Finally, Germans Trias i Pujol University Hospital received funding for the project "Randomized, prospective, controlled study of the effect on patient quality of life and cognition after surgery on cerebral gliomas in a neurocognitive telerehabilitation programme".

Investigator George Thomas joins IDIBELL

George Thomas, one of the world's leading scientists in the study of cancer and metabolic diseases, joined IDIBELL at the end of 2011. Dr.

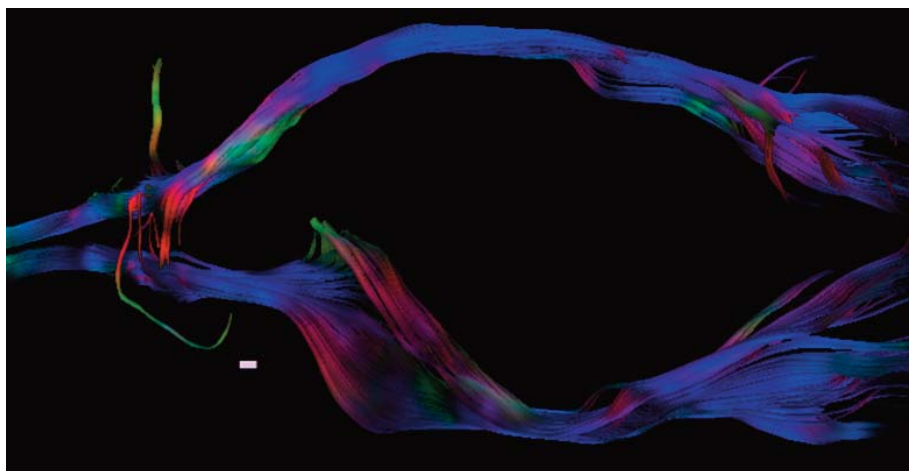
Thomas' research focuses on the metabolic processes behind human diseases, which has led him to make findings in apparently different diseases such as cancer, diabetes and obesity.

George Thomas is recognized by the scientific community as an innovative leader in the field of signal transduction and cell growth control, based on his studies on the regulation of protein S6 kinase (S6K1). The group led by Dr. Thomas found that S6K1 is regulated by phosphorylation (the addition of a phosphate chemical group), which allowed the group to demonstrate key processes that occur within the cell associated with the generation of energy through nutrients.

Substance discovered that acts against cancer "dark matter"

A research study coordinated by Manel Esteller, a researcher at the Catalan Institution for Advanced Research and Studies (ICREA) of the Bellvitge Biomedical Research Institute (IDIBELL), identified a substance that inhibits cancer growth by activating the so-called "dark genomic matter" (i.e. non-coding DNA) and micro-RNA molecules. The study was published in the prestigious scientific journal *Proceedings of the National Academy of Sciences* (PNAS).

The researchers have shown that small-molecule enoxacin, which is used in antibacterial compounds, binds to the protein that builds micro-RNA and stimulates its tumour-growth inhibiting activity. According to Manel Esteller, "It would be like installing a brand-new engine in a second-hand car". The substance has been tested in laboratory cells and animal models and its behaviour will now be studied in humans.



Science highlights VHIR research on human microbiome as one of top ten breakthroughs of the year

Researchers at Vall d'Hebron Research Institute (VHIR) contributed to the discovery of the existence of three groups of bacterial populations that divide the world population of intestinal flora into three types (the human microbiome) in a manner similar to blood groups. This global classification allows researchers to define the number of variables that may be involved in certain diseases so a closer correlation can be made between the state of intestinal flora and individual health status.

The results of this phase of the study were published in the journal *Nature* and represent a significant step forward for the European MetaHIT project, in which 13 European organizations work with €11.4 million in funding to investigate the human microbiome. The researchers expected to find differences in the microbiome in terms of race, nationality, type of diet and environment, but were surprised because the results classified humans in three major groups according to the dominant bacteria, regardless of origin. These findings will provide very valuable information for researchers, because these groups will have to be taken into account when differences are found between

the human microbiome under healthy and disease conditions. The information is also crucial when considering the possibility that this flora could be transferred from one person to another. The findings may also provide guidance in other research areas on the different responses of these three groups to specific diets and drugs. Moreover, the article contains some results that correlate certain genetic and functional markers of intestinal flora with the patient's age, body mass index and sex.

VHIR leads European project for early treatment of blindness due to diabetes

The Diabetes and Metabolism Group at Vall d'Hebron Research Institute (VHIR) will coordinate the EUROCONDOR European consortium in the investigation of early treatment of diabetic retinopathy, the leading cause of blindness in developed countries among people of working age. The project will involve carrying out a controlled clinical trial in phases II and III that will test the efficacy of somatostatin, a neuroprotective drug, at preventing or delaying the progression of the disease in early stages. The multicentre research project will represent a major step forward in the prevention of the disease, as it will make a new screening system available, will reduce the number of

patient sick days and appointments with doctors, and will drive innovation and new developments in the pharmaceutical industry.

EUROCONDOR is being led by the VHIR research group because the group was the first to publish the keys of the neurodegeneration of the diabetic eye and demonstrated the existence of a deficit of somatostatin in the retina of diabetic patients.

In the same research line, the VHIR discovered the molecular basis for fenofibrate's efficacy against diabetic macular oedema (DMO). Although scientists were aware of the efficacy of this drug in the prevention and delaying of the progression of diabetic retinopathy in early stages, the how and why of the efficacy had never been explained. This discovery, published in the journal *Diabetologia*, provides specialists with greater certainty when recommending that patients take this drug, the only one that has proven to be effective against the disease.

Research project of Germans Trias i Pujol Hospital, the Blood Bank and Hospital Clínic finds relationship between severe psoriasis and genetics

Researchers at the Dermatology Service of Germans Trias i Pujol Hospital, Germans Trias i Pujol Institute, the Blood and Tissue Bank's Immunobiology Laboratory for Research and Diagnostic Applications (LIRAD) and the Immunological Service of Hospital Clínic concluded that there is a relationship between the severity of psoriasis and certain genetic characteristics of people who suffer from the disease. Based on the blood samples of more than 200 patients with the disease, the researchers detected that those who presented with the

Research

most severe cases of psoriasis had, on average, more copies of the CCL4L gene in their genetic code. This gene is responsible for producing the CCL4L protein, a chemokine that forms part of the body's immune system and acts by regulating infection and inflammatory processes because it attracts defence cells to the affected area of the body.

The fact that genetics and chemokines play a key role in the inflammatory process of psoriasis was the subject of an article published in the digital edition of the *Journal of Investigative Dermatology*, the world's most prestigious journal in the speciality of dermatology. The findings will help doctors predict which patients will develop the more severe form of the disease and will open doors in the search for increasingly more specific and customized treatments.

Researchers at Germans Trias i Pujol Research Institute develop new surgery to minimize heart attacks by applying fat to heart

Researchers in the Cardiology Group at Germans Trias i Pujol Health Sciences Research Institute (IGTP) have designed a new surgical method to minimize the damage caused to heart tissue by acute myocardial infarctions. The technique, which was shown to be effective in a study on fifty pigs, involves partially removing the fat from inside the heart and applying it in strips directly on the tissue no longer receiving blood supply. The surgical technique could be a new alternative treatment for heart attacks, in addition to existing ones, such as treatments to remove blood clots blocking the coronary arteries (fibrinolytic drugs), the placement of meshes to open the arteries through catheterization, and bypass surgery to re-channel blood flow. The

new technique does not require open heart surgery. Instead, an incision is made on the side of the thorax to access the heart so heart function does not have to be stopped. The study was published in the online version of the scientific journal *Cardiovascular Research*.

Researchers at Joan XXIII University Hospital in Tarragona show that early antiviral treatment reduces mortality in patients with severe H1N1 influenza

A team of researchers at the Intensive Care Unit of the Pere Virgili Institute for Health Research and at the CIBER Respiratory Disease Centre (CIBERES) at Joan XXIII University Hospital in Tarragona coordinated a multicentre study on severe cases of H1N1 influenza at 148 intensive care units throughout Spain. In collaboration with all the participating centres, the researchers contributed valuable information on different aspects of

this new disease that were published in prestigious medical journals. One of the most important aspects studied by the group was being able to determine the real impact of early antiviral treatment on the mortality of patients suffering from severe H1N1 influenza infection. The results of the study on 600 critical patients were published in the *Journal of Antimicrobial Chemotherapy* and showed that antiviral treatment administered in the 48 hours after symptoms begin is associated with a significantly lower mortality rate than when treatment is started later. However, the impact of early treatment is not limited to reduced mortality, but also includes a reduction in the number of days spent on mechanical ventilation and in hospital. The researchers therefore recommend that antiviral treatment not be delayed when H1N1 influenza is suspected, given that such delays double the rate of mortality in patients with severe cases of the disease.





IRBLleida receives recognition for research in three areas

A study coordinated by the Biomedical Research Institute of Lleida (IRBLleida) and the Medical Research Council of London identified EndoG as a protein responsible for maintaining cardiac form and function and, therefore, the protein's fundamental role as a regulator of cardiac hypertrophy. This discovery, published in *Nature*, opens the doors to making EndoG a future therapeutic target and a key element in the analysis and prognosis of some heart diseases.

A study by the Experimental Nephrology Group at the IRBLleida made it possible to discover a protein's effect on halting the progression of kidney deterioration in patients with kidney disease. The study earned an Íñigo Álvarez de Toledo Award from the Íñigo Álvarez de Toledo Kidney Foundation.

Finally, the Oncological Pathology Group at the IRBLleida is participating with five other groups in a project

approved by the Spanish Cancer Association. The aim of the study is to help find an effective treatment to prevent metastasis. The research study should help determine the factors that cause 20% of endometrial cancer cases to be fatal for sufferers. In fact, endometrial cancer is the most common form of gynaecological cancer in women. In general, the Oncological Pathology Group is trying to determine the molecular basis for tumours and learn more about them so they can find the genetic alterations that cause metastasis in the organism.

Dr. Josep Trueta University Hospital: leader in research quality

Dr. Josep Trueta University Hospital in Girona is one of the leading hospital in Spain in terms of the quality of its research, according to a 2011 study by SCImago Institutions Rankings World Report, which analysed the 3042 best research institutions and organizations in the world. In the study, indicators were examined

such as scientific impact, thematic specialization, number of publications and international collaboration. This study is published every four years and analyses institutions working in health and education, government agencies and corporations, among others.

According to the study results, Dr. Josep Trueta University Hospital is the leading hospital in Spain after Carlos III Health Institute in terms of research excellence, which reflects the percentage of scientific publications included in the top 10% in the ranking of the most cited articles in relevant scientific fields. According to this indicator, 25.5% of the 556 publications produced by Dr. Josep Trueta Hospital between 2005 and 2009 are ranked in the top 10% of the most cited articles in the world. Within the study's general classification, Dr. Josep Trueta Hospital was listed in 424th place (18th in Spain). However, when only health-related institutions are considered, it was ranked in 207th place in the world and 13th in Spain. The research excellence indicator highlights the fact that small centres, such as Dr. Josep Trueta Hospital, can carry out first-rate research.

IDIAP encourages research in primary healthcare

The Jordi Gol Primary Healthcare Research Institute (IDIAP) has nearly 190 active projects, of which 36 were started in 2011. Because of this heavy load of research work, ten personnel contracts were entered into for different projects in 2011.

In chronic diseases and the most prevalent minor diseases, primary healthcare is the ideal place to study certain aspects of drugs, which is why it is much easier to carry out the fieldwork for these studies with the collaboration of primary health-

Research

care professionals. The IDIAP's Agency for Clinical Research Management in Primary Healthcare (AGICAP) is in charge of the organization of this research task, in conjunction with a network of family medicine and nursing professionals specially trained to carry out clinical trials. In 2011, a total of 57 clinical trials were in operation, half of which dealt with cardiovascular topics and 11% were on infectious diseases. Gynaecology (accounting for 9%), respiratory diseases (7%) and rheumatology (5%) were the other major research areas for clinical trials, whereas dermatology was one of the areas with the least research (4%), along with allergies (2%). In 2011, a total of ten theses were read. As in previous years, the aim of the IDIAP is to promote research in the first level of healthcare and this was clear from the grants awarded to projects and the support for doctoral studies on research projects carried out in the field of primary healthcare.

Though it is not the IDIAP's mission to take the place of other research agencies by directly financing projects, the IDIAP does provide different grants within the context of its own working lines. Of note was the 7th

Award for Research in Primary Healthcare granted jointly with the Barcelona Healthcare Region in 2011 for the project "Seven-year follow-up of a cohort study of non-institutionalized elderly patients. Predictive validation of a tool for detecting fragility in primary healthcare" of the Barcelona City Primary Healthcare Area. A runner-up award was also granted to the project "Impact of the implementation of a tool for clinical collaboration through networking (ECOPIH) between professionals in primary healthcare and specialized care in the reduction of the number of referrals" of the SAP Badalona-Sant Adrià.

Viladecans Hospital Foundation merges with IDIBELL

The Viladecans Hospital Research Foundation has merged with IDIBELL. This decision provides an opportunity for the Foundation to focus more on its research excellence, which is highly necessary for clinical practice.

The move represents a major step forward for the Foundation's consolidated groups, i.e. the Functional Digestive Disease Group and the

Healthcare Services and Quality Indicators Group, which now form part of the strategy of the IDIBELL.

Awards for ICS Research Careers granted

During the 4th ICS Research Conference, the award ceremony was held for the 2011 Awards for ICS Research Careers, the aim of which is to promote and recognize high-quality health-sciences research done by investigators in the ICS primary healthcare network and hospitals.

The 2011 winners were Dr. José Manuel Fernández-Real, of the IDIBGi, for his intense research work in the field of insulin resistance and, in particular, endocrinology diseases of great social impact at present and in the future, such as obesity and type 2 diabetes mellitus, and Dr. Ernest Vinyoles, of CAP La Mina, who received the award for his research in the field of high blood pressure, especially in clinical blood pressure measurement and specifically in outpatient monitoring of blood pressure, electrocardiography in patients with high blood pressure and at cardiovascular risk. Each award included a purse of €12,000.

Scientific Production of Research Institutes

	Articles published in indexed journals	Total impact factor
Bellvitge Biomedical Research Institute (IDIBELL) ¹	799	3,467.94
Vall d'Hebron Research Institute (VHIR)	656	3,378.19
Germans Trias i Pujol Health Sciences Research Institute (IGTP)	545	2,111.14
Pere Virgili Institute for Health Research (IISPV) ²	325	1,407.10
Biomedical Research Institute of Lleida (IRBLleida)	209	1,017.52
Dr. Josep Trueta Biomedical Research Institute in Girona (IDIBGi)	163	601.63
Jordi Gol Primary Healthcare Research Institute (IDIAP)	257	471.80

Data provided by the research institutes. Some publications may have been counted by more than one centre.

1. These figures are the result of adding up all the published articles and the impact factor of Bellvitge Biomedical Research Institute and the Viladecans Hospital Educational and Research Foundation.

2. These figures are the result of adding up all the articles and the impact factor of Pere Virgili Institute for Health Research, which includes Joan XXIII University Hospital in Tarragona and Verge de la Cinta Hospital in Tortosa.

Education

Each year, the ICS trains 2400 residents in 50 different specialities

The ICS trains 2400 resident physicians in 50 different specialities each

year, i.e. half of all the residents in the Catalan healthcare system. In terms of positions for specialized healthcare training, ICS hospitals and primary healthcare centres had a total of 702 certified positions in 2011,

specifically, 436 hospital speciality positions (45% of the total) and 266 positions for family and community care (75% of the total). Of note is the fact that eight ICS hospitals and eight family and community care teaching units are certified for specialized healthcare training.

One of the indicators of the prestige of hospitals is their ability to attract residents. The ICS provides the entire Catalan healthcare network with specialist doctors, given that many of these centres (in most cases, county hospitals) do not have the structure required to provide training because of their size. In the last three years, Vall d'Hebron Hospital has maintained its position among the top three hospitals most preferred in Spain (along with La Paz Hospital and 12 de Octubre Hospital in Madrid) by the residents with the top 100 scores on the MIR examination. Vall d'Hebron Hospital is also one of the centres that attracts the most residents in Spain for rotations in specific areas, with more than 300 residents a year, of which 45% come from outside Catalonia.

The main objective of the ICS centres is to train specialists who are ready to respond satisfactorily to the needs of citizens and the Catalan healthcare system. The training programmes are designed to progressively include the competencies of each speciality in terms of scientific knowledge, technical skills and professional attitudes, based on a tutored clinical exercise model with gradually decreasing supervision and the progressive acquisition of responsibilities as predefined objectives are achieved. The job of teaching committees and tutors, key elements in the entire system, is designed to offer maximum teaching quality and to train excellent residents.

Positions Certified and Offered by ICS Centres in 2011

Hospitals	Certified positions	Positions offered	Specialities
Vall d'Hebron	161	130	46
Bellvitge	97	86	41
Germans Trias	67	60	35
Dr. Josep Trueta	36	35	23
Arnau de Vilanova	34	30	25
Joan XXIII	32	31	21
Verge de la Cinta	8	7	8
Viladecans	1	1	1
Total	436	380	

Primary healthcare	Certified positions	Positions offered	Specialities
Costa de Ponent	69	58	2
Barcelona City	60	41	1
Metropolitana Nord	40	36	1
Girona	27	24	2
Camp de Tarragona	23	18	1
Catalunya Central	21	18	1
Lleida	14	13	1
Terres de l'Ebre	12	8	1
Total	266	216	



Professionals

ICS Board of Directors approves new 2012-2015 Human Resources Organization Plan

The Board of Directors approved the new Human Resources Organization Plan (PORH) for the 2012-2015 period. The PORH establishes five action lines that make up the framework of ICS actions in human resources management and make it possible to determine where work is done while the plan is in operation. These lines include improving processes and productivity, developing management and clinical management competencies, promoting professional development, reviewing and improving human resources management systems, and promoting measures related to the application of the 2011-2014 ICS Strategic Plan for Corporate Social Responsibility. While it is in force, this flexible management tool may include new sections on factors that affect working conditions previously negotiated by the Healthcare Industry Negotiating Committee and the Board of Direc-

tors, such as the extension of retirement age, the point system for voluntary transfers and general criteria for recruiting processes.

ICS Council for Professional Participation and General Council for Participation created

In December 2011, the Council for Professional Participation was created to provide the Board of Directors with advice on topics related to the work of the organization's medical and nursing professionals. The council has 15 members, plus the Chair of the Board of Directors. Of the 15 members, 12 are elected through a voting process by primary care and hospital clinical boards.

At the same session, the General Council for Participation was also created as a body for community participation to provide consulting, advice, monitoring and supervision of ICS healthcare activity. The council members are the Chair of the ICS Board of Directors and representatives of several patient and user or-

ganizations, community organizations, trade unions, business associations, municipal bodies, official associations of healthcare professionals, CatSalut and the Catalan Ministry of Health, as well as members of the ICS and three renowned experts in the world of healthcare.

Agreements signed for management of hospitals and primary healthcare teams

To consolidate the structure established in recent years in hospitals and primary healthcare, management agreements have focused on three main strategic areas: sustainability, healthcare activity and quality, and organizational improvement in quality management and patient safety.

At hospitals, sustainability and healthcare activity follows the objectives established in the CatSalut programme agreement, with new additions such as management of outpatient medication dispensing by hospitals (MHDA) and monitoring the recommendations of the ICS Pharmacotherapy Committee in



terms of the quality of external drug prescription. The aim is to continue focusing on quality and efficiency.

Regarding primary healthcare teams, of note is the addition in the organizational improvement section of new management agreements of an objective linked to the implementation of a quality self-assessment system and the strategy for future official certification of primary healthcare centres by the Catalan Ministry of Health.

New procedure presented on intervening in workplace bullying

On International Women's Day, the updated protocols were presenting for intervening in cases of workplace bullying. Besides the addition of legislative updates on this topic, this document now specifically includes bullying based on gender and sexual orientation and other forms of discrimination, in accordance with the protocol drawn up by the Directorate General for Public Administration. The ICS has been a pioneering organization in the Catalan government in the development of initiatives for intervention in cases of workplace bullying. In 2004, the ICS established the first procedure that included guidelines to be followed in situations of this kind and a number of revisions have been made since then.

Occupational risk prevention management system audited

In 2011, a legal audit was carried out on the occupational risk prevention management system of all ICS centres. To complete the process, a total of 53 primary healthcare centres and eight hospitals were visited. In December 2011, the overall results were presented to management and, in 2012, reports will be presented to



the regional managers and measures will be started up to correct any deviations detected.

End of assessment of psychosocial risk at all ICS centres

The assessment of psychosocial risk started in 2006 with the aim of identifying any flaws in the way work was organized that could have negative effects on the health of professionals. The assessment was carried out using the CoPsoQ methodology, as recommended by the Catalan Ministry of Enterprise and Labour. It involved personally handing out a questionnaire to staff members (88% of the total), and a response rate of 67.4% was obtained.

The results provided an overall assessment and also identified the most problematic areas, which included psychological demands, the lack of work-life balance and compensation. Some of the favourable situations identified were active

work, the possibilities for development and social relations. Some areas that required improvement were the control of working time, predictability and the quality of leadership.

Nearly 30,000 ICS professionals receive continuous training

In 2011, 68% of ICS professionals received some kind of training. Nearly 950,000 hours of training were offered, which represents an average of 25 hours per employee.

In terms of the distribution in thematic areas, 49% of the hours was dedicated to the healthcare area and 44% was devoted to cross-cutting topics, including information technologies (30%), the prevention of occupational risks (27%), communication (15%) and quality and continuous improvement (8%). About 7% of the training hours was spent on the area of management and services, and most courses were on the subject of administration processes (54%).



Miquel Vilardell receives 2011 Doctor of the Year Award

Dr. Miquel Vilardell Tarrés, the head of the Internal Medicine Service in the General Area of Vall d'Hebron University Hospital and the president of the Official Association of Physicians of Barcelona, won the 2011 Doctor of the Year Award for his professional career and work on the Catalan government's Healthcare Advisory Board. The EDMISA Awards recognize the most outstanding people and institutions of the year in

Spain in the areas of healthcare and medicine.

Official Association of Nurses of Barcelona grants award to Isabel Pera

The "A prop teu" award was granted to nurse Isabel Pera i Fàbregas, a professional working at Vall d'Hebron University Hospital, for her contribution in the area of professional responsibility in nursing practice and her contribution to raising awareness about the role of the nurse.

Doctors' Association presents awards to 18 ICS doctors

Eighteen ICS professionals earned individual awards and two ICS teams of professionals won group awards in the form of the Award for Professional Excellence from the Official Association of Physicians of Barcelona. The award winners work at primary healthcare centres and hospitals such as Vall d'Hebron Hospital, Bellvitge Hospital and Germans Trias i Pujol Hospital, and at the Jordi Gol Primary Healthcare Research Institute (DIAP): Antoni Lluís Andreu Periz, Aurelio Ariza Fernández, José Miguel Baena Díez, Jaume Candell Riera, Joan Córdoba Cardona, Josefa Cortadellas Àngel, Enric Esplugas Oliveras, Josep M. Grinyó Boira, Enric Juncadella Garcia, Maria Leon Sanromà, Josep Lloret Roca, Roser Marquet Palomer, Manuel Monreal Bosch, Isabel Montaner Gomis, Maria Rosa Pou Vila, Consuelo I. Simón Muela, Pere Toran Monserrat and Concepció Violan Fors. The professional teams receiving the awards included the Ciutat Badia Primary Healthcare Team and the Palliative Care Unit team at Germans Trias i Pujol University Hospital.



Corporate Social Responsibility

The ICS to save more than €3 million on annual hospital electricity bill

The ICS electricity bill comes to more than €25 million a year, €13 million of which corresponds to the organization's eight hospitals. These centres consume about 100 GWh of electricity a year, which represents more than half the overall electricity consumption of the entire ICS. With the aim of making progress as a socially responsible company, the ICS has made a strategic change in its electricity acquisition system. Since June 2011, electricity has been bought at the variable "pool" price from the wholesale electricity market controlled by the Omel operator. In this electricity market, electricity is purchased and sold on a daily basis, which means that the price of electricity varies by the hour. Moreover, the reductions in electricity consumption in different time brackets and the organizational effort made by the centres ensure that the risk of this operation is under control at all times.

The ICS previously purchased electricity through public tenders and fixed-rate auctions for the entire year. This kWh price stability involved a higher cost on the overall invoice because the company managing purchases assumed the risk of the volatility of the electricity market.

With this new system of electricity purchases, which is applied in Spain only by ADIF and the Madrid metro system, the ICS could save more than €3 million on the annual electricity bill of its hospitals.

Catalan Health Institute Equality Plan approved

The ICS Equality Plan was approved in October 2011 by the Healthcare Industry Negotiating Committee

with the consensus of all the trade union organizations represented. The Plan has seven action areas, some of which are directly related to human resources policies and others to strategy, internal organization and corporate communication.

For each area, the document contains a set of measures that have been adopted or should be adopted after analysis and diagnosis of the institution's specific situation from the perspective of gender and equality. Moreover, the document includes specific objectives and defines the actions required to achieve them within the framework of an implementation schedule.

In terms of communication, the ICS has published a guide designed to promote the use of non-sexist language. Recommendations for the Use of Non-sexist Language in Healthcare was written for healthcare professionals and aims to provide simple, easy-to-use guidelines for writing non-sexist texts, including letters, presentations, printouts and teaching materials.

Making advances to achieve true equality between men and women and working to make everyone aware of the perspective of gender in all areas is a strategic aim of the corporate social responsibility policies of the ICS, an organization where female employees represent 74% of the staff.

Nearly 300 people participate in 18th edition of Catalan Healthcare Race

A total of 295 professionals from the Catalan healthcare community participated on 27 May 2011 in the 18th edition of the Catalan Healthcare Race, which is organized by Germans Trias i Pujol University Hospital. A new record was set because a total of 453 runners entered the race. The winners in the absolute men's and women's categories were the same as in 2010: Elías Pérez, a professional at Germans Trias i Pujol University Hospital, and Carmen Auñón, who works at the Catalan Oncology Institute.

Support for international cooperation

Within the context of the international cooperation begun in 2005 with Touba Hospital, four Senegalese professionals travelled to Joan XXIII University Hospital to work on the prevention of nosocomial (hospital-acquired) infections.

Two professionals in the Barcelona City Area participated in cooperation tasks in Chad and Cameroon.

Moreover, two nurses and a social worker in Lleida Regional Management went to Ecuador and Côte d'Ivoire to work on two healthcare projects.



Corporate Social Responsibility

Ten professionals at Metropolitana Sud Management went to India, Peru and different countries in Africa to work on cooperation missions, thanks to the collaboration of the Vicente Ferrer Foundation and other non-governmental organizations (NGOs). Furthermore, through the Bellvitge Solidarity Programme, donations of pharmacy materials and fungibles were made to NGOs such as Solidaritat i Comunicació (SICOM), Avôlo As Salam, the Association of Friends of Nepal, CC ONG Ajuda al Desenvolupament and Quiros Surgical Cooperation.

The ICS continues with volunteer activities

The volunteer activities of the primary healthcare teams throughout Catalonia have continued with accompaniment tasks, discussion sessions, lending orthopaedic material, exhibitions, etc., often in collaboration with other organizations such as the Red Cross, the ONCE Foundation, Caritas and Voluntaris Badalona.

Several organizations collaborate with Vall d'Hebron University Hospital by making donations, participating in leisure activities, and accompanying patients and family members during hospital stays.

The services at Germans Trias i Pujol University Hospital include the patient library and a computer room on the paediatrics floor, which are staffed by volunteers who also visit hospitalized patients to chat and provide company.

Eleven groups of volunteers work at Dr. Josep Trueta University Hospital in Girona. Volunteer Week is held in the first week in May and provides an opportunity for these groups to describe their day-to-day activities at the hospital, as well as the jobs and projects they work on. Eight associations, including, for the

first time, the Lleida delegation of the Association of Diabetics of Catalonia, do volunteer work at Arnau de Vilanova University Hospital in Lleida by accompanying patients and their families.

Viladecans Hospital has an agreement with the Red Cross to accompany admitted patients and outpatients. In the Metropolitana Sud Regional Management, Bellvitge University Hospital has agreements with volunteer associations that provide a response to hospital patients in two different ways: by providing testimonials of their own experience as a patient or a family member of a patient, and by providing accompaniment.

The ICS and the TV3 Marathon

The 2011 Marathon sponsored by Catalan television channel TV3 was on tissue and organ regeneration and transplantation. As in previous years, the ICS participated through activities organized by different primary healthcare centres, such as appearances on the TV3 programme by professionals from Joan XXIII University Hospital in Tarragona, Germans Trias i Pujol University Hospital, Bellvitge University Hospital and

Vall d'Hebron University Hospital, as well as appearances by patients from some of these hospitals, either in the form of interviews, discussion sessions or recorded videos.

Leo Messi Foundation signs agreements to train Argentinean doctors at Vall d'Hebron, Trias i Pujol and Sant Joan de Déu Hospitals

The Leo Messi Foundation, along with Vall d'Hebron University Hospital, Sant Joan de Déu University Hospital and Germans Trias i Pujol University Hospital, with the support of the Ànima Foundation, signed collaboration agreements so that paediatricians from Víctor J. Vilela Hospital in Rosario and Dr. Garrahan Hospital in Buenos Aires can come to Catalonia to receive specialist training. The doctors have the opportunity to work in clinical practice and acquire knowledge about paediatric oncology, transplants of haematopoietic progenitor cells and handling the patients who need them, as well as other paediatric sub-specialities such as infectious diseases, immune system diseases, endocrinology, gastroenterology, neurology and congenital errors of metabolism.



Investments and Facilities

Investments in Facility Replacement

- Continuation of the construction work on 19 operating rooms and 56 critical-care beds on floors 5, 4 and 3 of the General Area of Vall d'Hebron University Hospital.

Amount invested: €9,967,256.22

- Second phase started on new building of the Multiple Sclerosis Centre of Catalonia (CEMCAT), located at Vall d'Hebron University Hospital.

Amount invested: €1,869,999.56

- Finalization of construction work and start-up of a new emergency generator room (2 x 3.100 kVA) at Vall d'Hebron University Hospital.

Amount invested: €3,253,506.01

- Continuation of work in second phase of the extension of Bellvitge Hospital.

Amount invested: €8,698,148.51

- End of first phase of refurbishing of Emergency Services at Germans Trias i Pujol University Hospital.

Amount invested: €1,289,931.13

- Construction work on new parking garage at Joan XXIII University Hospital. Organization of urban development.

Amount invested: €3,977,874.00

- Continuation of project to expand CAP Bages.

Amount invested: €2,744,542.77

- Construction work on new linear accelerator at Arnau de Vilanova University Hospital.

Amount invested: €172,596.79

New Facilities

- Oncohaematology Day Hospital and Multipurpose Day Hospital at Arnau de Vilanova University Hospital in Lleida

- Paediatric intensive care unit at Vall d'Hebron University Hospital



- Haemodynamics Laboratory at Bellvitge Hospital
- CUAP Castelldefels
- CAP Gràcia (Sabadell)
- CAP Trinitat Vella
- CAP Comte Borrell
- CAP Palau-solità and Plegamans
- CAP Goretti Badia (Súria)
- CAP Moià

- Bell-lloc d'Urgell Local Consulting Room
- Vilablareix Local Consulting Room
- Porqueres Local Consulting Room
- Mieres Local Consulting Room
- Magraners Local Consulting Room
- Solivella Local Consulting Room
- Kitchen for patients at Viladecans Hospital

Minor Construction Work on Rooms, Minor Equipment and Tools

Barcelona City Primary Healthcare	107,880.83
Vall d'Hebron University Hospital	3,121,673.82
Germans Trias i Pujol University Hospital	186,927.86
Bellvitge University Hospital	24,469.58
Dr. Josep Trueta University Hospital in Girona	3,229.69
Arnau de Vilanova University Hospital in Lleida	2,360,303.46
Joan XXIII University Hospital in Tarragona	4,720.35
Total	5,809,205.59

In euros.

Financial Management

The budget of the Catalan Health Institute, an organization that is included in the budgets of the Catalan government, is balanced in terms of incoming funding and budgetary expenses.

The ICS's main sources of financing come from the budget granted each year by the Parliament of Catalonia through the Budget Act (which includes transfers from the Catalan Health Service for healthcare activity purchases), incoming funding for providing healthcare services to third parties for whom payment is compulsory, and, to a much lesser extent, other miscellaneous incoming funding not linked to healthcare activity.

Executed Budget

Catalan Health Institute	
Primary healthcare	1,119,704,030.25
Specialized care	1,580,708,362.75
Corporate Centre ¹	83,481,046.04
Total	2,783,893,439.04

Alt Pirineu i Aran	
Total	13,826,034.47

Barcelona	
Barcelona Primary Healthcare	251,979,284.94
Vall d'Hebron University Hospital	593,546,038.64
Total	845,525,323.58

Camp de Tarragona	
Camp de Tarragona Primary Healthcare	76,256,960.60
Joan XXIII University Hospital in Tarragona	111,016,029.92
Total	187,272,990.52

Catalunya Central	
Total	90,572,302.88

Girona	
Girona Primary Healthcare	102,682,377.15
Dr. Josep Trueta University Hospital in Girona	128,848,495.58
Total	231,530,872.73

The financial data on expenses shown below come from the public accounts records (GECAT) classified by centre and function, and correspond to budget items charged to the expense budget for financial year 2011.

The amounts include the total current and capital expenses of the different programmes (primary healthcare, specialized care and administration) and budget chapters (1, personnel expenses; 2, expenditure on goods and services; 4, current transfers; and 6, investments) in which ICS budget expenses are classified.

Lleida	
Lleida Primary Healthcare	67,584,700.07
Arnau de Vilanova University Hospital in Lleida	139,235,781.75
Total	206,820,481.82

Metropolitana Nord	
Metropolitana Nord Primary Healthcare	258,648,027.15
Germans Trias i Pujol University Hospital	209,690,326.20
Total	468,338,353.35

Metropolitana Sud	
Costa de Ponent Primary Healthcare	221,869,985.45
Viladecans Hospital	39,079,724.65
Bellvitge University Hospital	299,559,378.17
Total	560,509,088.27

Terres de l'Ebre	
Terres de l'Ebre Primary Healthcare	36,284,357.54
Verge de la Cinta Hospital in Tortosa	59,732,587.84
Total	96,016,945.38

In euros.

Source: Financial and Organizational Management.

1. Includes personnel expenses of the Corporate Centre (€13.4 million), the operating and maintenance expenses of the building (€4.4 million) and other expenses that affect all the centres but are processed centrally from the Corporate Centre (€65.6 million), such as IT services, the civil liability insurance policy and the primary healthcare call centre, among others.

The ICS jointly acquires 64% of the purchase of fungible materials and drugs

Of the efficiency measures started up by the ICS, the one that stands out the most is the increase in the volume of joint purchases for all the institution's centres. The revamping of information systems in 2007 and the establishment of joint working procedures made it possible for aggregate purchases to be increased and the objective of paying lower prices to be widely applied.

In financial year 2011, the ICS made purchases of materials and pharmaceutical products for all its centres for a total of €467.5 million, of which €299.9 million (64%) corresponded to aggregate purchases. More precisely, this procedure was used to acquire 64% of the drugs, including serums, and 58% of the prostheses in the case of materials.

These joint purchases made in 2011 received an average price reduction of 11%.

Logaritme expands its services

Logaritme Serveis Logístics, AIE, an economic interest grouping created by the ICS and the Blood and Tissue Bank, added Hospital Clínic as a partner in Barcelona in 2011. The Consortium of Health Agents of Castelldefels (CASAP) has been a partner since 2007.

Logaritme has a 15,000-m² warehouse in Sant Sadurní d'Anoia, where it provides its clients with a wide range of added-value logistics services, which include: issuing, checking and verification of orders for the release of materials to suppliers; reception and preparation of orders from centres, including transport and distribution; and stock management.

In 2011, Logaritme expanded its services to include the collection of waste groups III and IV, the internal bag from Vall d'Hebron University Hospital and the management of its maintenance warehouse and administrative files.



**Generalitat de Catalunya
Ministry of Health**

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A word cloud of values in white text on a dark blue background. The words are arranged in a non-uniform, overlapping manner. The largest word is 'commitment', followed by 'involvement', 'change', 'innovation', 'responsibility', 'integrity', 'sustainability', and 'competence'. Other words include 'enthusiasm', 'public service', 'respect', 'trust', 'safety', 'fairness', 'sensitivity', and 'cooperation'.

enthusiasm
public service
responsibility
innovation
commitment
respect
integrity
change
trust
involvement
safety
sustainability
competence
fairness
sensitivity
cooperation

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