

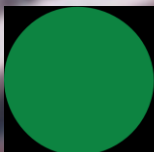
# The value of effective clinical data interchange among Healthcare Organizations. 13 years of experience in Catalonia

**Xavier Pastor, M.D., Ph.D.**

CMIO, Hospital Clínic of Barcelona

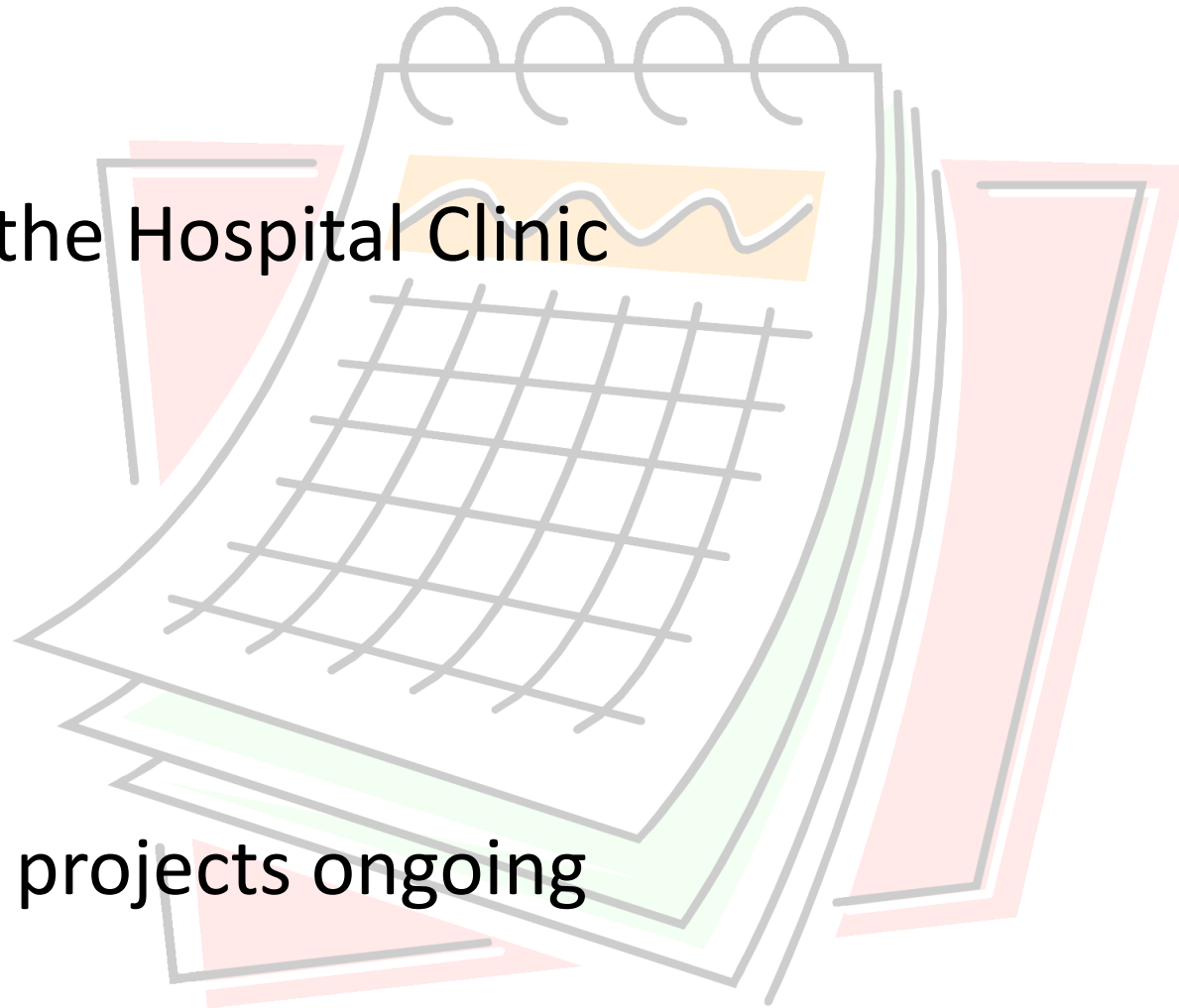
University of Barcelona

**27<sup>TH</sup> INTERNATIONAL CONFERENCE ON HEALTH PROMOTING  
HOSPITALS AND HEALTH SERVICES**



# Outline of this presentation

- Brief introduction to the Hospital Clinic
- The problem
- Proposed Solution
- Implementation
- New challenges, new projects ongoing





# The Hospital Clínic Campus

New  
Projects

Emergencies

Medical  
School

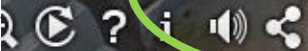
Research

Inpatients  
Dx&Tr units

Outpatients



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CLÍNIC  
BARCELONA  
Hospital Universitari



# Hospital Clínic: a high-tech acute care hospital

## ■ High technology University Hospital (2017 data)

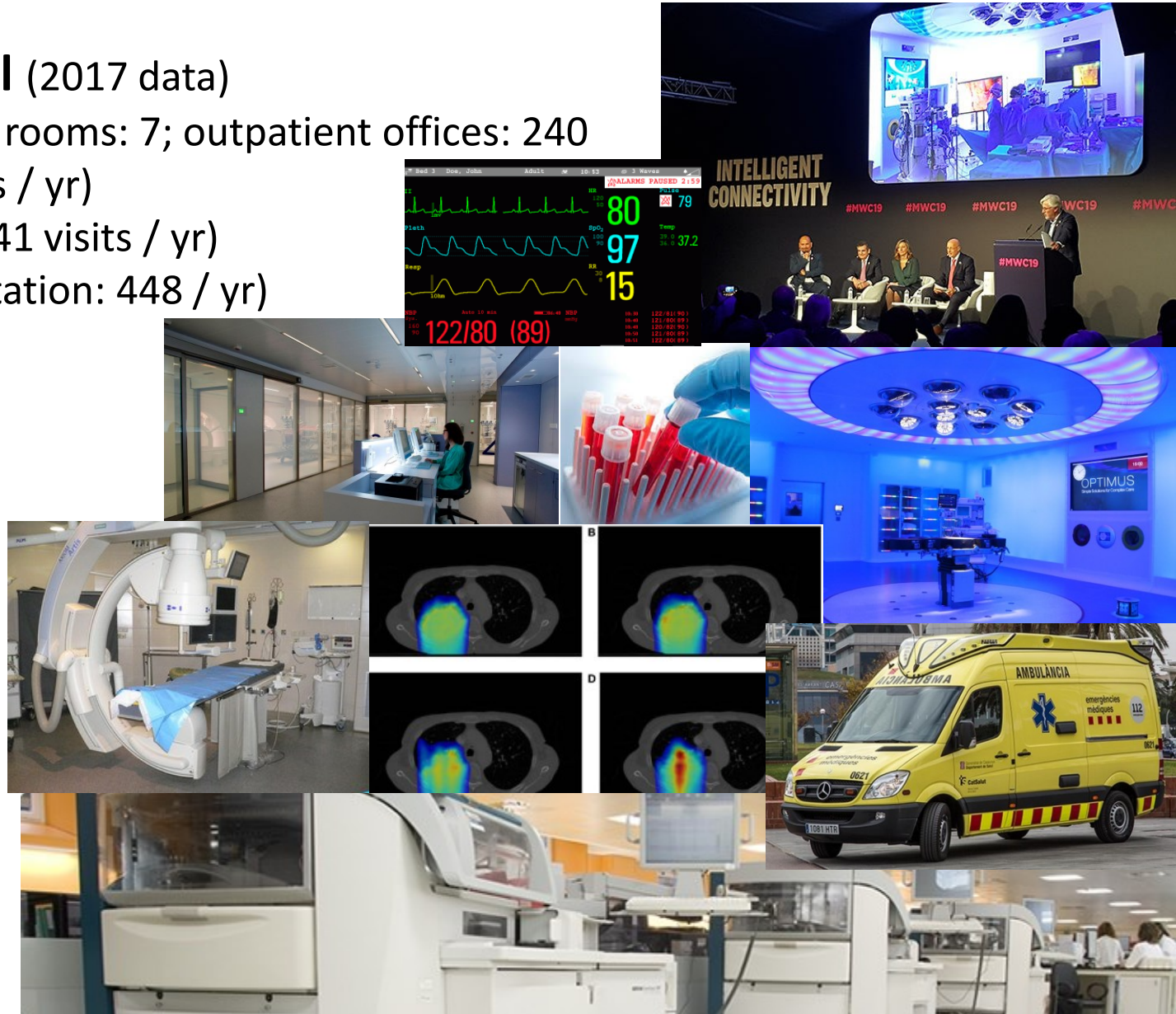
Beds: 710; operating rooms: 31; delivery rooms: 7; outpatient offices: 240

- Acute care hospital (43.135 admissions / yr)
- Outpatient clinic for specialties (496.741 visits / yr)
- Surgery (22.817 / yr) (Organ transplantation: 448 / yr)
- Deliveries (3.083 / yr)
- Emergency care (133.950 / yr)
- One-day stay session (125.509 / yr)

Human resources: 4.511

- Physicians: 1.120
- Nurses / Auxiliary nurses: 2.485
- Administrative staff: 634
- General services: 263
- Management Board: 9

- Budget: 489,349.000 euros

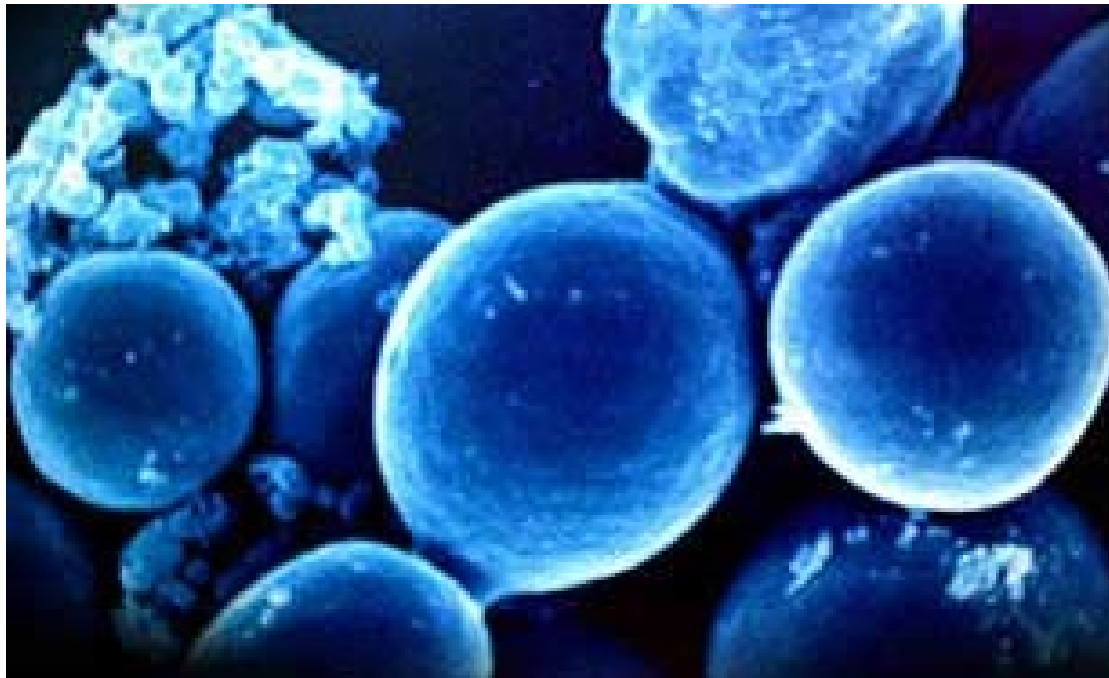


# Hospital Clínic: involved in translational research

## ■ IDIBAPS:

Research consortium sponsored by:

- Hospital Clínic
- University of Barcelona
- Consejo Superior de Investigaciones Científicas
- Generalitat de Catalunya



## ■ Fundació Clínic:

Research brand of the Hospital Clínic to collect private or public funds for research projects

Global Budget in 2017: 56,6 M euros



# Hospital Clínic: a teaching hospital of the University of Barcelona

## ■ Undergraduate programs with UB:

- Biomedical Engineering
- Biomedical Sciences
- Medicine
- Nursing



## ■ Other programs:

- Aula Clínic
- Clinic Summer School
- Scientific dissemination activities to the citizenship

## ■ Postgraduate programs:

- Residency programs
- Doctorate courses
- Master courses
- Postgraduate courses
- Continuous Medical Education
- Healthcare training



**Medical School at UB is the only Spanish academic center in among the 100 Medical Sciences Schools of the world (2018)**

A woman with curly hair, wearing a white lab coat, is seated at a desk in a modern, brightly lit office or hospital information system center. She is looking at a large computer monitor. In the background, other people are working at similar desks with multiple monitors. The room has orange walls and recessed ceiling lights.

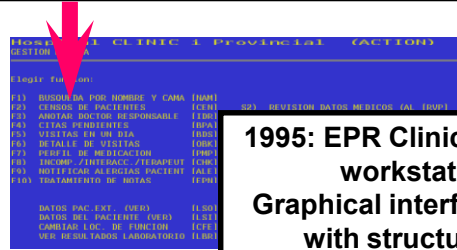
# Information systems at Hospital Clínic

A highly integrated model with extensive and intensive use

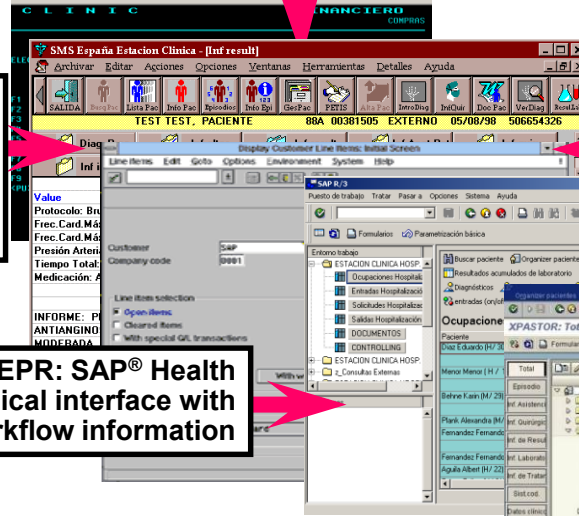


# A graphical summary of Hospital Clínic ICTs evolution

1984: HIS - textual interface without structured information – Financial S.



1995: EPR Clinician workstation. Graphical interface with structured information



1997: ERP. SAP®R3

2003: ERP + EPR: SAP® Health solution. Graphical interface with structured and workflow information

2007: Full clinical record

2010: eMedication & data-based “CDS”

2011-2017: IPA. Better customization to professional needs and patient safety

2018-.....: Functional improvement And knowledge-based “CDS”

Hospital Clínic

HIMSS EMRAM SCORE (2011)



Healthcare professionals

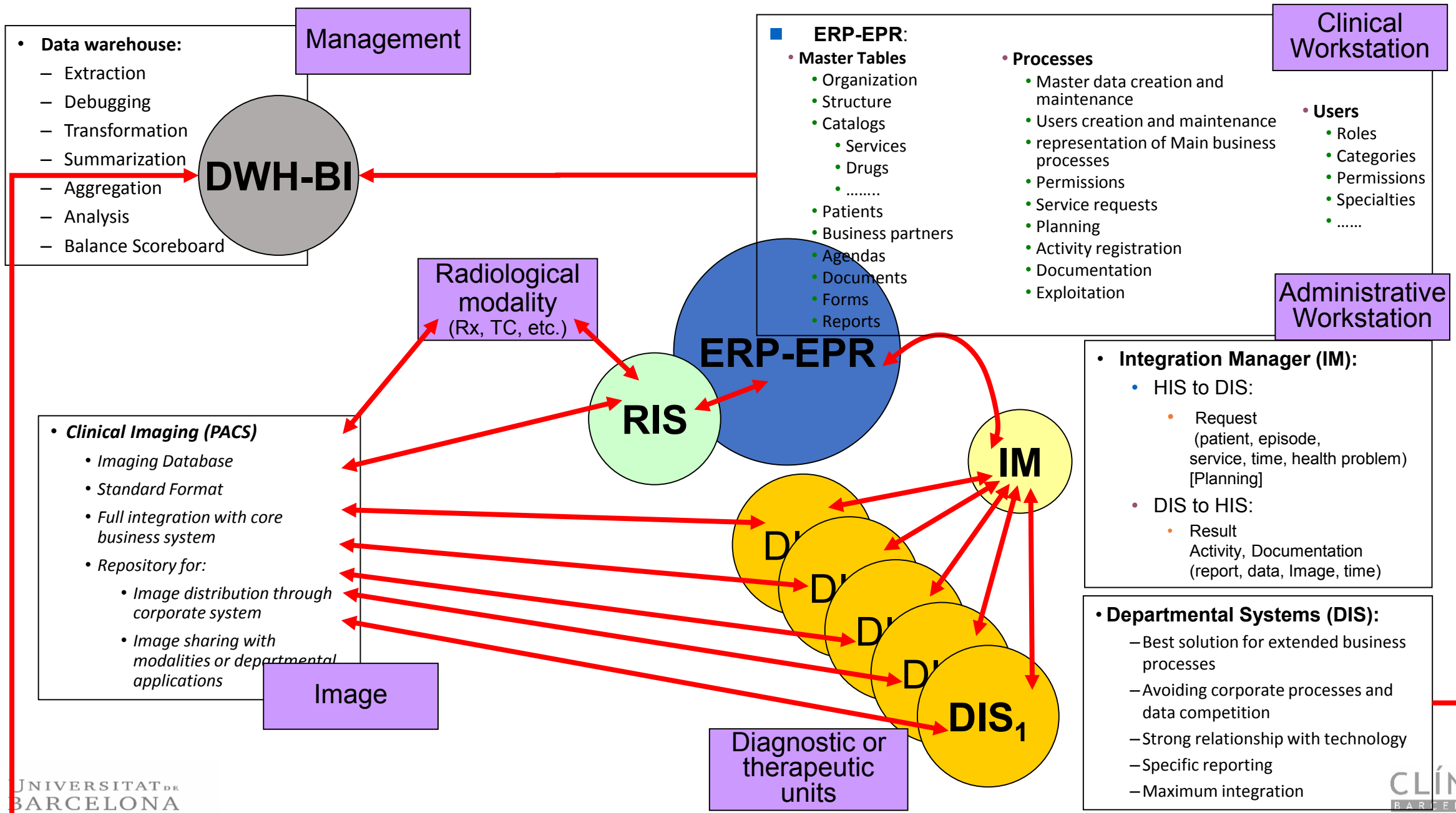


Medical Informatics





# Information Systems: a highly integrated model



# Registration of the main business processes in healthcare facilities



**Achievement: business process standardization**



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- 2.- Complementary examinations path
- 3.- Surgical path
- 4.- Medication
- 5.- Nursing care



# 2019: Hospital Clinic IS usage

## Extensive

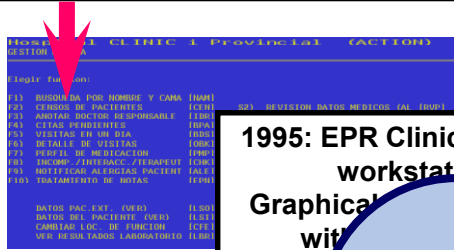
- Full availability in all the hospital
- Users: 6.500 users (aprox.)
- Devices
  - 4.000 PCs (aprox.)
    - Computers (generic and personal workplaces)
    - Laptops
    - Tablets
    - Mobile phones
  - 400 printers
- Connectivity
  - Wire and wifi connection
  - VPN for remote access

## Intensive

- High implication of health personnel
  - Nearly paperless
  - All stakeholders involved
  - Concurrent users: 3.000 (11:00-14:00)
  - Non-stop operation

# Is it all right?

1984: HIS - textual interface without structured information – Financial S.



1995: EPR Clinician workstation  
Graphical  
with



1997: ERP SAP®R3

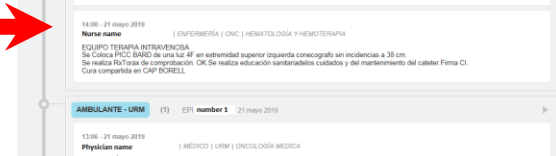
Are we (Hospital Clínic) alone in the healthcare business?  
Are we taking care of the whole care process of the patient?  
Is the patient really in the focus of our activities?

Hospital Clínic

HIMSS EMRAM  
SCORE (2011)



2018-.....: Functional improvement  
And knowledge-based “CDS”



Medical  
Informatics

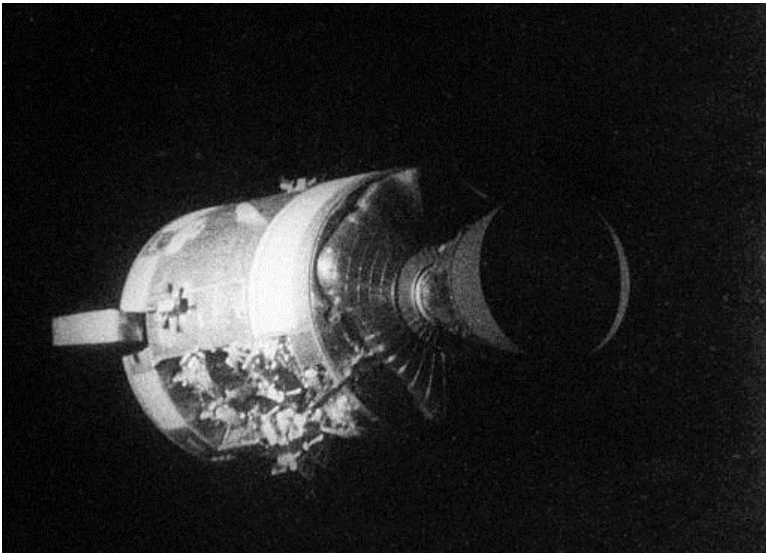


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# 2004, fifteen years ago: Primary – Specialized Care

- The mean time to establish a lung cancer diagnosis by the specialist after the initial consultation of patient to the Family physician was 50 days.
- Top-down measures from Health Authorities hadn't be successful to improve such situations.



Houston, we have a problem !!!



A sepia-toned illustration depicting a medical or caregiving scene. A hand in the upper left holds a pen, poised to write on a document. Another hand in the lower right rests gently on a patient's arm. The patient is lying down, and a medical tube is visible near their head. The overall tone is somber yet hopeful, with the text 'a glimpse of Hope' overlaid in the center.

a glimpse of Hope



# AISBE

Public Healthcare Insurance

Catalut: 7 health regions

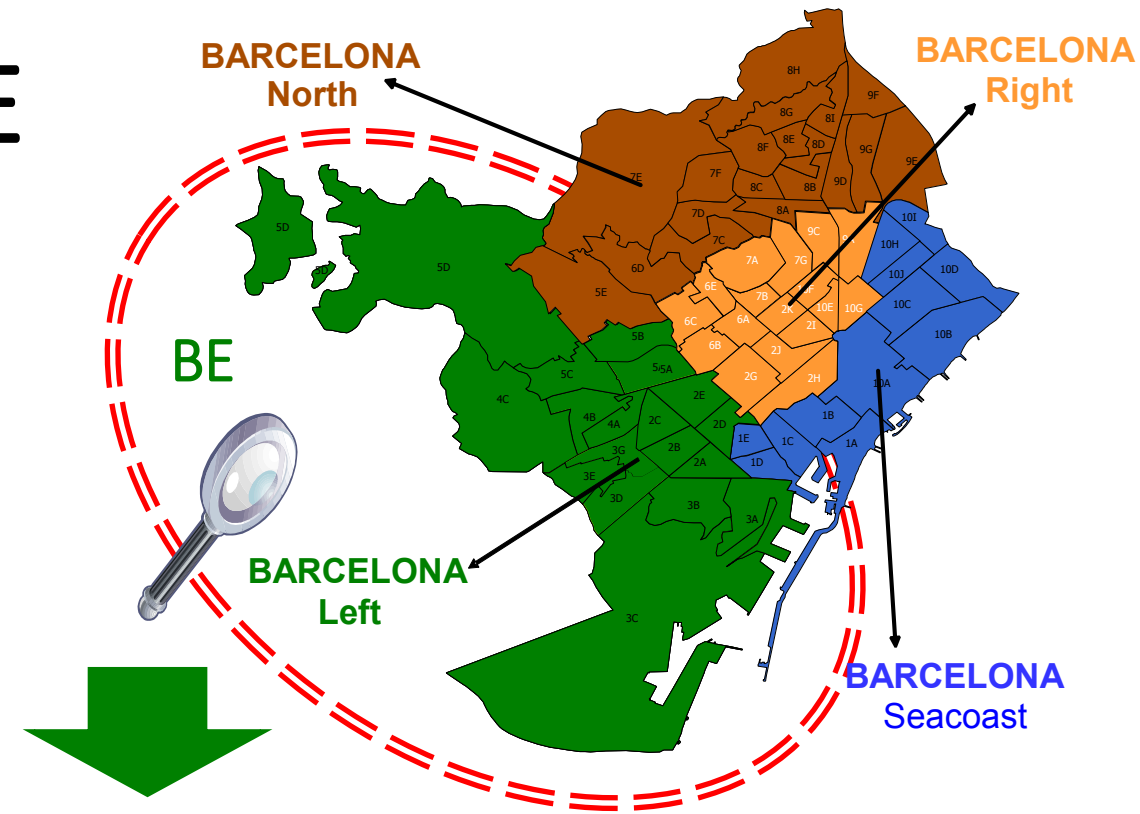
↳ Health region of Barcelona

↳ Health Consortium of Barcelona city

↳ 4 Integral Healthcare Areas (AIS)

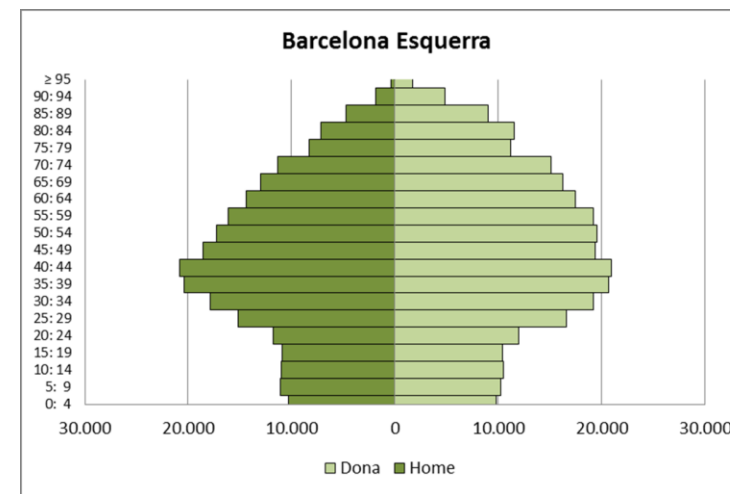
## ***Mission:***

***To offer an integral health care to the population in a territorial framework by effective coordination between institutions and health care professionals***



Population: 517.880 inhabitants

- Aging
- Immigration



# Hospital Clínic: “dual” model a real challenge

## ■ High technology University Hospital (2017 data)

Beds

■ Ac

■ Ou

■ Sur

■ De

■ Em

■ On

Budg

Hum

Keep the threshold reached  
as a high tech hospital  
and...

Face and lead the challenge  
of  
“Continuous Patient Care”  
in AISBE

■ Nurses / Au

■ Administrat

■ General se

■ Management

rses: 2.485

624

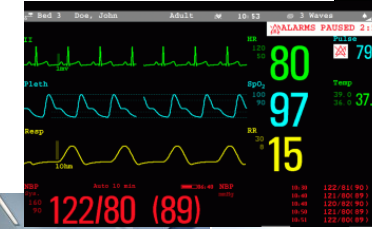
.9

rooms: 7; outpatient offices: 240

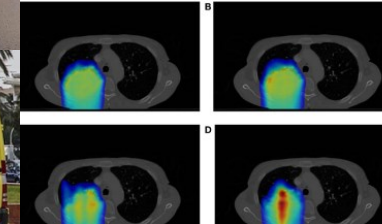
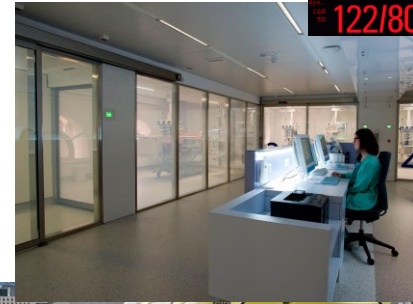
/ yr)

1 visits / yr)

ation: 448 / yr)



INTELLIGENT  
CONNECTIVITY



- Leading the reengineering process between Primary and Specialized care to deliver a true “Integrated care” including Home care & chronic patients programs (COPD, HF, AIDS, Cancer) and Long Term Care and Mental Health connection over a reference population about 520.000 inhabitants.



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the real world

# Departure situation in AISBE

## Healthcare facilities:

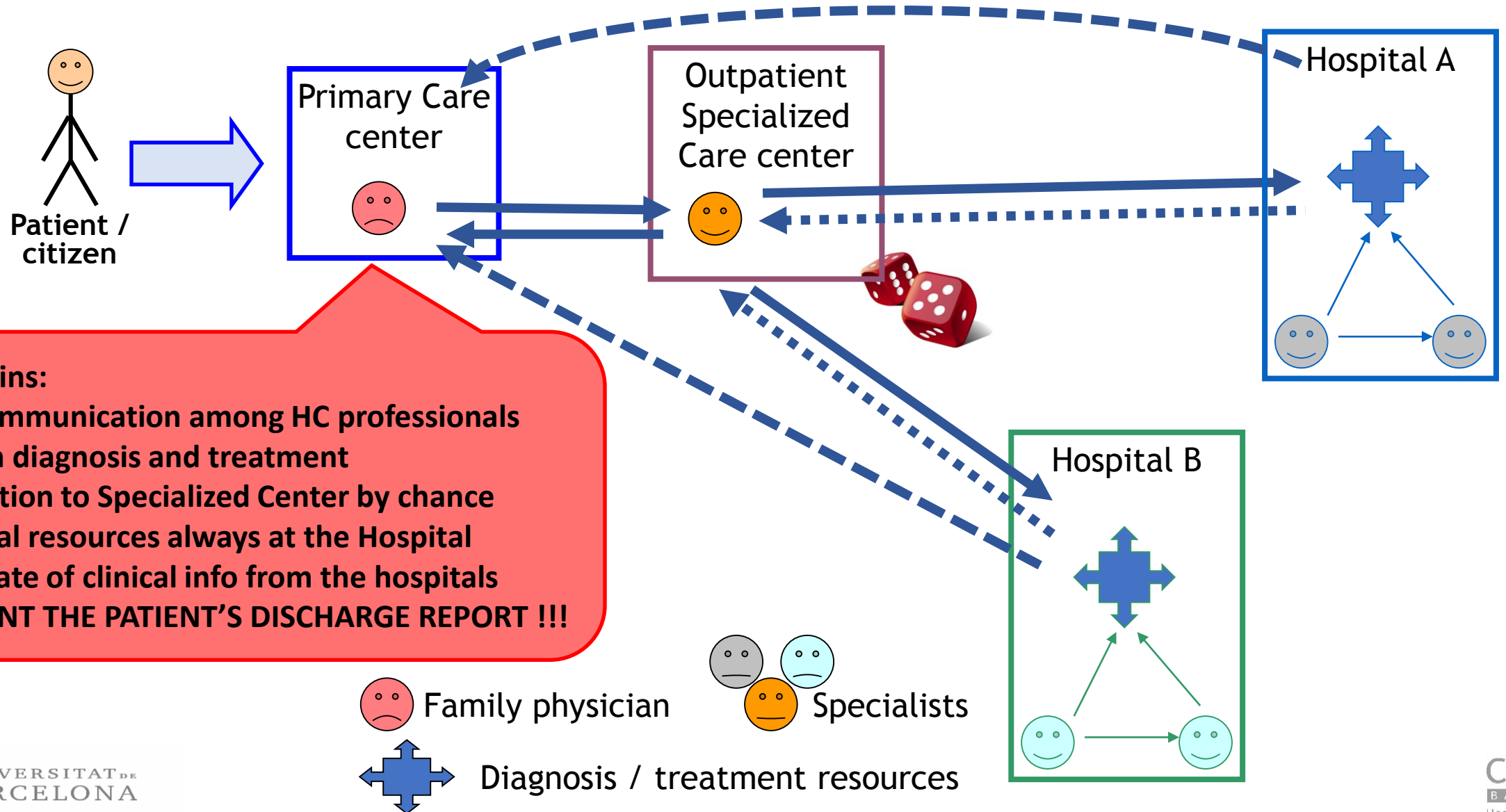
- 23 Primary Care centers (6 providers)
- 2 Outpatient Specialized centers (1 provider)
- 4 Acute care Hospitals (4 providers)
- 6 Mental health centers (6 providers)
- 4 Long-term care centers (3 providers)

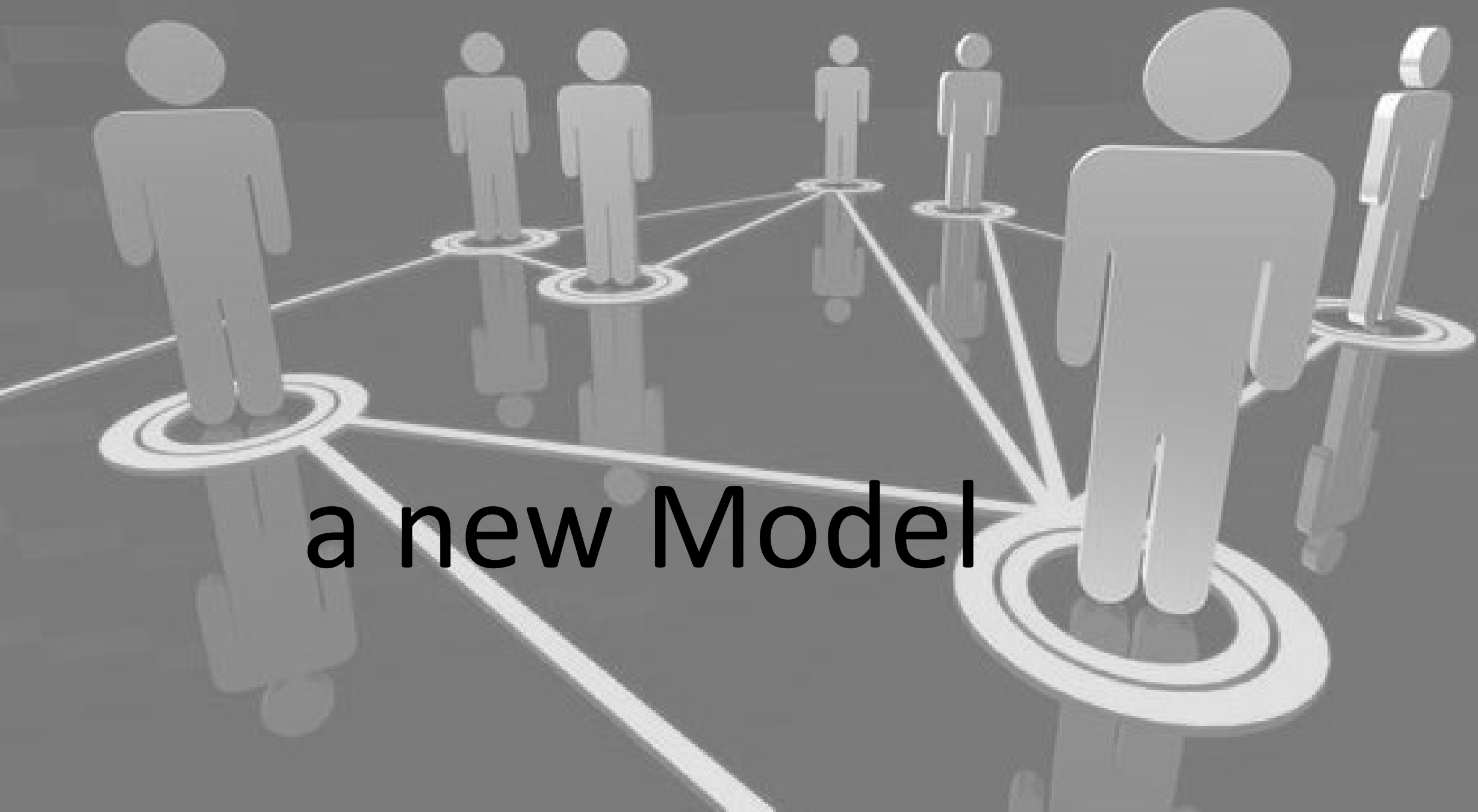
## Very BIG differences in many dimensions:

- Size
- Complexity
- Organization
- Equipment
- Human resources
- ICTs



# Primary and Specialized Care: initial relationship



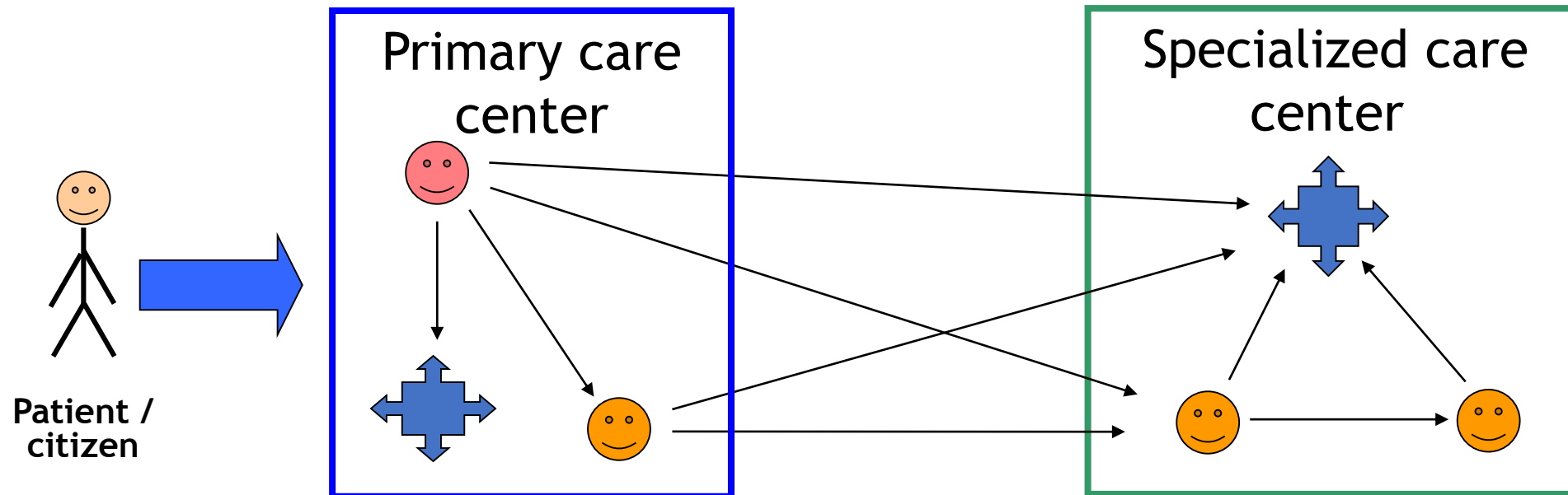


a new Model



# Reengineering the relationship between Primary and Specialized Care

1<sup>st</sup> Goal: Improve the patient care with a new approach over the relationship among family physicians and clinical specialists.



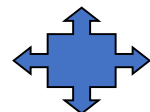
Patients' flow regulated by agreements and clinical protocols based on scientific evidence



Family physician



Specialists



Diagnosis / treatment resources

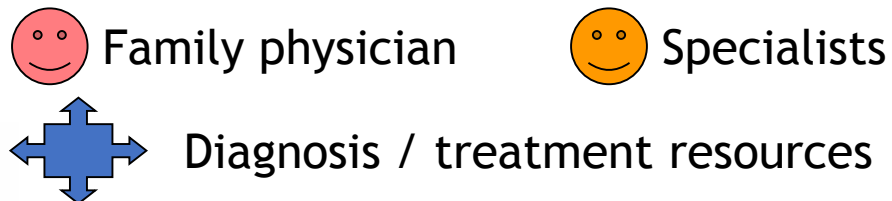
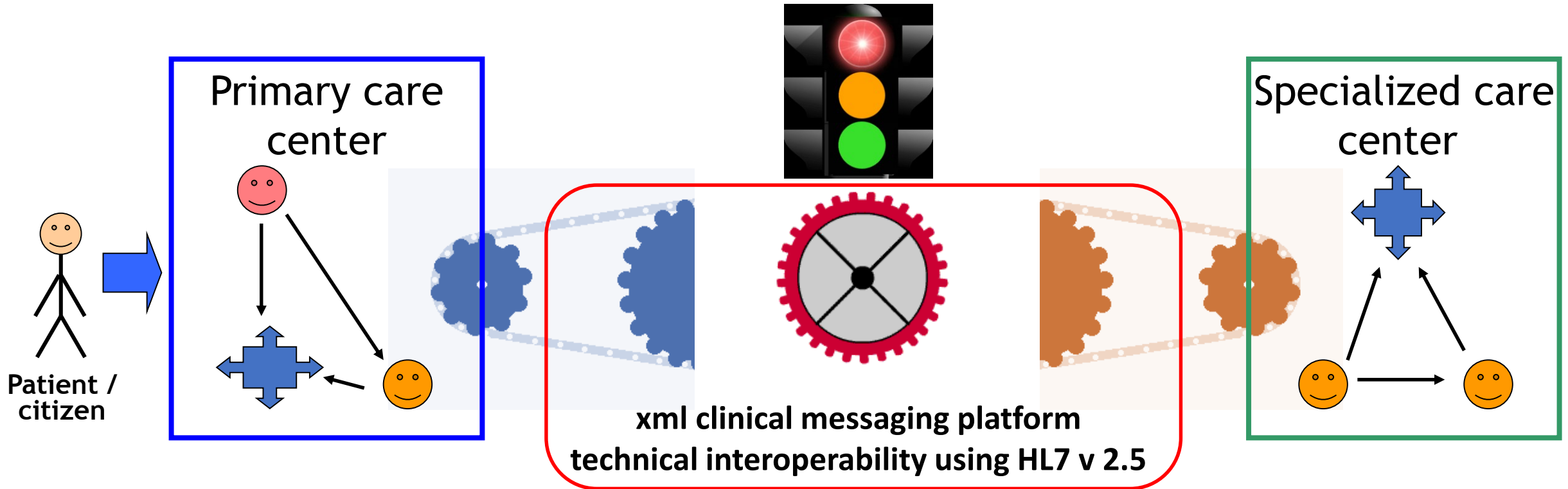
A serene image featuring a path of smooth, light blue stones leading from the foreground into a body of water. The stones are arranged in a slightly curved line, and their reflection is visible in the calm water. The background is a soft, light blue gradient, suggesting a clear sky or a calm sea. The text "keep it simple" is overlaid in a clean, black, sans-serif font on the right side of the image.

keep it simple



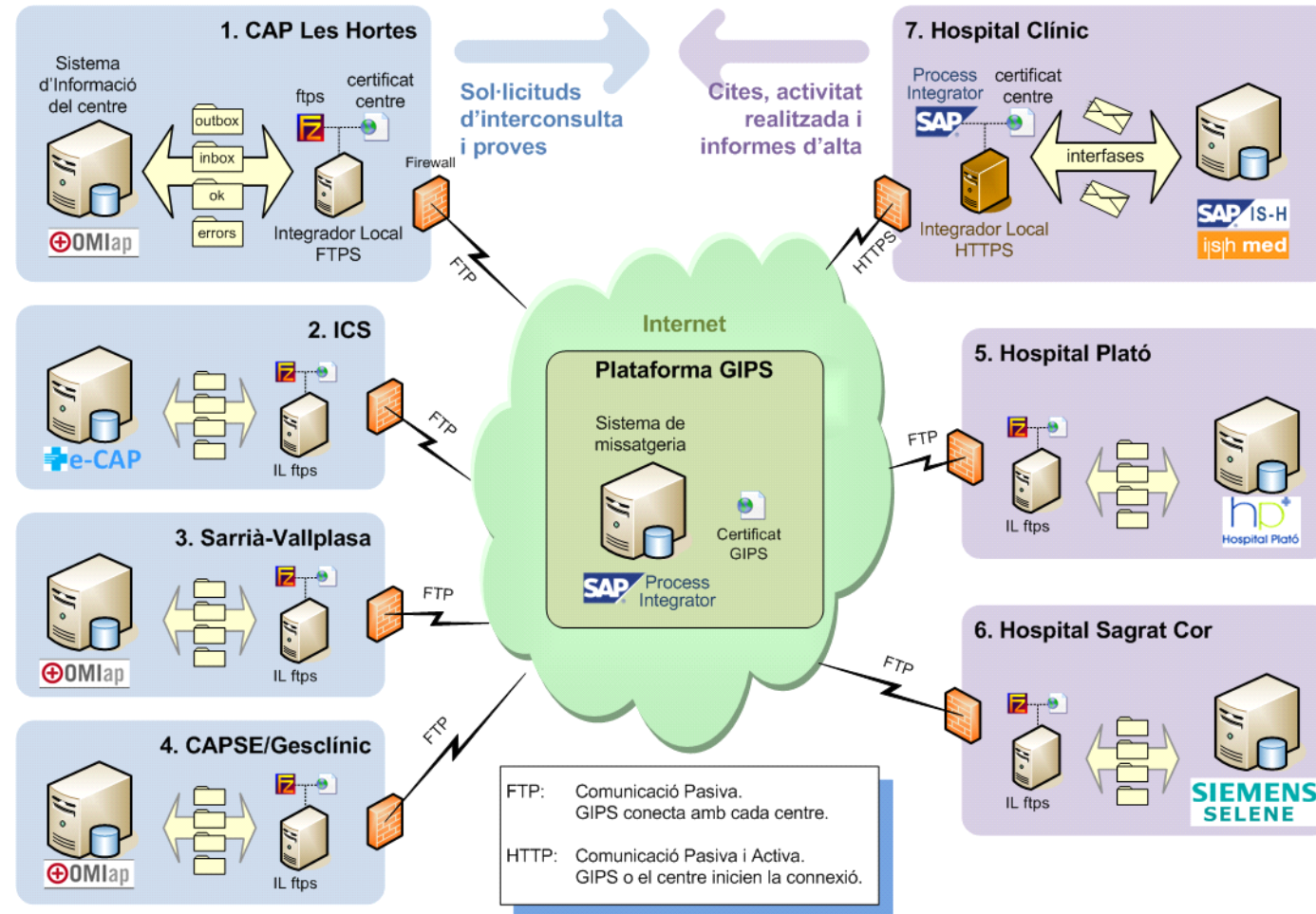
# Searching the proper technology

Patients' flow regulated by agreements and clinical protocols based on scientific evidence



**Affordable approach**  
**Quick wins**  
**Scalability**

# Interoperability using a Common Platform



Connecting EPRs with a **Technically Interoperable Platform** based upon **accepted** and **affordable** communication **standards** for interchanging **meaningful clinical information** to share the processes with **added value**

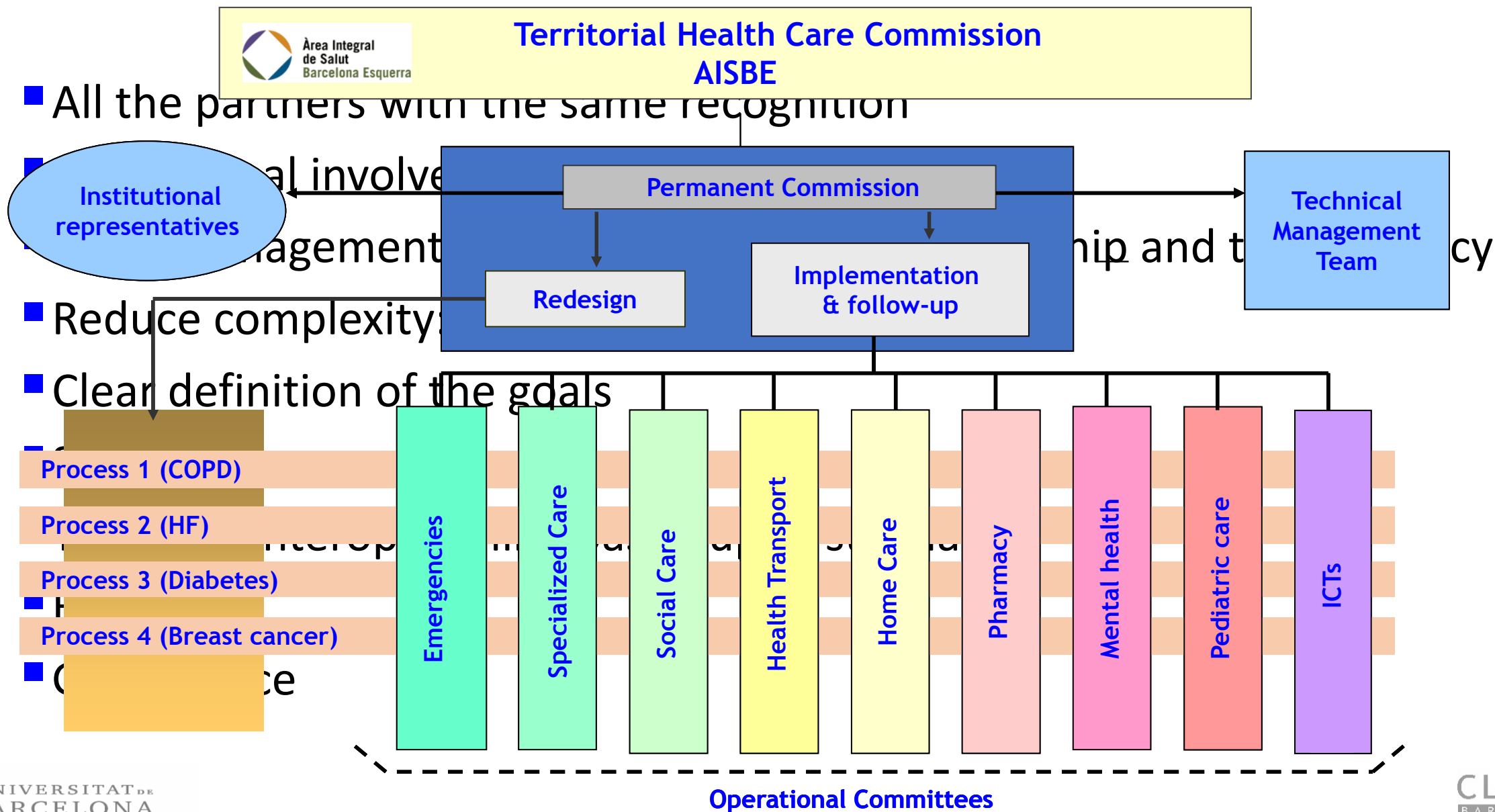




a coordinated team



# Stepwise approach: from middle-out with the professionals



# Working Group on Information and Communication Technologies

- Composition:

- For each provider Institution

- ICT responsible
    - Responsible of patients' management
    - Technological partners

- One responsible of the Public Health Insurance (Catsalut)

- Method:

- Yearly objectives
  - Global monthly meeting
  - Group sessions according ongoing projects

- Working meetings

- Coordination tasks

- With the Executive Committee
  - With ongoing projects (HC3, WIFIS, etc...)

- Support tasks

- Monitoring.
  - Security audits and updates.
  - Operating Support Systems.

- Diffusion tasks

- Sessions, workshops and meetings.
  - Academic courses.



following a method



# Clinical processes : functionality and status

## Clinical information tracks:

- Specialists activity done at PC center
- Interconsultation to SC at the hospital with appointment
- Pre-scheduled interconsultation to SC at the hospital
- Relevant Clinical Documentation
- Service requests to hospital and delivery of reports and images
- Teleconsultation (dermatology, vascular surgery, hematology,...)
- Patient's derivation between Emergency Deps.

## Status:

- Reception
- Rejection
- Appointment
- Re-appointment
- Cancellation
- Activity done
- Documentation
- Image
- Closure



[illegible]

Done by physician or nurse

- Patient
- Document type
- Non structured document (pdf)

① Admission, Emergency, Outp.

The diagram shows a box on the left containing the text 'Done by physician or nurse' and a bulleted list: '• Patient', '• Document type', and '• Non structured document (pdf)'. To the right of this box is a circle containing the number '1', followed by the text 'Admission, Emergency, Outp.'. A blue double-headed arrow points from the bottom of the box to the circle.

The diagram illustrates the RSC-BAE process flow, divided into Primary care and Specialized care stages, connected by a central Platform.

**Primary care** (Left box):

- ⑥ Discharge report
- Emergency report
- Etc...

**Specialized care** (Right box):

- ⑤ Document + closure
- ② Clinical process + discharge
- ③ Patient RSC-BE
- ④ Patient id consultation Catsalut

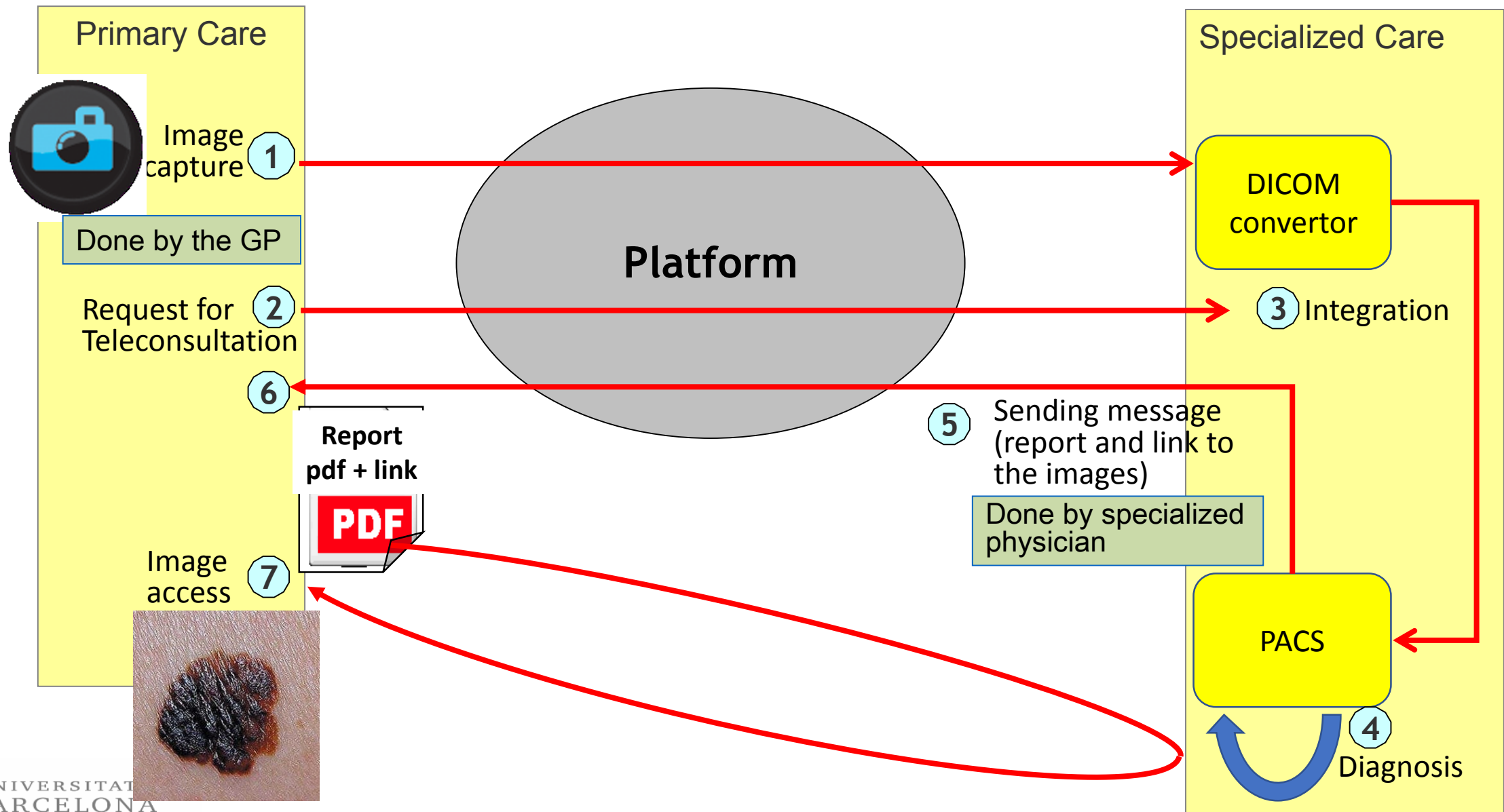
**Central Platform** (Grey oval):

The Platform acts as the central hub, facilitating the flow of information between Primary care and Specialized care. A red arrow points from the Platform to the Primary care box, and another red arrow points from the Specialized care box to the Platform.

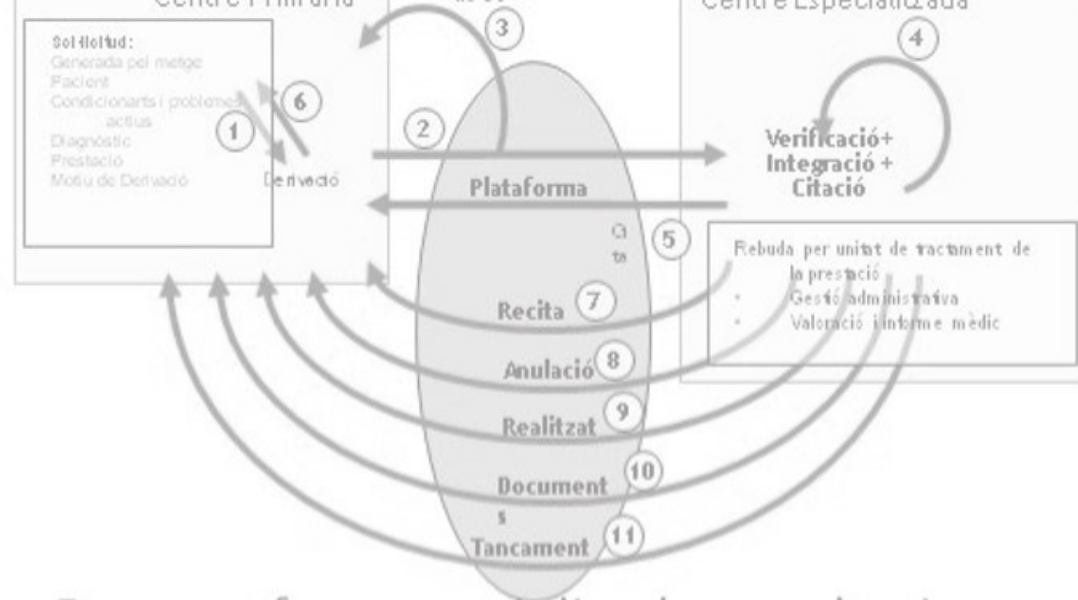
**Flow and Connections:**

- A red arrow points from the Specialized care box (③ Patient RSC-BE) to the Primary care box (⑥ Discharge report).
- A red arrow points from the Specialized care box (④ Patient id consultation Catsalut) to the Platform.
- A red arrow points from the Platform to the Primary care box.
- A red arrow points from the Specialized care box (② Clinical process + discharge) to the Specialized care box (③ Patient RSC-BE).

# AISBE 2<sup>nd</sup> goal: innovation. Teleconsultation







Request for a specialized consultation

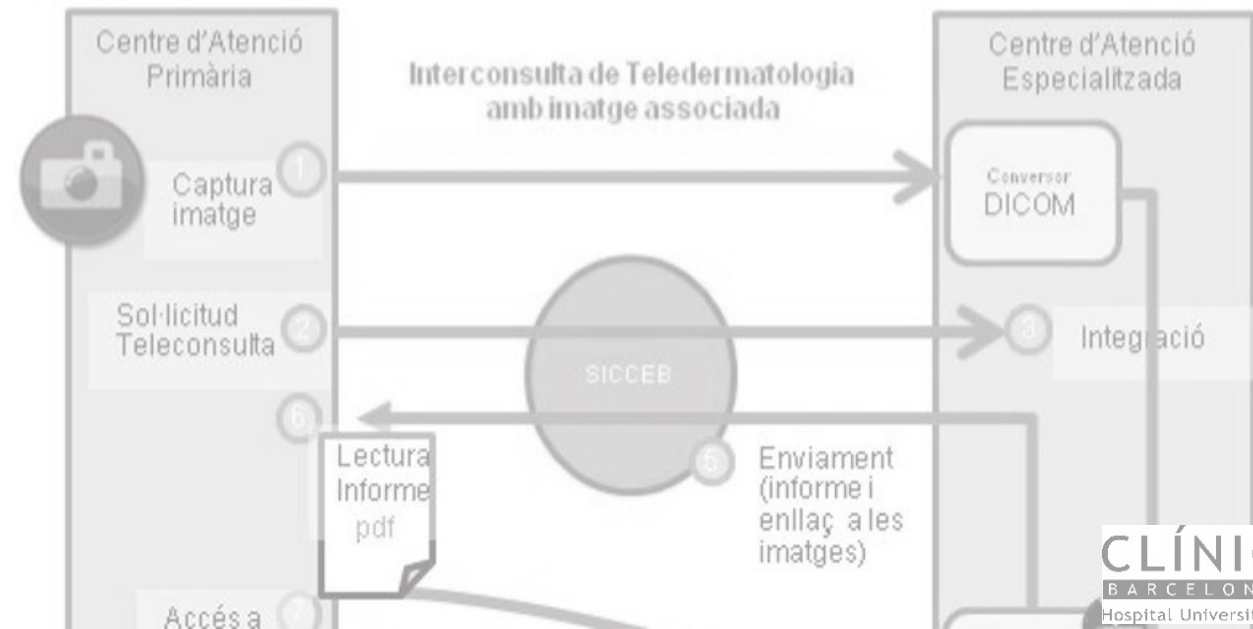


Relevant Clinical Documentation from SC to PC

Request for a diagnostic test



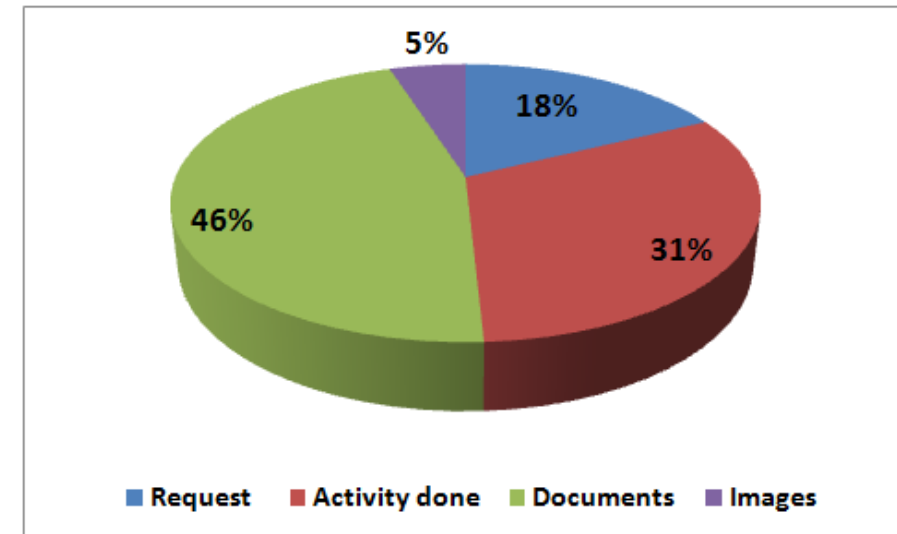
Request for a teleconsultation in Dermatology



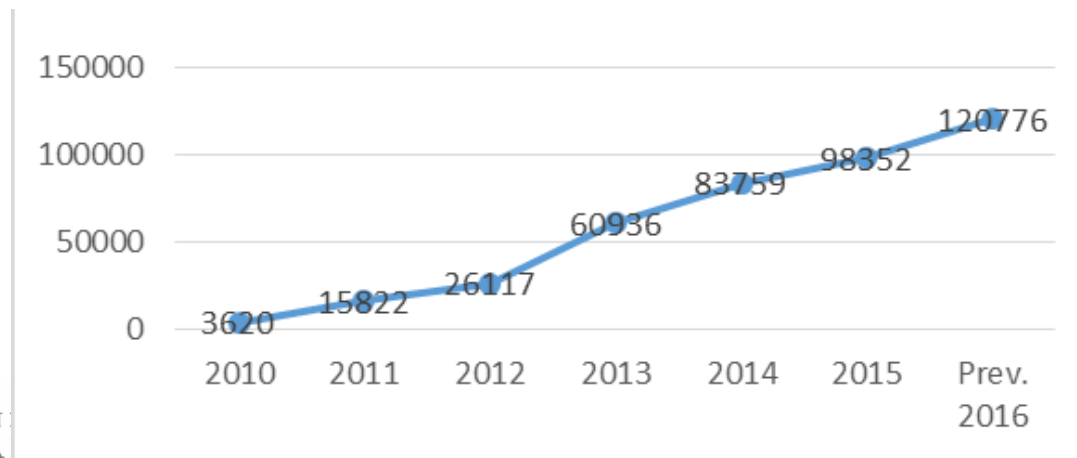
# Some results (1)

Improving and growing activity of the system in “classical” processes

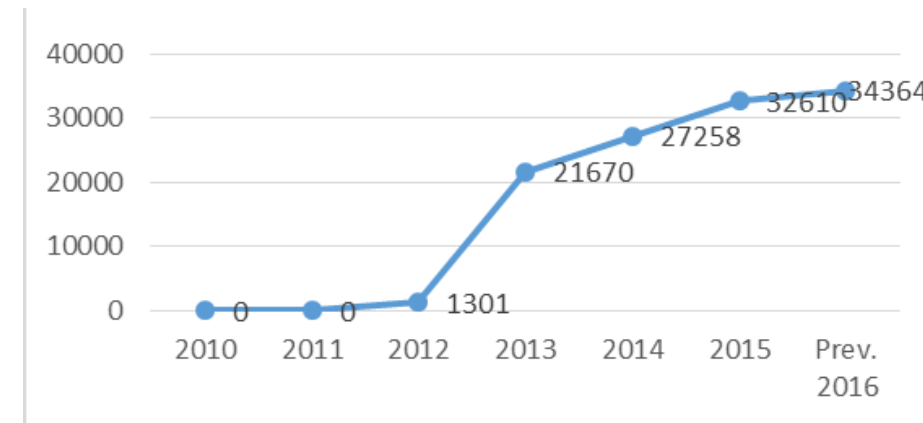
Type	Number (2010-2015)
Requests	323360
Activity done	577575
Documents	839779
Images	91374



Services requested by PC

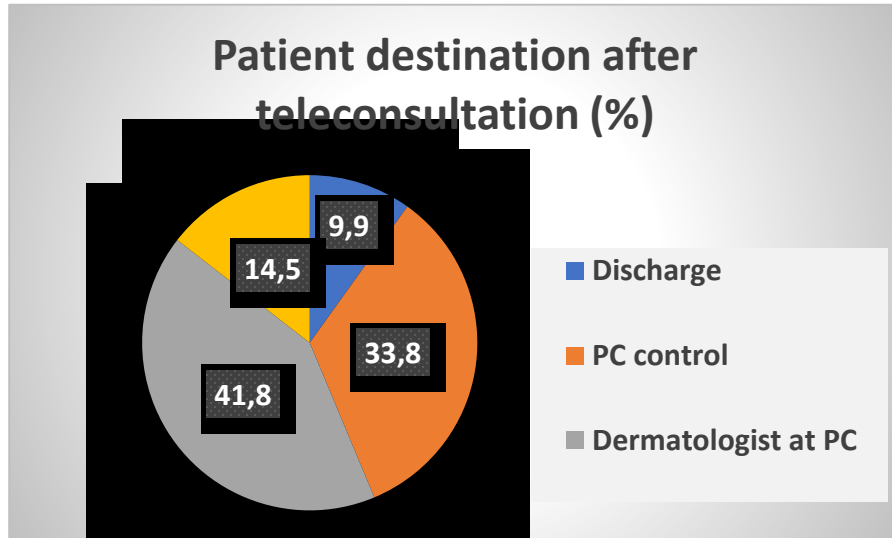


Images provided by SC

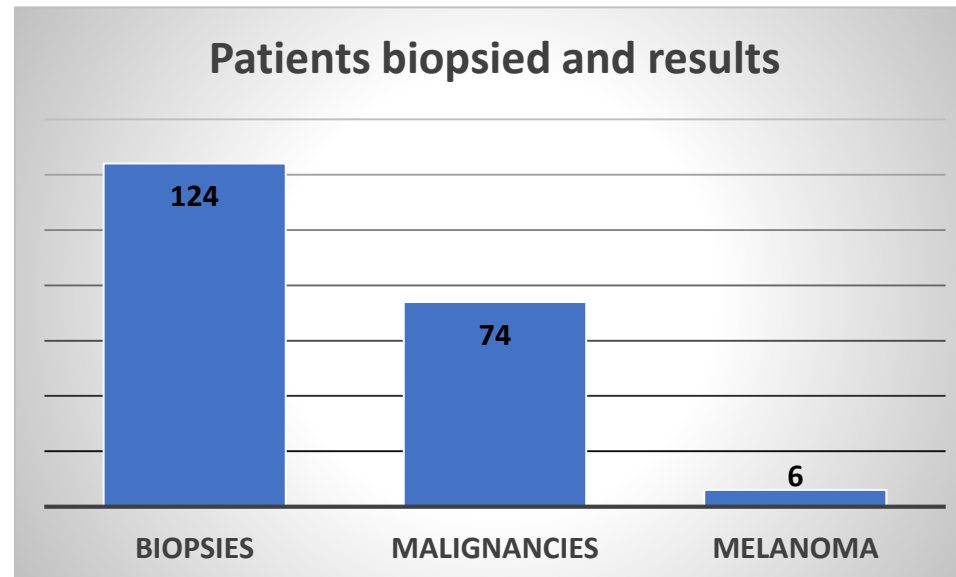


# Some results (2)

Teledermatology: a successful example of a new process mediated by ICTs

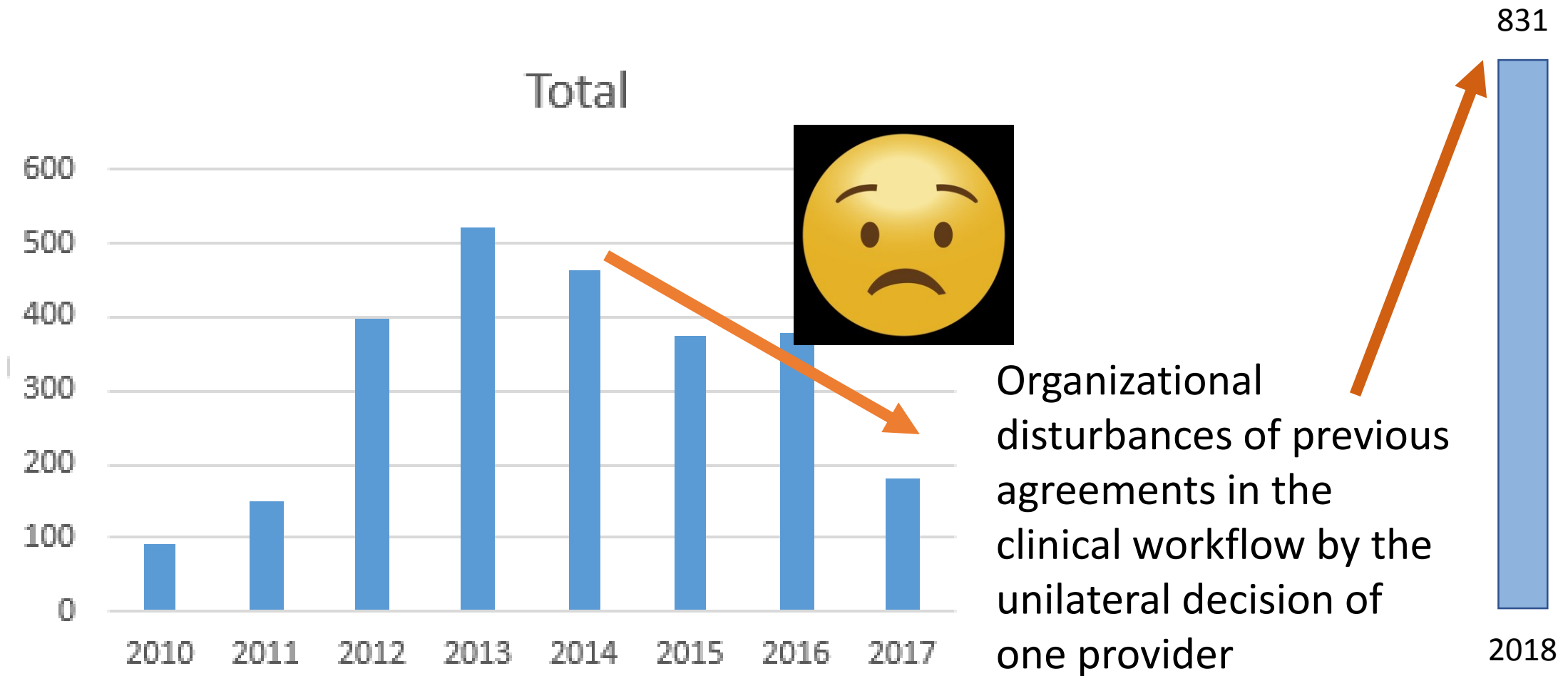


Period	Jan 13 – Jun 14
PC physicians	68 (= 13,5 TC by Phys)
Teleconsultation	920 cases
Dermat. answer	1,84 days (mean)
Picture quality	94,3 %
Visits saved	535 (58.2%)





# Lessons learned: the case of Teledermatology





satisfaction

# 2014: The AISBE model extended to the rest of Catalonia

AISBE  
IOP platform  
2007-2014

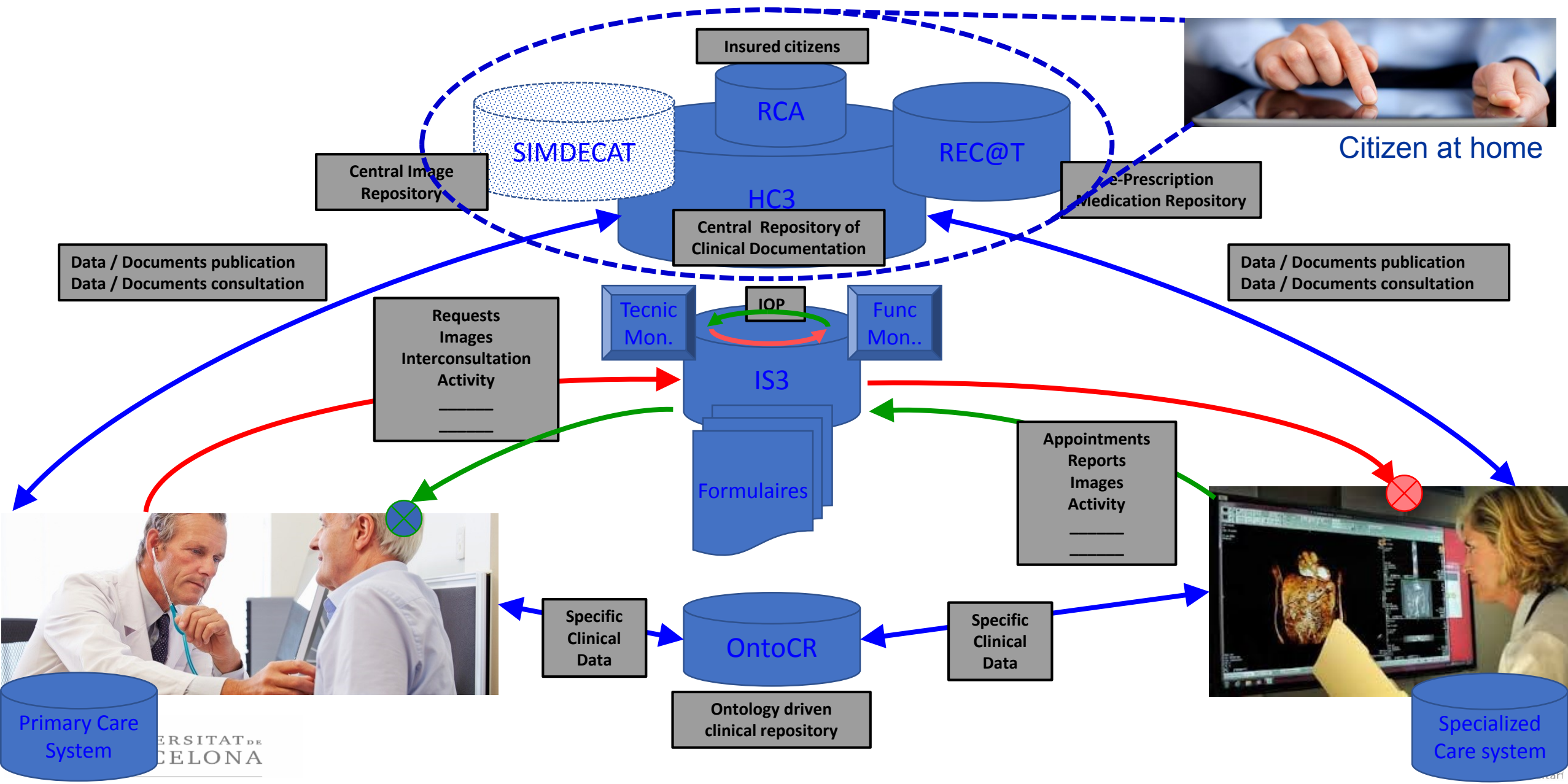
2014

IS3  
Catalonian  
Healthcare  
IOP platform  
2014 - .....





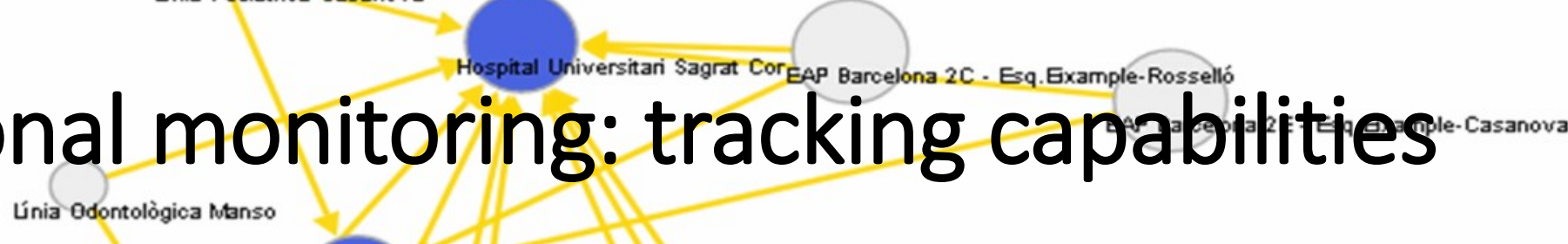
# Shared eHealth resources in Catalonia today





always transparency

# Functional monitoring: tracking capabilities



## Monitoratge de dominis

Domini	--Seleccionar Va	Id. Sol·licitud	--Seleccionar Va	UP Origen	EAP Barcelona 2	UP Destí	--Seleccionar Va
Període	2019-05	Id. Flux únic	--Seleccionar Va	Prestació Sol·licitada	--Seleccionar Va	Servei destí	--Seleccionar Va
Data Sol·licitud	20/05/2019 00:0	Id. Prestació	--Seleccionar Va			Últim estat	--Seleccionar Va
		Número Autorització	--Seleccionar Va			Ahir ?	0
						Aplicar	Restablecer

## Informació detallada

Domini: TOTS, Període: TOTS, Data sol·licitud: 20/05/2019 00:00:00, 19/05/2019 00:00:00, 18/05/2019 00:00:00, 17/05/2019 00:00:00, 16/05/2019 00:00:00, 15/05/2019 00:00:00  
 Id Sol·licitud: TOTS, Id Flux únic: TOTS, Id Prestació: TOTES, Número Autorització: TOTS  
 UP Origen: EAP Barcelona 2C - Esq. Eixample-Rosselló, Prestació Sol·licitada: TOTES  
 UP Destí: TOTES, Servei Destí: TOTES, Últim estat: TOTES, Ahir: 0

Id. Derivació	Id. Flux únic	ID. Prestació	Estat Derivació	Data Sol·licitud	UP Origen	UP Destí	Servei destí	Prestació Sol·licitada
28107849	IdMsgIntWmb_2019-05-15 09:51:00.4146c1	19537802	Resultats disponibles - A	15/05/2019	EAP Barcelona 2C - Esq. Eixample-Rosselló	Hospital Clínic de Barcelona	Dermatologia	interconsulta - 204311000135100
28107881	IdMsgIntWmb_2019-05-15 09:52:04.6a6e7c	19538104	En curs - IP	15/05/2019	EAP Barcelona 2C - Esq. Eixample-Rosselló	Hospital Clínic de Barcelona	No disponible	ecografia de l'abdomen complet (inclou renal) - 04030101
28107923	IdMsgIntWmb_2019-05-15 09:52:46.622528	19538105	Programada - SC	15/05/2019	EAP Barcelona 2C - Esq. Eixample-Rosselló	Hospital Clínic de Barcelona	No disponible	ecocardiografia - 40701008
28107934	IdMsgIntWmb_2019-05-15 09:53:26.677a07	19538106	Reprogramada - RG	15/05/2019	EAP Barcelona 2C - Esq. Eixample-Rosselló	Hospital Clínic de Barcelona	No disponible	tomografia computada del crani sense contrast - 05040101
28108001	IdMsgIntWmb_2019-05-15 09:54:14.9e9c52	39V00290001872369	Pendent Confirmació Creació - NW	15/05/2019	EAP Barcelona 2C - Esq. Eixample-Rosselló	Hospital Clínic de Barcelona	Cirurgia Maxil·lofacial	primera consulta - 117741000135105
28108689	IdMsgIntWmb_2019-05-15 10:14:08.609f9f	19538122	En curs - IP	15/05/2019	EAP Barcelona 2C - Esq. Eixample-Rosselló	Hospital Clínic de Barcelona	No disponible	ecografia pelviana - 04030401
28108966	IdMsgIntWmb_2019-05-15 10:22:00.511111	2019/355895	En curs - IP	15/05/2019	EAP Barcelona 2C - Esq. Eixample-Rosselló	Hospital Universitari Sagrat Cor	Rehabilitació	primera consulta - 117741000135105

Individual patient process

Process status



Reporting (1)

Domini	--Seleccionar Va ▼	Id. Solicitud	--Seleccionar Va ▼	UP Origen	EAP Barcelona 2 ▼	UP Destí	--Seleccionar Va ▼
Període	2019-05 ▼	Id. Flux Únic	--Seleccionar Va ▼	Prestació Sol·licitada	Primera visita;pri ▼	Servei destí	--Seleccionar Va ▼
Data Sol·licitud	20/05/2019 00:0 ▼	Id. Prestació	--Seleccionar Va ▼			Últim estat	--Seleccionar Va ▼
		Número Autorització	--Seleccionar Va ▼			Ahir ?	0 ▼
						Aplicar	Restablecer ▼

Domini: TOTS, Període: TOTS, Data sol·licitud: 20/05/2019 00:00:00,16/05/2019 00:00:00,15/05/2019 00:00:00,  
Id Sol·licitud: TOTS, Id Flux únic: TOTS, Id Prestació: TOTES, Número Autorització: TOTS  
UP Origen: EAP Barcelona 2C - Esq.Eixample-Rosselló, Prestació Sol·licitada: Primera visita,  
UP Destí: TOTES, Servei Destí: TOTS, Últim estat: TOTS, Ahir: 0

from one Primary Care Center

from one Primary  
Care Center

to the Hospital  
destination

Taula 1. Dades de derivació i prestació								
Id. Derivació	Id. Flux únic	ID. Prestació	Estat Derivació	Data Sol·licitud	UP Origen	UP Destí	Servei destí	Prestació Sol·licitada
28108001	IdMsgIntWmb_2019-05-15 09:54:14.9e9c52	39V00290001872369	Pendent Confirmació Creació - NW	15/05/2019	EAP Barcelona 2C - Esq.Eixample Rosselló	Hospital Clínic de Barcelona	Cirurgia Maxil·lofacial	primera consulta - 117741000135105
28108966	IdMsgIntWmb_2019-05-15 10:22:40.5ce5b4	2019/355895	En curs - IP	15/05/2019	EAP Barcelona 2C - Esq.Eixample Rosselló	Hospital Universitari Sagrat Cor	Rehabilitació	primera consulta - 117741000135105
28109887	IdMsgIntWmb_2019-05-15 10:51:17.5dbfd7	WE#2019:010176	Programada - SC	15/05/2019	EAP Barcelona 2C - Esq.Eixample Rosselló	Hospital Plató	Urologia	primera consulta - 117741000135105
28109895	IdMsgIntWmb_2019-05-15 10:51:59.8cd080	39V00290001872445	Pendent Confirmació Creació - NW	15/05/2019	EAP Barcelona 2C - Esq.Eixample Rosselló	Hospital Clínic de Barcelona	Ginecologia	primera consulta - 117741000135105
28109958	IdMsgIntWmb_2019-05-15 10:52:37.4ccd7e	39V00290001872448	Pendent Confirmació Creació - NW	15/05/2019	EAP Barcelona 2C - Esq.Eixample Rosselló	Hospital Clínic de Barcelona	Al·lèrgologia	primera consulta - 117741000135105
28112423	IdMsgIntWmb_2019-05-15 12:14:06.8baee4	2019/356823	Cancel·lada - CA	15/05/2019	EAP Barcelona 2C - Esq.Eixample Rosselló	Hospital Universitari Sagrat Cor	Rehabilitació	primera consulta - 117741000135105
28112612	IdMsgIntWmb_2019-05-15 12:20:29.225c88	WE#2019:010185	Programada - SC	15/05/2019	EAP Barcelona 2C - Esq.Eixample Rosselló	Hospital Plató	Oftalmologia	primera consulta - 117741000135105

# Reporting (2)

Línia Odontològica Manso

Hospital Universitari Sagrat Cor

EAP Barcelona 2C - Esq.Example-Rosselló

EAP Barcelona 2E - Esq.Example-Casanova

## Monitoratge de dominis

Domini: --Seleccionar Valo ▾  
 Període: 2019-05 ▾  
 Data Sol·licitud: 20/05/2019 00:00:00 ▾  
 Id. Sol·licitud: --Seleccionar Valo ▾  
 Id. Flux únic: --Seleccionar Valo ▾  
 Id. Prestació: --Seleccionar Valo ▾  
 Número Autorització: --Seleccionar Valo ▾  
 UP Origen: EAP Barcelona 2C ▾  
 Prestació Sol·licitada: --Seleccionar Valo ▾  
 UP Destí: --Seleccionar Valo ▾  
 Servei destí: Dermatologia ▾  
 Últim estat: En curs; Resultats ▾  
 Ahir ? 0 ▾  
 Aplicar Restablecer ▾

## Informació detallada

Domini: TOTS, Període: TOTS, Data sol·licitud: 20/05/2019 00:00:00,19/05/2019 00:00:00,18/05/2019 00:00:00,17/05/2019 00:00:00,16/05/2019 00:00:00,15/05/2019 00:00:00

Id Sol·licitud: TOTS, Id Flux únic: TOTS, Id Prestació: TOTES, Número Autorització: TOTS

UP Origen: EAP Barcelona 2C - Esq.Example-Rosselló, Prestació Sol·licitada: TOTES

UP Destí: TOTES, Servei Destí: Dermatologia, Últim estat: En curs; Resultats disponibles, Ahir: 0

Status of the process  
and time lapse

Id. Derivació	Id. Flux únic	ID. Prestació	Estat Derivació	Data Sol·licitud	UP Origen	UP Destí	Servei destí	Prestació Sol·licitada
28107849	IdMsgIntVmb_2019-05-15 09:51:00.4146c1	19537802	Resultats disponibles - A	15/05/2019	EAP Barcelona 2C - Esq.Example-Rosselló	Hospital Clínic de Barcelona	Dermatologia	interconsulta - 204311000135100
28116545	IdMsgIntVmb_2019-05-15 14:44:09.88e8ef	19543150	Resultats disponibles - A	15/05/2019	EAP Barcelona 2C - Esq.Example-Rosselló	Hospital Clínic de Barcelona	Dermatologia	interconsulta - 204311000135100
28126776	IdMsgIntVmb_2019-05-16 09:53:00.991278	19546350	Resultats disponibles - A	16/05/2019	EAP Barcelona 2C - Esq.Example-Rosselló	Hospital Clínic de Barcelona	Dermatologia	interconsulta - 204311000135100
28129327	IdMsgIntVmb_2019-05-16 11:21:30.08d8cd	19548029	Resultats disponibles - A	16/05/2019	EAP Barcelona 2C - Esq.Example-Rosselló	Hospital Clínic de Barcelona	Dermatologia	interconsulta - 204311000135100
28133833	IdMsgIntVmb_2019-05-16 13:32:25.02a6a0	19550459	Resultats disponibles - A	16/05/2019	EAP Barcelona 2C - Esq.Example-Rosselló	Hospital Clínic de Barcelona	Dermatologia	interconsulta - 204311000135100
28151476	IdMsgIntVmb_2019-05-17 12:59:24.590c8e	19557757	Resultats disponibles - A	17/05/2019	EAP Barcelona 2C - Esq.Example-Rosselló	Hospital Clínic de Barcelona	Dermatologia	interconsulta - 204311000135100
28169893	IdMsgIntVmb_2019-05-20 13:50:23.61ace1	19568700	En curs - IP	20/05/2019	EAP Barcelona 2C - Esq.Example-Rosselló	Hospital Clínic de Barcelona	Dermatologia	interconsulta - 204311000135100
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28170841	IdMsgIntVmb_2019-05-20 14:40:28.695ae0	19569061	En curs - IP	20/05/2019	EAP Barcelona 2C - Esq.Example-Rosselló	Hospital Clínic de Barcelona	Dermatologia	interconsulta - 204311000135100
28170984	IdMsgIntVmb_2019-05-20 14:49:58.790568	19569746	En curs - IP	20/05/2019	EAP Barcelona 2C - Esq.Example-Rosselló	Hospital Clínic de Barcelona	Dermatologia	interconsulta - 204311000135100

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CLÍNICA  
BARCELONA  
Hospital Universitari

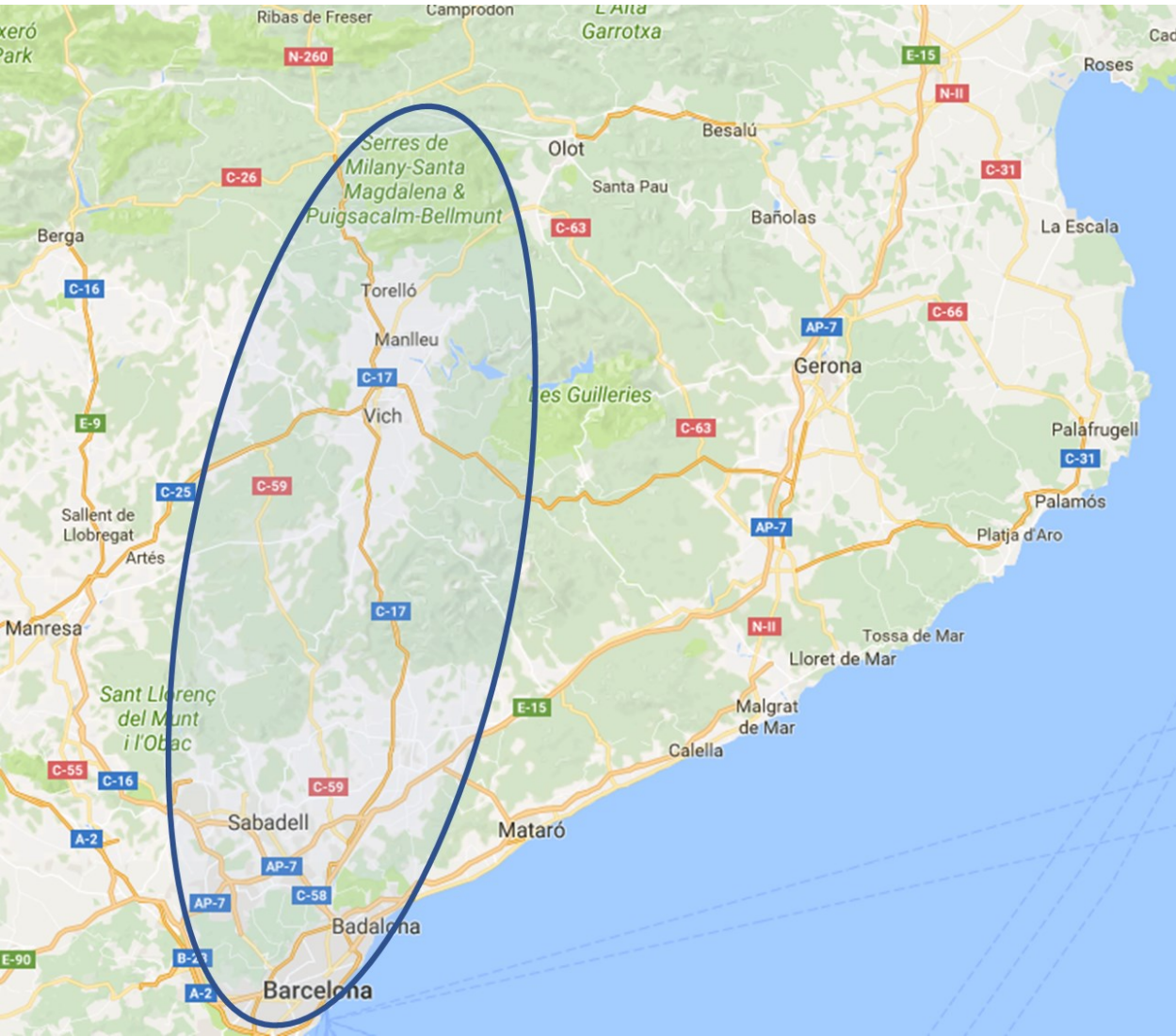
**AIM**

steps forward





# The ongoing C-17 project



- Tertiary care
  - Oncology
  - Surgery
  - Complex diagnosis
- Specific patient data
  - Oncology
    - Lung Cancer
    - Breast Cancer
    - Leukemia / Lymphoma
    - Ovarian cancer

# Facing new challenges

- Full coverage of the implemented processes
- Development of new functionalities
  - Event notifications
  - Patient's connection
- Decentralized management
  - Monitoring improvement
  - From reporting towards a Territorial Clinical Scorecard
- Governance and Quality issues
  - Functional refinement
  - Cancer registry

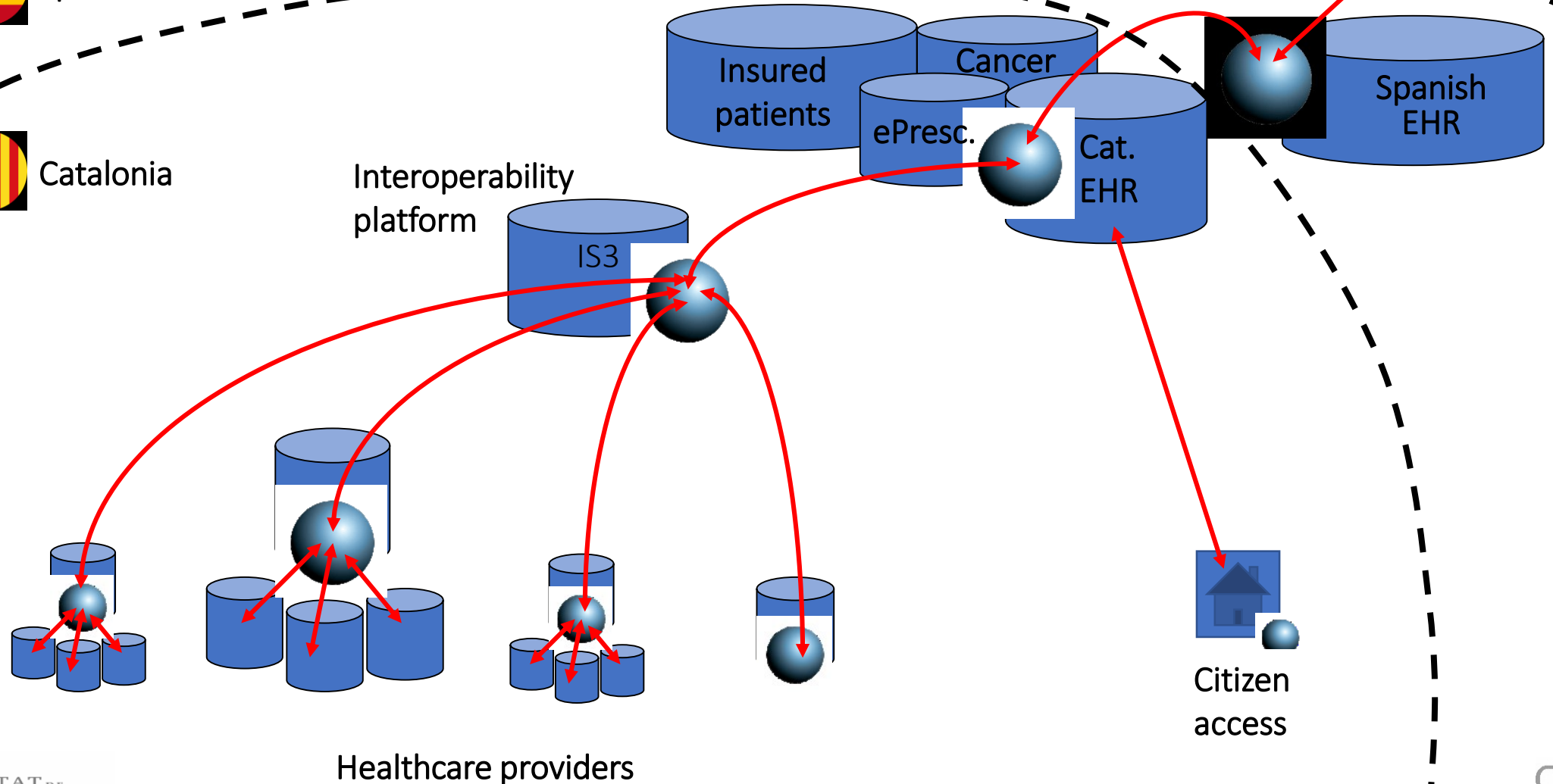
# 2019: Public healthcare collaboration



Spain



Catalonia



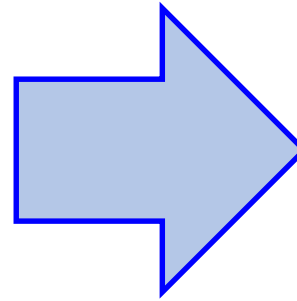


# Concluding remarks

It's possible to redesign and improve healthcare processes with ICT support

Key factors for success are:

- Leadership
- Transparency
- Governance
- Professional involvement
- Agreements
- Methodology



Return of investment includes more things than savings or revenues:

- Better quality of care
- A big field for research and growth of new ideas
- Stimulus for organizational development and improvement
- Trust to afford new objectives



... and satisfaction because

- Milestones reached → **Project accomplishment**
- Professional acknowledgement → **Real added value**
- Patient's reconnaissance → **"Healthcare has improved" ....**



be patient



Thank you very much for your attention!!!

[xpastor@clinic.cat](mailto:xpastor@clinic.cat)