A Patient-Driven Interoperability Model

Catalonia Public – Private Healthcare Coordination

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Characteristics of the Catalan Health System

Universal Coverage

Created in 1990 under the principle of universality so that individuals and communities can receive health services

Public Financing

The system is financed by general taxes and State funds and contributions.

Territorial Equity

Dense network of Primary Care Centers, hospitals and intermediate care centers

Collaborative Model

Different entities collaborate in the provision of services with management autonomy

8.115.895

Population of Catalonia (1/1/25)

15.500M€

CatSalut budget (2024)

> 2,000

Points of attention

> 160

Health service providers for the provision of healthcare services, total **of 786 contracts**

129 millions

Patient **encounters** (2023)

114 millions

Medical Reports Published (2024)

58 millions

access to My health

7,77

User satisfaction

86%

Loyalty

Characteristics of the Catalan Health System

Functions	Health insurance scheme

		Population of Catalonia (01/01/25)	8.115.895	100%
Tax collection	Government	Double coverage	2.637.666	32,5%

Health authority planning and financing	Department of Health

Insurance purchase of services	Catalan Health Service

Provision of health services	Suppliers involved by the Generalitat	Suppliers not involved by the Generalitat	Suppliers Catalan Health Institute	Private centers
	22 hospitals 32 EAP 14 socio-sanitary 10 social centers	36 hospitals 23 PHC 13 socio-sanitary 19 social centers	8 hospitals 292 EAP	432 Centers (8 hospitals)

The Private Sector in Catalonia

% Number of Inpatient Beds

Private 17%

Public 83%
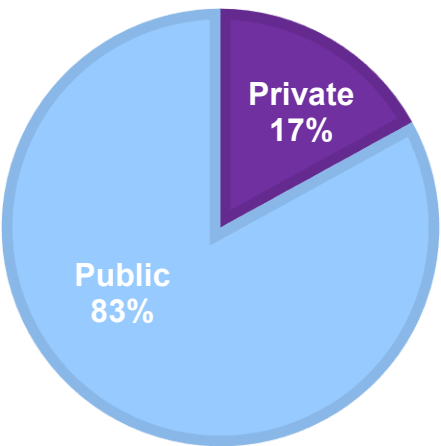
Companies
264

Centers
432

Employees
14.628

Medical Professionals
6.954*
(15,35% of 45.291 registered Medical doctors (1)

Acute care beds in private centers in Catalonia
2.714
17,25% of 15.733 totals (2)

Social and health care beds in private centers in Catalonia
2.128
31,77% of 6.698 totals (2)

Medical discharges in private acute centers
216.339
24,31% activity of 889.869 totals (2)

Reference sources:

○ https://www.aces.es/Uploads/docs/Presentacio_ACES_4YFN.pdf

○ EESRI https://scientiasalut.gencat.cat/bitstream/handle/11351/10478/estadistica_centres_hospitalaris_catalunya_2019.pdf?sequence=1&isAllowed=y

Lab Reports: A Key Case

Contributions of this project in the laboratory:

- Patient safety (reduced errors, critical alerts)

- Treatment speed (rapid interpretation)

- Diagnostic accuracy (longitudinal + contextualized data)

- Resource efficiency (fewer repeats, targeted testing)

Lab Reports: A Key Case

Real-World Clinical Scenarios & Evidence of Clinical Impact

Without IPS	With IPS-Enhanced LAB Data
Clinician misses a rising creatinine trend in fragmented records.	**Automated alert:** "eGFR dropped 40% in 3 months → possible AKI."
ER repeats labs due to missing/incomplete history.	**Pre-filled critical labs:** Troponin, electrolytes, and anticoagulant levels available instantly.
Hyponatremia (Na+ 125 mmol/L) treated without checking medications.	**Alert:** "Na+ 125 + taking hydrochlorothiazide → stop diuretic, fluid restrict."

- **37% reduction in lab-related ADEs** (Adverse Drug Events) in IPS-adopting health systems **(ONC data).**

- **50% faster ED triage** when IPS delivers prioritized labs with clinical context **(HIMSS Analytics).**

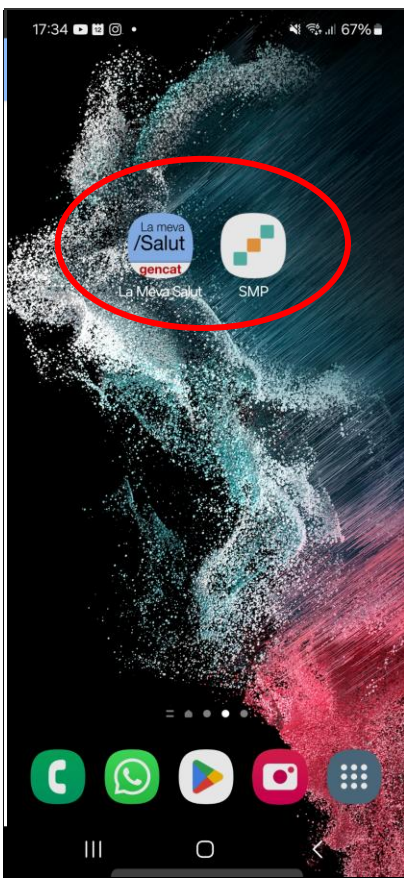- **Fewer redundant tests**: ~15% reduction in duplicate labs after IPS rollout **(KLAS Research).**

"Cross-border" and its Complexity

- Change some healthcare private organizations mindset.

- Fulfill GDPR Security and Privacy Requirements

- Impossible to set up direct connection between organizations

- Impossible to deploy a big central repository

- EHR not implementing HL7 standards and IHE Profiles.

Patient-Driven Interoperability

- Health data exchange is patient-mediated and patient-driven

- More than 2,2 millions Paper Lab reports have been exchanged by patient since 2020

- Initially inspired on Blue Button, and now following xShare YellowButton

- Focused on the "letter" not on the "envelope"

- Using a user know sharing model, Mobile App

Keep It Simple: How to Interoperate in 6 Steps

# EHR Project Participants Requirements

- Vendor Neutral, and based on Open Standards and Profile

- EHR must be certified on selected IHE Profiles

- Document Content: IPS (CDA/FHIR), XD-LAB, PRE, XDS-SD

- Document signature based on CDA HL7 SD IG and FHIR Composition Signature

- Mandatory to register ATNA traces on Login, Export and Import

Project Impact and Achievements

Salut/

Reference population 480.296	
Publications shared clinical history 5.457.306	
Derivatives intermediate products 20.858	
Documents provided by the citizen 25.066	
Global IPS downloads (Yellow Button) 60.076	

SMP. SERVEIS MÈDICS PENEDÈS

Number of patients 59.845
Publications Shared clinical history 493.879
Medical procedures + 780.000 year 2024
Average new CDA + 10.000 /month
Results (Yellow Button) downloads 3.676 /month
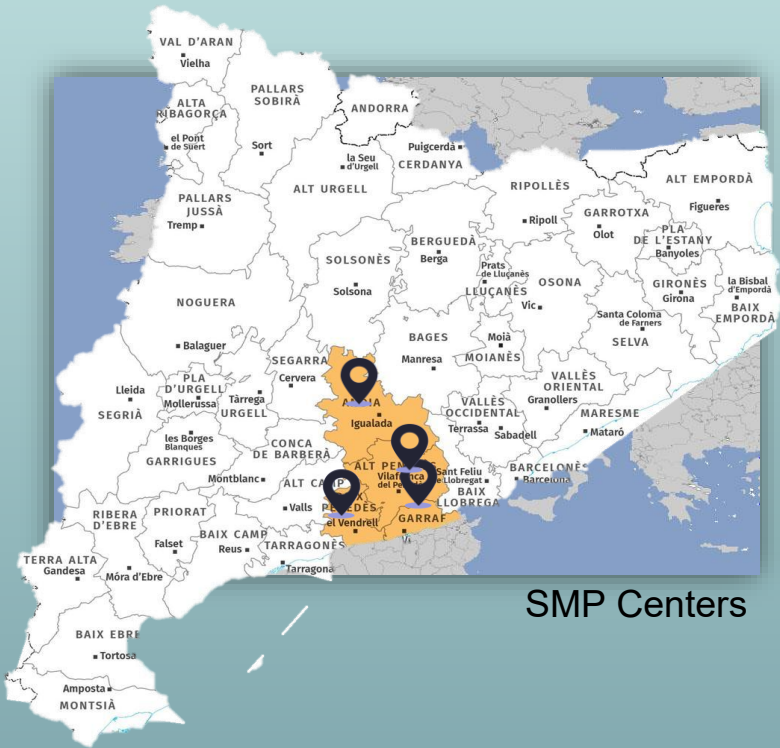
SMP Centers

Project Evolution

- **DEXEUS WOMEN'S HEALTH**

  - First IHE IPS Complete Option "Pregnancy History"

  - Coordinate Public/Private Pregnancy Episode

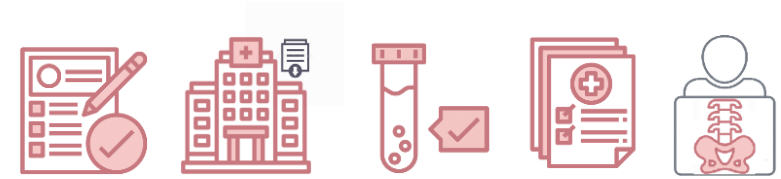 - Based on IPS/EPS, Lab Results, Imaging exchange

Collaborating with healthcare provides (Clinica Girona/Clinica Bofill)

European Health Data Space (EHDS) Regulation Opportunities

- IG on most relevant document's types

  o Summary, Discharge, Laboratory, Prescription, Imaging

- As a regulation hope to accelerate new EHR project adoption

- "Natural" evolution of current model (CDA to FHIR; ATNA + FHIR)

- As its FHIR based, new FHIR profiles opportunities (MHD, Smart Links)

- Leveraged by xShare Project

THANK YOU

I ❤ INTEROPERABILITY