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The power to reshape the health ecosystem by embracing open platforms at scale: The Catalanian decision

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Catalan Health Service





Highlights on the Catalan Health System



7,722,203

Population in Catalonia on January 1, 2023.



Universal coverage

The publicly health care system of Catalonia was founded in 1990 under the principle of universality; so, all individuals and communities can receive the health services.



15,000 M€

Catalan Health Service budget for 2023. The system is funded from general taxation, government funds and contributions.



> 160

Health care entities to provide health care services.



> 16,000

Applications across the Catalan Health System:

- 1 EMR for primary care.
- > 29 EMR products in hospitals.
- At least 10 different systems for social care records.

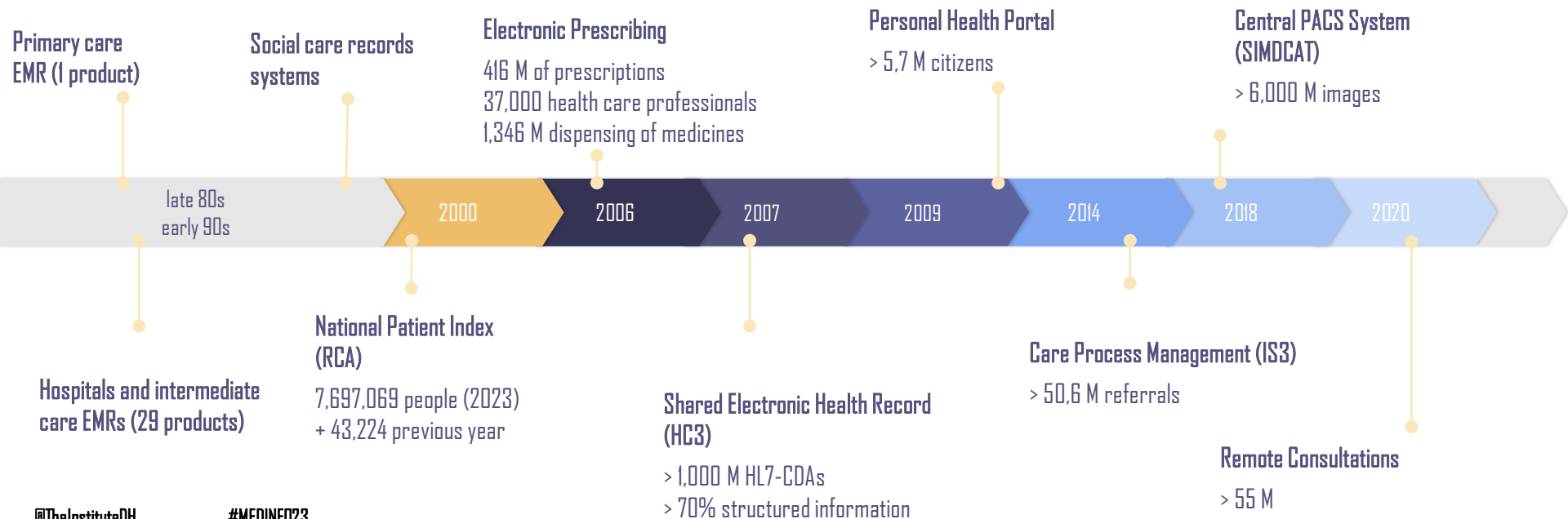


940

Facilities that range from primary health care centres to hospitals and intermediate care centres.



The Catalan Digital Health Platform



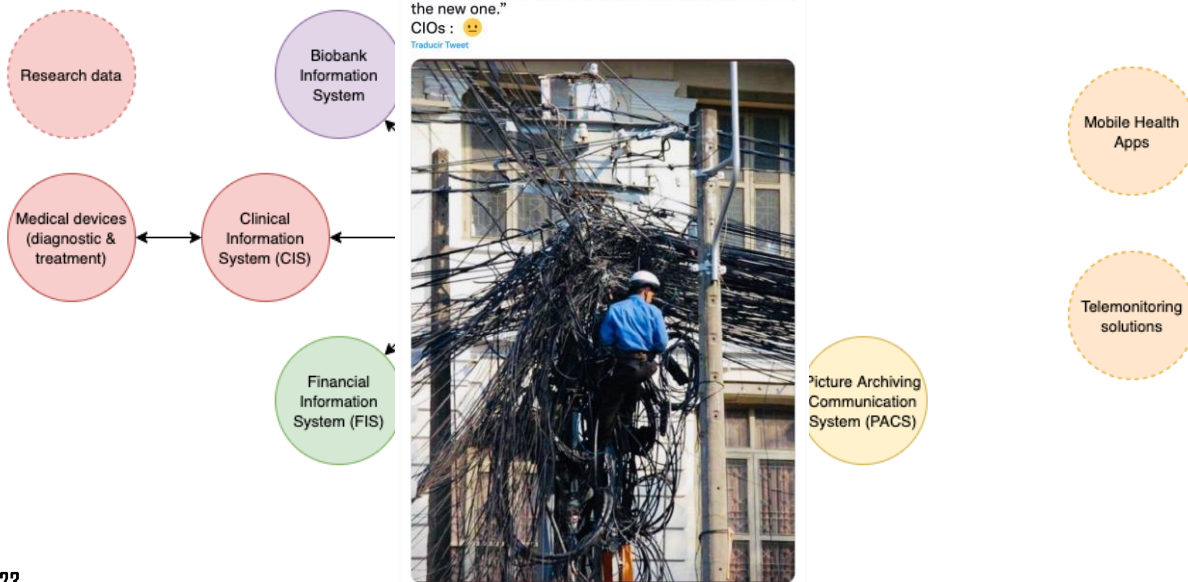


It's all about data silos...

- 71 hospitals and 29 different EMR products
- Each tertiary hospital has around 800 silos of information
- Each secondary hospital has around 400 silos of information
- Our prospections indicate us we have more than 16k silos of patient related information being the EMRs the biggest source
- Huge heterogeneity of proprietary data models

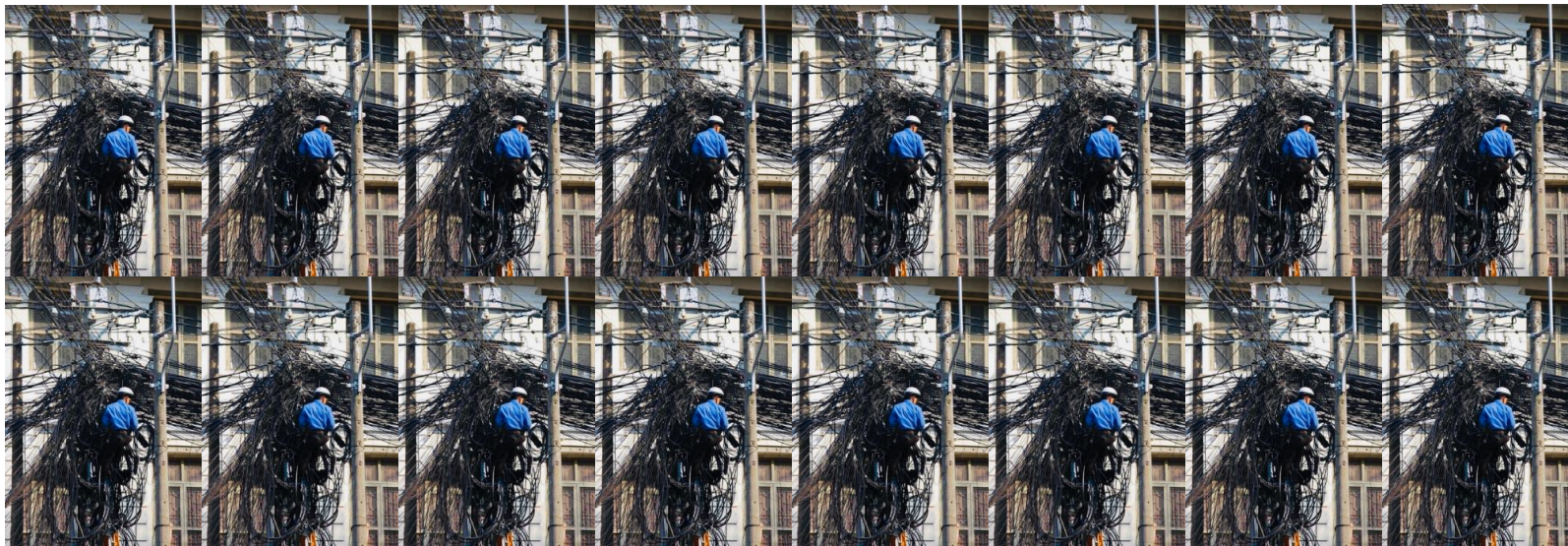


The EMR is a complex system of systems





Trying to build a longitudinal EHR is drama





Data is not understood

> J Am Med Inform Assoc. 2022 Apr 13;29(5):753–760. doi: 10.1093/jamia/ocab289.

Quantitating and assessing interoperability between electronic health records

Elmer V Bernstam^{1 2}, Jeremy L Warner³, John C Krauss⁴, Edward Ambinder⁵, Wendy S Rubinstein⁶, George Komatsoulis⁶, Robert S Miller⁶, James L Chen⁷

Affiliations + expand

PMID: 35015861 PMCID: PMC9006690 (available on 2023-01-07)

DOI: [10.1093/jamia/ocab289](https://doi.org/10.1093/jamia/ocab289)

- Allscripts
- Varian Medical Systems
- General Electric
- Cerner
- Epic Systems
- IntrinsicQ
- Elekta
- NextGen
- Flatiron Health

As defined in the study, ***intra-vendor interoperability*** refers to the ability to share information between instances of the same vendor's product (e.g., Epic > Epic). ***Inter-vendor interoperability*** refers to the ability to share information between instances of different vendor products (e.g., Epic > Cerner)."

A recent study of EHR interoperability found that **68% of data was "understood" when exchanged across different sites using the same vendor**, but only **22% was "understood" when exchanged across different EHR vendors.**



Unwarranted variation of data = unwarranted variation of care?

Ridding NHS of “unwarranted variation” could save £5bn a year, says report



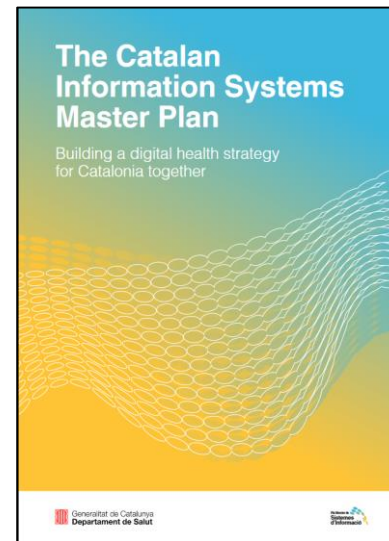
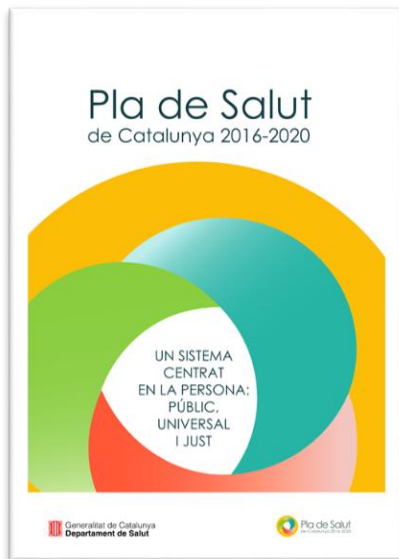
Making a Dent in the Trillion-Dollar Problem: Toward Zero Defects

Prof. Peter Pronovost





The Digital Health Strategy for Catalonia



<https://bit.ly/3WNwGhH>



(Our) current model of HLT: limitations

Broad ecosystem of applications with buried business logic and data models.

Old-fashioned solutions and a dramatic increase in technical debt.

Communication between service providers and the NHS through static and limited interoperability solutions.

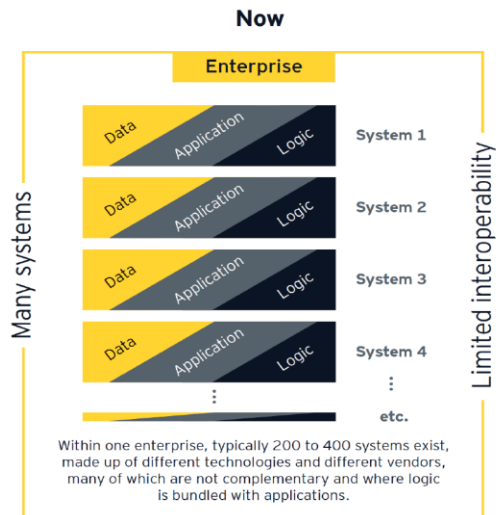
High costs for maintenance, corrective and evolutionary development.

Difficulties to scale-up innovations and best practices.

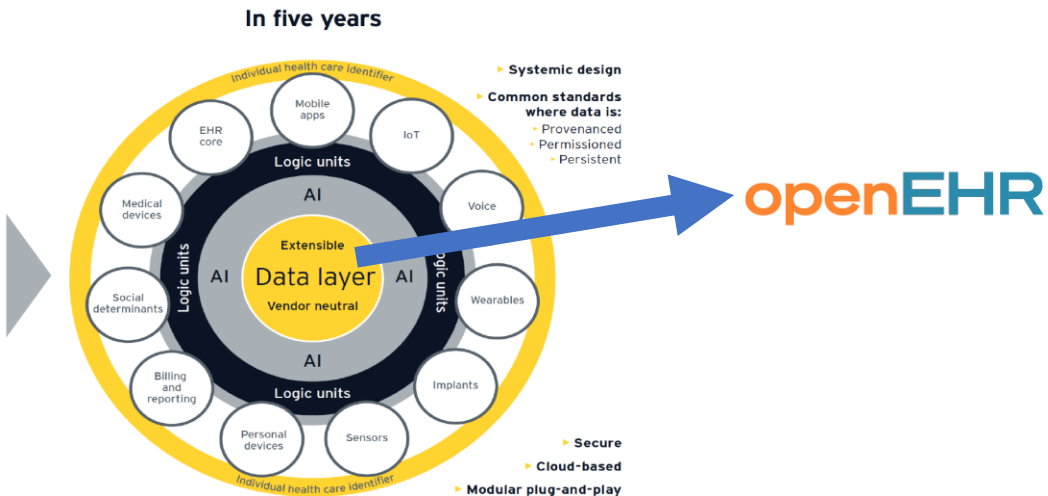
Rigid model that does not foster adaptation to change.



Current vs future view



Present: Many systems all with intimately bound data logic and applications



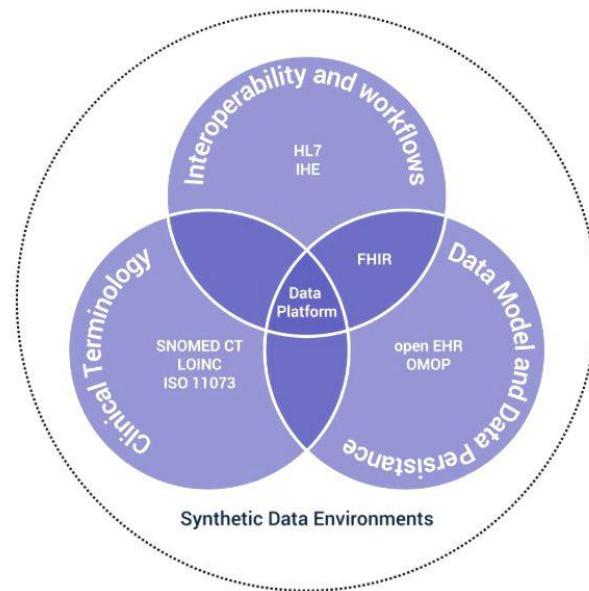
Future: A cohesive technology stack, giving a unified experience for clinicians, professionals and patients; unique data at the center accessed by applications in real time through micro-services





The open platform is standard agnostic

- Data focused
- Engineered for all care settings
- Longevity of standardised data
- Supports value-based care
- Citizen focused
- Lifelong health records – 100 years+
- Adaptive and additive
- Orchestrated and modular
- AI-ready



Source: Prof. Rachel Dunscombe



Our view for an open future

- We are building an INFOSTRUCTURE
 1. Business processes
 2. Information needs
 3. Applications
 4. Technology
- We are decoupling data from applications, storing data in an open format
- This will foster better integration and collaboration
- It will help scaling-up innovations
- This will facilitate the systematic use of health data



A promise long term overdue

"...pushing information and knowledge to the point where health decisions are made, so the right decision can be made at the right time".

Source: Information for Health: A Strategy for Building the National Health Information Infrastructure, National Committee on Vital and Health Statistics (2001).

"It is more important to know what sort of person has a disease than to know what sort of disease a person has".

Source: Hippocrates (460 BC).



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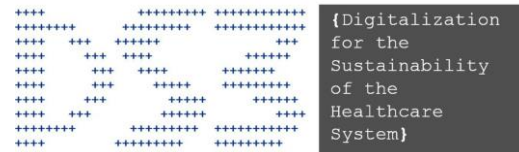
Thanks!

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Salut/ Servei Català de la Salut