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Health

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The Role of Digital Health in Integrated Care Delivery

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Digital Health Tools

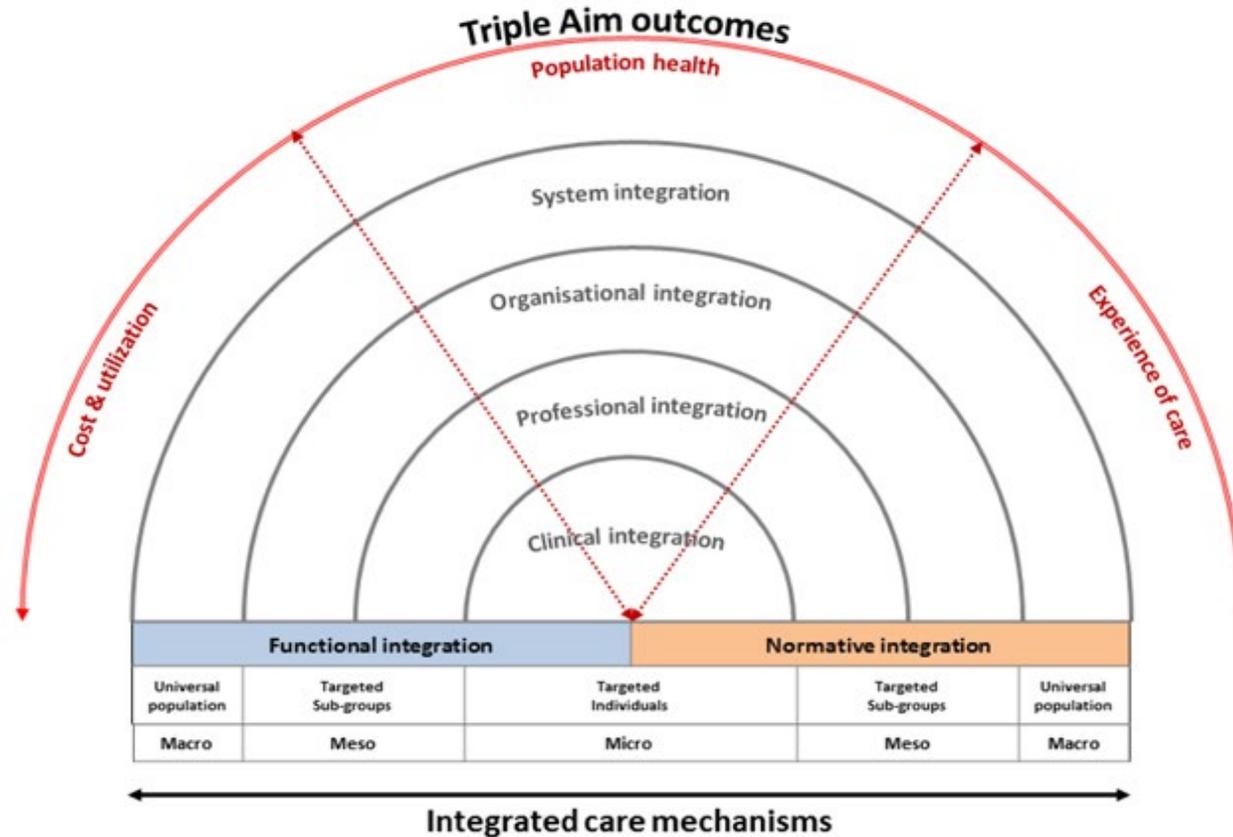
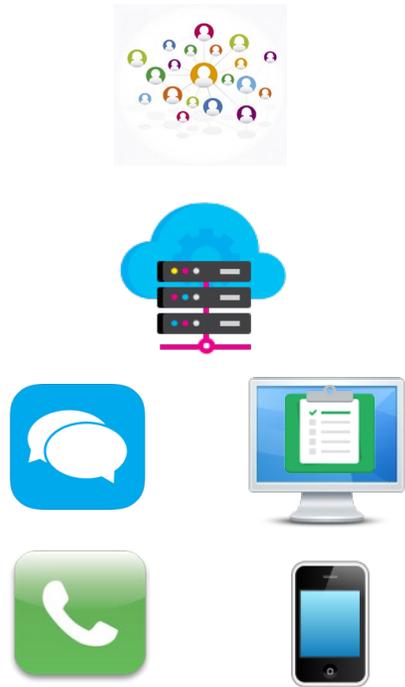


- eHealth – information communication technologies
- mHealth – mobile devices
- Telehealth/telemedicine/telecare (phone or video care)
- Health Records (EMRs, EHRs, PHRs)
- Health Information Exchange
- Big data in health
- Artificial Intelligence in health

Steele Gray, Gagnon, Guldemond & Kenealy. "Digital Health Systems in Integrated Care" in V. Amelung et al (Eds) *Handbook Integrated Care, Vol 2*. Springer International Publishing *forthcoming, April 2021*



Digital Health in Integrated Care



Social artefacts
that can influence
normative
integration



Lupton, D (2014). Apps as Artefacts: Towards a Critical Perspective on Mobile Health and Medical Apps. *Societies*, 4(4): 606-622

Valentijn PP et al. Understanding integrated care: a comprehensive conceptual framework based on the integrative functions of primary care. *IJIC*. 2013;13:e010.



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In the before times...

Comparative case study of 9 cases (3 Ontario, 3 Quebec, 3 New Zealand)

- What functionality, use and role does ICT play to enable activities of integrated models of community-based primary health care?
- What are the implementation enablers and challenges in adopting ICT across different organizational contexts?

Steele Gray et al. *Implementation Science* (2018) 13:87
<https://doi.org/10.1186/s13012-018-0780-3>

Implementation Science

RESEARCH

Open Access



Using information communication technology in models of integrated community-based primary health care: learning from the iCOACH case studies

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Abstract

Background: Information communication technology (ICT) is a critical enabler of integrated models of community-based primary health care; however, little is known about how *existing* technologies have been used to support *new* models of integrated care. To address this gap, we draw on data from an international study of integrated models, exploring how ICT is used to support activities of integrated care and the organizational and environmental barriers and enablers to its adoption.

Methods: We take an embedded comparative multiple-case study approach using data from a study of implementation of nine models of integrated community-based primary health care, the *Implementing Integrated Care for Older Adults with Complex Health Needs* (iCOACH) study. Six cases from Canada, three each in Ontario and Quebec, and three in New Zealand, were studied. As part of the case studies, interviews were conducted with managers and front-line health care providers from February 2015 to March 2017. A qualitative descriptive approach was used to code data from 137 interviews and generate word tables to guide analysis.

Results: Despite different models and contexts, we found strikingly similar accounts of the types of activities supported through ICT systems in each of the cases. ICT systems were used most frequently to support activities like care coordination by inter-professional teams through information sharing. However, providers were limited in their ability to efficiently share patient data due to data access issues across organizational and professional boundaries and due to system functionality limitations, such as a lack of interoperability.

Digitally Enabled Integrated Care Activities

Level of integration	Activity	ON case 1	ON case 2	ON case 3	QC cases 1-3	NZ case 1	NZ case 2	NZ case 3
System : Community resources and policies	Information sharing (health to social care)		.		.	.	.	.
	Informed management decisions							
System: Health system	Quality improvement	.	.	.				
	Case finding	.	.			.	.	.
Organization & Professional: Delivery system design	Action planning				.	.	.	.
	Care coordination	.	.	.				
	Assessment							
	Electronic referral	.						
	Remote monitoring		.					
	Prevention activities	.			.	.	.	.
Clinical: Self-management support	Part of care planning				.	.	.	.
	Collaborative decision-making		.		.			.
	Provide access to resources					.	.	.
Clinical: Decision-supports	Clinical guidelines				.	.		
	Referral pathways					.		
	Peer support					.		
All levels: Clinical information systems	Documentation	.	.	.	.	.	.	.
	Clinical level	.	.	.	.	.	.	.
	Regional level				.	.	.	.

Valued by leaders in collecting performance measure data - however not all providers see that data as important/relevant to integrated care

Often a static care plan that sits in an EMR as a form where only some of the care team has writing privileges

Most often around accessing evidence-based guidelines.

Implementation factors

Implementation constructs	Ontario	Quebec	New Zealand
Characteristics of individuals	Personal values/norms Task/work coherence eHealth literacy	Personal values/norms Task/work coherence eHealth literacy Training	Personal values/norms Task/work coherence eHealth literacy Training
Organizational environment	Organizational policy Technical support		Organizational policy and culture Technical support
External environment	Regulations and data access Connections between		Regulations and policy (privacy, data access) Cost/funding
Characteristics of technology	Functionality (interoperability)	Functionality (interoperability) Usability	Functionality (interoperability) Usability

Explored through implementation narratives focusing specifically on how information sharing to support care coordination was enabled or hindered by individual, organizational, environmental and technological factors

How the Policy Context Shaped Implementation

All three jurisdictions have strong legislation and regulations around patient data privacy and security



- “Light-touch” policy environment
- Grassroots interventions
- Fragmentation in system and existing ICTs

Workarounds and multi-step connections



- Centralized government-initiative
- Several centralized digital assets (regional utilization and home support platforms)

Permission barriers based on professional designation



- Integrated models based on local initiatives BUT, centralized digital assets with unique patient identifiers

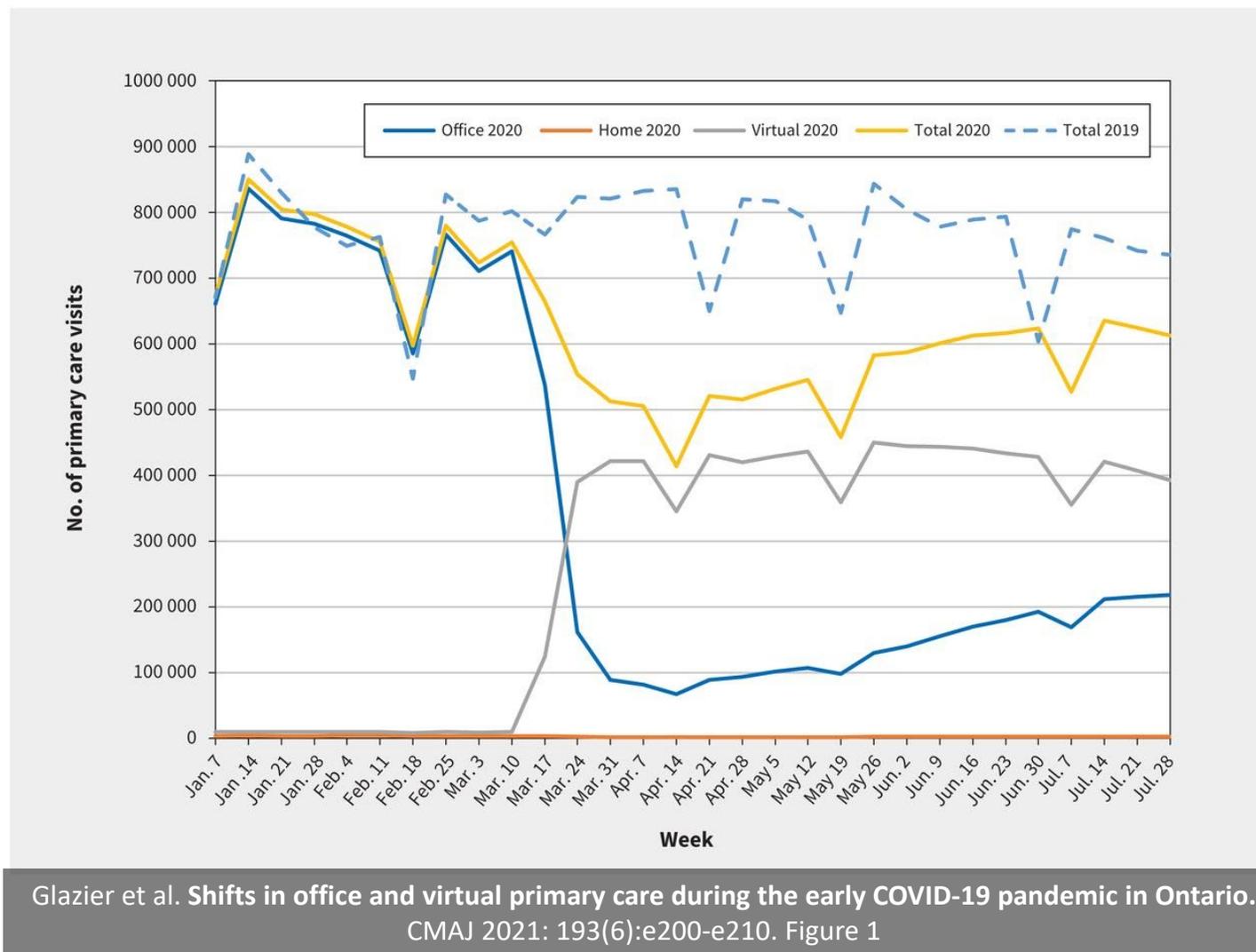
Getting close – but still multiple logins & professional restrictions

All made more challenging due to organizational and professional **inertia**



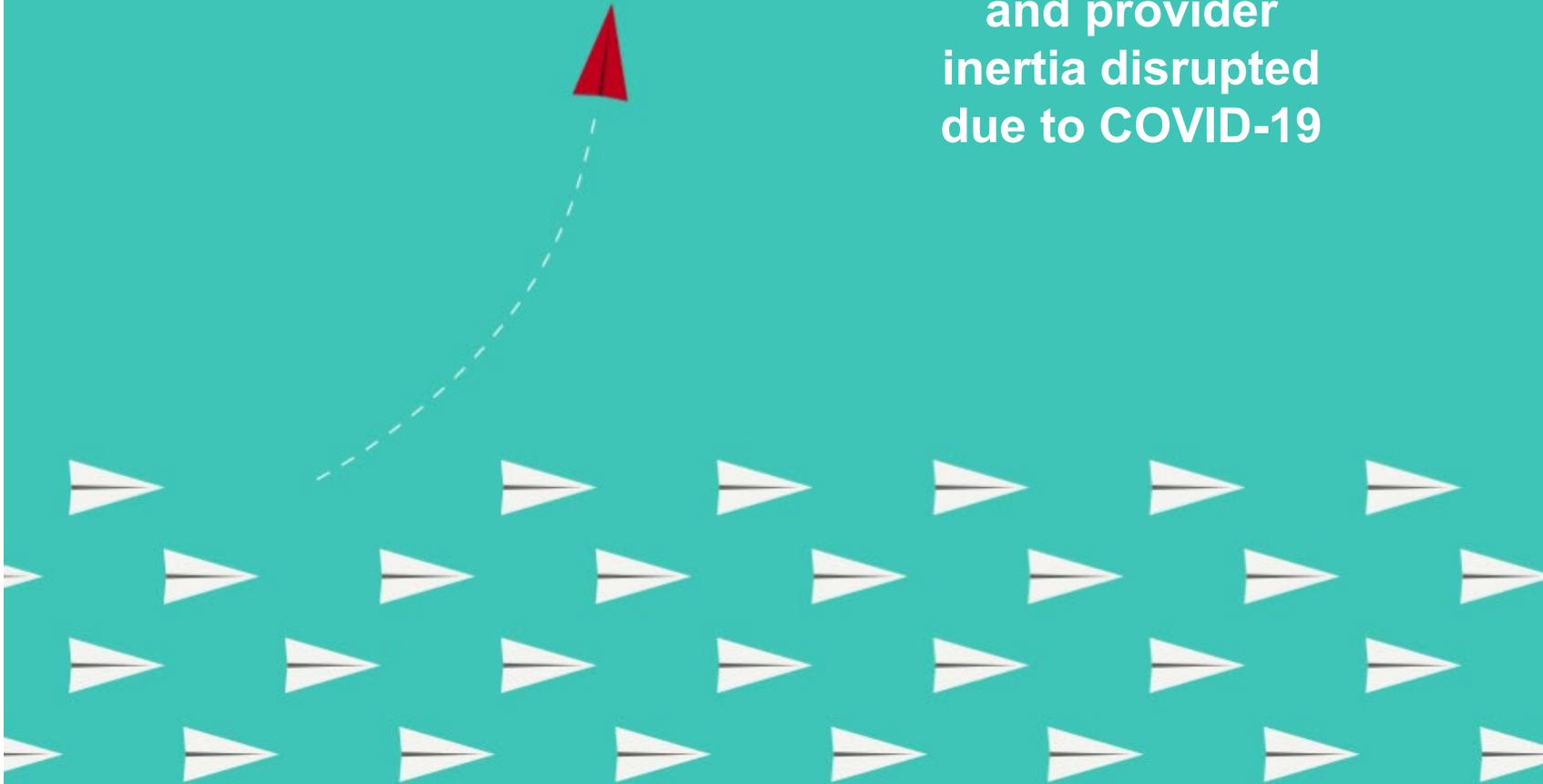
But what about the now times?

- Virtual visits increased significantly in the early period (512 visits per week), but declined later
- Cite a Women's College evaluation pilot study that when provided with a choice, more than 90% of visits occurred asynchronously via texting



Glazier et al. Shifts in office and virtual primary care during the early COVID-19 pandemic in Ontario. CMAJ 2021; 193(6):e200-e210. Figure 1

**Organizational
and provider
inertia disrupted
due to COVID-19**



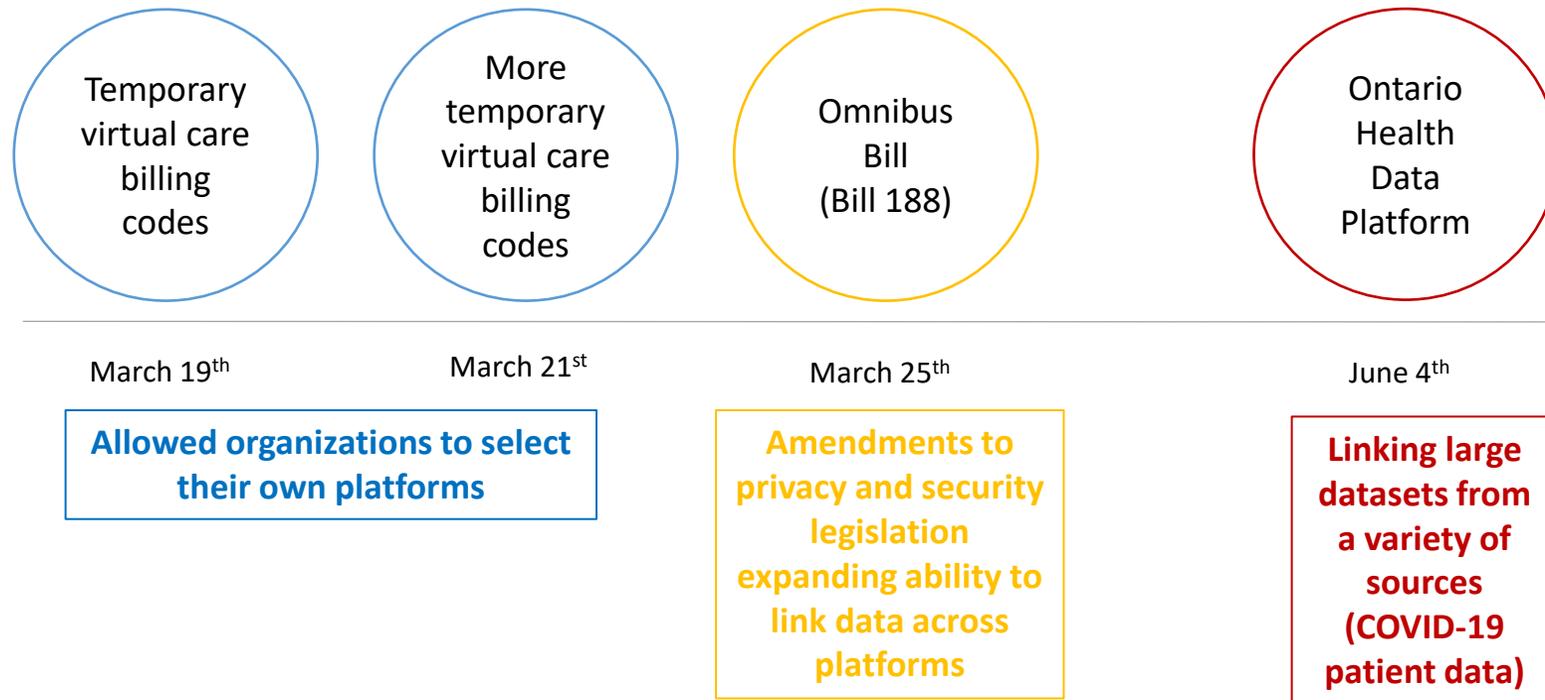
VIRTUAL CARE IN CANADA:

Discussion paper

What about Policy Inertia?

- Canadian Medical Association 2019 Report identifying 3 system level barriers to wider adoption of virtual care:
 1. Insufficient payment mechanisms
 2. Varying licensure requirements
 3. Lack of interoperability (and related privacy and security issues)

Regulatory Changes in Ontario

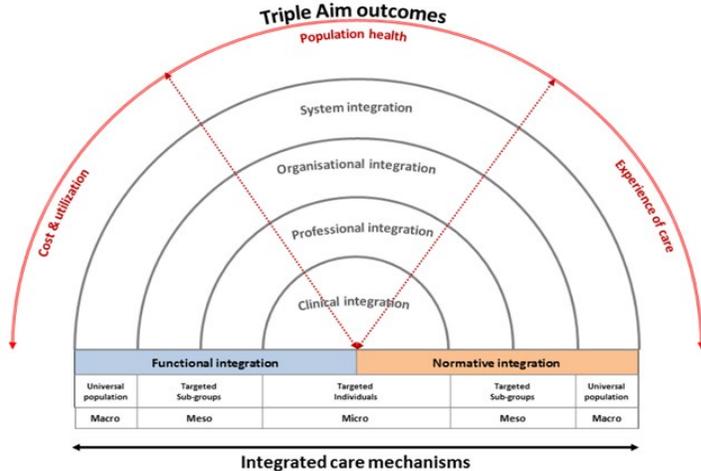
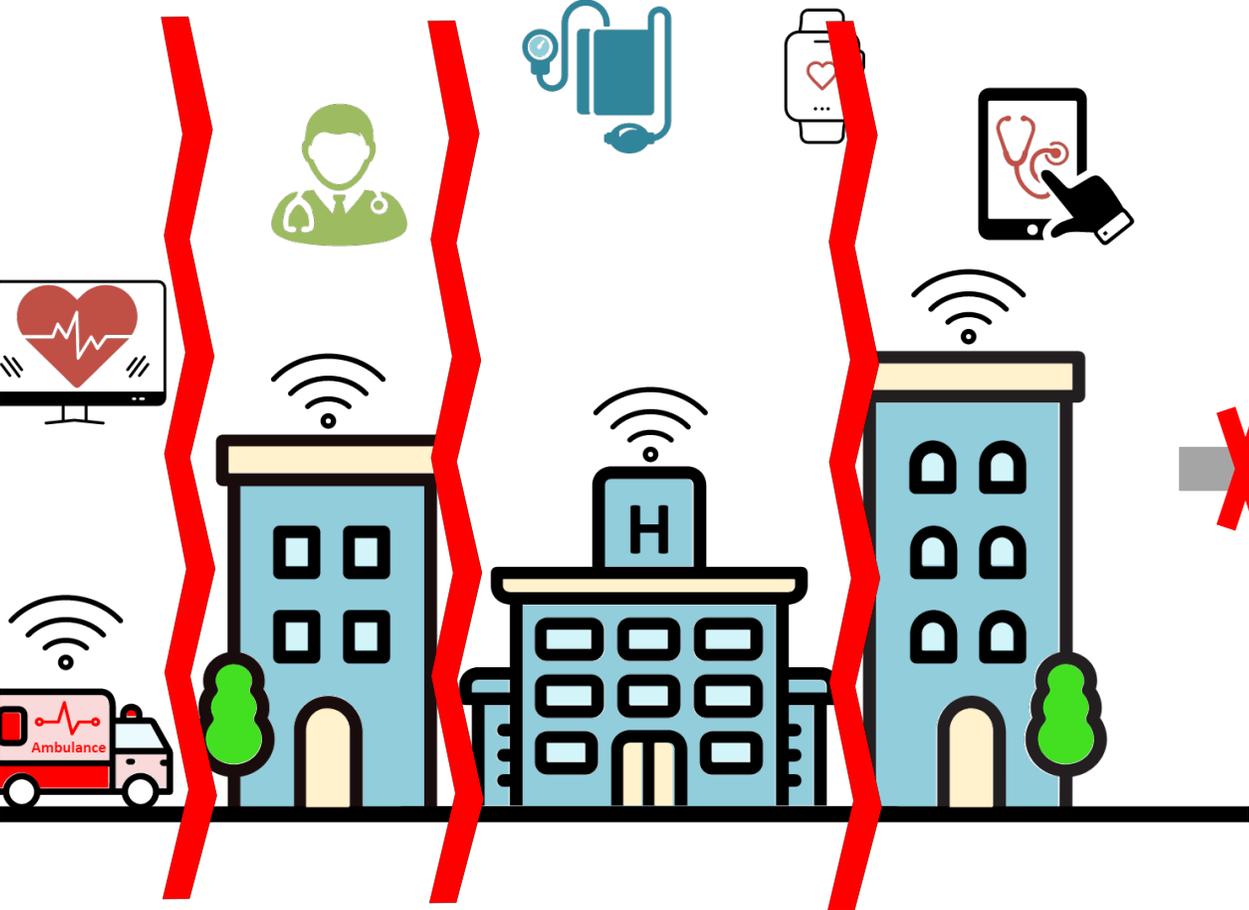


Payment mechanisms
Better

Interoperability
Precedent

Cross provincial licensure
Not so much

The Opportunity and the Risk





Shining example in Catalonia, Spain

Special Interest Group in Digital Health Enabling Integrated Care



https://integratedcarefoundation.org/sig_groups/digital-health-enabling-integrated-care [info]

<https://integratedcarefoundation.org/events/digital-health-enabling-integrated-care-webinar-series-2#1575628205259-cc2b6985-05a9> [webinars – next April 20th]

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