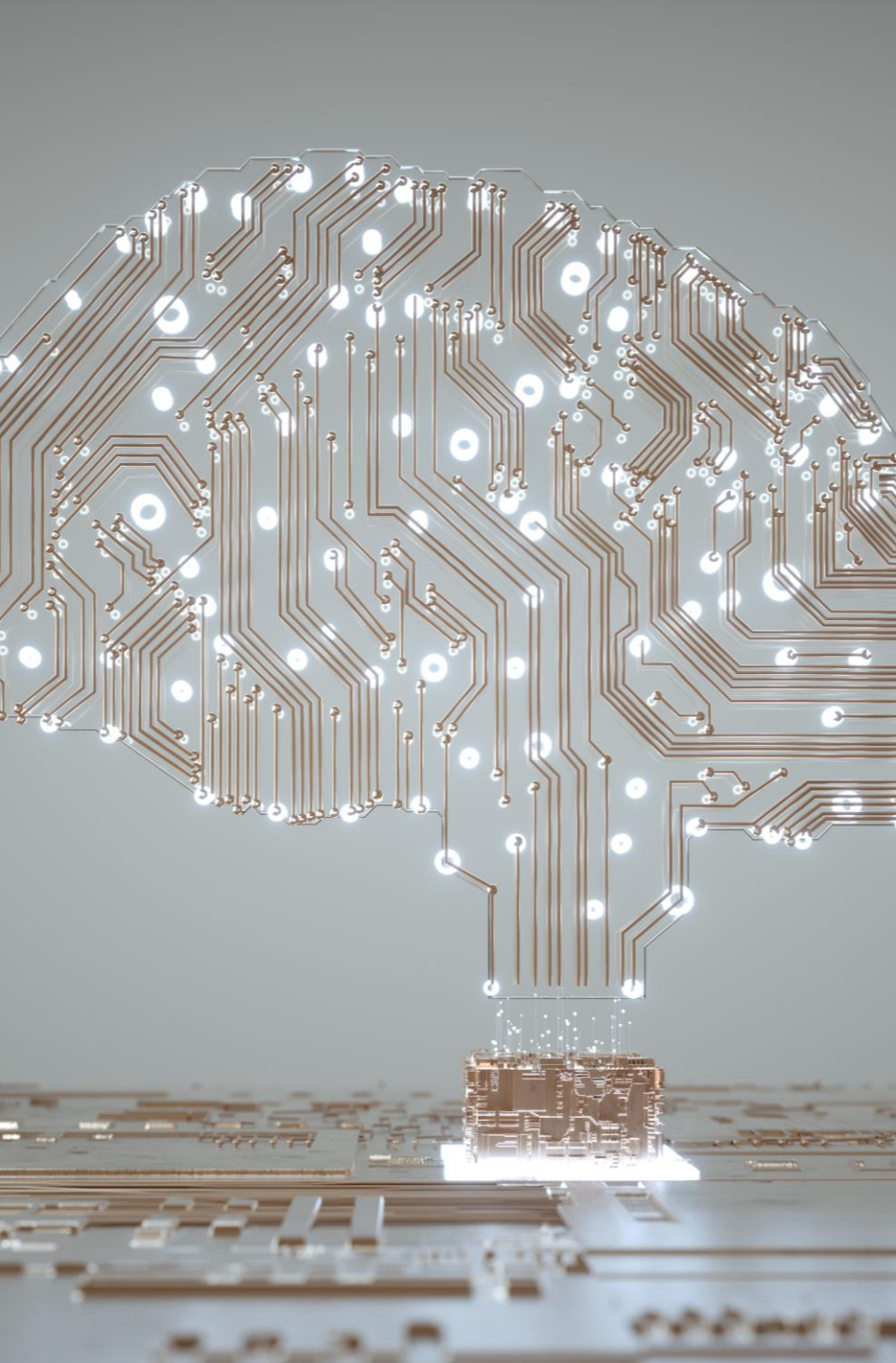


DATA is here to stay. How to use data to create value in Healthcare+

Nasim Bergman Farrokhnia, MD PhD MBA (essential/via LSE)
Industry Advisor/Healthcare Executive WE Microsoft
Chair of eHealth Doctors (Swedish Medical Association)
Co-founder of www.digitalcarereseach.se





Key Messages

Increase **Quality** of Care with Data

AI: machine learning and NLP, RPAs (automations), Decision support tools (nudging)

Provide more **Value** to Patients by Digitizing HC

User-friendliness (UX), Accessibility, Co-creation

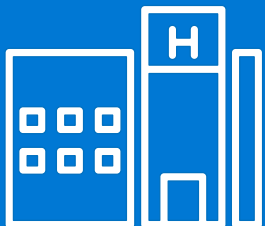
Healthcare Data **Interoperability** is essential

Standards (FHIR, OpenEHR, SNOMED), Regulations

Change Management a must-have

5 Trends

DRIVING
INTELLIGENT
HEALTH



Rapidly emerging technologies



1 GB

Today, an **average of 1GB of health-related data** is created daily per person.¹

Aging populations



2 billion

people in 2050 will be over 60 years old, representing an increase of 10% over today's aging population.³

Shortage of healthcare workers



14 million

healthcare worker positions will go unfilled in 2030 as the world experiences a **global shortage of healthcare workers**.⁵



\$6.2 billion

is lost due to data breaches to the health industry every year, leading to increased **pressure in security and compliance**.²

Growing cybersecurity threats



97%

of patients have **raised expectations** around their healthcare, expecting every health institution to have access to their full medical history.⁴

Increasing patient expectations

Digital Transformation in Healthcare: OECD Perspective

*“Health lags far behind other sectors in harnessing the potential of data and digital technology, missing the opportunity to **save a significant number of lives** and billions of dollars. A digital transformation is urgently needed and long overdue at a time of increasing pressure on health systems and budgets. This means **ensuring access to the right information by the right people at the right time**. The results will be safer, better and more efficient health systems and healthier populations.”*

OECD (2019), Health in the 21st Century: **Putting Data to Work for Stronger Health Systems**, OECD Health Policy Studies, OECD Publishing, Paris, <https://doi.org/10.1787/e3b23f8e-en>.

Voices of Healthcare Providers (*Microsoft Customers*):

"I want to **prevent readmissions**"

"**Chronic care** patients need to be treated at home as far as possible"

"My operations need to be patient centric"

"Patients should feel more connected with Healthcare"

"I want to create a Nationwide Cardio Health program"

"I want to become **data driven hospital**"

"**Security and privacy** of patient data is indispensable "

"Want to **monitor my operations in real time**"

"I want to roll out new digital services for our patients"

"I'm working on internal **Cultural Transformation**"

"I don't have Digital Skills in my organization"

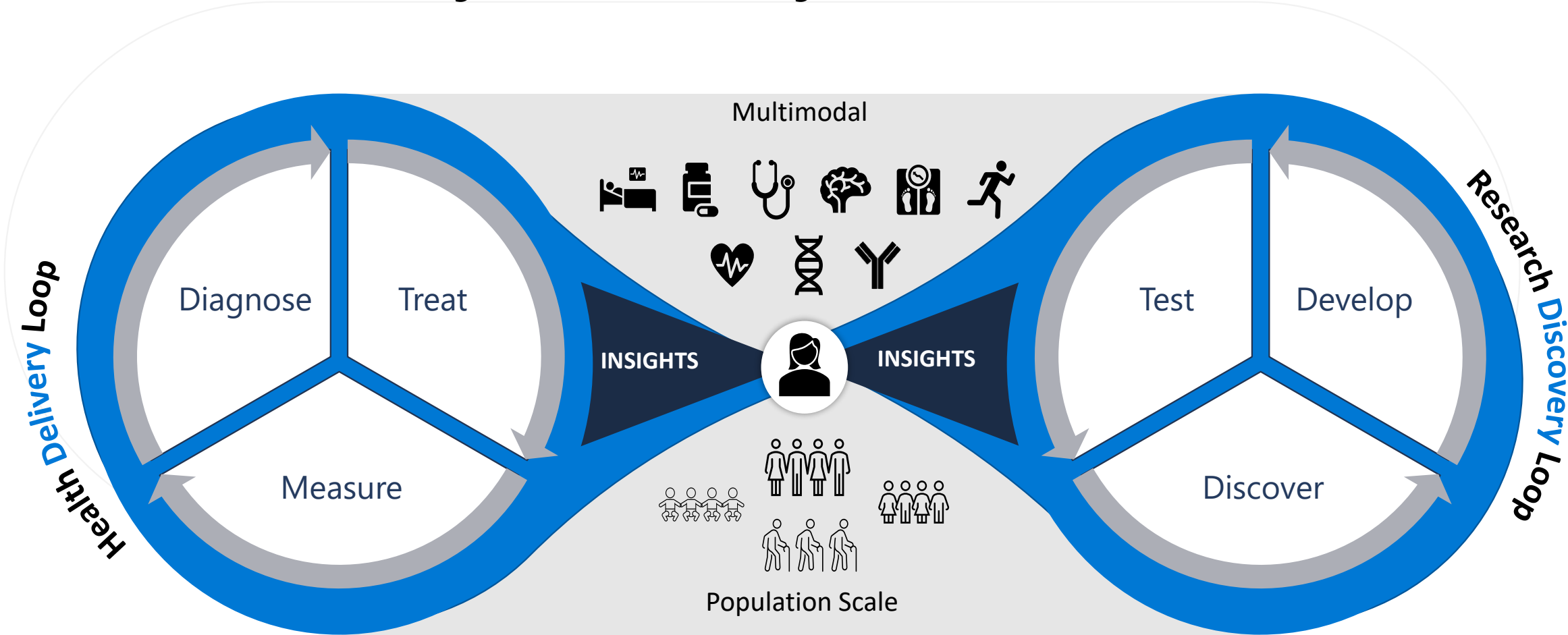
"I need a platform for Value Based Healthcare"

"Need **Single view** of my patient data"

"Need to **reduce my hospital space**"

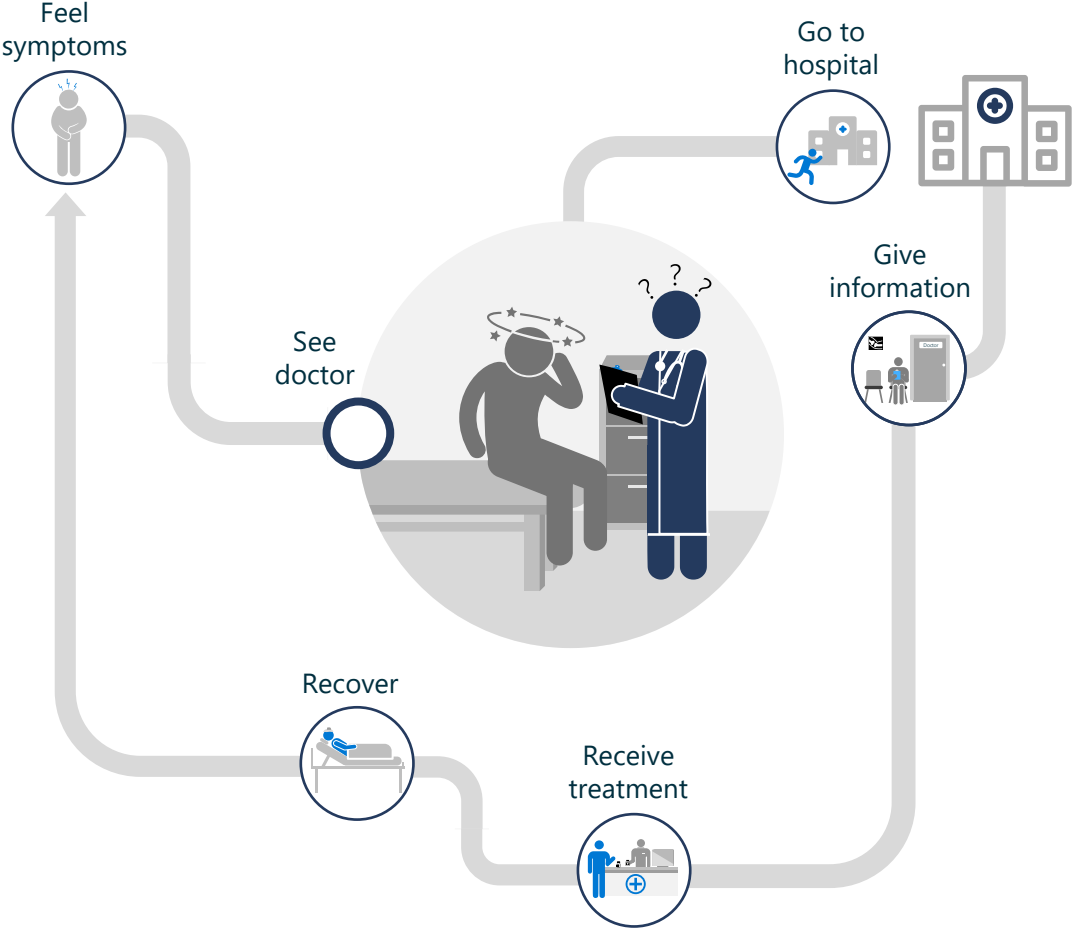


Data Intensity as the catalyst for Precision Health

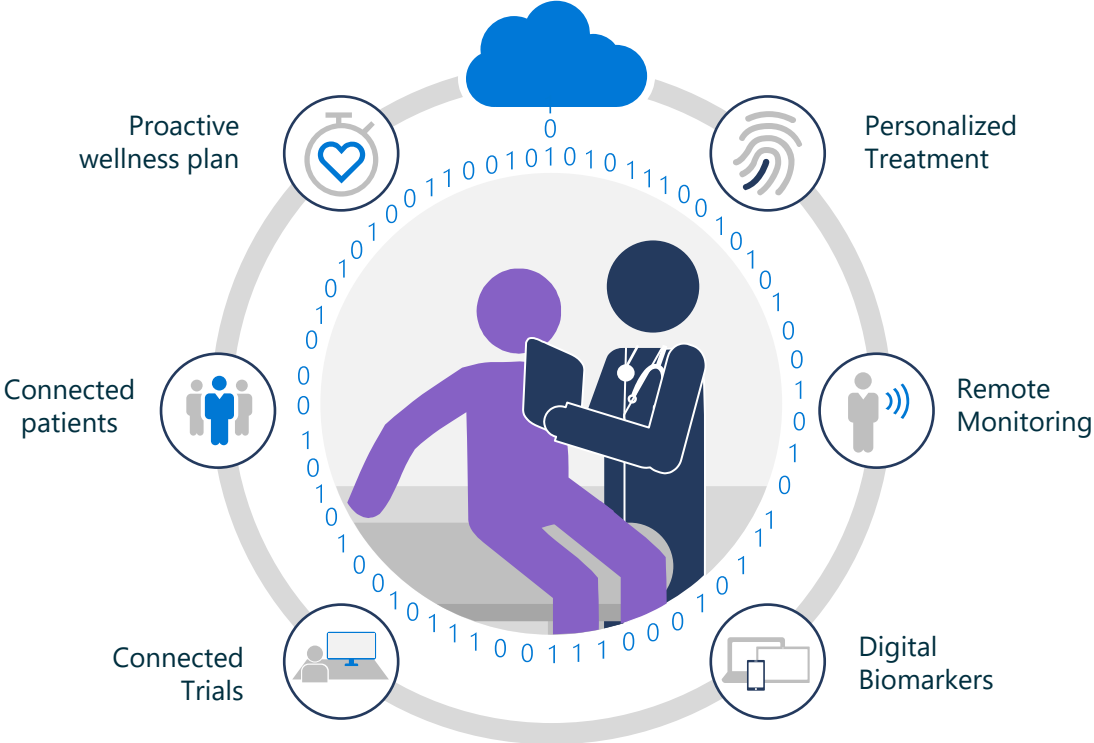


Digital Health: the emerging new normal

From a reactive, disconnected and cyclical process

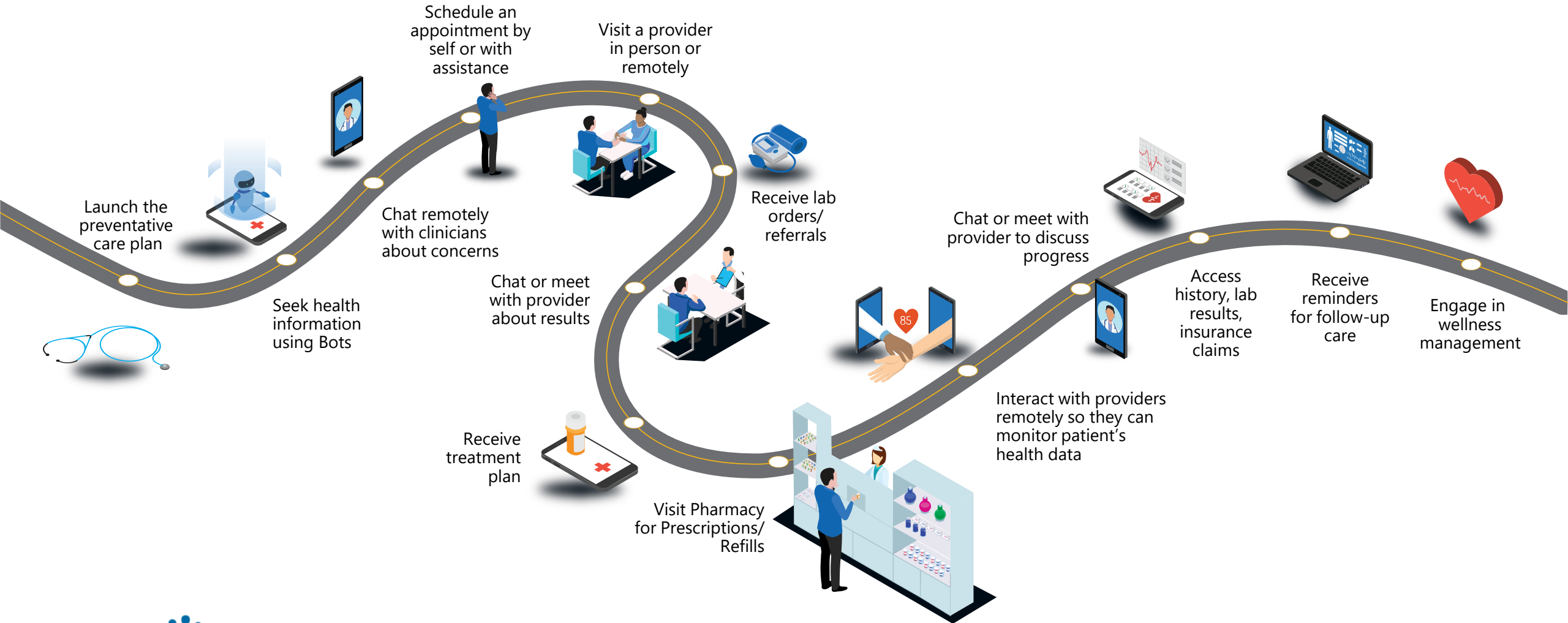


To Digital Health: a continuous, collaborative approach to preventative care



The future of healthcare is a more seamless, end-to-end patient experience

Reducing Secondary Cardiac Events with virtual Cardiac Rehab



Covid-19 Health Bot – Deployed Nationwide in Denmark



Code Snippets and starter template: <https://github.com/iBoonz/Healthbot-Covid-Snippets>

English

I am not a substitute for professional medical advice, diagnosis, or treatment.

Do you accept this and want to proceed?

I accept

Just now

I accept

Just now

From the current site you are in, I believe you are in:

Region Hovedstaden

Please confirm, what region are you in?

Region Hovedstaden

Region Syddanmark

Region Nordjylland

Region Midtjylland

Region Sjælland

Just now

* Udviklet af Region Hovedstaden i samarbejde med de øvrige regioner

English

Yes

Just now

Tell us about yourself

We could use a little more information to help fight coronavirus disease.

SELF-ASSESSMENT OF CORONAVIRUS-DISEASE

Please tell us about yourself

We need your help fighting the Coronavirus.

The following form is optional.

Your zip code

Your zip code

Your age

Your age

Your sex

Male

Female

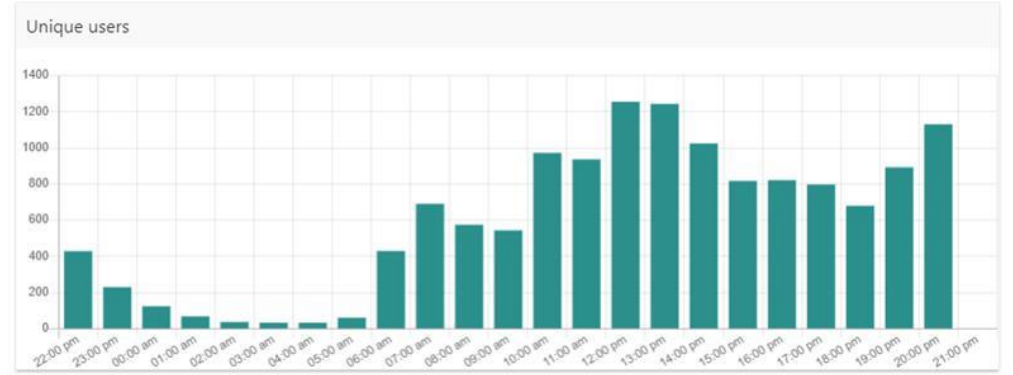
Other

Send

No thank you

Just now

* Udviklet af Region Hovedstaden i samarbejde med de øvrige regioner



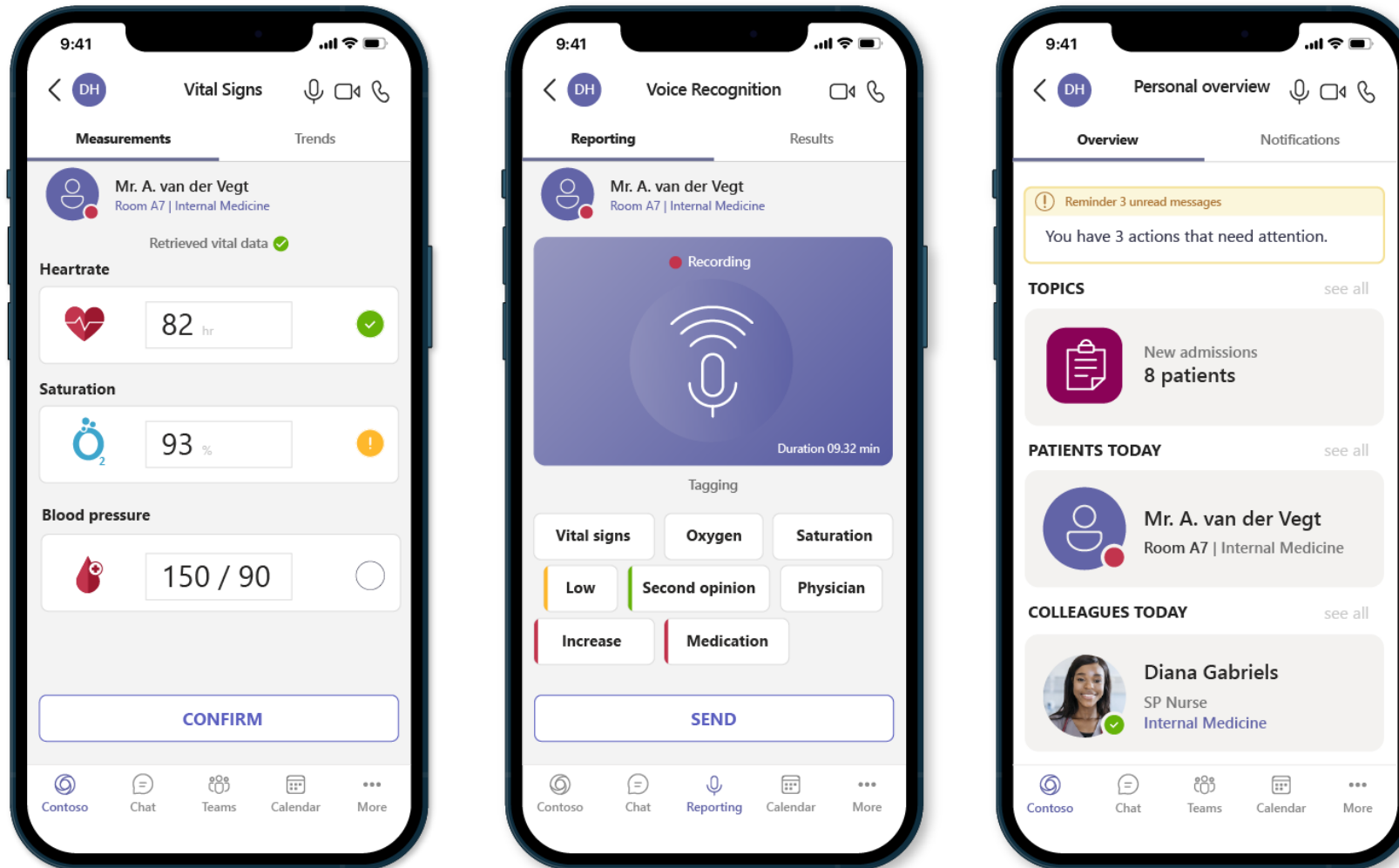
Average load after a couple of days in production



Healthbot in action

Power Bi Template that provides valuable insights

Nurse Mobile App Mock-up: easy reporting as handsfree as possible, to support nurses in their daily work



Medxnote clinical chatbot workflow



Mobile, AI enabled Virtual Assistant

- Secure Instant Messaging (Teams)
- Chatbot Platform (Medxnote)
- Alerts and notifications (Medxnote)

Smart Connected IT

- Open and Standards based platform
- HL7 FHIR Interoperability
- Open up all clinical data and business intelligence

TRUSTED BY LEADING HOSPITALS IN THE UK AND FRANCE

HoloLens at Emergency Department (ED): faster and more secure assessment of critically ill patient in the Emergency Room (ER)



Use Case 1:

Assisted Consultation by the senior consultant virtually connected

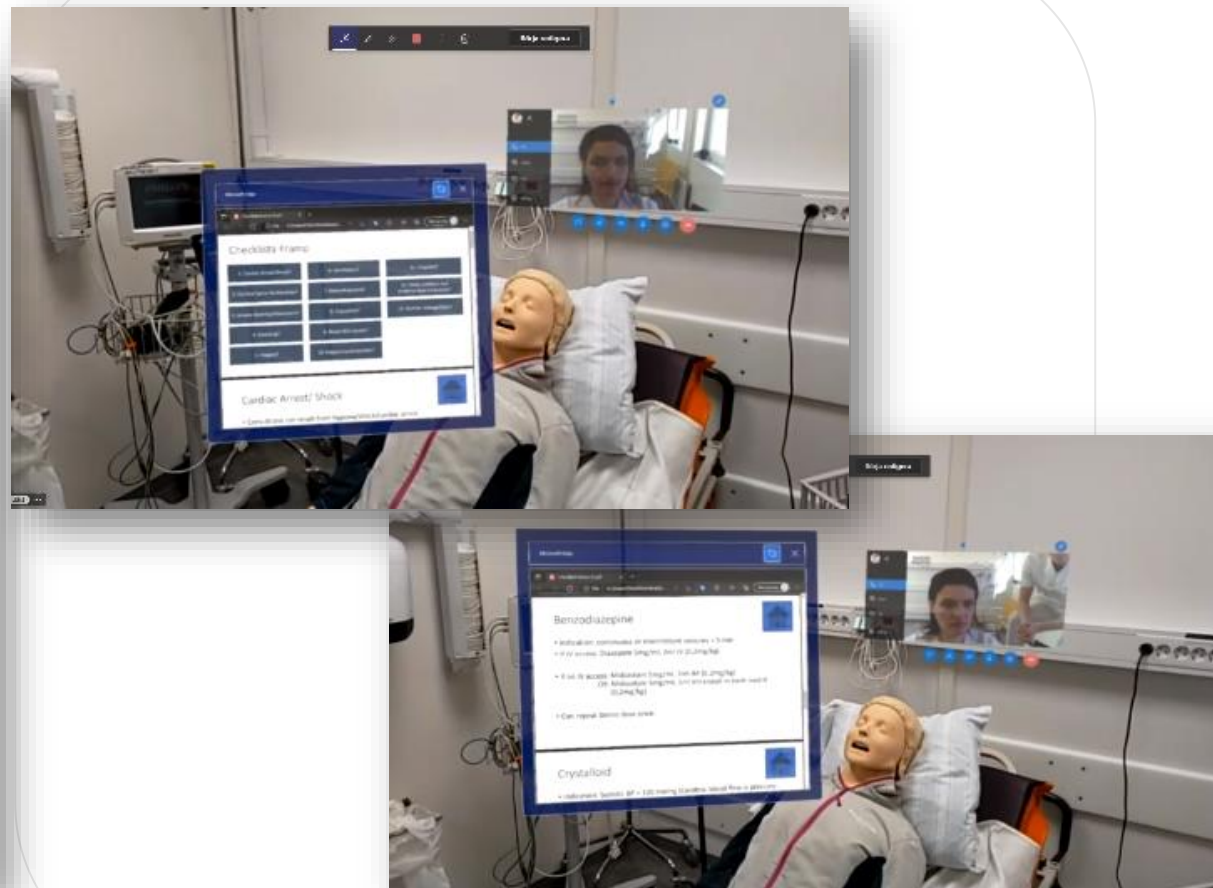


On-call physician bedside, while Senior Consultant Remote via HoloLens



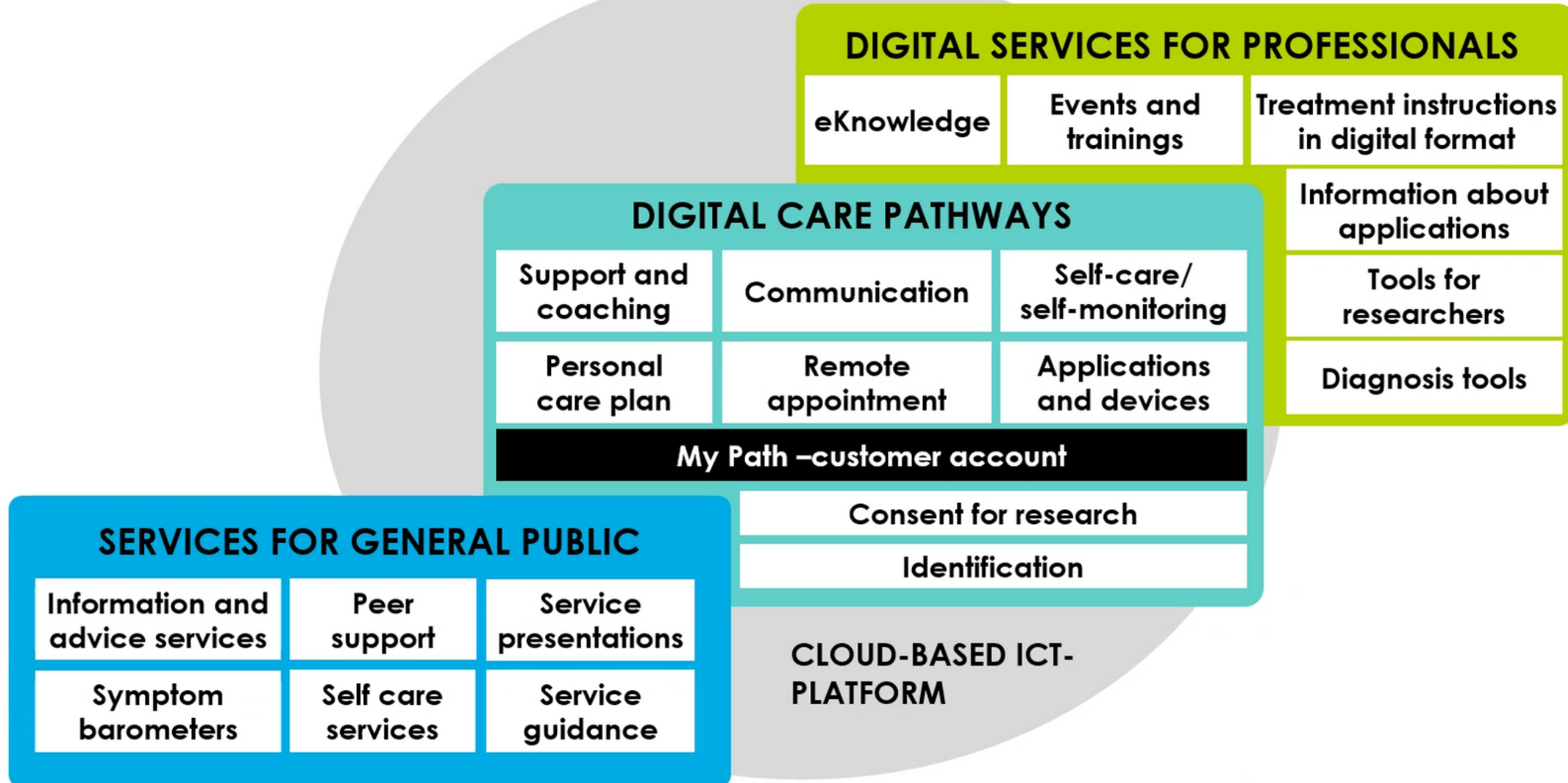
Use Case 2:

Supported Assessment/treatment by Integrated Guidelines and Checklists



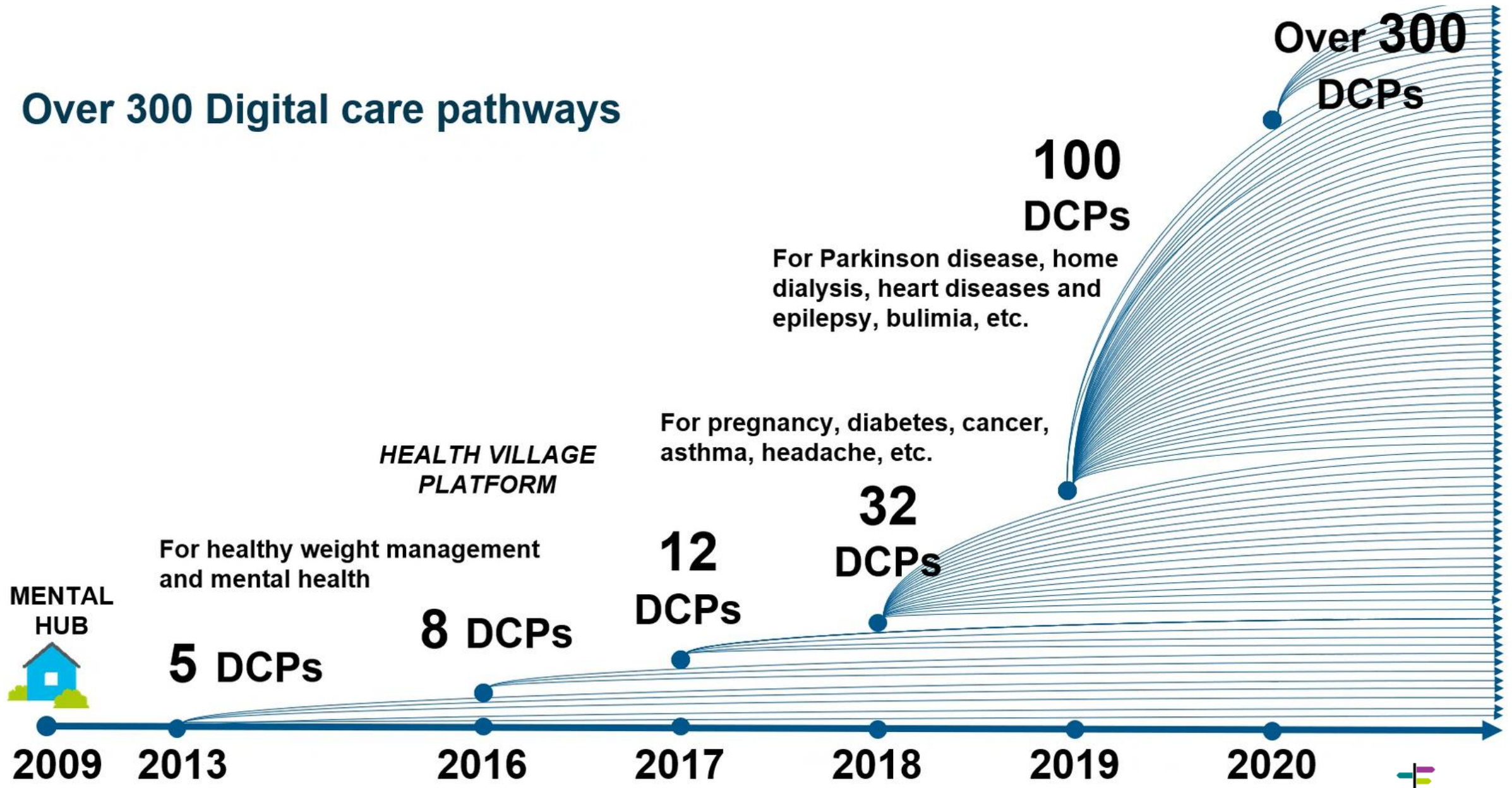
Clinical Decision Support provided bedside by HoloLens

HEALTH VILLAGE SERVICES IN FINLAND



HUS: Helsinki University Hospital has 27 000 employees, 3000 beds, and is Finland's 2nd largest employer.

Over 300 Digital care pathways





How the Microsoft Cloud for Healthcare comes to life



Digital Healthcare Capabilities



Partner ecosystem



Healthcare solutions:
Pre-configured and customized



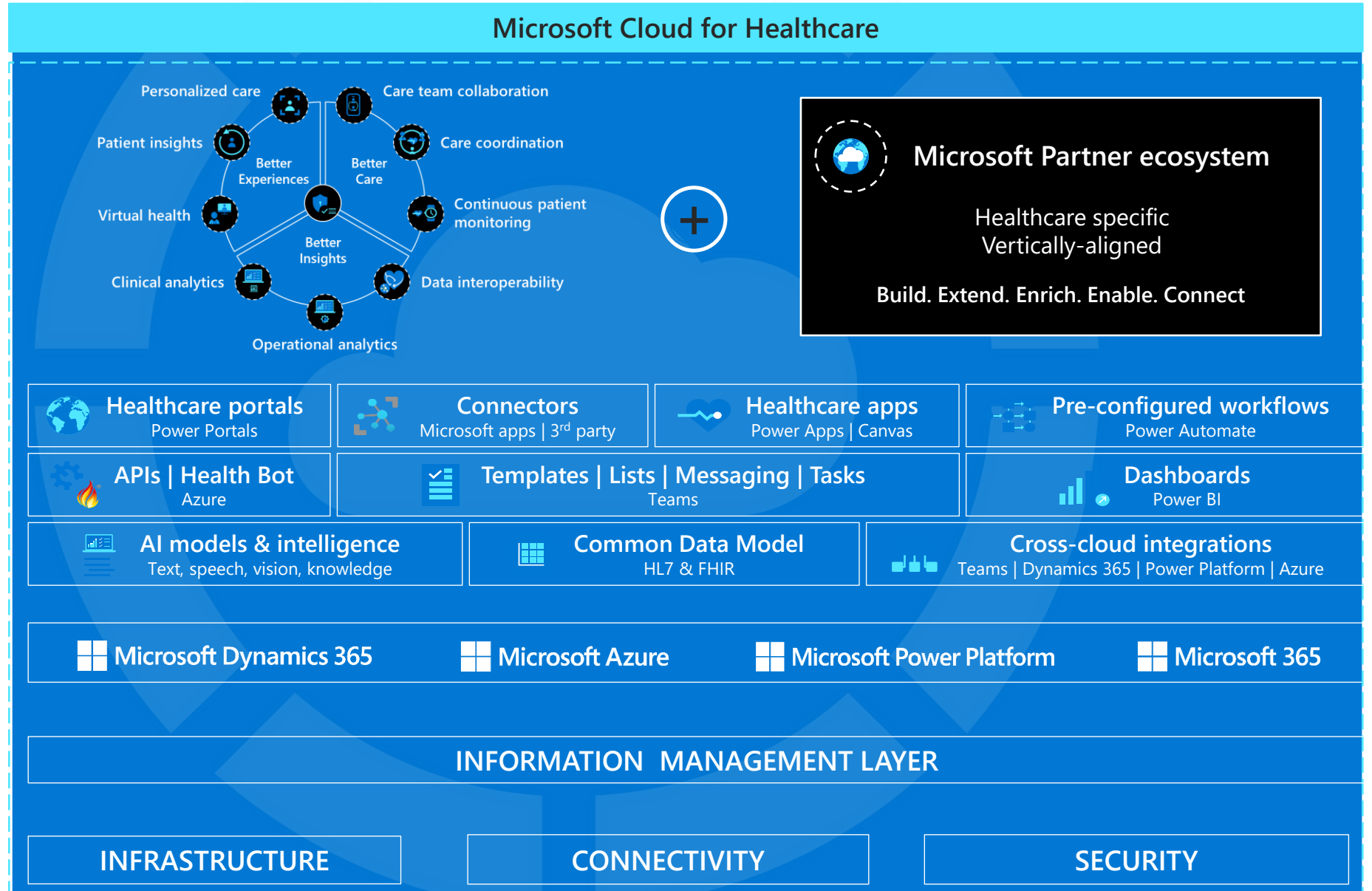
Horizontal Apps



Data Platform



Datacenters



Digital Health Platform in Norway

“Felles Kommunal Journal Interim AS” (FKJ) is a company set up to describe a **platform-based approach to renew the primary care EHR infrastructure** within a majority of the Norwegian municipalities. The project is a **cooperation between Norwegian municipalities**, managed by the Norwegian Association of Local and Regional Authorities (KS) and is a spin-off of the “Akson” and “**En innbygger – en Journal**” projects originally run by the Norwegian Directorate of eHealth.

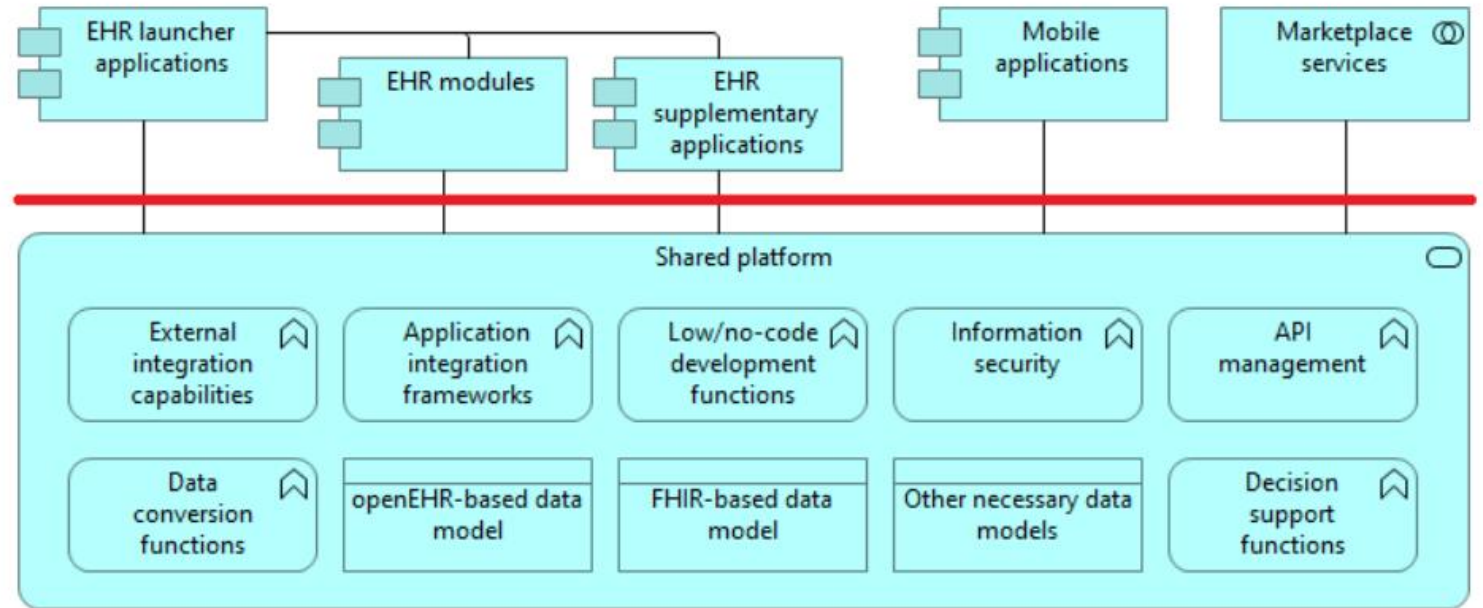
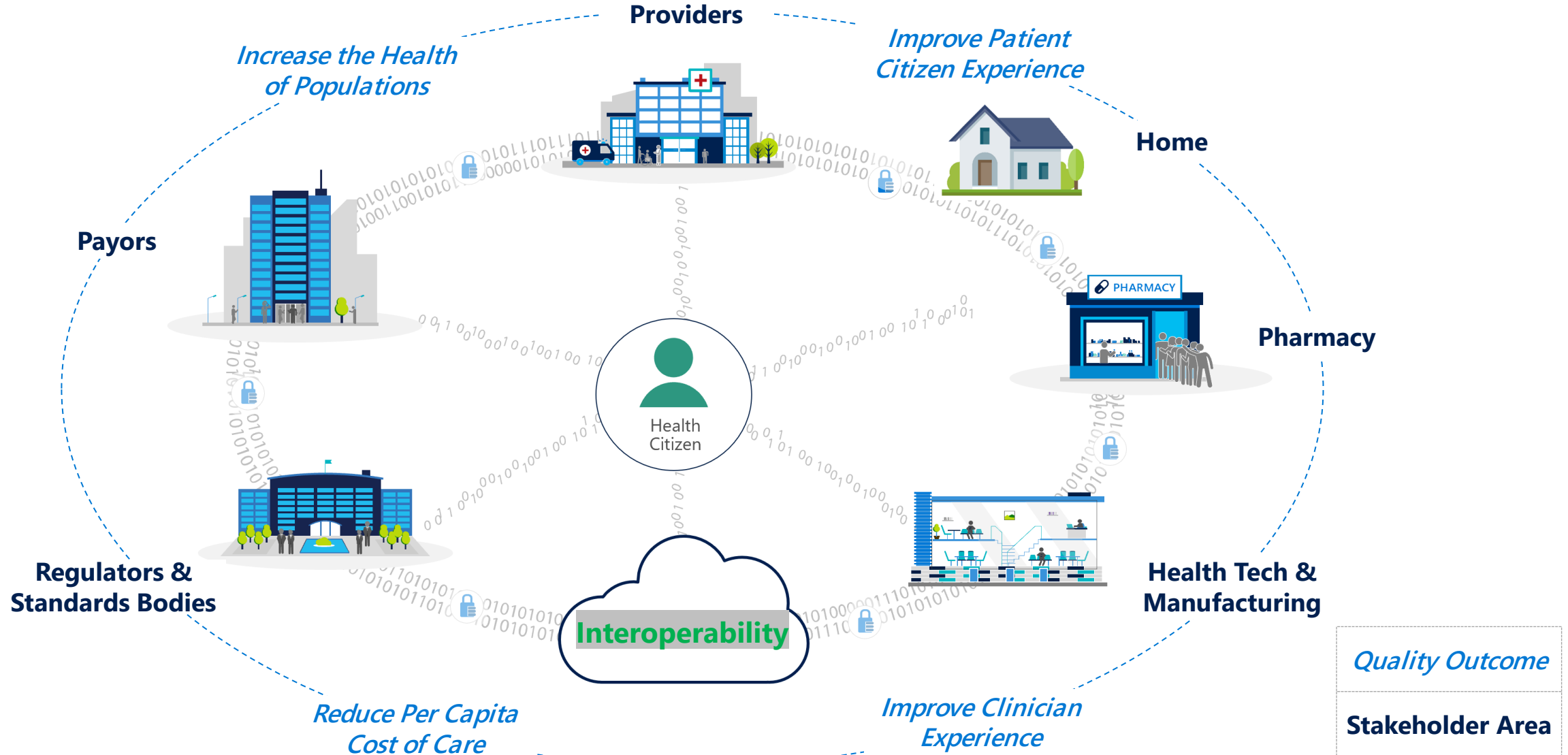


Figure 1 shows a conceptual model of a platform (below the red line) and different types of applications (above red line). The platform functions are illustrative and may not represent a complete picture, and can be built gradually over time.

Let's get the Health Ecosystem connected

Holistic Healthcare is constrained by silos



Care planning must support patients, carers, healthcare professionals and system leaders



“ I want to ensure my patient's wishes are met when the time arises ”



Wendy, 32

“ I don't want to have to repeat the same information over and over again ”



Sally, 67

One London
Dynamic integrated
care planning
service

Worries and fears

- I'm overwhelmed already, how is it going to help me and my patients
- We don't need a new system
- Bringing the current patients across: they will call the surgery or call me
- Need it all in one place this isn't just another system



“ I don't have access to the information I need ”



Tom, 35

Change Management

Technological
Change

Adaptive
Change in
Human
attitudes and
skills

Adaptive
change in legal
frameworks and
the organization
of work

1. **Building trust in the benefits** of digital transformation among health workers and patients
2. Advancing **expertise and skills needed for effective use** of digital health technologies
3. Adapting the organisation of health service delivery and the **related legal and financial framework**

Support is needed throughout all these processes on all levels: local, regional and national, including for leaders, and decision and policy makers.

Empowering the **health workforce**

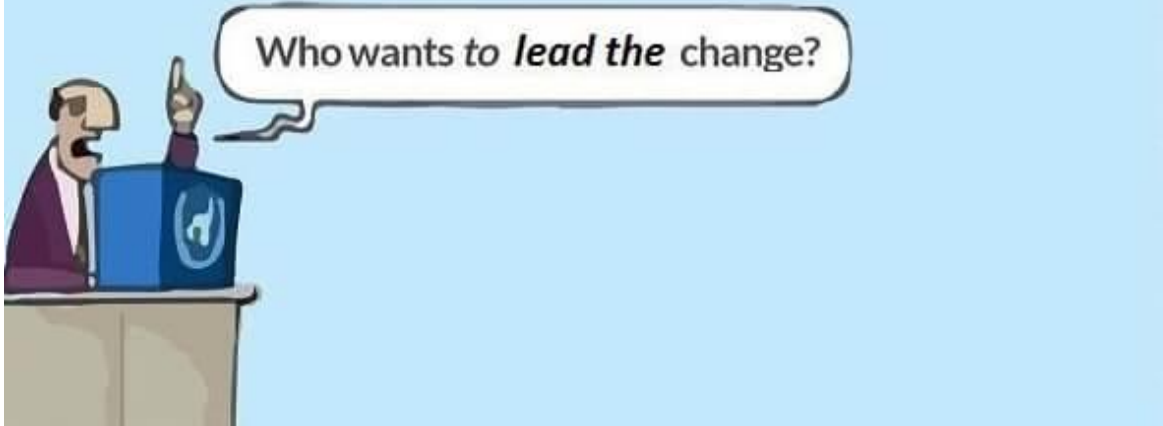
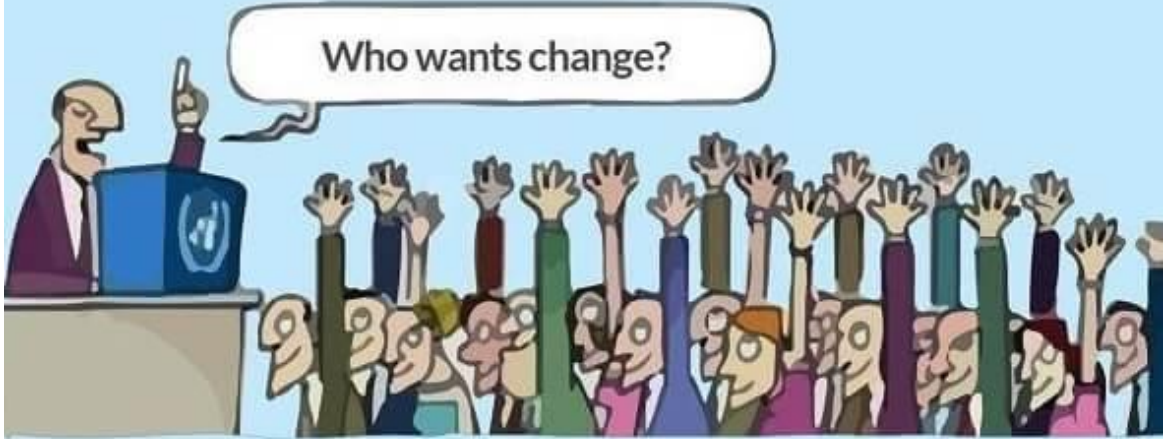
Strategies to make the most
of **the digital revolution**



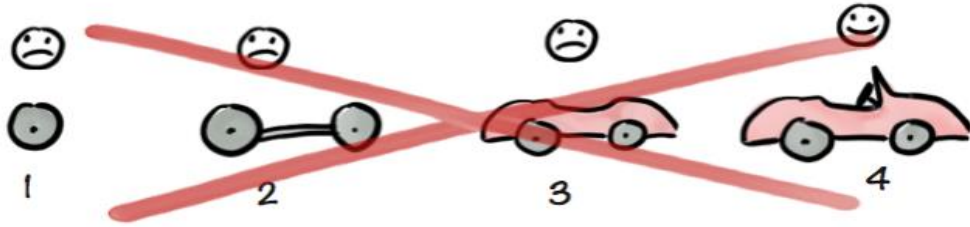
Published in November 2020

[Digital health - OECD](#)

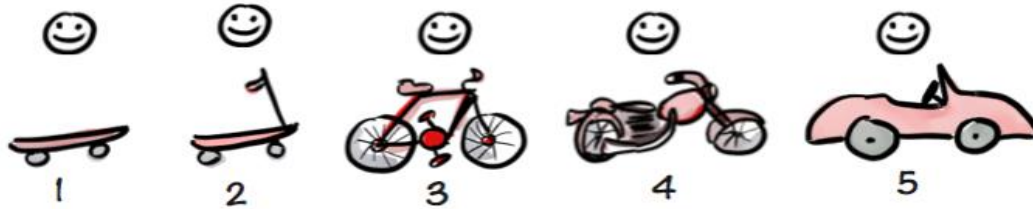
René Laennec invented the stethoscope in 1816, *however*, it took 30 years to implement the device among the physicians



Not like this....



Like this!



 **Democratization Tool**
 **Empowerment**

 **Innovation > MVP > Pilots**

 **Data > Iteration > Development***

 **To scale > Reimbursement models**

[*At the End of the Funnel: Translation of Improvement Approaches in Healthcare \(chalmers.se\)](http://chalmers.se)

by Christian Colldén MD PhD





The Swedish Collaboration on:
<https://digitalcarereseach.se/>
Gathers all Swedish Medical Faculties



European Health Data Space

Data Access and Fluidity to enable following objectives:

Empower individuals to control their health data



Unleash the power of the health data economy

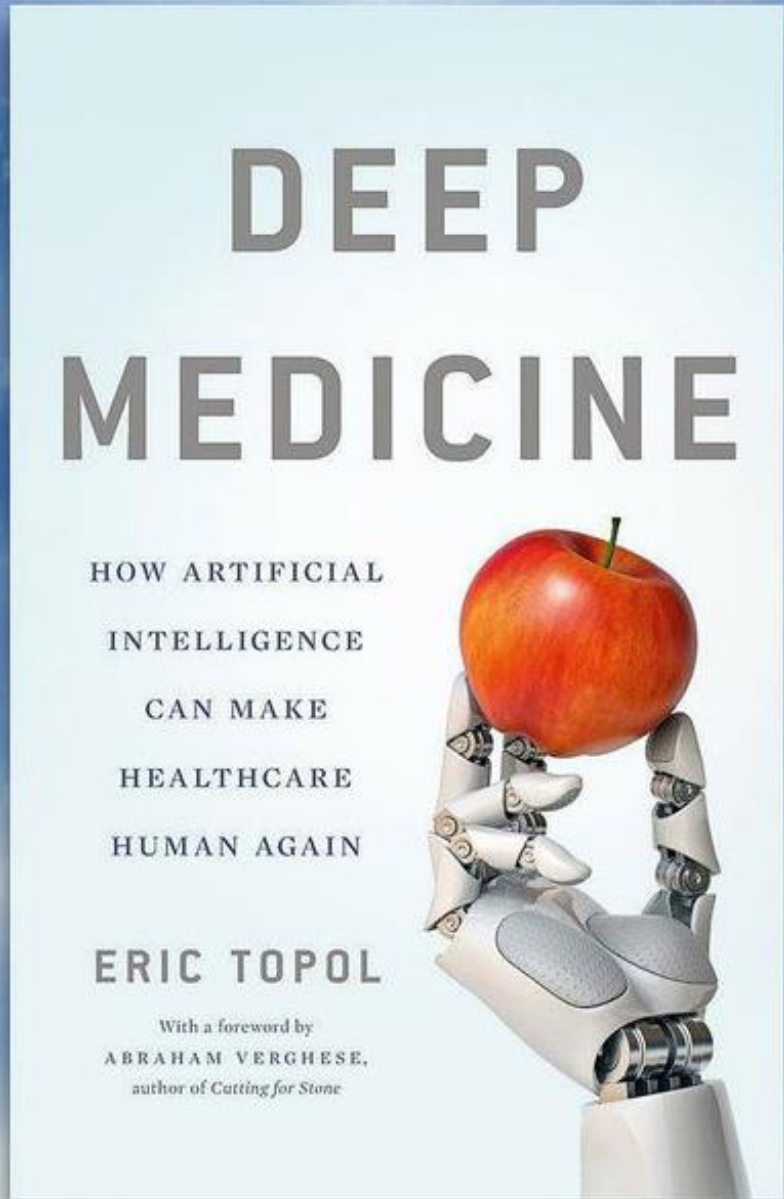
Foster a single market for digital health services and products



Ensure a consistent and efficient framework for the reuse of health data for research, innovation, policy-making and regulatory activities

Ensure **interoperability** and security of health data and a level playing field for manufacturers

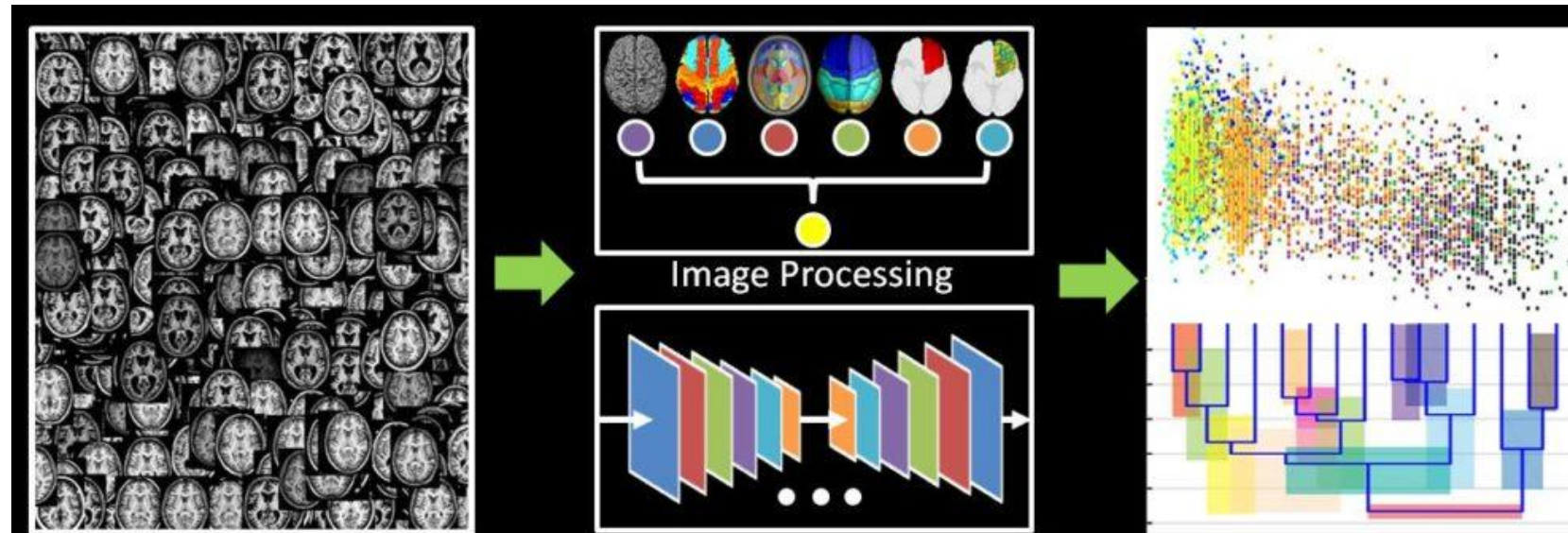




a16z Podcast: The Future of Primary Care

by Ivor Horn, Jeffrey Kaditz, Julie Yoo, and Hanne Winarsky

bio + health • Digital Health Builders •
big data • digital health • healthcare



**The Future is Already Here,
even if not yet that common...**

Thank You

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Chair of eHealth Doctors (Swedish Medical Association)**