PAULA STRADIŅA
KLĪNISKĀ UNIVERSITĀTES
SLIMNĪCA

Digital Health:

To provide more accessible, effective and efficient healthcare

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13.05.2024

SALUS AEGROTI SUPREMA LEX

What is Digital Health?

«The field of knowledge and practice associated with the development and use of digital technologies to improve health»

The broad scope of digital health includes categories such as:

- mobile health (mHealth),
- health information technology (IT),
- wearable devices,
- telehealth and telemedicine,
- and personalized medicine.

https://www.who.int/publications/i/item/9789240020924
https://www.fda.gov/medical-devices/digital-health-center-excellence/what-digital-health

1950-1960 Mainframe computers

- ✓ Mainframe computers are introduced to business sectors, were agnostic to all sectors.
- ✓ Code written in machine and assembly language.
- ✓ Relatively limited impact on healthcare.

Focus: limited focus on corporate support functions only.

Adapted from: Digital Health: A Framework for Healthcare Transformation White Paper. HIMSS. (Iegūts no https://www.himss.org/resources/digital-health-framework-healthcare-transformation-white-paper)

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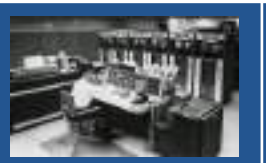
1950-1960 Mainframe computers 	1970-2000 Health IT	2000-2020 E-Health
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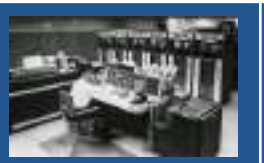
1950-1960 Mainframe computers 	1970-2000 Health IT	2000-2020 E-Health	2020+ Digital Health
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Focus: limited focus on corporate support functions only.	Focus: Logistics and organizational functions a major focus, performance is prioritized. Management systems software focus.	Focus: Health IT focus on patient care delivery, digital technologies focus on provider directed and controlled care processes.	Focus: WELNESS! Consumer and person centric – care that aligns with lifestyle. New data sources (wearables, sensors, social network data) connect to health systems.

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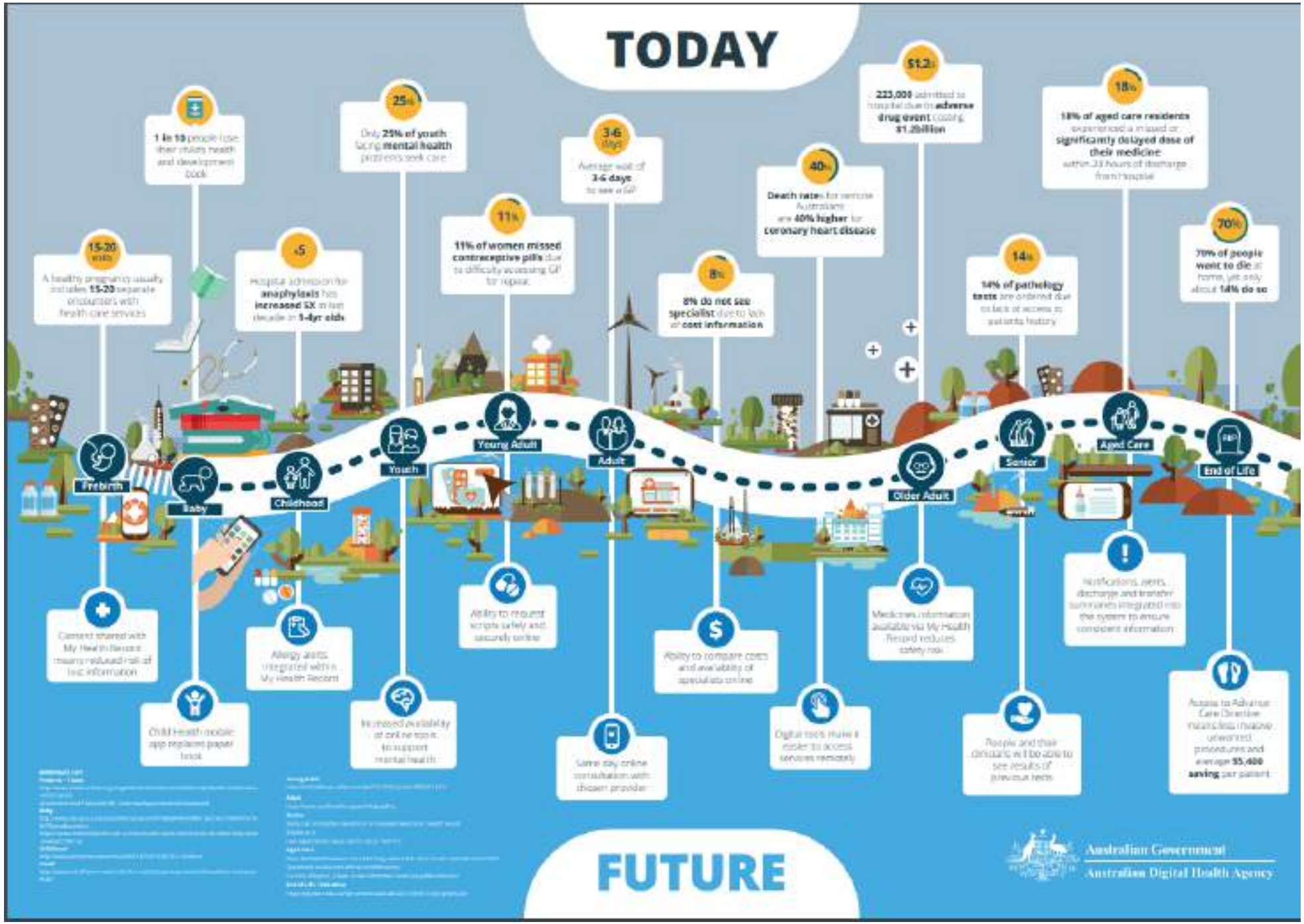

TODAY
15-20 visits
A healthy pregnancy usually includes 15-20 separate encounters with health care services
1 in 10 people lose their mobile health and development book
<5
Hospital admission for anaphylaxis has increased 5X in last decade in 1-4yr olds
25%
Only 25% of youth facing mental health problems seek care
11%
11% of women missed contraceptive pills due to difficulty accessing GP for repeat
3-6 days
Average wait of 3-6 days to see a GP
8%
8% do not see specialist due to lack of cost information
40%
Death rates for remote Australians are 40% higher for coronary heart disease
$1.2b
223,000 admitted to hospital due to adverse drug event costing $1.2billion
14%
14% of pathology tests are ordered due to lack of access to patients history
18%
18% of aged care residents experienced a missed or significantly delayed dose of their medicine within 24 hours of discharge from hospital
70%
70% of people want to die at home, yet only about 14% do so
Prebirth
Baby
Childhood
Youth
Young Adult
Adult
Older Adult
Senior
Aged Care
End of Life
Consent shared with My Health Record means reduced risk of lost information
Child Health mobile app replaces paper book
Allergy alerts integrated with My Health Record
Increased availability of online tools to support mental health
Ability to request scripts safely and securely online
Same day online consultation with chosen provider
Ability to compare costs and availability of specialists online
Digital tools make it easier to access services remotely
Medicines information available via My Health Record reduces safety risks
People and their carers will be able to see results of previous tests
Notifications, alerts, discharge and transfer summaries integrated into the system to ensure consistent information
Access to Advance Care Directive means less invasive, unwanted procedures and average $5,400 saving per patient
FUTURE
Australian Government
Australian Digital Health Agency

Patient experience journey map

DIGITAL HOT SPOTS

Prior to Visit

Seeking healthcare information, remote triage

Choosing a physician or caregiving facility for treatment

Appointment scheduling and reminders

Diagnosis and Treatment

Remote interactions with providers

Accessing and sharing electronic health records (EHR)

AI-based provider support

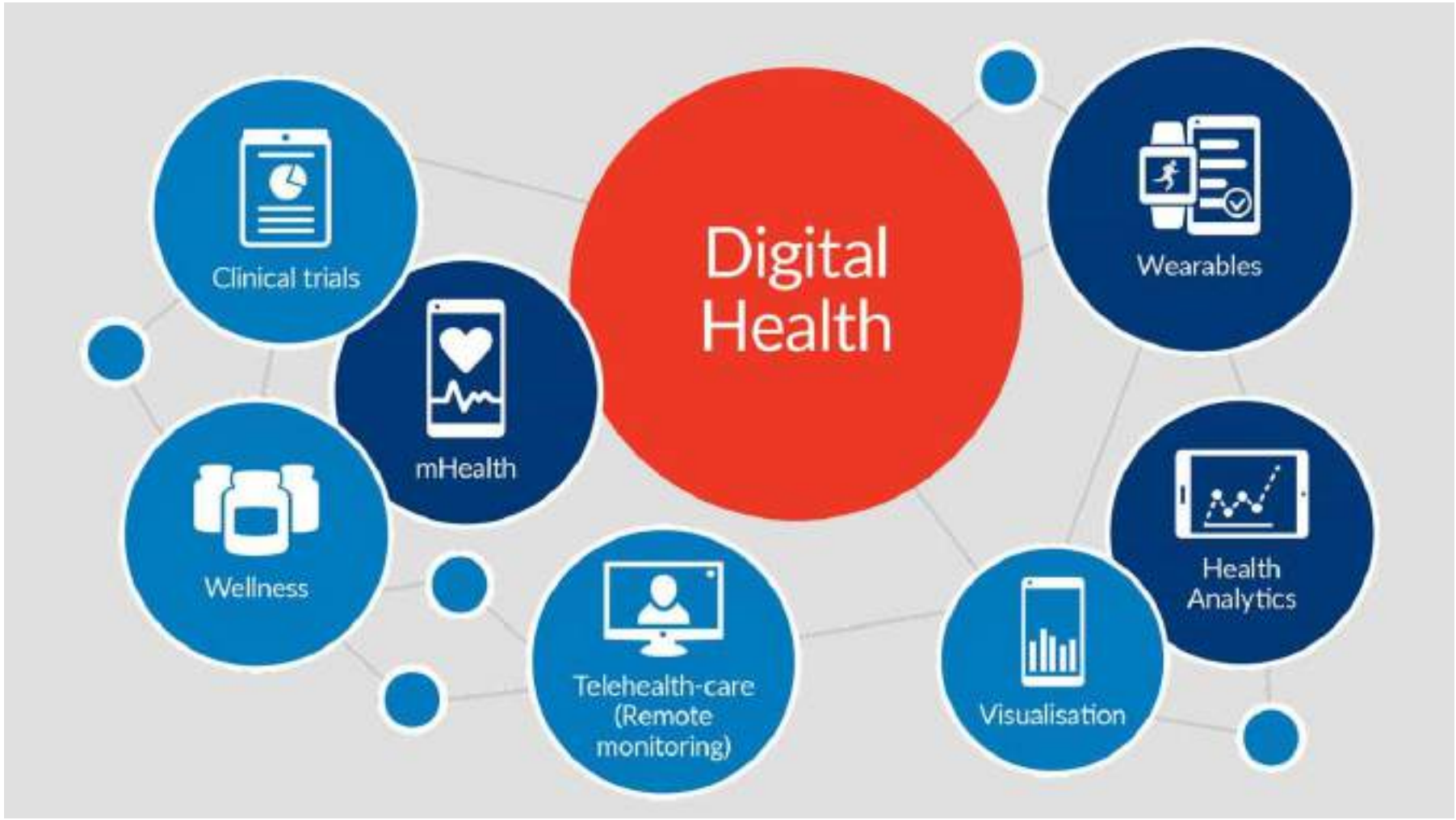
Care team collaboration

Follow-up Care

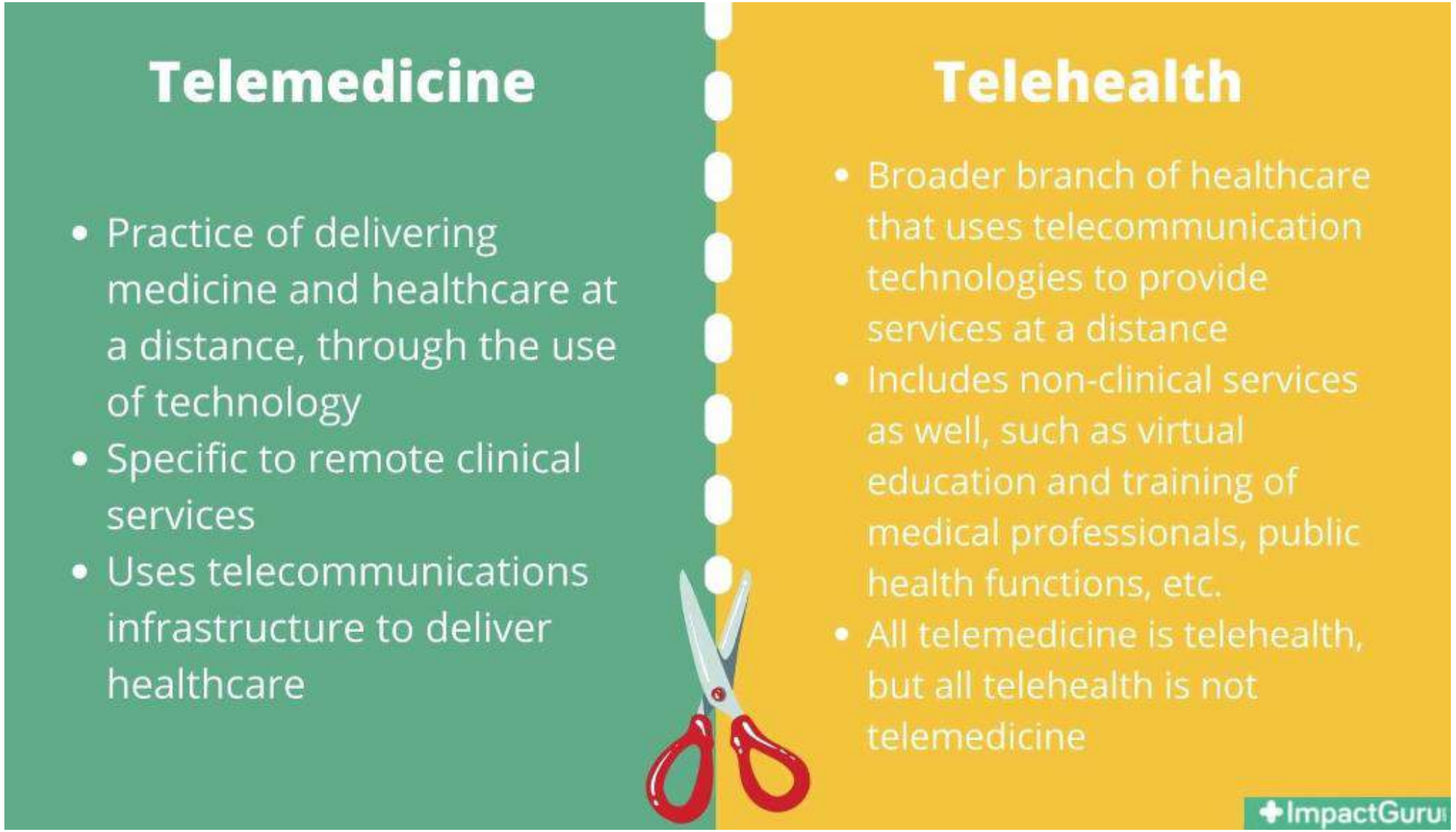
Filling, refilling, and approving prescriptions

Remote health monitoring

Ongoing patient care and plan reminders


Digital Health
Clinical trials
mHealth
Wellness
Telehealth-care (Remote monitoring)
Visualisation
Health Analytics
Wearables

Telehealth vs Telemedicine



HealthSnap

The "Umbrella" of Telemedicine

Virtual **Telehealth** Services

Audio & Video

Telephone Visits

COVID-19 Notice

Telehealth rules changed under 1135 waiver

Non Face to Face Services

Review of Medical Records

E-visits

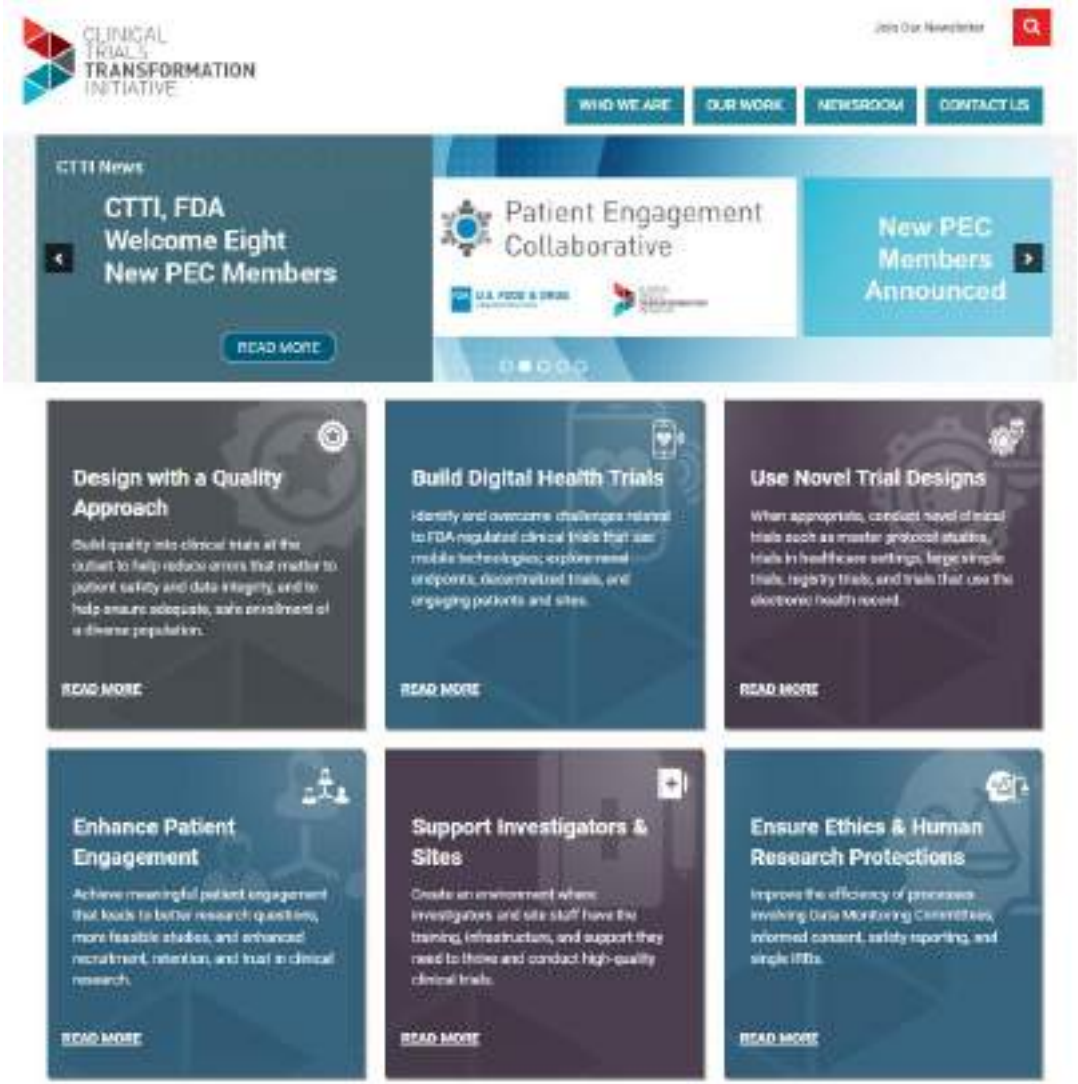
Virtual Checkins

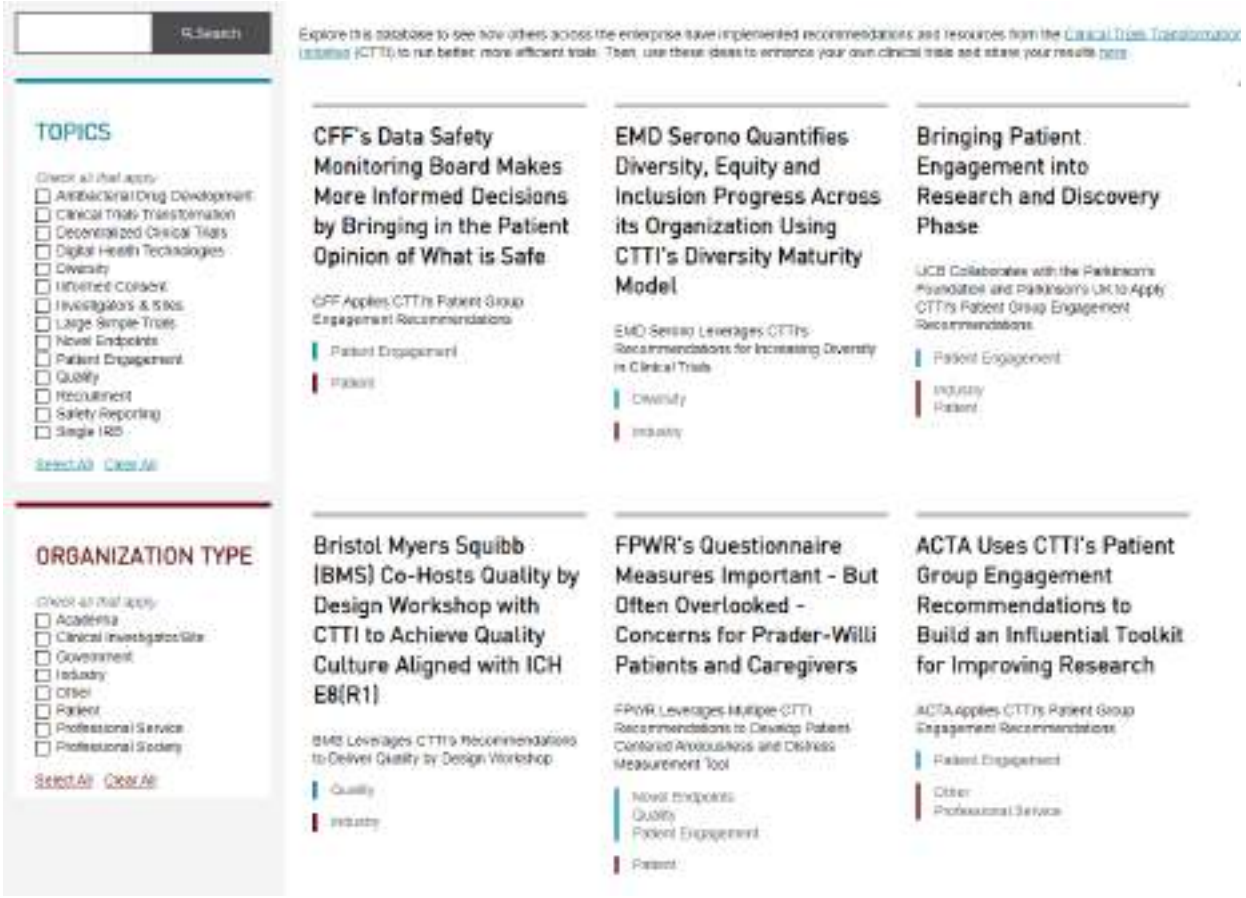
Interprofessional Consultations

Review of Imaging

Remote Patient Monitoring

Digital health: Clinical trials





https://ctti-clinicaltrials.org/

Digital health: mHealth

MHealth or mobile health refers to the **practice of medicine and public health** supported by mobile devices such as mobile phones, tablets, personal digital assistants and wireless infrastructure. It encompasses all applications of telecommunications and multimedia technologies for the delivery of healthcare and health information.

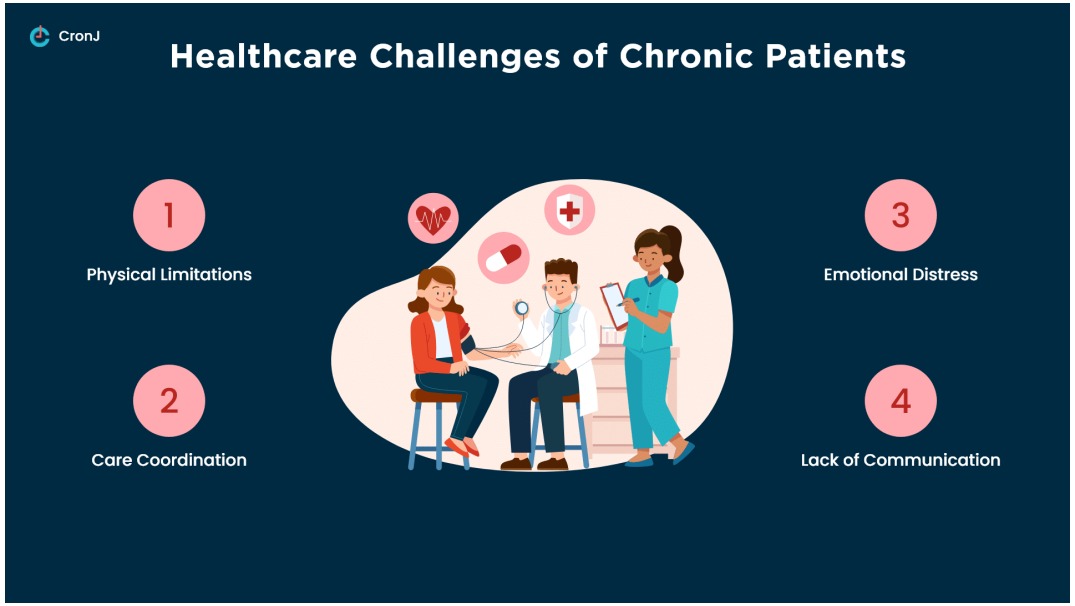
WHY IS MHEALTH USED?

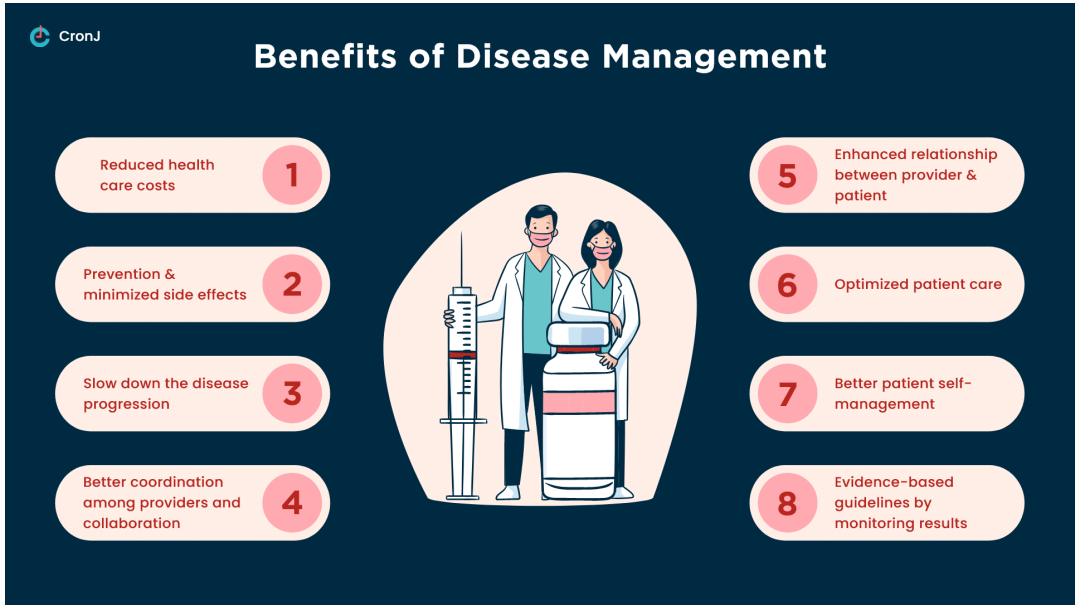
1. Provides education and awareness
2. Assists with diagnostic and treatment support
3. Enables remote data collection
4. Facilitates remote monitoring
5. Enables telemedicine
6. Supports chronic disease management
7. Support medication compliance

https://www.monsenso.com/health-app-or-mhealth-solution/

Digital health: mHealth

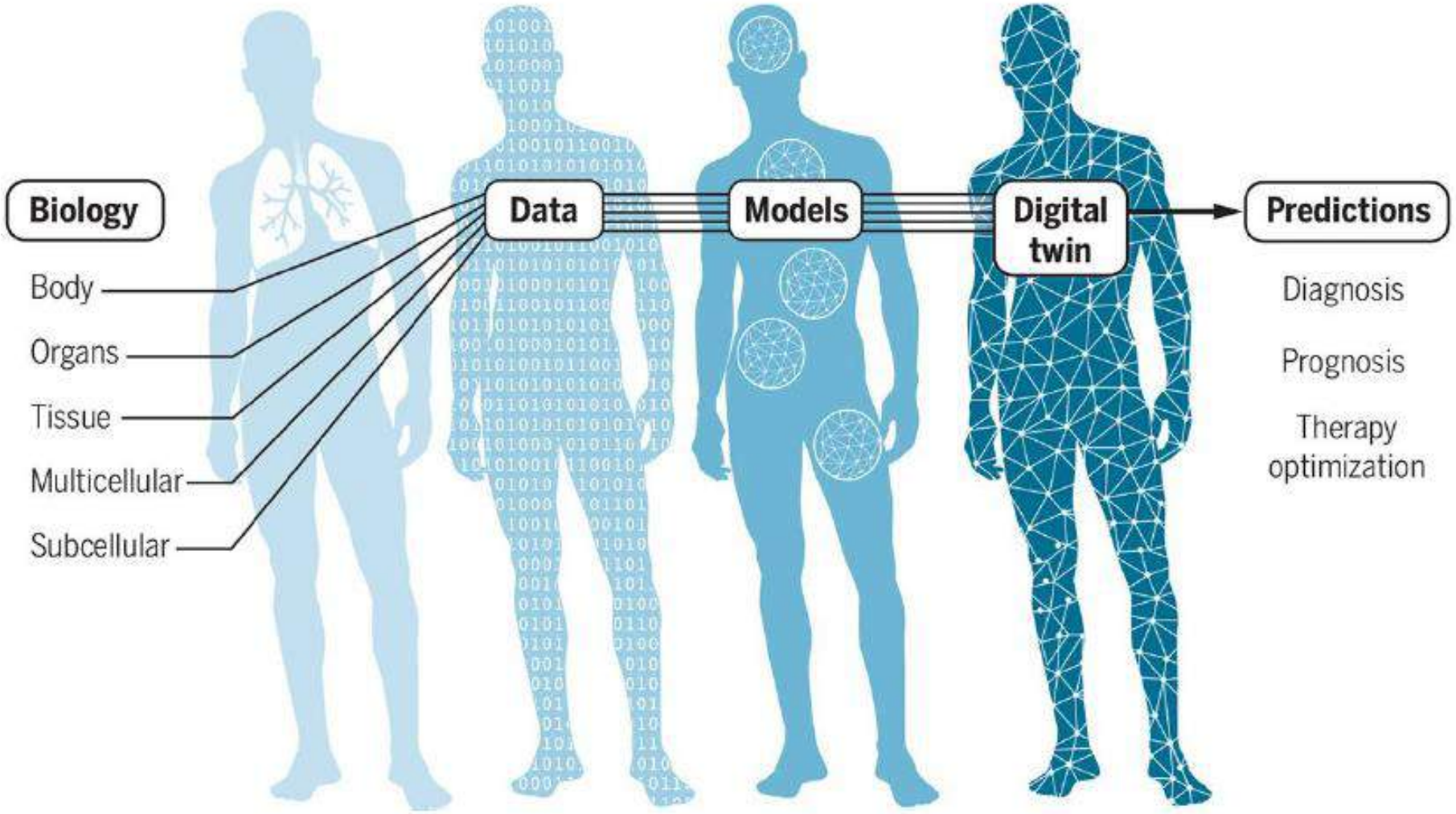
https://www.sciencedirect.com/science/article/abs/pii/S0306437917301631?via%3Dihub

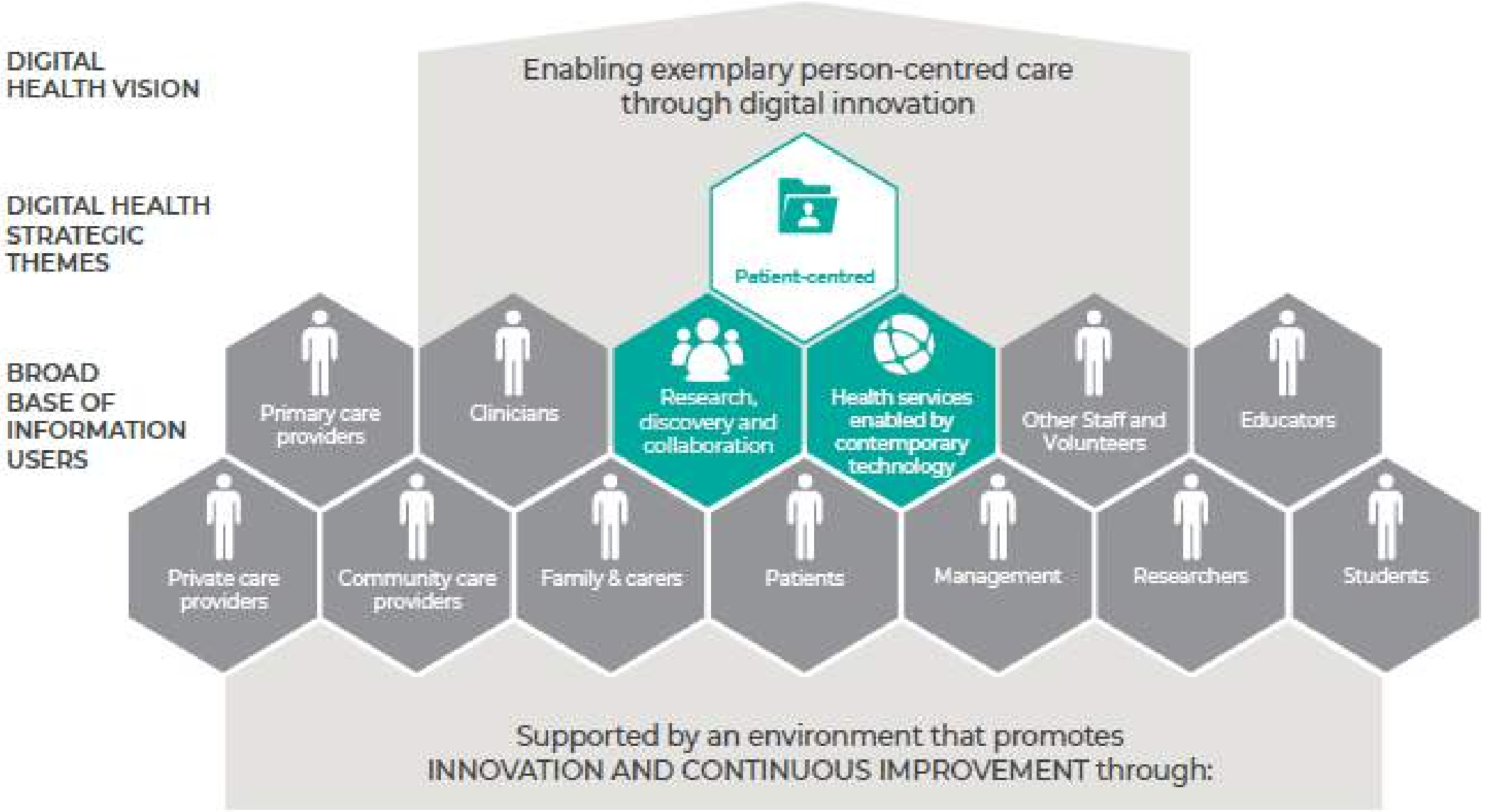




How does Digital Healthcare Transform Chronic Disease Management. https://www.cronj.com/blog/how-do-healthcare-solutions-transform-chronic-disease-management/

Digital twin…



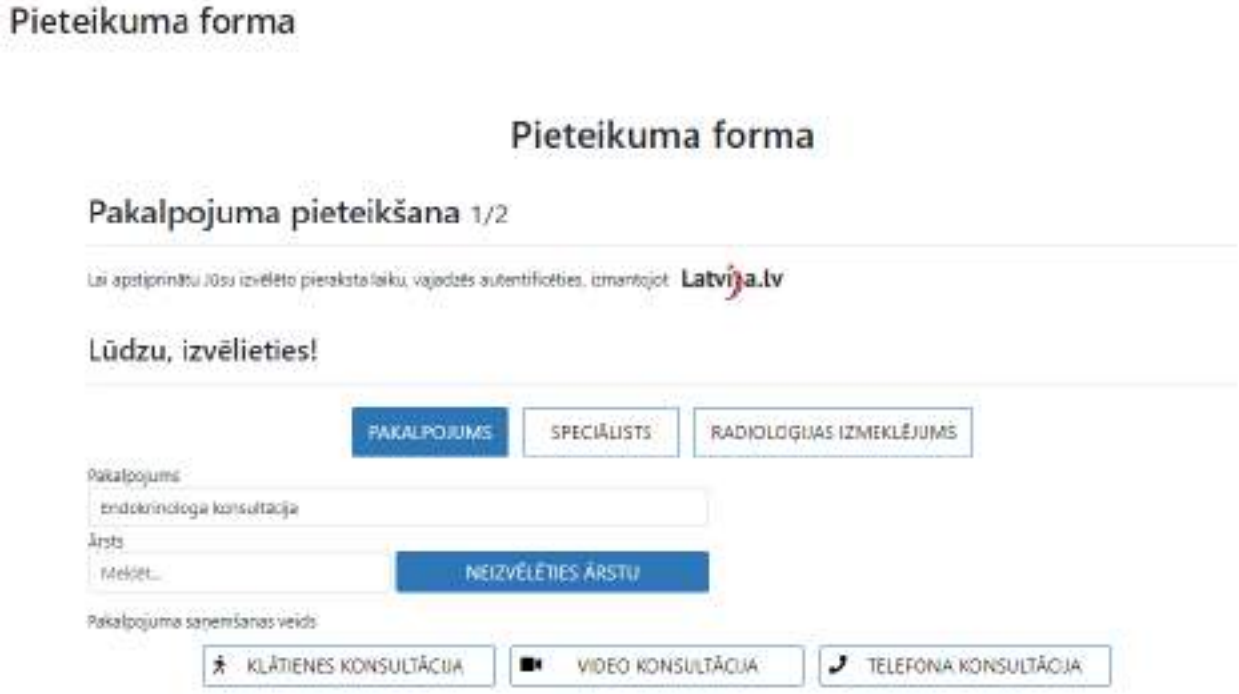


Digital Health Strategy 2019-2029 ACT Health

Digital health in PSCUH

- Electronical Medical Record systems – several
- Data exchange with other institutions: 3 CUH, NMPD, DataMed, etc
- Data exchange on eHealth platform:
  - E-prescriptions
  - E-referalls
  - Vaccination (Covid-19, influenza)
  - Sickness leaves
  - Discharge reports
  - Specific disease registries (Oncology, Tubercolosis, Trauma, etc)
- Apointment booking – PSCUH home page
- Reimbursement systems: NHS, private insurance
- Remote patient monitoring (intensive care units), tele-monitoring (cardio-patients, diabetics)
- Remote consultations – for patients (Covid-19)
- Remote consultations among professionals - consiliums (since Covid-19), NMPD SMC since 2008
- Data analytics and statistics
- AI use: radiology projects, pilot-projects
- TeleHealth: use of simulation techniques in cooperation with RSU, NMPD

PSCUH Booking appointment online



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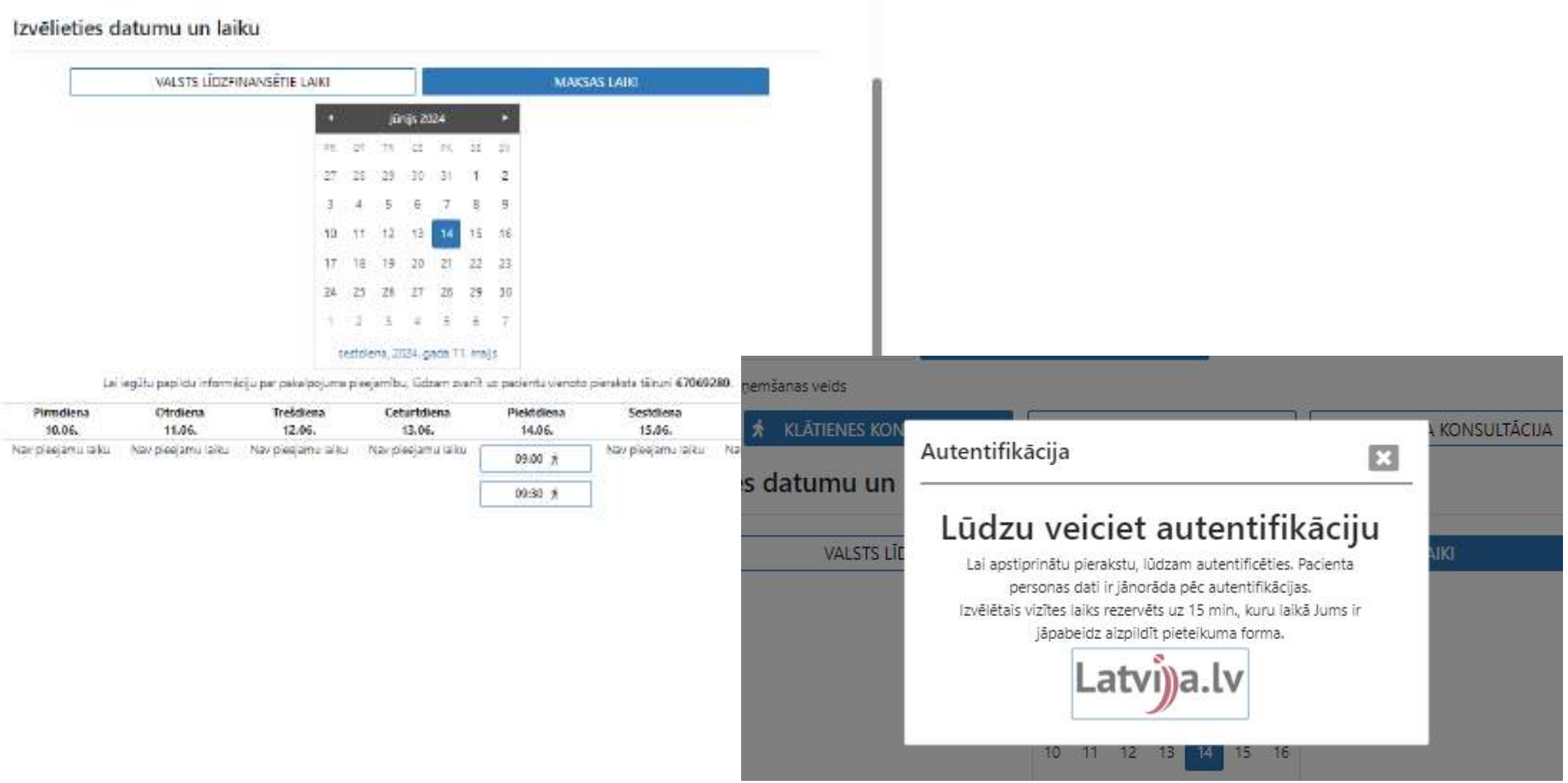

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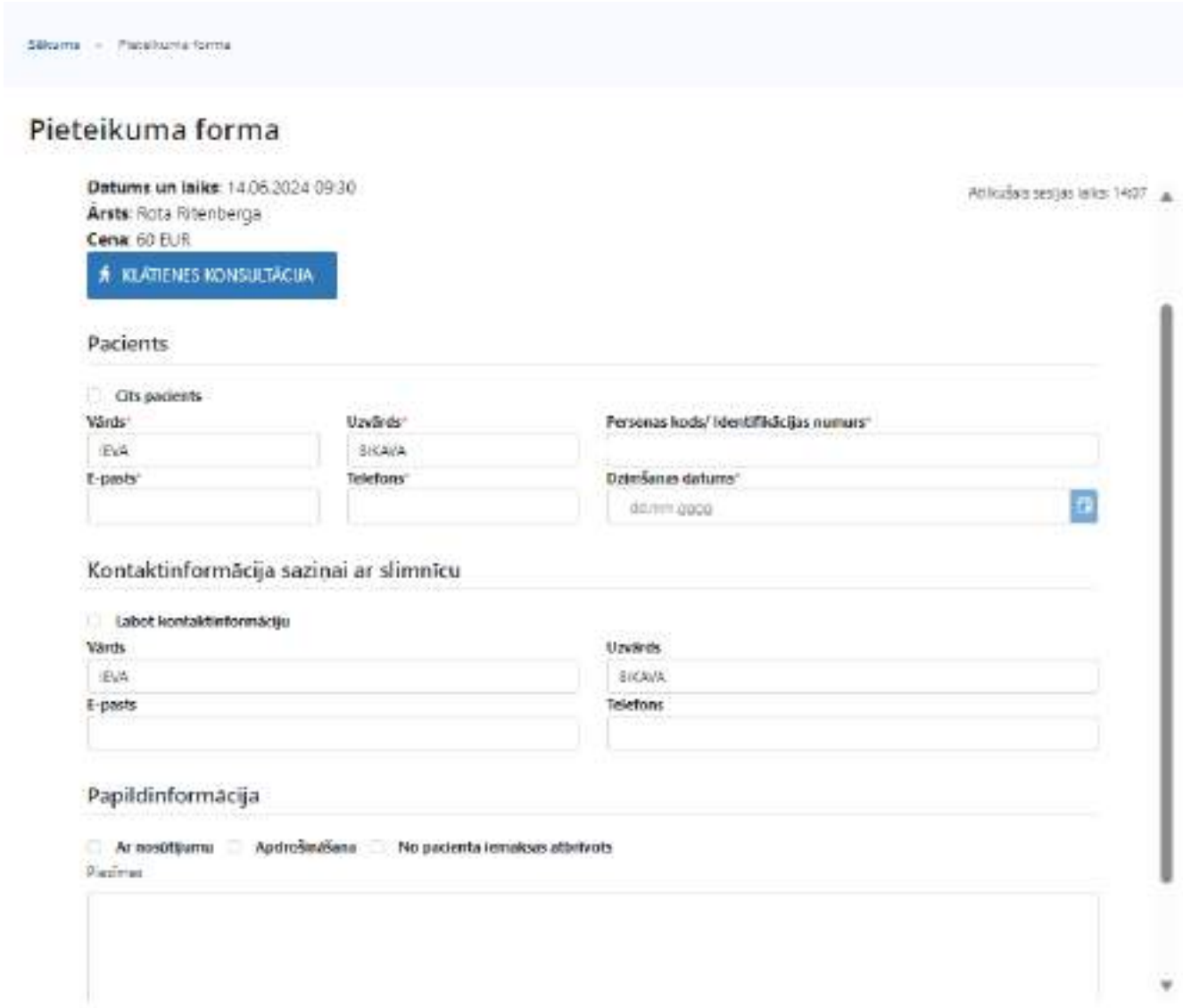


Digital health in Latvia

- E-health system:
  1. E-prescriptions – since 2018
  2. Sickeness leaves – since 2018
  3. E-referalls – since ~2021 (Covid-19)
  4. Discharge reports – since ~2022 (voluntary)
  5. Image diagnostics – since ~2022 (voluntary)
  6. Patients contact persons, trustees – since 2018
  7. Permission for use of organs and tissues after death – since 2022
- «Digital health strategy – 2029»
  1. Development of the «core» of Digital health eco-system
  2. Availability, timeliness, safety and quality of health data;
  3. Development of Telemedicine, services based on digital technologies, innovations
  4. Digital skills and change of culture
- Digital Competence Centre for the Health Sector (establishment phase)

Digital health in Latvia

1) Change of technologies to provide data interoprability:
   Technical strandard: HL7 CDA => HL7 FHIR

2) Implementation of new terminologu standarts:
   - LOINC – for laboratory services, since 2023
   - SNOMED-GPS for Cross-border projects, since 2023
   - ICD-O-3.2. for oncology, since 2024
   - TNM 8th for pathology, since 2024
   - ICCC-3 pediatric oncology, since 2024
   - SNOMED-CT - implementation is under discussion
   - ICD-11 - implementation is under discussion

CDA – Clinical Document Architecture
FHIR – Fast Healthcare Interoperability Resources, https://www.hl7.org/fhir/

E-prescription exchange (04.03.2024)

Nacionālais veselības dienests

Valstu saraksts, ar kurām Latvijai notiek e-receptes pārrobežu datu apmaiņa

Valsts	Latvija nodod e-recepšu datus	Latvija saņem e-recepšu datus
Spānija	✓	✓
Polija	✓	✓
Igaunija	✓	✓
Portugāle		✓
Čehija	✓	✓
Lietuva	✓	✓

https://www.vmnvd.gov.lv/lv/media/30354/download?attachment

Patient summary exchange (04.03.2024)

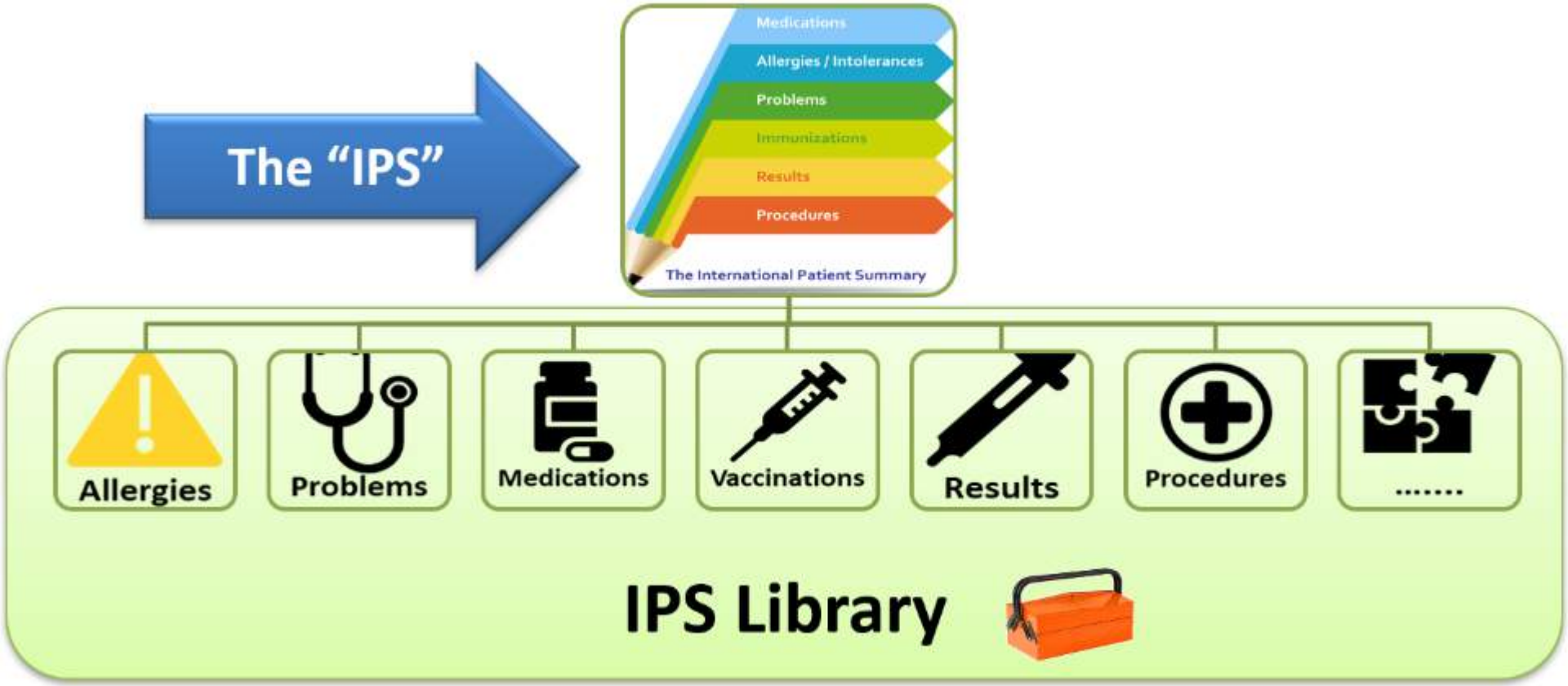
Nacionālais veselības dienests

Valstu saraksts, ar kurām Latvijai notiek veselības pamatdatu pārrobežu datu apmaiņa

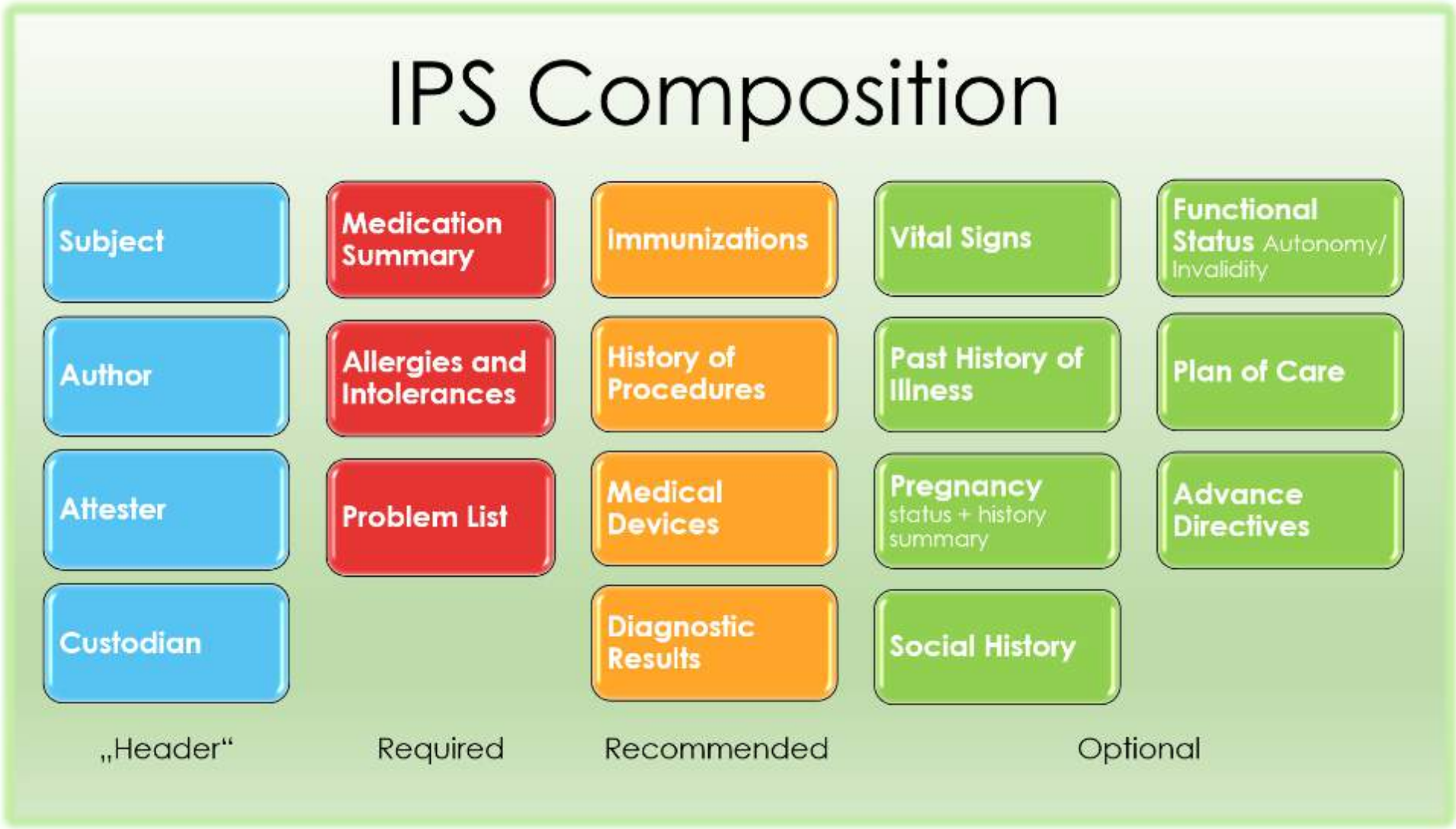
Valsts	Latvija nodod veselības pamatdatus	Latvija saņem veselības pamatdatus
Portugāle	✓	✓
Spānija	✓	✓
Igaunija	✓	✓
Francija	✓	

https://www.vmnvd.gov.lv/lv/media/30354/download?attachment

International Patient Summary (IPS)

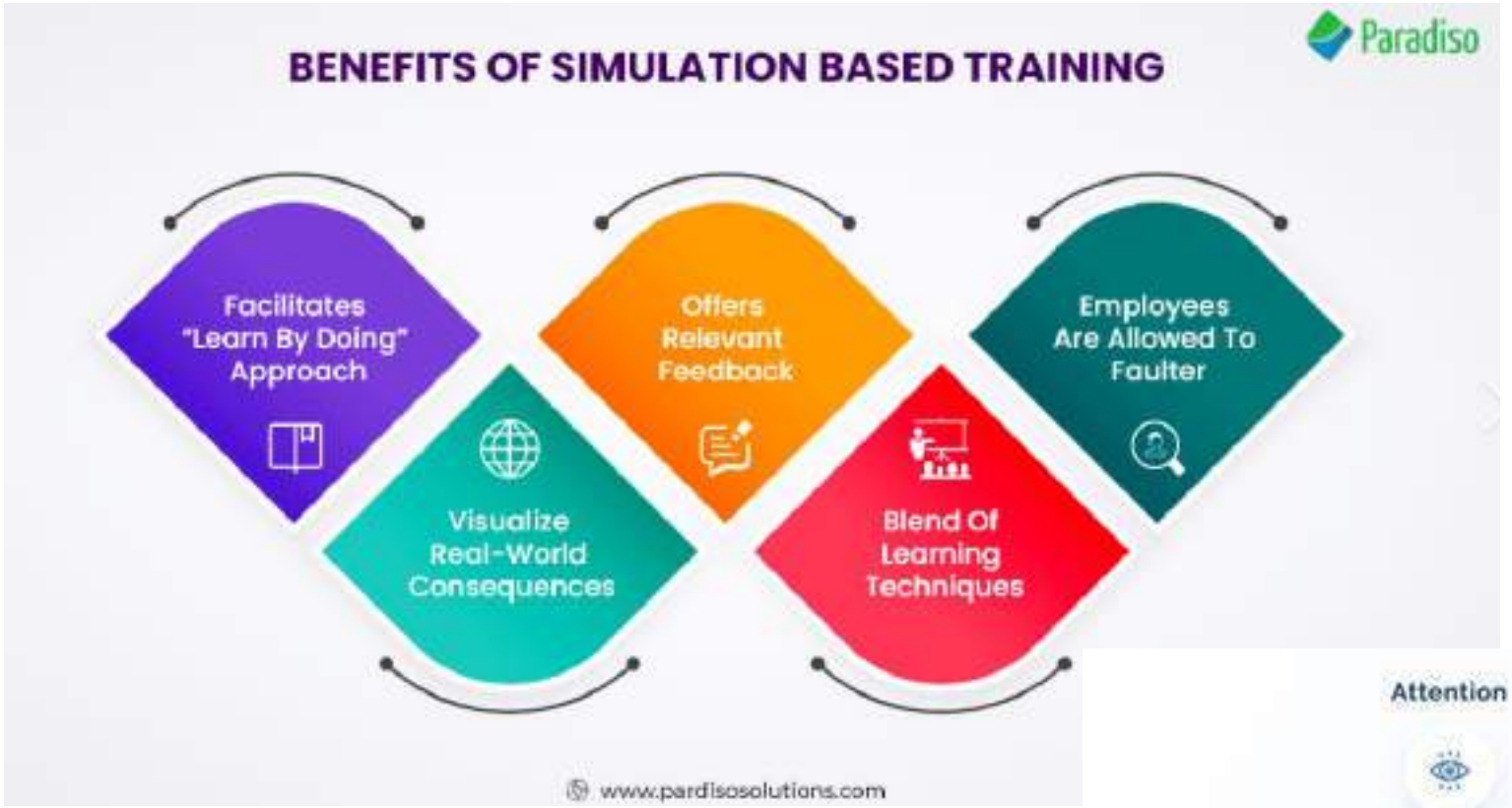


HL7.FHIR.UV.IPS\International Patient Summary Implementation Guide - FHIR v4.0.1



HL7.FHIR.UV.IPS\International Patient Summary Implementation Guide - FHIR v4.0.1

Digital health in medical education


Paradiso
BENEFITS OF SIMULATION BASED TRAINING
Facilitates "Learn By Doing" Approach
Offers Relevant Feedback
Employees Are Allowed To Faulter
Visualize Real-World Consequences
Blend Of Learning Techniques
www.pardisosolutions.com

Attention
Learning by doing
Playful
Repetition
Classroom
E-learning & Serious Games
Rapid & Micro-learning (mobile)
Simulation-based Learning

Clinical simulation centers in Latvia

Riga Stradins University - the only simulation center in Latvia and the largest in the Baltics, which ensures the acquisition and improvement of skills, as well as the implementation of simulation programs in various healthcare sectors.

Clinical simulation centers in Latvia

Emergency Medical Service Competency Centre - In Latvia, and probably also in the Baltics, the most unique training base for any professional in the field of emergency medicine to strengthen their skills right at the pre-hospital stage. Its layout and technological solution make it possible to simulate the provision of assistance in different environments. It is also possible to use an operational medical vehicle in the premises of the simulation unit during the training process.

Clinical simulation centers in Latvia

Riga East Clinical University Hospital - The new study centre of Riga Stradins University in REACH is the largest of the study bases set up in Latvian hospitals, and embodies the educational function of RECUH as a university hospital, ensuring excellent quality of education and expanding RSU contribution.

What we found about Georgia and digital health?

https://www.tagonline.org/wp-content/uploads/2020/01/2019-Digital-Health-Report_compressed.pdf
https://www.who.int/europe/news/item/17-11-2022-georgia-takes-steps-to-build-digital-health-capacity
https://www.unicef.org/georgia/press-releases/eu-un-and-government-georgia-launch-new-digital-health-project
https://eufordigital.eu/new-digital-health-project-launched-in-georgia/

How can we help you?

What would you like to know more about?

Paldies par uzmanību!