



Digital Health:

To provide more accessible, effective and efficient
healthcare

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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.

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.

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1970-2000 Health IT






- ✓ Health informatics as discipline emerges. Problem oriented health record is implemented.
- ✓ Personal computers on the market for consumers.
- ✓ Health IT departments in hospitals deploy IT enterprise systems.

Focus: Logistics and organizational functions a major focus, performance is prioritized. Management systems software focus.

1950-1960 Mainframe computers 	1970-2000 Health IT 	2000-2020 E-Health 
<ul style="list-style-type: none"> ✓ Mainframe computers are introduced to business sectors, were agnostic to all sectors. ✓ Code written in machine and assembly language. ✓ Relatively limited impact on healthcare. 	<ul style="list-style-type: none"> ✓ Health informatics as discipline emerges. Problem oriented health record is implemented. ✓ Personal computers on the market for consumers. ✓ Health IT departments in hospitals deploy IT enterprise systems. 	<ul style="list-style-type: none"> ✓ Growth in chronic illness rates, need for data given quality and safety challenges. ✓ Consumerism emerges with use of personal computers and access to information via Internet. Public funders invest in interoperability. ✓ Enterprise wide shared health record (EMR) implementation underway.
<p>Focus: limited focus on corporate support functions only.</p>	<p>Focus: Logistics and organizational functions a major focus, performance is prioritized. Management systems software focus.</p>	<p>Focus: Health IT focus on patient care delivery, digital technologies focus on provider directed and controlled care processes.</p>

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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<ul style="list-style-type: none"> ✓ Mainframe computers are introduced to business sectors, were agnostic to all sectors. ✓ Code written in machine and assembly language. ✓ Relatively limited impact on healthcare. 	<ul style="list-style-type: none"> ✓ Health informatics as discipline emerges. Problem oriented health record is implemented. ✓ Personal computers on the market for consumers. ✓ Health IT departments in hospitals deploy IT enterprise systems. 	<ul style="list-style-type: none"> ✓ Growth in chronic illness rates, need for data given quality and safety challenges. ✓ Consumerism emerges with use of personal computers and access to information via Internet. Public funders invest in interoperability. ✓ Enterprise wide shared health record (EMR) implementation underway. 	<ul style="list-style-type: none"> ✓ Analytics, AI, robotics, machine learning, IoT, health apps, virtual reality. ✓ Pervasive use of ICT in «digital» societies. ✓ Consumers demand health services that are responsive when and where needed, digitally.
<p>Focus: limited focus on corporate support functions only.</p>	<p>Focus: Logistics and organizational functions a major focus, performance is prioritized. Management systems software focus.</p>	<p>Focus: Health IT focus on patient care delivery, digital technologies focus on provider directed and controlled care processes.</p>	<p>Focus: WELNESS! Consumer and person centric – care that aligns with lifestyle. New data sources (wearables, sensors, social network data) connect to health systems.</p>

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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



Telehealth vs Telemedicine

Telemedicine

- Practice of delivering medicine and healthcare at a distance, through the use of technology
- Specific to remote clinical services
- Uses telecommunications infrastructure to deliver healthcare

Telehealth

- Broader branch of healthcare that uses telecommunication technologies to provide services at a distance
- Includes non-clinical services as well, such as virtual education and training of medical professionals, public health functions, etc.
- All telemedicine is telehealth, but all telehealth is not telemedicine





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

The screenshot displays the CTTI website interface. At the top left is the CTTI logo and navigation links: "WHO WE ARE", "OUR WORK", "NEWSROOM", and "CONTACT US". A search bar is located at the top right. The main content area features a "CTTI News" section with three featured articles: "CTTI, FDA Welcome Eight New PEC Members", "Patient Engagement Collaborative", and "New PEC Members Announced". Below this is a grid of nine article cards, each with a title, a brief description, and a "READ MORE" button. The cards are: "Design with a Quality Approach", "Build Digital Health Trials", "Use Novel Trial Designs", "Enhance Patient Engagement", "Support Investigators & Sites", "Ensure Ethics & Human Research Protections", "CFF's Data Safety Monitoring Board Makes More Informed Decisions by Bringing in the Patient Opinion of What is Safe", "EMD Serono Quantifies Diversity, Equity and Inclusion Progress Across its Organization Using CTTI's Diversity Maturity Model", "Bringing Patient Engagement into Research and Discovery Phase", "Bristol Myers Squibb (BMS) Co-Hosts Quality by Design Workshop with CTTI to Achieve Quality Culture Aligned with ICH E8(R1)", "FPWR's Questionnaire Measures Important - But Often Overlooked - Concerns for Prader-Willi Patients and Caregivers", and "ACTA Uses CTTI's Patient Group Engagement Recommendations to Build an Influential Toolkit for Improving Research". On the right side, there are two filter panels: "TOPICS" and "ORGANIZATION TYPE", both with checkboxes for various categories. Below the filters is a search bar and a "Search" button. The bottom of the page features a footer with the URL "https://ctti-clinicaltrials.org/".

CTTI News

- CTTI, FDA Welcome Eight New PEC Members
- Patient Engagement Collaborative
- New PEC Members Announced

Design with a Quality Approach

Build quality into clinical trials at the outset to help reduce errors that matter to patient safety and data integrity, and to help ensure adequate, safe enrollment of a diverse population.

Build Digital Health Trials

Identify and overcome challenges related to FDA regulated clinical trials that use mobile technologies, experimental endpoints, decentralized trials, and engaging patients and sites.

Use Novel Trial Designs

When appropriate, conduct novel clinical trials such as master protocol studies, trials in healthcare settings, large simple trials, registry trials, and trials that use the electronic health record.

Enhance Patient Engagement

Achieve meaningful patient engagement that leads to better research questions, more feasible studies, and enhanced recruitment, retention, and trust in clinical research.

Support Investigators & Sites

Create an environment where investigators and site staff have the training, infrastructure, and support they need to thrive and conduct high-quality clinical trials.

Ensure Ethics & Human Research Protections

Improve the efficiency of processes involving Data Monitoring Committees, informed consent, safety reporting, and single IRTs.

TOPICS

- Antibacterial Drug Development
- Clinical Trials Transformation
- Decentralized Clinical Trials
- Digital Health Technologies
- Diversity
- Informed Consent
- Investigators & Sites
- Large Simple Trials
- Novel Endpoints
- Patient Engagement
- Quality
- Recruitment
- Safety Reporting
- Single IRT

ORGANIZATION TYPE

- Academia
- Clinical Investigator/Site
- Government
- Industry
- Other
- Patient
- Professional Service
- Professional Society

CFF's Data Safety Monitoring Board Makes More Informed Decisions by Bringing in the Patient Opinion of What is Safe

CFF Applies CTTI's Patient Group Engagement Recommendations

- Patient Engagement
- Industry

EMD Serono Quantifies Diversity, Equity and Inclusion Progress Across its Organization Using CTTI's Diversity Maturity Model

EMD Serono Leverages CTTI's Recommendations for Increasing Diversity in Clinical Trials

- Diversity
- Industry

Bringing Patient Engagement into Research and Discovery Phase

UCB Collaborates with the Parkinson's Foundation and Parkinson's UK to Apply CTTI's Patient Group Engagement Recommendations

- Patient Engagement
- Industry
- Patient

Bristol Myers Squibb (BMS) Co-Hosts Quality by Design Workshop with CTTI to Achieve Quality Culture Aligned with ICH E8(R1)

BMS Leverages CTTI's Recommendations to Deliver Quality by Design Workshop

- Quality
- Industry

FPWR's Questionnaire Measures Important - But Often Overlooked - Concerns for Prader-Willi Patients and Caregivers

FPWR Leverages Multiple CTTI Recommendations to Develop Patient-Centered Awareness and Distress Measurement Tool

- Novel Endpoints
- Quality
- Patient Engagement
- Patient

ACTA Uses CTTI's Patient Group Engagement Recommendations to Build an Influential Toolkit for Improving Research

ACTA Applies CTTI's Patient Group Engagement Recommendations

- Patient Engagement
- Other
- Professional Service

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

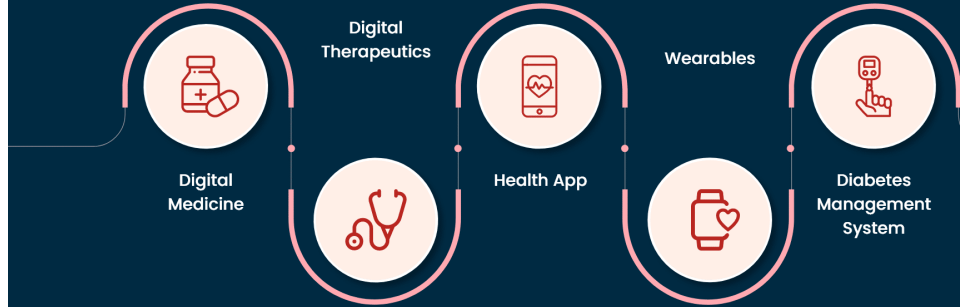
Digital health: mHealth



Healthcare Challenges of Chronic Patients



Top 5 Healthcare Solutions for Effective Disease Management & Therapeutics

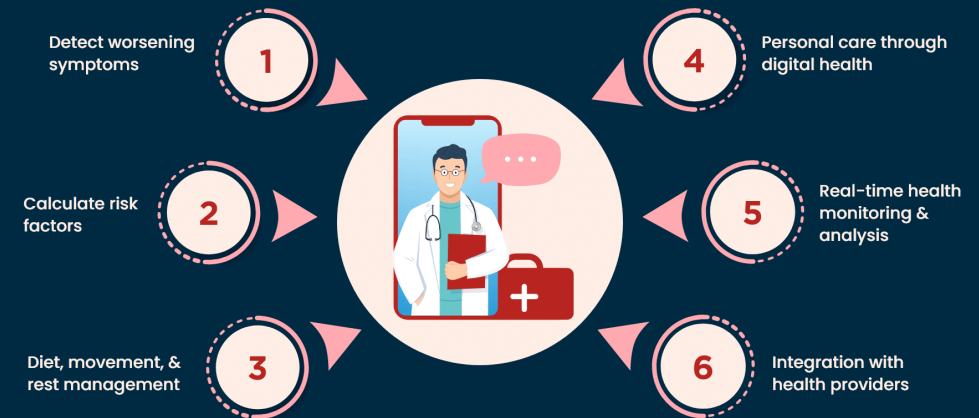


Benefits of Disease Management



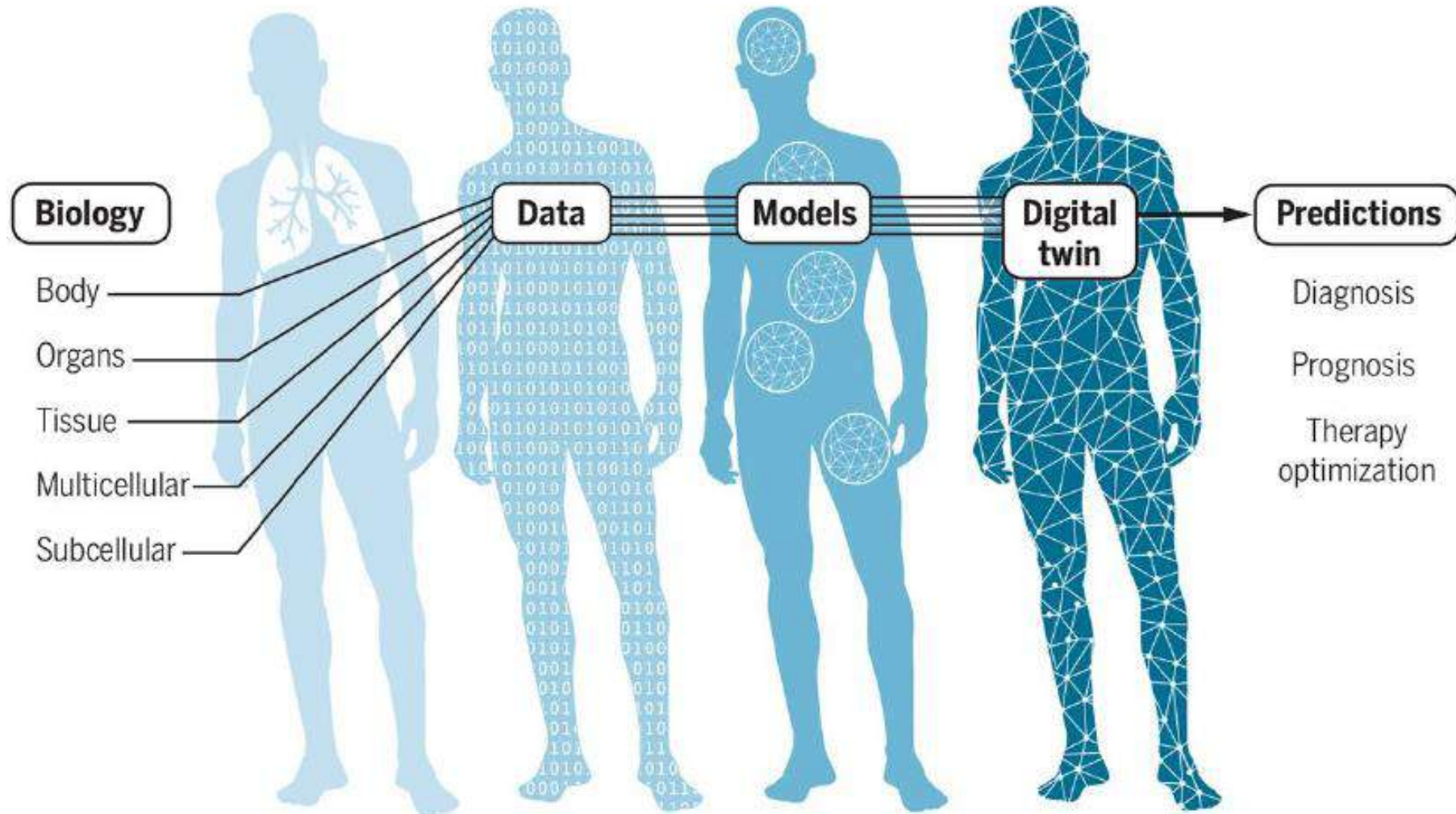
Health Apps

— FEATURES —



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 VISION

Enabling exemplary person-centred care
through digital innovation

DIGITAL HEALTH
STRATEGIC
THEMES

Patient-centred

BROAD
BASE OF
INFORMATION
USERS

Primary care
providers

Clinicians

Research,
discovery and
collaboration

Health services
enabled by
contemporary
technology

Other Staff and
Volunteers

Educators

Private care
providers

Community care
providers

Family & carers

Patients

Management

Researchers

Students

Supported by an environment that promotes
INNOVATION AND CONTINUOUS IMPROVEMENT through:

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, Tuberculosis, 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



Pieteikuma forma

Pieteikuma forma

Pakalpojuma pieteikšana 1/2

Lai apstiprinātu Jūsu izvēlēto pieņemšanas laiku, vajadzēs autentificēties, izmantojot [Latvija.lv](https://www.latvija.lv)

Lūdzu, izvēlieties!

- PAKALPOJUMS
- SPECIĀLISTS
- RADIOLOĢIJAS IZMEKLĒJUMS

Pieteikuma forma

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Pakalpojums

endokrinoloģa konsultācija

Ārsts

Mēģēt...

NEIZVĒLĒTIES ĀRSTU

Pakalpojuma saņemšanas veids

- KLĀTIENES KONSULTĀCIJA
- VIDEO KONSULTĀCIJA
- TELEFONA KONSULTĀCIJA

PSCUH Booking appointment online

Izvēlieties datumu un laiku

VALSTS LĪDZFINANSĒTIE LAIKI MAKSAS LAIKI

jūnijs 2024

26	27	28	29	30	31	1	2
3	4	5	6	7	8	9	
10	11	12	13	14	15	16	
17	18	19	20	21	22	23	
24	25	26	27	28	29	30	
1	2	3	4	5	6	7	

septembris, 2024. gada 11. mējs

Lai iegūtu papildu informāciju par pakalpojuma pieejamību, lūdzam zvanīt uz pacientu vienoto pieraksta tālruni 67069280.

Pirmdiena 10.06.	Otrdiena 11.06.	Trešdiena 12.06.	Ceturtdiena 13.06.	Piektdiena 14.06.	Sestdiena 15.06.
Nav pieejamu laiku	Nav pieejamu laiku	Nav pieejamu laiku	Nav pieejamu laiku	09:00 ↗ 09:30 ↗	Nav pieejamu laiku

Autentifikācija

Lūdzu veiciet autentifikāciju

Lai apstiprinātu pierakstu, lūdzam autentificēties. Pacienta personas dati ir jānorāda pēc autentifikācijas. Izvēlētais vizītes laiks rezervēts uz 15 min., kuru laikā Jums ir jāpabeidz aizpildīt pieteikuma forma.

Latvija.lv

PSCUH Booking appointment online

Sākums - Pacalķuma forma

Pieteikuma forma

Datums un laiks: 14.06.2024 09:30

Ārsts: Rota Ritenberga

Cena: 60 EUR

Atlikušas sesijas laiks: 14:07 ▲

📍 KLĀTIENES KONSULTĀCIJA

Pacients

Gits pacients

Vārds*

IEVA

Uzvārds*

SIKAVA

Personas kods/ identifikācijas numurs*

E-pasts*

Telefons*

Dzimšanas datums*

04.11.2000



Kontaktinformācija sazinai ar slimnīcu

Labot kontaktinformāciju

Vārds

IEVA

Uzvārds

SIKAVA

E-pasts

Telefons

Papildinformācija

Ar nosūtījumu Apdrošināšana No pacienta iemaksas atbrīvots

Piezīmes

Digital health in Latvia

- E-health system:
 1. E-prescriptions – since 2018
 2. Sickness 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 interoperability:
Technical standard: HL7 CDA => HL7 FHIR

- 2) Implementation of new terminology standards:
 - 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
 - ICC3 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)



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

Valsts	Latvija nodod e-recepšu datus	Latvija saņem e-recepšu datus
Spanija	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Polija	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Igaunija	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Portugāle		<input checked="" type="checkbox"/>
Čehija	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Lietuva	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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

Patient summary exchange (04.03.2024)

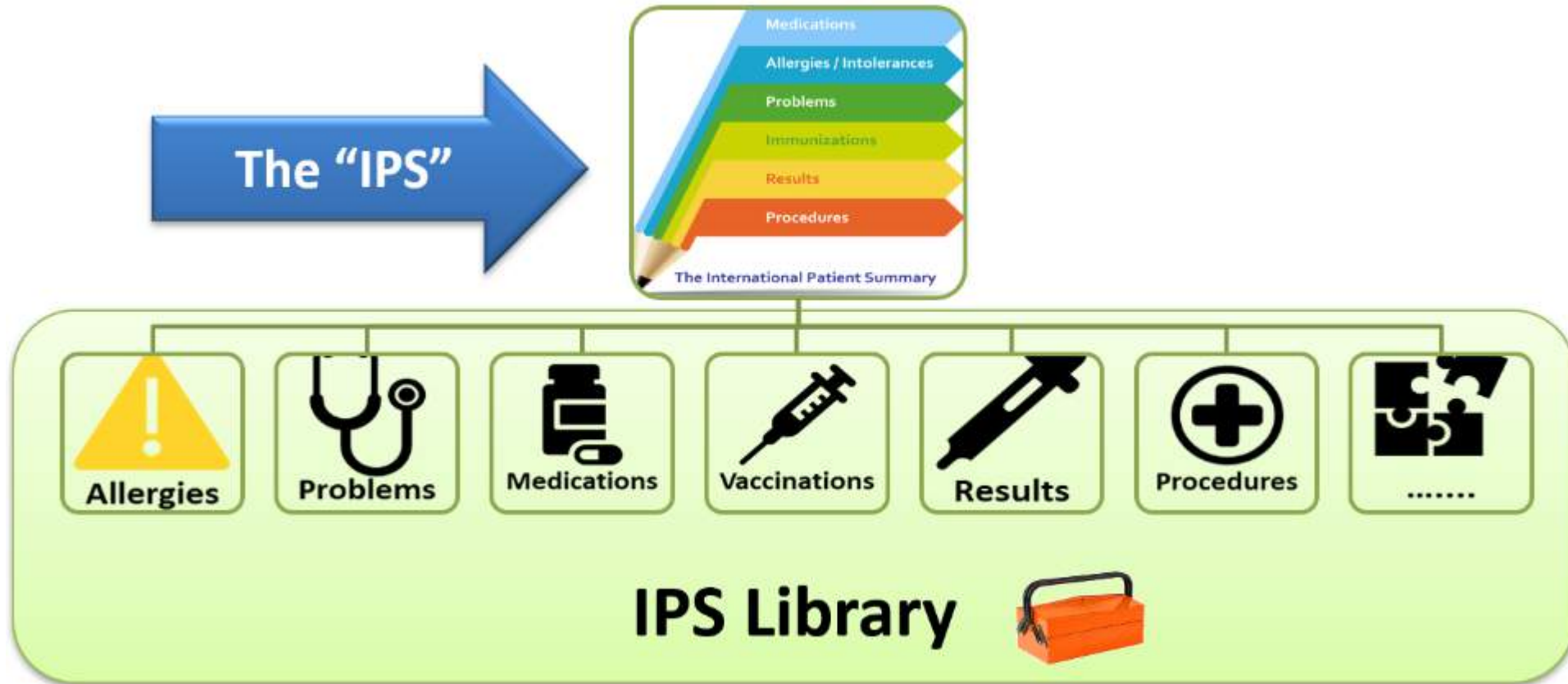


Valstu saraksts, ar kurām Latvijai notiek veselības pamatdatu pārrobežu datu apmaiņa

Valsts	Latvija nodod veselības pamatdatus	Latvija saņem veselības pamatdatus
Portugāle	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Spānija	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Igaunija	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Francija	<input checked="" type="checkbox"/>	

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

International Patient Summary (IPS)



IPS Composition



„Header“

Required

Recommended

Optional

Digital health in medical education



BENEFITS OF SIMULATION BASED TRAINING



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!