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Preparing for the Digital Transformation of Healthcare in Ukraine.

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ТЕМА ДОПОВІДІ

Preparing for the Digital Transformation of Healthcare in Ukraine.

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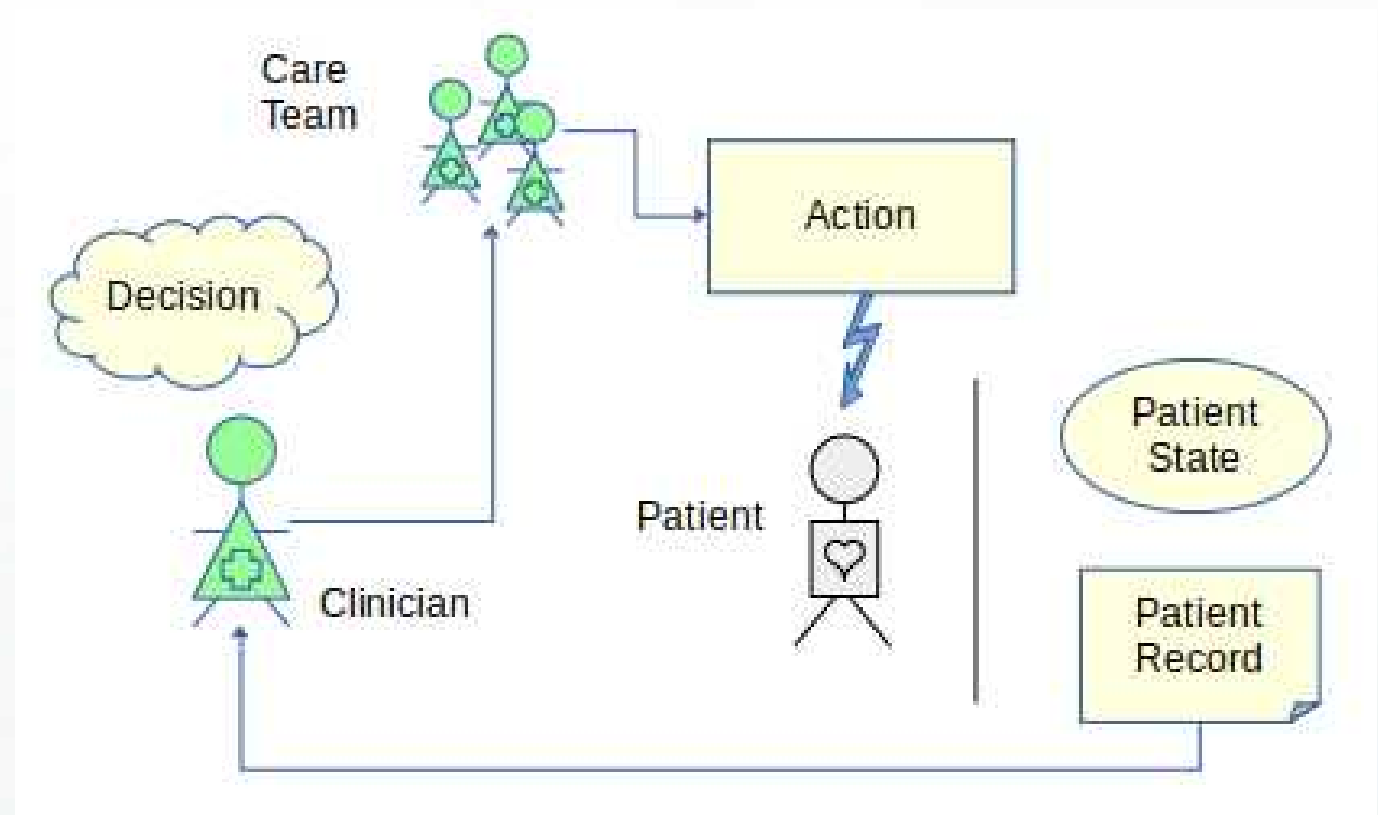
An Engineer's View of Healthcare



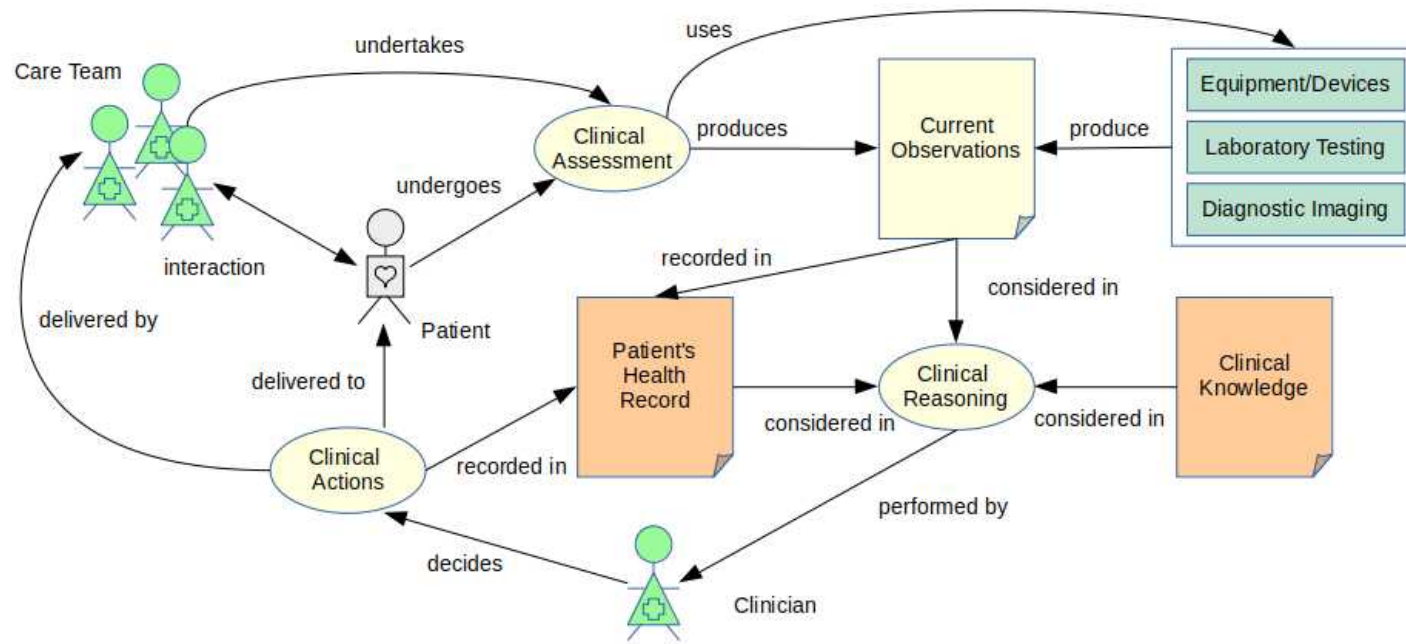
Healthcare can be modeled as a sequence of Actions to improve or maintain the health of a patient.

Actions are delivered by members of a Care Team or by Patients themselves.

The next Action is decided by a Clinician, based on the current State of the Patient and the historic Patient Record.

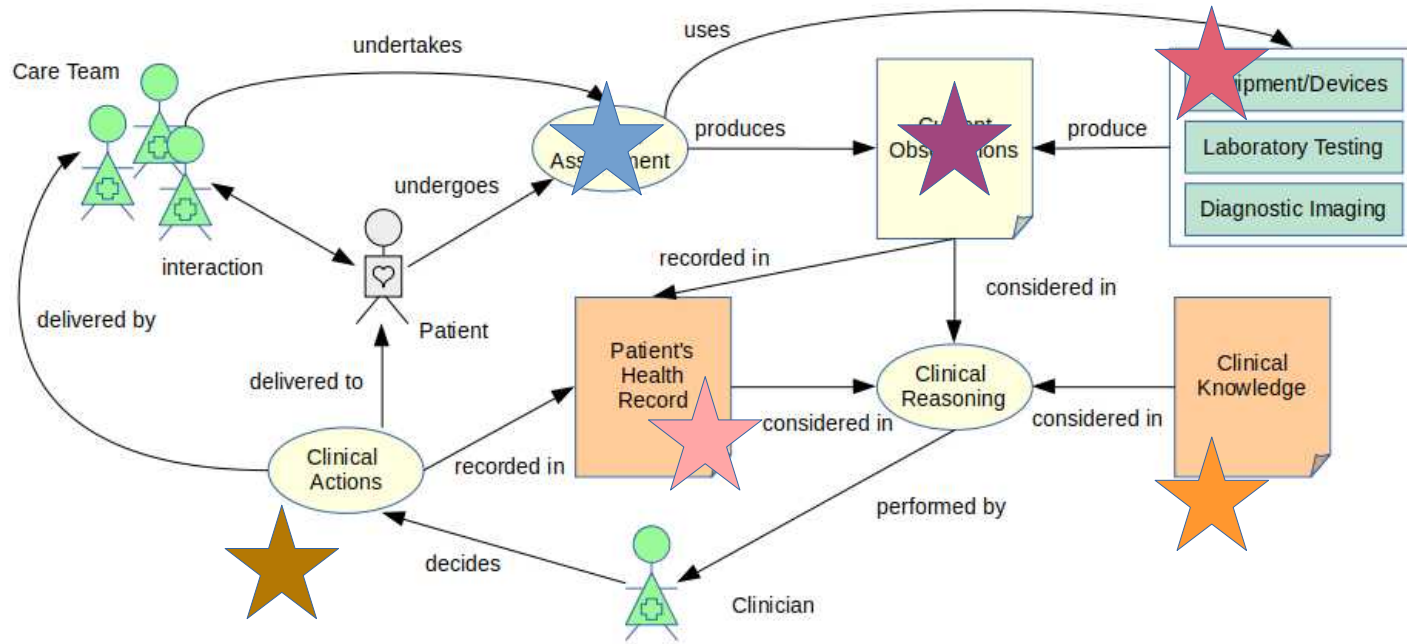


Digital Transformation of Healthcare



Digital Transformation of Healthcare is introducing digital systems at every point of the healthcare process.

Digital Transformation of Healthcare



- ★ Digital monitoring and assessment
- ★ Digital ordering
Digital prescribing
- ★ Digital imaging
Digital labs

- ★ Clinical Decision Support
Executable Care Pathways
- ★ Electronic Health Records
Personal Health Records
- ★ Robotic Surgery
Continuous drug delivery



Digital Transformation of Healthcare is introducing digital systems at every point of the healthcare process.

Digital Transformation of Healthcare



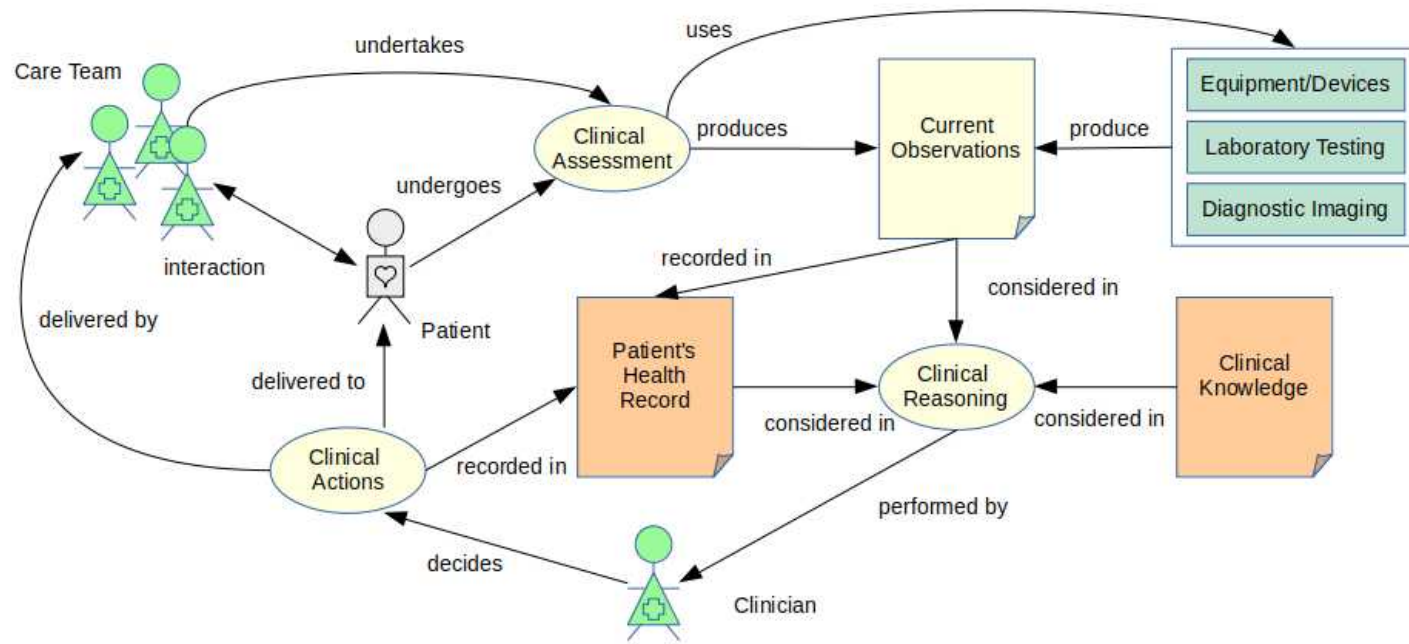
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For most people, the digital transformation of healthcare now means the application of Artificial Intelligence in healthcare.

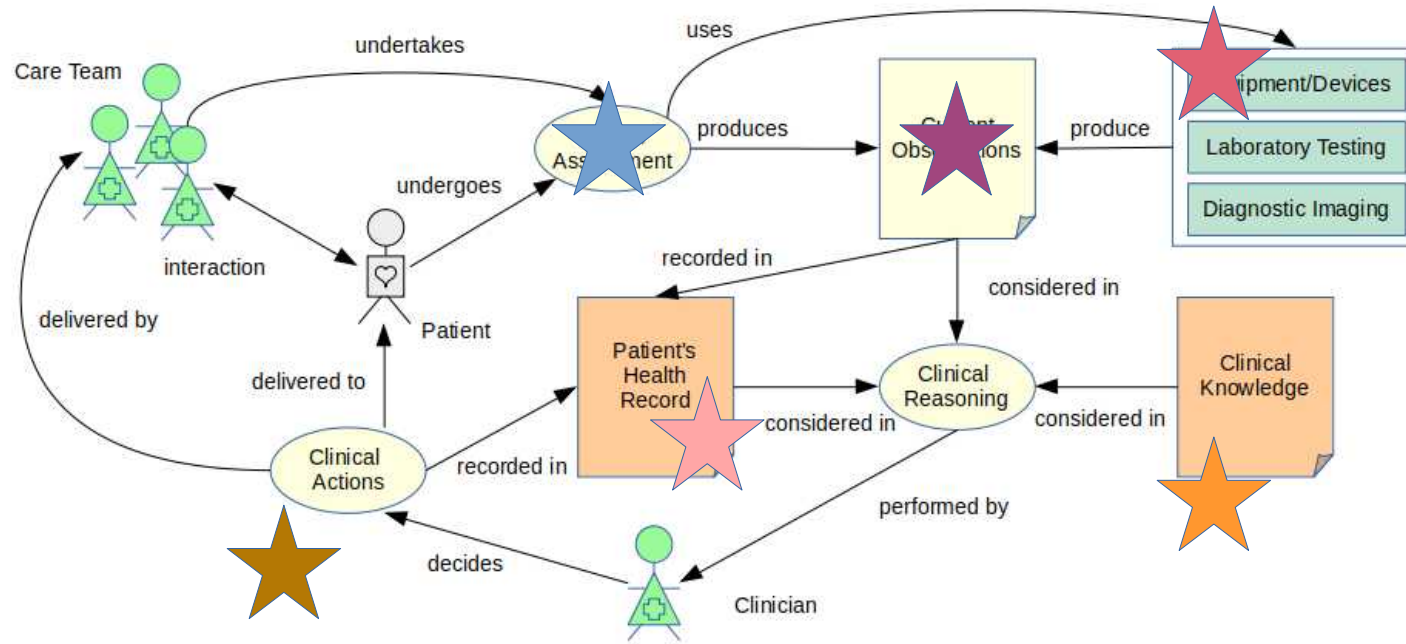


Fundamental Change to the Practice of Healthcare



It is true that AI is set to fundamentally change the practice of healthcare and the ways in which citizens maintain their own health and interact with healthcare services.

Fundamental Change to the Practice of Healthcare



Digital Scribe
(AVT)



Video monitoring
Automated Alerts



Image Analysis
Test Interpretation



LLMs
Digital Health Assistants



Structured summaries
Clinical data visualization



Autonomous Robotic Surgery
Patient Advocate



It is true that AI is set to fundamentally change the practice of healthcare and the ways in which citizens maintain their own health and interact with healthcare services.

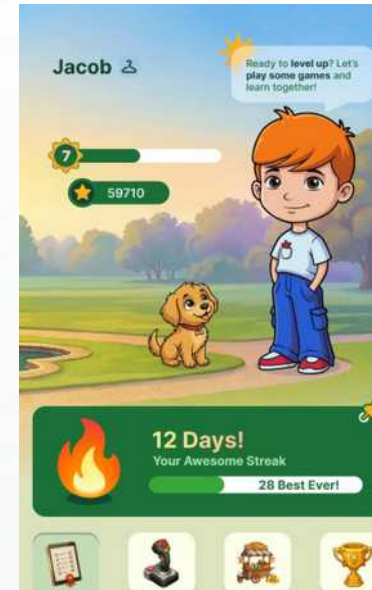
AI, Mobile Health Applications, Telemedicine



Yet the key to digital transformation in healthcare lies in the foundations of digital health upon which the latest advances in AI, mobile health applications and telemedicine depend.



Artificial
Intelligence



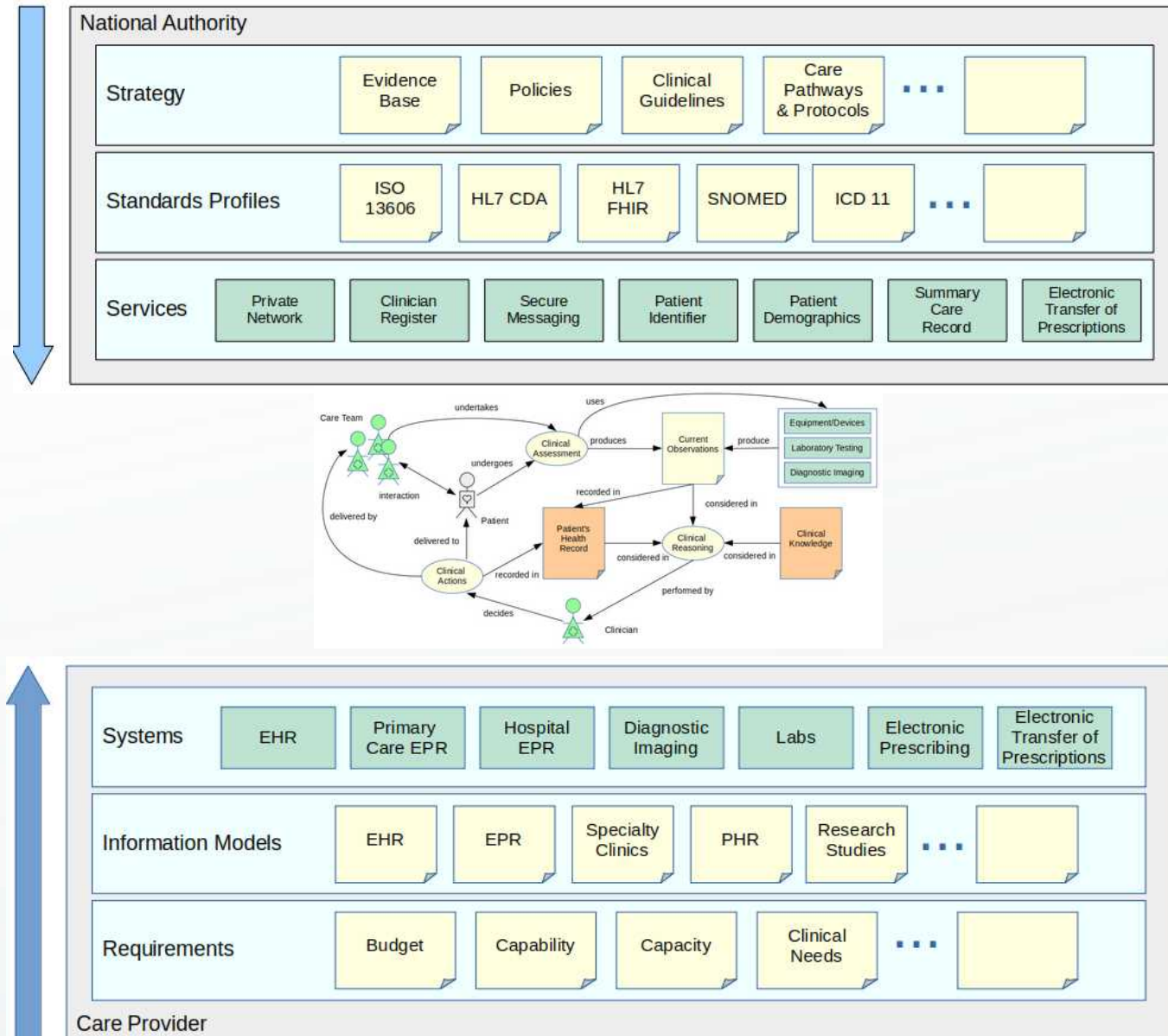
Mobile
Applications



Telemedicine
And Telehealth

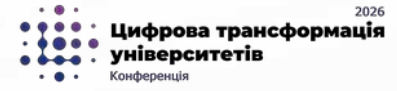
Foundations of Digital Health

The Foundations of Digital Transformation



Those foundations include structured Electronic Health Records, national services for managing patient and clinician identity, access control and security, and the seamless transfer of healthcare data between applications at local, regional and national level.

Digital Transformation in North America and Europe



Ukraine's North American and European allies may seem further advanced in the digital transformation of healthcare, but in reality they have made many mistakes over the last thirty years and spent billions of dollars on solutions that are far from ideal.



The Gazette

MONTREAL NEWS

Quebec's electronic records plan a 'disaster,' Barrette says

Nearly 15 years later and costing \$1.6 billion dollars, Quebec's electronic medical records remains a patchwork of digital applications that often do not communicate with one another.

≡ Dayton Daily News

OPINION: Our veterans deserve better. The VA's health records disaster can't happen again

Garrett Exner - Contributing Writer May 26, 2026 Updated 2 hrs ago

IEEE Spectrum

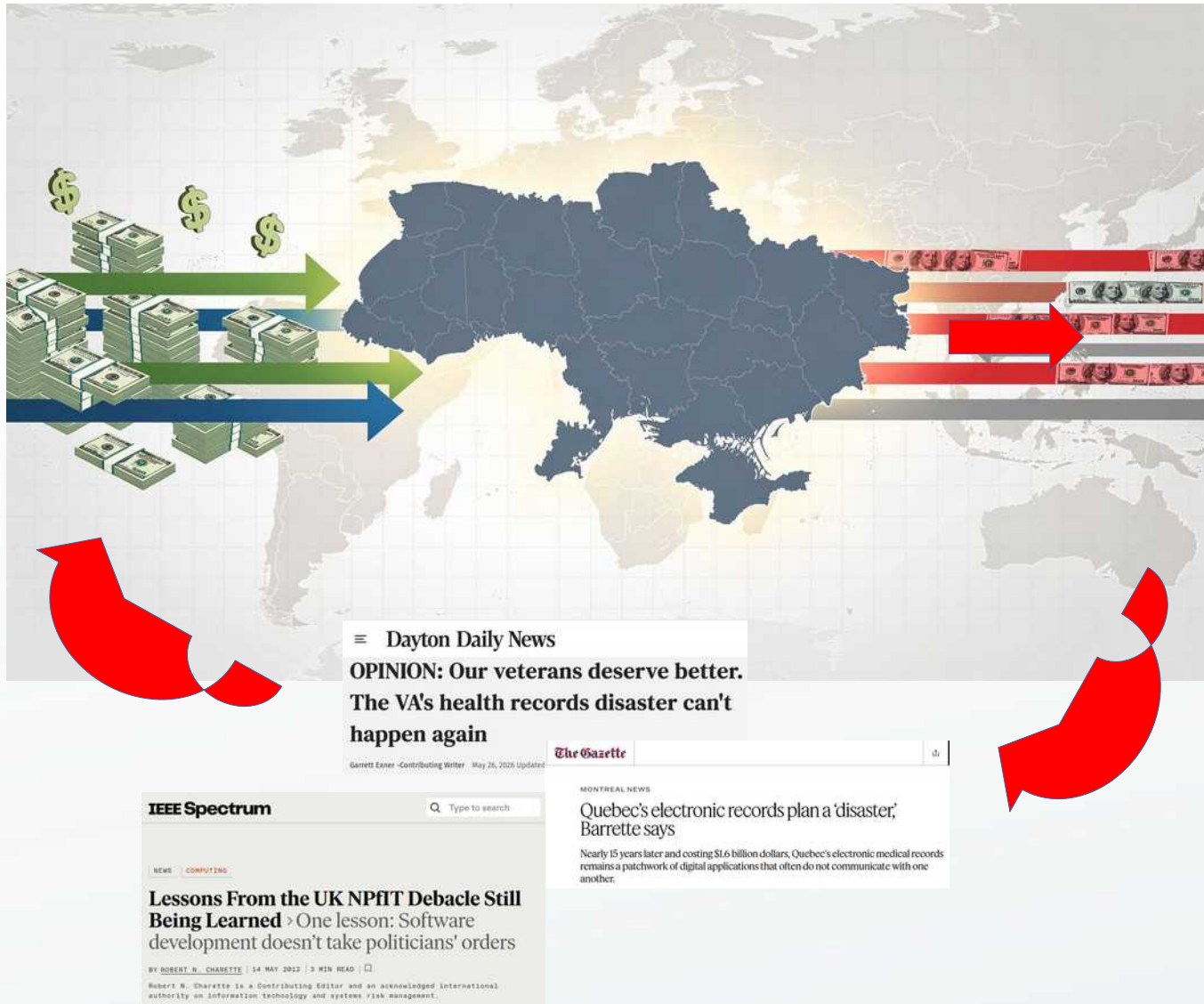
NEWS COMPUTING

Lessons From the UK NPfIT Debacle Still Being Learned > One lesson: Software development doesn't take politicians' orders

BY ROBERT N. CHARETTE | 14 MAY 2012 | 3 MIN READ |

Robert N. Charette is a Contributing Editor and an acknowledged international authority on information technology and systems risk management.

Dangers When the Reconstruction of Ukraine Begins



There is a danger that when the reconstruction of Ukraine begins, money flowing into the country for digital transformation of healthcare will flow back out again, spent on the same imperfect products and solutions that have under-performed in other countries.

An Approach that is "Made in Ukraine"



Securing the future of digital health in Ukraine requires the development of local expertise and an approach that is "made in Ukraine".

It requires an equivalent digital transformation in higher education, teaching students the foundations of digital health and equipping them with the knowledge and skills required to drive the digital transformation of healthcare.



**ЗРОБЛЕНО
В УКРАЇНІ**

Pictures from the Odesa Oblast, 2018

Delivering Future Digital Health Solutions



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Those students will become the technologists, engineers, administrators and politicians who will deliver future digital health solutions.

Digital Transformation of Teaching



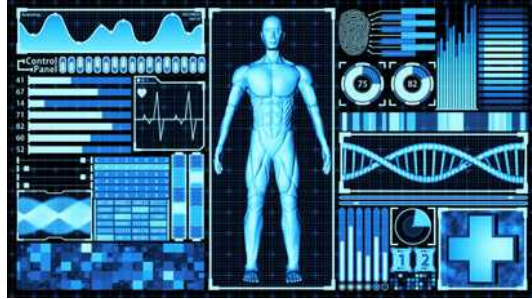
Digital transformation of teaching the digital transformation of healthcare involves hands-on learning using open source software, international open standards for health data representation and exchange, alignment with EU data protection, medical device and AI regulations, understanding of the legislation and administration of healthcare in Ukraine, and student-led research into the application of AI in healthcare.



Health Informatics at Masters Level in Ukraine



science of information



practice of information processing



engineering of information systems



In 2026 we launched an initiative to introduce the academic discipline of Health Informatics at Masters level in Ukraine.

Health Informatics is the science of information, the practice of information processing and the engineering of information systems in healthcare.

Introduce Health Informatics into Masters Programs



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Fall Semester

Concepts in Health Informatics
Models for Clinical Information
Electronic Health Records

Spring Semester

The Business of Health Informatics
Engineering Clinical Information Systems
Healthcare Integration

Summer Semester

Artificial Intelligence in Healthcare
Analysis and Reporting in Healthcare

Residential Courses (one-week, intensive)

State of the Art in Health Informatics
XML in Healthcare
Integration in Healthcare and Telemedicine
Model-Driven Electronic Health Records



Starting with a full set of open source teaching materials, first used to deliver the Applied Health Informatics masters program at Fordham University in New York, participating universities are developing their own materials and will start to introduce Health Informatics into their masters programs, starting in September.



Curriculum Development Workshop, Oxford



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Ukrainian universities have participated in a first curriculum development workshop at the University of Oxford, in collaboration with Nord University (Norway) and the University of Victoria (Canada).



Workshops on Telemedicine Data Integration



**In addition, we are delivering
a series of practical
workshops on Telemedicine
Data Integration for students
from Rivne and Kyiv.**

Sprint 1 - Jan	Sprint 2 - Feb	Sprint 3 - Mar	Sprint 4 - Apr	Sprint 5 - May	Sprint 6 - Jun
Development Environment	Prototype Sub-Systems	End-to-End Prototype	Hospital Deployment	End-to-End Pilot	Live Running
01 – Telemedicine Integration Architecture	05 – Telemedicine Device Integration	08 – EHR Information Models	11 – MIS Interface Adaptor Development	14 – EHR User Experience	17 – Continuous Glucose Monitoring
02 – Agile Development Process	06 – ECG Signal Processing	09 – Mirth Integration Engine Deployment	12 – Integration Engine Channels and Routing	15 – EHR Summary and Reporting	18 – Line Systems Patient Monitoring
03 – Server Room Deployment	07 – EHR Repository Deployment	10 – Integration Engine Transformation	13 – EHR Internationalization	16 – Business Intelligence Configuration	19 – Line Systems Data Integration
04 – Hypervisor (KVM) Configuration					



Real Implementation Project



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The workshops run in parallel with a real implementation project, which is using open standards and open source software to build a server room, deploy equipment and virtual machine infrastructure, access data from telemedicine devices, store those data in a Data Lake, interface with Medical Information Systems (MIS) and provide data analysis and reporting.



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