
Building the third generation EHR

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Next Generation thinking – The NHS

A. Best of Breed

A collection of solutions usually selected and procured by health systems on basis of cost. There is little consideration for interoperability, data standardisation or longer term usability.

Tactical system with siloed non-standardised data & low organisational reach

B. Monolithic

Single EPR vendor implementing their solutions across the continuum of care, spanning primary care, secondary care and support services.

EPR-centric landscape with some sharing between organisations & care settings

C. Federated

Orchestrated by the healthcare provider that focuses on the data for the life of a patient. Longitudinal data is engineered and joined to data from other healthcare systems with minimum friction, enabling data liquidity. This allows innovation around the edge to create novel solutions while having stable core systems.

Open data single unified record for the citizen

Level of benefit



Little consideration for interoperability, data standardisation, quality or usability

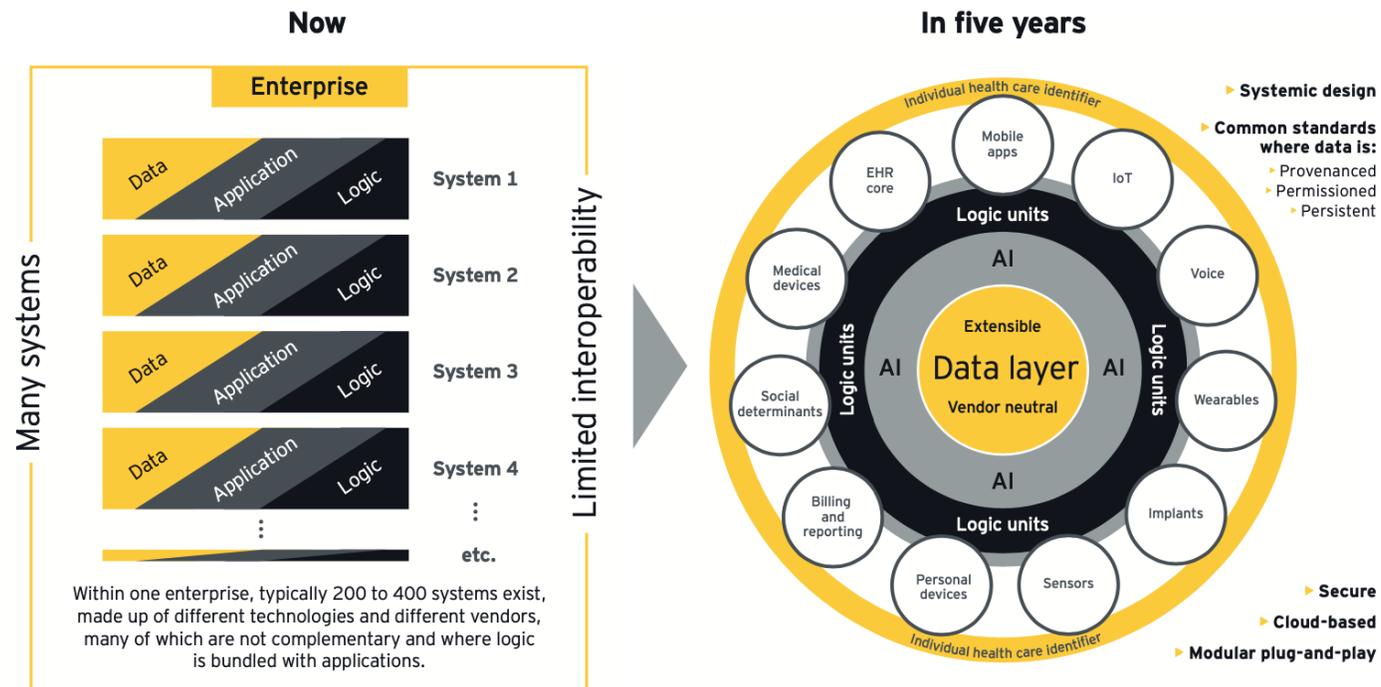


Addresses issues around siloed data with the creation of one unified record



Integrates longitudinal data across multiple healthcare systems with minimal friction.

EY – Future EHR is more than the Hospital



Present: Many systems all with intimately bound data logic and applications

Future: A cohesive technology stack, giving a unified experience for clinicians, professionals and patients; unique data at the center accessed by applications in real time through micro-services

Drivers for future EMR

First Generation – Best of Breed

Cheapest solution, tactical, limited interoperability

Second Generation - Monolithic

Centralize – one large acute EMR that attempts to do everything for everyone, bespoke data model

Third Generation – Federated

Data focused, engineered for all care settings, longevity of standardized data, supports value-based care, citizen focused, longitudinal, adaptive and additive, orchestrated and modular, AI ready



Postmodern Approach



The postmodern EHR Approach

- ✓ Full data fluidity and pathways that span health and care domains
- ✓ A unified and life-long clinical data repository (CDR) designed on open-data standards
- ✓ Support for full interoperability between vendors, technologies, and applications
- ✓ Vendor neutral
- ✓ Applications with a “care-team-driven” user experience
- ✓ Agile and modular



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Unwarranted variation in data = Unwarranted variation in care ?

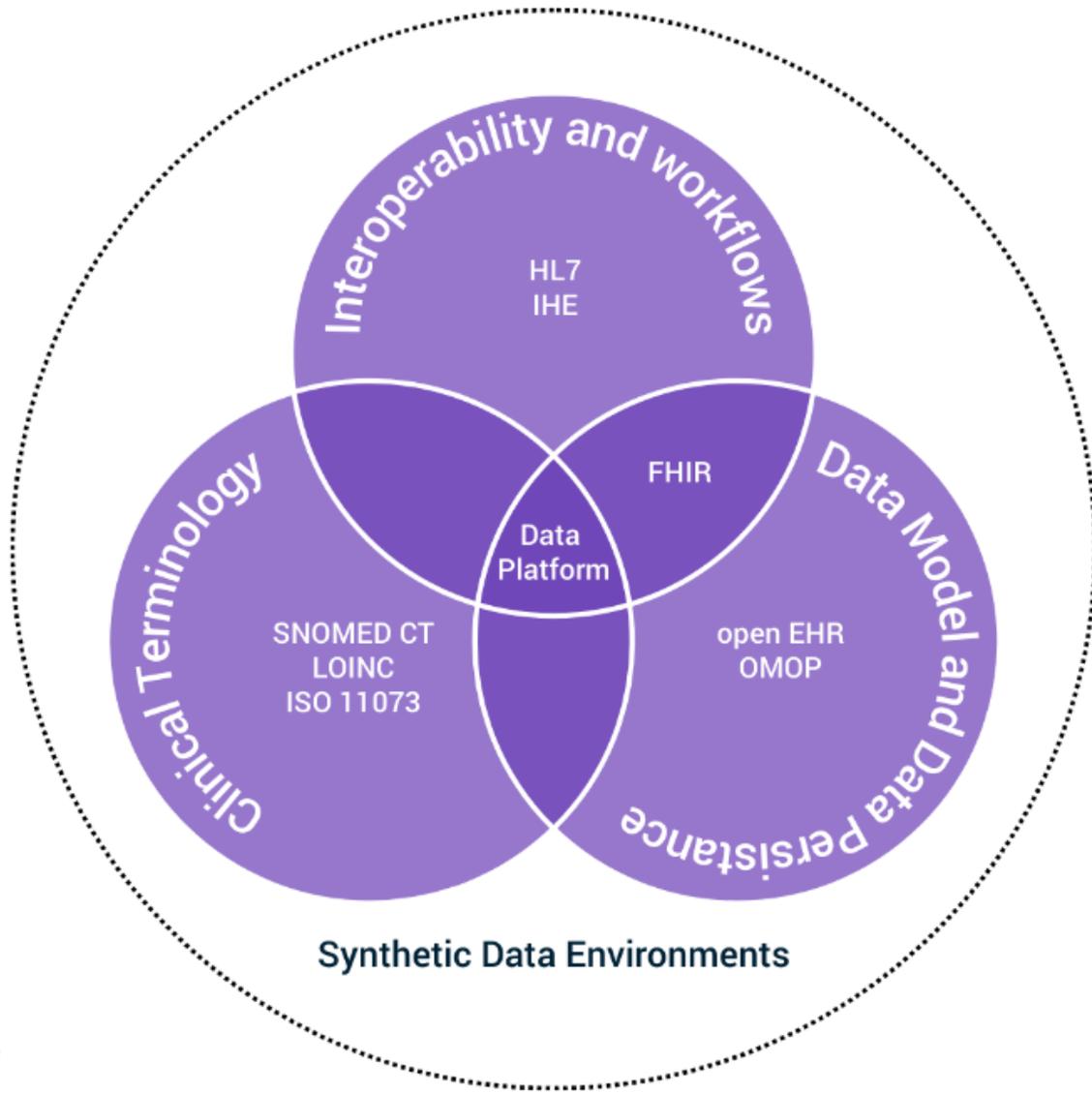
Ridding NHS of “unwarranted variation” could save £5bn a year, says report



Making a Dent in the Trillion-Dollar Problem: Toward Zero Defects

Prof. Peter Pronovost





Life Long
Data for High
Quality Care



How do we engineer ?

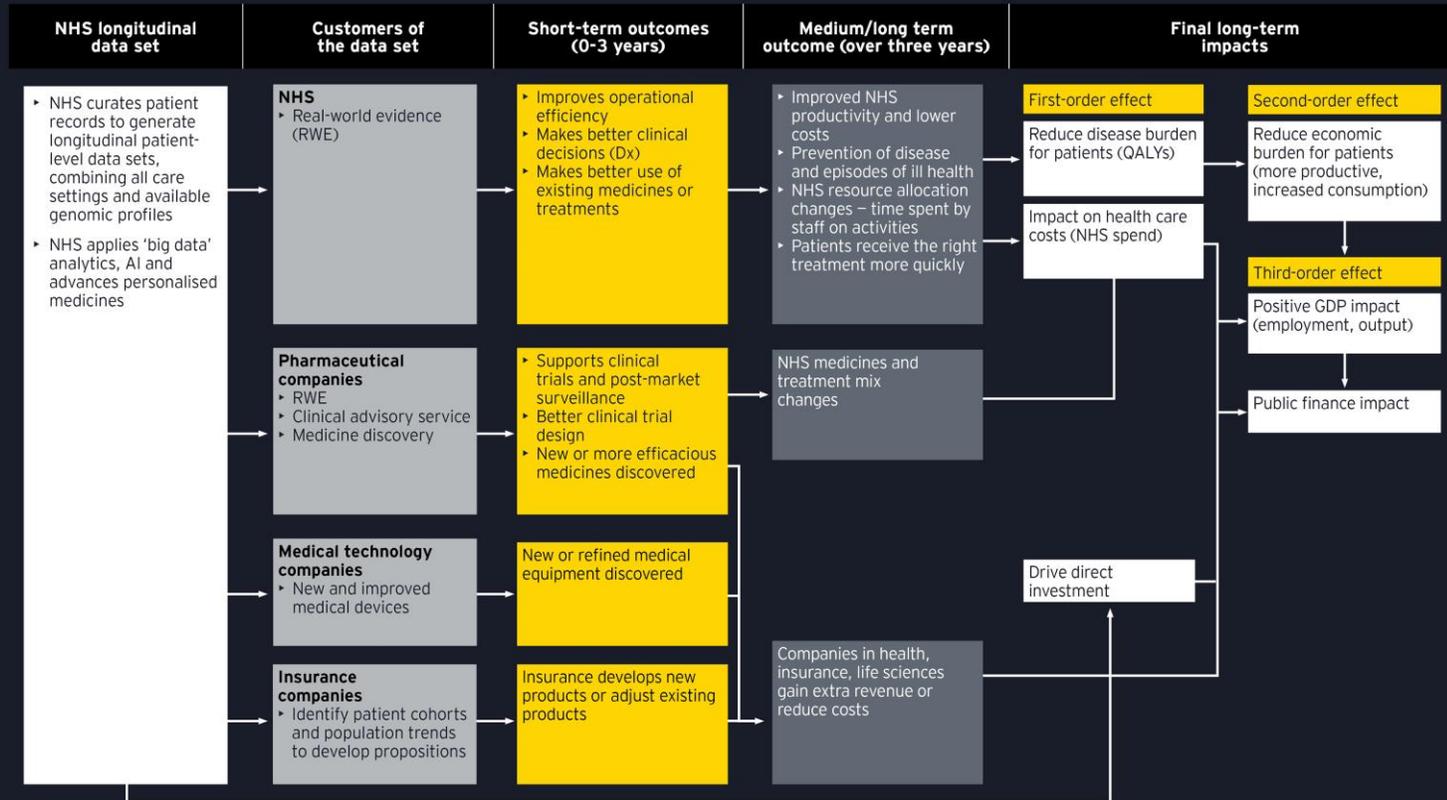


Engineer



Schematic of impact framework for estimating the economic benefits and uplift

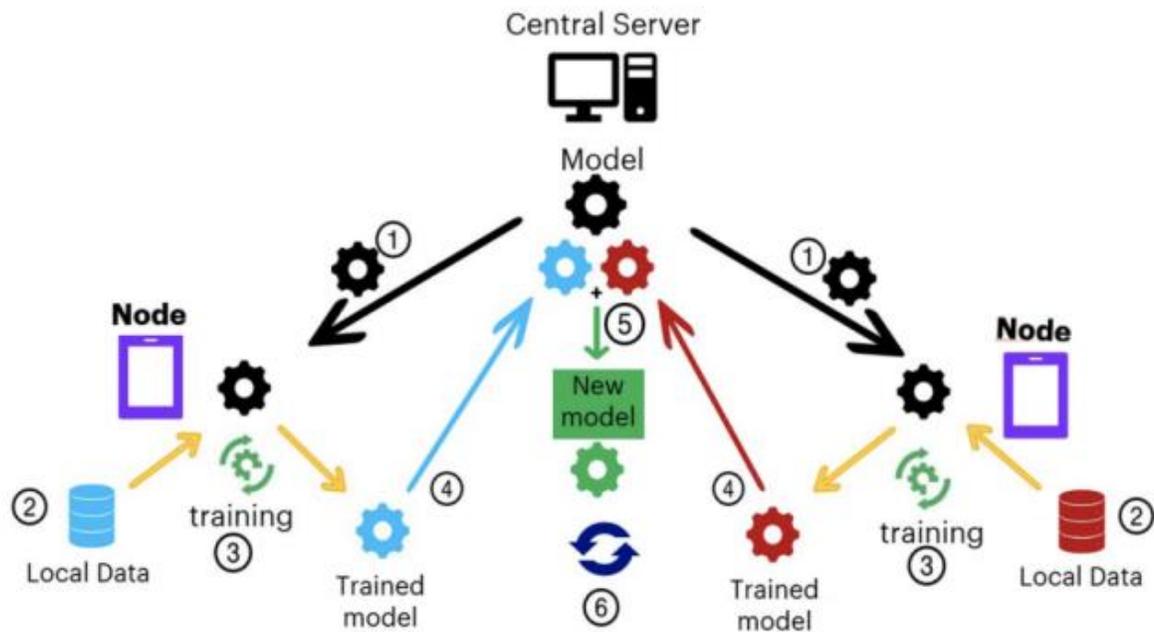
This impact framework demonstrates a number of short-, medium- and long-term impacts which yield financial and economic benefits as a result of more cost effective and informed spending (QALY – quality-adjusted life year; GDP – gross domestic product)..



Data as a civic capital asset

Intangible assets

How this changes buying behaviour



<https://medium.com/accenture-the-dock/instilling-responsible-and-reliable-ai-development-with-federated-learning-d23c366c5efd>

The Third generation EHR – Enabling AI and cognitive age

Looking to the future

- The third generation EHR is engineered for life long data and enables the AI age
- Data becomes the focus – systems and experiences on this data will develop and change over time
- Unwarranted variation in data must be driven out to achieve safe efficient systems
- A new approach to data is needed for the changing health systems with a focus on value based care, personalization, citizen participation and care nearer the home



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