

digitalhealth

AI DATA

Transforming nursing and midwifery: AI's impact on care and practice

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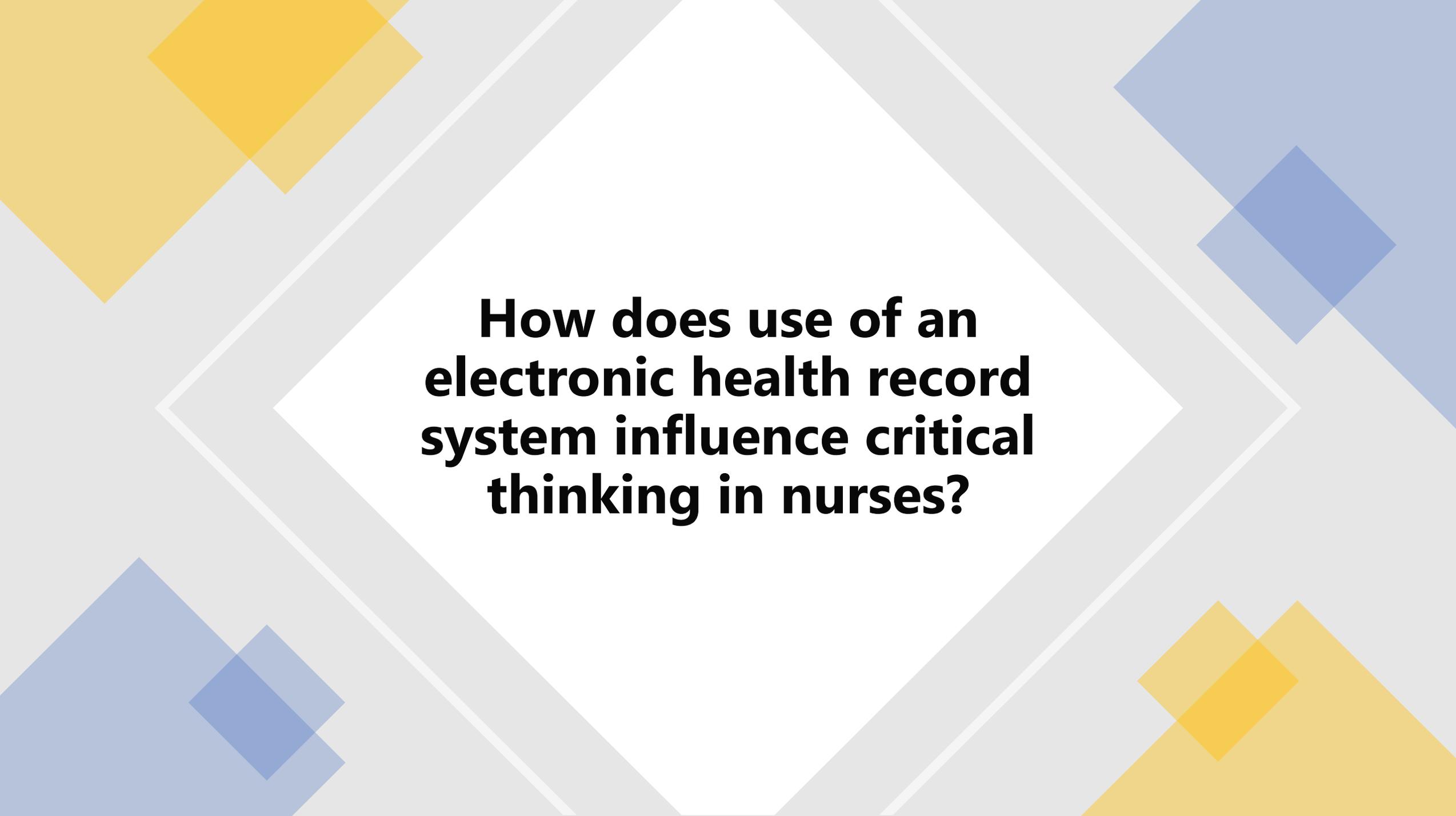
Chair: Sara Nelson

Programme Director
DigitalHealth.London

Headline sponsor



#AIDATA23



**How does use of an
electronic health record
system influence critical
thinking in nurses?**

Scoping Review

- A search of the key operational, review and professional publications
- A search of articles was conducted on the themes which came out of these publications
 - Challenges: healthcare digitisation
 - Challenges: related to clinical documentation
 - Challenges: nursing documentation and process
- A general internet and library search



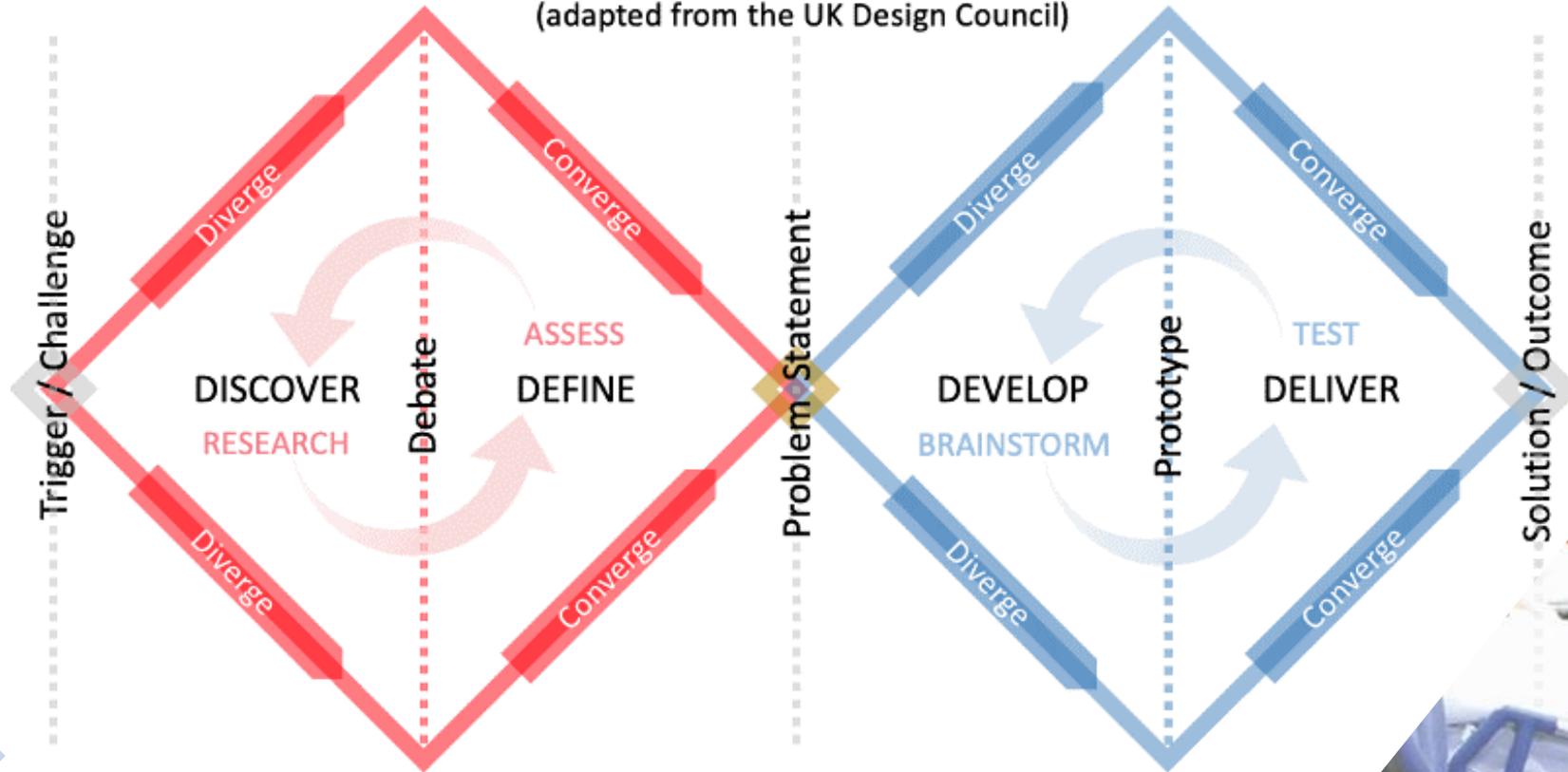
Themes

- Design Process
- Data rich or complex data environments
- **Clinical decision support systems**
- Documentation burden
- Impact of technology on the nursing process



Design Process

Double Diamond Model of Design Thinking
(adapted from the UK Design Council)

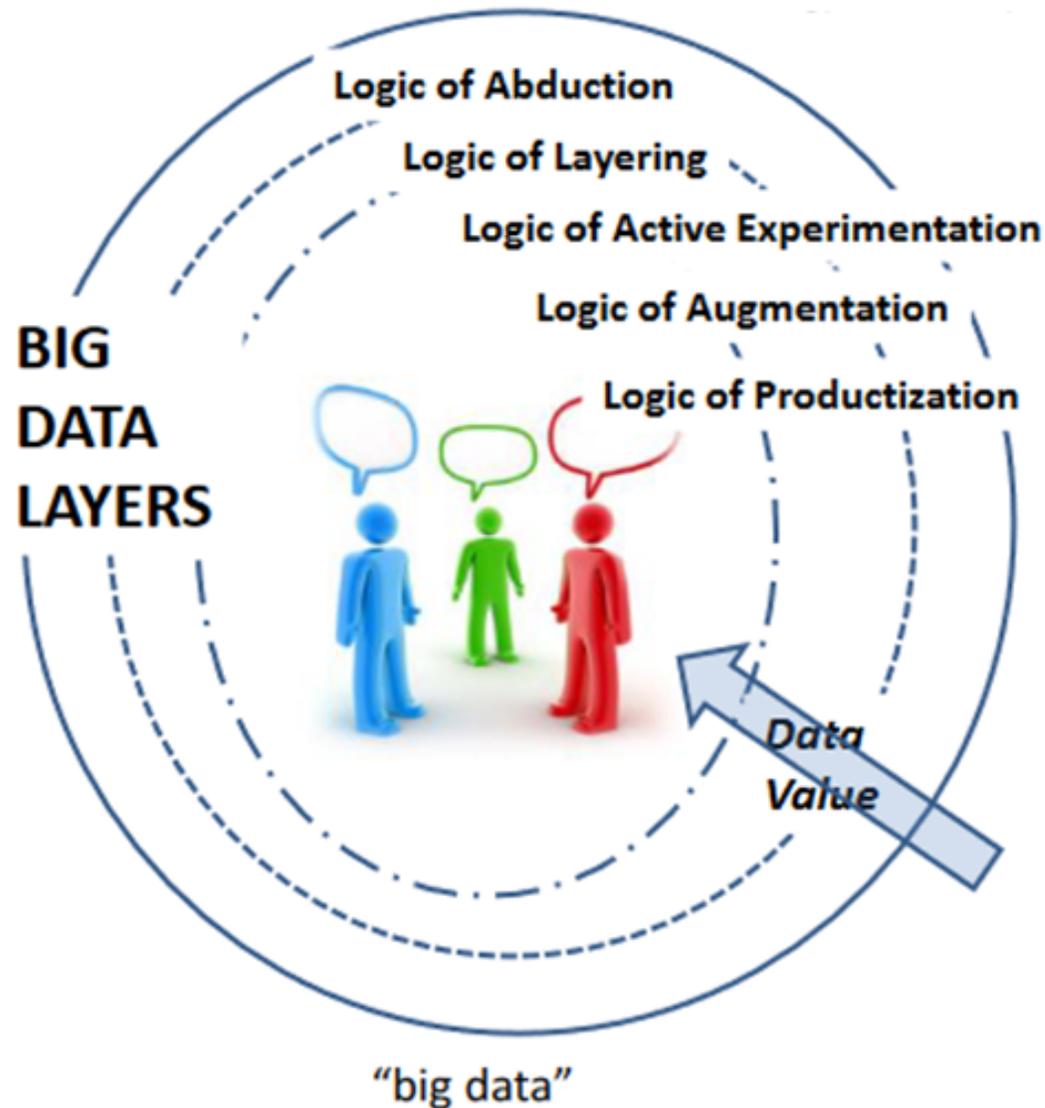


Davis and Francis (2021)



Complex Data Environments

Adapted from Lyytinen & Grover (2017)

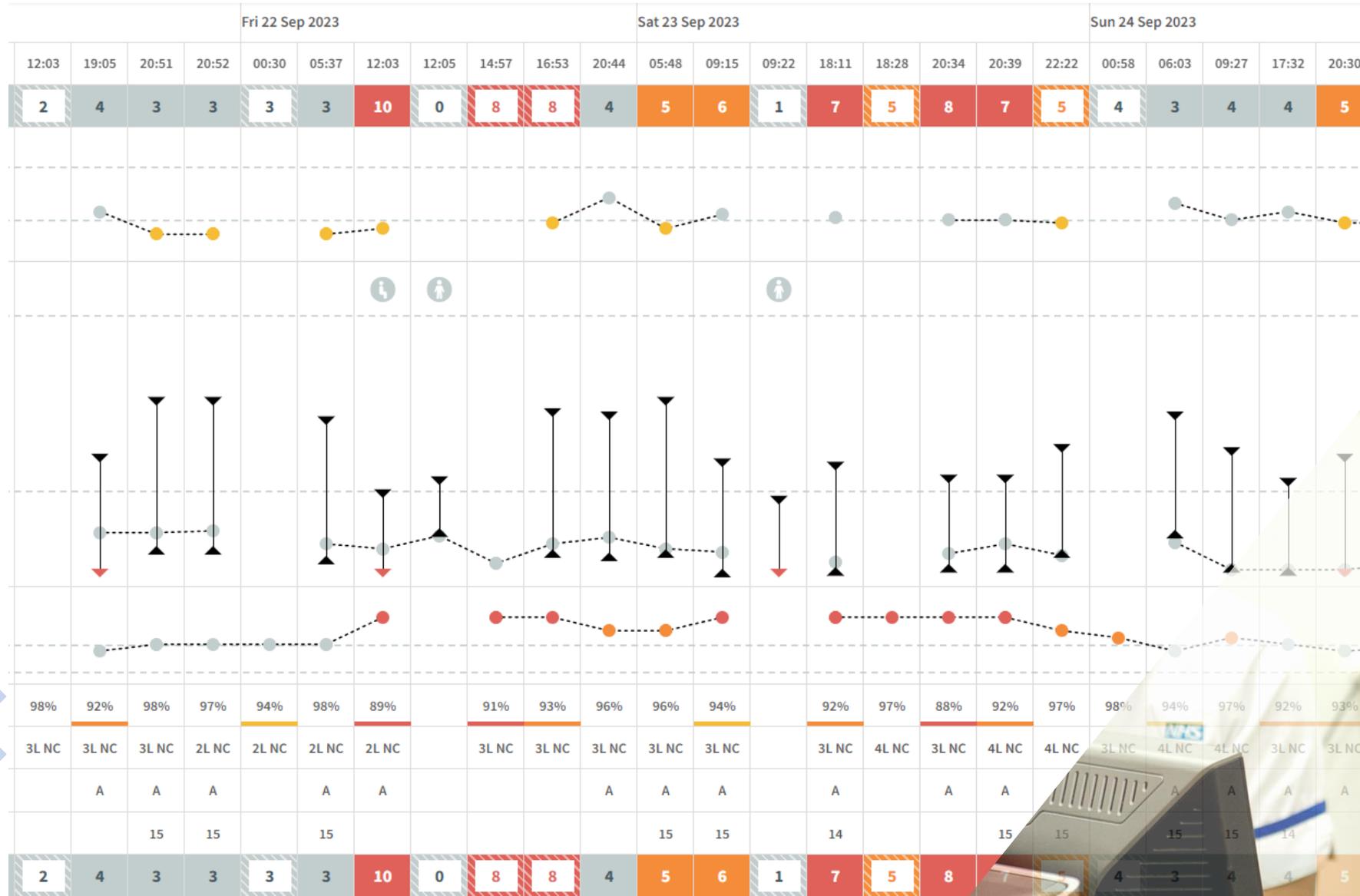


Environment

- Process (Open)
- Dynamic
- Technology & Data Replete



Clinical Decision Support



Documentation Burden

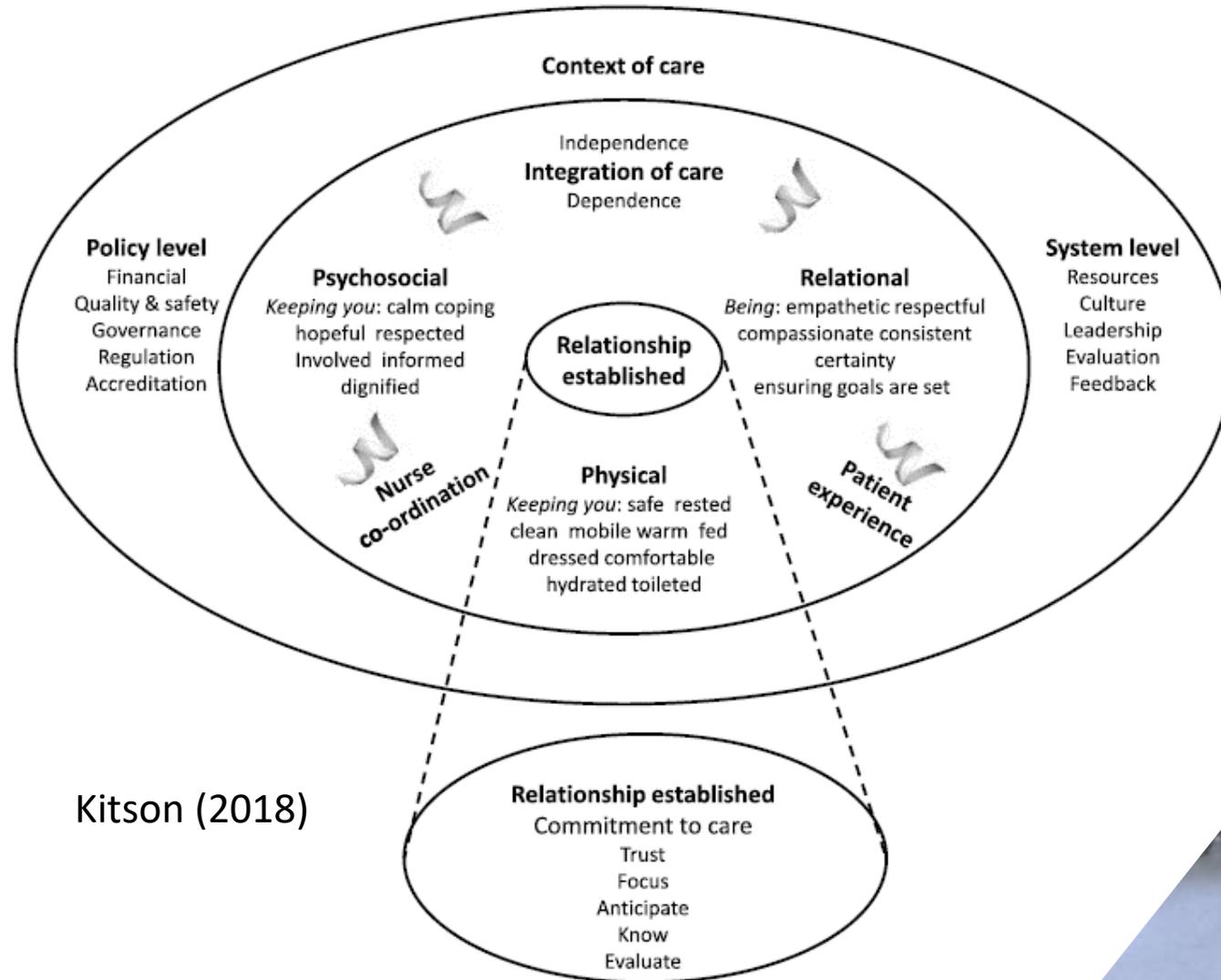
Six Domains of Burden

- 1 Operational
- 2 Regulatory
- 3 Quality
- 4 Usability
- 5 Interoperability
- 6 Self-Imposed

Adapted from
Rossetti and Rosenbloom (2021)



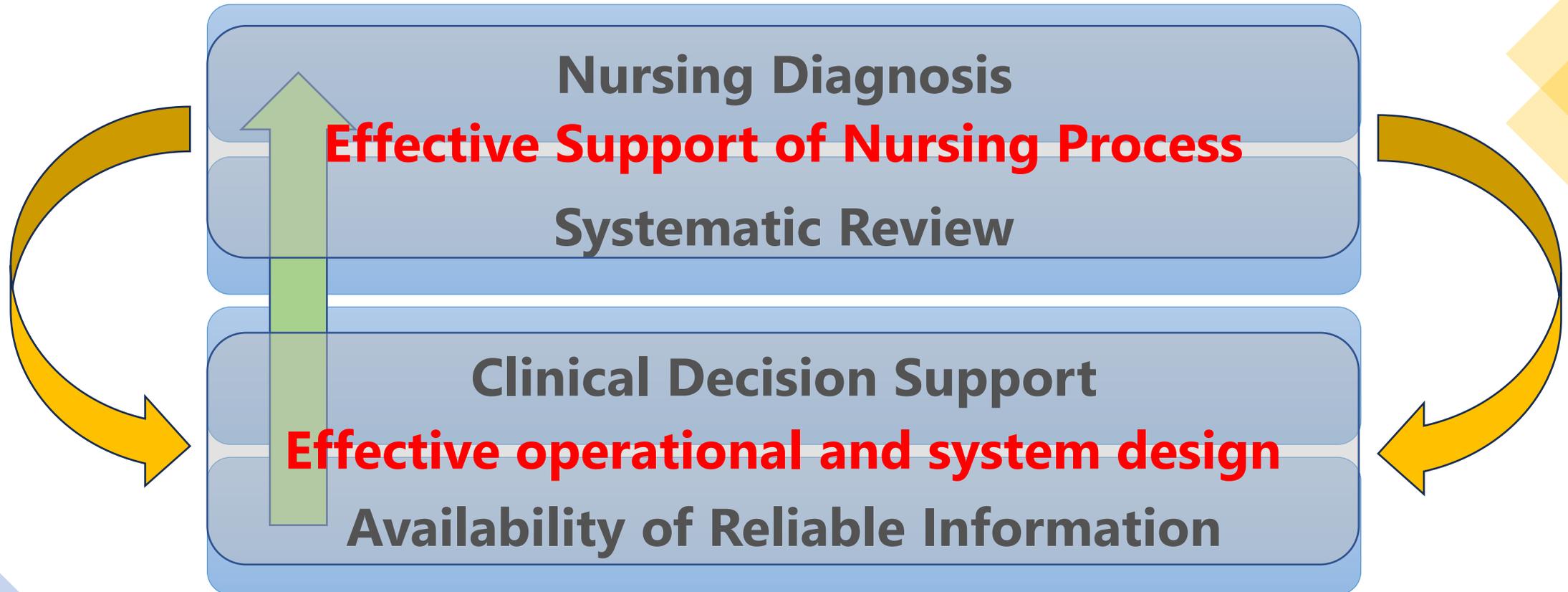
Nursing Process/Diagnosis



Kitson (2018)



The Relationship Between Themes



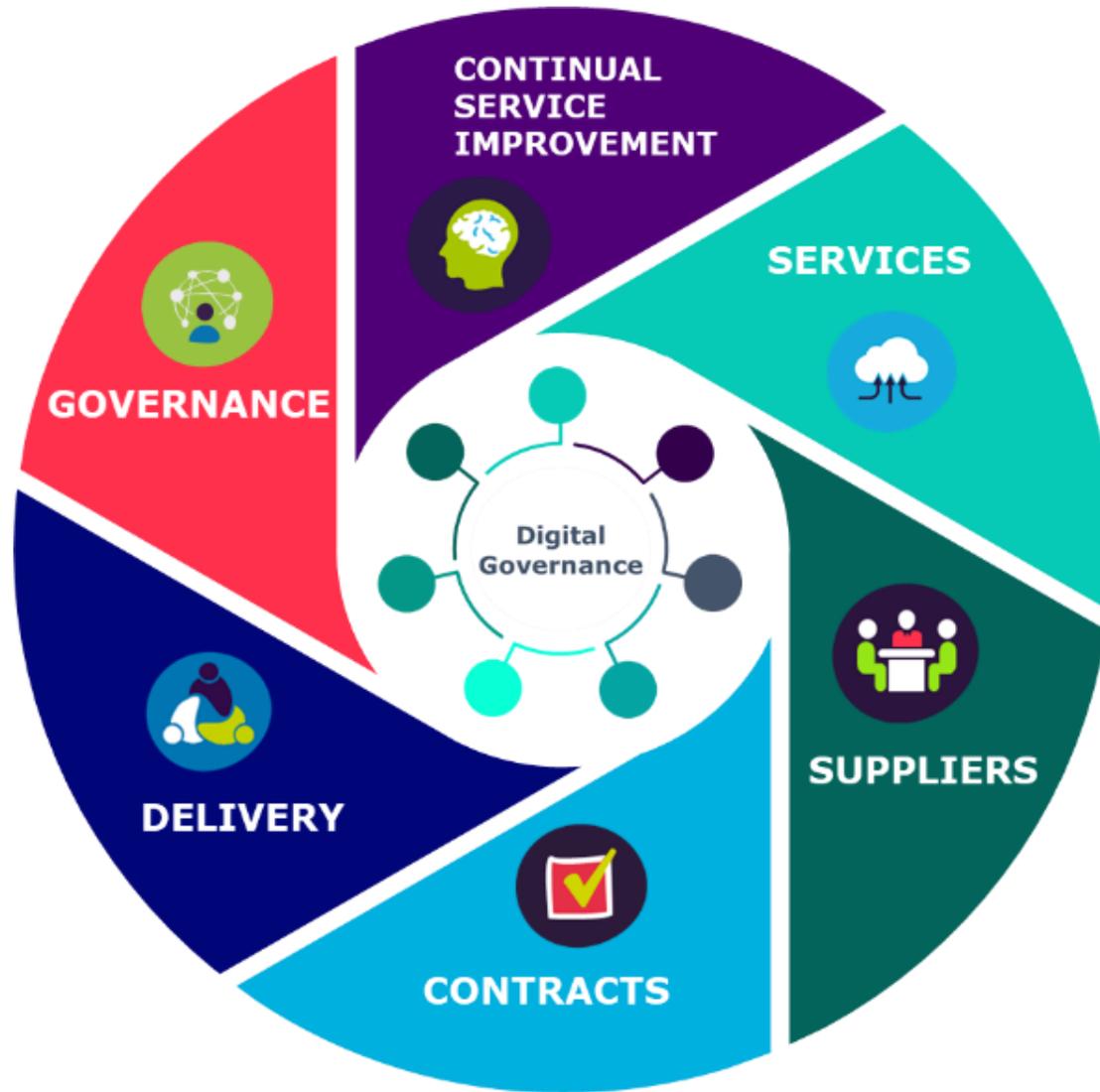


Some Core Considerations

Guidance should inform, not lead



Digital Governance

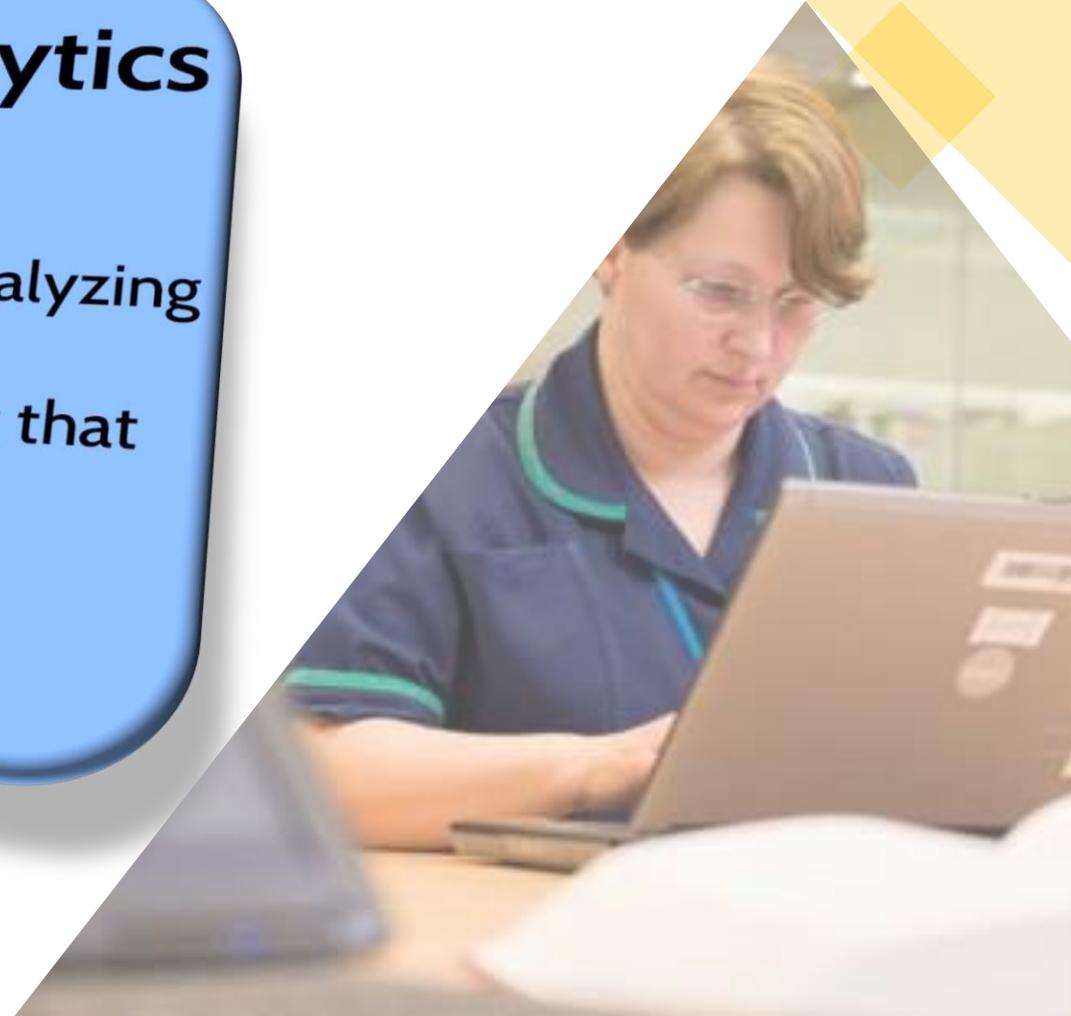


What About the Data?



Data Analytics
['dā-tə ə-nə-'li-tiks]

The science of analyzing raw data to make conclusions about that information.



Digitally Enabled Workforce





In Summary

- Timely and accurate data are vital
- Data overload is toxic
 - Presentation
 - Input demand
 - Alert “noise”
- Culture and ownership are fundamental
- The workforce need to be enabled



Thank you

AI in Maternity

Transforming nursing & midwifery: AI's impact on care and practice

Presented by:

Jules Gudgeon – National Digital Midwife Lead for Maternity

What is AI?

It is the science and engineering of making intelligent machines, especially intelligent computer programs.

John McCarthy 1955

I'm increasingly inclined to think that there should be some regulatory oversight, maybe at the national and international level, just to make sure that we don't do something very foolish. **I mean with artificial intelligence we're summoning the demon.**

Elon Musk

"The use of digital technology to create systems capable of performing tasks commonly thought to require human intelligence".

NHS AI Lab 2023

Alan Turing 1950

"Turing test" was based on the fact that the intelligent behaviour of a computer is the ability to achieve human level performance in cognition related tasks

At its simplest form, artificial intelligence is a field, which combines computer science and robust datasets, to enable problem-solving.

IBM 2023

What is AI in reality?



Some people call this artificial intelligence, but the reality is this technology will enhance us. So instead of artificial intelligence, **I think we'll augment our intelligence**

Ginni Rometty

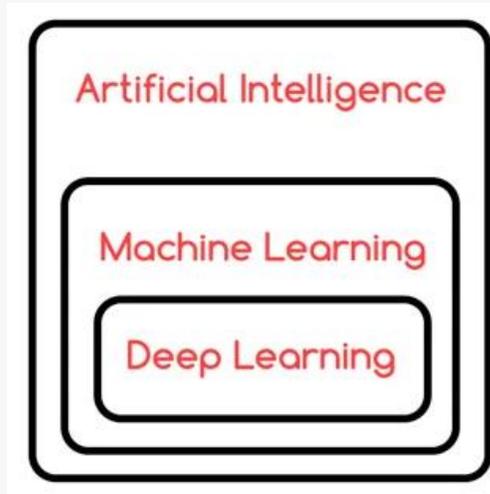
 Chatbots

 Natural Language Processes

 Image recognition

 Machine Learning

And so what...?



All **machine learning** and **deep learning** counts as AI in the broadest category, machines with intelligence

Not all AI is machine learning -the machine **isn't self-aware**; it means it can **solve specific problems** – “if this then do that” using a decision tree

Clinical AI has been ‘happening’ since the 1970s and the digital revolution – when it finally arrives – will come, **slowly, surely and powerfully.**

Hugh Harvey -Kings Fund 2017

2017 – 2022: >3.8M Babies were born in England



AI's Place in Maternity



Prioritise people

You put the interests of people using or needing nursing or midwifery services first. You make their care and safety your main concern and make sure that their dignity is preserved, and their needs are recognised, assessed and responded to.





Portsmouth Hospitals
University
NHS Trust

Portsmouth Hospitals Maternity Intelligent Automation Transformation

Charlotte Taphouse – Digital Lead Midwife for Maternity Services



Clinical risks emerged as we transitioned from hybrid model to fully digital model



Portsmouth Hospitals
University
NHS Trust

Increase in
antenatal
bookings >10
weeks
gestation &
large numbers
>12 weeks

Increase
referrals
waiting to be
actioned.
Mailbox at its
worst sat at
around 2000-
3000

Increase in
missed
screening
opportunities
due to late
bookings and
awaiting
referrals

Digital system created an administrative burden



We have launched an unprecedented innovation in a clinical setting



Maternity Services – Intelligent Automation Transformation of Service



Goal: Release Critical Time to Care, Safer Service, Rapid Patient Referral Response Time & Intuitive Maternity Alerting resulting in safer deliveries

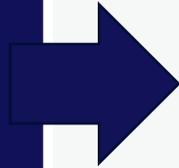
We've significantly improved patient & staff experience



Challenges in Maternity

Six Domains of Burden

- | | |
|---|------------------|
| 1 | Operational |
| 2 | Regulatory |
| 3 | Quality |
| 4 | Usability |
| 5 | Interoperability |
| 6 | Self-Imposed |



1. Time and people
- 2.
3. Data Quality
4. Women Centred, Clinically Led, Digitally Driven
5. Digital Maternity Record Standard
6. Educating the workforce

It doesn't always get it right

The human touch - unique qualities and capabilities



can you describe AI to a 10 year old?



Sure! AI, or Artificial Intelligence, is like giving a computer the ability to think and learn, just like how you learn in school. Imagine if your computer could learn from lots of information and experiences, like a very clever friend. This computer friend can do all sorts of tasks on its own, such as playing games, answering questions, or even helping with important stuff like medical diagnoses and predicting the weather. It's like having a digital assistant that's really good at learning and helping people.

**“AI won't replace clinicians,
but the clinicians who use AI
will replace those who don't”**

Eric Topol



N&M AIR



NURSING & MIDWIFERY
Artificial Intelligence in Reality

COMING SOON

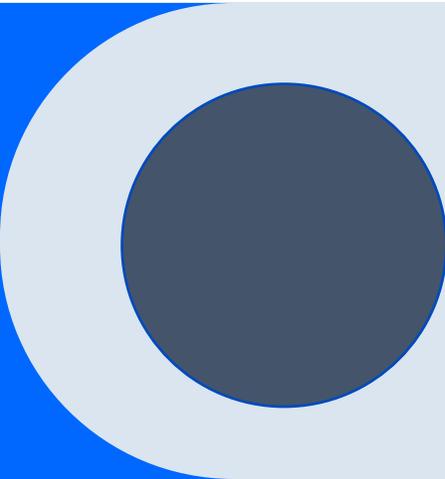


Digital Maternity: DigitalMaternityLeaders@nhs.net



Mastering Healthcare Data Analytics and AI:

What did I learn ?



Dione Rogers



Introduction to Dione



1991- 1994 RGN – DipHE Adult Nursing project 2000

200 – 2004 – BSC Professional practice

2019 CNIO – present

2020- Florence Nightingale Digital Scholar

2021 - 2023 – MsC Healthcare Data Analytics and Artificial Intelligence



Dr Natasha Phillips

Course content

Procurement

Manage the procurement, implementation and evaluation of digital healthcare technologies

Ethics

Evaluate the ethics surrounding data and artificial intelligence systems in a healthcare environment

Data frameworks

Utilise data frameworks in order to develop new predictive healthcare analytics

Application in healthcare

Apply and critically appraise AI and data analytics technologies for their suitability to the healthcare sector

“

This course helps you develop into a graduate with unique skills as a digital healthcare professional. You will study the business requirements for healthcare data analytics and AI products, and learn to manage them following deployment.

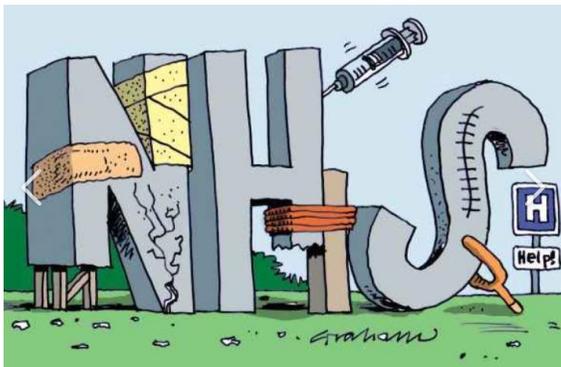
You will appreciate the challenge of working with such technology from a regulatory, legal and ethical perspective.

”

[MSc Healthcare Analytics and Artificial Intelligence Part-time 2024 | Sheffield Hallam University \(shu.ac.uk\)](#)

Modules – my learning

Module 1 – Healthcare And Information Systems



Module 2 - Ethics Of Healthcare Information

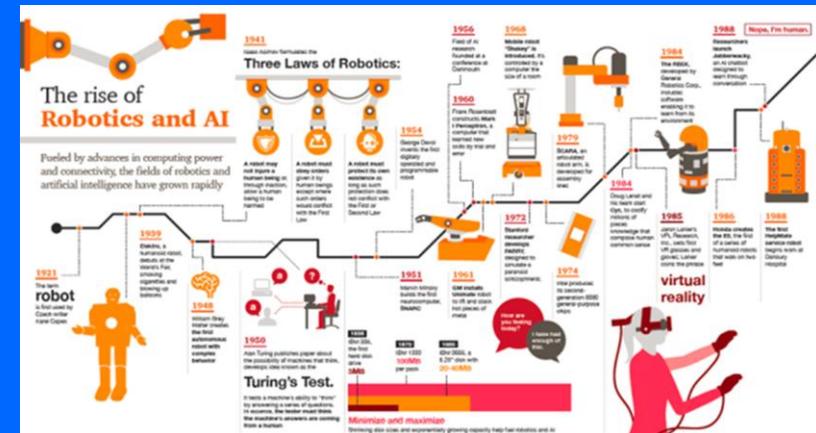
Practical application of ethics frameworks and the importance of ethics boards – design an app concept



Modules – my learning

Module 3 – Procuring And Implementing Healthcare Projects For Transformational Change

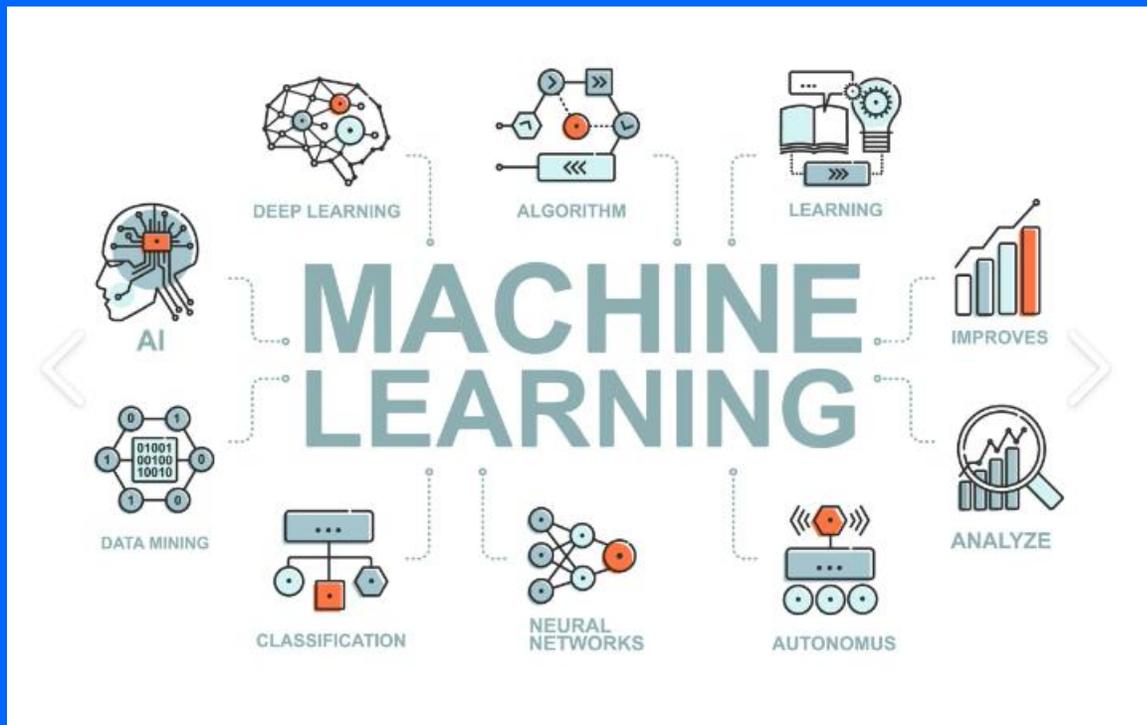
Clinicians need to understand procurement and get involved in the decision-making from the start. It's an essential skill.



Module 4 – Smart and Interactive Technologies

Module 5 - Healthcare Knowledge And Data Management

Module 6 - Learning Systems And Data Analysis For Healthcare



Module 7 - Research skills and Dissertation for computing

“What is the benefit of AI in the development of an inclusive NHS workforce? “



Thoughts over all

- Learning skill development - neurodiverse
- Knowledge
- Confidence
- Language
- Analytical skills outside healthcare
- Pride
- Kudos/Opportunity/ Career progression
- Speaking Opportunities !!!!

Summary

"AI: A double-edged sword, where our fears of its power must be tempered by our embrace of its potential for good, and with knowledge comes the true power to shape our future."

Dione Rogers supported by Chat GPT

Links and further reading

<https://www.shu.ac.uk/courses/computing/msc-healthcare-analytics-and-artificial-intelligence/full-time>

<https://digital-transformation.hee.nhs.uk/building-a-digital-workforce/dart-ed/horizon-scanning>

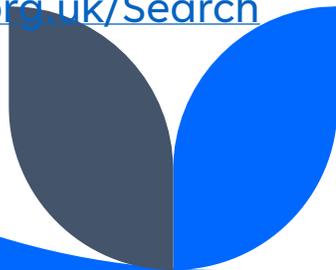
<https://digital-transformation.hee.nhs.uk/building-a-digital-workforce/dart-ed/delivering-education-and-training>

<https://topol.hee.nhs.uk/>

<https://digital-transformation.hee.nhs.uk/building-a-digital-workforce/dart-ed/horizon-scanning/ai-and-digital-healthcare-technologies/framework-structure/ethical-legal-and-regulatory-considerations>

<https://digital-transformation.hee.nhs.uk/digital-academy/programmes>

<https://portal.e-lfh.org.uk/Search>





Thank you

Dione Rogers

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[LinkedIn ☺ Dione Rogers](#)

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