

**Data driven
transformation**

**MSc digital skills
for health and
care professions**

Paul Howells, FCCA, MBCS, FEDIP

phowells@palantir.com



Overview

- Integrated health and social care
- Data driven transformation
- Design and implementation of digital solutions
- Data best practices
- Health and care – data quality and data standards
- Information governance



Career + big dreams

1996



2040



2021



Integrated health and social care – why digital and data is so important

Better use of data brings about the best possible outcomes for those who receive care and support services

Improved and connected care

Patient and citizen choice

Trusted and informed decisions

Stronger research capability

Defined ownership and accountability

Data driven decision making



[Case Study - Digital Health & Care Record](#)

Make data a priority and promote a data culture

Data driven transformation – key points

Case Study - Single Cancer Pathway

- Organisations, services and teams won't survive unless data driven transformation is embraced
- Be ambitious and pragmatic at the same time
- Don't be afraid to try, fail and learn - starting relatively small (with clear ambition) and well-defined use cases is important
- Data control and traceability throughout
- Change management – never underestimate, often the technology is relatively easy
- Organise for sustainability
- Never stop building the right skills and capacity



Design and implementation of digital solutions – tips and best practice based on my experiences

- User focused iterative design
- Users (primary and secondary) must be part of the design and implementation process
- Find the right balance between waterfall and agile (or traditional planning vs get on with it and build iteratively)
- Weekly planning, frequent check-ins, roadmap clear
- Use case driven, not technology driven
- Work together, MDT approach
- Team effort - use your team's skills and experience wisely, don't be afraid to ask for help, appreciate everyone's strengths and weaknesses
- Make sure there is an implementation lead – somebody to own and drive delivery every day



Design and implementation of digital solutions – tips and best practice based on my experiences

Identifying an improvement project to digitise an area

- Use case driven > senior sponsor > technical willingness > technical capability
- Senior buy-in, make your case, business case
- Business case:
 - Judge scale, e.g., lighter touch if possible
 - Focus on outcomes, ideally user benefits, e.g., patients, clinicians
 - Don't be afraid to attempt to quantify benefits, financial and non-financial based on best available information and expert input (include yourself as an expert)
- Private sector business cases are much faster and more agile – lessons to be learnt by the public sector (balanced by public scrutiny of tax-payer funds)
- Don't be afraid to outsource, the private sector has probably done it before and will often deliver quicker (own and communicate the cost to value ratio)
- Make sure done in partnership if co build with private sector - upskilling staff
- Be like a 'dog with a bone', show passion and ambition and others will follow



Design and implementation of digital solutions – tips and best practice based on my experiences

Analysing and reviewing a system that's in place

- Get into the detail
- Document it, make sure it's understandable to others
- Technical colleagues can help provide detail
- Busy/senior stakeholders are everywhere and often why projects fail – so do a 'very' concise BLUF (bottom line up front) 'BLUFs' are amazing, use them on everything you communicate, even emails
- Communicate your analysis – make sure it looks professional, e.g., not a messy indigestible spreadsheet
- Let others comment on it, ideally on the network together, and ideally not passed around by email, although sometimes a pragmatic option
- Have an idea of the desired outcome and test this with others early on and as you go
- Validate your thinking and start to engineer your analysis accordingly, based on this feedback / input from others
- Demonstrate input from a range of specialisms / experts, internal and external – will help credibility of your analysis
- Be transparent, open



Data engineering best practices based on my experience

- Template, reuse and share your data models and code
- As you scale, the previous work done will make the next use case easier
- Do not try and define entire data model upfront – make sure it's iterative and use case driven, then build on that
- Co-develop data engineering, not in silos, not dev and prod in sequence, use parallel branching
- Ensure transparent data lineage
- Treat data as code
- Data modelling – put all your models in one place, not disparate
- Data model chaining – if all your models are in one place, then chain them together in the same software, e.g., the outputs of one are the inputs of the other (automated and linked chaining)

Build a solid data foundation

Permission

Ingestion

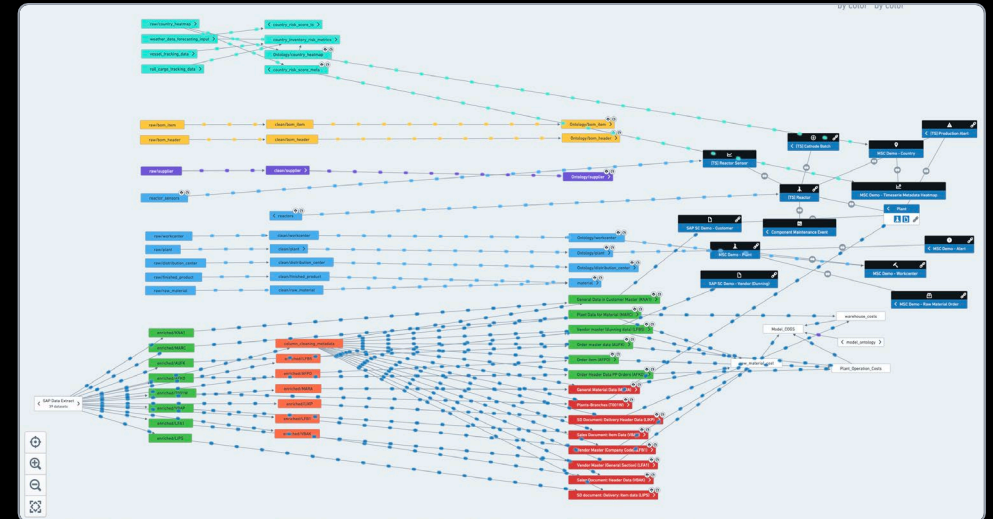
Cleanse

Harmonise

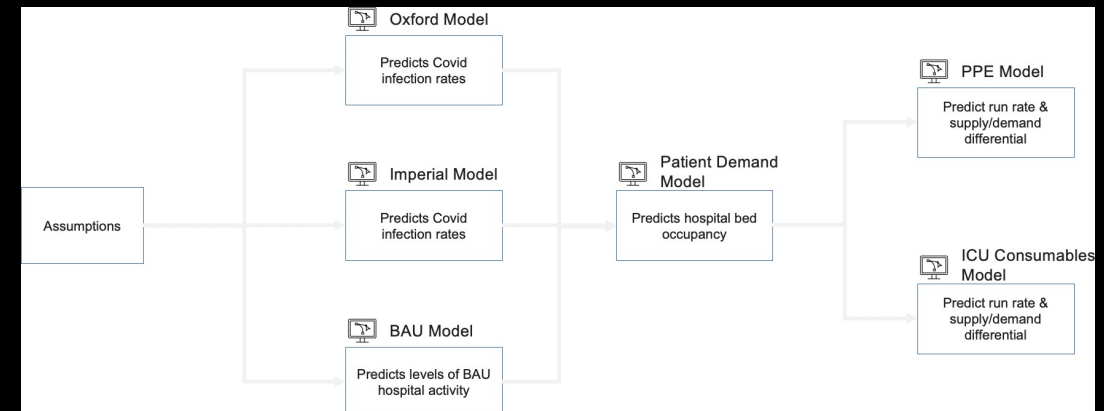
Ontologise (understandable data model)

Application/analysis/research

Data lineage example



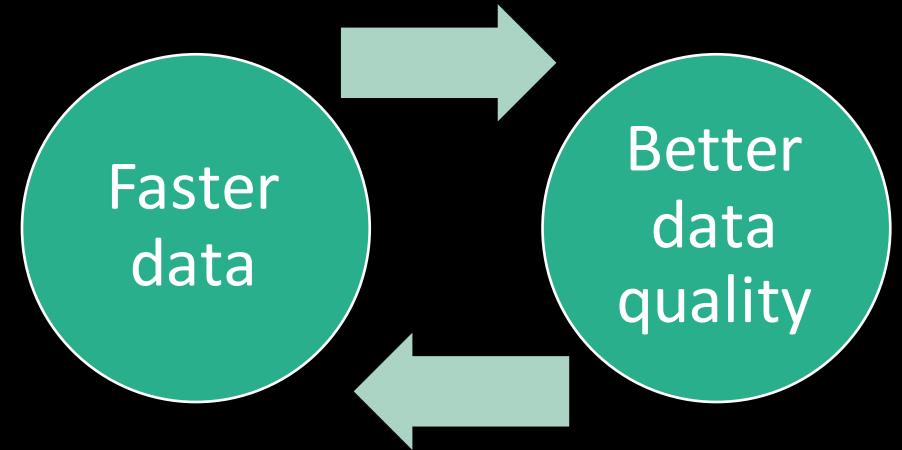
NHS data model chaining example (COVID)



Health and care – data quality and data standards

- A big problem in health and care (and other industries / sectors)
- Build data health checks into your solutions – feed back to the service owners in as near real time as possible
- Data quality culture – education and training for service users who create data
- Open standards – use and / or develop transparently
 1. Technical standards, e.g., use consistent and open standards for data transmission
 2. Data standards and ontology

1 + 2 = Semantic interoperability
- Data ontology – keep iterative, develop, share, learn, create open libraries



BLOG - Trust in Data

Information Governance – tips

- Make sure data controllers have control or your project will fail
- Build governance into the technology, not in paper - paper will drastically slow you down
- Consult with data controllers early, but make sure you have a solid hypothesis and understanding of outcomes, workflows and dataflows beforehand, to sound credible up front – do your research first
- Same with senior technical colleagues who might have to approve a solution
- Aim to get a senior sponsor to present for / with you to make a credible case to get IG and technical buy-in

[**BLOG - Purpose Based Access Controls**](#)



Summary

- Integrated health and social care
- Data driven transformation
- Design and implementation of digital solutions
- Data engineering best practices
- Health and care – data quality and data standards
- Information governance

