HSE National Clinical Programmes Conference Day
Recovery, Resilience and Reform

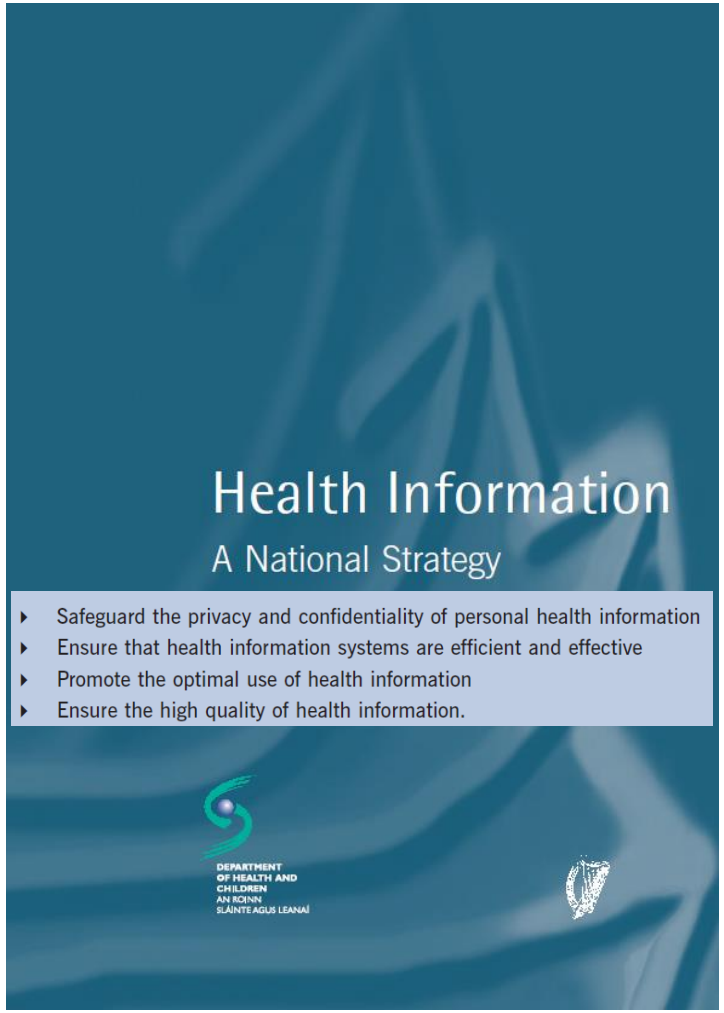
The Future of Data and Information Systems for Health Service Modelling to support recovery, resilience and reform – *what can we absorb, adapt and transform reflecting upon the last 3 years*

Dr Paul Kavanagh,
National Health Intelligence Unit,
HSE Strategy and Research

Data, Information Systems and Modelling in Irish Health System

Data, Information Systems and Modelling in Irish Health System

Where were we?



Health Information and Quality Authority
An tÚdarás Um Fhaisnéis agus Cáilíocht Sláinte

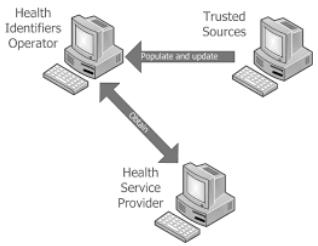
BMC Public Health

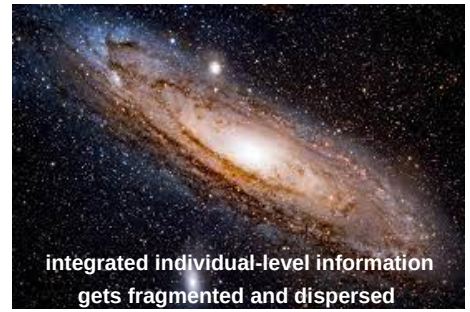
RESEARCH ARTICLE Open Access

A review of the inclusion of equity stratifiers for the measurement of health inequalities within health and social care data collections in Ireland

The Public Sector Duty

EIRCODE Find life easier.



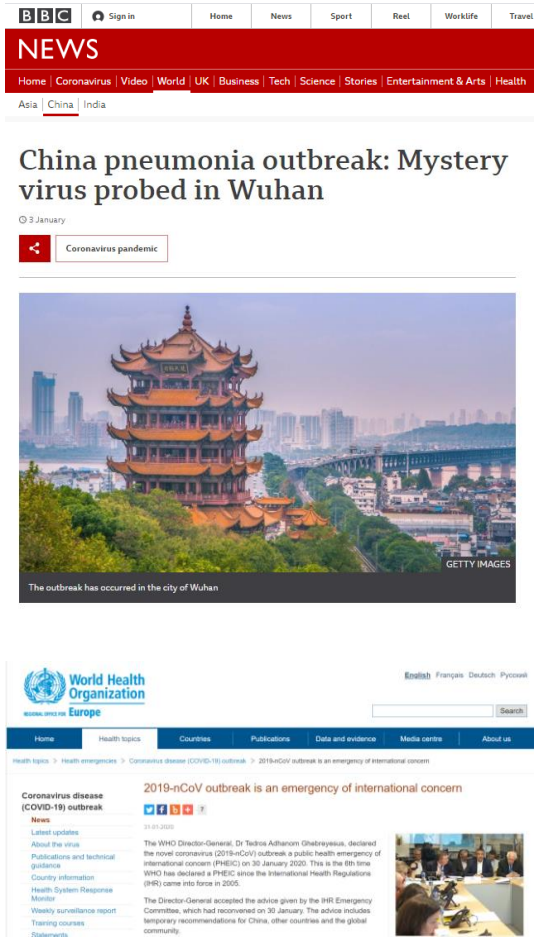


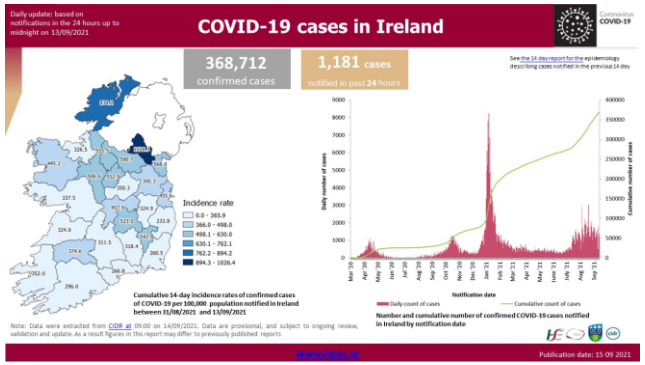
HEALTH INFORMATION AND PATIENT SAFETY BILL

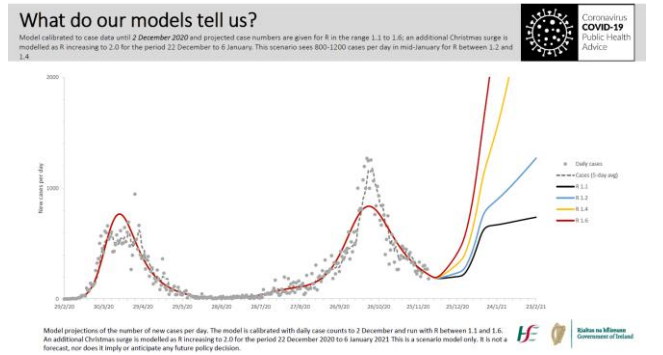
Revised General Scheme

Data, Information Systems and Modelling in Irish Health System

What happened?



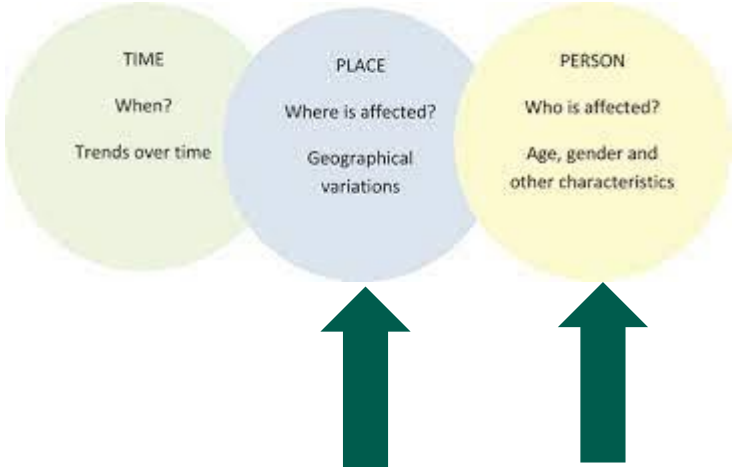




What happened?

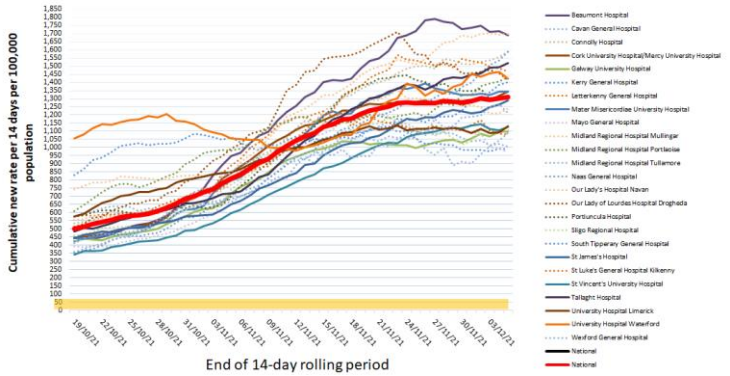
(a)

(b)

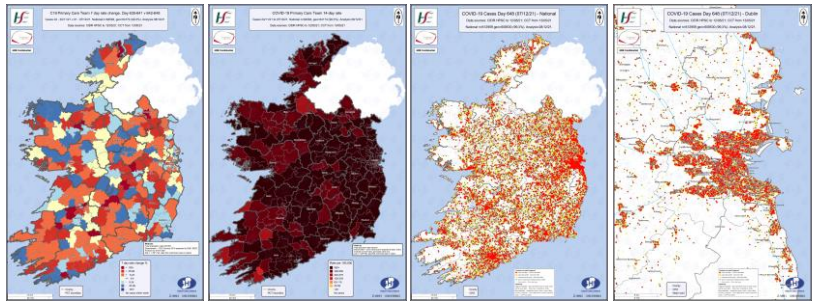


Atlas – C-19 hospital early warning system

14 day rolling C-19 incidence



C-19 National and Dublin maps



Original Research

Just a bad flu? Tackling the "infodemic" in Ireland through a comparative analysis of hospitalised cases of COVID-19 and influenza

K. Beatty [a,*], V. Hamilton [b], P.M. Kavanagh [a,c]

ORIGINAL ARTICLE

A retrospective cohort study of outcomes in hospitalised COVID-19 patients during the first pandemic wave in Ireland

Kenneth Beatty[1] · Paul M. Kavanagh[1,2]

Age group (years)	n (%)	Adverse outcomes		
		Long LOS % (95% CI)	ICU admission % (95%CI)	Inhospital mortality % (95%CI)
0–39	605 (14.8)	5.3 (3.65–7.39)	8.1 (6.05–10.57)	1.3 (0.57–2.59)
40–64	1440 (35.2)	20.2 (18.16–22.38)	18.8 (16.76–20.86)	5.0 (3.93–6.26)
65–84	1511 (38.0)	35.3 (32.95–37.77)	12.1 (10.54–13.85)	24.8 (22.66–27.08)
85+	530 (13.0)	37.9 (33.78–42.21)	2.6 (1.45–4.39)	41.9 (37.65–46.22)
Total	**4086 (100.0)**	**26.2 (24.89–27.61)**	**12.8 (11.74–13.81)**	**16.6 (15.44–17.74)**

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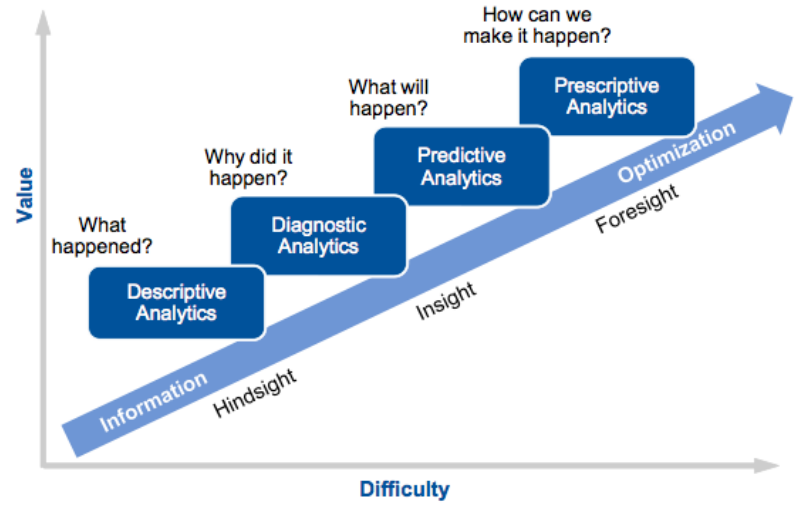
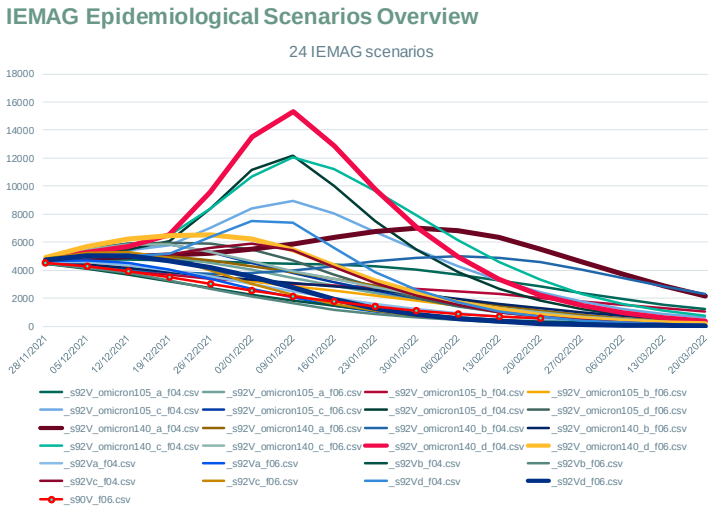
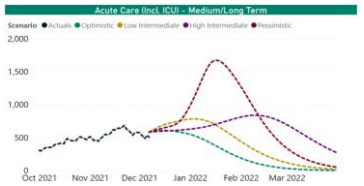
What happened?

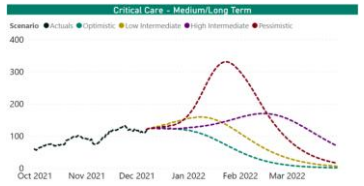


Source: Gartner (March 2012)

IEMAG Epidemiological Scenarios Overview







Cumulative cases

Scenario	Cumulative cases December	Cumulative cases January	Cumulative cases February
Optimistic Scenario	147,500	72,200	11,800
Low Intermediate	185,600	146,200	38,300
High Intermediate	155,000	190,600	175,900
Pessimistic Scenario	196,400	387,000	110,900

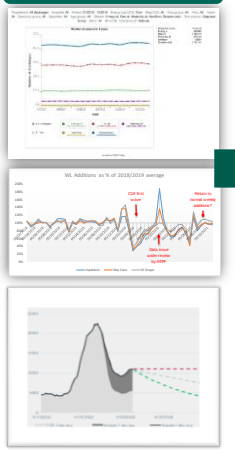
Acute care

Scenario	31/12/2021 acute care occupancy	31/01/2021 acute care occupancy	28/02/2022 acute care occupancy	Max acute care occupancy
Optimistic Scenario	555	201	36	614
Low Intermediate	777	459	126	784
High Intermediate	626	806	710	839
Pessimistic Scenario	937	1,312	361	1,672

Critical care

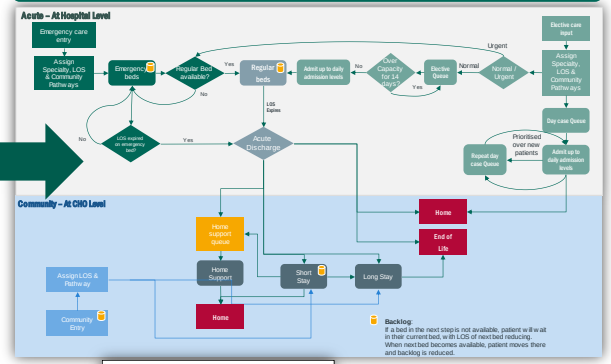
Scenario	31/12/2021 critical care occupancy	31/01/2021 critical care Occupancy	28/02/2022 critical care occupancy	Max critical care occupancy
Optimistic Scenario	118	53	10	125
Low Intermediate	153	112	34	159
High Intermediate	125	156	156	170
Pessimistic Scenario	159	305	98	330

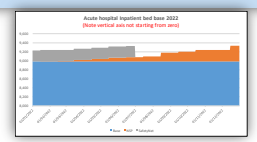
Demand



Health Service – Capacity and Op Model

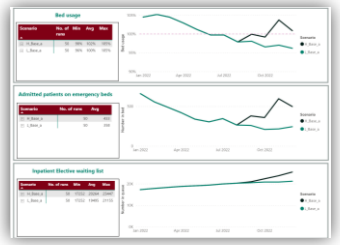
Patient by patient, site by site, day by day





Capacity and other assumptions
Data driven
Expert informed – Ops, Strategy and Clinical
Cross checked

KPI incl WLs



What happened?

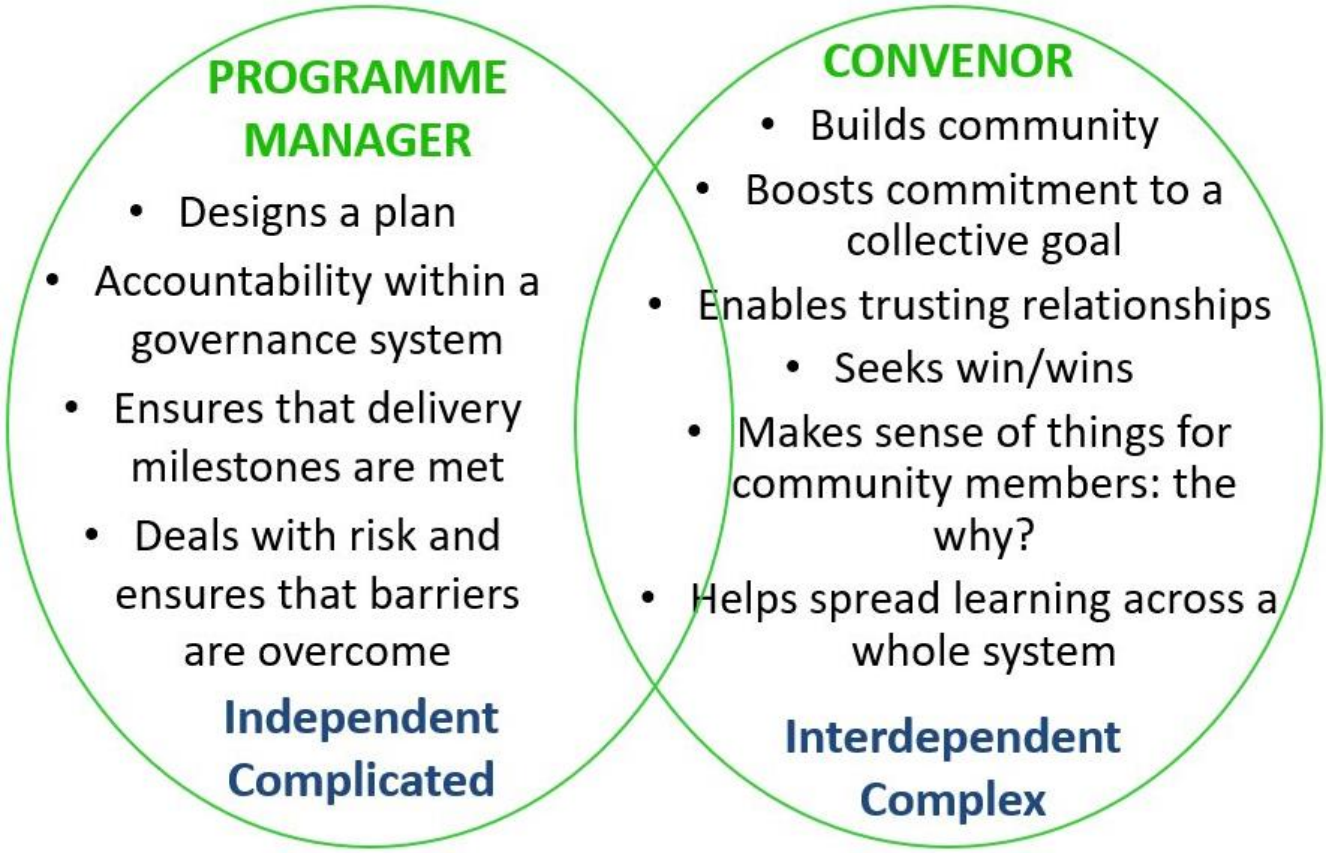
DATA AND INFORMATION MANAGEMENT TEAM MEETING

18th of October 2022 at 12 noon

AGENDA

1.	Update Science Foundation Ireland (SFI) Research Centre support projects – Collaboration with IEMAG
2.	Data Analytics and Capacity Modelling
3.	Data Governance
4.	Health Identifier Service
5.	Data Protection & Data Breaches
6.	COVID-19 Tracker **6.1** HSE COVID-19 Dataset Specification Management Process
7.	Reporting and Reviews
8.	HSE/CSO Statistical Liaison Group
9.	Ukraine Refugees Programme **9.1** Implementation of HSE COVID-19 Dataset Specification Management Process
10.	Any Other Business

From Silos to Systems



Leadership, governance, ways of working … culture

Data, Information Systems and Modelling in Irish Health System

What next?

Right information, right place, right time

Spending 33-50% of EU benchmarks

Capacity, Capability, Culture

TEHDAS

INFACT
Joint Action on Health Information

PHIRI
Population Health Information Research Infrastructure

Level 1 Basic	Level 2 Opportunistic	Level 3 Systematic	Level 4 Differentiating	Level 5 Transformational
▪ Data is not exploited, it is used ▪ D&A is managed in silos ▪ People argue about whose data is correct ▪ Analysis is ad hoc ▪ Spreadsheet and information firefighting ▪ Transactional	▪ IT attempts to formalize information availability requirements ▪ Progress is hampered by culture; inconsistent incentives ▪ Organizational barriers and lack of leadership ▪ Strategy is over 100 pages; not business-relevant ▪ Data quality and insight efforts, but still in silos	▪ Different content types are still treated differently ▪ Strategy and vision formed (five pages) ▪ Agile emerges ▪ Exogenous data sources are readily integrated ▪ Business executives become D&A champions	▪ Executives champion and communicate best practices ▪ Business-led/ driven, with CDO ▪ D&A is an indispensable fuel for performance and innovation, and linked across programs ▪ Program mgmt.. mentality for ongoing synergy ▪ Link to outcome and data used for ROI	▪ D&A is central to business strategy ▪ Data value influences investments ▪ Strategy and execution aligned and continually improved ▪ Outside-in perspective ▪ CDO sits on board

D&A = data and analytics; ROI = return on investment

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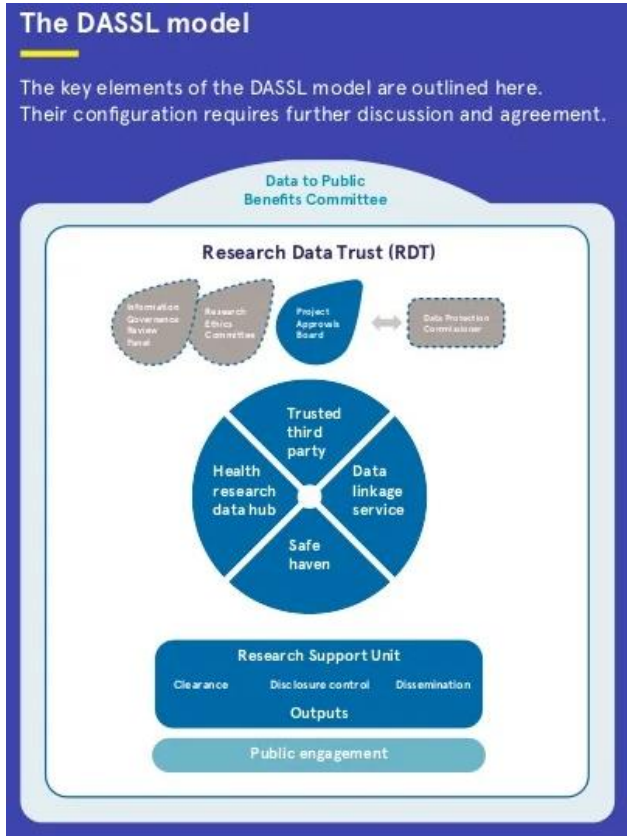
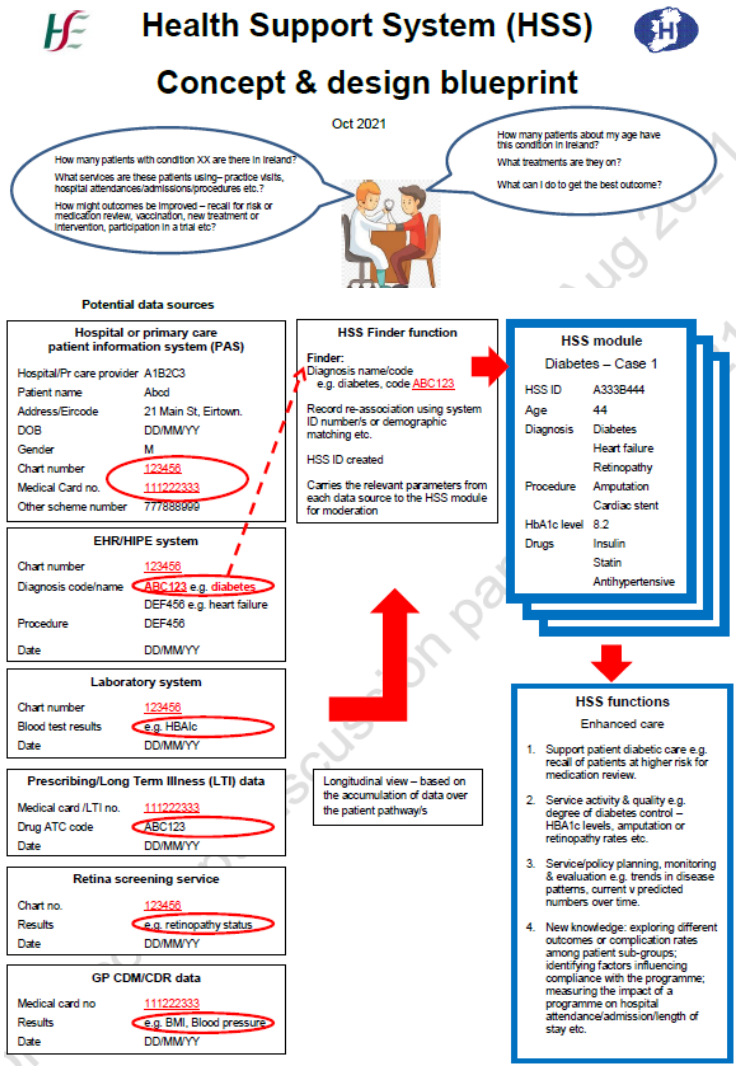
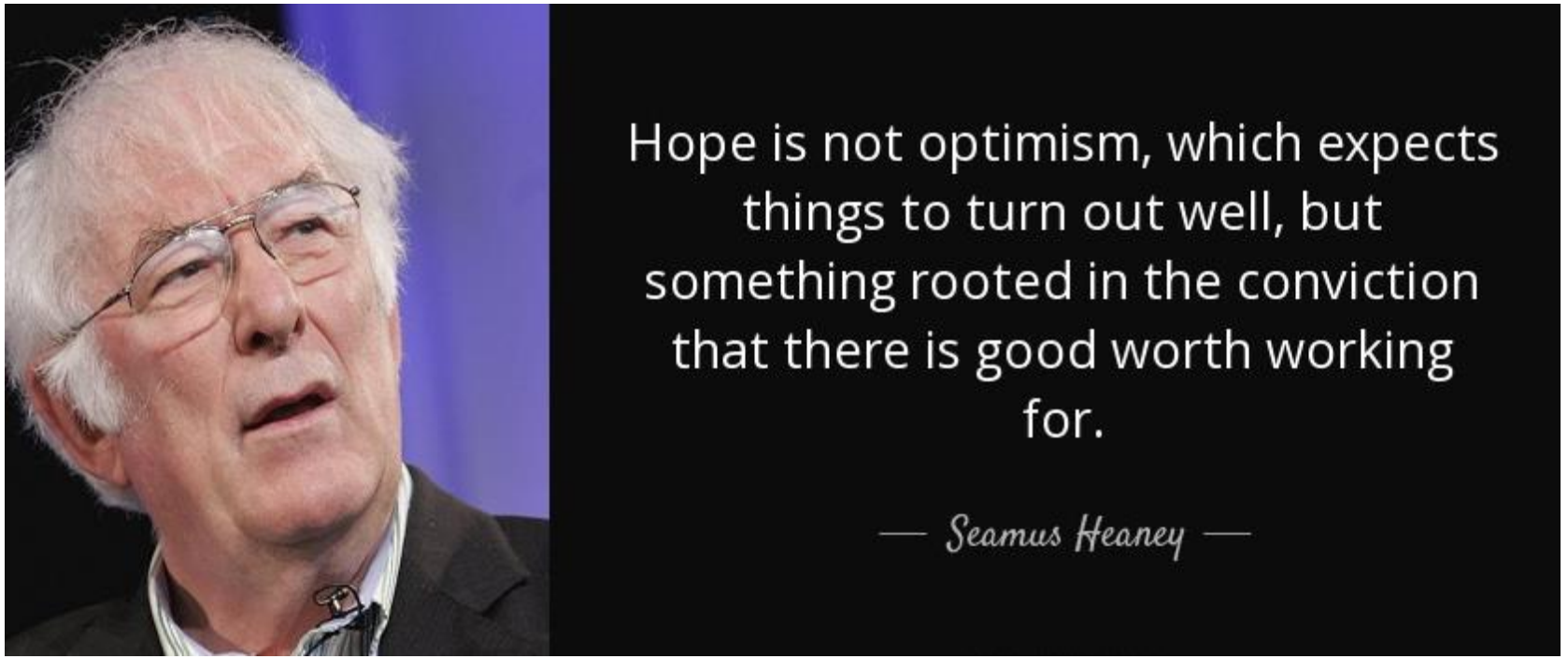
What next?





From Silos to Systems

Final thought … can we absorb, adapt and transform?



Not just optimistic – hopeful because recent experience has built our conviction that good health information which is used well is worth working for ….