

**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

Where were we?

What
happened?

What next?



Data, Information Systems and Modelling in Irish Health System



Where were we?

Health Information A National Strategy

- ▶ Safeguard the privacy and confidentiality of personal health information
- ▶ Ensure that health information systems are efficient and effective
- ▶ Promote the optimal use of health information
- ▶ Ensure the high quality of health information.

DEPARTMENT OF HEALTH AND CHILDREN
AN tOIGRE SLÁINTE AGUS LEANAÍ



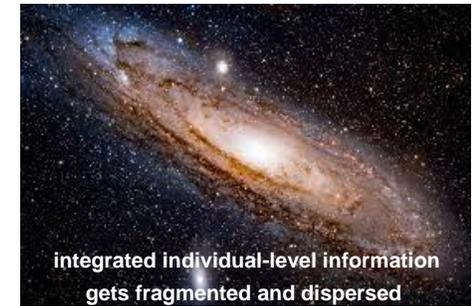
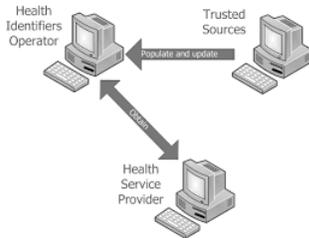
Carroll et al. BMC Public Health (2021) 21:1705
https://doi.org/10.1186/s12889-021-11717-8

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

Christopher Carroll^{1*}, Kate Evans¹, Khalifa Elmusharaf², Patrick O'Donnell², Anne Dee¹, Dáimuid O'Donovan³ and Marie Casey⁴



HEALTH INFORMATION AND PATIENT SAFETY BILL

Revised General Scheme



Data, Information Systems and Modelling in Irish Health System

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happened?

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Seirbhís Sláinte
Níos Fearr
á Forbairt

Building a
Better Health
Service

What happened?

BBC Sign in Home News Sport Reel Worklife Travel

NEWS

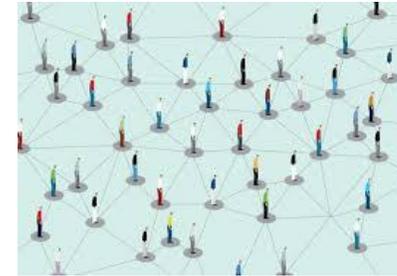
Home | Coronavirus | Video | World | UK | Business | Tech | Science | Stories | Entertainment & Arts | Health

Asia | China | India

China pneumonia outbreak: Mystery virus probed in Wuhan

3 January

Coronavirus pandemic



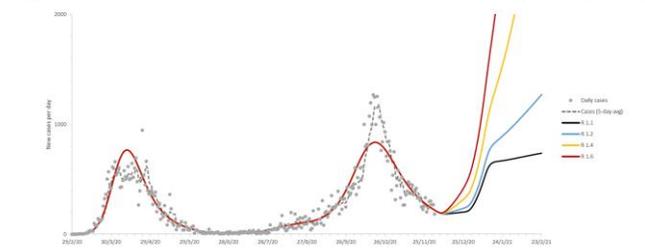
Download the COVID Tracker app at covidtracker.ie

Updated version now available in your Apple and Google play store

HE HSE Health Service Public Health Agency

What do our models tell us?

Model calibrated to case data until 2 December 2020 and projected case numbers are given for R in the range 1.1 to 1.6, an additional Christmas surge is modelled as R increasing to 2.0 for the period 22 December to 6 January. This scenario sees 800-1200 cases per day in mid-January for R between 1.2 and 1.4.



World Health Organization Europe

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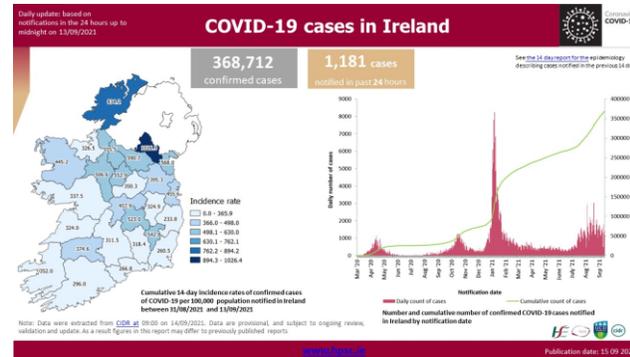
Health topics > Health emergencies > Coronavirus disease (COVID-19) outbreak > 2019-nCoV outbreak is an emergency of international concern

2019-nCoV outbreak is an emergency of international concern

Latest updates: 21/01/2021

The WHO Director-General, Dr Tedros Adhanom Ghebreyesus, declared the novel coronavirus (2019-nCoV) outbreak a public health emergency of international concern (PHEIC) on 30 January 2020. This is the 6th time WHO has declared a PHEIC, since the International Health Regulations (IHR) came into force in 2005.

The Director-General accepted the advice given by the IHR Emergency Committee, which had reconvened on 30 January. The advice includes temporary recommendations for China, other countries and the global community.



COVID-19 VACCINE Public Health Agency

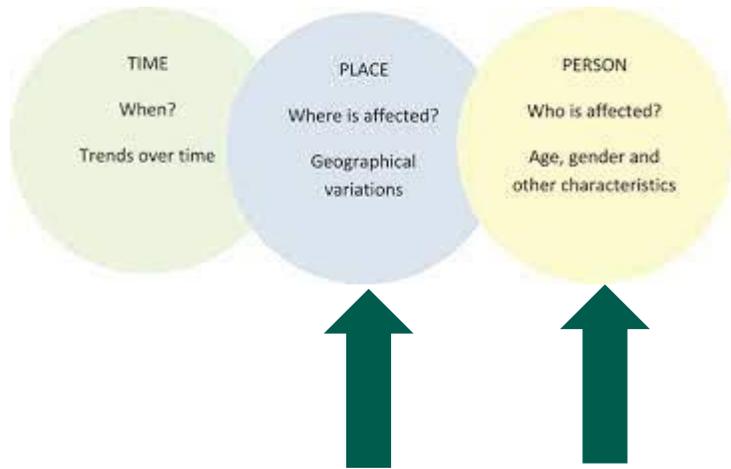
COVID-19 vaccination walk-in clinics

What happened?



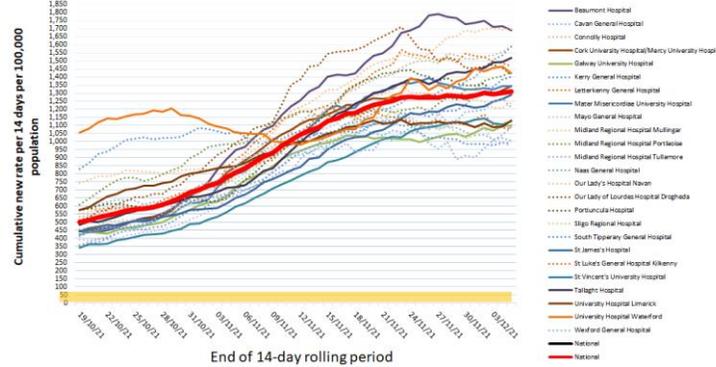
(a)

(b)

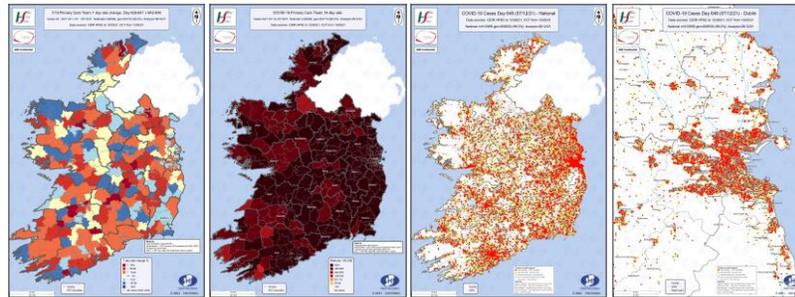


Atlas – C-19 hospital early warning system

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^a, Paul M. Kavanagh^{b,c}

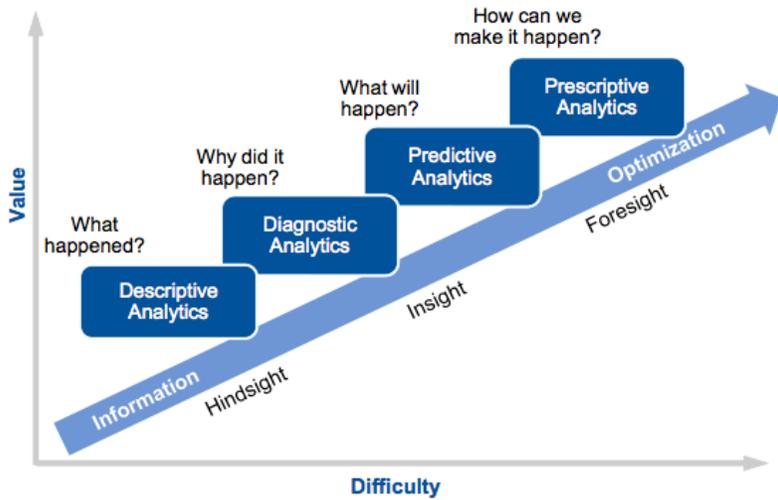
Age group (years)	n (%)	Adverse outcomes		
		Long LOS % (95% CI)	ICU admission % (95%CI)	Inhospital mortality % (95%CI)
0–39	605 (14.8)	5.3 (3.65–7.39)	8.1 (6.05–10.57)	1.3 (0.57–2.59)
40–64	1440 (35.2)	20.2 (18.16–22.38)	18.8 (16.76–20.86)	5.0 (3.93–6.26)
65–84	1511 (38.0)	35.3 (32.95–37.77)	12.1 (10.54–13.85)	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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RESEARCH ARTICLE
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A review of the inclusion of equity stratifiers for the measurement of health inequalities within health and social care data collections in Ireland
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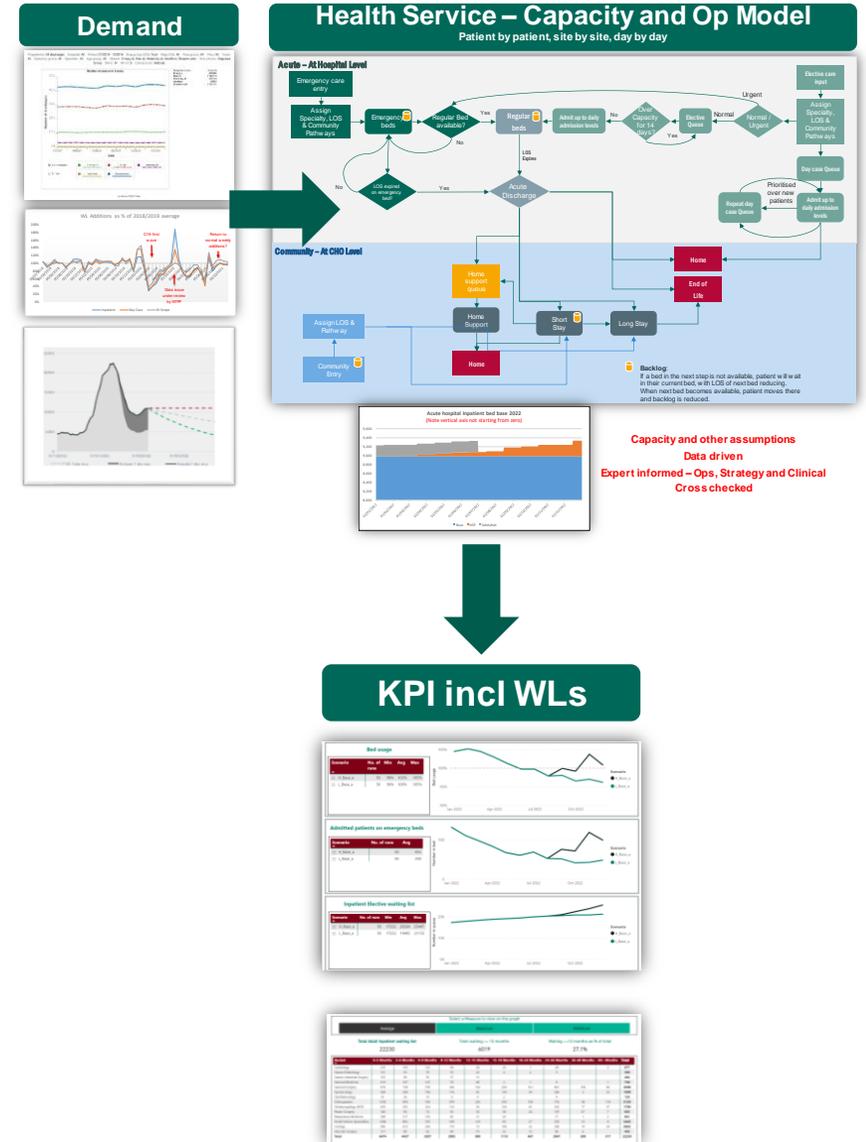
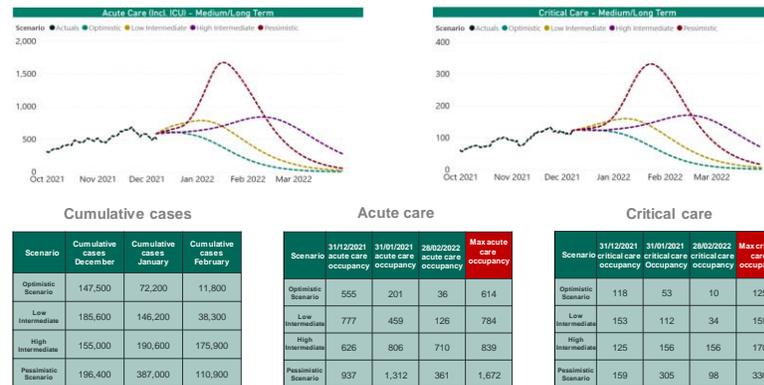
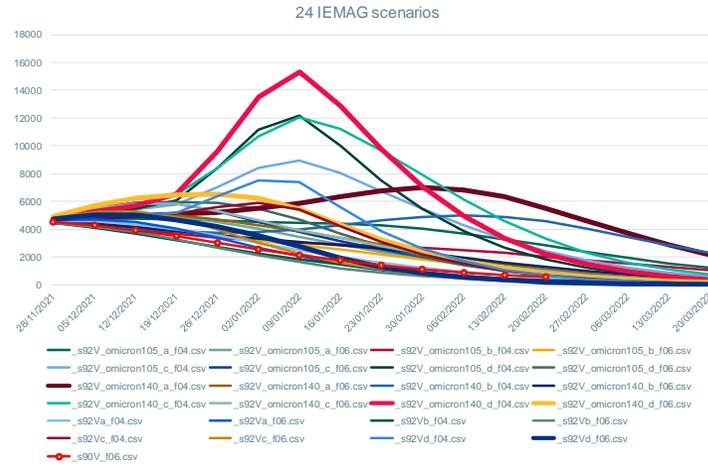


What happened?



Source: Gartner (March 2012)

IEMAG Epidemiological Scenarios Overview



What happened?



Coronavirus
COVID-19
Public Health
Advice

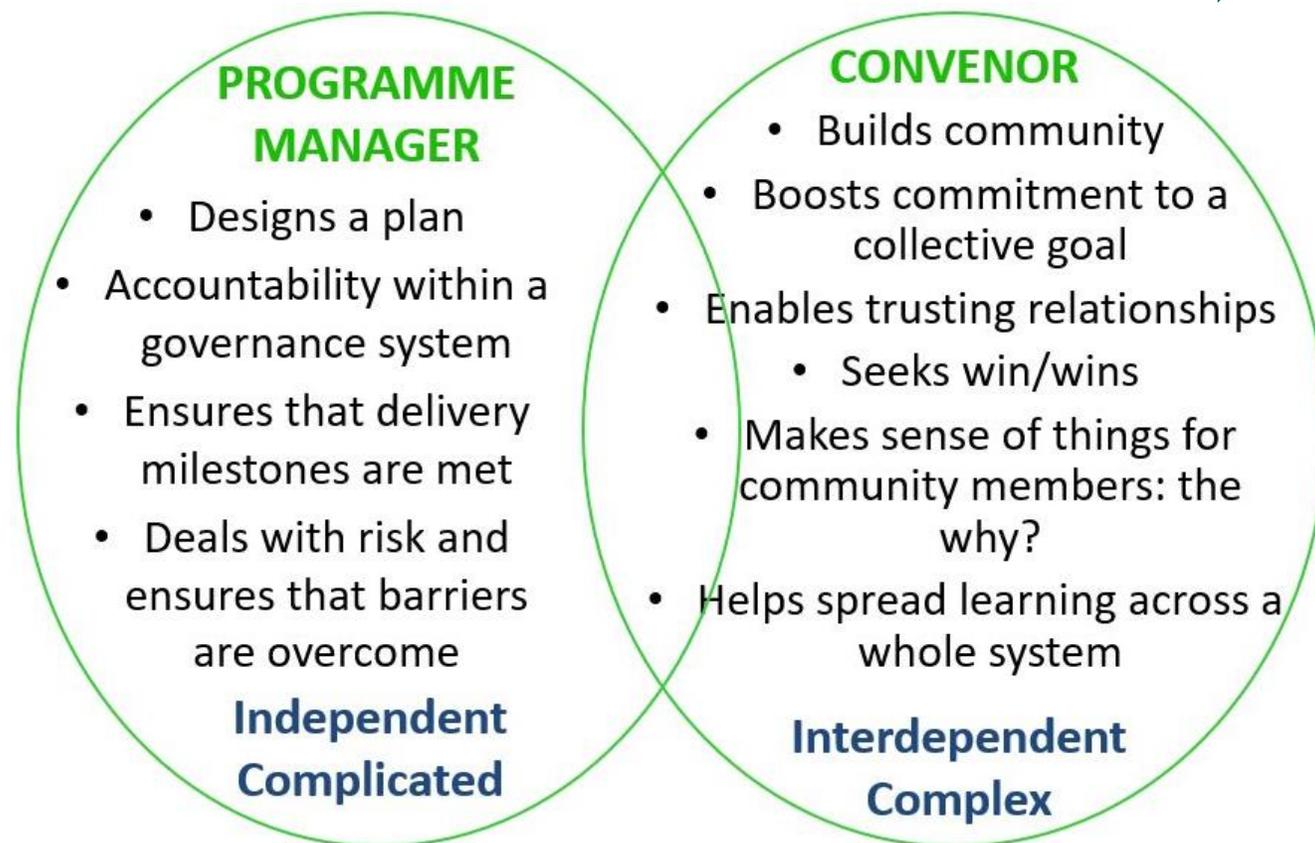
DATA AND INFORMATION MANAGEMENT TEAM MEETING

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



Seirbhís Sláinte
Níos Fearr
á Forbairt

Building a
Better Health
Service

Data, Information Systems and Modelling in Irish Health System

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What next?



Press release

Minister Donnelly receives Cabinet approval to develop new health information legislation

Right information, right place, right time



Effective engagement

Coordinated and ongoing public and professional engagement is essential to build trust and ensure success of new initiatives. This requires strategic leadership and a clear strategy and implementation plan.

Technical & operational requirements

Infrastructure to support data use is needed, including a citizen health portal and data sharing service. These must be underpinned by technical, security and data quality standards. Appropriate resources must be allocated for implementation.



Legislative framework

New legislation should address the health information landscape in a holistic way and act as a catalyst for a more integrated health and social care sector. Regulations, guidelines, codes of practice and policy should be developed to support implementation.

Governance structures

Governance structures for the collection, use and sharing of health information, including a national strategic entity and relevant oversight committees, are critical. They must be underpinned by expertise at a local level, and supported by a standards-based data governance framework.



Spending 33-50% of EU benchmarks
Capacity, Capability, Culture



Level 1 Basic	Level 2 Opportunistic	Level 3 Systematic	Level 4 Differentiating	Level 5 Transformational
<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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

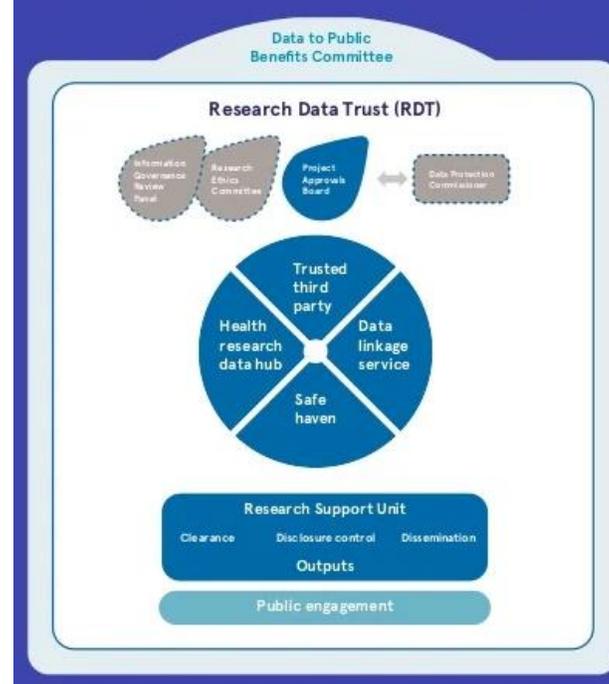
© 2017 Gartner, Inc.

What next?

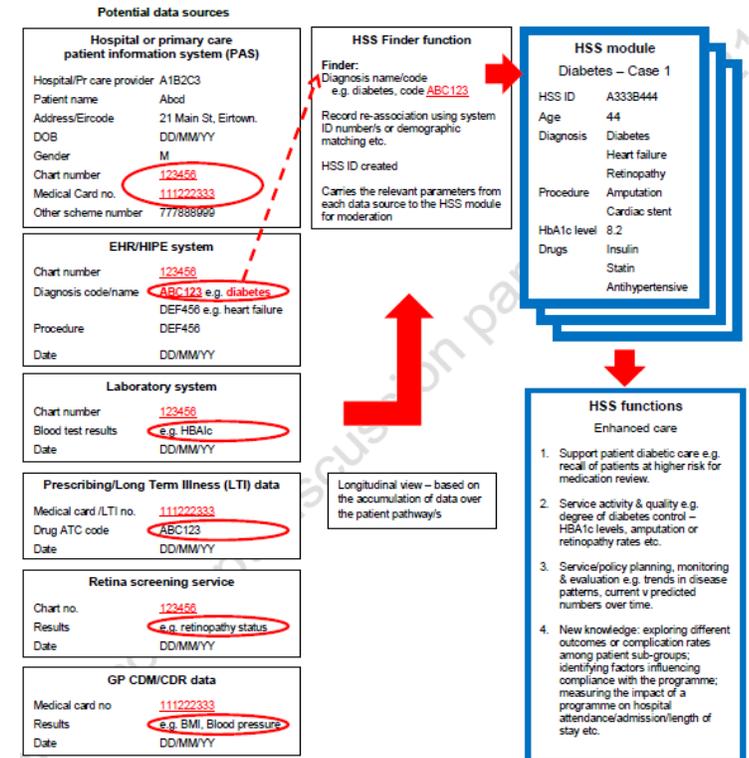
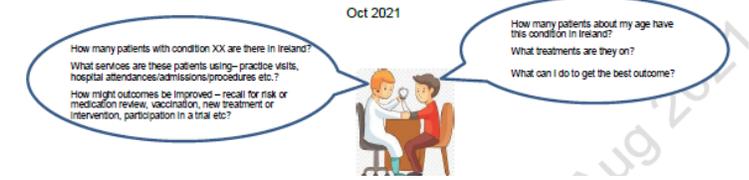


The DASSL model

The key elements of the DASSL model are outlined here. Their configuration requires further discussion and agreement.

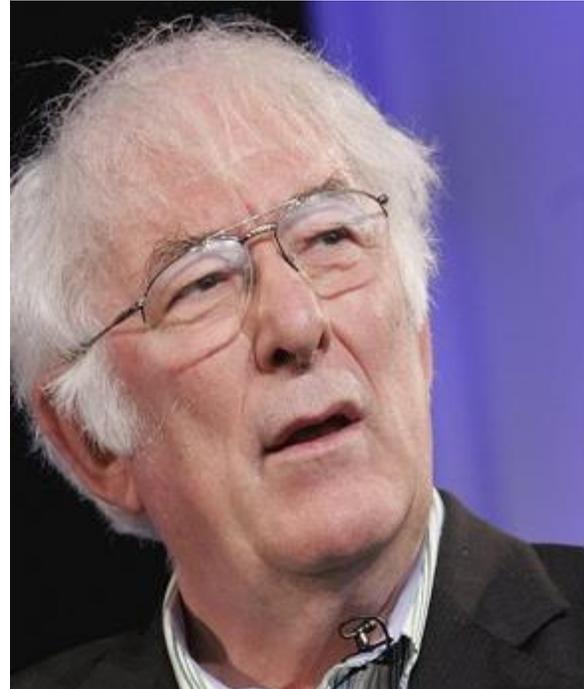


Concept & design blueprint



From Silos to Systems

Final thought ... can we absorb, adapt and transform?



Hope is not optimism, which expects things to turn out well, but something rooted in the conviction that there is good worth working for.

— *Seamus Heaney* —

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