## Learning Health System

What does it take to get started?

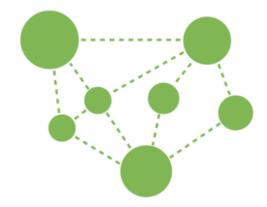
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Learning in a Complex System



#### Complex

Here, causes and effects are indistinguishable. Each action is simultaneously a reaction. Issues are connected in ways that mean problems are not open to being solved but instead need to be held in a dynamic equilibrium.

#### Why is complexity important?

Complexity describes the fundamental processes by which the outcomes we care about are made (outcomes such as improved wellbeing for people, or having a job).

If we fail to understand and embrace complexity, we will not be able to create the outcomes we seek.

**Build relationships** Start here! Make the THE SYSTEM system visible to its actors PURPOSE SYSTEM STEWARDSHIP EMBEDDING & CO-DESIGN INFLUENCING Managing and Governing the Learning Cycle EXPERIMENTATION, EXPLORATION EXPERIMENTATION EXPLORATION EXPLORATION

**HLS Learning Cycle** 

Human. Learning. Systems.: Public service for the real world

www.humanlearning.systems

Learning Health Systems included & not? build knowledge of factors **Build relationships** UNDERSTAND Start here! THE SYSTEM system visible to its actors PURPOSE purpose Emerged from data intensive sciences Driven by what we record Struggled to drive action EMBEDDING & CO-DESIGN But... INFLUENCING

What makes up a Learning Health System?

Multi
disciplinary
team
invested in
whole data
journey

"Real time"
data
collection,
structured &
unstructured

Curation of a wide range of 'intelligence'

What do we mean?

Learning from COVID

- more than 'real time' data
- more than data

data pipeline reproducible, repeatable & sustainable, automatable

Actors and analysts committed to planning action

Governance

enabling
conversations
The
intervention
is the
discussion

bring data together from multiple sources

Wide stakeholder engagement

& Champions of data

Working together in an analytical community sharing learning

# Example Challenge: integrated care and preventative care are difficult

It is difficult to visualise the whole system and peoples experiences

So far we have looked at: What is happening over time? Are there inequalities?

- Referrals
- Prescribing

CAMHS and Social Work

Third sector (100s of providers)

Opportunities for change: for example 30% of referrals are rejected and redirected to third sector providers

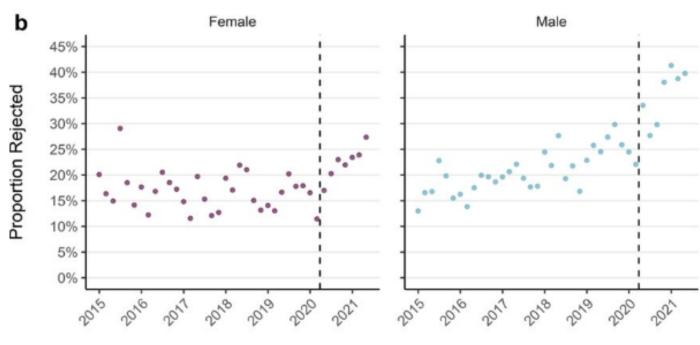
**GP** and Education

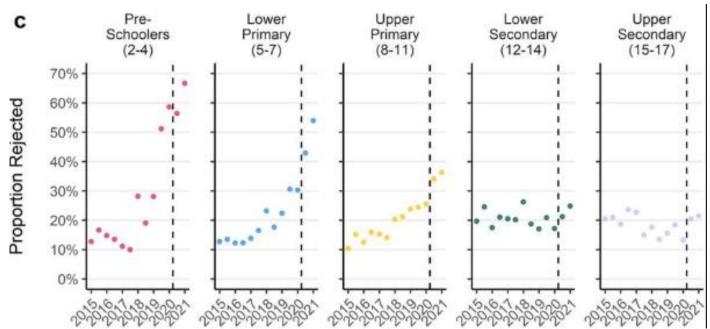
Undiagnosed/unsupported



### Example

Even small insights through the data and lived experience identify important opportunity to learn and act





# Developing a Learning Health System: a data perspective

WHO vision for a global digital strategy:

"to improve health for everyone, everywhere by accelerating the development and adoption of appropriate, accessible, affordable, scalable and sustainable person-centric digital health solutions to prevent, detect and respond to epidemics and pandemics, developing infrastructure and applications that enable countries to use health data to promote health and well-being"

- What if, in 5 years, when approaching improving children's health and well-being and reducing inequalities, an integrated child data platform allows us to understand the impact of health on education in our communities; identify localities where housing is poorest, impacting on child health and school attendance?
- What if we could show you that children rejected from CAHMS referrals were prescribed more medication and missed more school; what would you change? What if we were able to measure the impact of interventions in child mental health wellbeing aimed at reducing CAHMS referrals, rejections and prescribing to enable teams to innovate, learn and share learning?

### How might improving data improve mental health?

#### STATEMENT(S)

Timely access to the right data is a barrier to effective planning of mental health services Silos of data prevent integration of care and widen inequalities

A lack of openness to data sharing impedes engagement and social justice

#### MISSION

Improve mental health services, wellbeing and reduce inequalities through integrated care

		OUTCOMES		
Activities	Outputs	Short term	Medium term	Long term
Create a multi-disciplinary environment	Multi-discplinary community of practice working with data	greater sense of involvement clarity of priorities, feasibility and	greater interactions across sector boundaries improve shared understanding and	shared opportunity for interpretation and empowerment
Build a platform of 'real time'     data including structured and     qualitative data	Sustainable data pipeline integrating data of different types and from different sources, with analytical tools to support use	progress early access to initial tools and outputs	enable action  Reduced duplication of effort	Interventions targetted to reduce inequalities, meet community needs and improve well being
•	Programme of reports, briefings, infographics generated	shared understanding of barriers and enablers to integrating data	Secure and transparent handling of data	Effective and fair allocation of resource to reduce inequalities
3.Build trust through engagement and governance	Wrap around governance to enable safe sharing			Improved understanding of how to
4.Share learning	Involving, engaging and sharing learning through networks			

KEY ASSUMPTIONS	AREAS FOR DEVELOPMENT
Integrating data is an enabler in integrating the way we work together to improve mental health and	Identifying the best ways to engage across a complex landscape
wellbeing	Identify evidence base for social and public health outcomes improved through better use of data
Effective and fair resource allocation can be linked to better use of data in planning and targetting care	totality evidence base for social and public health obtaines improved alrough better use or data
(Attribution)	

#### Principles

- "Real time" data The timeliness of data is critical to enabling action
- Data that is **more than** administrative **counts** and includes brining evidence synthesised from elsewhere and deep qualitative local understanding
- Moving from 'looking back at the past' to being able to see the current and forecast to the future
- **Automation** both within the way we work with data but also supporting automation across the system, skilling up on knowledge of techniques including machine learning and AI
- **Boundaryless** data breaking down traditional silos within and between organisations through excellence in governance and integration
- **Usability** of data products, seeking information that can support action, advocacy and change
- The culture and engagement to work together across the system to solve problems, to have honest conversations and to bring focus to our efforts is vital
- Creating and holding space to innovate and learn
- Adaptability, planning now for a future of accelerated technological change
- Transparency about the data we use and why

### Work plan (example)

<u> </u>	2022	2022	2023	2024	
	Phase 1 Proof of concept	Phase 2 Pilot integration	Phase 3	Phase 4	
	Jan - Jun	Jul - Dec	Jan - Dec	Jan -	
Engagement/Co-production	CAMHs team, ACHDS data PPIE group	Multi-agency working group	Multi-disciplinary community of practice		
Mobilise Data	Mobilise: CAMHs, PIS (community dispensing), Scope: A&E, Admissions	Mobilise: Child Protection Register Suicide Scope: Health Visitor data, Drug & Alcohol Build: Initial live platform based on Phase 1	Mobilise: Education, Housing Scope: LA, NHS and Thrid sector data suite Begin developing: lived experience library		
Governance	Approvals for Phase 1 DPIA for sharing LA data	Approvals for phase 2 DPIA/DSA for platform Workshop(s) to scope for shared governance and access models	Approvals for platform Audit process for access and releases Approved data published on website	Continue to build shared data platform	
Infrastructure	DaSH	DaSH Live data platform on NHS Workshop(s) for shared platform model	Designing and comissioning shared platform		
Analysis	Understanding use of CAMHs, Prescribing, inequalities	Mental health care access for children on Child Protection Register Rejections Multi drug prescribing	Grampian atlas for child mental health Build family metrics Build tools to describe pathways through care Programme of reports		
Staff Resources	External funding (HF) DaSH, 2 HDS, 1 PPIE, HI support	External funding (HF) DaSH, 2 HDS, HI architect and analyst PH Researcher, LA analyst(s)	Multi agency - Core staffing team		
Outputs	Breifing paper, Reports, slide deck LHS development reports	Work programme	Community of practice Sustainable data pipeline	Platform with wrap around governance and audit "Whole system" engaged in dynamic learning	
Outcomes		Increased sense of involvement early use of emerging tools and reports Shared understanding of barriers	Increased interactions across sector boundaries to enable action Reduce duplication of effort	Shared oportunity for interpretation and empowerment Targetted interventions to meet community need Improved understanding of integration	

# Final integrated "product": is about people as much as it is about data



- Live multiagency data platform
- Drillable dashboard of data available to support cross sector working
- Multi disciplinary team working with the platform to support action
- Library of qualitative stories of lived experience
- Publically available atlas of mental health and well being for Grampian
- Reports, briefing papers and public facing infographics about mental health in Grampian
- Governance to enable shared data and appropriate access
- Research programme

But it doesn't work alone – the Data Learning Health System – needs to exist within organisations that deliver by learning