HDRUK
Health Data Research UK

An Introduction to Health Data Research in the UK and an Overview of Activities at the University of Liverpool Funded by HDR UK

01/07/2025

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Health Data Research UK

"To exploit the extraordinary capability of informatics to create a national medical research and innovation Institute that leads the international agenda in health data science.

"The Institute will create a thriving, high-energy, UK-wide network of interdisciplinary research expertise. This will disrupt traditional science and transcend disciplines, enable knowledge and predictions from large multi-dimensional datasets and harness cutting-edge technologies to catalyse scientific discovery at scale, accelerate solutions to UK and global health challenges, drive the creation of business opportunities and support informed policy making. The ambition is to transform science, practice and health globally."
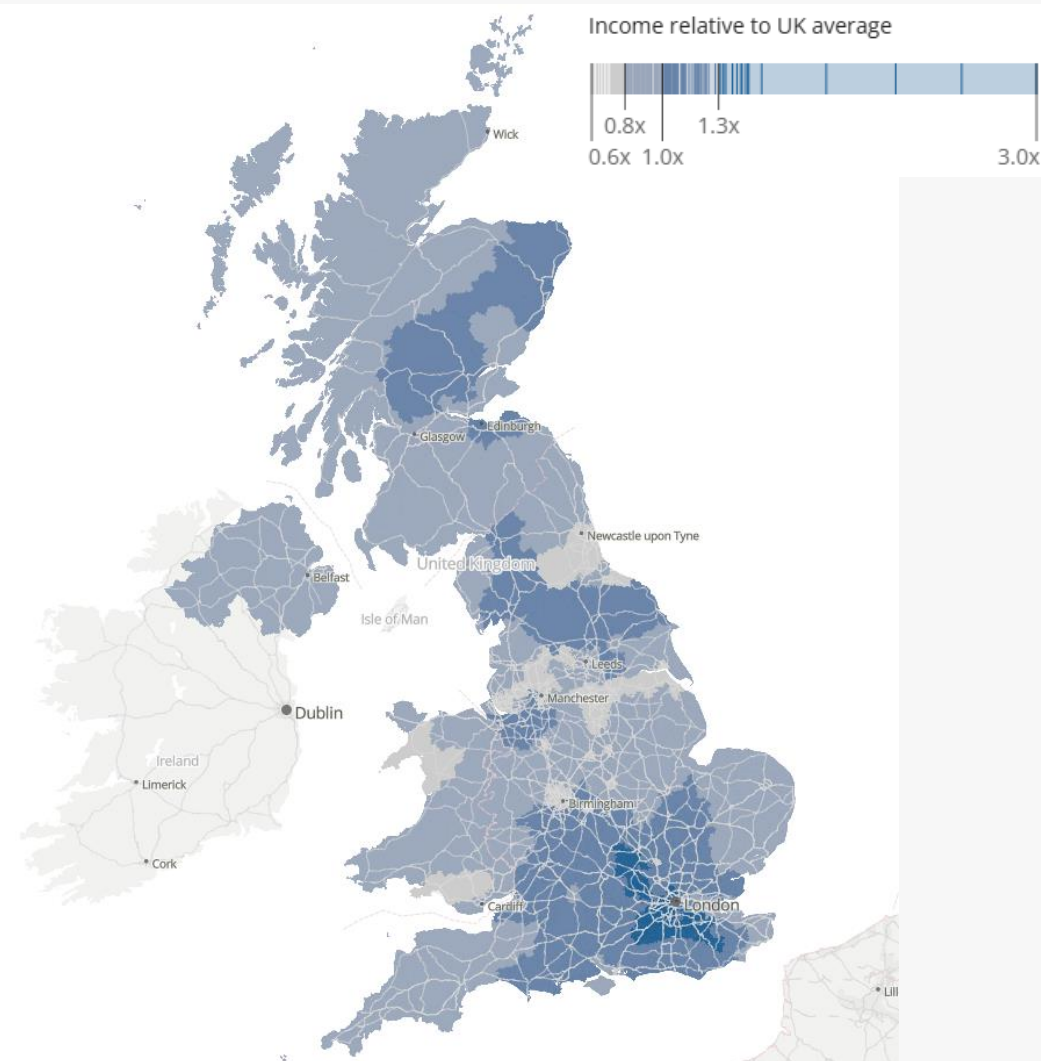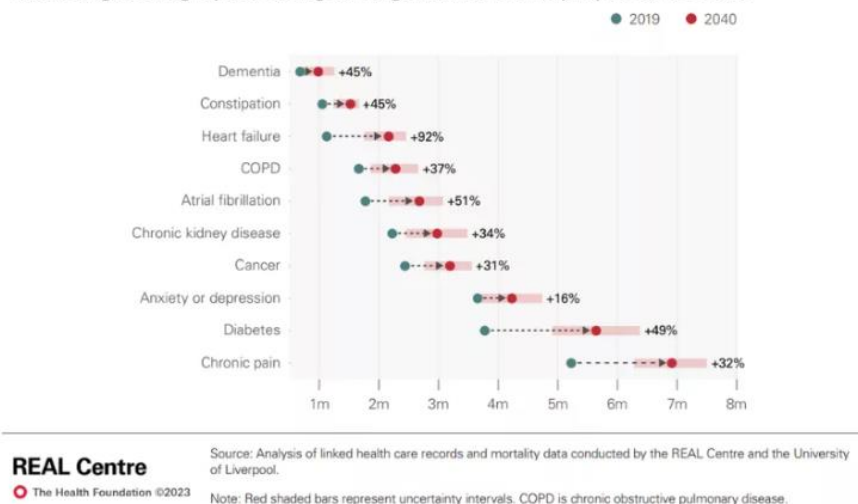
Director's vision – Andrew Morris 2017

Why do we need HDR UK?

Projected total number of diagnosed cases for the 10 conditions with the highest impact on health care use and mortality among those aged 30 years and older, including demographic changes, England, 2019 and projected for 2040
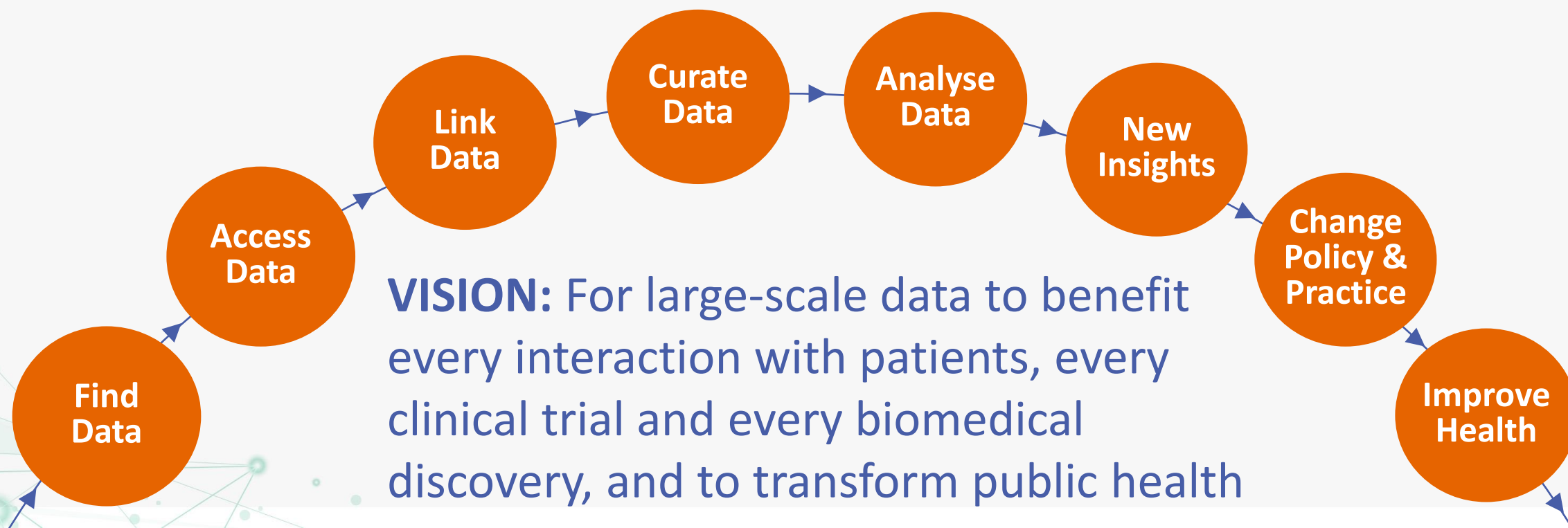
● 2019   ● 2040

Condition	Change
Dementia	+45%
Constipation	+45%
Heart failure	+92%
COPD	+37%
Atrial fibrillation	+51%
Chronic kidney disease	+34%
Cancer	+31%
Anxiety or depression	+16%
Diabetes	+49%
Chronic pain	+32%

1m 2m 3m 4m 5m 6m 7m 8m

REAL Centre
The Health Foundation ©2023

Source: Analysis of linked health care records and mortality data conducted by the REAL Centre and the University of Liverpool.

Note: Red shaded bars represent uncertainty intervals. COPD is chronic obstructive pulmonary disease.

Income relative to UK average

0.8x 1.3x
0.6x 1.0x 3.0x

[Mapping inequality in the UK](#)

Mission & Vision

What we are setting out to achieve

HDR UK
Health Data Research UK

MISSION: to accelerate trustworthy data use to enable discoveries that improve people's lives

Find Data

Access Data

Link Data

Curate Data

Analyse Data

New Insights

Change Policy & Practice

Improve Health

VISION: For large-scale data to benefit every interaction with patients, every clinical trial and every biomedical discovery, and to transform public health

Community

Four-nation UK institute to unite health data. With 86 organisations across 32 locations

A UK-wide leadership team

Key
- Infrastructure and Services Lead
- Driver Programme Lead
- One Institute Partnerships lead

Andy Boyd

Triple aim:

Three integrated areas of activity:

- Research Data Infrastructure and Services
- Research Driver Programmes
- One Institute Partnerships
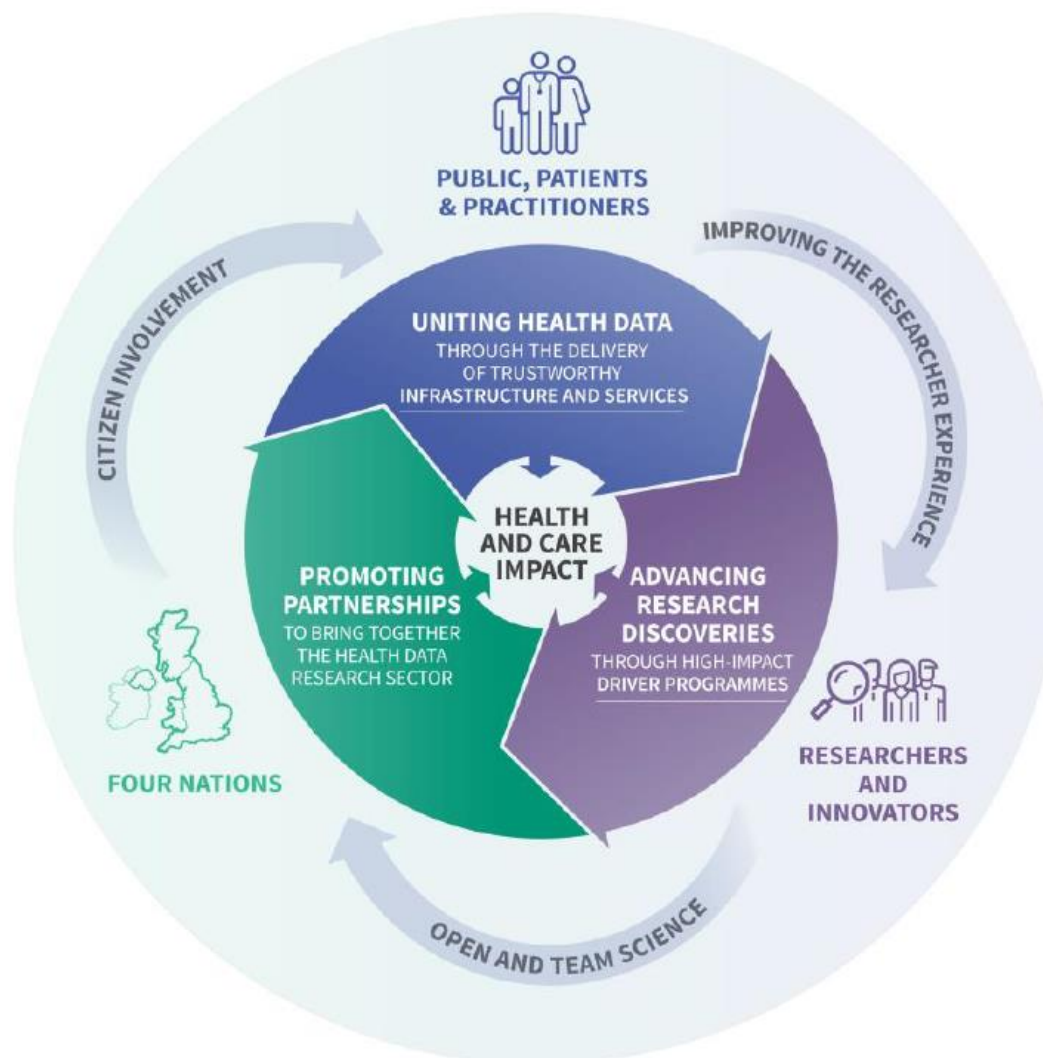
Developed in PARTNERSHIP with the community, stakeholders AND patient representatives

2. Research Driver Programmes

Aims to advance research discoveries through high impact UK-wide programmes that:
• Address major health and societal challenges
• Guide the development of the infrastructure and services for the benefit of other researchers
• Are outward-looking with global reach
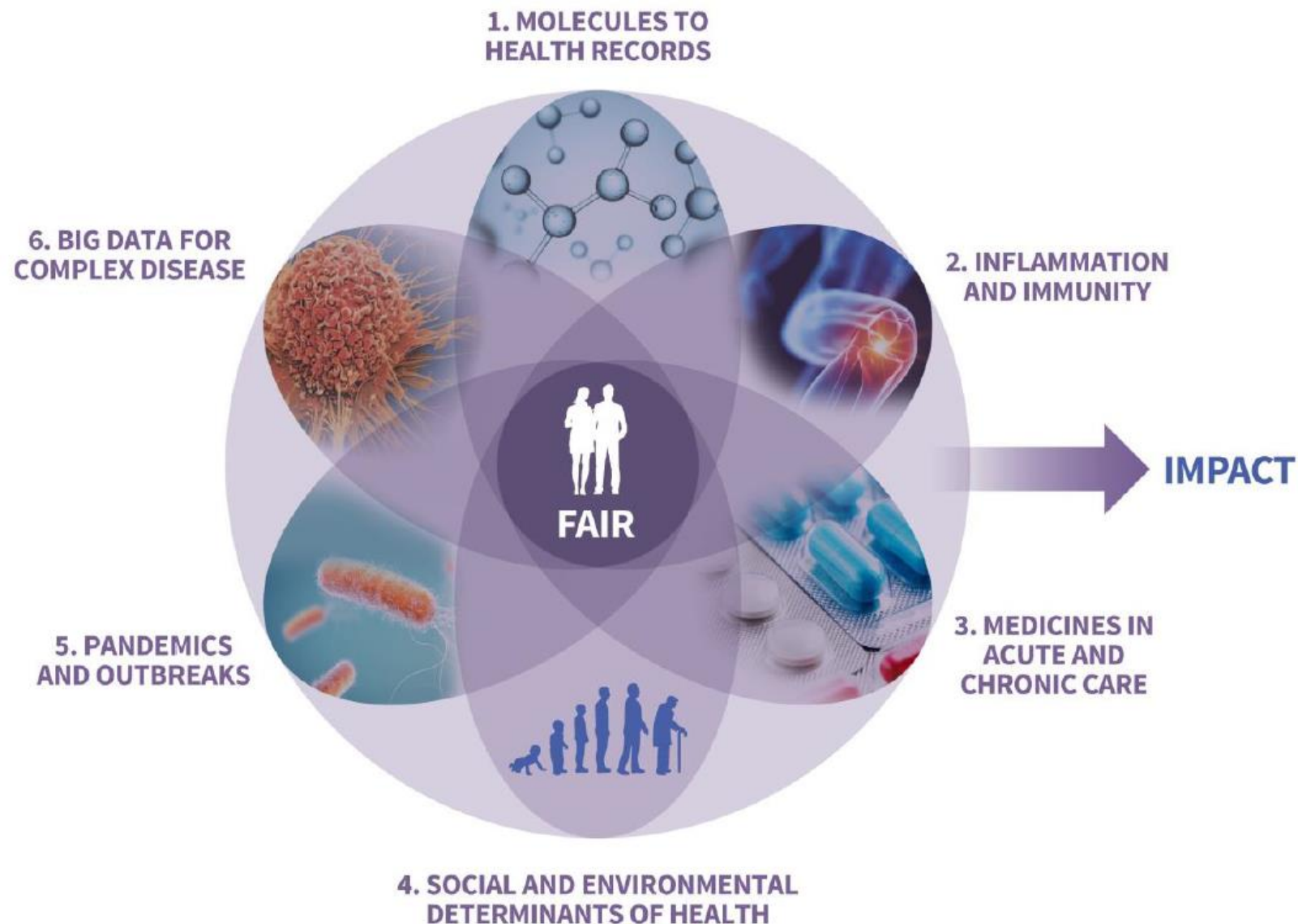
3. One Institute Partnership

We have established regional NHS, academic and industrial ecosystems to deliver the Institute's mission in partnership:

UK Regional Networks

- HDR UK Cambridge
- HDR UK London
- HDR UK Midlands
- HDR UK North
- HDR UK Oxford
- HDR UK Scotland
- HDR UK South East
- HDR UK Wales & Northern Ireland

HDR Global

Institute Office

This approach allows the Institute to benefit from health data science expertise and infrastructure across the UK and globally

Activities at University Liverpool
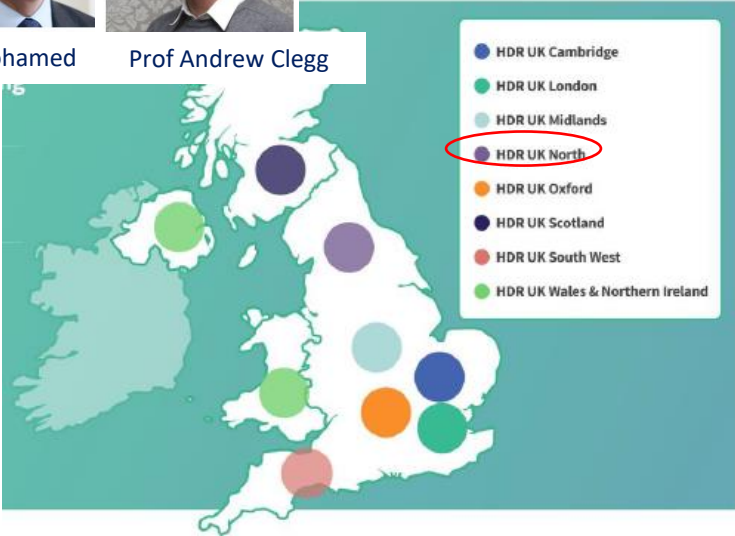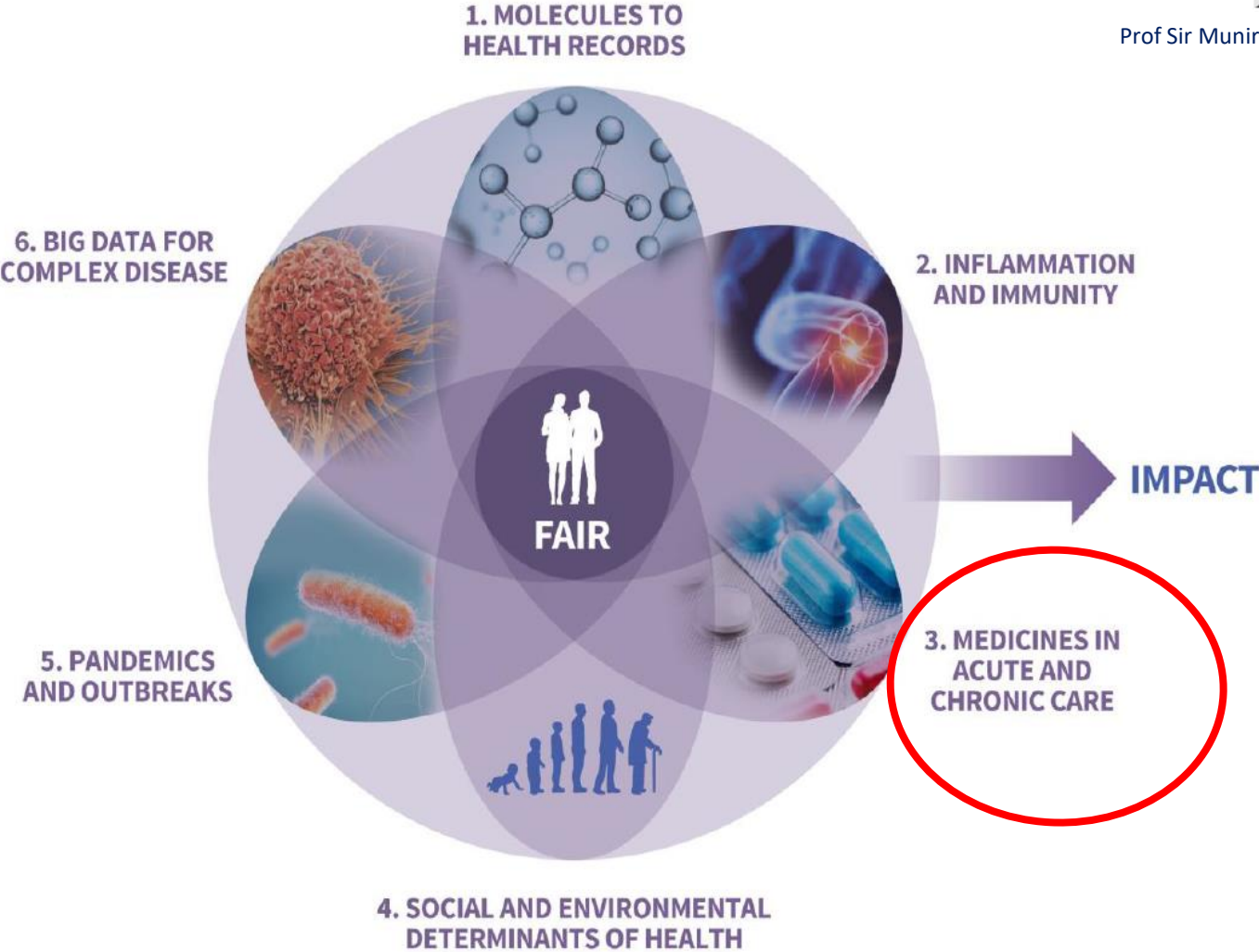

Programme Directors

Prof Sir Munir Pirmohamed   Prof Andrew Clegg

1. MOLECULES TO HEALTH RECORDS

2. INFLAMMATION AND IMMUNITY

3. MEDICINES IN ACUTE AND CHRONIC CARE

4. SOCIAL AND ENVIRONMENTAL DETERMINANTS OF HEALTH

5. PANDEMICS AND OUTBREAKS

6. BIG DATA FOR COMPLEX DISEASE

FAIR

IMPACT

- HDR UK Cambridge
- HDR UK London
- HDR UK Midlands
- HDR UK North
- HDR UK Oxford
- HDR UK Scotland
- HDR UK South West
- HDR UK Wales & Northern Ireland

Programme Directors

Dr Elizabeth Sapey
Director of PIONEER and Reader in Acute and Respiratory Medicine

Munir Pirmohamed
HDR UK Medicines in Acute and Chronic Care Driver Programme Co-Director and Co-Director

Swansea University Prifysgol Abertawe
University of Dundee
University of BRISTOL
UNIVERSITY OF LIVERPOOL
PIONEER Health Data Research Hub
UNIVERSITY OF LEICESTER
MANCHESTER 1824 The University of Manchester
NHS University Hospitals Birmingham NHS Foundation Trust
UNIVERSITY OF LEEDS
University of Strathclyde Glasgow
UNIVERSITY OF BIRMINGHAM

Activities at University Liverpool

Medicines are critical to health and an important cause of patient harm

Prescribing Costs in Hospitals and the Community - England 2021/22

Published 10 November 2022

- In 2022/23 in England, 1.18 billion items were dispensed in the community, costing £10.4B
- In hospitals, in 2021/22, costs of prescribing were £8.77 billion, 49.3% of total expenditure on drugs that year.

Good for you, good for us, good for everybody

A plan to reduce overprescribing to make patient care better and safer, support the NHS, and reduce carbon emissions

Published 22 September 2021

Policy Research Unit in Economic Evaluation of Health & Care Interventions (EEPRU)

PREVALENCE AND ECONOMIC BURDEN OF MEDICATION ERRORS IN THE NHS IN ENGLAND

- 237 million medication errors
- 3.8 million bed days
- 22,303 deaths per annum
- £1.6 billion annual cost

- 15% of patients on 5 or more medicines
- Elderly, those with disabilities and minority ethnic backgrounds disproportionately affected
- 10% of prescriptions should not have been issued (110 million)
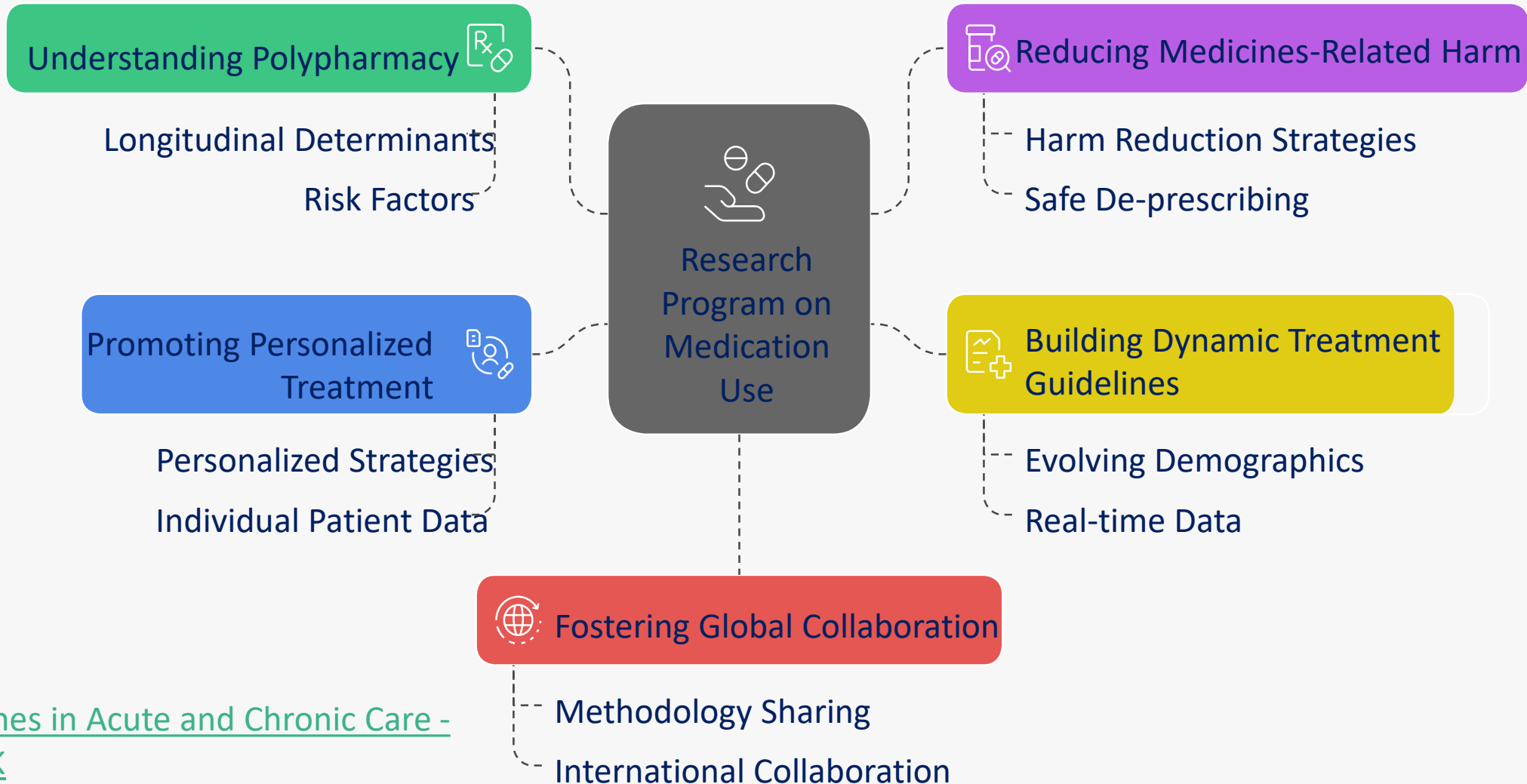
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ICODA

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HDR UK North

Programme Directors

Prof Sir Munir Pirmohamed   Prof Andrew Clegg

- **REGIONAL EXPERTISE**

- HDR UK North expertise extends across our large geographic footprint that includes our six core academic institution partners (Liverpool, Leeds, Lancaster, Manchester, Newcastle, Sheffield).

- Our robust data infrastructure and strong partnerships across PPI, industry, Health Innovation Networks Integrated Care Systems and Secure Data Environments mean that we are well positioned to deliver research with major impact.

- We have a strong track record in health services and systems research aligned to core NHS and social care priorities.

HDR UK North's regional activities

- To ensure new discoveries using health data translate into improvements in health and wellbeing by establishing strong cross-sector partnerships across the region.

- To catalogue the North region's data assets and resources and facilitate data sharing across multiple systems.

- To shape and support the data science capabilities of the NHS, local authority organisations, and workforce across the region through engagement, joint research grants, publications, and knowledge exchange activities.

- To secure additional funding through regional collaborative applications, support doctoral and postdoctoral fellowships, and align research with regional expertise and Department of Health and Social Care priorities to improve health outcomes and reduce health inequalities.

- To work with the other HDR UK regional networks on a shared purpose, to enable access to secondary care data, host knowledge exchange activities to encourage this work, and leverage further funding.

- HDR UK North - HDR UK

Find out more about HDR UK

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-News

-Events

-Training

- Funding opportunities

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