

Health equity and the 'humaniverse'

We want everyone to get the help they need in a crisis

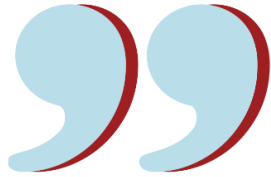


Our Health and Care services

People in the UK receive the care and support they need without falling through gaps in the health system

- > Assisted discharge
- > Support at home
- > Virtual wards / 'hospital at home'
- > Care at home (regulated)
- > Frequent attendance of A&E
- > Non-emergency patient transport





I believe that **data has become the new frontier of humanitarian work**. It's the new place where we contact and we are engaging with vulnerable populations. It's the new way in which we are engaging with governments, with the bigger picture.

— Caroline Holt
Director of Disasters, Climate and Crisis at the IFRC

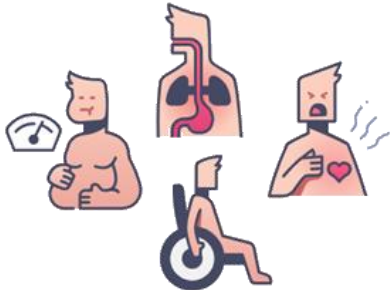
Mapping health inequalities across the UK



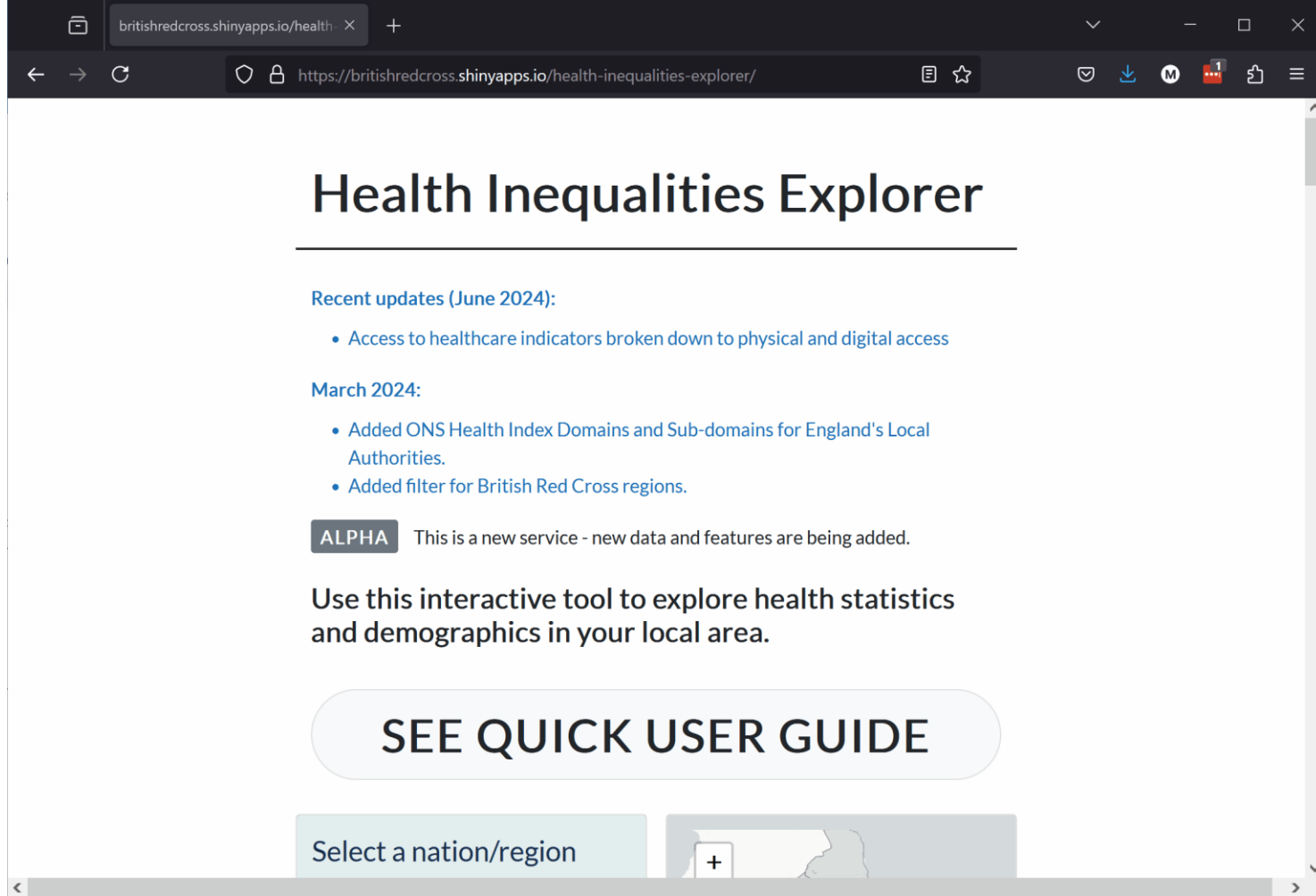
Places with the poorest health
(and highest risks of poor health)



Local health system performance



Demographic profiles, including
'PLUS' population groups



Health Inequalities Explorer

Recent updates (June 2024):

- Access to healthcare indicators broken down to physical and digital access

March 2024:

- Added ONS Health Index Domains and Sub-domains for England's Local Authorities.
- Added filter for British Red Cross regions.

ALPHA

This is a new service - new data and features are being added.

Use this interactive tool to explore health statistics and demographics in your local area.

SEE QUICK USER GUIDE

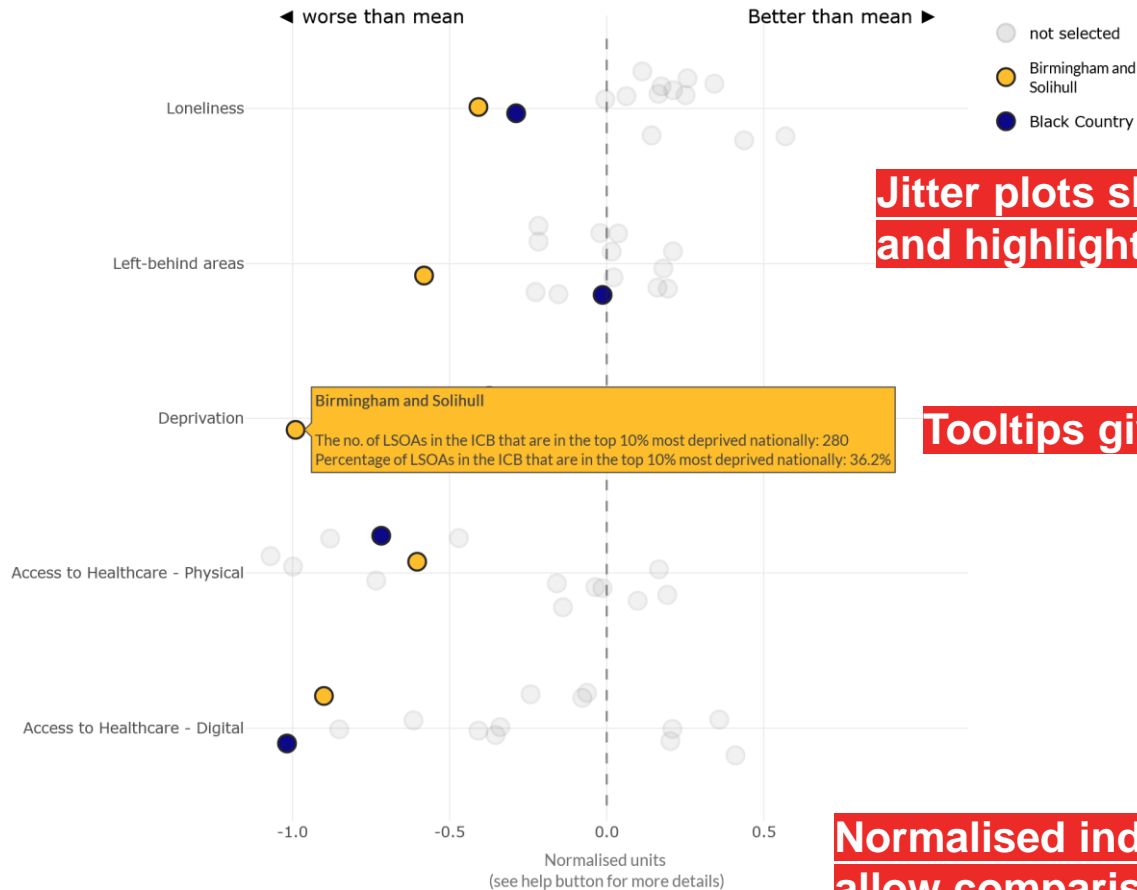
Select a nation/region

+



<https://britishredcross.shinyapps.io/health-inequalities-explorer/>

Greater vulnerability, higher risk, poorer performance etc. is always towards the left of the charts



Jitter plots show variation and highlight selected areas

Tooltips give more info

Normalised indicators allow comparisons across areas

Lots of supporting explanations to guide users

Click here



[Show indicator details](#) ^

These indicators summarise a selection of health metrics into a single score. They can be useful for comparing the overall health of different areas and are a good place to start. But, they should not be used in isolation to make judgements about all aspects of an area's health. For example, an area may score poorly in a summary metric, yet still excel in certain aspects of health.

The ONS Health Index provides an indication of health outcomes, risk factors, and the wider determinants of health. A detailed breakdown of the index can be viewed [here](#).

Discover more
information and
further links



Left-behind areas are places high in deprivation and socio-economic challenges, and low in social infrastructure and investment to meet those challenges. Research has shown they are associated with high health inequalities. More information on these areas can be found [here](#). An interactive map to visualise these areas can be found [here](#).

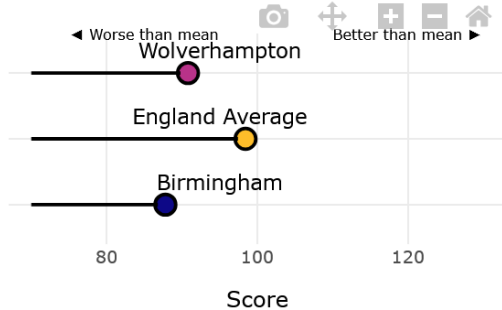
Health Index Domains and Sub-Domains

?

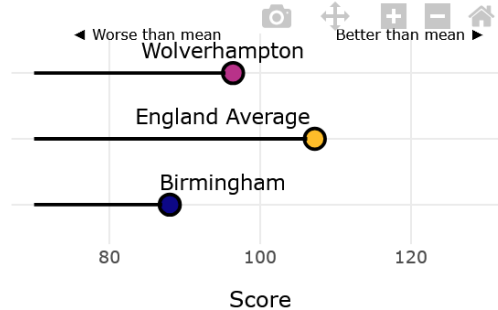
The ONS Health Index score can be broken down into three areas of health, known as domains - Health Outcomes (People), Preventable Risk Factors (Lives) and Social Determinants of Health (Places). Each domain contains several indicators, or subdomains that represent overarching topics related to their respective domain.

Click the help (?) button above for information on interpreting the scores.

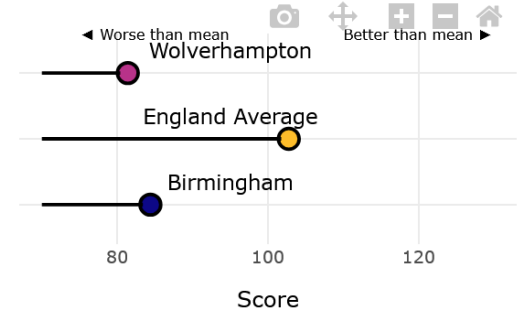
Health Outcomes Domain



Social Determinants of Health Domain



Preventable Risk Factors Domain



Health Outcomes Sub-Domains

Sub-domain	England		
	Average	Birmingham	Wolverhampton
Difficulties in daily life	98	94	90
Mental health	97	99	104
Mortality	102	83	82
Personal well-being	96	90	95
Physical health conditions	101	92	98

Social Determinants of Health Sub-Domains

Sub-domain	England		
	Average	Birmingham	Wolverhampton
Access to green space	102	95	101
Access to services	98	102	106
Crime	103	94	92
Economic and working conditions	104	84	89
Living conditions	111	96	103

Preventable Risk Factors Sub-Domains

Sub-domain	England		
	Average	Birmingham	Wolverhampton
Behavioural risk factors	103	83	87
Children and young people	109	98	99
Physiological risk factors	97	87	72
Protective measures	100	82	82

A diversion into
the humaniverse

We are building humanitarian data science infrastructure

A suite of R packages providing data and tools for doing humanitarian data science



Open source



Reproducible and repeatable analyses



Speed up development and analysis time

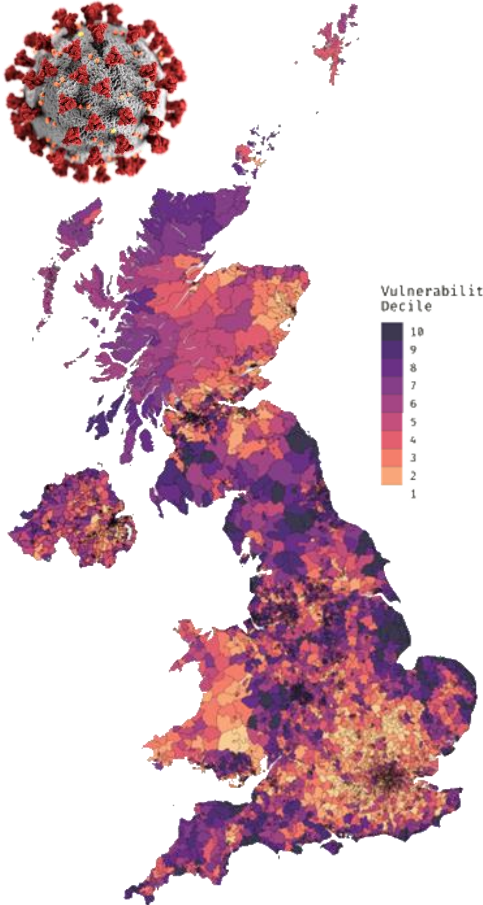


Being kind to our future selves

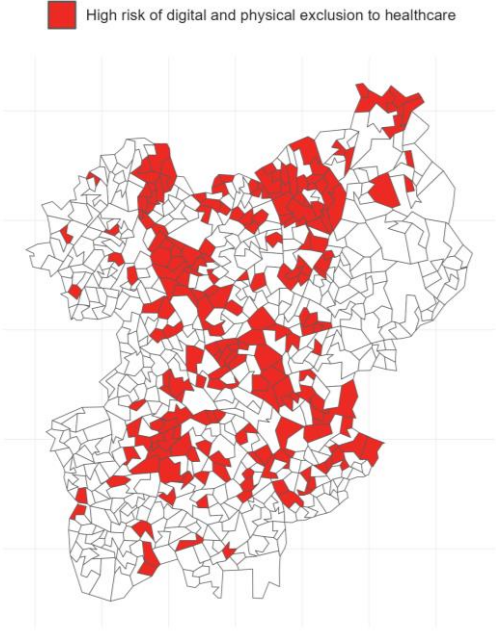




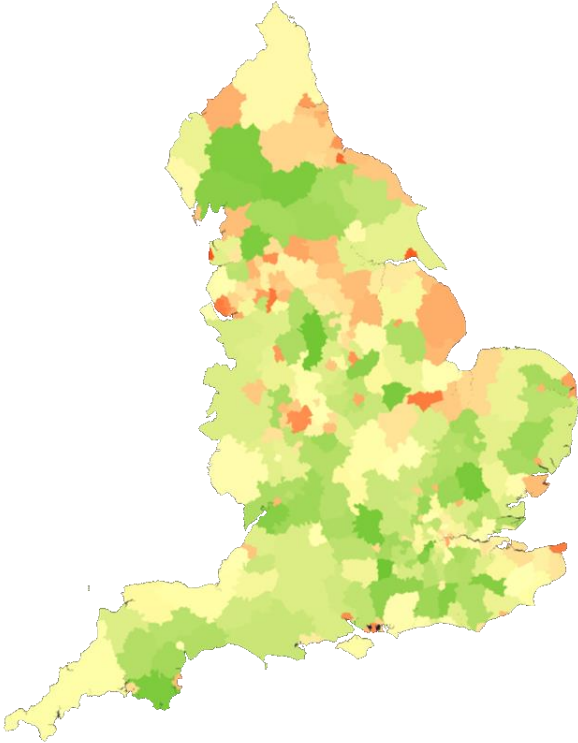
We use (and build) a *lot* of composite indices...



Digital and Physical Access to Healthcare in Black Country



Health Index



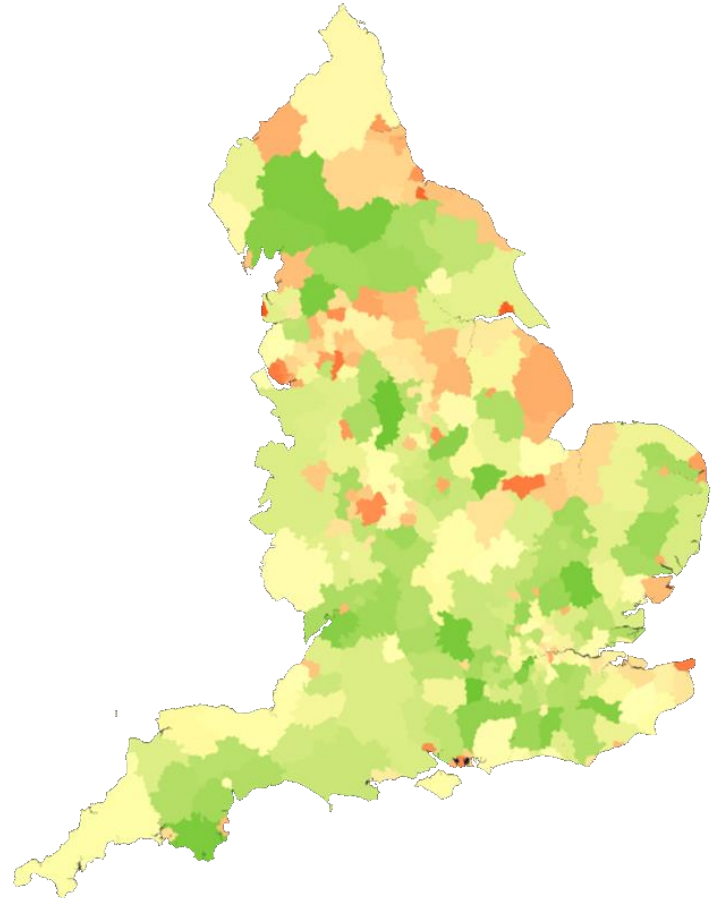
ONS Health Index for England

Health, in this index, is comprised of:

- > **Health outcomes**
Difficulties in daily life, mental health, mortality, personal wellbeing, physical health conditions
- > **Lifestyle, behaviour, modifiable risks**
Behavioural risk factors, physiological risk factors, protective measures, children and young people
- > **Wider determinants of health**
Access to green space, access to services, crime, economic and working conditions, living conditions

Intended to eventually become the **official measure of the nation's health** (see [Health 2040 report](#)).

Tracks health over time in **Local Authorities in England** (the British Red Cross is building versions for devolved nations).



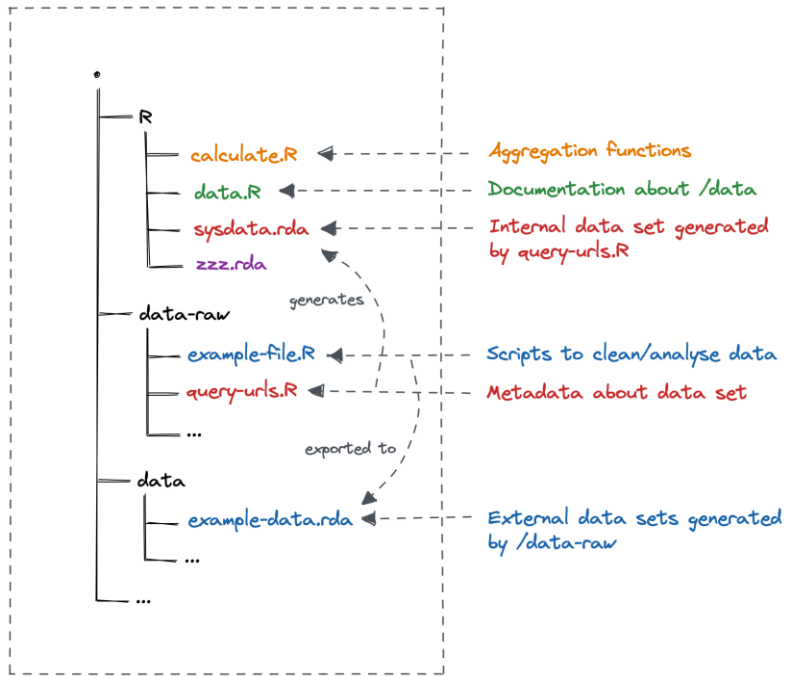


Trust and ICB data:

- > A&E attendance and admissions
- > Criteria to reside
- > Critical, general and acute bed occupancy
- > Discharged patients
- > IAPT
- > RTT

'PLUS' population data:

- > Contact with justice system (crime severity score)
- > Disability (under Equality Act)
- > Homelessness
- > Sexual orientation
- > ... more data in {demographr}



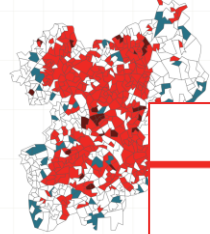
Building the Health Inequalities Explorer

Explaining ————— Exploring

46% of neighbourhoods in Black Country ICB's footprint are among the most deprived in England.

Deprivation in NHS Black Country Integrated Care Board

Core20 Left-behind area in Core20 Hidden deprivation



The **20% most deprived neighbourhoods (Core20)** and **'Left behind neighbourhoods'** (Core20 areas lacking social infrastructure such as community assets, connectivity, and civic engagement) are **concentrated across most of the urban areas within this ICB.**

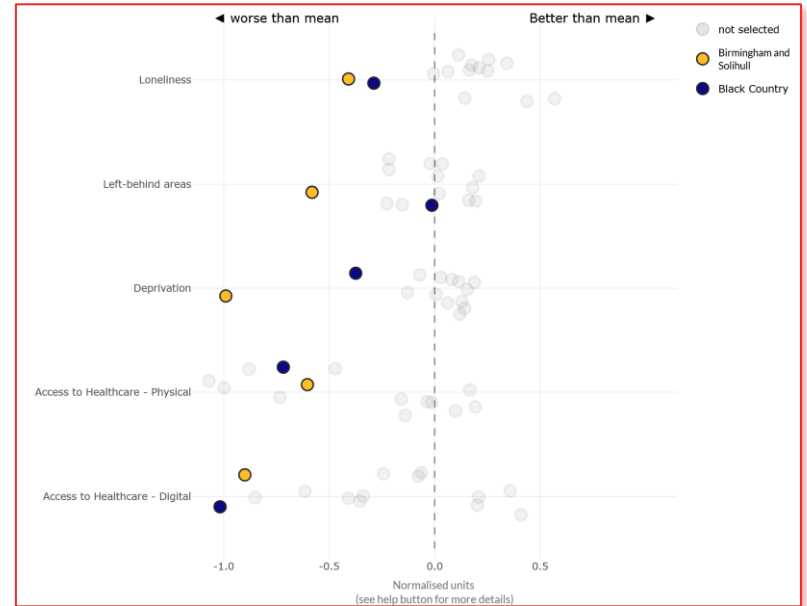
Hidden deprivation is where one or more households in an otherwise non-deprived area are experiencing deprivation in terms of education, employment, health/disability, and household overcrowding. Hidden deprivation is highest in

Strategic Insight and Foresight

Analysis of Black Country ICB health plans and priorities



How could prevention, early intervention and support in deprived neighbourhoods – particularly those



We've taken a product approach to build this app



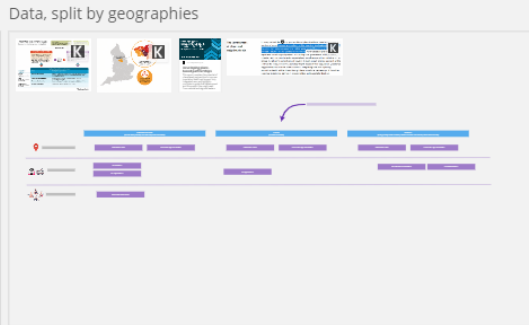
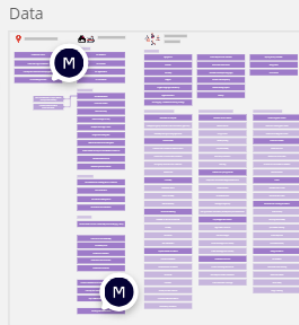
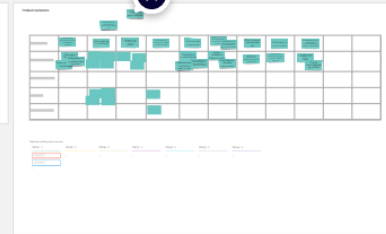
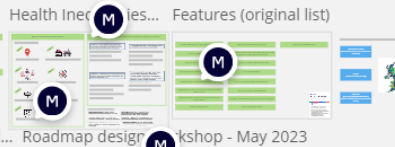
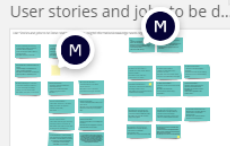
Health Inequalities Explorer - User Stories

As a user, I want to explore health inequalities data so that I can understand the impact of social factors on health outcomes.

As a user, I want to filter data by geography so that I can focus on specific areas of interest.

As a user, I want to view data in a clear and concise way so that I can quickly identify key trends and insights.

As a user, I want to be able to share and collaborate on the data so that I can work with others to address health inequalities.

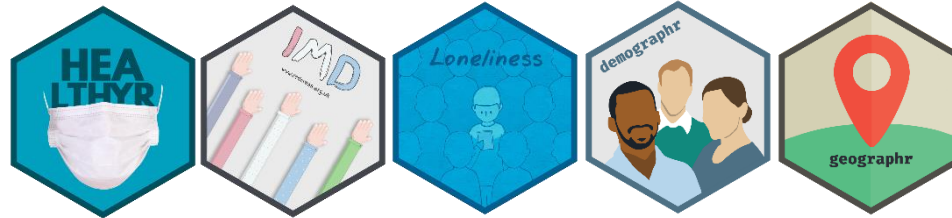


Products all the way down

Apps



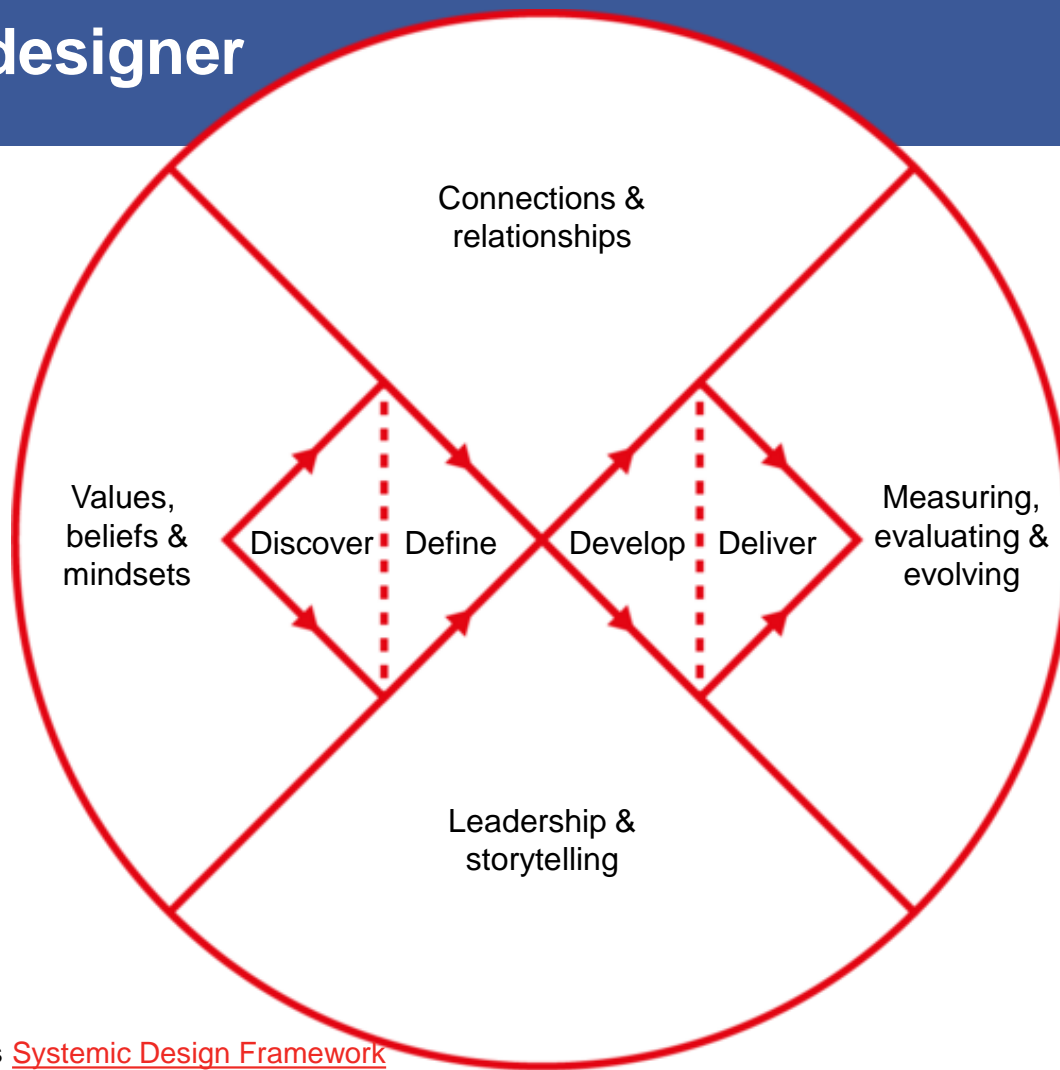
R packages



Data products

Health Index | Loneliness Index | DEPAHRI

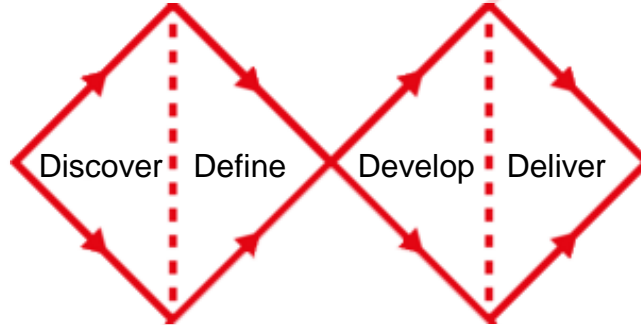
Think like a designer



Build a shared understanding of problems and co-design solutions

‘Problem space’

- > What’s going on?
- > Is this what’s going on?



Build prototypes that can **fail quickly** and **fail well**.

‘Solution space’

- > What could we do?
- > What should we do?

#1 Know your **audiences**
(and respect their headspace)

#2 Treat (almost) everything you
make like a **product**

#3 Be kind to your **future selves**

The techie bit

Scripts to pre-process data
and store as .rda files



R Shiny app,
structured as an R package

{gridlayout} for UI

Shiny modules
for UI components

- jitterPlotUI()
- jitterPlotServer()
- ggplotly_default()
- jitter_plot_prep()
- jitter_plot_null()
- jitter_plot_selected()



Hosted on
shinyapps.io

The future?



What we're building next

Health index for Wales, Scotland, Northern Ireland

- > Health outcomes, preventable risks, social determinants.
- > Figuring out how to build a composite index when you have more indicators (columns) than data points (rows).

Improving the app's UX

- > Speed it up.
- > Make it easier to use the data to tell stories.

AI-fuelled analysis of social determinants of health

- > From free-text referral notes.

**The power
of kindness**

**^
nerdy**