Using Shiny to track winter pressures in the UK National Health Service (NHS)

Fiona Grimm, Sarah Deeny

useR! 2019 Toulouse
Winter is a challenging time for the NHS

Emergency care waiting time > 4 hours (%)

peaks in winter

5% target
Tracking data on NHS winter pressures

raw data

update weekly

National situation

Trends

Variation between local health systems
Tracking data on NHS winter pressures

raw data
update weekly

National situation
Trends
Variation between local health systems

Digital
Throughout
Promoting the use of R in the NHS

This winter
*Shiny* NHS Winter Tracker

Last winter
An R workflow for analysis & visualisation

Before
Copy & paste
Challenges: things change all the time

- data quality
- spread sheet layout
- local health care systems
- indicators
Challenges: missing or not?

Large data gaps

Small data gaps

Ambiguous gaps?

Cleaning

Interpretability
Challenges: missing or not?

Large data gaps

Small data gaps

Ambiguous gaps?

Cleaning

Interpretability
Our workflow

Bed occupancy (%)

- over 95%
- 90-95%
- 85-90%
- 85% or less

Maps for December, January, February
Our workflow

- tidyverse
- readxl
- lubridate
- broom

+ maptools
geojsonio

Bed occupancy (%)

- over 95%
- 90-95%
- 85-90%
- 85% or less

December
January
February
Shiny: national trends

compare to previous years

compare indicators
Shiny: variation between local health systems
What did we learn?

Even **simple** analyses involve lots of decisions that impact results and interpretability.

It's worth sharing the how AND the why.

www.health.org.uk

github.com/fiona-grimm

medium.com/@fionagrimm
What did we learn?

Even **simple** analyses involve lots of decisions that impact results and interpretability.

It’s worth sharing the how AND the why.

www.health.org.uk

github.com/fiona-grimm

medium.com/@fionagrimm
What did we learn?

Even **simple** analyses involve lots of decisions that impact results and interpretability.

It’s worth sharing the how AND the why.