0.01 Welcome to NHS-R workshop no. 4

Quantitative evaluation using R

The key questions for any healthcare initiative, national or local, remain the same:

• Have patient outcomes and the quality of care improved?

• Has the patient or carer experience of care improved?

• Do the changes deliver better value (better outcomes for lower cost)?

In this workshop participants will explore the role of evaluation and the relative merits of different types of study design. The primary focus is understanding a small number of quasi-experimental study designs*, including interrupted time series, retrospective matched control, synthetic control, and regression discontinuity designs. Participants will be shown how to apply these approaches using the R statistical computing environment, and guidance will be offered on the practical considerations of evaluation using routinely collected NHS data. Participants will also be introduced to examples of evaluation projects undertaken by the Strategy Unit and the Health Foundation.

* these studies can be used to estimate the causal impact of an intervention on an outcome in a similar manner to experimental designs but without the element of random assignment to treatment or control.

The Strategy Unit

Leading research, analysis and change from within the NHS

Health and care services face serious and complex challenges.
Addressing them requires clear thinking, innovation and applied intelligence.
Our proposition is simple: better evidence, better decisions, better outcomes.

Workshop aims

Learn the principles behind a small number of observational study designs; understand how to approach the analysis of these designs in R; and have a sense of when these designs may be appropriate to answer questions about whether an intervention has worked.

Provide some space to experiment in R, and meet & learn from other R users.

Build the NHS-R community.

Housekeeping

- Toilets

- In case of fire

- Mobile phones

- Start/finish time, lunch, & breaks

Agenda – Day 1

- Icebreaker exercise

- Evaluation 101

- Study designs

  ← Break 11-ish

- The interrupted time series design

  ← Lunch 1-ish

- Practical exercises & self-directed learning

- Review

  ← Finish 4-ish

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Agenda – Day 2

- The retrospective matched controls design

Agenda – Day 3

Geraldine Clarke and Emma Vestesson from the Health Foundation

- Genetic matching

- Self-directed learning