Designing a rapid quantitative evaluation: a practical guide

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30 January 2020

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What do we mean by rapid?

‘The freshness of the results’ – from the end of the period you’re evaluating to when you share results and these can be used to inform decisions

To be able to inform decisions, we need analyses to be:

- Timely
- Robust

So how can we make evaluations more timely without compromising on quality?

Case study

Principia Enhanced Support in Care Homes

Principia enhanced support in care homes

- Introduced in April 2014 in Rushcliffe, a rural area in Nottinghamshire
- Included an aligned general practice; regular visits from a named GP; improved support and training from community nurses; close collaboration between GPs, care home managers, staff and community nurses
- 14 residential and 10 nursing homes caring for older residents
- Aims
  - Improve residents' care, involvement in decisions about their care and quality of life
  - Reduce secondary care use, including A&E attendances and emergency admissions

Study design

Cohort: residents aged 65+ who moved into care homes for older people during the study period

Study period: August 2014 to August 2016

Outcomes: A&E attendances, emergency admissions, potentially avoidable admissions*, hospital bed days, deaths out of hospital, elective admissions and outpatient appointments

Data: (pseudonymised) hospital records, patient registration data, CQC data

*Admissions for conditions that are often manageable, treatable or preventable in community settings without the need to go to hospital, or preventable through good quality care, e.g. diabetes, UTIs, pressure sores. Note: these are not always avoidable.

Study design – using a counterfactual

Aim: to compare with *what would have happened* if the intervention group hadn't received the intervention

Practice: compare with a carefully selected comparison group that resembles the intervention group – but received 'usual care'

1. Selected six comparable areas based on demographics (age, ethnicity, population density), levels of socio-economic deprivation, age-standardised emergency hospital admission rates

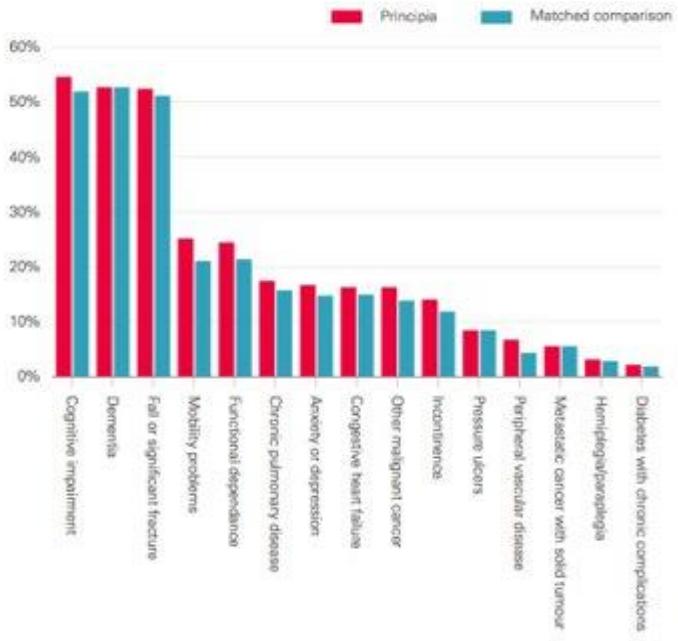
2. Selected a control group by matching on characteristics that may affect outcomes

- Resident characteristics, e.g. age, long term conditions, previous hospital use
- Care home characteristics, e.g. type, size, IMD quintile

Statistical analysis

- Compared outcomes of residents in intervention care homes with those of a matched control group, adjusting for remaining (observed) differences
- Multivariate regression modelling
- Subgroup analysis: residential and nursing homes

Comparison Principia and matched control groups at baseline



Results

	Relative difference (95% confidence interval) compared with a matched control group (only statistically significant results shown)		
	All care homes N=588 (each group)	Residential care homes N=203 (each group)	Nursing homes N=365 (each group)
A&E attendances	29% lower (43% to 11% lower)	43% lower (60% to 19% lower)	inconclusive
Emergency admissions	23% lower (39% to 3% lower)	40% lower (58% to 14% lower)	inconclusive
Potentially avoidable admissions	inconclusive	50% lower (70% to 18% lower)	inconclusive

Ways to make an evaluation more rapid

Preparation – before (final) data access

- Start thinking about the evaluation early
- Design the study – in detail
- Peer review input on statistical analysis protocol
- Establish data sources, ensure data flow, get early data access
- Write code for data cleaning, manipulation & analysis*

*The final data still needs to be reviewed and the analysis and underlying assumptions checked carefully!

Efficiency and flexibility

- Template for statistical analysis protocol
- Shared, consistent definitions and ways of calculating variables
- Standardised variable names
- Macros / functions that can be used flexibly across different projects
- Flexible working within the team
- Post-mortem at end of project to see what can be improved

Sharing results

- Share results with the local team early on - they can provide local insights
- Start engaging with wider audience before results
- Publication of academic papers takes time – publish on a pre-print website in order to share useful insights earlier

Table discussion

Opportunity to share knowledge and experience within the room

Table discussion

Thinking about commissioning / designing / delivering an evaluation that is both rapid and robust:

- What are the key challenges?
- How did you overcome them?
- What are your top tips?

References

Lloyd et al 2017 The impact of providing enhanced support for care home residents in Rushcliffe

Lloyd et al 2017 Technical appendix: The impact of providing enhanced support for care home residents in Rushcliffe

Lloyd et al 2019 The different impact of providing enhanced support in residential and nursing homes in Rushcliffe (under 'Related downloads')

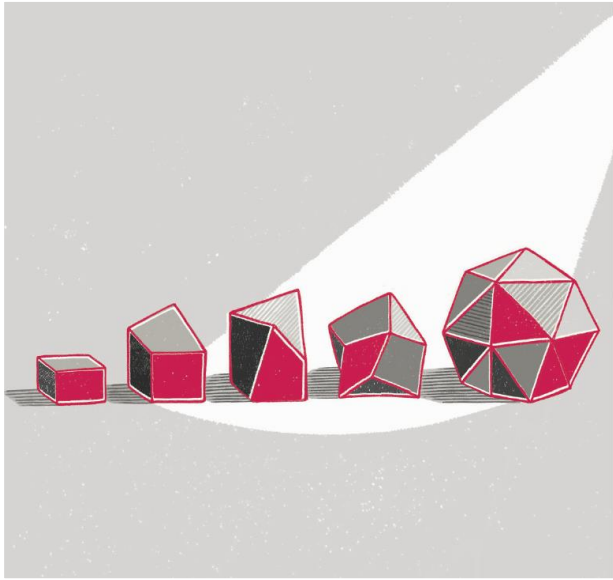
All available at https://www.health.org.uk/publications/the-impact-of-providing-enhanced-support-for-care-home-residents-in-rushcliffe

Lloyd et al 2019 Effect on secondary care of providing enhanced support to residential and nursing home residents: a subgroup analysis of a retrospective matched cohort study https://qualitysafety.bmj.com/content/qhc/28/7/534.full.pdf

Wolters et al 2019 Emergency admissions to hospital from care homes: how often and what for? https://www.health.org.uk/publications/reports/emergency-admissions-to-hospital-from-care-homes

About us

The Improvement Analytics Unit (IAU) is a unique partnership between NHS England and the Health Foundation that evaluates complex local initiatives in health care in order to support learning and improvement.



We shine a light on how to make successful change happen

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Thank you

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