Four examples from UK research of the innovative 'cohort multiple RCT' design

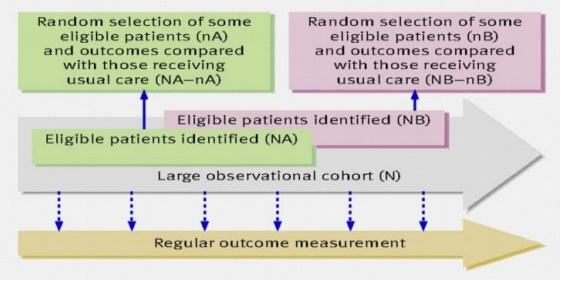
Clare Relton (1), Ellie Holding (1), Peter Bower (2), Sally Barber (3), Lesley Brown (3) (4)
1. University of Sheffield, 2. University of Manchester,
3. Bradford Teaching Hospitals NHS Foundation Trust
4. University of Leeds

Why did we start?

Pragmatic randomised controlled trials (RCTs) comparing 'trial' interventions to usual care are important in informing routine practice. The standard approach to pragmatic trial design recruits one 'population' per trial, and provides 'full information to all participants prior to the trial start.
This approach has a number of problems:
- recruiting the sample required to time – and target.
- When collating and comparing the results of different trials in different populations, using different outcome measures
Researchers/ triallists are now using other approaches such as 'Trials within Cohorts'. We describe here 4 UK examples of this approach.

Trials within Cohorts (TwiCs)

Trials within Cohorts (TwiCs) – embed one or more randomised controlled trials within a long term observational cohort or a disease/population register. see www.twics.global. The most common TwiCs is the *'Cohort multiple RCT 'design.* (Relton et al, BMJ 2010)



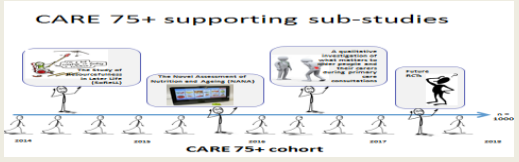
This design utilises a large observational cohort of people with the condition(s) of interest, collects regular outcomes . This provides a capacity for multiple trials. For each trial embedded within the cohort:

- ○Identify those eligible
- ○Random selection for trial intervention
- ○Comparison of outcomes with those eligible but not randomly selected
- ○Patient centred informed consent – tailoring the information given and the consents sought to each group at different time points before and during the trial

1. Community Ageing Research 75+ (CARE 75+)

Bradford Teaching Hospitals NHS Foundation Trust

Cohort of older people with well characterised frailty recruited from GP practices across Bradford and Leeds. N= 228 – target 1,000.
No interventions trialled as yet.



Contact: lesley.brown@bthft.nhs.uk

2.

Yorkshire Health Study
Your health, your research

Population based regional health study – set up to observe and facilitate the testing of interventions to improve population long term health in Yorkshire.
Recruited via GP practices & online recruitment methods.
N= 33,000 completed *Health Questionnaires* 2 waves of data collection (2010/12, and 2013/15)
One intervention trialled using the 'cohort multiple RCT' design (2 other RCTs and 22 other types of studies utilised cohort)
Contact: c.relton@sheffield.ac.uk

3. CLASSIC

SALFORD TOGETHER

This cohort is being used to assess effects of large scale integrated care programme on population health
One intervention – telephone health coaching –used the 'cohort multiple RCT' design.
N= 4377 older people recruited to the cohort
Contact peter.bower@manchester.ac.uk

4. Born in Bradford Better Start (BiBBs)

Worlds first experimental birth cohort

10 year project to address the dearth of evidence on the effectiveness of early interventions.
Target population: young mums and children up to 3 years in the most deprived parts of Bradford
N = 300 women recruited to BIBBS cohort
20 Better Start Bradford interventions will be delivered and evaluated, (5 already ongoing)

BORNINBRADFORD For a Healthy Future

Better Start BRADFORD INVESTING IN THE FUTURES OF OUR CHILDREN

Three interventions will be trialled using the 'cohort multiple RCT 'design
Contact: sally.barber@bthft.nhs.uk

What did we learn?

Researchers using the design reported the following
Advantages
Well characterised profile of participants
Easy identification and targeting of those with specific characteristics
Participants gained confidence in research process by being part of cohorts.
Simple conversations (with no ethical challenges) when offering the intervention being trialled to those randomly selected to the trial Offer Groups
and
Challenges
Research logistics & long term funding
Participants sometimes confused re their involvement
Complexities over power and analysis

NIHR CLAHRC Yorkshire and Humber