



# HEALTH SERVICES RESEARCH UNIT

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## Methodological Research

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The cluster randomised controlled trial is considered the optimal design when evaluating strategies to change professional behaviour. However, adopting such a design has implications for the design, conduct and analysis of a trial. A fundamental assumption of patient randomised controlled trials is that the outcome for an individual patient is completely unrelated to that for any other patient - they are said to be 'independent'. This assumption is violated in cluster randomised trials because patients within any one cluster are more likely to respond in a similar manner. A measure of this similarity is known as the intra-correlation coefficient (ICC). Because of this lack of independence, sample sizes require to be inflated.

We have developed two tools to aid the design of cluster trials in the implementation research field - a database of ICCs and a sample size calculator.

### Database of ICCs

A downloadable excel spreadsheet contains a list of ICCs calculated from a number of different interventions and settings. Also downloadable, is a list of references for the data contained in the spreadsheet.

- [Spreadsheet](#)
- [References](#)

### Sample size calculator

A sample size calculator for cluster randomised trials is obtainable from the link below. This is a self-extracting program.

- <http://www.abdn.ac.uk/hsru/sampsize/ssc.exe>

The instruction manual for this program can be downloaded as a pdf file at the link below.

- <https://www.abdn.ac.uk/hsru/documents/calculationmanual.pdf>

A further description of the calculator can be found in Campbell MK, Thomson S, Ramsay CR, MacLennan GS, Grimshaw JM. **Sample size calculator for cluster randomised trials**. Comput Biol Med 2004;34:113-125.

If you have any queries about either of these resources, please contact Graeme MacLennan ([g.maclennan@abdn.ac.uk](mailto:g.maclennan@abdn.ac.uk))

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