Fact sheet 10: How do I design my research project?

This fact sheet aims to give you information to help you to understand:

- What you will need to consider when designing a research project;
- How to decide on the most appropriate design for your research project and
- Factors which may influence the decisions you make.

It will also provide links to other useful fact sheets and documents that relate to research.

Define your research question/s
You need to ensure that you have a clear research question (for a more detailed guide on defining a research question, see Factsheet 9: How do I turn my idea into a research question?). This will shape the design of your research project. Your research question will help you to shape your research aims (what you want to do) and research objectives (how you will do this). These are vital to help you design your research project.

- Where has this question come from – your own experiences and/or interests?
- Consider the literature – is there a gap in knowledge? Are there findings elsewhere which could answer your question/s (such as peer reviewed publications/local insight work or needs assessments/locally produced evaluations/guidance/policy for example)?

See Factsheet 3: How do I prepare a review of existing evidence on a topic? and Factsheet 2: What sort of evidence is available to me in NHS Wirral? for more information on this.

- What are the expected outcomes of your research?
- Can your research question be defined and measured?

Define the scale and scope of your research project
How big will your research project be? Will it be confined to a small geographical location (such as a town in Wirral) or will it cover a larger area (such as Cheshire and Merseyside)?

This will be largely defined by your:

- Research question (see above)
- Population of interest
- Budget
- Timescale
- Research team members

Population of interest
This will be informed by your research question, and will be important in helping you to decide your sampling strategy. Your sampling strategy will be influenced by the methods that you decide to choose (qualitative, quantitative or both).

Some Examples of Sampling Strategies	
Random:	Considered the best way of selecting a representative sample. Each member of the population has an equal chance of being selected
Stratified random:	Sampling from a subset of the population that share at least one common characteristic
Systematic:	Selecting every Nth record from a list of population members
Multi-stage cluster:	Selecting a population from a defined cluster (such as selecting pupils within schools)
Convenience:	Selecting a sample because they are readily available. This is a less time-consuming process but may not provide a representative sample
Snowball:	Initial participants are responsible for recruiting other participants to the research (often known to them) – this can be useful for widening recruitment within a particular social network or as a means to speed up recruitment
Quota:	Specified sub-groups of the population are defined by the researcher(s). Convenience sampling is then employed within these sub-groups (for example to obtain 100 men aged 54-75 years)
Sequential:	Required sample size is not pre-set. Data are collected from participants until no new information is generated
Purposive:	Participants are selected for having certain characteristics

Budget
You may have a set budget for your research project. Make sure that you appropriately cost for the time and effort required to recruit participants, the materials and equipment required, and the methods used to collect the data, so as not to exceed your budget.

Alternatively, you may be designing your research project with a view to applying for external funding. If this is the case, be clear that your research project can be undertaken within the maximum budget outlined by the funding organisation. Costs need to be clearly justified. For more information see Factsheet 7: Where can I find funding for my research project? and Fact sheet 11. How do I write a research proposal?

Timescale
This may be determined by your own requirements. For example, you may wish to undertake research to inform the delivery of your service and you may need this information before the service is due to be re-commissioned.

Alternatively, timescales may be determined by the funding organisation you will be applying to. Some funding streams do not have a set deadline, but state that they would like to receive proposals which clearly explain and justify how long it would take to undertake the proposed research.

If you need to obtain advice regarding ethical approval (see Fact sheet 13 Ethical Considerations in Resaerch & Evaluation) make sure you factor this in to your timescales. Also consider the approaches you will use to gain consent. Both will take time and need to be considered when planning your research project.

Research team members
You need to make sure that you have enough people in your team, with the right levels of skill and expertise, to effectively conduct the research on time, and on budget.

You may wish to collaborate with stakeholders and/or experts from other relevant organisations who can help you to recruit participants, collect data, analyse and interpret findings, report the findings, and disseminate the findings. Alternatively you may be able to do this alone, or with colleagues from within your team and/or organisation.

Remember to appropriately cost the time of each of the research team members if you are applying for external funding.

Choose your methods
Your research question/s will help you determine the methods you choose to collect your data. You may wish to use quantitative methods, qualitative methods, or both (mixed methods). See Fact sheet 15. What are the best evaluation/research methods to use? for further information.

Quantitative
- Involves the collection and analysis of numerical data
- Uses tools (such as surveys or equipment) to collect numerical data
- Researcher knows what they want to look for in advance of the data collection
- Less in-depth so may miss contextual detail
- Collects data from a large sample and is therefore more representative of the population

Qualitative
- Involves the collection and analysis of words, pictures, video, audio, objects
- Researcher may not necessarily know what they are looking for (for example they may wish to explore views and perceptions, but not know in advance what these may be)
- Data collected is rich in detail
- Smaller sample sizes therefore not necessarily representative of the population
- Data collection can be time consuming

Mixed methods
While quantitative methods can be employed to gather a lot of information from a large sample size (helping to ensure the findings are representative of the population in question), qualitative methods can be used to add further detail to these findings. Qualitative methods can help you to explore an issue in more depth. Often issues may be discussed by participants that you had not expected or thought of (and so may not be covered in your survey questions).

You can use quantitative findings to develop the qualitative methods and vice versa. For example, you may conduct focus groups to explore an issue within a population, and use these to inform the development of your survey. Alternatively, you may wish to conduct a survey (for example of 500 residents in Wirral) and then conduct some interviews afterwards to add depth to the survey findings.

Analysis
Your analysis will be largely determined by the methods you have employed. When planning your analysis consider the purpose and audience for your research. Some simple description of your data may be sufficient. Alternatively you may be expected to conduct statistical tests to analyse your quantitative data or use a theoretical framework to analyse your qualitative data.

Consider whether you will require any statistical software packages (such as SPSS or StatsDirect) or any qualitative analysis software (such as NVivo). You should cost for this software (and appropriate number of licenses) at the outset of your research.

See Fact sheet 17. How do I analyse and interpret my data? for more detailed information regarding analysis.

Dissemination

When planning your research project, consider how you wish to disseminate what you find. If the purpose of your research is to improve service delivery then make sure you know how you will do this.

You may wish to share the findings of your research with colleagues, stakeholders, and other local, regional or national audiences. Meetings, newsletters, reports, events, conferences and peer-reviewed publications are different ways that you can disseminate your findings.

For further information see Fact sheet 18 How and why do I involve service users and other stakeholders? and Fact sheet 19 How do I disseminate the findings from my evaluation or research project?

More on this topic and further reading

http://www.shoulderdoc.co.uk/documents/research_flowchart.pdf

See 'Defining Research' leaflet on the National Research Ethics Service website:

http://www.socialresearchmethods.net/kb/contents.php