

Fact sheet 9: How do I turn my idea into a research question?

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

- The process of developing an evidence gap or idea into a research question.

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

Exploring the idea further

Do you have a research idea? Do you have an idea for service improvement and want to explore if it works? Have you identified a gap in the knowledge relating to your service or your user group? Maybe you have discovered a need for more information following an audit or evaluation and want to explore further?

It is sometimes difficult to know how to start to turn your idea into a more specific research question that can be investigated.

Firstly, it will be helpful to think about the following:

- Why does this area interest you?
- Why do you feel it is important to consider this further?
- What would you be aiming to achieve if you carried out some research in this area?
- Are you looking to:
 - Test a hypothesis (e.g. does texting improve attendance at appointments?);
 - Explore an area to get a greater understanding of it (e.g. what do young people think of alcohol services?);
 - Explore relationships between the delivery and outcome of a service or the differential impact of a service on different individuals? (e.g. why do outcomes for COPD patients differ between settings of care?); or
 - Generate hypotheses (e.g. are there any social or economic determinants that affect the likelihood of taking up screening offers?).
- Has your idea been considered before? It is useful to review the literature to explore what research has been done before on this topic. See [Factsheet 3: How do I prepare a review of existing evidence on a topic?](#)
- What will be the outcome of any research into your idea and how will the community, service users or other stakeholders benefit from your research?

Formulating a focused question

Developing a research question enables you to describe the research you will undertake and begin to plan how you will do it. To ensure your research question is clear and concise consider the following:

Purpose:

Review relevant literature to ascertain whether there is a gap in the knowledge, and help you refine your research idea. Consider what you want to know, and why you want to know this. Determine the aims and objectives of your study. These need to be realistic. Your aims (what you want to find out) and objectives (how you will find this out) need to be clear and measurable, and be achievable within the budget and timescale that you have set.

Population:

Define your population of interest (this will link in with the scale and scope of your project). Be clear about who will be included and who will be excluded from your research. Consider whether you can access this population feasibly within your budget and timeframe, and if this access route will provide you with a representative sample. Your population may be based upon a clinical condition (e.g. asthmatics), health behaviour (e.g. smoking), demographic characteristics (e.g. residents of a particular neighbourhood), or a mixture of these. Within these categories you may wish to focus further by age, sex, ethnic group, risk profile or other condition.

Outcomes:

Consider the expected outcomes of your research and how you will measure these. Can you measure all of these within your budget and timescale? Are there any other outcomes that you need to consider? (e.g. a weight management programme may consider BMI the primary measure of change, but are there other outcomes you may also be interested in, such as self-esteem or quality of life?).

Types of research questions:

Descriptive – where the aim of the study is to describe something (such as the percentage of people who access a service, or the experiences of heart failure patients). You could choose to use qualitative or quantitative methods for a question of this type.

Relational – explores the relationship between one variable and another (e.g. is obesity associated with residential deprivation? or is smoking associated with age?). Typically quantitative in nature, statistical analysis will help you understand whether one variable is significantly related to another.

Causal – does one thing cause or affect another (e.g. does smoking cause lung cancer? or does alcohol cause depression?). Typically quantitative in nature, statistical analysis will help you understand whether one variable does significantly cause or affect another.

CAUTION: *Be careful not to confuse relational and causal – for example obesity may be associated with deprivation, but deprivation does not cause obesity.*

For further information about methods and analysis see [Fact sheet 15. What are the best research evaluation methods to use?](#) and [Fact sheet 17. How do I analyse and interpret my data?](#)

PICO tool

If your research involves exploring the impact of an intervention (e.g. an activity, initiative or new service) you may find the PICO tool a useful framework for structuring and focusing your research question. This considers four central components of a research question; population (P), intervention (I), comparison (C) and outcome(s) (O). The key is to be as specific as possible in your definitions.

P - The first step is to identify the specific **population (P)** of interest. This might refer to a clinical condition, (e.g. children with asthma, diabetics), a health behaviour (e.g. long-term smokers, physically inactive adults), demographic characteristics (e.g. a specific age group or residents of a particular neighbourhood) or a health state (e.g. those with poor mental wellbeing). Within these categories, consider whether to focus further by age, sex, ethnic group, risk profile or other clinical condition.

I - The **Intervention** can refer to what you plan to do for that patient or group as part of the research or the existing intervention that you are exploring. This may include the use of a specific diagnostic test, treatment, medication or behavioural intervention (such as the impact of a weight management service for obese young people; the effectiveness of one medication versus another; or the impact of a course of CBT, for example).

C - The **Comparison** or comparison intervention is the third phase of the question, which relates to comparisons with standard treatment or the main alternative you are considering (this might include treatment as usual). For example, if your intervention was a new treatment for obesity, you may want to compare this to existing health interventions (such as a weight management service enhanced with CBT versus usual weight management service).

O - The **Outcome** specifies the result(s) of what you plan to accomplish, improve or affect and should be measurable. Outcomes may consist of relieving or eliminating specific symptoms, improving or maintaining function or change in health behaviour e.g. improved survival rate, most cost effective treatment etc. If relevant, the timescale of an outcome should be considered.

A simple (fictitious) example of the above process for formulating a question is given below, showing the difference between a weak (unfocused) question and a strong one. A suggested template is also included.

Issue to investigate: - a commissioner needs to decide how best to invest resource to increase the uptake of Chlamydia screening amongst target groups. Social networking has been highlighted as a possible route to investigate.

Weak research question (non specific PICO):

“Does a social media presence (I) affect the uptake of Chlamydia screening (O) amongst young people (P)?” (NB no ‘C’ considered)

Stronger research question (specific PICO):

“Does the development of a Facebook group signposting screening services (I) lead to an increase in the rate (numbers per month) (O) of 18-24 year olds in Wirral (P) being screened for Chlamydia, compared with the current rate of screening (C)?”

Your research topic/area of interest		
(Briefly describe the key aspects of your research topic)		
PICO		
Consider how the following four categories relate to your research topic		
P	Population/problem How would you describe the person/people in the scenario? E.g. By sex, age, race, condition, care setting, socio economic setting?	
I	Intervention What is the intervention? E.g. type of therapy, treatment, cause prevention, system of support, new service.	
C	Comparison The comparison could be an alternative treatment or placebo, different setting, dosage or frequency. There may not be a comparison.	
O	Outcome What is aiming to be achieved by the scenario? E.g. survival rate, quality of life, reduction of event, reduction of symptoms, client safety or independence?	
Your research question		