A Step By Step Guide to Primary Care Research
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Generating a Research Question

Research process

- Generating a research question
- Reviewing the literature
- Refining the research question
- Designing the study
- Writing a research proposal and applying for funding
- Applying for ethics approval
- Collecting the data
- Analysing the data
- Disseminating the results

INTRODUCTION

The first step in research is to generate a good research question. The research question guides the study objectives. It can be generated from many sources including:

- Experiences from clinical practice
- Ideas after reading the literature
- Discussions with colleagues
- Topics presented at conferences

Before formulating a research question, ask:

- Experiences from clinical practice
- Ideas after reading the literature
- Discussions with colleagues
- Topics presented at conferences

If yes to all, a research question is identified.
DEFINING AND REFINING A RESEARCH QUESTION

Defining and refining the research question is the next important step after a question is generated. This is an iterative process; it involves the research question undergoing several rounds of refining, especially after literature review and discussions with the research team. One should refine the research question until it becomes clear and answerable.

A way of defining and refining a research question is using the PICO method.

PICO
- **People/Patients/Place** - 'Who is the research population?', 'Where will the research be conducted?'
- **Intervention/Inquiry** - 'What is the intervention/inquiry to an observation?'
- **Control** - 'Who is the comparator of the intervention?' (this is usually applied to randomised control trials)
- **Outcome** - 'What is the outcome?', 'What is this study measuring?'

Example:

**Proposed question:** 'How do doctors manage H1N1 influenza infection?'

- **People/population** – 'doctors'
  - GPs? Specialists? All doctors? Certain group of doctors?
  - Where is the setting?

- **Inquiry** – 'H1N1 influenza infection'
  - All cases? Children? Pregnant women? Elderly?
  - Suspected or confirmed cases?

- **Outcomes** – 'management'
  - Diagnosis? Treatment? Communication? Follow-up?

**Refined question:** *How do general practitioners diagnose and treat children with suspected H1N1 influenza infection in District X?*
SETTING OBJECTIVES

Objectives should reflect the research question. It should be specific in informing steps to be taken to answer the research question. Avoid setting too many objectives for a single study.

Example:

<table>
<thead>
<tr>
<th>Research question:</th>
<th>What is the antibiotic prescribing pattern for upper respiratory tract infection (URTI) in Malaysian general practice?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research objectives:</td>
<td>1. To determine the antibiotic prescribing rate for URTI in Malaysian general practice</td>
</tr>
<tr>
<td></td>
<td>2. To determine the factors associated with antibiotic prescribing for URTI in Malaysian general practice.</td>
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