Module 6: FORMULATION OF RESEARCH
OBJECTIVES

Flowchart: Steps in the development of a health systems research proposal
NB: Development of a research process is a cyclical process. The double-headed arrows indicate that the process is never linear.

**Module 6: FORMULATION OF RESEARCH OBJECTIVES**

<table>
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<th>Questions you must ask</th>
<th>Steps you will take</th>
<th>Important elements of each step</th>
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</table>
| What is the problem and why should it be studied?                                      | Selection, analysis and statement of the research problem | - problem identification  
|                                                                                        |                                            | - prioritising problems                        |
|                                                                                        |                                            | - analysis                                    |
|                                                                                        |                                            | - justification                                |
| What information is available?                                                           | Literature review                          | - literature and other available information |
| Why do we want to carry out the research? What do we hope to achieve?                   | Formulation of research objectives         | - general and specific objectives             |
|                                                                                        |                                            | - hypotheses                                  |
| What additional data do we need to meet our research objectives? How are we going to collect this information? | Research methodology                      | - variables                                   |
|                                                                                        |                                            | - types of study                              |
|                                                                                        |                                            | - data collection techniques                  |
|                                                                                        |                                            | - sampling                                    |
|                                                                                        |                                            | - plan for data collection                    |
|                                                                                        |                                            | - plan for data processing and analysis       |
|                                                                                        |                                            | - ethical considerations                      |
|                                                                                        |                                            | - pre-test or pilot study                     |
| Who will do what, and when?                                                             | Work plan                                  | - human resources                             |
|                                                                                        |                                            | - timetable                                   |
| What resources do we need to carry out the study? What resources do we have?            | Budget                                     | - material support and equipment              |
|                                                                                        |                                            | - money                                       |
| How will the project be administered? How will utilisation of results be ensured?       | Plan for project administration and utilisation of results | - administration                             |
|                                                                                        |                                            | - monitoring                                  |
|                                                                                        |                                            | - identification of potential users           |
| How will we present our proposal to relevant authorities, community and the funding agencies? | Proposal summary                           | - briefing sessions and lobbying              |
OBJECTIVES

At the end of this session you should be able to:

1. **State** the reasons for writing objectives for your research project.
2. **Define** and describe the difference between general and specific objectives.
3. **Define** the characteristics of research objectives.
4. **Prepare** research objectives in an appropriate format for the project you are developing.
5. **Develop** further research questions, and research hypotheses, if appropriate for your study.

1. **Objectives**
2. **Hypotheses**
3. **Title of the study**

I. RESEARCH OBJECTIVES

The **OBJECTIVES** of a research project summarise what is to be achieved by the study.

Objectives should be closely related to the statement of the problem. For example, if the problem identified is low utilisation of child welfare clinics, the general objective of the study could be to identify the reasons for this low utilisation, in order to find solutions.

The **general objective** of a study states what researchers expect to achieve by the study in general terms.

It is possible (and advisable) to break down a general objective into smaller, logically connected parts. These are normally referred to as **specific objectives**.

Specific objectives should systematically address the various aspects of the problem as defined under ‘Statement of the Problem’ (*Module 4*) and the key factors that are assumed to influence or cause the problem. They should specify **what** you will do in your study, **where** and **for what purpose**.

A study into the cost and quality of home-based care for HIV/AIDS patients and their communities in Zimbabwe, developed at an HSR workshop, for example, had as its general objective:
To explore to what extent community home-based care (CHBC) projects in Zimbabwe provide adequate, affordable and sustainable care of good quality to people with HIV/AIDS, and to identify ways in which these services can be improved.

It was split up in the following specific objectives:

1. To identify the full range of economic, psychosocial, health/nursing care and other needs of patients and their families affected by AIDS.
2. To determine the extent to which formal and informal support systems address these needs from the viewpoint of service providers as well as patients.
3. To determine the economic costs of CHBC to the patient and family as well as to the formal CHBC programmes themselves.
4. To relate the calculated costs to the quality of care provided to the patient by the family and to the family/patient by the CHBC programme.
5. To determine how improved CHBC and informal support networks can contribute to the needs of persons with AIDS and other chronically and terminally ill patients.
6. To use the findings to make recommendations on the improvement of CHBC to home care providers, donors and other concerned organisations, including government.

The first specific objective usually focuses on quantifying or specifying the problem.

This is necessary in many studies, especially when a problem has been defined (but not quantified) for which subsequently the major causes have to be identified. Often use can be made of available statistics or of the health information system. In the study on the high defaulter rate of TB patients, this rate should first be established, using the records, and only then would the contributing factors to defaulting be analysed.

In the example given, the needs of AIDS patients and their relatives for care and support have been defined in the first objective. The objectives which follow concentrate on adequacy, cost and quality of care provided whereas the last two objectives specify possible improvements with respect to CHBC, and to whom the results and recommendations of the study will be fed back.

**Note:**
It may be helpful to use the diagram as a point of departure and check whether the problem and all major, directly contributing factors (analytic study) or major components (descriptive or evaluation study) have been covered by the objectives. An objective indicating how the results will be used should be included in every operational study, either as part of the general objective or as a specific objective.

**Why should research objectives be developed?**

The formulation of objectives will help you to:

- **Focus** the study (narrowing it down to essentials);
- **Avoid** the collection of data which are not strictly necessary for understanding and solving the problem you have identified; and
- **Organise** the study in clearly defined parts or phases.

Properly formulated, specific objectives will facilitate the development of your research methodology and will help to orient the collection, analysis, interpretation and utilisation of data.

**How should you state your objectives?**

Take care that the objectives of your study:

- Cover the different aspects of the problem and its contributing factors in a **coherent** way and in a **logical sequence**;
- Are **clearly phrased** in **operational terms**, specifying exactly what you are going to do, where, and for what purpose;
- Are **realistic** considering local conditions; and
- Use **action verbs** that are specific enough to be evaluated.

**Examples** of action verbs are: to determine, to compare, to verify, to calculate, to describe, and to establish. Avoid the use of vague non-action verbs such as: to appreciate, to understand, or to study.

Keep in mind that when the project is evaluated, the results will be compared to the objectives. If the objectives have not been spelled out clearly, the project cannot be evaluated.

Using the previous example on cost and quality of CHBC, we may develop more specific **research questions** for the different objectives, such as:
• Do rural and urban CHBC projects differ with respect to the adequacy, quality, affordability and sustainability of HBC provided?
• How satisfied are AIDS patients, relatives and service providers with the care provided? Are there differences in perceptions between those groups?
• Is the stigma attached to being HIV+ the same strong for women as for men? Or are there gender differences in stigma?
• What impact does the care provided to AIDS patients have on the economy of the homestead? Is there competition with other basic needs (e.g. schooling of children, purchases of food)?

II. HYPOTHESES

Based on your experience with the study problem, it might be possible to develop explanations for the problem, which can then be tested. If so, you can formulate hypotheses in addition to the study objectives.

A HYPOTHESIS is a prediction of a relationship between one or more factors and the problem under study that can be tested.

In our example concerning the cost and quality of HBC in Zimbabwe it would have been possible to formulate and test the following hypotheses:

1. The role of first-line relatives in the provision of care to AIDS patients is more substantial in rural than in urban areas.
2. The silence and stigma surrounding AIDS makes the formation of self-help groups of AIDS patients and their relatives next to impossible, which in turn maintains the high level of stigma on HIV/AIDS.

Note:

Policy makers and field staff usually feel the need for research because they do NOT have enough insight into the causes of a certain problem. Therefore, most HSR proposals present the specific objectives in the form of open statements (as given in the examples earlier) instead of focusing the study on a limited number of hypotheses.

III. TITLE OF THE STUDY

Now you can finalise the title of your study. The title should be in line with your general objective. Make sure that it is specific enough to tell the reader what your study is about and where it will be calculated.

NOT: ‘A study on community home-based care’
BUT: ‘A study on cost and quality of community home-based care for HIV/AIDS patients and their communities in Zimbabwe’

You might also consider fancier titles:

‘Do We Care? A study on cost and quality of CHBC for HIV/AIDS patients in Zimbabwe’*

Another example could be:

‘WORKSHOPS: Blessings or Burdens? A study of the workshops held in 1999 in Province Y - Their utility and consequences for daily working activities of health staff’

*The study with this title, used as an example in the present module, was carried out by G Woelk, H Jackson, R Kerkhoven, K Hansen, N Manjonjori, P Maramba, J Mutambirwa, E Ndimande and E Vera. It was published in December 1997 by the Department of Community Medicine, University of Zimbabwe, the Southern African AIDS Information Dissemination Service (SAFAIDS) and the National AIDS Control Programme, Ministry of Health, Harare, Zimbabwe.

GROUP WORK (2 hours)

1. Choose a chairperson and a recorder.
2. Hang up the flip charts that you used to present your statement of the problem so they are visible to all group members. Incorporate useful suggestions for changes that were made when you presented them in plenary. Then, use the analysis diagram as a starting point for formulating objectives, focusing, for example, on:
   - Further quantifying and specifying the problem, if required;
   - Exploring the key factors or major groups of factors that, in your opinion, might influence or cause the problem; and/or
   - Any other major research activities you propose.
3. Prepare a general objective and specific objectives for the research proposal you are developing.
4. After formulating your objectives ask yourself the following questions:
   - Do the objectives deal with all aspects of the research problem in a logical and coherent way?
   - Are the objectives clearly phrased?
   - Are the objectives defined in operational terms that can be measured? Are they realistic?
Do they indicate where the study will be conducted?

Do they include the development of recommendations for how the research results will be used to solve the problem?

5. Prepare a flip chart with your objectives for use in the exercise and in the plenary discussion. Add on the title of your study and revise it, if necessary, to match the objectives

**EXERCISE: Assessing the objectives of another group** (½ hour)

Assess the research objectives formulated by another team using the criteria mentioned above. Compare them with the group’s statement of the problem and the title of the study.

**Trainer’s Notes**

**Module 6: FORMULATION OF RESEARCH OBJECTIVES**

**Timing and teaching methods**

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<th>½ hour</th>
<th>Introduction and discussion</th>
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<tr>
<td>2 hours</td>
<td>Group work</td>
</tr>
<tr>
<td>½ hour</td>
<td>Exercise: Assessing the objectives of another group</td>
</tr>
<tr>
<td>1 hour</td>
<td>Presentation by each group, followed by comments by the group that did the exercise and general discussion</td>
</tr>
<tr>
<td>1 hour</td>
<td>Adjustments</td>
</tr>
<tr>
<td>5 hours</td>
<td>TOTAL TIME</td>
</tr>
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**Introduction and discussion**

- Emphasise that the formulation of clear and comprehensive objectives is critical to the development of all the other components of a research design, as well as to subsequent data analysis and report writing.
- Formulation of good objectives is a skill with which many participants have difficulty. Two types of problems come up quite often:
  - Difficulties with developing concise, operational objectives that focus clearly on what the study hopes to accomplish and cover all parts of the study in a logical order;
— Difficulties in understanding the difference between programme objectives and research objectives. For example, many participants may not, in the beginning, see the distinction between a programme objective, such as, ‘Make sure that Health Posts in District X are supplied monthly with sufficient drugs’ and a research objective, such as ‘To compare two methods of supplying drugs to Health Posts in District X’.

Reference to the analysis diagram that groups developed in Module 4 will help solve these problems. It should be stressed that they should first consider whether they need more data to specify their problem. Then they should systematically write objectives to cover the different categories of factors they have identified.

- Stress that it is not necessary to develop an objective for every single contributing factor they included in the diagram. The participants should try to limit their objectives to two or three for each major category in their diagram, including several factors in each objective, when possible.

**Group work**

Be sure to provide sufficient time for the groups to formulate good objectives for their chosen projects. As groups work from their analysis diagram, they may discover that changes are necessary (additions, regrouping, or dropping of factors). It is recommended that the diagram be displayed on a flipchart rather than on an overhead sheet with photocopies for individual group members, so it will be easier to focus the group’s attention on it. The flip chart with the diagram can also be used in Module 8 (Variables).

**EXERCISE: Assessing the objectives of another group**

Hold an exercise in which groups evaluate the objectives prepared by another group, using the criteria set out on the exercise sheet.

**Plenary session**

Have each group present their analysis diagram and the objectives they have developed. Immediately following each presentation, ask the group that analysed the objectives during the exercise to comment. Then open up the discussion to the rest of the class. (Allow 15 minutes per topic.)

Each group should also present the title of its research project.
It is important that each group receive clear feedback on the quality of the objectives they have developed, as well as practical suggestions for improvement. When providing feedback, ask yourself:

1. Do the objectives cover all parts of the analysis diagram, in a logical order?
2. Do the objectives really measure what the group wants them to?
3. If the objectives were met, would the study provide the results needed to solve the problem posed in the statement of the problem?
4. Are the objectives feasible? If too ambitious, could the scope of the study be reduced?
5. Is the title specific enough and does it cover the objectives?

**Adjustments**

Facilitators in past courses have found it useful to provide a second group work session in which participants can finalise their objectives, analysis diagram and title of the research project, after they have received feedback during the plenary session.