MINISTRY OF HEALTH

RESEARCH MANAGEMENT MANUAL

SHORT COURSE MODULE FOR BUILDING CAPACITY OF PROGRAM MANAGERS, OFFICERS AND IMPLEMENTERS TO UTILIZE OPERATIONS RESEARCH

May 2008
The DRH has identified research implementation as a key area that deserves attention in improving RH service provision. This is in line with the National Health Sector Strategic Plan II (2005-2010), The Reproductive Health (RH) policy (2007) and the National Reproductive Health Strategy (1997-2010), which is a response to the programs of Action of the 1994 United Nations International Conference on Population and Development (ICPD).

By producing the “Research Management Manual for RH Managers and Providers” with technical assistance from researchers in reproductive health, policymakers and program implementers, DRH continues to emphasize the importance of evidence-based program implementation.

Using this manual, DRH has taken the central role in empowering its program staff with research management skills. This was after realization that for DRH to play its role effectively, it needed to have its key officers in the field such as RH coordinators and other stakeholders in RH, understand and help to support RH research taking place within their regions or areas of work.

The development of this manual will help in the utilization of the recently developed Research Guidelines by enabling the officers concerned understand and support operations research and hence ensure adherence to the guidelines. It will also enhance evidence-based service delivery.

It is my hope that the use of this manual will lead to improved quality of RH services and contribute to the improvement of the RH indicators.

Dr Josephine Kibaru
Head, Division of Reproductive Health
Ministry of Health
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ACKNOWLEDGEMENTS

The Ministry of Health thanks the following organisations and individuals for their contributions to the successful adaptation and implementation of the operations research short course module:

We especially thank Dr. Josephine Kibaru, head of the Division of Reproductive Health, who facilitated the module’s adaptation and allowed DRH staff to fully participate in pilot testing during the National Training in August 2006. Dr. Marsden Solomon, then the program manager for Family Planning and HIV/AIDS programs, Anne Njeru, training manager, Roselyn Koech, Diane Kamar and Ruth Wayua, program officers and Dr Nancy Kidula, Capacity Project, who were all instrumental in guiding the review team and facilitating the pilot training. We also acknowledge the crucial role of all participants from the national and provincial levels, who provided valuable feedback on the module during the 5-day pilot testing session. We are grateful to the DRH and the provincial teams for taking ownership of this activity.

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We acknowledge the Population Council’s support, through Dr Harriet Birungi, for providing the original module and materials for adaptation to the Kenyan context. We acknowledge the Family Health International Kenya staff, including Maureen Kuyoh for her technical leadership, Dr. Cathy Toroitich Ruto and Dr Marsden Solomon for their technical monitoring. In addition, we thank FHI staff, Willis Odek, Kirsten Krueger, Jennifer Liku, Joel Rakwar and Rick Homan for their technical review. We thank Ms. Violet Bukusi for follow-up and review of the process; Ruth Gathu for designing the cover and formatting the entire manual and Kate Carroll for her editorial and formatting input into the adaptation of this module.

Special thanks go to Dr. Stephen Okeyo, who was the lead consultant in the adaptation, implementation, and finalization of the module.

The ministry wishes to acknowledge the contribution of the United States Agency for International Development, who through Family Health International provided financial and technical assistance for development of the guidelines. The contents of this document do not necessarily reflect USAID policy.
**ABBREVIATIONS & ACRONYMS**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>BCC</td>
<td>Behaviour Change Communications</td>
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<tr>
<td>CBOs</td>
<td>Community Based Organisations</td>
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<tr>
<td>CHW</td>
<td>Community Health Worker</td>
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<tr>
<td>C/S</td>
<td>Caesarean Section</td>
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<tr>
<td>DFID</td>
<td>Department for International Development</td>
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<tr>
<td>DH</td>
<td>District Hospital</td>
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<tr>
<td>DMOH</td>
<td>District Medical Officer of Health</td>
</tr>
<tr>
<td>DMPA</td>
<td>Depo-medroxyprogesterone Acetate (injectable contraceptive)</td>
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<tr>
<td>DRH</td>
<td>Division of Reproductive Health</td>
</tr>
<tr>
<td>EC</td>
<td>Ethical Committee</td>
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<tr>
<td>ERB</td>
<td>Ethical Review Boards</td>
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<tr>
<td>FHI</td>
<td>Family Health International</td>
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<tr>
<td>GOK</td>
<td>Government of Kenya</td>
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<tr>
<td>HC</td>
<td>Health Centre</td>
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<tr>
<td>HF</td>
<td>Health Facility</td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td>Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome</td>
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<tr>
<td>HQ</td>
<td>Headquarters</td>
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<tr>
<td>IBP</td>
<td>Implementing Best Practices</td>
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<tr>
<td>ICT</td>
<td>Information Communication Technology</td>
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<tr>
<td>ICH</td>
<td>International Commission on Harmonisation</td>
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<td>ICPD</td>
<td>International Conference on Population and Development</td>
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<tr>
<td>IEC</td>
<td>Information Education and Communication</td>
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<tr>
<td>IT</td>
<td>Information Technology</td>
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<td>IUDs</td>
<td>Intrauterine Devices</td>
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<tr>
<td>KAP</td>
<td>Knowledge, Attitudes, and Practices</td>
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<tr>
<td>LCD</td>
<td>Liquid Crystal Display</td>
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<tr>
<td>MOU</td>
<td>Memorandum of Understanding</td>
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<tr>
<td>MIS</td>
<td>Management Information System</td>
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<td>MOH</td>
<td>Ministry of Health</td>
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<tr>
<td>NBAC</td>
<td>National Bioethics Advisory Commission</td>
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<td>NCAPD</td>
<td>National Coordinating Agency for Population and Development</td>
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<tr>
<td>NGOs</td>
<td>Nongovernmental Organisations</td>
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<tr>
<td>OR</td>
<td>Operations Research</td>
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<tr>
<td>PC</td>
<td>Population Council</td>
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<tr>
<td>PMTCT</td>
<td>Prevention of Mother to Child Transmission of HIV</td>
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<tr>
<td>RA</td>
<td>Random Assignment</td>
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<tr>
<td>RCQHC</td>
<td>Regional Centre for Quality Health Care</td>
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<tr>
<td>RH</td>
<td>Reproductive Health</td>
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<tr>
<td>TA</td>
<td>Technical Assistance</td>
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<tr>
<td>TBA</td>
<td>Traditional Birth Attendant</td>
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<td>TNA</td>
<td>Training Needs Assessment</td>
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<td>USAID</td>
<td>United States Agency for International Development</td>
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<td>VCT</td>
<td>Voluntary Counselling and Testing</td>
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<td>WHO</td>
<td>World Health Organisation</td>
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Executive Summary

Building the Capacity of the Division of Reproductive Health and other RH Programs to Utilize Operations Research

The Ministry of Health (MOH), through the Division of Reproductive Health (DRH), is responsible for planning, implementing, coordinating, and monitoring RH programs in Kenya. The DRH believes that operations research, used appropriately, can help ensure relevant and effective programming. However, most DRH program managers are unfamiliar with OR and how to apply research findings. To bridge this gap, the DRH has worked with Family Health International (FHI) to improve local capacity to use research and evidence-based programming. This capacity building initiative includes developing a national reproductive health research agenda, gathering data for decision-making trainings, launching National RH Research Guidelines, and strengthening the DRH resource centre. The OR short course module presented here evolved from FHI’s training for senior MOH staff in RH research management this module borrowed heavily from a Population Council (PC) short course on OR. The PC successfully conducted an OR exercise in Uganda several years ago and expressed an interest in working with the DRH and FHI to adapt the module to the Kenyan context. This course is an adaptation of the original PC OR short course module combined with FHI’s pilot study on research management. It aims to increase the DRH’s capacity to use OR data in programming.

From August 7 to 11, 2006, the module was pilot tested during a RH skills building workshop on evaluating collaborative research and translating research findings into program implementation. The final adapted module includes recommendations from this workshop. In general, participants rated the course very highly in meeting training objectives.
PARTICIPANT TRAINEE SELECTION CRITERIA

Training workshops may include as many as 30 participants, preferably from departments within the DRH and provincial and district RH programs, as well as nongovernmental RH programs. Participants should include:

1. Program managers
2. Program officers
3. Implementing line officers

The general criteria and requirements for selection may include participants who:

1. Have clinical backgrounds and are posted in RH fields
2. Are RH program implementers
3. Have backgrounds in basic RH research
4. Have completed the pre-training evaluation form
5. Are available for the five days of training
6. Are ready to train other staff in their work station
INTRODUCTION

The Division of Reproductive Health within the MOH is responsible for designing, planning, implementing, coordinating, and monitoring RH programs in Kenya. The DRH has identified research implementation as a key area for improving RH services. As a first step towards addressing this need, the DRH has developed National Reproductive Health Research Guidelines. The guidelines address priorities, processes, and procedures for conducting RH research, and provide harmonisation and tracking of RH research while facilitating dissemination and use of research findings. The next step is to build research management capacity among DRH personnel. For this undertaking, the Ministry has found willing partners in FHI and the Population Council, with financial support from USAID.

The DRH seeks to build OR capacity to address some of the programmatic problems in providing RH services. In line with this goal, the DRH adapted the Regional Centre for Quality Health Care (RCQHC) OR short course module and is rolling out training for RH program personnel in Kenya. The training module content aims to equip participants with the knowledge, attitudes, and skills to manage RH research.

PRE-WORKSHOP PARTICIPANT PREPARATION

1. Potential participants should be informed of the planned OR training in good time and their availability to participate in training confirmed.
2. They should be asked to review records and reports of RH services in their work stations, identify issues and challenges to providing quality RH services, and write case studies to be shared during training.
3. Participants should be sent a self-administered questionnaire assessing experiences and issues with OR, which they are to return to the lead facilitator before the workshop. This information will act as a training needs assessment.
AIMS AND OBJECTIVES

AIMS

The short course *Building the Capacity of Division of Reproductive Health and Other RH Programs to Utilize Operations Research* aims to provide program managers, administrators and policy makers with the OR skills needed to generate, receive, share, and disseminate evidence-based information for decision making and practical problem solving.

OBJECTIVES

The objectives of the course are to:

1. Increase participants’ understanding of the importance of using evidence-based practices for improving quality of care;
2. Promote operations research and show how it can improve program planning and implementation;
3. Clarify the differences and similarities between operations research and programmatic evaluation;
4. Increase program managers’, officers’, and implementers’ capacity to collaborate with researchers on designing and implementing research projects; and
5. Orient program managers, officers, and implementers on their roles in designing, planning, implementation, use, and dissemination of operations research studies.

The five-day, participation-based course comprises 16 sessions, each having specific objectives. A session outline is provided below.
## WORKSHOP TRAINING TIMETABLE
Building the Capacity of RH Program Managers, Officers and Implementers to Utilize Operations Research

<table>
<thead>
<tr>
<th>SESSION TOPIC</th>
<th>LEARNING OBJECTIVES</th>
<th>CONTENT</th>
<th>SESSION PLAN</th>
<th>TEACHING MATERIALS</th>
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<tr>
<td><strong>Section I</strong></td>
<td><strong>Introduction to Operations Research</strong></td>
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<tr>
<td><strong>Session One:</strong></td>
<td><strong>Climate Setting and Course Objectives</strong></td>
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<td>By the end of this session, trainees should be able to:</td>
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<td>- Establish familiarity with one another, participate in team building activities’</td>
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<td>and set up exercise groups and group norms to be observed during the workshop</td>
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<td>- Share expectations</td>
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<td>- Share the outcome of the training needs assessment, including participants’ OR</td>
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<td>knowledge, views, attitudes and experience</td>
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<td>- Review training objectives in response to identified training needs</td>
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<td>- Participatory introduction activities</td>
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<td>- Ice-breaker and team building exercise</td>
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<td></td>
<td>- Listing expectations</td>
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<td>- Establishing groups and group norms/dynamics</td>
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<td></td>
<td>- Computer/LCD projector</td>
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<td></td>
<td>- Flip charts, newsprints</td>
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<td></td>
<td>- Self-administered questionnaire</td>
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<td>- Pre-test questionnaire</td>
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<td>- Ice-breaker, team building guides</td>
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<td>- Participant reports</td>
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<td>- Handouts</td>
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<tr>
<td><strong>Session Two:</strong></td>
<td><strong>Defining OR, Why is OR necessary?</strong></td>
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<td>By the end of this unit, trainees should be able to:</td>
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<td>- Define OR and distinguish it from other types of research evaluation</td>
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<td>- Discuss the history and evolution of OR</td>
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<td>- Enumerate the objectives of OR</td>
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<td>- Discuss the importance of OR and its potential use in district health plans</td>
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<td>- Identify and list current areas of focus in OR</td>
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<td>- List and describe barriers to wider adoption of evidence-based data in decision</td>
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<td>- History of OR</td>
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<td>- Definition of OR</td>
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<td>- Distinctions among types of research and evaluation</td>
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<td>- Categories of OR</td>
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<td>- Purpose/objectives of OR</td>
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<td>- Importance of OR and its use in health planning</td>
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<td>- Areas of focus for OR</td>
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<td>- Barriers to evidence-based decision making</td>
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<td></td>
<td>- PowerPoint technical presentation</td>
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<td></td>
<td>- Discussion</td>
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<td>- Group work</td>
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<td>- Group exercise with the health system case study</td>
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<td>2 hours</td>
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<td></td>
<td>- PowerPoint technical presentation</td>
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<td></td>
<td>- Analysis of self-administered questionnaire</td>
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<td></td>
<td>- Health system case study</td>
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VII
<table>
<thead>
<tr>
<th>SESSION TOPIC</th>
<th>SPECIFIC OBJECTIVES</th>
<th>CONTENT</th>
<th>SESSION PLAN</th>
<th>TEACHING MATERIALS</th>
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</table>
| Session Three A: Identify researchable program problems | By the end of this unit, trainees should be able to:  
- Describe a program in terms of a production system  
- State the steps in the OR process  
- Identify OR problems and three broad types of program objectives  
- Distinguish between a programmatic problem and a non-programmatic problem  
- Distinguish between a researchable and non-researchable program  
- Identify at least one researchable programmatic problem from a program |  
- Concept of program as a production system, with inputs, processes, outputs, outcomes, and impact  
- The five steps in the OR process  
- OR problems and the three broad types of program objectives (access, quality, efficiency)  
- Examples of programs with the three main program problems (access, quality, efficiency)  
- Formulating OR problems  
- Distinguish between programmatic and non-programmatic problems  
- Distinguish between researchable and non-researchable problems | Discussion  
- Practical group work  
- Case studies | 2 hours  
- Computer/LCD projector  
- PowerPoint technical presentation  
- Flip charts/newsprints  
- Handouts |
| Session Three B: Literature review | By the end of this unit, trainees should be able to:  
- Describe the importance of and justifications for literature review  
- List possible sources of information and how to gain access to them  
- List and describe issues in literature review  
- Demonstrate knowledge and skills in literature review  
- Make a brief summary of literature review |  
- Importance of and justifications for literature review  
- Possible sources of information and strategies for gaining access to them  
- Key issues in literature review  
- Common biases in literature review  
- Ethical considerations in review of literature  
- Brief summary of literature review | Discussion and group exercise  
- (review of literature with the previous case study) | 1 hour  
- Computer/LCD projector  
- Flip charts/newsprints  
- Handouts  
- Technical presentation  
- DRH Web site on CD  
- News clippings |
<table>
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<tr>
<th>SESSION TOPIC</th>
<th>SPECIFIC OBJECTIVES</th>
<th>CONTENT</th>
<th>SESSION PLAN</th>
<th>TEACHING MATERIALS</th>
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</table>
| **Session Four:** The concept of causality | By the end of this unit trainees will be able to:  
- Describe the concepts of association and causality in relation to testing interventions and evaluating program activities  
- Define the basic principles of experimentation and their use in intervention-testing and evaluation  
- Describe the differences between alternative designs for testing and evaluating interventions and their appropriateness |  
- Concepts of association and causality in relation to testing interventions and evaluating program activities  
- Elements characterizing causality  
- Basic principles of experimentation and their use in intervention-testing and evaluation  
- Examples of research designs (experimental, non-experimental, quasi-experimental)  
- Justification for using experimental designs to test interventions  
- Hypothesis  
- Validity and reliability  
- Differences between alternative designs for testing and evaluating interventions and their appropriateness |  
- Discussion  
- Group Work: Generic case studies in session six, as well as the health systems case study |  
- Computer/LCD projector  
- Technical presentation  
- Flip charts/newsprints  
- Handouts |
| **Session Five:** Indicator development for problem identification and success of program | By the end of this unit trainees will be able to:  
- Describe the concepts and operational definitions of variables and indicators  
- Discuss the process of indicator development in program activities  
- Discuss the quality of indicators |  
- Variables and indicators, their types and operational definitions  
- Key variables in OR  
- Process of indicator development in program activities  
- Criteria for indicator selection  
- Limitations of indicators  
- Quality of good indicators |  
- Discussion  
- Practical exercise  
- Brain teaser  
- Can a non-valid measure be reliable?  
- Can an unreliable measure be valid? |  
- Computer/LCD projector  
- Flip charts/newsprints  
- Handouts |
<table>
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<tr>
<th>SESSION TOPIC</th>
<th>SPECIFIC OBJECTIVES</th>
<th>CONTENT</th>
<th>SESSION PLAN</th>
<th>TEACHING MATERIALS</th>
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</table>
| Session Six: Research design and indicator exercises | By the end of this unit trainees will be able to: | ▪ Exercise 1: Classifying RH indicators  
▪ Exercise 2 to 5: Recommend, describe study designs from suggested programs  
▪ Exercise 6 to 7: Compare the effects of interventions  
▪ Exercise 8: Continued development of the health system analysis case study (see details of exercises 1-7 in session 4 and 8 in Appendix 2) | ▪ Discussions  
▪ Exercises | 2 hours  
▪ Computer/LCD projector  
▪ Technical presentation  
▪ Flip chart/newsprints |

| Session Seven: Ethics of operations research | By the end of this unit trainees will be able to: | ▪ Definitions of key terms in research ethics  
▪ Evolution of research ethics and important international codes, declarations, regulations and guidelines  
▪ Belmont Report, ICH, NBAC  
▪ Principles of research ethics (respect for persons, beneficence and justice)  
▪ Ethical conduct of research through attention to issues of informed consent and how to handle vulnerable groups  
▪ Elements of informed consent  
▪ Researchers’ responsibilities  
▪ Sponsors’ responsibilities  
▪ Role of ethical review boards (ERBs) in conducting research  
▪ Criteria for review of approval of a research proposal  
▪ Special issues that may arise during research | ▪ Discussion  
▪ Exercises  
▪ Pre- and post-test examination | 2 hours  
▪ Computer/LCD projector  
▪ PowerPoint technical presentation  
▪ Flip charts/newsprints  
▪ Handouts  
▪ Sample informed consent form |
<table>
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<tr>
<th>SESSION TOPIC</th>
<th>SPECIFIC OBJECTIVES</th>
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<th>SESSION PLAN</th>
<th>TEACHING MATERIALS</th>
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<tbody>
<tr>
<td>Section III: Operations Research Management</td>
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</table>
| **Session Eight: Role of program managers in OR** | By the end of this session trainees will be able to: | ▪ Different roles of program managers in design, planning, implementation, use and dissemination of OR  
▪ Manager’s rights in OR  
▪ Manager’s responsibilities in OR  
▪ Researcher’s roles, rights and responsibilities in OR  
▪ Characteristics of good collaboration between manager and researcher in OR | ▪ Scenario/case-based  
▪ Brainstorming and group work  
▪ Discussion of managers’ roles in selected completed OR intervention (the needs assessment of obstetric fistula in Kenya, the IUCD re-introduction project, safe motherhood demonstration project, Western Kenya, as well as examples contained in the IBP report) | 2 hours, 45 minutes  
▪ Computer/LCD projector  
▪ PowerPoint technical presentation  
▪ Flip charts/newsprints  
▪ Handouts  
▪ Scenarios or cases  
▪ Generic operations  
▪ Research proposal  
▪ Operations research  
▪ Intervention reports |
| **Session Nine: Intervention formulation and development** | By the end of this session trainees will be able to: | ▪ Aim and characteristics of intervention formulation  
▪ Applying a production framework in intervention design  
▪ Process and steps of intervention development  
▪ Steps in selection and designing intervention  
▪ Building an intervention team  
▪ Detailed implementation plan | ▪ Exercises  
▪ Discussions  
▪ Practical group work: The health system cast study (Appendix 2) used to develop interventions for selected OR problems identified in previous group work | 2 hours, 45 minutes  
▪ Computer/LCD projector  
▪ PowerPoint technical presentation  
▪ Flip charts/newsprints  
▪ Handouts  
▪ A defined problem and objectives (half proposal)  
▪ Implementation development tools, e.g. the performance improvement framework |
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<th>SESSION TOPIC</th>
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<th>TEACHING MATERIALS</th>
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<tbody>
<tr>
<td><strong>Session Ten:</strong> Application of Kenya National RH Research Guidelines</td>
<td>By the end of the session, trainees will be able to:</td>
<td>▪ Content and details of the RH guidelines</td>
<td>▪ Discussion</td>
<td>▪ Computer/LCD projector&lt;br&gt;▪ PowerPoint technical presentation&lt;br&gt;▪ Flip charts/newsprints&lt;br&gt;▪ Copies of the National RH Research Guidelines</td>
</tr>
<tr>
<td></td>
<td>▪ Describe the National RH Research Guidelines</td>
<td>▪ Elements of capacity building for DRH</td>
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<td></td>
<td>▪ Identify the role of program officers in implementing research guidelines</td>
<td>▪ Justification for the guidelines</td>
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<td>▪ By the end of the session, trainees will be able to:</td>
<td>▪ Key collaborating partners involved</td>
<td></td>
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<td></td>
<td>▪ Objectives of the RH guidelines</td>
<td>▪ Process of capacity building</td>
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<td></td>
<td>▪ Target audience for the guidelines</td>
<td>▪ Content of the guidelines</td>
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<td></td>
<td>▪ Content of the guidelines</td>
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<td></td>
<td><strong>Session Eleven:</strong> Interpretation, dissemination, and use of OR results</td>
<td>▪ Meanings and issues of interpreting data</td>
<td>▪ Discussions: Examples of correlations in RH studies</td>
<td>▪ Computer/LCD projector&lt;br&gt;▪ PowerPoint technical presentation&lt;br&gt;▪ Flip charts/newsprints&lt;br&gt;▪ Handouts&lt;br&gt;▪ Reports of examples of qualitative studies in Kenya&lt;br&gt;▪ Summary of findings and recommendations from a recent study, from which to identify the key policy and program actions, identify the obstacles, draft a tentative work-plan for dissemination and implementation</td>
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<td>By the end of the session trainees will be able to:</td>
<td>▪ Show statistically significant relationship or difference, from both experimental and cross-sectional studies</td>
<td>(derived from the Safe Motherhood Demonstration Project in Western Kenya and the Re-introducing the IUD initiative)</td>
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<td></td>
<td>▪ Discuss the concepts of statistically and programmatic significance association or difference, and the differences between correlations and causality</td>
<td>▪ Correlation versus causality</td>
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<td></td>
<td>▪ Critically appraise findings based on qualitative data</td>
<td>▪ Inferential statistics</td>
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<td></td>
<td>▪ Enumerate the importance of documentation and dissemination of research findings</td>
<td>▪ Definition and factors of statistical significance</td>
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<td></td>
<td>▪ Discuss the factors influencing the use of research results among RH programme managers and encourage evidence-based approaches to decision making</td>
<td>▪ Importance and process of documentation and dissemination of research findings</td>
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<td></td>
<td>▪ Describe the importance and requirements for scaling up and research to policy interventions, including communication for policy makers</td>
<td>▪ Factors influencing the use of research results, replication and scale up</td>
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<td>SESSION TOPIC</td>
<td>SPECIFIC OBJECTIVES</td>
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</table>
| Session Twelve: Resource requirement and mobilisation | By the end of this session participants should be able to:  
- Describe skills for accessing research funding  
- Describe the principles and skills for forging partnerships, sourcing, and negotiating skills for program managers  
- Outline the critical issues in developing budgeting and writing skills for operations research fundraising | - Strategies for accessing reproductive health program funding (resource mobilization)  
- Requirements, including skills  
- Pros and cons of alternative sourcing  
- Developing partnerships (expectations, qualities looked for, inputs and outputs, ownership, benefits, responsibilities)  
- Potential partnerships  
- Manage a partnership and resources  
- The grant relationship  
- Keys to success in grant seeking  
- Trends in grant making  
- Principles of budgeting for OR | - Group exercise  
- Discussion | - Computer/LCD projector  
- PowerPoint technical presentation  
- Flip charts/newsprints  
- Handouts |
| Session Thirteen: Presentation of DRH Web site, Web use and literature review | By the end of this session participants should be able to:  
- List and define common terminology used in information technology (IT)  
- Demonstrate knowledge | - Definition of common terminology used in IT  
- Browsers and search engines in common use  
- Accessing the DRH Web site ([www.drh.go.ke](http://www.drh.go.ke)), including use of search engines to identify programs and publications on the Web site | - Technical presentation  
- Discussion  
- Hands-on practice with internet search using key words derived from the case studies | - Projector  
- Computer  
- Internet  
- Handouts  
- Internet facility |
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<th>SESSION TOPIC</th>
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</table>
| **Session Fourteen:**  
Critiquing a proposal | By the end of this session participants should be able to:  
- Describe the proposal review process  
- Critique a proposal | ▪ Proposal review  
▪ What to look for in a proposal  
▪ Generic proposal outline  
▪ Critiquing a proposal  
▪ Specific objectives as check lists  
▪ Definition of research critique  
▪ Purpose  
▪ Conceptualization  
▪ Literature Review  
▪ Hypothesis and research question  
▪ Study design, methodology, analysis, limitations  
▪ Conclusions, recommendations | ▪ Simulation of a review panel reviewing a completed proposal  
▪ Each review panel will have one person summarize the proposal, and one person to determine the group consensus of review comments and recommendations | 1 hour, 45 minutes  
▪ Checklist for proposal review/ National RH Research Guidelines  
▪ Three ready-made proposals |
| **Session Fifteen:**  
Applying skills learnt | By the end of this session participants should be able to:  
- Critique a proposal  
- Describe the proposal review process | ▪ This is a practical exercise in which each group makes a presentation based on the knowledge and skills learnt in previous session.  
▪ **Step 1:** Panel presentation of the full proposals  
▪ **Step 2:** One panel member summarizes the proposal  
▪ **Step 3:** Reviewers’ comments  
▪ **Step 4:** Decision on possibility of funding, from among competing options | 2 hours  
▪ A list of questions  
▪ Proposal to be presented  
▪ Proposal review checklist |
<table>
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<tr>
<th>SESSION TOPIC</th>
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<th>TEACHING MATERIALS</th>
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<tbody>
<tr>
<td>Section IV Application</td>
<td>By the end of the session, the participants should have:</td>
<td>▪ Distribution of participants’ and facilitators’ addresses</td>
<td>Reflection</td>
<td>Final written evaluation</td>
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<td></td>
<td>▪ Established knowledge networks</td>
<td>▪ Course evaluation</td>
<td>Discussion</td>
<td>Evaluation form (included in an appendix)</td>
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<td></td>
<td>▪ Participated in post-test examination</td>
<td>▪ Ideas for follow-up and follow-on activities</td>
<td>Individual interaction and networking</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Agreed on follow-on activities</td>
<td>▪ Researchable program problem(s) for future collaboration discussed</td>
<td>Post-test examination</td>
<td></td>
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<td></td>
<td></td>
<td>▪ Possibilities for step-down training/facilitation in OR issues at district level discussed</td>
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SECTION I: INTRODUCTION TO OPERATIONS RESEARCH

SESSION ONE: CLIMATE SETTING AND COURSE OBJECTIVES

Duration: 1 hour

Learning Objectives

By the end of this session participants should be able to:

1. Establish familiarity with one another, participate in team building activities, and set up exercise groups and group norms to be observed during the workshop
2. Share expectations
3. Share the outcome of the training needs assessment, including participants’ OR knowledge, views, attitudes, and experience
4. Review training objectives in response to identified training needs

Teaching methods:
- Pre-test
- Participatory introduction
- Presentation (illustrated participatory lectures and reporting of the analysis of pre-workshop questionnaire)
- Participatory experience sharing
- Team building exercises

Teaching Materials:
- Computer/LCD projector
- Flip charts/newsprints
- Self-administered questionnaire
- Pre-test questionnaire
- Analysis report of self-administered questionnaire
- Ice-breaker, team building guides (exercise cards, hypothetical report)
1.1 Introductions and team building

Introductions are made through participatory methods (pairing and exchange of personal details, followed by partners introducing each other).

1.2 Sharing participants’ expectations

Each participant makes a list of expectations, to be placed on flip charts, followed by a brief discussion to develop a comprehensive list of expectations.

1.3 Assessing participants’ knowledge, attitudes, and experience in OR

Participants will have received a self-administered questionnaire, which they will have completed and mailed back to the lead consultant before the workshop begins. Questionnaires will be analyzed and results presented during experience-sharing at the start of training. The findings provide information about the participants’ knowledge, attitudes, and practices (KAP) in OR, as well as expectations. These findings can serve as a training needs assessment (TNA) and guide the content and methods of training.

The pre-test questionnaire is to be administered before the start of technical presentations and provides a baseline for assessing the post-test.

1.4 Bringing participants to the same level in relation to OR, for effective participation in training

Training objectives are presented, followed by a brief discussion to harmonise participants’ expectations and confirm whether content covers gaps identified in the pre-workshop questionnaire or TNA. Participants are selected to present and discuss experiences with OR in their areas of work.

1.5 Group norms and dynamics; team building and formation of groups for practical exercises

Participants list and discuss group norms, followed by selection of group leaders for various activities and tasks.
ICE BREAKER EXERCISE
“PASS THE BEAT”

Objective: Participants get to know each other, and the group’s energy is raised as trainees become aware of their dependence upon one another.

Time: 5 to 10 minutes

Materials required: None

Settings: All training and field work

Process

Have all participants form a circle. To introduce the exercise, say:
“I am going to face and make eye contact with the person on my left and we will try to clap our hands at the same moment [demonstrate].

Then, she/he will turn to the left and clap hands at the same time with the person next to her/him. We will ‘pass the beat’ around the circle. Let’s try it now and remember to make eye contact and try to clap at the same time.”

The rhythm builds up and the facilitator can call out “faster” or “slower” to increase the speed of the game. Once the handclaps have passed around the circle, say: “Now we will try to make the rhythm go faster and faster. Always be ready because we might begin to send additional rounds of handclaps around the circle, chasing the first one.”

The beat begins to be passed around the circle, from one person to the next. Remind people to keep it going, even if it stops for a moment when someone misses the beat. When the first round of handclaps is well-established, start a new round of hand clapping. Eventually there might be three or four beats going around the group at the same time. This will often result in a sort of enjoyable, high-energy chaos in the group, with lots of laughter.

Closure:
Briefly ask whether participants enjoyed the game. Ask the group to describe, without singling anybody out, what happens in an interdependent team game when a player drops the ball. Remind the group that, to get the best results when working as a team, everyone is interdependent.

The facilitator can introduce one or two ice breakers and solicit more examples from participants.
SESSION TWO: HISTORY AND DESCRIPTION OF OPERATIONS RESEARCH

Duration: 2 hours

Learning Objectives

By the end of this session participants should be able to:
1. Discuss the history and evolution of OR
2. Define OR and distinguish it from other types of research and evaluation
3. Enumerate the objectives of OR
4. Discuss the importance of OR and its potential use in district health plans
5. Identify and list areas of focus in OR
6. List and describe barriers to wider adoption of evidence-based data in decision making

Method

• PowerPoint technical presentation
• Discussion
• Group work
• Group exercise with the health system case study

Teaching Materials:

• Computer/LCD projector
• Flip charts/newsprints
• Handouts (OR notes, DRH research agenda)
• Case scenario report for group work

Reference Materials:

OR is a relatively new discipline, having started in Britain just before the Second World War with the establishment of teams of scientists to study the strategic and tactical problems involved in military operations. The objective was to find the most effective use of limited military resources by the use of quantitative techniques.

- **2.1 Defining operations research and distinguishing it from other types of research and evaluation**

OR is the study of factors, under the control of the program manager, that influence the operations of a program. OR identifies service delivery problems and tests new programmatic solutions to these problems.

OR is a way of identifying and solving program problems, a continuous process with five steps: 1) Problem identification and diagnosis, 2) strategy selection, 3) strategy evaluation, 4) information dissemination and 5) information utilisation.

**Categories of OR**

1. **Exploratory/diagnostic studies:** Seek descriptive information related to the problem under consideration. Analysis of this information may suggest reasons or factors contributing to the problem. For example, if a discrepancy in rates of HIV infection were noted between villages in a small geographic area, an exploratory/diagnostic study would shed light on the factors responsible for this variation. With this knowledge, appropriate programs can be designed.

2. **Field intervention studies:** Test new approaches, strategies, or solutions to problems in existing programs. In the example given above, researchers might have found that in the village with low HIV prevalence, local community leaders supported condom distribution programs or sexual behaviour change, such as reducing the number of sexual partners or delaying the initiation of sexual relations. Field intervention studies would test the effectiveness of different strategies of mobilising community leaders to support Behaviour Change Communication.

3. **Evaluation studies:** Assess the success of the program using the interventions derived from the previous steps. However, these studies can also be used to assess the success of interventions that were hurriedly implemented without careful testing, as has occurred with HIV/AIDS programs. Evaluation should occur over the life of a program and could help improve programs.

4. **Cost-effectiveness studies:** Assess the unit cost for a given level of outcome, or the level of outcome for a given cost of intervention. This is important in the context of resource constraints. Cost-effectiveness studies can be valuable management tools and are frequently part of intervention and evaluation studies.
The systematic linkage of the four categories above is obvious, and indeed the differentiation of intervention and evaluation studies is often difficult.

There are two main types of evaluations: program monitoring (program and facility-based data) and impact assessment (population-based biological/behavioural data).

The box below shows the schematic flow of typical program components:

```
[Input —> Process —> Output] —> [Outcome —> Impact]

Program & facility-based data

Program Monitoring

Population-based biological/behavioural data

Impact Assessment
```

Program evaluation entails assessing administrative and management activities. Impact assessment entails measuring the effects of the programmatic activities. By convention, short-term effects are referred to as outcomes, while long-term effects are referred to as impacts. Generally RH outcomes are related to change in RH knowledge, attitudes/perceptions, and behaviour/practices. Impacts are related to change in health status or mortality. Data for impact assessment can be obtained partly from facility records, but are largely population based and related to biological and behavioural characteristics. (See Session Three B for examples of specific characteristics or indicators to be assessed in program evaluation.)

2.2 History and evolution of OR

- Early OR workers came from different disciplines, one group consisting of a physicist, physiologist, mathematical physicist and surveyor. What such people brought to their work were scientifically trained minds, used to questioning assumptions, exploring hypotheses, devising experiments, collecting data, analyzing numbers, etc. Many, too, were of high intellectual calibre (at least four UK wartime OR personnel were later to win Nobel prizes when they returned to their peacetime disciplines).
- After the war OR spread in different ways in the USA and UK.

2.3 Goal and Objectives of conducting OR

The goal of OR is to provide program managers and policy makers with the information they need to improve and expand existing services.

Specific objectives of OR include improving:
- Quality of service (as measured by client/patient perceptions, as well as standard measures of RH quality)
- Coverage (as measured by number or proportion of eligible beneficiaries and groups served)
• Effectiveness (as measured by achieving agreed outputs and outcomes)
• Efficiency (as measured by increased outcomes for unit of input, or reduced inputs for unit of outcome)
• Accessibility (as measured by services’ proximity to intended beneficiaries)
• Availability (as measured by ability to meet the variety of service needs)
• Acceptability (as measured by client/patient perception)

2.4 Discuss the importance of OR in RH and its potential use in District Health Plans

• The District Health System is the most basic RH services unit that is charged with implementation of programs. Thus, it is useful to view OR within that context.
• RH encompasses reproduction, sexuality, HIV/AIDS, safe motherhood, etc., thus affecting human society in its cultural, religious, political, and economic spheres. RH problems are numerous, diverse, widespread, and complicated by serious morbidity and death. RH programs usually address sensitive issues such as sexuality, human rights, poverty, violence, gender inequality, stigma, and discrimination.
• To be effective, RH programs require not only community and other stakeholder involvement and committed personnel, but also detailed planning at all levels, close coordination of program implementation, careful training and supervision of personnel, meticulous logistical arrangements, and continuous supervision, monitoring, and evaluation of program development and impact.
• OR is an important tool to support and inform these essential planning, coordinating, training and evaluation functions, which weigh heavily on a program manager.
• OR employs many methodologies in the five-step process stated in Section 2.1. Methods can be qualitative or quantitative. The design can range from experimental through quasi-experimental to non-experimental.

2.5 List the areas of focus for OR

1. Training programs: To examine contents and methods of training; comparing one training approach with another
2. Information, education, and communication (IEC): Comparing different approaches in terms of message understanding and retention, efficiency, reaching specific target audiences
3. Management information systems (MIS): Comparing information systems and testing new systems
4. Program impact: Testing the impact of different service delivery approaches
5. Administration and management: Qualitative assessment
6. Quality of care: Quality and acceptability of services
7. Commercial channel of contraceptive distribution: Comparing commercial with non-commercial channels
8. HIV/AIDS and family planning: The effect of integration of the two services
9. **Male involvement in family planning**: Testing mechanisms and approaches for male involvement

### 2.6 Barriers to wider adoption of evidence-based data in decision making

- Barriers to fully embracing evidence-based decision making include competing research paradigms and lack of conciseness of instructions and the inappropriate dissemination of research results.
- Results from research are often couched in rigid academic literary styles or are too technical.
- Reports produced are often too long to be read by decision makers, or conversely the key findings are limited to an executive summary, which usually does not have the detail and contextual elements of the research findings.
- Health personnel point to a general lack of access to research results (expensive journal subscriptions, lack of access to the internet, etc.), as well as to prescriptive and hierarchical working structures that do not reward change, whether evidence-based or not.

Engaging decision makers in identifying and defining research problems and enabling their participation in as much of the ensuing research as is appropriate greatly increases the likelihood that study results will be used. This is not only to ensure that their specified needs are being addressed (rather than the researchers' perception of these needs), but also to reduce the likelihood of the decision maker being surprised or caught unawares by the results. The need to develop ways to communicate research findings to end users (be they decision makers or donors) through channels other than published papers and conference presentations has become urgent, particularly for those working in universities and other research institutions. Although these channels remain important and need to be maintained, research programs have to find ways to directly reach decision makers, including donors.

### GROUP WORK

**Time:** 30 minutes for group discussions and 30 minutes for plenary presentation & discussion

*Participants form four groups and discuss the different components of the health system case study (See Appendix 2).*

*The group work proceeds through the following steps:*

**Step 1:** Participants form four groups

**Step 2:** Assign different components of the health system case study

**Step 3** Discuss the OR potential of the case study with perspectives of the different health system components or levels

**Step 4:** Discuss group findings in plenary
SECTION II: OPERATIONS RESEARCH DESIGN

SESSION THREE A

IDENTIFYING RESEARCHABLE PROGRAM PROBLEMS

Duration: 2 hours

Learning Objectives

By the end of this session participants should be able to:
1. Describe a program in terms of a production system
2. State the steps in the OR process
3. Identify OR problems and list three broad types of program objectives;
4. Distinguish between a programmatic problem and a non-programmatic problem
5. Distinguish between a researchable and a non-researchable programmatic problem
6. Identify at least one researchable programmatic problem from a program

Teaching Method:
• PowerPoint technical presentation
• Discussion
• Exercise
• Practical group work

Teaching Materials:
• Computer/LCD projector
• Flip charts/newsprints
• Handouts

Reference Materials:

3 A.1 Concept of program as a production system

Similar to a production system, an RH program requires inputs that are subjected to processes and procedures to achieve certain end products (health and related outputs, outcomes, and impacts).

The goal of operations research is to provide program managers with information to make decisions for improving program operations, solving problems, taking advantage of opportunities, and achieving program objectives.

Applying the system model to health programs

INPUTS ⇒ PROCESS ⇒ OUTPUTS ⇒ OUTCOMES ⇒ IMPACT

Inputs
These include resources that are the “raw material” of the program, e.g.
– Finances
– Materials, equipment, supplies
– Staff
– Facilities
– Other resources

Processes
These include activities by which the program resources are used to produce the program outputs, e.g.
– Management
– Staff training
– Supervision
– Commodity logistics
– Reporting and record keeping
– Other processes and procedures

Outputs
These are end products of the program activities, e.g.
– Services provided
– Information communicated
– Trained providers
– Materials, equipment, supplies acquired
– Other outputs

Outcomes
These are a direct effect of the outputs on knowledge, attitudes, behaviour, and practices of the population served by the program, e.g.
– Positive perception of condoms
– Increased antenatal care (ANC) clinic visits, delivery in health facility (HF), condom use
– Less stigma manifestation
– Other outcomes.

**Impact**
These are changes in the health and well-being of the population served by the program, e.g.
– Fewer unwanted pregnancies
– Reduced transmission of sexually transmitted infections (STIs)
– Reduced incidence of HIV/AIDS
– Reduced maternal and child mortality
– Reduced malnutrition

### 3 A.2 Steps in the OR process
OR has five main steps:
Step 1: Identify and diagnose problem
Step 2: Generate a programmatic intervention to solve problem (strategy selection)
Step 3: Test the intervention through implementation and evaluation (strategy testing and evaluation)
Step 4: Disseminate information on evaluated strategy
Step 5: Use research results and information in solving operational program problems

### 3 A.3 OR problems and the three broad types of program objectives

#### Identifying the problem
START WITH THE PROBLEM, NOT THE INTERVENTION!

- A problem exists when there is a disparity between the expected and the observed state, such as poor staff performance, or high prevalence of STIs e.g. HIV/Malaria pandemic etc.

It is important to always diagnose the problem thoroughly before identifying the intervention(s) to address it. Formulate a problem statement and decide the objectives to be achieved in solving the problem.

*An OR problem is a programmatic problem restated as a question*

### 3 A.4 Broad types of program objectives
OR problems and program objectives are usually stated in terms of program objectives or outcomes that can be summarized as three broad types:

1. Increase **access** to or availability of information and services
2. Enhance **quality** of information and services
3. Improve **efficiency** of providing services
Program with an access problem
• Problem statement: Sexually active adolescents do not use services,
• Program factors: clinic image, opening hours, clinic location, staff attitudes, staff competence, cost of service, etc.

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<thead>
<tr>
<th>Outputs</th>
<th>Effect</th>
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<tbody>
<tr>
<td>Improved clinic image, e.g. cleanliness</td>
<td>Increased client flow</td>
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(Short-term outcomes)

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<tr>
<th>Impact</th>
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<tbody>
<tr>
<td>Improved coverage</td>
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(Long-term outcomes)

Program with a quality problem
• Problem statement: Clients with STIs are not correctly diagnosed and treated.
• Program factors: service protocols, clinic/laboratory equipment/reagents, drug availability, staff training, etc.

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<thead>
<tr>
<th>Outputs</th>
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<tbody>
<tr>
<td>Available service protocols</td>
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Effect

Improved diagnoses

(Short-term outcomes)

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<tr>
<th>Impact</th>
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<tbody>
<tr>
<td>Reduced morbidity, mortality</td>
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(Long-term outcomes)

Program with an efficiency problem
• Problem statement: Few clients are served per day/month.
• Program factors: clinic organization, staff deployment/work schedules, clinic operating hours, commodity procurement and supply procedures, etc.

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<thead>
<tr>
<th>Outputs</th>
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<tr>
<td>More convenient clinic operating hours</td>
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Effect

More clients served

(Short-term outcomes)

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<tbody>
<tr>
<td>Improved coverage</td>
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(Long-term outcomes)

Brief Exercise (30 minutes):
• Divide participants into four groups
• Assign each group one of the following four themes
• Discuss (10 minutes)
• Present to plenary (5 minutes each)

The following short discussion activity can help participants further appreciate and internalize the concepts above.

Small groups of participants seated next to each other take on the following four themes and discuss for five to ten minutes. At the end of ten minutes, the groups make statements and responses based on what they discussed, with the session facilitator providing guidance where necessary.
1. Here’s the intervention – what was the problem?
   • Community-based distribution of contraceptives
   • Improved quality of client-provider interactions for family planning services
   • Post-abortion care established
   • Integration of STI management into FP and ANC services
   • Educating men on their roles in reproductive health and motivating them to participate in maternity care services

2. Stating an OR problem
   Think of a common RH problem:
   • Define the problem in terms of health issues facing the specified population
   • Describe the nature and extent of the problem
   • Identify program strategies that have been tried elsewhere to solve similar problems
   • Restate this problem as a question to be answered through research

3. Defining an OR problem
   Think of a common RH problem, make a brief statement of:
   • The incidence and prevalence of the health problem
   • The geographic or administrative areas affected
   • The characteristics of populations affected
   • The probable reasons for the problem
   • What has and has not worked already

4. Do you have an OR problem?
   Think of a common and simple RH concern, make a brief statement or write a short, simple paragraph that identifies the health problem.
   • State the discrepancy between what is and what should be
   • State this as a question you could answer through research
   • Give two or more feasible and potentially effective and sustainable ways of answering the question

3 A.5 Distinguish the difference between a programmatic problem and a non-programmatic problem

A programmatic problem exists when:
• There is a perceived difference between actual and desired client behaviours, staff performance, or similar situation
• The cause of the problem is not known

Define a non-programmatic problem
There are many types of problems, but not all require research. Public health program problems are not the same as general problems
Programmatic problem examples stated as questions
• How can pregnant women be managed to prevent transmission of syphilis?
• How can injectable contraceptives be offered to maximize the number of eligible women using them?

Non-programmatic problem examples, stated as questions
• Why are maternal syphilis rates increasing?
• Why do many women prefer the injectable contraceptive?

How to identify a programmatic problem
• Think of ways the problem can be addressed by the program
• Is it possible to develop a feasible, effective and sustainable intervention?
• What health improvements will result from solving the problem this way?
• Is it a serious problem? And to whom?
If the problem is important, affects vulnerable groups, can be solved by program operational activity and feasible, effective, sustainable interventions, with measurable outcomes, then it can be considered a programmatic problem.

Problems and Opportunities
• Not all problems mean something is wrong with the program. Some problems can be converted into opportunities, e.g. “What is the best way to increase the reach of this program to serve more people?”

3 A.6 Difference between research and non-research problems

Is the problem a research problem?
In deciding whether a problem is researchable, one needs to ask the following questions:
• Can my question be answered correctly by common sense and experience?
• Do I need to do research to solve the problem?
• Can I get enough time, money and qualified persons to do research?
• Will those responsible for making decisions use research results?
The problem is considered researchable only if the answer to the first question is no and the others are yes.

Identifying non-research problems
1. A discrepancy exists between desired and observed situation
2. We know why the discrepancy exists
3. We know the best solutions

Identifying research problems
1. A discrepancy exists between the desired and observed situation; this can be established through data, anecdotal evidence or observation
2. We don’t know why the discrepancy exists
3. Two or more potential solutions exist, and we don’t know which is the best
3 A.7 Identification of researchable programmatic problems from the national RH program

The national RH policy is designed to address worsening trends in RH, attributed in large part to a weak health care system and resulting in poor quality of care. The policy recognises specific RH problems and concerns, which are organised into nine thematic areas. Within those RH areas, second-generation programming thematic areas can be identified which fit within the nine OR focus areas cited in Session Two, 2.5.

PRACTICAL GROUP WORK

Time: 30 minutes for group discussions and 30 minutes for presentation and discussion

The health system (HS) case study

Step 1: Participants form four groups
Step 2: Each group reviews one component of the HS case study based on the following levels:

1. Community
2. Health centre
3. District
4. DMOH

Step 3: Each group brainstorms on researchable and OR problems
Step 4: Present and discuss group findings in plenary
SESSION THREE B

LITERATURE REVIEW IN OPERATIONS RESEARCH

Duration: 1 hour

Learning Objectives
By the end of this session participants should be able to:
1. Describe the importance of and justification for literature review
2. List possible sources of information and how to access them
3. List and describe issues in literature review
4. Make a brief summary of literature review

Teaching Method:
• PowerPoint technical presentation
• Discussion
• Exercises

• Teaching Materials
• Computer/LCD projector
• Flip charts/newsprints
• Handouts
• Technical presentation
• DRH Web site on CD
• News clippings

3 B.1 Importance of and justification for literature review

Reasons for literature review
• Reveals the extent of knowledge of the topic one intends to study
• Identifies what has been done to avoid duplication of work
• Provides ideas of the type of study or design that one may use in conducting research
• Reveals deficiencies in existing research
• Helps researchers avoid errors that others may have made studying the same or similar problems
• Provides convincing arguments for why particular research is needed
3 B.2 Possible sources of information and how to access them

Possible sources of information
- Individuals, groups, and organizations
- Published information (books, articles, journal indexes and abstracts, Web sites)
- Unpublished information (other research proposals in related fields, reports, records, and computer data bases)

Where sources can be found
- Administrative level
- Community, district, and provincial level
- National level
- International level

Strategy to access information
- Develop a strategy to obtain information in the most productive manner
- Strategy may vary according to workplace, topic, and resources

Steps to access information
1. Identify key persons knowledgeable on the topic
   - Seek a few recommended references
   - Names of others to consult
2. Identify conference speakers who may be helpful
3. Contact librarians at universities, research institutions, MOH, and media houses requesting relevant references
4. Search bibliographies and reference lists in key papers and books to identify relevant references
5. Search references in journal abstracts
6. Do computerized literature searches

Preparation of literature review steps
1. Organise index cards in groups of related statements corresponding to different aspects of the problem
2. Decide the order in which you want to discuss the issues
3. Finally, write a coherent discussion of your findings in your own words, using all relevant references

3 B.3 Key issues in literature review

Common bias in literature review
Bias in literature review is a distortion of available information in such a way that it reflects opinions or conclusions that do not represent the real situation.

Types of biases
- Playing down controversies and differences in one’s study results
• Restricting references to those that support the point of view of the researcher
• Drawing far-reaching conclusions from preliminary or questionable research results, or making sweeping generalizations from just one case or small study

Ethical considerations in literature review
• Any bias would call into question the scientific integrity of the researcher
• Careless presentation and interpretation of data may mislead readers who want to use the study findings
• Carelessness may have serious consequences in terms of time and money spent on research
• Unethical research may lead to wrong decisions affecting people's health
• The presentation of research results or scientific publications from other writers without citing the author may have legal repercussions
• Appropriate referencing procedures should be followed

3 B.4 Brief summary of literature review

Key points
• Literature review is a significant part of any research process
• It should present material and not just be a “filler”
• It gives researchers key information about the area of study
• Consider both primary and secondary sources in literature review
• The literature review must be selective, relevant, thorough, and adequate
• It should critically evaluate previous findings and studies
• It must point out possible deficiencies and provide explanations for them
• Avoid biases in literature review because they have ethical implications
• Literature reviews must be written in a logical sequence

GROUP WORK

Time: 30 minutes for group discussion and 30 minutes for plenary presentation and discussion

Step 1: Identify a research question based on the program in which you work.
Step 2: List the sources of information you can use for review
Step 3: Search through the documents (books, articles and bibliographies available)
Step 4: List useful references you find on the topic
Step 5: Review standard formats for quoting references
Step 6: Summarize the most important information from the reference
Step 7: Prepare a literature review for your proposal
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CAUSALITY AND RESEARCH DESIGN

Duration: 2 hours

Learning Objectives

By the end of this session participants should be able to:

1. Describe the concepts of association and causality in relation to testing interventions and evaluating program activities
2. Define the basic principles of experimentation and their use in intervention testing and evaluation
3. Describe the differences among alternative designs for testing and evaluating interventions and their appropriateness

Teaching Method:
• Presentation
• Discussion and group exercise (case studies)

Teaching Materials:
• Computer/LCD projector,
• Flip charts/newsprints,
• Handouts

Reference Materials

Session Content

a. Concepts of association and causality in relation to testing interventions and evaluating program activities

Concepts of association and causality

Causality exists when you can demonstrate that the intervention causes a change in the outcome(s) indicators. Causality is supported by the following elements:
• Time order: The intervention precedes any changes in the outcome(s)
• Co-variation: Intervention and outcomes are linked (associated)
b. Basic principles of experimentation and their use in intervention-testing and evaluation

Justification for using experimental designs to test interventions
- Accepted as strongest or most valid evidence of intervention effectiveness
- Permits hypothesis testing
- Goes beyond showing that an intervention can work or is feasible

Why test intervention effectiveness?
Even if an intervention is implementable, we still have to ask the following questions:
- Does the intervention have any effect on providers’ or clients’ knowledge, attitudes, and practices (KAP)?
- What is the magnitude of the effect?
- Is the effect direct or indirect?
- How do we know it was the intervention and not something else that made the difference?

Manipulate the intervention
- Prospectively testing a new intervention provides more convincing evidence than evaluating a continuing intervention
- Obtaining pre- and post-intervention measurements is preferable in showing change caused by the intervention
- It is important also to consider the following questions:
  - How much manipulation is necessary or possible?
  - What variables should be controlled?
  - Can the findings be generalized?

Create and compare equivalent experimental and control groups
- Random assignment of:
  - Individuals
  - ‘Blocks’

Controlling research conditions
- Thoroughly pre-test all data collection instruments to reduce inaccurate measures of indicators
- Use discrete measures to avoid influencing responses
- Collect as much information as possible about the study situation to control for other activities or "natural" trends
**Key variables**
A variable is a characteristic whose value can be measured to detect change. Variables can be categorised broadly into two types:

1) **Independent variables:**
   - Programmatic factors that can be manipulated
   - Strategy being tested
   - The “cause” of the problem

2) **Dependent variables:**
   - Characteristics we are expecting to change
   - Outcomes or impact being measured
   - The “effect” of the intervention

**Hypotheses**
A hypothesis is a statement about an expected causal relationship between independent and dependent variables that can be tested through collecting information, i.e. a “tentative answer”

Examples of hypotheses
- Contraceptive use will be higher in villages where the fieldworker is viewed as credible than in villages where the fieldworker is not viewed as credible
- The performance of clinic staff who have received a five-week, field-based training course will be better than the performance of clinic staff who have received a three-week, classroom-based training course

**Validity and Reliability**
- In stating hypotheses we are implying that a CAUSAL RELATIONSHIP EXISTS
- This means that we must rule out alternative explanations for the observed or measured effects
- One of the most important alternative explanations is that the measurements were not VALID or RELIABLE
- Validity refers to true and accurate data, i.e. it measures what it is meant to measure
- Reliability which refers to consistency, stability and dependability of the data

**Threats to Validity**
1. History effects
2. Selection bias
3. Testing
4. Instrumentation
5. Maturation
6. Differential mortality
7. Regression towards the mean
History effects
Changes in the social climate during the study period that influence the outcome apart from the effect of the intervention.

Selection bias
Initial selection leads to pre-existing differences between groups. This can occur if the intervention and control groups are selected differently, whether this is deliberate or incidental.

Re-testing
Earlier measurements can influence later measurements. Changes from re-testing: guessing research hypothesis after manipulation, cooperative responding, practice effects, etc.

Instrumentation
The accuracy or sensitivity of instruments used may be significantly different, thus contributing to the observed effect, apart from the intervention effect.

Maturation
Over time, natural changes, e.g. age, occurring to individuals may contribute to the observed effect.

Differential mortality
In longitudinal research designs, some participants may be lost over time because of motivation and resilience factors. If those lost to follow up are significantly different from those who remain, the outcome might be affected.

Regression towards the mean
Participant scores are likely to move towards mean values over time.

c. Differences among alternative designs for testing and evaluating interventions and their appropriateness

Intervention study design
- A design is the plan of action for answering the research question
- The objective of a design is to minimize possible errors and bias, by maximizing reliability and validity
- Reliability refers to consistency, stability and dependability of the data

Examples of research designs
There are three categories of research designs:

1) Experimental research design
The researcher manipulates one variable while holding other relevant variables constant and observes the effect on the variable of interest. Two conditions must also be observed: the researcher is able to control the research environment and there is a control group. In the best scenario, measurement of the outcome variable of interest is undertaken before and
after the manipulation (A below). However, measurements might be possible only after the intervention (B below):

A. Pre-test and post-test control group design
B. Post-test only control group design

2) Quasi-experimental research design

This is employed when ethical considerations associated with human subjects prohibit meeting important conditions of experimental design. The researcher manipulates the intervention variable but has no control over the research settings, and there is no matched control group.

⇒ Time series (multiple measurement of outcome variable over time)
⇒ Non-equivalent control group (non-random comparison group)
⇒ Separate sample pre-test and post-test (post manipulation measurement done on a different randomly selected group from the same study population)

3) Non-experimental research design

This design is similar to experimental design but lacks the strict observance of all conditions.

Types of non-experimental research design
⇒ Pre-test and post-test design
⇒ Post-test only design
⇒ Static group comparison

The first one represents the strongest design for studying cause and effect relationships, and the last one is the weakest. Thus the latter is best for descriptive studies and small case studies.

Considerations in selecting design
- Ethical issues
- Practical, financial and administrative issues
- Technical issues:
  - Random assignment
  - Matching
  - Comparison group
  - Time series
  - Safeguard validity

Balancing Validity and Generalisability
- Selection of study group(s): Research participants may be so special that they are not found elsewhere
- Experimental setting: The setting or context may be so special that results cannot be reproduced elsewhere
• Contamination: It may be preferable to use matching to avoid adjoining sites
• Focus on hypothesis testing: May inhibit documentation of implementation process

**Steps in creating a strong research design**
1. Ensure that the design is ethically sound
2. Random assignment to experimental and control groups from single sample or match characteristics of comparison group with experimental group
3. Pre- and post-intervention measures (ensure same data collection and sampling)
4. More steps (rule of three multiples):
   • Include multiple measures over time
   • Use multiple data sources to enhance reliable measurements and to describe intervention implementation from different perspectives
   • Replicate intervention in multiple settings or among different subjects to maximize generalisability

**GROUP WORK**

*Step 1:* Participants form groups  
*Step 2:* Generic case studies in session nine, as well as the health systems case study, divided among the groups  
*Step 3:* Each group discusses and identifies appropriate study designs for each scenario  
*Step 4:* Presentation and discussion in plenary
SESSION FIVE:  INDICATOR DEVELOPMENT FOR PROBLEM IDENTIFICATION & SUCCESS OF PROGRAM

Duration:  2 hours

Learning Objectives

By the end of this session participants should be able to:

1. Describe the concepts and operational definitions of variables and indicators
2. Discuss the process of indicator development in program activities
3. Discuss the quality of indicators

Method:
- Presentation
- Exercise and discussion
- Practical exercise
- Brain teaser

Teaching Materials:
- Computer/LCD projector
- Flip charts/newsprints
- Handouts

Reference Materials:

4. Reference to newly developed RH indicators for DRH.
5.1 Concepts of variables and indicators, their types and operational definitions

What is a Variable?
- A characteristic of a person, object, etc. that can take on different values.
Variables can be categorised as:
  - Numerical variables (weight, age)
  - Categorical variables (sex, disease outcome)

Key Variables in Operations Research

Independent variables

An independent variable is a variable that a researcher manipulates in order to determine its effect or influence on another variable. Independent variables are also called predictor variables because they predict the amount of variation that occurs in another variable.

Dependent variables

A dependent variable, sometimes called the criterion variable, attempts to indicate the total influence arising from the effects of the independent variable. A dependent variable therefore varies as a function of the independent variable.

Confounding variables

Confounding variables explain the relationship between the independent and dependent variable. It is associated with the independent variable and is independently associated with the dependent variable.

What is an Indicator?
- A measure to determine the degree of adherence to standards
- Something that provides an indication, a pointer or any device for exhibiting conditions for the time being
- Stated in terms of counts, ratios, proportions or percentages

Indicators can be
- Quantitative (involving numerical measurements for results and impact)
- Qualitative (Involving people’s opinions or perceptions)

Uses of Indicators
- Monitor changes over time
- Monitor the implementation and outputs of a program to ensure that it is on track
• Evaluate the effectiveness and impact of a program

Types of Indicators
• Process (multiple activities that are carried out to achieve the objectives of the program)
• Output (results of program level efforts)
• Outcome (results of programs measurable at population level; reflects use of services, i.e. behaviour change)
• Impact (preferably long-term outcome)

5.2 Process of indicator development in program activities

The process of indicator development
• Define characteristics to be measured
• Identify the target audience and the purpose of the indicator
• Define the criteria for selecting the indicator
• Identify and evaluate a potential indicator based on selection criteria
• Pilot test the indicator
• Choose the final set and review the indicator periodically

Criteria for indicator selection
In selecting an indicator, it has to be:
• Useful: Follow-on action within the program is immediately apparent
• Accessible: Readily available in a usable format and at appropriate time intervals. Accessibility will reflect closely the source of data
• Ethical: Data gathering, processing and presentation requirements are ethical in terms of confidentiality, freedom of choice in supplying data and informed consent
• Valid: Measures the issue or factor it is supposed to measure. Essential starting point is to establish exactly what the indicator is supposed to measure
• Reliable: Gives the same value if its measurement is repeated in the same way on the same population and at almost the same time. It also addresses accuracy of the data collected
• Specific or precise: Reflects changes only in the issue or factor under consideration, and the numerator, denominator, and the time reference are precisely defined
• Representative: Adequately captures all issues or population groups it is expected to cover
• Understandable: Easy to define, to describe its meaning, and to interpret
• Socially acceptable:
• Time bound

Limitations of indicators
Indicators do not tell managers why changes have or have not occurred. Qualitative data is also needed to answer the why question.
5.3 Quality of indicators

**Quality of indicators is judged by their reliability and validity:**

- Validity is related to the ability of an indicator to measure what it is meant to measure.
- Reliability is related to repeatability of the measurement, i.e., the same measurement will be obtained at another time or in a different place if carried out in the same way.

**PRACTICAL**

**Participants discuss or debate the following brain teaser:**

1. Can a non-valid measure be reliable?
2. Can an unreliable measure be valid?
SESSION SIX: RESEARCH DESIGN AND INDICATORS
EXERCISES

Duration: 1 hour, 45 minutes

Learning Objectives

By the end of this unit participants should be able to:

1. Practice concepts used in Sessions 4 and 5
2. Identify research design and indicators

Teaching Methods:
- Exercise
- Presentation and discussion

Teaching Materials:
- Computer/LCD projector
- Flip charts/newsprints

Reference Materials:

Session Content

Practice identifying research design and indicators

Exercise/ Practical

Exercise 1
Classify the 17 RH indicators in the compendium of indicators (See Appendix 7) into:
- Output
- Outcome
- Impact
Exercise 2
A maternity hospital wishes to determine whether the provision of family planning methods, post-partum, will increase contraceptive use among women who deliver at the hospital.

1,500 women per year deliver at the hospital in four wards. Women who give birth at the hospital receive on average three pre-natal visits and one post-natal visit.

Question
What designs would you recommend to test the hypothesis that women who are offered post-partum family planning services are more likely to use family planning than women who are not offered services?
   a. Exploratory/diagnostic studies
   b. Field intervention studies
   c. Evaluation studies
   d. Cost-effectiveness studies

What will you assign: patients, providers, or wards?

Exercise 3
The hospital is not available for your study, but you can use maternity wards of 10 Health Centres.

Questions
a. What will you randomly assign?
b. Or would you want to use matching? What factors would you match on?
c. What design will you use if you cannot randomly assign?

Exercise 4
The national RH programme has added injectables to the range of FP methods offered. Some manager’s think that the injectables should be made available through community health workers (CHWs), arguing that it will increase contraceptive prevalence in rural areas (one CHW per village of 500+ populations). Other managers believe that the risks of allowing CHWs to provide depo-medroxyprogesterone acetate (DMPA) (perceived to be poor infection prevention and poor counselling) outweigh any possible increases in contraceptive prevalence.

Questions
1. What design would you use to compare these two points of view?
2. Would you use random assignment or matching?
3. What outcome indicators would you measure?

Exercise 5
Free vasectomies will be offered for one day only in a large gymnasium. 1,000 men are expected to attend. The programme wants to compare the effectiveness of ‘no-scalpel’ vasectomy with the traditional technique.
Questions
1. What design will you use?
2. What will be your outcome measure(s)?
3. What are the main ethical considerations with this design?

Exercise 6
A study will examine the effect of increasing time devoted to sex education from 3 hours to 18 hours.

Operationally define the underlined terms in the following hypothesis:
■ Adolescent boys will use more condoms if they receive more sex education.

Exercise 7
You plan an experiment with an experimental and control group to determine if male peer educators refer more clients for VCT than female peer educators.

Define the underlined terms
■ Men will refer more clients than will women.

Exercise 8
Continued development of the health system analysis case study
SESSION SEVEN: ETHICS OF OPERATIONS RESEARCH

Duration: 2 hours

Learning Objectives

By the end of this session participants should be able to:
1. Define key terms in research ethics
2. Describe the evolution of research ethics as documented in codes, declarations, regulations and guidelines
3. Describe the fundamental principles of human research ethics (respect for persons, beneficence, and justice)
4. Describe how ethical conduct of research can be achieved by looking at issues of informed consent and how to handle vulnerable groups.
5. Describe the role of ethical review boards (ERBs) in research
6. Describe issues that may arise in the conduct of research e.g. conflict of interest, authorship, and professional misconduct

Method:
- Technical presentation
- Discussion

Teaching Materials:
- Computer/LCD projector
- Flip charts/newsprints
- Handouts

Reference Materials:
1. International Declarations and Guidelines:
   - CIOMS guidelines,
2. FHI Research Ethics Training Curriculum
Session Content

7.1 Key terms and definitions in research ethics

Research
Systematic investigation, or information gathering, designed to produce knowledge that can be generalized and applied to other populations. It may be published and disseminated.

Research Participants
Living individuals from whom the researcher may obtain:
- Data through interaction or intervention
- Identifiable private information

Informed Consent
Permission given by a competent individual for information to be collected from her/him, who has:
- Received necessary information regarding the research
- Adequately understood it
- Considered it
- Arrived at a decision without coercion, undue influence, inducement or intimidation

Principles of Research Ethics
There are three main principles in research ethics:
- Respect for persons
- Beneficence
- Justice
(See full definitions in section 7.3 below)

7.2 Evolution of research ethics and important international codes, declarations, regulations and guidelines

- Observe three fundamental principles
- Recognize that research is a privilege, not a right
- Recognize that the participant’s well-being is paramount

The table below lists codes, guidelines, and declarations as well as the salient elements of each.

<table>
<thead>
<tr>
<th>CODES, GUIDELINES AND REGULATIONS</th>
<th>ELEMENTS</th>
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| Common to all                     | • Fundamental principles: respect, beneficence, and justice.
|                                   | • Research is a privilege, not a right
|                                   | • Well-being of participant is paramount
|                                   | • Drawn from fundamental ethical principles to local guidelines |
CODES, GUIDELINES AND REGULATIONS

**Nuremberg code (1947)**
The judgment by the war crimes tribunal at Nuremberg laid down 10 standards of ethical medical behaviour for the post World War II human rights era to which physicians must conform when carrying out experiments on human subjects.

- Voluntary informed consent
- Qualified researchers
- Appropriate design
- Weigh risk against benefit
- Free to stop at anytime

**Declaration of Helsinki**
Adopted by the 18th World Medical Assembly, Helsinki, Finland, June 1964, amended by the 29th World Medical Assembly, Tokyo, Japan, October 1975 and the 35th World Medical Assembly, Venice, Italy, October 1983.

- Well-being of research participant takes precedence over interests of science and society.
- Consent in writing
- Limited use of placebo
- Greater access to benefit
- Use caution if participant is in dependent relationship to researcher.
- Conform to generally accepted scientific principles and practice
- Experimental protocol reviewed and vetted by independent committee (ERB).
- Good clinical and laboratory practice
- Truthful publication of the results
- Informed consent
- Care in case of legal incompetence (disability)
- Compliance with good ethical practices

**Common rule**

- Approved by ethics committee
- Written informed consent and documentation
- Equitable recruitment of participants
- Special protection of vulnerable groups
- Continuing review of approved research
- Ethical justification and scientific validity of research
- Ethical review and the role of ERBs
- Strengthening of national or local capacity for ethical review
- Informed consent
- Vulnerability of confidentiality; compensation for injury; obligations of sponsors to provide health-care services

**Council for International Organizations of Medical Sciences (CIOMS)**

- Ethical review and the role of ERBs
- Strengthening of national or local capacity for ethical review
- Informed consent
- Vulnerability of confidentiality; compensation for injury; obligations of sponsors to provide health-care services
CODES, GUIDELINES AND REGULATIONS  

ELEMENTS

- Protection of vulnerable groups
- Distribution of burdens and benefits
- Research in developing countries

Belmont Report

A 1976 report (summarising basic ethical principles) of the National Commission for the Protection of Human Subjects of Biomedical and Behavioural Research

International Conference on Harmonisation (ICH)

Created in 1990 to achieve greater harmonization in the interpretation and application of technical guidelines and requirements for product registration

National Bioethics Advisory Commission (NBAC)

Established in 1995 by the president of the USA to provide advice and make recommendations to the National Science and Technology Council and to other appropriate government entities regarding bioethics

Belmont Report

On July 12, 1974, the USA National Research Act (Pub. L. 93-348) was signed into law, thereby creating the National Commission for the Protection of Human Subjects of Biomedical and Behavioural Research. The commission's mandate was to identify the basic ethical principles that should underlie the conduct of biomedical and behavioural research involving human subjects and to develop guidelines to assure that such research is conducted in accordance with those principles.

The Belmont Report stems from four days of intensive discussions held in February 1976 at the Smithsonian Institution's Belmont Conference Centre and is supplemented by monthly deliberations over the subsequent four years. It attempts to summarize basic ethical principles the commission identified during its deliberations.

International Conference on Harmonisation (ICH)

The International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use, created in April 1990 at a meeting in Brussels, brought together the regulatory authorities of Europe, Japan and the United States and experts from the pharmaceutical industry in the three regions to discuss scientific and technical aspects of pharmaceutical product registration. The purpose of ICH is to reduce duplication of testing carried out during the research and development of new medicines by recommending ways to achieve greater
harmonization in the interpretation and application of technical guidelines and requirements for product registration.

Harmonization would lead to a more economical use of human, animal and material resources and the elimination of unnecessary delay in the global development and availability of new medicines while maintaining safeguards for quality, safety, and efficacy and regulatory obligations to protect public health.

National Bioethics Advisory Commission

The National Bioethics Advisory Commission (NBAC) was established in 1995 by the president of the USA to provide advice and make recommendations to the National Science and Technology Council and to other appropriate government entities regarding the following matters:

1. The appropriateness of departmental, agency, or other governmental programs, policies, assignments, missions, guidelines and regulations as they relate to bioethical issues arising from research on human biology and behaviour; and
2. Applications, including the clinical applications, of that research.

NBAC identifies broad principles to govern the ethical conduct of research, citing specific projects only as illustrations for such principles. However, NBAC is not responsible for the review and approval of specific projects. In addition to responding to requests for advice and recommendations from the National Science and Technology Council, NBAC also may accept suggestions of issues for consideration from both the Congress and the public. NBAC also may identify other bioethical issues for the purpose of providing advice and recommendations, subject to the approval of the National Science and Technology Council.

7.3 Fundamental principles of human research ethics (respect for persons, beneficence and justice); principles of international and national ethical standards

There are three main principles to be observed in research ethics:

- Respect for persons,
- Beneficence and
- Justice

Respect for persons
This can be taken to mean that an individual's rights, interests and dignity are duly recognised and respected, especially those who are vulnerable. Informed consent is only one element in demonstrating respect for persons. Individuals should not be treated as mere means to research ends. Three important elements to observe are:

- Self-determination
- Informed consent
- Protection of vulnerable populations
Beneficence (and non-malfeasance)
This requires giving due consideration to maximising benefits and minimising (if not preventing) harm. Research procedures should be developed with due consideration for the consequences of participation in the research. Important elements include:
- Weighing risks against benefits
- Safeguarding physical, mental and social well-being
- Reducing risk to a minimum
- Protecting participants

Justice
This requires giving due consideration to the benefits and burdens of research participation. For example, repeated participation in research by the same group of individuals may be unfair, particularly where there are no attendant benefits with such participation. Key elements in justice include:
- Distribution of risk and benefits
- Equitable recruitment of participants
- Protection of vulnerable groups

7.4 Ethical conduct of research through attention to issues of informed consent and how to handle vulnerable groups

In addressing ethical conduct of research one needs to review issues such as whose ethics, what type, legality of stated ethics, dealing with vulnerable populations, including minorities, informed consent from health administration versus individual health workers.

Elements of Informed Consent
Details given to participant prior to signing consent include:
- Research description
- Benefits accruing from the research
- Alternative solutions to the problem
- Confidentiality
- Compensation
- Voluntary participation
- Opportunity for withdrawal of research subject at any time, without punitive action
- Contact
- Documentation of informed consent

Researchers’ Responsibilities
- Protection of human participants
- Conduct research according to protocols (Good Clinical Practice, Good Laboratory Practice)
- Compliance with ethical committee (EC) requirements.
- Post-study, long-term interest of participants
Sponsors’ Responsibility
- Ensure appropriate review, approval, and supervision
- Monitor research
- Select qualified researchers
- Provide policies and procedures guidelines
- Comply with local ethics requirements
- Ensure local relevance of research
- Provide research integrity

7.5 The role of ethical review boards (ERBs) in conducting research; engaging communities and other stakeholders; monitoring beyond ethics approval (compliance)

Ethical review boards, also called ethical review committees (ERCs) are mandated to ensure and coordinate ethical conduct of research and perform the following tasks:
- Review and approval of research proposals
- Supervision and monitoring of research
- Attending to special issues that may arise during research

Ethical review committees
- The composition of the committee follows standard membership guidelines including community representatives and other key stakeholders
- The committees have defined responsibilities in vetting research proposals
- The committees have standard operating procedures and processes for evaluating acceptability of research proposals

Criteria for review and approval of a research proposal
In allowing or rejecting a research application the committee is guided by the following considerations:
- Scientific design and conduct of research (research protocol)
- Methods of recruitment of participants
- Considerations of community interests
- Care and protection of research participants
- Informed consent
- Confidentiality

Post-approval roles and monitoring
- Following up on sponsor’s obligations and responsibilities in implementation of the research ethics committees
- Community (public interest groups)
- Regulatory agencies
- Data safety monitoring boards

Other reporting requirements include:
- Any alteration to the research protocol must be approved by the committee
• Consideration of new study sites
• Recruitment procedures
• Reporting adverse events relating to the conduct of the research
• Documenting problems and how they are addressed

7.6 Special Issues that may arise during conduct of the research

The following issues may need to be confronted by the committee:
• Equity in research; Are different interest groups adequately represented in the research? Are they represented in the ERB?
• Conflict of interest: This may arise, for example, when pharmaceutical companies sponsor research whose findings could affect their products
• Scientific misconduct: Researchers with preconceptions about results may manipulate the measuring instruments to favour certain readings
• Authorship: It is important that authorship of research be accurately cited. Plagiarism should be carefully guarded against. Using names of supervisors and mentors as authors sometimes becomes an issue. Authorship should be carefully assessed and based on objective assessment of actual contributions
• Professional misconduct: ERBs need to ensure that researchers maintain professional norms and standards
• Maintaining scholarly and research integrity, by the researcher, research team, sponsoring institutions and accountability to the scientific community and to the wider social community
• Other significant issues include scientific merit, justification, safety, careful planning, requisite competence, and adequate resources
SECTION III

SESSION EIGHT: ROLE OF PROGRAM MANAGERS IN OPERATIONS RESEARCH

Duration: 2 hours, 45 minutes

Learning Objectives

By the end of this session participants should be able to:
1. Describe the roles of program managers in design, planning, implementation, use and dissemination of operations research
2. State the manager’s rights and responsibilities in OR
3. List characteristics of effective research collaboration

Teaching Methods:
- PowerPoint technical presentation
- Scenario/case-based
- Presentation
- Brainstorming and discussion

Teaching Materials:
- Computer/LCD projector
- Flip charts/newsprints
- Handouts
- Scenarios or cases
  1. Generic OR proposal
  2. OR intervention report

Reference Materials:
8.1 Roles of program managers in design, planning, implementation, use and dissemination of Operations Research

The program manager’s role in research includes:
1. Identify (diagnose) the program problem to be solved or decision to be made (see Session Three A)
2. Decide if research is required (consult with staff and a researcher)
3. Set parameters for the research design
4. Oversee research implementation
5. Plan for use and scaling up
6. Plan for dissemination

It is important to be certain that a program problem exists and, once ascertained, that the problem be accurately diagnosed. Session Three A sets out the guidelines for identifying program problems.

Once the problem has been identified, it is then time to decide whether it is researchable.

Start by asking, “Is research necessary?” Only as a last resort.
- Are there any questions that cannot be answered by experience or common sense?
- Is there enough time, money and other resources to do research?
- Does the literature tell us how similar problems elsewhere were solved?
- If the answer is yes, then there is no need for research!

Roles include negotiating space and roles with planners, policy makers, donors and users.

In participating in research design, the manager needs to give critical thought to the following:
- The program problem or decision
- The complexity of the design
- The experience of the researcher
- Strength of the host organization, i.e. ability to conduct research
- Volatility of the situation, e.g. insecurity, social upheavals (civil war), natural disasters, social-cultural environment
Choosing solutions for testing
Solutions to program problems are largely found among the following:
- Program staff
- Clients
- Community
- Limited literature
- Limited number of researchers

Evaluating Solutions:
- Is the solution affordable and sustainable?
- Is it easy to implement?
- Is there evidence that the solution can be successful?
- Can the impact of the solution intervention(s) be measured?

Setting parameters for the research design
The manager also needs to set parameters for research design, including:
- Identifying the information needed to make the decision
- Determining when the information is needed (set research time frame)
- Determining the level of precision required from the data (what is the consequence of a bad decision?)
- Determining what level of obtrusiveness in the research can be tolerated
- Identifying resources that can be used

Research Implementation
Successful implementation of research requires attention to administrative matters to ensure that the research parameters set above are observed and that there is effective participation of all research partners. Appropriate monitoring ensures that implementation proceeds on course and those corrective measures are done in a timely manner.

Role in Monitoring Research
The manager’s role in monitoring research includes the following:
- Make sure staff cooperate in the research effort
- Maintain contact with researchers throughout the project
- Check with researchers before making changes in the program that might affect the research effort

Then ask, “Is the research relevant?”
- *Hypothesis:* An intervention to encourage individual clients to communicate more with providers in a clinic setting will result in longer consultations
- *Results:* No significant difference between groups
- *“Based on this evidence…”* (the intervention will be scaled up nationally). Because individual client education is not practical on a nationwide scale, a more cost effective mass media campaign *(will take place).*
Key issue for managers (and researchers)
- In an intervention study you must monitor both the measurement and the intervention.
- If you cannot explain how much of an activity produces a result you cannot replicate or scale up. It's like prescribing a medicine without giving a dosage!

Role in dissemination
- Identify key audiences (service providers, policy makers, ministers)
- Identify effective means of dissemination (seminars, presentation at annual meeting, newsletter, etc.)
- Help in presentation of results

Managers' role in use of research results
- Use the results in making a decision!
- Make plans for scaling-up a successful intervention

8.2 Managers' and researchers' roles, rights and responsibilities in OR

Managers' roles and rights
The manager has the following roles and rights in research done within the program:
- Right to be an author and publish findings, as well as be a presenter
- Right to participate in problem identification, formulation of the research problem, and research design
- Right to set the research parameters
- Right to be informed of progress

Managers' responsibilities
The manager has the following responsibilities in research done within the program:
- Responsibility to ensure compliance with research guidelines and standards and hence integrity of the research
- Responsibility to consult with researchers
- Responsibility to ensure use of findings in decision making
- Responsibility to participate in dissemination of research findings
- Responsibility to ensure scaling-up

Researchers' roles, rights and responsibilities in OR
The researcher has the following rights and responsibilities:
- Right to be an author and publish findings, as well as be a presenter
- Right to participate in problem identification, formulation of the research problem, and research design
- Right to expect compliance from providers and program staff
- Responsibility to consult with program managers
- Responsibility for the integrity of the research
- Responsibility to participate in dissemination of research findings
- Responsibility to assist in scaling-up
8.3 The characteristics of good collaboration in OR

Managers and researchers require effective collaboration to fulfil their roles in research. Characteristics of good collaboration include the following:

- Researchers and managers collaborate in every phase of the project from problem identification to research design and utilization
- Managers and researchers respect and trust each other
- Managers and researchers share credit and responsibilities
KENYA LINKS RESEARCH TO PROGRAMMATIC DECISIONS

The members of the national advisory board looked expectantly at the Minister of Health as he began to speak. “Welcome to the third meeting of the national advisory board for our health program’s decision linked research project,” he began. “According to our recent Kenya Demographic and Health Survey (KDHS), 59% of married women of reproductive age in Kenya are in need of family planning, but for various reasons are not using the available services. Our research questions should help us explore the factors related to this unmet need and guide us towards programmatic decisions that will help reduce it. The project’s researchers are here today, so that we can work together with them to develop questions and explore possible methodologies for the research.”

“According to the Kenya Demographic and Health Survey, between 95% and 97% of our clients, both women and men respectively, have knowledge about family planning methods,” said a representative from the Information, Education, and Communication (IEC) division of the Ministry of Health. “More than 65% of women in urban areas have heard family planning messages via radio or television. But the IEC campaign is reaching less than 28% of women in rural areas, and 80.7% of women in rural areas do not have a television. What are some effective ways of reaching these women with information?”

“I am concerned about the depth of client knowledge of family planning methods, something that KDHS did not explore,” said a provincial health officer. “I would like to know more about what they know and how it relates to their unmet need. For example, what information might increase their demand for and use of modern contraceptive methods?”

“We have printed informational materials available in the waiting area at all our clinics,” said another provincial health officer. “But as the KDHS brought out, 22.1% of the women of reproductive age in my region have never attended school, and 51.8% have attended only primary school. I would like to know whether they understand the messages in the IEC materials we provide, and if not, how we can make the information easier for them to understand.”

“I come from a rural area where women respect their health providers but are afraid to ask questions,” said a community elder. “I think that a greater emphasis on counseling by providers might be more effective than a mass media campaign at increasing women’s knowledge. I would like the researchers to explore women’s experiences with their providers and find out whether providers are effective at counseling clients.”

The project’s chief researcher stood up to speak to the group. “It seems to me that you have raised three areas of concern so far,” he said. “You would like to explore the depth of women’s knowledge of family planning, and how best to reach rural, semi-literate women, in particular with information about family planning methods. Is this correct?” The board members nodded in agreement. “It also seems to me that you think that increasing their depth of knowledge could increase women’s demand for and use of contraception and reduce their unmet need.” They nodded again.
“As for reaching clients with information, so far you have mentioned three ways: mass media campaigns, IEC materials, and counselling,” he continued. “These three ways of disseminating information have very different implications for your program. By its nature a mass media campaign provides general information and is geared for a wide audience. Mass media messages are developed at the national level, IEC materials are more detailed, but they are still impersonal and standardized, and are also usually developed at the national level. Counselling, on the other hand, is geared to the individual client. The national programs might have standards and guidelines, but the act of counseling occurs at the service delivery level.

“Yet in examining these three ways of reaching clients, our source of information for all of them is the client herself. What messages has she received? How does her knowledge affect her decision to use contraception? How confident does she feel in asking questions of her provider?” The researcher paused, “Am I on the right track?” The board members nodded. “To gather this kind of information about client knowledge and behavior I would suggest using focus group discussions.” A murmur of agreement ran through the group.

“I think that it might be important to get the providers’ perspective on reaching clients also,” suggested a provincial health officer. “Do they feel that the current mass media campaigns help them do their jobs? Are our IEC materials providing the same messages that we have asked them to give our clients? What is their attitude toward counseling?”

“You have raised interesting questions,” said the researcher. “I would also suggest holding focus group discussions with service delivery providers and observing provider-client interactions.”

“Having information like this about a broad spectrum of our clients, from rural to urban, educated to illiterate, young to old might for the first time provides us with a comprehensive view of our clients and their information needs,” said the minister of health. “It will help us to decide how we might need to revise our mass media campaign and IEC materials. It could also help us think about our provider training and supervision programs and how counseling skills might be improved and applied more systematically.”

“One of the reasons we formed a National Advisory Board was to make sure that the research is done in a collaborative way and that it remains focused on identifying the changes we need to make in our programs to reduce unmet need,” he continued. “I think this discussion is proving the usefulness of this approach. Let’s take a break and discuss some of the other data we need to collect and the types of quantitative analyses we might undertake.”
CASE DISCUSSION QUESTIONS: LINKING RESEARCH TO PROGRAMMATIC DECISIONS

1. What is the role of the advisory board in the decision-linked research process, and what should the board include in terms of reference for the researchers?
2. What are some of the factors related to unmet need that the board members have raised in their meeting and that they would like the researchers to address?
3. What are the board and the researchers doing to break down the barriers and differences that commonly exist between researchers and decision makers?

CASE ANALYSIS: KENYA LINKS RESEARCH TO PROGRAMMATIC DECISIONS

1. What is the role of the advisory board in the decision-linked research process, and what should the board include in terms of reference for the researchers?

The primary roles of the advisory board in the decision-linked research process are to:

• Establish an effective partnership in which both researchers and decision makers have equal standing and can work effectively together;
• Advise on all aspects of the research process, from the selection of the principal researchers to helping develop the principal research questions and the methodology;
• Develop terms of reference for the researchers;
• Respond to and disseminate preliminary results, develop plans for disseminating final results, and work with decision makers to use results to improve program performance.

The terms of reference that the advisory board develops for the researchers should state that the researchers must:

• Participate in board meetings to clarify issues related to the research subject, program performance problems the research would address, and interest of the various stakeholders;
• Prepare and submit to the board a research protocol that describes the background of the problem, objectives, research design, data collection methodology, work plan and budget;
• Conduct the research following the protocols agreed upon in collaboration with the advisory board, including supervision of research workers;
• Conduct data processing activities, including quality control of data input;
• Meet periodically with the board to discuss the results of their efforts, submit a draft final report with decision options for using the findings to improve program performance, and collaborate with the board to develop dissemination and utilization plans;
• Revise as needed the draft report, which should include decision options on using findings to improve program performance;
• Work with stakeholders to translate findings into practical actions to improve program performance.

2. What are some of the factors related to unmet need that the board members have raised in their meeting and that they would like the researchers to address?

The board members are concerned about information barriers to unmet need, specifically in relation to demand, provider counseling, and culture.

**Demand.** Several board members raised issues that relate to demand.
• A representative from the IEC division of the Ministry of Health notes that the national IEC campaign is reaching less than 28% of women in rural areas, and that 80.7% of rural women do not have a television. The representative would like to learn effective ways for reaching these women with information (and thus increase their demand for and use of services and family planning methods).
• A regional health officer notes that the KDHS did not explore the depth of knowledge of family planning messages. The officer would like to know more about what clients know and how it relates to their unmet need. She would like to learn more about what kind of information the health program could provide that would increase client demand for and use of modern contraceptive methods.
• Another regional health officer points out that the vast majority of women in the region are semi-literate and thus not able to read the IEC materials available. The officer would like to learn whether the women understand the messages in these materials, and, if not, how to reach them more effectively.

**Provider counseling.** Several board members are interested in learning more about the attitudes and experiences of both providers and clients related to counseling. The findings could have implications for supervision and training providers, in particular how their counseling skills might be improved and applied more systematically.

**Culture.** A community elder raises the point that women in his community are afraid to ask questions of their providers. The elder would like the researchers to explore women’s experiences with their providers and find out whether these providers are effective at counselling clients. The findings could have implications for the type of training that counsellors receive, as it may need to take these cultural sensitivities into account.
3. What are the board and the researchers doing to break down the barriers and differences that commonly exist between researchers and decision makers?

The advisory board and researchers are doing the following things to promote collaboration and consensus:

- The minister of health opened the meeting by stating the group’s objectives for the day. This set a positive tone and directed the participants toward a common goal.
- The board members were prepared for the meeting. They were able to explain to the group what information they already had, based on a recent KDHS survey and their knowledge of their communities. They also identified information that they felt they lacked.
- The chief researcher was effective at:
  - Summarizing and synthesizing the issues that the board members had raised, and asking for feedback to make sure that he had interpreted their points correctly.
  - Identifying the relationship between the three ways of disseminating information to clients that the board members raised in the meeting (mass media, IEC, and counselling).
  - Showing how this relationship related to choosing a research methodology, in this case focus group discussions with clients.
  - Incorporating a new suggestion to look at providers’ attitudes toward counselling, and suggesting that they use focus group discussions with providers and that they add a new methodology, observation of provider-client interactions.
- Lastly, the minister was effective at synthesizing what the group had accomplished so far and how it related to possible programmatic decisions, such as revising the mass media campaign and IEC materials.
SESSION NINE: INTERVENTION FORMULATION/DEVELOPMENT

Duration: 2 hours, 45 minutes

Learning Objectives

By the end of this session participants should be able to:

1. Describe the aim and characteristics of intervention formulation.
2. Describe the process of intervention development.

Method

- PowerPoint technical presentation
- Exercise and discussion

Teaching Materials

1. A defined problem and objectives (half proposal) for which possible solutions are to be worked out
2. Implementation development tools, e.g. the Performance Improvement Framework
3. Computer/LCD projector
4. Flip charts/newsprints
5. Handouts

Reference Materials

2. Semi-complete research protocols

Session Content

9.1 Aim and characteristics of intervention formulation

In formulating an intervention, it is important to select the most targeted and cost-effective strategy that will help provide answers to identified program problems. Important characteristics to look for are listed below.

Characteristics of an OR intervention

- Results-oriented
- Comprehensive
- Systemic
- Cost-effective

Systemic (Applying a production framework)

- Inputs/Resources
- Processes and procedures
• Outputs, outcomes, and impact

9.2 Process and steps of intervention development.

Intervention development is a systematic process with sequential steps.

Steps in OR process and intervention development
1. Identify and diagnose the problem
2. Generate a programmatic intervention to solve the problem
3. Test the intervention through implementation and evaluation
4. Disseminate the results
5. Ensure the results are used to address the problem (use of results)

Steps in selection and designing intervention
1. Select intervention
2. Develop a design plan for each intervention
3. Document and get approval of the design
4. Develop, field test (where appropriate), and produce final version

Participants in intervention development
The intervention steps are done in collaboration with:
• Key client contact
• Stakeholders
• Design and implementation teams
• External expertise

Step One: Selection of intervention
• Aim is to propose interventions that address the problem identified and described
• Think of alternative interventions and compare those alternatives
• Agree on general interventions
• Describe these in sufficient detail
• Make a list of interventions

Steps in selection
• Develop selection criteria
• Brainstorm on possible interventions
• Apply the criteria
• Select the intervention using the criteria

Develop selection criteria
In selecting interventions, one needs to address the following issues and concerns
• Time bound: able to implement by a certain time
• Cost and affordability
• Feasibility; start with simple interventions
• Least dependent on outside assistance
• Most effective at solving the problem identified
• Culturally acceptable
• Sustainable
• Acceptable by the implementer; in line with goals and plan of the organisation
• Requires no external supervisors

Identify possible interventions
Start with problem identification and let the nature of the problem determine the selection of the intervention

OR problems are usually stated in terms of programme outcomes and can be broadly categorized as:
– Access and availability
– Quality
– Efficiency

Categorise the research type
• Exploratory or diagnostic study
• Field intervention study
• Evaluative study
• Cost-effective study

Step Two: Develop a design plan
Aim is to
• Identify expectations and design plan
• Put in place a team to design and develop intervention
• Gain common understanding of the program direction

The team
• Multi-skilled (if many interventions)
• Intervention specialists
• Key client
• Representative of target group
• Provision for late entrants to the team
• Arrangement for team planning meetings

Team planning meetings
The initial meetings aim to:
• Summarize the findings of diagnosis and definition of the problem
• Agree on objectives of the assignment
• Develop the team’s work plan
• Agree on plans for working with clients
• Decide how they will work together
• Decide who will do what
• Decide how much of what will be done
• Decide when, where, and to whom it will be done
• Decide on the purpose for doing it
Output from the Team
- Expected result
- Indicators
- Process and steps
- Time frame
- Resources

Step Three: Document and receive approval
- Share intervention plan with key client and other decision makers
- Get input from intervention specialists as to feasibility, adequacy, and suitability
- Discuss timing, resources, and sequencing
- Compare with other similar interventions

Step Four: Produce final version of intervention
- Select and train staff
- Develop and field test
- Review with users, clients, and content experts
- Use feedback to finalize the document for use

Implementation of intervention goal
- Execute the intervention
- Create and manage implementation teams
- Manage implementation
- Oversee organizational change

Outputs from implementation
- Implementation team
- Implementation plan
- Intervention agreements with cooperating agencies
- Interim reports on milestones
- Completed intervention

Implementation steps
- Build implementation team(s)
- Develop a detailed implementation plan
- Conduct monitoring activities and meetings

Building a team
- Maintain stakeholders agreement
- Identify necessary professionals to implement plan
- May need to engage other organizations
- Draw up an MOU specifying goals, methods, milestones, deliverables, and deadlines

Detailed implementation plan
- All team members understand their roles and responsibilities
- All know expectations of the intervention
• Determine evaluation milestones
• Construct overall plan detailing the roles of each individual implementer
• Meet to identify intersection points
• Obtain commitment to responsibilities, deliverables, milestones, and deadlines

**Conduct monitoring activities**
• Monitor progress of plan
• Keep stakeholders informed
• Resolve obstacles
• Review adequacy of materials and continued support
• Track organizational changes

**Monitoring Check list**
• Is leadership supportive?
• Do target groups accept use of intervention?
• Are there any external conditions that may affect implementation?
• Are required resources in place; does the capacity to implement intervention exist?

**PRACTICAL GROUP WORK**

The health system case study (Appendix 2) is used to develop interventions for selected OR problems identified in previous group work. The group discussions are then presented and discussed in plenary.
SESSION TEN: THE KENYA NATIONAL REPRODUCTIVE HEALTH RESEARCH GUIDELINES

Duration: 1 hour

Learning Objectives

By the end of this session participants should be able to:
1. Describe the Kenya National RH Research Guidelines

Method:
- Presentation and discussion

Teaching Materials:
- Computer/LCD projector
- Flip charts/newsprints

Reference Materials:

Session Content

10.1 Content and details of the national RH guidelines

Capacity building for DRH
The DRH has been undertaking capacity building measures to improve effectiveness and efficiency of the RH program. Measures include:
- National RH Research Guidelines
- The DRH Web site, which includes a searchable database of RH research
- DRH Resource Centre
- Data for decision-makers training module
- Research management training module

Justification for the guidelines
- Absence of relevant research evidence to influence RH programs
- Absence of a coordinated research agenda
- Absence of a standardized way of conducting RH Research
**Key collaborating government partners:**
- Ministry of Health, Division of Reproductive Health
- Ministry of Education, National Institute for Science and Technology

**Bi-lateral agencies**
- World Health Organization

**Research institutions**
- Kenya Medical Research Institute

**Other partners:**
- Nongovernment organizations: Maendeleo Ya Wanawake
- Collaborating agencies:
  - Family Health International
  - Population Council
  - Population Services International
- Teaching institutions
  - University of Nairobi, Dept of Obs/Gynae & School of Nursing
  - Moi Referral & Teaching Hospital
  - Nairobi Teaching Hospital
  - Kenya Medical Training College
- Donors: United States Agency for International Development

**Capacity building process**
- Workshop to set research agenda - 2004
- USAID-funded capacity building project implemented through FHI – 2004
- Draft research guidelines developed - 2004
- Stakeholders meeting to review draft guidelines – 2004
- Research working group – 2006
- Production of research guidelines - 2006
- Dissemination of research guidelines - 2006

**Objectives of the RH research guidelines**
1. Improve DRH research management
2. Provide clear steps for RH researchers in Kenya
3. Facilitate increased use of research findings in programs
4. Facilitate increased demand for evidence-based programming

**Target audience for the guidelines**
- RH researchers wishing to conduct RH research in Kenya
- Policy makers, practitioners, and development partners working in Kenya
- DRH/MOH staff implementing programs
- NGOs implementing RH programs
- Private sector

**Content of the guidelines**
Section One: Overview of RH in Kenya
Section Two: 2004 DRH focus research areas
Section Three: Implementing RH research within the DRH
Section Four: Basics on research ethics
Appendices

**Use of the guidelines would ensure:**
- Reproductive health research priorities are being addressed
- Assessment of research proposals for consistency with acceptable practices and standards
- Good laboratory and clinical practices are followed
- Conformity to ethical standards

**Use of the guidelines would:**
- Provide a basis for reviewing the concept proposals
- Facilitate a tracking mechanism for documenting all RH research being conducted in the country
- Ensure adequate dissemination and use of RH research findings
- Provide a standard for supervision of any RH research activity

**Summary messages**
- DRH is committed to evidence-based programming
- Guidelines and accompanying systems are key to ensuring that programs are influenced by relevant research only
- Research guidelines aim to **bridge the research practice gap** by facilitating a coordinated agenda with the DRH and repository
SESSION ELEVEN: INTERPRETATION, DISSEMINATION & UTILIZATION OF OPERATIONS RESEARCH RESULTS

Duration: 2 hours

Learning Objectives

By the end of this unit participants should be able to:

1. Discuss the concepts of statistically and programmatically significant association or difference, and the differences between correlations and causality
2. Critically appraise findings based on qualitative data
3. Enumerate the importance of documentation and dissemination of research findings
4. Describe the factors influencing the use of research results among RH programme managers and encourage an evidence-based approach to decision making
5. Describe the importance and requirements for scaling up and research to policy interventions, including communication for policy makers

Teaching Methods:
- Technical presentations
- Group work
- Discussions

Teaching Materials:
- Computer/LCD projector
- Flip charts/newsprints
- Handouts

Reference Materials:

Session Content

11.1 Meaning and issues of interpreting data from experimental and cross-sectional studies

Issues in research findings and basic research questions
- Is there a difference between the experimental and control groups?
- Are the findings credible and reliable?
- Is the difference statistically significant?
- Does the design allow one to rule out alternative explanations?
- Is the difference meaningful in a practical sense?
- Do the findings address issues of interest to the target audience?
- Do the findings address issues the audience can act upon?

Correlation versus causality
- Correlation is defined as a statistical relation between two or more variables such that systematic changes in the value of one variable are accompanied by systematic changes in the other. Correlation does not necessarily imply that change in one variable causes change in or influences the other’
- Causality implies that the relationship is such that change in one variable causes change in the other’

Examples of correlations in RH studies (derived from the Safe Motherhood Demonstration Project in Western Kenya and the Reintroducing the IUD Initiative)
1. Facilitative supervision is correlated with quality of ANC
2. Quality of referral system is correlated with peri-natal mortality
3. Breast-feeding is correlated with cognitive development.
4. Health facility capacity correlated with IUD use

It is important to remember that a perceived relationship between two variables may be caused by another factor, which is independently related to the two variables. This third factor is called a confounder.

Can you think of confounders in the examples above?
(Level of knowledge/attitudes; availability and quality of communication; economic capacity)
Common confounders
– Other events occurring at same time caused results
– Groups were not comparable
– Self-selection

Causality
Where a cause and effect relationship is proposed, one variable may be causing or influencing the other. This is further supported by the following elements:
• Time series: Occurrence of effect is preceded by causative variable
• Dose-response effect: Change in one variable is accompanied by a commensurate change in the other variable
• Biological plausibility
• Evidence from other sources/studies

Inferential statistics
Tests of statistical significance are done to confirm association of factors, i.e. to test the reliability of differences between groups. These include:
- Chi-Square
- T-Test
- F-Test

Definition of statistical significance:
The value or measurement is larger or smaller than would be expected by chance alone, implying that the independent variable is affecting the results.

Significance Conventions
P < .01; P < .05; P < .10; P < .50

Factors contributing to statistical significance
• Sample size
• The power of the intervention

Statistically significant does not mean that the result is important!

A conservative recommendation
*If a result is not statistically significant there is no difference between groups
STOP!
*If a result is significant ask, “Is the difference practically meaningful?”

ALWAYS ASK:
“What is the quality of the data that we are using to make this important program decision?”
Are the findings reliable?

RELIABILITY:
• A reliable measure gives the same results every time.
Example
- The doctor asks the mother her weight. She says 65 kgs.
- The nurse asks the mother her weight. She says 70 kgs.
- The pharmacist asks the mother her weight. She says 60 kgs.
- Is the mother’s information reliable?

Manager’s role in producing reliable results
- Make sure your staff are collaborating with the researchers
- Make sure that forms and records are available to and reaching the field
- Prepare for negative results!
  - A > B
  - B > A
  - A = B

When findings don’t support your hypothesis:
- Don’t blame the respondents or the interviewers
- Don’t present questionable analyses

Examples
Don’t blame the respondent
- African Situation Analyses studies: More than 95% of clients report they are “satisfied” with quality of services. Researchers can’t believe it! They ascribe high levels of satisfaction to “courtesy bias.”

Don’t blame the observer
- “We chose not to include data on whether clients were treated in a friendly manner. … Either … providers are sensitive as our data indicate, or, more likely, our observers are incapable of recognizing brusque or discourteous behavior. Because the observers, like the providers, are … of a higher social status than the clients, they may, despite considerable training, lack the ability to be empathetic to the client’s situation.”

Don’t present questionable analyses
Two quality of care studies with same design:
- Causal analysis: No significant differences in continuation between experimental and control groups. Authors perform correlation analysis: higher quality associated with longer continuation.
- Senegal: “…provides empirical proof that receiving good quality of care influences the continued use of contraception.”
- Philippines: “The most important finding is that quality of care… influences subsequent contraceptive use…”

REAL WORLD RESULTS:
*Programs invest in interventions that do not work and fail to invest in interventions that do*
Your responsibility as a manager: Never say the research has solved the problem when it has not.
11.2 Examples of results from qualitative studies

Examples of studies:
1. Results of an OR study to increase intrauterine device (IUD) knowledge, improve attitudes towards IUD and increase IUD use: Experimental and control comparison
2. Results of a study to reduce number of traditional birth attendant (TBA) assisted deliveries, increase ANC attendance and increase health facility (HF) deliveries: Before and after comparison

Two particular examples from Kenya offer insight into interpretation and dissemination of research findings to achieve improved RH program performances:

11.3 Importance and process of documentation and dissemination of research findings

- Improve communication between researcher and study participants
- Provide communication tools in support of policy change to researchers and (RH) advocates
- Help other researchers, scientists and decision-makers understand the social, cultural, political, or economic factors influencing RH
- Empower vulnerable, disadvantaged, voiceless groups
- Keep RH issues alive in the media, among donors, and in public health communication

Why disseminate OR findings?
Because OR is applied research, its results must be appropriately interpreted, widely disseminated, and used to inform decision making. And this should be planned for beginning with the design stage and budgeting.

- It is an obligation in scientific research to share findings
- Dissemination spreads knowledge of what program approaches work or are promising
- It facilitates the use of evidence for program improvement, policy review, and development of new policies. The importance of dissemination is contained in reports of some Kenyan OR studies, including (see references below):
  - “Translating research into practice: Reintroducing the IUD in Kenya”
  - The Western Kenya Safe Motherhood project
  - The Obstetric Fistula needs assessment
The Dissemination Process
- Organizing the research evidence into easy to understand formats
- Delivering the information through channels appropriate to the target audience
- Following up to support use of the findings

Issues in designing dissemination
- What key findings from the study should be communicated to what audiences?
- What channels of communication should be used for what audience?
- What outcome should be expected?
- What is needed to ensure use?

Possible Dissemination Channels
- Printed reports and summaries
- Publication in peer review journals
- Mass media (press releases, articles)
- Professional journals
- One-on-one meetings
- Internet (Web sites, e-mail listservs)
- Meetings, presentations (conference, in-house discussions)
- Distribution of fact sheets
- Use of traditional media (song, dance, drama, puppetry, posters, billboards)
- Audiovisual presentations
- Modern communication approaches, e.g. Information Communication Technology (ICT)
- Training workshops

Expected outcomes of dissemination
- The ultimate goal of dissemination is use of findings
- Dissemination creates awareness and demand for the research data
- Dissemination can also lead to requests for more information and more research

11.4 Factors influencing the use of research results. How managers can ensure that research results are likely to be programmatically useful

Use of OR
Can be defined as:
- OR findings used in decision-making
- Successful pilot interventions sustained after study
- The OR innovation is promoted and adopted by other agencies (scaling up)
Factors promoting use of results
- The quality of the research
  - Appropriate design and analysis
  - Competent researchers
  - Well-controlled research process
- Political and program context
  - Are the findings relevant to current priorities?
  - Are there external factors that may influence what action can be taken?
- Relationship between researchers and decision makers
  - Nature of the relationship
  - How frequently and cordially do they interact?
  - Do researchers have a role in helping RH managers apply results?
- Systematic and focused dissemination activities, appropriate and timely
- Commitment to research utilization
  - Are resources available to implement findings?
- The sustainability of the pilot intervention:
  - Are additional resources needed, or can existing resources be re-allocated?
  - Who is responsible for financial decisions?

Barriers to research utilization
- Poor relations between researchers and policy makers
- Poorly organized dissemination activities
- Research findings being inapplicable to the policy process or program management
- Research is of poor quality
- Failure by researchers to understand the policy process and when research is needed

11.5 From research to scaling-up: Moving from pilot programs and knowing when to scale up or replicate; communication for policy makers

Reproductive health indicators remain poor in many countries despite decades of innovative, successful small-scale projects. Accordingly, there is a pressing need to identify strategies to expand, replicate, or scale up such projects, accompanied by an increasing demand for evidence-based decision making. Mainstreaming innovations, through research to policy interventions, guarantees sustainability.

Policy makers may be averse to lengthy technical reports, hence the presentation of research findings targeting policy makers needs to be appropriately packaged into policy briefing papers and supported by timely policy briefing meetings.
Summary Notes

- Dissemination facilitates use by stimulating and sustaining dialogue to that encourages policy action
- Research can:
  - Inform the policy process
  - Set the agenda for policy change
- Research results influence the strategy for utilization

Group Exercise: 30 Minutes

Study the summary of findings and recommendations from a recent study:
- Identify the key policy and program actions needed
- Identify the obstacles you would have taking action on any of the recommendations
- Draft a tentative work-plan, illustrating how you would disseminate the findings in-house and the actions you would take to implement the appropriate findings
SESSION TWELVE: RESOURCE REQUIREMENTS AND THEIR MOBILIZATION FOR OPERATIONS RESEARCH

Duration: 2 hours

Learning Objectives

By the end of this unit participants should be able to:
1. Describe skills for accessing research funding
2. Describe the principles and skills for forging partnerships, fund raising and negotiating skills for program managers
3. Discuss the critical issues in developing budgeting and writing skills for OR fund-raising

Method:
• Facilitated discussion

Teaching materials:
• Computer/LCD projector
• Flip charts/newsprints
• Handouts

Reference materials:
1. District planning guidelines – MOH Kenya
2. I@mak.com district resource mobilisation handbook

Session Content

12.1 Strategies for accessing RH program funding (resource mobilisation)

Developing a resource mobilisation strategy for OR requires consideration of:
• Scope
• Resource deployment
• Competitive advantage
• Synergy

Requirements, including skills
• Information gathering and networking
• Knowing the relative advantage or influence of stakeholders (funders and recipients)
• Resource mobilisation language
• Understanding the political environment

66
Pros and cons of alternative sourcing

- Reflect on district/local authorities’ budgets and planning and institutionalizing resources for OR……..
- External/donor support…..

12.2 Developing partnerships (expectations, qualities sought, inputs and outputs, ownership, benefits, responsibilities…)

Potential partnerships

- Donors/MOH/local governments
- Researchers/institutions
- Communities
- Technical assistance agencies
- Nongovernmental organizations (NGOs)
- Some key OR studies in Kenya that provide examples of partnerships include:
  - Translating Research into Practice: Reintroducing the IUD in Kenya
  - The Western Kenya Safe Motherhood Project
  - The Obstetric Fistula Needs Assessment
  - Cases in the Implementing Best Practices (IBP) Initiative

Developing partnerships

- Defining and understanding the concept
- Public relations and communication skills
- Advocacy for evidence-based programming

Ability to manage partnerships and resources

- Steering committee approach (i.e. feed forward control)
- Screening control – based on activities as they occur
- Awareness of any local government financial controls

The grant relationship:

- A match starts with a common interest in a problem or need
- It is fulfilled when your program designs help fulfill a funder’s objectives
- Funders address particular problems by granting funds to other agencies
- The contract: Your problem-solving services are exchanged for donor’s resources
- Through grants, both sides are getting their core needs met: A problem is solved
- Your task is to convince the funder that the match with your agency is excellent
- Grant seeking starts with your agency’s plan and programs, not donor priorities
- Still you need creativity to identify and define a match that both sides can accept
- There are usually several potential donors for a problem; your task is to find them
- Donor research and relationship development is a continuous task for all agencies
Grant seeking is learned by practice, like cooking or playing the ‘mbira’ musical instrument.

Grant seekers are made, not born; no one simply does this work naturally.

Grant seekers have to master a set of skills; some are technical, others are personal.

Grant seekers as people:

- Grant seekers are curious, always looking to learn from and about others.
- Grant seekers must focus on keeping records, following procedures and meeting deadlines.
- They must perform under many pressures, so they need to manage stress well.
- They juggle multiple tasks that demand careful planning and time management.
- They have good writing skills to organize topics and make ideas sound exciting.
- No one can prepare a grant proposal alone; grant seekers must work in teams.
- Grant seekers know how to give and take feedback with grace and dignity.
- Success in grant seeking depends on good interpersonal communication skills.
- Success also depends on confidence to present ideas and writing for scrutiny and perhaps rejection.

Donors and donor staff:

- Grant making involves no secret methods or insider tricks; it too is hard work.
- Grants are investments, and donor staff invest their agencies’ money for a living.
- Donors do not specialise in all fields; they must have trust in their grantees’ expertise.
- With each grant a grant maker’s reputation is on the line; they learn to be cautious.
- Grants are experiments; donors have to decide which are the best bets.
- The grant maker’s lament: There is too much money chasing too few great ideas.
- Grant makers look for practical innovation, positive change, and healthy speculation.
- They also seek thorough analyses of problems and professionalism in program design.
- The process is fair in that donors usually publish their priorities and procedures.
- Still, donor staff are affected by prejudices, personal viewpoints and past failures.
- Grant makers are people investing in people who work for the good of people.
Some keys to success in grant seeking:
Core characteristics that grant makers look for in grant seekers (including the 5 C’s):
• Credibility
• Competence
• Confidence
• Curiosity
• Commitment
• Getting it all “just right”:
• The right person
• The right amount for the right program
• The right time in the right way

Trends in grant making:
• Increased competition for resources: More applicants for less resources
• Better quality proposals: More professional and sophisticated products
• Emphasis on obtaining results and impact, and on leveraging other resources
• Demands for transparency, accountability, sustainability, and cost recovery
• More ancillary concerns
• Increased use of detailed application guidelines designed by each donor
• Decentralization of decision making on grants to country and regional offices
• More funding designated for national and local NGOs and CBOs
• Slight increase in regional or multi-country focus
• International NGOs seen as capacity builders

12.3 Principles of budgeting for OR

Review of the production system model in OR provides convincing evidence of the need for skills in budgeting, which in turn requires planning and management of inputs and processes to achieve planned objectives or outputs. In the context of resource constraints endemic to developing countries, effective and efficient resource use is critical and requires:
• Planning, managing and delivering services on a sustainable basis
• Meaningful (community) participation and empowerment in OR; who should be involved?
• Deciding on development goals and which philosophy informs them
• Shared responsibility or singular response?
SESSION THIRTEEN: PRESENTATION OF DRH WEB SITE AND WEB USAGE IN LITERATURE REVIEW

Duration: 1 hour

Learning Objectives

By the end of this session participants should be able to:
1. List and define common terminology used in information technology (IT)
2. Show skills in accessing the World Wide Web and the DRH Web site, including use of search engines to identify programs and publications on the Web site

Teaching Method:
• Discussion

Teaching Materials:
• Computer/LCD projector
• Internet connectivity
• Flip charts/newsprints
• Handouts

Reference Materials:
1. Standard IT training manual
2. Specific manual for Internet users
3. Specific learners manuals for RH electronic resources

Session Content

13.1 Common terminology used in IT

• World Wide Web/Internet - A system of computer servers linked together as information resources.
• Web site – a location on the Web (www)
• Web page – a document/information in a Web site
• Home page – main page in a Web site
• HyperText Mark-up Language – Web language that supports text, graphics, audio and video.
• Hyperlink – a link to a Web page or another Web site
• Browser – software/program used for locating and displaying Web pages.
Browsers commonly used include:

**Internet Explorer:**
This is also called Windows Internet Explorer or Microsoft Internet Explorer and is a series of proprietary graphical Web browsers developed by Microsoft and included as part of Microsoft Windows operating systems starting in 1995.

**Mozilla Firefox:**
This is a graphical Web browser developed by the Mozilla Corporation and a large community of external contributors. Firefox started as a fork of the Navigator browser component of the Mozilla Application Suite, which it has replaced as the flagship product of the Mozilla project, under the direction of the Mozilla Foundation. Mozilla Firefox is a cross-platform browser, providing support for various versions of Microsoft Windows, Mac OS X and Linux.

**Opera:**
This is a proprietary software, cross-platform Web browser and Internet suite that handles common Internet-related tasks, including visiting Web sites, sending and receiving e-mail messages, managing contacts and chatting online. It was developed by Opera Software, based in Oslo, Norway.

**Netscape Navigator:**
This is also known as Netscape and was a proprietary popular Web browser during the 1990s. Its use declined by the year 2002 partly due to the inclusion of Microsoft's Internet Explorer Web browser with the Windows operating system, but also due to lack of significant innovation after the late 1990s. Netscape's demise was a central component of Microsoft's antitrust trial, in which the court ruled that (among other things) bundling Internet Explorer with Windows was an illegal monopolistic business practice.

**Google:**
Google, also a search engine, rose to prominence around 2001. Its success was based in part on the concept of link popularity and page rank. The number of other Web sites and Web pages that link to a given page is taken into consideration with page rank, on the premise that good or desirable pages have more links than less desirable pages. The Page Rank of linking pages and the number of links on these pages contribute to the Page Rank of the linked page. This makes it possible for Google to order its results by how many Web sites link to each found page. Google's minimalist user interface is very popular with users.
Search engines
Definition of search engine: a program that searches Web sites, Web pages and documents corresponding to a specified keyword or search term. It compiles and displays a list of results.

- Search engines are very important when one needs information from the Web but doesn’t know the Web site address.
- When a search is complete, a list of the Web sites and Web pages found with matching keywords appears. In many cases millions of pages are compiled in a few seconds.
- To view search results, click on the hyperlinks provided to open the Web page in which the keyword has been found.

Examples of search engines
- Google - www.google.co.ke
- AltaVista - www.altavista.com
- MSN search - www.msn.com
- Yahoo search - www.yahoo.com
- Excite – www.excite.com
- Webopedia - www.webopedia.com – IT and computer
- Pubmed – medical publications (accessed by registering through the Internet)
- Cochrane – research outcomes (accessed through subscription)
- Blackwell Synergy – More than 1 million articles from nearly 1,000 journals. Requires subscription

13.2 Accessing the DRH Web site, including use of search engines to identify programs and publications on the Web site

With increasing development of the ICT and computer technology and software, the click of a mouse or button brings a flood of information. The information, as mentioned above, is contained in Web pages, which have addresses. Accessing a Web page for the first time often requires that one remember the Web address, but thanks to improvements in software technology, addresses can be automatically stored so that subsequent access to the same Web page requires no more than one click of the mouse or button.

DRH WEB SITE
- The Division of Reproductive Health of the Ministry of Health, Government of Kenya, has an active Web site, with the address www.drh.go.ke
- The Web site is a key disseminator and source of information related to activities and interests of the DRH.
- It contains information on the DRH’s background, programs, publications, policies, and guidelines, and has links to organizations that collaborate with the DRH. From the Web site, users can access a quarterly newsletter.

Programs on the DRH Web site
- Safe Motherhood and Child Survival
• Gender and Reproductive Health Issues
• Adolescent Reproductive Health
• Family planning
• Community Reproductive Health
• Monitoring and Evaluation

Publications on the DRH Web site
The Web site has a page with a list of publications. One can search for a publication using the following criteria:
1. Author
2. Title
3. Category

The DRH is publishing a quarterly newsletter and each publication is to be uploaded onto the Web site. Final reports and abstracts will also be uploaded frequently.

PRACTICAL GROUP WORK
Time: 30 Minutes

1. Practical on surfing the DRH Web site and the Wide World Web using key words from the case studies
2. The health system case study can be used to brainstorm on researchable OR problems in the groups. The group discussions are then presented and discussed in plenary.
SESSION FOURTEEN

CRITIQUING A PROPOSAL

Duration: 1 hour, 45 minutes

Learning Objectives

By the end of this unit participants should be able to:

1. Describe the proposal review process
2. Critique a proposal using a given critique framework.

Teaching Method:

• Simulation of a review panel to review a ready-made proposal
• Each review panel should have one person summarize the proposal, and one person determines the group consensus of review comments and recommendations. Other group members will be responsible for preparing independent reviews according to guidelines provided.

Teaching Materials:

• Checklist for proposal review/National RH Research Guidelines
• Three ready-made proposals

References:

14.1 Proposal review process

What to look for in a proposal
- Process of reviewing OR proposal
- Guidelines for proposal review (Review the Kenya National RH Research Guidelines)

A good proposal has a flowing logical sequence of information, aimed at convincing the reader of the rationale and justification for the proposed research. The outline below presents one common approach.

Generic proposal outline:
1. Introduction
   - Background information/context
   - Problem definition
   - Statement of the importance of the problem
   - Strategy to solve the problem
2. Objectives and hypotheses
3. Literature review and conceptual framework
4. Methodology
   - Research design and operational definition of variables
   - Intervention study designs
   - Data collection procedures and instruments
   - Data analysis
   - Duration of the study or work plan
5. Ethical considerations and critical assumptions
6. Dissemination and use of research findings
7. Budget

14.2 Critiquing a proposal using a given critique framework:
Definition of research critique:
A critique is an evaluation of strengths and weaknesses of the research work. Though the word critique has negative connotations, actually it refers to the process, not attitude.

A systematic approach to critiquing entails design, development, and use of a check list that contains the steps, elements, and procedures of proposal development and writing.

Specific objectives as check lists
- They are indicators for meeting research criteria
- Measure the quality of research
- Justify need for the research
What do you check?
- If the title is appropriate
- If the problem is stated clearly
- That the author differentiates between general and specific problems
- That the problem is a practical one that needs a solution
- The proposal explains what is significant about the problem
- How the author learned about the problem
- The proposal indicates the incident that stimulated the problem,
- Stated significance of the problem for future research
- That it is a reproductive health issue

Purpose
- What the researcher hopes to achieve is clear
- Why the researcher wants to do the study
- States who will benefit from the research
- Shows how the research will be used

Conceptualization
- That the concepts are defined
- That the concepts are relevant
- States who benefits from the study
- This should be step by step from problem to data analysis
- That there is a logical route for theory to research problem

Literature Review
- That it is specific to the study purpose
- That it includes specific and general background material
- That the literature review is adequate
- It is enough to allow understanding
- That the material includes current professional information such as journals and books
- Authors should be experts in their fields, e.g. obstetrics and gynaecology
- It is important that the literature contain both historical and contemporary material

Hypothesis and research question
- They should be clearly stated
- Based on theory
- Indicate direction and relationship between variables
- Concepts should be clearly defined
Study design
- Design should show good planning
- Indicate if original or replication
- Ensure all steps of scientific method are included for easy replication
- Any pilot study and changes made on report
- Pre-testing of instruments done for validity and reliability
- Measures taken to protect rights of research subjects, i.e. ethical issues and confidentiality

Methodology
- Sample has to be appropriate for hypothesis or research question
- Sample selection criteria have to be clear
- Sample should be representative of the study population
- Descriptive measures and statistical tests have to be appropriate
- Effort should be made to control variables
- Method of study has to be explained, e.g. if observation or experiment
- List research assistants and extent of training

Data Analysis
- Statistical tests must be used and interpreted correctly
- Level of significance should be reported
- Hypothesis accepted or rejected
- Presentation of data should be clear and consistent, with good interpretation and explanation

Conclusions
- Should be supported by data
- Should have important information from data
- Should be clear and concise

Limitations
- Useful to future research
- For the consumer, profession, or discipline
- For public, individual, or community
- Should be clearly stated

Recommendations
- Suggest further research
- Additional ideas for other research
- To source for grant or funding
- Suggest other hypotheses to be tested

Summary
- Areas of strength in the research should be highlighted
- Areas of the research that need improvement should be clearly stated
SESSION FIFTEEN: APPLYING SKILLS LEARNED

Duration: 2 hours

Learning Objectives

By the end of this unit participants should be able to:

1. Critique a proposal
2. Describe the proposal review process

Teaching Method:
• Review panel and discussion

Teaching Materials:
• A list of questions

Exercises

This is a practical exercise in which each group makes a presentation based on the knowledge and skills learnt in previous sessions.

Step 1: Panel presentation of the full proposals
Step 2: One of the panel members summarizes the proposal
Step 3: Reviewers’ comments
Step 4: Decision on possible funding from among options competing for funding
Duration: 2 Hours

Learning Objectives

By the end of this unit participants should be able to:
1. Establish teams and build networks to better apply and share acquired skills
2. Evaluate the course
3. Discuss follow-up plans

Method:
• Final written evaluation
• Individual interaction and networking

Teaching Materials:
• Evaluation form, (included as part of Appendix 1)
• Post-test evaluation followed by overall training course evaluation

Session Content

16.1 Distribution of participants' and facilitators' addresses
16.2 Course evaluation
   o Post-test evaluation followed by overall training course evaluation
   o Generate with the participants an evaluation format for immediate post-workshop and long-term evaluation
16.3 Ideas for follow-up activities
   o Researchable program problems for future collaboration discussed
   o Possibilities for step-down training/facilitation in OR issues at district level discussed
Appendix 1: Pre-Workshop Questionnaire

1. What are your expectations for the workshop?

2. What is your current position at your place of work?

3. Have you ever participated in research?
   a) Yes  ( )
   b) No  ( )

4. If yes, estimate the number of years of active participation    ______

5. If yes, briefly describe the following (where applicable). Your most recent research activity(ies)
   i) Title(s) of research: ________________________________________
      ________________________________________
   ii) Type(s) of research. ________________________________________
   iii) Institutions involved, ________________________________________
   iv) Funding, ________________________________________
   v) Goal(s) (Broad Objective), ________________________________________
   vi) Results:
      a. ________________________________________________
      b. ________________________________________________
      c. ________________________________________________

6. Have results of that research been disseminated?
   a) Yes  ( )
   b) No  ( )

7. Have results of that research been used in other settings?
   a) Yes  ( )
   b) No  ( )

8. If yes, where and when? ________________________________________

9. Concerning experiences from that research:
   i) What were the challenges?
      •
   ii) What were the lessons learnt?
      •

B. Pre- and Post- Test Questionnaire for OR training

1. Define Operations Research

2. List the steps in Operations Research
   i. ...
   ii. ...
   iii. ...
   iv. ...
   v. ...

APPENDICES
3. State two requirements necessary for a problem to be considered researachable.
   a) ........................................
   b) ........................................

4. State two requirements necessary for a problem to be classified as a programmatic problem
   a) ........................................
   b) ........................................

5. Of the following, tick only three that are considered key principles of research ethics:
   a) □ Justice   b) □ Fairness   c) □ Trust   d) □ Credibility
   e) □ Beneficence   f) □ Respect of human rights

6. Which of the following international documents, declarations, codes, and guidelines are relevant to research ethics?
   a) □ Nuremberg code   b) □ Warsaw Pact   c) □ Belmont Report   d) □ CIOMS
   e) □ Common Law   f) □ Better Research Ethics   g) □ Declaration of Helsinki

7. List at least five elements giving evidence for a cause and effect association
   i. ..
   ii. ..
   iii. ..
   iv. ..
   v. ..

8. List at least skills required in operations research
   i. ..
   ii. ..
   iii. ..
   iv. ..
   v. ..

9. State whether the following two statements are true or false:
   a) A non-valid indicator can be reliable  □ True  □ False
   b) An unreliable indicator can be valid  □ True  □ False

10. List at least five channels of research dissemination
    i. ..
    ii. ..
    iii. ..
    iv. ..
    v. ..
11. List at least five roles of RH program managers
   i. ..       iii. ..       v. 
   ii. ..       iv. .. 

12. A **serious** health problem is a program problem.
    a) True□       b) False□

13. List three characteristics of good research collaboration
   i. ..       ii. ..       iii. ..

14. List at least three procedures for effective resource mobilization
   i. ..       ii. ..       iii. ..

15. State two factors important in critiquing a proposal
    a)                         b)
Appendix 2: Pre- and post-test questionnaire for OR training

1. Define operations research

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

2. List the steps in Operations Research

i. ____________________________________

ii. ____________________________________

iii. ____________________________________

iv. ____________________________________

v. ____________________________________

3. State two requirements necessary for a problem to be considered researchable.

i. ____________________________________

ii. ____________________________________

4. State two requirements necessary for a problem to be classified as a programmatic problem

i. ____________________________________

ii. ____________________________________

5. Of the following, tick only three that are considered key principles of research ethics;
   a) □ Justice       b) □ Beneficence  c) □ Respect of human rights

6. Which of the following international documents, declarations, codes and guidelines are relevant to research ethics?
   a) □ Nuremberg code       b) □ Belmont Report  c) □ CIOMS

   d) □ Common Law       e) □ Declaration of Helsinki
7. List at least five elements giving evidence for a cause and effect association.
   i. __________________________________________
   ii. _________________________________________
   iii. _________________________________________
   iv. _________________________________________
   v.  _________________________________________
   vi. _________________________________________
   vii. _________________________________________

8. List at least five skills required in Operations Research:
   i. __________________________________________
   ii. _________________________________________
   iii. _________________________________________
   iv. _________________________________________
   v.  _________________________________________

9. State whether the following two statements are true or false:

   a) A non-valid indicator can be reliable

   b) An unreliable indicator can be valid

10. List at least five channels of research dissemination
    i. __________________________________________
    ii. _________________________________________
    iii. _________________________________________
    iv.  _________________________________________
    v.   _________________________________________
11. List at least five roles of RH program managers
   i. __________________________________________
   ii. __________________________________________
   iii. __________________________________________
   iv. __________________________________________
   v. __________________________________________

12. A serious health problem is a program problem.
   i. __________________________________________
   ii. __________________________________________
   iii. __________________________________________
   iv. __________________________________________
   v. __________________________________________

13. List three characteristics of a good research collaboration
   i. __________________________________________
   ii. __________________________________________
   iii. __________________________________________
   iv. __________________________________________
   v. __________________________________________

14. List at least three procedures for effective resource mobilization
   i. __________________________________________
   ii. __________________________________________
   iii. __________________________________________
   iv. __________________________________________
   v. __________________________________________
15. State two factors important in critiquing a proposal

i. ____________________________________________

ii. ____________________________________________

iii. ____________________________________________

iv. ____________________________________________

v. ____________________________________________
Appendix 3: Sample answers for pre- and post-test questionnaire training for OR

14. Define operations research

The study of factors under the control of the program manager that influence the operations of a program.

15. List the steps in Operations Research

i. Step 1: Problem identification and diagnosis
ii. Step 2: Generate a programmatic intervention to solve problem (strategy selection)
iii. Step 3: Test the intervention through implementation and evaluation (strategy testing and evaluation)
iv. Step 4: Information dissemination
v. Step 5: Use of research results and information in solving program operation problems

16. State two requirements necessary for a problem to be considered researchable.
   a) The problem cannot be explained/answered correctly by common sense and experience
   b) There is enough time, money and qualified persons to do research
   c) Those responsible for making decisions will listen to research results

17. State two requirements necessary for a problem to be classified as a programmatic problem
   a) There is a perceived difference between actual and desired client behaviours / staff performance/situation
   b) The cause of the problem is not known

18. Of the following, tick only three that are considered key principles of research ethics;

   a) □ Justice       b) □ Beneficence       c) □ Respect of human rights

19. Which of the following international documents, declarations, codes and guidelines are relevant to research ethics?

   a) □ Nuremberg code       b) □ Belmont Report       c) □ CIOMS

   d) □ Common Law       e) □ Declaration of Helsinki
20. List at least five elements giving evidence for a cause and effect association

   i. Dose effect response  
   ii. Evidence from other research  
   iii. Time sequence  
   iv. Biological plausibility  
   v. Statistically significant association, after excluding alternative explanations

21. List at least five skills required in Operations Research:

   i. “scientifically trained” minds, used to query assumptions, logic, exploring hypotheses,  
   ii. System thinking  
   iii. Designing OR skills  
   iv. Data Collection skills,  
   v. Analytical skills  
   vi. Communication skills

22. State whether the following two statements are true or false:

23. Define operations research

   The study of factors under the control of the program manager that influence the operations of a program.

24. List the steps in Operations Research

   i. Step 1: Problem identification and diagnosis  
   ii. Step 2: Generate a programmatic intervention to solve problem (strategy selection)  
   iii. Step 3: Test the intervention through implementation and evaluation (strategy testing and evaluation)  
   iv. Step 4: Information dissemination  
   v. Step 5: Use of research results and information in solving program operation problems

25. State two requirements necessary for a problem to be considered researchable

   i. The problem cannot be explained/answered correctly by common sense and experience  
   ii. There is enough time, money and qualified persons to do research  
   iii. Those responsible for making decisions will listen to research results
26. State two requirements necessary for a problem to be classified as a programmatic problem
   
   i. There is a perceived difference between actual and desired client behaviours / staff performance/situation
   ii. The cause of the problem is not known

27. Of the following, tick only three that are considered key principles of research ethics;
   
   a) □ Justice   b) □ Beneficence   c) □ Respect of human rights

28. Which of the following international documents, declarations, codes and guidelines are relevant to research ethics?
   
   a) □ Nuremberg code   b) □ Belmont Report   c) □ CIOMS
   d) □ Common Law   e) □ Declaration of Helsinki

29. List at least five elements giving evidence for a cause and effect association
   
   i. Dose effect response
   ii. Evidence from other research
   iii. Time sequence
   iv. Biological plausibility
   v. Statistically significant association, after excluding alternative explanations

30. List at least five skills required in Operations Research:
   
   i. “scientifically trained” minds, used to query assumptions, logic, exploring hypotheses,
   ii. System thinking
   iii. Designing OR skills
   iv. Data Collection skills,
   v. Analytical skills
   vi. Communication skills

31. State whether the following two statements are true or false:
   
   i. A non-valid indicator can be reliable   True
   ii. An unreliable indicator can be valid   False
32. List at least five channels of research dissemination

i. Printed reports and summaries
ii. Publication in peer review journals
iii. Mass media (press releases, articles)
iv. Professional journals
v. One-on-one meetings
vi. Internet (Web sites, e-mail listservs)

vii. Audiovisual presentations

viii. Meetings, presentations (conference, in-house discussions)
ix. Distribution of fact sheets
x. Use of traditional media (song, dance, drama, puppetry, posters, billboards)

xi. Modern communication approaches, e.g. ICT

xii. Training workshops

33. List at least five roles of RH program managers

i. Identify (diagnose) the program problem to be solved or decision to be made

ii. Decide if research is required (consult with staff and a researcher)

iii. Set parameters for the research design

iv. Oversee research implementation

v. Plan for use and scaling up

vi. Plan for dissemination

34. A serious health problem is a program problem. False

35. List three characteristics of a good research collaboration

i. Researchers and managers collaborate in every phase of the project from problem identification to research design and use

ii. Managers and researchers respect and trust each other

iii. Managers and researchers share credit and responsibilities

iv. Shared needs addressed through the planned program

v. Shared objectives

vi. Continuous learning relationship

36. List at least three procedures for effective resource mobilization

i. Knowledge gathering

ii. Team work in proposal development

iii. Good interpersonal communication

iv. Resource mobilisation plan/strategy
37. State two factors important in critiquing a proposal

i. Process of reviewing OR proposal
ii. Guidelines for proposal review (such as those contained in the
iii. Kenya National RH Research Guidelines)

38. List at least five channels of research dissemination

i. Printed reports and summaries
ii. Publication in peer review journals
iii. Mass media (press releases, articles)
iv. Professional journals
v. One-on-one meetings
vi. Internet (Web sites, e-mail listservs)
vii. Audiovisual presentations
viii. Meetings, presentations (conference, in-house discussions)
ix. Distribution of fact sheets
x. Use of traditional media (song, dance, drama, puppetry, posters, billboards)
xii. Modern communication approaches, e.g. ICT
xiii. Training workshops

39. List at least five roles of RH program managers

i. Identify (diagnose) the program problem to be solved or decision to be made
ii. Decide if research is required (consult with staff and a researcher)
iii. Set parameters for the research design
iv. Oversee research implementation
v. Plan for use and scaling up
vi. Plan for dissemination

40. A serious health problem is a program problem. False

41. List three characteristics of a good research collaboration

i. Researchers and managers collaborate in every phase of the project from problem identification to research design and use
ii. Managers and researchers respect and trust each other
iii. Managers and researchers share credit and responsibilities
iv. Shared needs addressed through the planned program
v. Shared objectives
vi. Continuous learning relationship

vi. List at least three procedures for effective resource mobilization

i. Knowledge gathering
ii. Team work in proposal development
iii. Good interpersonal communication
iv. Resource mobilisation plan/strategy
vii. State two factors important in critiquing a proposal

i. Process of reviewing OR proposal
ii. Guidelines for proposal review (such as those contained in the
iii. Kenya National RH Research Guidelines)
Appendix 4: DAILY EVALUATION

This exercise will be used to improve subsequent training sessions. The questionnaire is anonymous, so please be as honest and objective as possible.

Date __________________________

Please answer the following questions by circling the answer which best reflects how you feel currently. If you wish to comment on a particular session or exercise, please do so where it says “Please explain”.

1. What did you learn from today’s session on?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

2. What actions do you plan to take with the new knowledge/skills/information you learned today?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

3. How much did you personally benefit from today’s sessions?
   - Not very much
   - Much
   - Very much
   - Please explain

3. How clear was today’s presentation?
   - Not very clear
   - Clear
   - Very clear
   - Please explain

4. How well did the facilitator(s) help you to understand the concepts and skills presented today?
   - Not very well
   - Well
   - Very well
   - Please explain
5. What activity (session) did you find the most:

- Interesting
- Difficult

6. I would feel more comfortable if we could review the following:

7. Other comments or suggestions?

<table>
<thead>
<tr>
<th></th>
<th>Excellent</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevance of content</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training material/resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training methods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participant participation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clarity of presentation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any other comments, recommendations to improve future delivery</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of the session (brief, in point form)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix 5: Overall Course Evaluation

Part 1: Please give your opinions about whether the course fulfilled the following 5 objectives as outlined in Table 1.

Table 1: Fulfillment of course objectives:

<table>
<thead>
<tr>
<th>Objective</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gave a clear definition of OR?</td>
<td>1</td>
</tr>
<tr>
<td>2. Gave a clear introduction to the role of program officers in designing and implementing research?</td>
<td>1</td>
</tr>
<tr>
<td>3. Gave a clear introduction to the role of program managers in interpreting, using and disseminating research results?</td>
<td>1</td>
</tr>
<tr>
<td>4. Gave a clear introduction to resource requirements and mobilization for research?</td>
<td>1</td>
</tr>
<tr>
<td>5. Gave a clear introduction to distinguishing between good, useful and poor research results?</td>
<td>1</td>
</tr>
</tbody>
</table>

Part 2: Open ended

1. Please indicate which aspects of the course you would have liked more information or preferred to spend more time on;

2. What aspects of the course did you enjoy the least?

3. Please indicate which aspects of the course sessions you would have liked less information or preferred to spend less time on.
Part 3: Meeting course expectations

This section of the evaluation form constitutes 4 questions and requires participants to evaluate the course based on a scale. That is, on a scale of 1 to 3 with “1” being Not at all and “4” being very well how well do the following statements describe you?

Table 2. Fulfillment of course expectations

<table>
<thead>
<tr>
<th>Evaluation question</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at all</td>
</tr>
<tr>
<td>1. I understand how operations research can improve programs.</td>
<td>1</td>
</tr>
<tr>
<td>2. I can clearly describe the differences and similarities between operations</td>
<td>1</td>
</tr>
<tr>
<td>research and programmatic evaluation</td>
<td></td>
</tr>
<tr>
<td>3. I am able to collaborate with researchers to design and implement research</td>
<td>1</td>
</tr>
<tr>
<td>projects.</td>
<td></td>
</tr>
<tr>
<td>4. I understand my role as a program officer in planning, Implementing, utilizing</td>
<td>1</td>
</tr>
<tr>
<td>and disseminating operations research</td>
<td></td>
</tr>
</tbody>
</table>

Part 4: Open-ended questions

1. What sort of problems will this course help you address in your workplace? Please indicate what aspects the course sessions are likely to be most useful in your current work?

2. How will you transfer your knowledge and skills to the rest of your staff?
Part 5: Overall evaluation of course sessions

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>No opinion</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The session objectives were clearly stated.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2. The facilitator communicated effectively</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3. The information presented was new to me</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>4. A variety of teaching methods/materials were used</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>5. The training materials were useful</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>6. The content of the session was practical not theoretical</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>7. The content of the sessions was relevant.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>8. The sessions were well organized</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>9. I felt involved in all the sessions</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>10. The time allocated to sessions was adequate.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>11. The session objectives were fully achieved</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>12. My personal expectations were fully met</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>13. Administrative support for the session was adequate</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Part 6: Open-ended
1. Please give your suggestions on how the course could be changed to better meet the needs of reproductive health managers. What other topics do you think should have been included?

2. Please mention other things that you strongly felt about the course
Appendix 6: CASE STUDY FOR HEALTH SYSTEM ANALYSIS

Faith Kadzo was a seventeen year old girl who got pregnant while in secondary school in a rural community of Kenya.

She was able to successfully conceal her pregnancy until she was about seven months pregnant. This brought about debate in the community and her family. Her father was enraged, blaming the mother, to the extent that the girl was forced to go and live with the auntie in another village. She visited a health centre once and was so upset by the negative way she was treated that she did not attend again. Her auntie took her to see the local traditional birth attendant (TBA) who had helped her deliver two of her own babies some years back.

In due course she went into labour and the auntie took her to the same TBA, who after spending 18 hours with her without success, told the auntie to take her to the local health centre. At the health centre she was also unable to deliver. The nurse in charge referred her to the district hospital, but because of lack of transport she was delayed for another six hours while waiting for day break. She arrived at the district hospital (DH) on a Sunday morning. The staff on duty was worried about her condition and immediately called for the doctor, who arrived two hours later and sent the patient to theatre for emergency Caesarean Section (CS). Assembling the theatre staff and setting up all the required supplies, drugs and equipment took another three hours. She was eventually delivered of a severely distressed male baby who had to spend about a month in hospital to stabilize the consequences of severe distress and infection. The mother also spent two weeks in hospital as a result of complications related to infection and severe blood loss. In due course she had developed urine leakage. The baby survived but was suspected to have sustained brain damage.

Group discussion:
Participants to work in groups, discussing the case study, focusing on what went wrong and how programmatic interventions can be identified and implemented

<table>
<thead>
<tr>
<th>Community level</th>
<th>Identify, describe and justify OR problem</th>
<th>Formulate research question</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. The health services were not accessible to the girl</td>
<td>1. What approaches are effective in providing RH services to the youth?</td>
</tr>
<tr>
<td></td>
<td>2. There was poor communication</td>
<td>2. What are the promising RH community communication approaches and their effectiveness in addressing youth pregnancy?</td>
</tr>
<tr>
<td></td>
<td>3. There is lack of family guidance and support for pregnant girls</td>
<td>3. What are the strategies for facilitating family role in youth RH?</td>
</tr>
<tr>
<td></td>
<td>4. There is inadequate local emergency transportation</td>
<td>4. What are the effective and sustainable local transportation options?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. What are the best strategies for</td>
</tr>
<tr>
<td>Health centre level</td>
<td>Identify, describe and justify OR problem</td>
<td>Formulate research question</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>5. TBAs conducting deliveries despite a policy discouraging the practice</td>
<td>reorienting the roles of TBAs in RH?</td>
<td></td>
</tr>
<tr>
<td>6. There is negative attitude of community towards youth pregnancy</td>
<td>6. What is the level of awareness and socio-cultural perceptions of youth pregnancy?</td>
<td></td>
</tr>
<tr>
<td>7. What is the effectiveness of an interactive communication strategy for parents’ communication with adolescents and youth?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>District Hospital Level</th>
<th>Identify, describe and justify OR problem</th>
<th>Formulate research question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Staff have negative attitudes towards adolescent pregnancy</td>
<td>1. How can we reorient staff attitudes related to youth pregnancy?</td>
<td></td>
</tr>
<tr>
<td>2. The health centre (HC) does not have emergency transportation</td>
<td>2. How can we build capacity of HCs to provide emergency referral services?</td>
<td></td>
</tr>
<tr>
<td>3. There are no youth friendly services (YFS)</td>
<td>3. What are the best approaches for providing youth RH services?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DMOH Level</th>
<th>Identify, describe and justify OR problem</th>
<th>Formulate research question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. There is shortage of staff</td>
<td>1. How can we establish and maintain optimum staffing?</td>
<td></td>
</tr>
<tr>
<td>2. There is shortage of supplies and equipment</td>
<td>2. How can we establish and maintain efficient supplies and equipment logistics?</td>
<td></td>
</tr>
<tr>
<td>3. There is poor supervision</td>
<td>3. How can we optimize staff supervision?</td>
<td></td>
</tr>
<tr>
<td>4. There is poor management of logistics</td>
<td>4. What are the strategies for establishing and sustaining high staff commitment?</td>
<td></td>
</tr>
<tr>
<td>5. There is poor staff commitment to duty</td>
<td>5. What are the strategies for HF improvement?</td>
<td></td>
</tr>
<tr>
<td>6. What are the strategies for</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
service providers establishing and maintaining service provider technical competence?

TASKS TO BE ACCOMPLISHED BY GROUPS:
1. Identify any other level-specific RH problems, pending issues and add to the list
2. Formulate research problems and research questions for each
3. Describe interventions, develop and use selection criteria to choose the best intervention
4. List all potential designs; select the best experimental design
5. Describe, justify the chosen design
6. Identify and describe variables and indicators
Appendix 7: FACILITATION GUIDE FOR GROUP EXERCISE ON ROLES OF PROGRAM MANAGERS IN RESEARCH

Managers Rights
- Right to determine the research problem
- Right to set the research parameters
- Right to participate in research design
- Right to expect compliance from providers and program staff
- Right to be informed of progress
- Right to be an author and a presenter

Manager’s Responsibilities
- Responsibility to consult with researchers
- Responsibility to ensure program compliance
- Responsibility to use results in decision making
- Responsibility to participate in research dissemination
- Responsibility to assist in scaling-up
Appendix 8: CHECK LIST FOR CRITIQUING A PROPOSAL

1. Does the proposal outline conform to standards? (executive summary, background, study design and methodologies, study site/population, sampling)
2. Are the outcomes clearly stated, as well as methods of measurement?
3. Is the research area within the current research agenda?
4. If not, is it an emerging research area of concern that presents a special need and is it appropriately justified?
5. Is it appropriately categorized as OR?
6. Is the research addressing a programmatic problem?
7. Is the problem researchable?
8. Are the objectives specific, measurable, achievable, realistic, and time bound? (SMART)
9. Is/are the hypothesis(es) clear
10. Is the research question appropriate?
11. Is/are the intervention(s) appropriately and sufficiently selected and developed?
12. Is the supporting literature/information appropriate and sufficient?
13. Are the concepts/principles of association and causality appropriately and sufficiently discussed?
14. Is the conceptual framework appropriate, clear, and complete?
15. Is/are the variable(s) and indicator(s) clear and operationalized?
16. Is the research design appropriate, clearly stated, and clearly described?
17. Are the research methodologies clear, appropriate, and sufficient?
18. Is the planning sufficiently integrated and comprehensive? Does the plan clearly identify all the major steps that are required to complete the project? Are the scheduled dates and effort estimates realistic?
19. Is the role of the program manager clear and evident?
20. Are the roles of other stakeholders/partners clear and evident?
21. Have the ethical concerns been sufficiently addressed, along with other issues, e.g. feasibility of the research to be conducted?
22. Are the methods and plan for result analysis, dissemination, and use appropriately, clearly and sufficiently spelled out, including the participation of all relevant stakeholders?
Appendix 9: Practices in identifying research design and indicators: Sample answers to exercises

Exercise 1
Classify the 17 RH indicators in compendium of indicators (202-3) into:

- Output
- Outcome
- Impact indicators
(See Appendix 6)

Exercise 2

a. Outcome indicator:
   - Number and proportion/percentage of FP acceptors
   - Contraceptive continuation or discontinuation

b. Describe the intervention
   - Counselling and provision of FP after delivery and before discharge from hospital

c. Experimental design

True experimental design; intervention is counselling and provision of FP methods after delivery, before discharge from hospital (intervention group). The control group is matched with the above intervention group, but is not offered counselling and provision of FP methods after delivery

d. Random assignment

Research participants are randomly assigned to either the intervention or control group

What will you assign: patients, providers, or wards?
Answer: Delivery mothers are assigned

Exercise 3

a. What will you randomly assign?
Answer: Delivery mothers are assigned, or alternatively HC maternity wards

b. Or would you want to use matching? What factors would you match on?
Answer: It is also possible to match each intervention client with a control client. Matching is done on other social and demographic characteristics that are perceived to influence FP use, including age, education, parity, etc.

c. What design will you use if you cannot randomly assign?
Answer: Quasi-experimental design
Exercise 4
4. What design would you use to compare these two points of view?
Answer: Experimental design with the intervention group being assigned to CHW for DMPA services. The control group is assigned the conventional health system.

5. Would you use random assignment or matching?
Answer: Matching is the best option. Random assignment may be problematic because it would interfere with clients’ right to choice.

6. What outcome indicators would you measure?
Answer: 1) Number and proportion/percentage of DMPA Acceptors, 2) DMPA continuation or discontinuation, 3) Number and proportion of clients with infection complications, 4) Quality of counselling

Exercise 5
4. What design will you use?
Answer: True experimental design with intervention group being assigned the ‘no-scalpel’ vasectomy, while the control group is assigned the traditional technique of vasectomy

5. What will be your outcome measure(s)?
Answer: Technical feasibility (provider related indicator), acceptability and other client related indicators, semen sterility, operational indicators, e.g. cost effectiveness

6. What are the main ethical considerations with this design?
Answer: Clients right to choice, actual practical benefit of the new method to the client, confidentiality, being an operation, there is possibility of harm

Exercise 6
A study will compare the effect of increasing time devoted to sex education from 3 hours to 18 hours
Operationally define the underlined terms in hypothesis:

Adolescent boys will use more condoms if they receive more sex education.
Answer:
- Adolescent is a young boy or girl up to age 18
- More use of condoms means increased number and proportion of use of condoms during sexual intercourse
- More sex education means increased number of hours or sessions devoted to teaching/talking about sex education

Exercise 7
You plan an experiment with an experimental and control group to determine if male peer educators refer more clients for VCT than female peer educators. Define the underlined terms
Men will refer more clients than women
Answer: More clients mean increased number of referrals
Appendix 10: Select RH Indicators extracted from the Compendium of RH Indicators

Table 1: Matrix of DRH M&E Indicators

**Key:** ID Codes for Indicators by level of assessment and core programs:

IA = Impact assessment, OA = Outcomes Assessment MO = Monitoring programme outputs
SM = Safe Motherhood, FP = Family planning, AS = Adolescent sexual reproductive health programme, CM = Community program GD = Gender program, MC = Management & coordination, OR = Operational research

*Indicators from Health Sector M&E Framework are:* (IA, OASM1, OASM2, OASM5, OAFP7, OAS9, MOSM8, and MOSM14)

<table>
<thead>
<tr>
<th>Level of Assessment / ID Code</th>
<th>Indicator</th>
<th>Indicator Definition</th>
<th>Data Source</th>
<th>Responsibility</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Impact Assessment</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>IA1</td>
<td>Maternal mortality ratio (NME 3)</td>
<td>Number of maternal deaths/100,000 live births</td>
<td>Household survey (DHS)</td>
<td>CBS Director</td>
<td>3 - 5 years</td>
</tr>
<tr>
<td>IA2</td>
<td>Neonatal mortality rate</td>
<td>Number of neonatal deaths /1,000 live births</td>
<td>Household survey (DHS)</td>
<td>CBS Director</td>
<td>3 - 5 years</td>
</tr>
<tr>
<td><strong>Outcomes Assessment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| OASM1 | Percentage of pregnant women having at least four antenatal visits during this pregnancy (NME4) | **Numerator:** Number of pregnant women making 4 ANC visit  
Denominator: Total number of pregnant women  
**NB:** disaggregated by province and district | **Numerator**  
a) ANC register  
b) Facility HMIS form  
c) District HMIS summary form  
Denominator:  
d) population projections (multiplied by crude birth rate =expected no. of pregnant women)  
Household survey (DHS) | a) ANC staff  
b) Facility HRIO/M&E officer and facility chief  
c) DHRIO and DMOH  
d) CBS Director  
e) CBS Director | a) Continuous  
c) Quarterly  
d) Annually  
e) 3-5 years. |
| --- | --- | --- | --- | --- | --- |
| AOSM2 | % of (expected) deliveries in the population, which were conducted by a skilled attendant | **Numerator:** number of deliveries conducted by a skilled attendant  
Denominator: total number of deliveries in the population (= crude birth rate x total population / 1000) | Maternity register + theatre register  
Reports from domiciliary midwives | a) Facility in charge  
b) DHRIO and DMOH | a) Continuous  
b) Monthly  
c) Quarterly |
<table>
<thead>
<tr>
<th>OASM3</th>
<th>HIV prevalence among 15-24 year old pregnant women (NME 11)</th>
<th>-Expected pregnancies in the population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Numerator: Number of pregnant women (15-24) tested HIV+</td>
<td>(1) Household survey (DHS)</td>
</tr>
<tr>
<td></td>
<td>Denominator: Total number of HIV tested pregnant women</td>
<td>(2) ANC Sentinel Surveillance</td>
</tr>
<tr>
<td></td>
<td>(15-24) in the population.</td>
<td>(3) Numerator and Denominator</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a) maternity registers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) Facility HMIS form</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) District HMIS summary form</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OASM4</th>
<th>Percentage of HIV+ pregnant women receiving ARV treatment for prevention of mother to child transmission of HIV (NME 13)</th>
<th>Numerator and Denominator</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Numerator: Number of HIV+ pregnant women receiving ARV treatment for prevention of mother to child transmission of HIV</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Denominator: Total number of HIV+ pregnant women</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) ANC (denominator) and maternity (numerator) registers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) Facility HMIS form</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c) District HMIS summary form</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) ANC and maternity staff</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) Facility HRIO/M&amp;E officer and facility chief</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c) DHRIIO and DMOH and Facility in-charge</td>
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<table>
<thead>
<tr>
<th>OAFP5</th>
<th>Contraceptive Prevalence Rate (NME 19)</th>
<th>Numerator: Total number of women of reproductive age using any modern contraceptive method</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Household survey (DHS)</td>
<td>(1) CBS Director</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) NASCOP Director</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a) Maternity staff</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) Facility HRIO/M&amp;E officer and facility chief</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) DHRIIO and DMOH and Facility in-charge</td>
</tr>
</tbody>
</table>

|       | (1) 3 - 5 years                        | (2) Annual                                                                                |
|       |                                       | a) Continuous                                                                            |
|       |                                       | b) Monthly                                                                               |
|       |                                       | c) Quarterly                                                                             |
| **OAFP6** | **Percentage of women of reproductive age receiving family planning services at facilities (NME 20)** | **Denominator**: Total number of women of reproductive age  
**Numerator**: Total number of women using any modern contraceptive method  
**Denominator**: Estimated total number of women of reproductive age within catchment area | **Numerator** | a) Family planning register  
b) Facility HMIS form  
c) District HMIS summary form  
**Denominator** | d) Population projections | a) Family planning staff  
b) Facility HRIO/M&E officer and facility chief  
c) DHRIO and DMOH and Facility in-charge  
d) CBS Director | a) continuous  
b) monthly  
c) quarterly  
d) annual |
| **OAAS7** | **Proportion of adolescents/youths accessing youth friendly services** | **Numerator**: Number of adolescents and youths (10-24 years) accessing youth friendly services  
**Denominator**: Estimated total number of youths in the population  
**NB**:  
1. Services defines as per the Youth Friendly National guidelines  
2. Disaggregated by sex | **Numerator** | a) Youth friendly service registers  
b) Facility HMIS form  
c) District HMIS summary form  
**Denominator** | d) 36% of national estimates of total population | a) Youth friendly service staff  
b) Facility HRIO/M&E officer and facility chief  
c) DHRIO and DMOH and Facility in-charge  
d) CBS Director | a) continuous  
b) monthly  
c) quarterly  
d) annual |

**Monitoring Programme Outputs**

| **MOSM1** | **Percentage of facilities conducting maternal death reviews (NME 7)** | **Numerator**: Number of facilities with evidence that maternal death reviews are being | **Annual facility inventory** | **DHRIO/DMOH** | **Annually** |
| **Monitoring Programme Outputs** | **Percentage of facilities conducting maternal death reviews (NME 7)** | **Numerator**: Number of facilities with evidence that maternal death reviews are being | **Annual facility inventory** | **DHRIO/DMOH** | **Annually** |
| MOSM2 | % of women who attended post-natal care checkup between 1 and 2 weeks after delivery | conducted  
Denominator: Total number of eligible facilities (level 4-6)  
Numerator: Number of PNC visits between 1-2 weeks after delivery  
Denominator: Total number of deliveries in population | Post-natal/ partum register | Facility in charge | Quarterly |
| MOSM3 | Percent of health facilities offering PMTCT services | Numerator: Number of health facilities offering PMTCT services  
Denominator: Total number of health facilities  
NB: PMTCT services defined according to national guidelines | Annual facility inventory | DHRIODMOH | Annually |
| MOSM4 | Number of pregnant women who received HIV counseling and testing for PMTCT and received their test results | Total number of pregnant women who received HIV counseling and testing for PMTCT and receive their test results before leaving the facility/site  

a) ANC register  
b) Facility HMIS form  
c) District HMIS summary form | a) ANC staff  
b) Facility HRIO/M&E officer and facility chief  
c) DHRIO and DMOH and Facility in-charge | DASCO | a) Continuous  
b) Monthly  
c) Quarterly |
<p>| MOSM5 | Number of health workers newly trained or retrained in the provision of PMTCT services. | Total number of workers newly trained or retrained in the provision of PMTCT services | Training report | Bi-annual |</p>
<table>
<thead>
<tr>
<th>MOSM6</th>
<th>% of (expected) deliveries in the population which were conducted by CS (should be 5 – 15 %)</th>
<th>Numerator: Number of Caesarean sections</th>
<th>Operation theatre book</th>
<th>I/C of theatre? Facility in Charge</th>
<th>) Continuous b) Monthly c) Quarterly</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOSM7</td>
<td>Availability of Basic Emergency Obstetric Care ( BEOC ) (should be at least 4/500,000 population)</td>
<td>Denominator: Total number of deliveries in population</td>
<td>1) Annual facility inventory</td>
<td>1) DHRIO/DHMT</td>
<td>1) Annually</td>
</tr>
<tr>
<td>MOSM8</td>
<td>Availability of Comprehensive Emergency Obstetric Care (CEOC) (should be at least 1/500,000)</td>
<td>N: Number of fully functional BEOC facilities times 500,000 population D: Total population</td>
<td>2) Periodic Survey (RAT Tool)</td>
<td>2) NCAPD &amp; MOH</td>
<td>2) 3 – 5 years</td>
</tr>
<tr>
<td>MOSM9</td>
<td>Case fatality rate of emergency obstetric complications treated in CEOC facilities</td>
<td>N: Number of fully functional CEOC facilities times 500,000 population D: Total population</td>
<td>1) Annual facility inventory</td>
<td>1) DHRIO/DHMT</td>
<td>1) Annually</td>
</tr>
<tr>
<td>MOSM10</td>
<td>Met need for EOC (=% of emergency obstetric complications, which were treated in EOC facilities)</td>
<td>Numerator: Number of emergency complications seen in CEOC facilities</td>
<td>Register Admission book of female or gynecology Ward</td>
<td>Facility in-charge</td>
<td>Quarterly</td>
</tr>
<tr>
<td></td>
<td>Denominator: 15% of number of deliveries</td>
<td>- Maternity Register</td>
<td>- Admission book of female or gynecology ward</td>
<td>Facility in-charge</td>
<td>- Annually.</td>
</tr>
</tbody>
</table>
| MOSM11 | Number of community own resource persons (CORP) trained on RH using the orientation package | Number of CORP trained on RH using the orientation package | a) CORP training report  
b) District RH training report | a) Facility in charge  
b) DMOH | a) Continuous  
b) Quarterly |
| MOSM12 | Percentage of verbal autopsies conducted at community level | Numerator: Number of verbal autopsies done X 100  
Denominator: Total number of maternal deaths in the community | -Maternal Death Notification Report Form or verbal autopsy form  
- source of number of maternal deaths in the community  
- Maternal Death Notification Form  
Annual facility inventory | a) Provincial Administrators (Chief)  
b) RH Coordinator | Continuous autopsy reporting with quarterly notification to DRH |
| MOFP13 | Proportion of health facilities providing comprehensive and integrated RTI/STI services. | Numerator: Number of health facilities offering integrated RTI/STI services  
Denominator: Total number of health facilities  
NB: integrated RTI/STI services needs to be defined | | DHRIO | Annually |
| MOFP14 | Number of health service providers updated in FP | Number of health service providers updated in FP according to revised national FP guidelines  
NB: correlated with SPA indicator | a) FP training report  
b) District RH training report | a) RH Coordinator  
b) DMOH | a) Continuous  
b) Quarterly |
| MOFP15 | Number of facilities with no contraceptive stockouts | Number of health facilities with over 3 months stock of at least 3 modern methods of contraceptives | a) Consumption Data Report and Request Report (CDRR)  
b) report from district RH coordinator to DRH | a) District Supplies Officer  
b) District RH Coordinator | a) Monthly  
b) Quarterly |
| MOFP16 | Proportion of health facilities offering infertility services |  
**Numerator:** Number of health facilities offering infertility services  
**Denominator:** Total number of eligible health facilities  
**NB:** correlated with SPA indicator | Annual facility inventory | DHRIO | Annually |
| MOAS17 | Percentage of health facilities offering cervical cancer screening |  
**Numerator:** Number of health facilities offering cervical cancer screening  
**Denominator:** Total number of eligible health facilities  
**NB:** correlated with SPA indicator | Annual facility inventory | DHRIO | Annually |
| MOAS18 | Number of Youth Friendly Centers (YFC) established | Number of YFC established | Annual facility inventory | DHRIO | Annually |
| MOCM19 | Number of RH IEC/BCC sessions held at the health facility and in the community | Number of RH IEC/BCC sessions held at the health facility and in the community  
a) RH IEC/BCC log book  
b) the form that is used to summarize the facility service information and sent to the district  
c) the form that is used to summarize the district’s | a) Community Health Extension Worker (CHEW)  
b) Facility HRIO/M&E officer and facility chief | a) Continuous  
b) Monthly  
c) Quarterly |
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Numerator</th>
<th>Denominator</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOCM20</td>
<td>Number of CORPS trained on contraceptives distribution</td>
<td>Number of CORPS trained on contraceptives distribution at the community level</td>
<td>-Community register -CORPS log book</td>
<td>c) DHRIO and DMOH Facility in-charge</td>
</tr>
</tbody>
</table>
| MOCM21 | Number of IEC, BCC, songs, poems developed at community level                | Number of functional groups producing IEC, BCC, folk songs, drama, puppets on for example HIV & AIDS, ASRH, gender-based violence and sexual abuse.  
  **NB:** disaggregated by district | Community group registers                                                                                                           | CHEW           |
| MOMC22 | Proportion of MOH funds disbursed for RH programmes                          | **Numerator:** Amount of MOH funds disbursed to RH programmes  
  **Denominator:** Total funds allocated to MOH                                                                                      | Printed estimates                                                                                       | PS MOH          |
| MOGD23 | Number of health facilities offering post-rape care                          | Number of health facilities offering post-rape care services  
  **NB:** Disaggregated by levels 1-6                                                                                               | Annual facility inventory                                                                             | DHRIO           |
| MOGD24 | Number of health service providers                                           | Number of health service providers trained in                                                     | a) Gender mainstreaming training report                                                                | a) Continuous  |
|        |                                                                             |                                                                                                    | a) *who’s ever in charge of training*                                                                  | b) Quarterly   |

**NB:** Disaggregated by levels 1-6.
<table>
<thead>
<tr>
<th>MOGD25</th>
<th>MOOR26</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of sensitzation sessions on female genital mutilation (FGM) and inter-generational dialogue conducted at the community level</td>
<td>Number of RH operations research completed</td>
</tr>
<tr>
<td>trained in gender mainstreaming</td>
<td>Number of RH operations research studies completed as identified by RH programme stakeholders</td>
</tr>
<tr>
<td>gender mainstreaming <strong>NB:</strong> disaggregated by level of provider Number of sessions conducted on FGM and inter-generational dialogue at community level</td>
<td></td>
</tr>
<tr>
<td>b) District RH training report</td>
<td>RH research inventory</td>
</tr>
<tr>
<td>a) RH IEC/BCC log book</td>
<td>DRH M&amp;E Officer</td>
</tr>
<tr>
<td>b) the form that is used to summarize the facility service information and sent to the district</td>
<td>Continuous</td>
</tr>
<tr>
<td>c) the form that is used to summarize the district's facility information and sent to the DRH or national HMIS</td>
<td></td>
</tr>
<tr>
<td>a) Community Health Extension Worker (CHEW)</td>
<td></td>
</tr>
<tr>
<td>b) Facility HRIO/M&amp;E officer and facility chief</td>
<td></td>
</tr>
<tr>
<td>c) DHrio and DMOH Facility in-charge</td>
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</tr>
</tbody>
</table>
### APPENDIX 11

#### STUDY IN-DEPTH INTERVIEW PATIENT CONSENT FORM

**VOLUNTEER AGREEMENT (HATI YA MAKUBALIANO)**

- **Record Respondent Study Participation #:**
- **Andika nambari la mshiriki wa mradi:**

<table>
<thead>
<tr>
<th>Verification of Consent</th>
<th>Agree (Nakubali)</th>
<th>Disagree (Nakataa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I agree to participate in the survey interview. (Nakubali kushiriki katika mahojiano ya utafiti).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I give study staff permission to review my patient chart. (Navapa wafanyakazi wa utafiti ruhusa kuchunguza rekodi zangu).</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**INTERVIEWER:** You will sign here. Your signature certifies that the objectives and procedures for this study have been read to the participant. It certifies that you have answered all the questions that the participant had about the research, and that each participant has agreed to take part in the research.

**Anayehoji:** Utaweka sahihi hapa chini kabla ya kuendelea na mahojiano. Sahihi yako yathibitisha ya kwamba, madhumuni na taratibu za mradi hua yamesomewa mshiriki. Inathibitisha ya kwamba umejibu maswali yote ambayo mshiriki alikuwa nayo na kwamba mshiriki amekubali kushiriki katika utafiti.

- **Date (Tarehe)**
- **Signature of interviewer (Sahiji ya anayehoji)**

**PARTICIPANT:** The above document describing the benefits, risks and procedures for the research titled “Understanding Fertility Desires and Demand for Contraceptive Use of Women on Antiretroviral Therapy in Comprehensive Care Centre of Nakuru, Rift Valley, Kenya” has been read and explained to me. I have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate as a volunteer.


- **Date (Tarehe)**
- **Signature or mark of volunteer (Sahiji ya anajitolea)**

**WITNESS** (If volunteer cannot read the form, a witness has to sign here): I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

**SHAIHIDI** (kama mshiriki hawezi kusoma form, shahidi ataweka sahihi hapa): Nathibitisha ya kwamba kanuni na taratibu, manufaa na hatari zinazoambatana na kushiriki katika utafiti zimeelezewa mshiriki.
Date (Tarehe)  
Signature of witness (Sahihi ya shahidi)

A signed copy of this consent form was given to the participant – should we synchronize this statement in all the ICFs?

Hati iliyotiwa sahihi ya fomu ya makubaliano ilipewa mshiriki.

Interviewer’s Initials: (Herufi za kwanza)  
Date: (Tarehe)
Appendix 12: References, books, and Materials that can be used in training sessions

12. Case Studies used, Group work exercises, Guides and Answers
### Appendix 13: LIST OF REVIEWERS

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
<th>Email</th>
<th>Tel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anne Njeru</td>
<td>DRH, MOH</td>
<td><a href="mailto:Anne_k_njeru@yahoo.com">Anne_k_njeru@yahoo.com</a></td>
<td>0733606-404</td>
</tr>
<tr>
<td>Anna Karani</td>
<td>UON, Nursing Council of Kenya</td>
<td><a href="mailto:karanikagure@yahoo.com">karanikagure@yahoo.com</a></td>
<td></td>
</tr>
<tr>
<td>Cathy Toroitich-Ruto</td>
<td>FHI</td>
<td><a href="mailto:cruto@fhi.org">cruto@fhi.org</a></td>
<td>2713913</td>
</tr>
<tr>
<td>Diane Kamar</td>
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<td>0722-674-998</td>
</tr>
<tr>
<td>Eunice Kamanthe</td>
<td>DRH, MOH</td>
<td><a href="mailto:Kamanthe2002@yahoo.com">Kamanthe2002@yahoo.com</a></td>
<td>0722-968954</td>
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<tr>
<td>Harriet Birungi</td>
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<td></td>
</tr>
<tr>
<td>Jennifer Liku</td>
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<tr>
<td>Joel Rakwar</td>
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<tr>
<td>Joyce Lavussa</td>
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<td>0722-785-941</td>
</tr>
<tr>
<td>Kirsten Krueger</td>
<td>FHI</td>
<td><a href="mailto:kkrueger@fhi.org">kkrueger@fhi.org</a></td>
<td></td>
</tr>
<tr>
<td>Margaret Meme</td>
<td>DRH, MOH</td>
<td><a href="mailto:magmeme2004@yahoo.com">magmeme2004@yahoo.com</a></td>
<td></td>
</tr>
<tr>
<td>Marsden Solomon</td>
<td>FHI</td>
<td><a href="mailto:msolomon@fhi.org">msolomon@fhi.org</a></td>
<td>0722-736813</td>
</tr>
<tr>
<td>Rick Homan</td>
<td>FHI</td>
<td><a href="mailto:rhoman@fhi.org">rhoman@fhi.org</a></td>
<td>2713913</td>
</tr>
<tr>
<td>Roselyn Koech</td>
<td>DRH, MOH</td>
<td><a href="mailto:Rakinyi5@yahoo.co.uk">Rakinyi5@yahoo.co.uk</a></td>
<td>0722-269-489</td>
</tr>
<tr>
<td>Ruth W Muia</td>
<td>DRH</td>
<td><a href="mailto:eruth2005@yahoo.com">eruth2005@yahoo.com</a></td>
<td>0733-712-315</td>
</tr>
<tr>
<td>Violet Bukusi</td>
<td>FHI</td>
<td><a href="mailto:vbukusi@fhi.org">vbukusi@fhi.org</a></td>
<td>2713-913</td>
</tr>
<tr>
<td>Willis Odek</td>
<td>FHI</td>
<td><a href="mailto:wodek@fhi.org">wodek@fhi.org</a></td>
<td>2713913</td>
</tr>
</tbody>
</table>