MEDICAL EDUCATION CENTRE FOR RESEARCH INNOVATION & TRAINING (MECRIT)

Khesar Gyalpo University of Medical Sciences of Bhutan (KGUMSB), Thimphu

COURSE BRIEF

Bhutan's Structured & Mentoring Approach to Research Training (BSMART)

1. Course Overview

The Bhutan's Structured & Mentoring Approach to Research Training (BSMART) is an adapted version of the Structured Operational Research and Training Initiative (SORT-IT), originally developed by the International Union Against Tuberculosis and Lung Disease (The Union) and Médecins Sans Frontières (MSF). This course has been contextualized to address Bhutan's national health priorities and research needs.

The program aims to strengthen operational research (OR) capacity among health professionals by equipping them with practical skills to design, conduct, analyze, and disseminate research. The course emphasizes evidence-based decision-making to improve healthcare planning, service delivery, and policy formulation.

Participants will gain hands-on experience across the entire research cycle - from protocol development to publication and dissemination of findings.

2. Purpose

To develop practical competencies in conducting operational research, including designing studies, managing and analyzing data, and disseminating findings through scientific publications and presentations.

3. Course Structure and Duration

The BSMART course consists of four modules conducted over a period of 6–8 months at MECRIT, KGUMSB, Thimphu.

4. Course Modules and Expected Outputs

Module 1: Research Questions and Protocol Development

Duration: 7 days

Objective: To provide participants with a comprehensive understanding of operational research and enable them to develop a draft research protocol.

Content Overview: - Introduction to operational research - Formulating research questions - Research terminology (patients and data) - Development of research hypotheses (where applicable) - Defining aims and objectives - Basic data analysis concepts - Reference management - Research ethics

Assessment: - Pre-test prior to course commencement - Post-test conducted after Module 2 for learning assessment.

Output: - Draft research protocol developed by each participant.

Module 2: Data Management and Analysis (Part I)

Duration: 7 Days

Objective: To develop skills in data management and design efficient electronic data collection tools.

Content Overview: - Principles of data quality and data management - Designing electronic data entry tools (REDCap/EpiData – hands-on) - Developing structured data collection instruments - Data entry and validation techniques - Introduction to basic data analysis - Generating tabular outputs.

Output: - Draft electronic data entry instrument for each participant.

Module 3: Data Analysis (Part II)

Duration: 7 days

Objective: To strengthen participants' capacity in quantitative data analysis using statistical software.

Content Overview: - Data types and levels of measurement - Descriptive statistics (tables, graphs, summary measures) - Measures of dispersion - Bivariate analysis (t-tests, chi-square tests, correlation, F-tests) - Regression analysis (linear, logistic, ordinal, multinomial) - Testing statistical assumptions (linearity, normality, homoscedasticity, multicollinearity) - Data transformations (logarithmic, quadratic) - Introduction to factor analysis and survival analysis - Practical exercises using STATA/R.

Output: - Completed data analysis with tables and figures.

Module 4: Scientific Writing and Publication

Duration: 7 days

Objective: To guide participants in transforming research findings into a publishable scientific manuscript.

Content Overview: - Principles of scientific writing - Structuring a research manuscript - Use of LaTeX and document preparation tools - Journal selection and submission process - Responding to peer review comments.

Output: - Draft manuscript ready for journal submission.

5. Eligibility Criteria

- Applicants must: Be faculty members, clinicians, program officers, or health professionals under KGUMSB, or affiliated institutions.
- Attended and completed Basic Research Methodology Training conducted by MECRIT. Importantly, not have previously attended the BSMART course.
- Submit a complete research concept note in the prescribed format - Demonstrate commitment to attend all modules - Obtain institutional endorsement where required.

6. Selection Criteria

a. Alignment with National Health Priorities

- Relevance to Bhutan's priority health areas (e.g., NCDs, communicable diseases, maternal and child health, health systems strengthening)
- Contribution to improving healthcare delivery

b. Operational Research Relevance

- Focus on real-world implementation challenges
- Potential to generate actionable evidence

c. Research Quality

- Clearly defined research question and objectives
- Draft protocol, dataset plan, and analysis outline

d. Methodological Appropriateness

- Suitable study design
- Feasible data sources

- Appropriate analysis plan

e. Feasibility

- Achievable within the course timeline
- Ethical feasibility and approval potential

f. Policy and Program Impact

- Potential to inform policy and program improvements
- Alignment with MoH priorities

g. Publication Potential

- Likelihood of producing publishable results
- Scope for dissemination at national or international levels

h. Applicant Commitment and Capacity

- Demonstrated interest in research
- Commitment to complete all course requirements
- Basic understanding of research methods

7. Additional Considerations

- Equitable regional representation
- Gender balance
- Priority for early-career and first-time researchers
- Encouragement of multidisciplinary participation