HAMDARD INSTITUTE OF MEDICAL SCIENCES AND RESEARCH
Department of Community Medicine

Electives Module:
Medical research writing: Concepts, Protocol development, and ethical use of Artificial Intelligence

Name of Elective:	**Medical Research Writing**
Name of Supervisor:	Dr Yasir Alvi, Assistant Professor
Name of Co-Supervisor:	(1) Dr Kartikey Yadav, Assistant Professor
	(2) Dr Shyambhavee, Assistant Professor
Department:	Department of Community Medicine
Duration:	15 days
Intake:	05 Students

About the Elective

The Department of Community Medicine is providing an opportunity for MBBS students to master their academic research skills and help them prepare the manuscript for subsequent submission to academic journals. Learn step-by-step from idea to paper, with no jargon, just real-world skills. Led by skilled and experienced mentors, this course will be a great help if learners are interested in turning thoughts into papers and standing out in the academic and research community.

Objectives:

This course will provide the opportunity for MBBS student to

- Understand Research Fundamentals
- Master Manuscript Structure
- Enhance Writing Proficiency
- Ethical use of Artificial Intelligence
- Navigate Citation and Referencing
- Learning publication ethics
- Learning about journals and submission procedures.

Expected outcomes

By the end of the course, the MBBS student is expected to be skilled in

- Proficient Manuscript Composition
- Basic data analysis
- Ethical use of Artificial Intelligence

Assessment Guidelines

- Assessment will align with the general assessment pattern document of CBME.
- Students should maintain and submit a logbook with all academic and nonacademic activities, along with their stories and reflections about each event.
- Students will be assessed during and at the end of each elective posting.
- Feedback, comments, and/or grades about the student's performance by the faculty mentor will be documented with the help of a checklist, including both professional and academic attributes.
- 75% attendance is mandatory for each block of electives.

TEACHING LEARNING METHODS

The following strategy is used for organizing teaching learning activities:

1. Interactive Lectures are used for teaching the basic principles.
2. Small Group discussion, tutorials and hands on activities
3. Seminars presentations
4. Self-directed learning
5. Teaching learning methods like field visits, practical demonstrations, problem solving in Epidemiology and Biostatics using computers provides opportunity for skill development for the students

COURSE CONTENTS

- Basics of Research methods
- Basics of primary and secondary data research
- Protocol development
- Ethical use of Artificial Intelligence
- Mastering review of literature
- Basic biostatistics
- Basics of data analysis
- Data presentation and interpretation
- Bits and pieces of manuscripts submission
- Publication Ethics

Logbook:

Attached separately

Logbook of Elective

Applications of Statistical Software in Medical Research
for

MBBS Students

DEPARTMENT OF COMMUNITY MEDICINE

Hamdard Institute of Medical Sciences and Research,

New Delhi

Logbook For Elective

<u>Medical research writing</u>

Name of the student: _____

Admission year: _____

Roll No: _____

Dates of the course: _____

PREFACE

The Competency-Based Medical Education (CBME) curriculum has introduced an elective brief course available to learners during their undergraduate study period. They can choose from the available options based on their interests and career preferences. Elective posting is mandatory for all learners, as per NMC guidelines. It is to be conducted after the exam of the Third Professional Phase Part 1 and before the start of academic teaching for the Third Professional Phase Part 2.

To assess learners during this course, the Department of Community Medicine at Hamdard Institute of Medical Sciences and Research, New Delhi, feels the need for a comprehensive workbook for MBBS students. This logbook is intended to record all the skills in the intended electives and their domain. The workbook is divided into various parts for recording various related activities and aims to upgrade knowledge and skills in the provision of health services, research, and public health management.

I am confident that this workbook will significantly improve the quality of MBBS scholars. Suggestions from both teachers and students are welcome for further improvements to the workbook. I sincerely thank my colleagues for their valuable inputs.

Date:

Professor and Head,
Department of Community Medicine,
HIMSR, New Delhi

CERTIFICATE

This is to certify that the candidate Mr/Ms.. ....bearing Roll. No. .... admitted in the year... in Hamdard Institute of Medical Sciences and Research, New Delhi, has **_satisfactorily completed / has not completed_** all assignments / requirements mentioned in this logbook for **Elective course on Academic Research and Manuscript writing.**

He/She **_is / is not_** eligible to appear for the summative (University) assessment.

Elective Supervisor
Community Medicine,
HIMSR, New Delhi

Professor and Head,
Community Medicine,
HIMSR, New Delhi

INFORMATION OF THE CANDIDATE

| Paste Recent |
| Colour |
| Photograph |

Name: _____

DOB: _____

Father's Name: _____Profession _____

Mother's Name: _____ Profession _____

Address Local _____

_____**Telephone**_____

Address Permanent _____

_____**Telephone**_____

Email ID:_____

Qualification	Year	College	University
_____	_____	_____	_____

Date of Joining (MBBS)   ☐☐ ☐☐ ☐☐☐☐

                    Date   **Month**   **Year**

Mentors: **Dr Azhar Uddin,**

          Dr Richa Gautam

          Dr Mohd Rashid

Signature of the Candidate

GENERAL INSTRUCTIONS FOR THE CANDIDATE

1. **Purpose of Log Book**

   a. To help the MBBS student to record their experiences during the Elective classes and posting, so that deficiencies can be clarified & remedied.

   b. To assess the candidate's overall training.

2. **MBBS students are required to record Teaching Experiences**

   2.1 Course-work related

   2.2 Hand on / Field activities

   2.3 Other activities, like seminar, SGD etc.

3. **The log book entries should be made regularly**

Summary of students' activities and achievements

Description and particulars			Signature of Faculty
Attendance (percentage)			
	Expected	**Actual completed**	
Seminar	2		
Manuscript development	1		
Small group discussion assessment			
Self-Directed Learning assessment			
Research undertaken			
Overall assessment of student			

B: Below Expectations, M: Meets Expectations, E: Exceeds Expectations

INTRODUCTION TO ELECTIVE

Name of Elective:	**Academic Research and Manuscript writing**
Name of Supervisor:	Dr Azhar Uddin, Statistician Cum Assistant Professor
Name of Co-Supervisor:	(1) Dr Richa Gautam, Assistant Professor (2) Dr Mohd. Rashid, Assistant Professor
Department:	Department of Community Medicine
Duration:	15 days
Intake:	05 Students

About the Elective

The Department of Community Medicine is providing an opportunity for MBBS students to master their academic research skills and help them prepare the manuscript for subsequent submission to academic journals. Learn step-by-step from idea to paper, with no jargon, just real-world skills. Led by skilled and experienced mentors, this course will be a great help if learners are interested in turning thoughts into papers and standing out in the academic and research community.

Objectives:

This course will provide the opportunity for MBBS student to

- To provide hands-on training for medical researchers on statistical software tools relevant to healthcare research.
- To apply statistical software for analyzing real-world datasets in areas such as epidemiology, clinical trials, and public health.
- To develop guidelines and workflows for integrating statistical software into routine medical research processes.
- To evaluate the role of some basic and advanced statistical techniques in improving the quality of medical research outcomes.

Expected Outcomes

By the end of the course, the MBBS student is expected to be skilled in

- Enhanced capacity among researchers to utilize statistical software for robust medical research.
- High-quality research outputs that inform evidence-based decision-making in healthcare.

- Establishment of a knowledge base and resources that can be utilized by the medical research community.
- Increased interdisciplinary collaboration between statisticians, medical researchers, and healthcare providers.

Assessment Guidelines

- Assessment will align with the general assessment pattern document of CBME.
- Students should maintain and submit a logbook with all academic and nonacademic activities, along with their stories and reflections about each event.
- Students will be assessed during and at the end of each elective posting.
- Feedback, comments, and/or grades about the student's performance by the faculty mentor will be documented with the help of a checklist, including both professional and academic attributes.
- 75% attendance is mandatory for each block of electives.

TEACHING LEARNING METHODS

6. The following strategy is used for organizing teaching learning activities:
7. Interactive Lectures are used for teaching the basic principles of statistical data analysis.
8. Tutorials and hands on activities
9. Seminars presentations of case studies
10. Self-directed learning
11. Problem solving in Epidemiology and Biostatistics using computers provides opportunity for skill development for the students

Theoretical understanding Attainment log

Competency and Statement	Date completed	Grade (M or E)	Signature of Faculty
Introduction of Medical Research and its benefits in healthcare			
Different types of use of Epidemiology Study design in Medical Research			
Ethics of use of Medical Data in Research			
Introduction of different types of data used in Medical Research			
Introduction of Statistical methods in Medical			

Research			

Summative assessment (Criteria for grading)

Exceeds Expectations	Meets Expectations	Below Expectations
The student is able to correctly describe / identify / demonstrate **at least 80 percent** of the what was taught with supporting reasons.	The student is able to correctly describe / identify / demonstrate **60 percent** what was taught with reasons.	The student is able to correctly describe / identify / demonstrate less than 60 percent of what was taught

Practical application Attainment log

Competency and Statement	Date completed	Grade (M or E)	Signature of Faculty
Introduction of Statistical software (Excel, SPSS and R)			
Data Analysis using statistical software			
Data presentation in Manuscript			
Data interpretation in Manuscript			
Practical Exercises			

Summative assessment (Criteria for grading)

Exceeds Expectations	Meets Expectations	Below Expectations
The student is able to correctly demonstrate **80 percent** of the what was taught with supporting reasons.	The student is able to correctly demonstrate **60 percent** what was taught with reasons.	The student is able to correctly demonstrate less than 60 percent of what was taught

Research projects in which you have participated and level of Participation (to be verified by the project investigator):

Projects	Level of Participation	Investigator	Summary

| | | 14 | |
| | | | |

ACADEMIC ACTIVITIES

Sl. No.	Date	Activity	Student's Reflections

			16
Faculties Signature and comments			

HAMDARD INSTITUTE OF MEDICAL SCIENCES AND RESEARCH
Department of Community Medicine

Electives on Applications of Statistical Software in Medical Research

Name of Elective:	Application of Statistical Software in Medical Research
Name of Supervisor:	Dr. Azhar Uddin, Statistician Cum Assistant Professor
Name of Co-Supervisor:	(1) Dr. Richa Gautam, Assistant Professor
	(2) Dr. Mohd Rashid, Assistant Professor
Department:	Department of Community Medicine
Duration:	15 days
Intake:	05 Students

Introduction

In the modern era of medical research, the application of statistical software has become indispensable for analyzing complex datasets, interpreting findings, and ensuring the validity and reproducibility of results. Statistical software, such as Excel, SPSS and R, offers powerful tools for conducting diverse analyses ranging from descriptive statistics to advanced modeling techniques like survival analysis, machine learning, and predictive modeling.

Medical research benefits immensely from these tools, as they enable researchers to uncover patterns, identify risk factors, and assess interventions with a high degree of accuracy. The growing demand for data-driven decision-making in healthcare further emphasizes the need for equipping researchers and practitioners with statistical software proficiency.

This proposal outlines a series of research activities designed to explore, implement, and disseminate the application of statistical software in medical research. These activities aim to enhance methodological rigor, foster interdisciplinary collaboration, and build capacity among researchers.

Objectives

This course will provide the opportunity for MBBS student to

1. To provide hands-on training for medical researchers on statistical software tools relevant to healthcare research.
2. To apply statistical software for analyzing real-world datasets in areas such as epidemiology, clinical trials, and public health.
3. To develop guidelines and workflows for integrating statistical software into routine medical research processes.
4. To evaluate the role of some basic and advanced statistical techniques in improving the quality of medical research outcomes.

Proposed Activities

1. **Training Programs**
   - Introduction of types of Statistical software such as Excel, SPSS and R.
   - Topics include data cleaning, visualization, hypothesis testing and regression modeling.
   - Target datasets: Analyze of primary and secondary datasets.
2. **Research Projects**
   - Use case studies to demonstrate the practical application of software in areas like disease prevalence, vaccine efficacy, and health economics.
3. **Learning Resources**
   - Online tutorials, manuals, and video lectures to make statistical software accessible.
   - Focus on case-based learning to highlight real-world medical research applications.
4. **Publication of Research Findings**
   - Analyze medical datasets using statistical software and publish findings in peer-reviewed journals.
   - Topics may include risk factor analysis, prevalence studies, and treatment outcome evaluations.
5. **Evaluation of Software Tools**
   - Compare the performance of different statistical software packages in handling medical research datasets.
   - Assess usability, efficiency, and accuracy to guide researchers in selecting the right tools.

Expected Outcomes

By the end of the course, the MBBS student is expected to be skilled in

- Enhanced capacity among researchers to utilize statistical software for robust medical research.
- High-quality research outputs that inform evidence-based decision-making in healthcare.
- Establishment of a knowledge base and resources that can be utilized by the medical research community.
- Increased interdisciplinary collaboration between statisticians, medical researchers, and healthcare providers.

Conclusion

The proposed activities aim to bridge the gap between medical research and statistical methodologies, fostering a culture of data-driven inquiry in healthcare. By equipping researchers with the necessary skills to use statistical software effectively, this initiative will contribute significantly to advancing the quality and impact of medical research.

Assessment Guidelines

- Assessment will align with the general assessment pattern document of CBME.
- Students should maintain and submit a logbook with all academic and non-academic activities, along with their stories and reflections about each event.
- Students will be assessed during and at the end of each elective posting.
- Feedback, comments, and/or grades about the student's performance by the faculty mentor will be documented with the help of a checklist, including both professional and academic attributes.
- 75% attendance is mandatory for each block of electives.

TEACHING LEARNING METHODS

The following strategy is used for organizing teaching learning activities:

12. Interactive Lectures are used for teaching the basic principles of statistical data analysis.

13. Tutorials and hands on activities

14.	Seminars presentations of case studies

15.	Self-directed learning

16. Problem solving in Epidemiology and Biostatistics using computers provides opportunity for skill development for the students

COURSE CONTENTS

- Introduction of Medical Research and its benefits in healthcare

- Different types of use of Epidemiology Study design in Medical Research

- Ethics of use of Medical Data in Research

- Introduction of different types of data used in Medical Research

- Introduction of Statistical methods in Medical Research

- Introduction of Statistical software (Excel, SPSS and R)

- Data Analysis using statistical software

- Data presentation and interpretation

- Practical Exercises

- Writing statistical analysis in publication

Log book:

Attached Separately

HIMSR

Hamdard Institute of Medical Science & Research

Logbook of Elective

Medical research writing: Concepts, Protocol development, and ethical use of Artificial Intelligence

for

MBBS Students

DEPARTMENT OF COMMUNITY MEDICINE

Hamdard Institute of Medical Sciences and Research, New Delhi

Logbook For Elective

<u>Medical research writing</u>

Name of the student: _____

Admission year: _____

Roll No: _____

Dates of the course: _____

PREFACE

The Competency-Based Medical Education (CBME) curriculum has introduced an elective brief course available to learners during their undergraduate study period. They can choose from the available options based on their interests and career preferences. Elective posting is mandatory for all learners, as per NMC guidelines. It is to be conducted after the exam of the Third Professional Phase Part 1 and before the start of academic teaching for the Third Professional Phase Part 2.

To assess learners during this course, the Department of Community Medicine at Hamdard Institute of Medical Sciences and Research, New Delhi, feels the need for a comprehensive workbook for MBBS students. This logbook is intended to record all the skills in the intended electives and their domain. The workbook is divided into various parts for recording various related activities and aims to upgrade knowledge and skills in the provision of health services, research, and public health management.

I am confident that this workbook will significantly improve the quality of MBBS scholars. Suggestions from both teachers and students are welcome for further improvements to the workbook. I sincerely thank my colleagues for their valuable inputs.

Date:

Professor and Head,
Department of Community Medicine,
HIMSR, New Delhi

CERTIFICATE

This is to certify that the candidate Mr/Ms.. ....bearing Roll. No. .... admitted in the year... in Hamdard Institute of Medical Sciences and Research, New Delhi, has *__satisfactorily completed / has not completed__* all assignments / requirements mentioned in this logbook for **Elective course on Academic Research and Manuscript writing.**

He/She *__is / is not__* eligible to appear for the summative (University) assessment.

<table>
<tr><td>**Elective Supervisor**</td><td>**Professor and Head,**</td></tr>
<tr><td>**Community Medicine,**</td><td>**Community Medicine,**</td></tr>
<tr><td>**HIMSR, New Delhi**</td><td>**HIMSR, New Delhi**</td></tr>
</table>

INFORMATION OF THE CANDIDATE

Name: _____

DOB: _____

Father's Name: _____**Profession** _____

Mother's Name: _____ **Profession** _____

Address Local _____

_____**Telephone**_____

Address Permanent _____

_____**Telephone**_____

Email ID:_____

Qualification	**Year**	**College**	**University**
_____	_____	_____	_____

Date of Joining (MBBS)   ☐☐ ☐☐ ☐☐☐☐

                                                    Date   Month   Year

Mentors: **Dr Yasir Alvi,**

                Dr Kartikey Yadav

                Dr Shyambhavee

Signature of the Candidate

10

GENERAL INSTRUCTIONS FOR THE CANDIDATE

4. **Purpose of Log Book**

    a. To help the MBBS student to record their experiences during the Elective classes and posting, so that deficiencies can be clarified & remedied.

    b. To assess the candidate's overall training.

5. **MBBS students are required to record Teaching Experiences**

    2.1 Course-work related

    2.2 Hand on / Field activities

    2.3 Other activities, like seminar, SGD etc.

6. **The log book entries should be made regularly**

Summary of students' activities and achievements

Description and particulars			Signature of Faculty
Attendance (percentage)			
	Expected	Actual completed	
Seminar	2		
Manuscript development	1		
Small group discussion assessment			
Self-Directed Learning assessment			
Research undertaken			
Overall assessment of student			

B: Below Expectations, M: Meets Expectations, E: Exceeds Expectations

INTRODUCTION TO ELECTIVE

Name of Elective:	**Academic Research and Manuscript writing**
Name of Supervisor:	Dr Yasir Alvi, Assistant Professor
Name of Co-Supervisor:	(1) Dr Kartikey Yadav, Assistant Professor
	(2) Dr Shyambhavee, Assistant Professor
Department:	Department of Community Medicine
Duration:	15 days
Intake:	05 Students

About the Elective

The Department of Community Medicine is providing an opportunity for MBBS students to master their academic research skills and help them prepare the manuscript for subsequent submission to academic journals. Learn step-by-step from idea to paper, with no jargon, just real-world skills. Led by skilled and experienced mentors, this course will be a great help if learners are interested in turning thoughts into papers and standing out in the academic and research community.

Objectives:

This course will provide the opportunity for MBBS student to

- Understand Research Fundamentals
- Master Manuscript Structure
- Enhance Writing Proficiency
- Ethical use of Artificial Intelligence
- Navigate Citation and Referencing
- Learning publication ethics
- Learning about journals and submission procedures.

Expected outcomes

By the end of the course, the MBBS student is expected to be skilled in

- Proficient Manuscript Composition
- Basic data analysis
- Ethical use of Artificial Intelligence

Assessment Guidelines

- Assessment will align with the general assessment pattern document of CBME.
- Students should maintain and submit a logbook with all academic and nonacademic activities, along with their stories and reflections about each event.
- Students will be assessed during and at the end of each elective posting.
- Feedback, comments, and/or grades about the student's performance by the faculty mentor will be documented with the help of a checklist, including both professional and academic attributes.
- 75% attendance is mandatory for each block of electives.

TEACHING LEARNING METHODS

The following strategy is used for organizing teaching learning activities:

17. Interactive Lectures are used for teaching the basic principles.

18. Small Group discussion, tutorials and hands on activities

19. Seminars presentations

20. Self-directed learning

21. Teaching learning methods like field visits, practical demonstrations, problem solving in Epidemiology and Biostatics using computers provides opportunity for skill development for the students

Theorical understanding Attainment log

Competency and Statement	Date completed	Grade (M or E)	Signature of Faculty
Basics of Research methods			
Structure of research Protocol			
Mastering review of literature			
Basic skills in AI			
Basics of data analysis			
Data presentation and interpretation			
Bits and pieces of manuscripts submission			
Publication Ethics			

Summative assessment (Criteria for grading)

Exceeds Expectations	Meets Expectations	Below Expectations

| The student is able to correctly describe / identify / demonstrate **at least 80 percent** of the what was taught with supporting reasons. | The student is able to correctly describe / identify / demonstrate **60 percent** what was taught with reasons. | The student is able to correctly describe / identify / demonstrate less than 60 percent of what was taught |

Practical application Attainment log

Competency and Statement	Date completed	Grade (M or E)	Signature of Faculty
Review of literature			
Basic skills in AI			
Basics of data analysis			
Data presentation and interpretation			
Protocol development			

Summative assessment (Criteria for grading)

Exceeds Expectations	Meets Expectations	Below Expectations
The student is able to correctly demonstrate **80 percent** of the what was taught with supporting reasons.	The student is able to correctly demonstrate **60 percent** what was taught with reasons.	The student is able to correctly demonstrate less than 60 percent of what was taught

Research projects in which you have participated and level of Participation (to be verified by the project investigator):

Projects	Level of Participation	Investigator	Summary

ACADEMIC ACTIVITIES

Sl. No.	Date	Activity	Student's Reflections

			18

Faculties Signature and comments

NOTES