NATIONAL WORKSHOP

ON

SYSTEMATIC REVIEW & META-ANALYSIS

(SRMA)

One-Day National Training Programme



Health Technology Assessment in India (HTAIn)- Regional Resource Centre (RRC)

INDIAN INSTITUTE OF SCIENCE

In collaboration with

HTAIn Secretariat, Department of Health Research (DHR), Ministry of Health and Family Welfare, Government of India

Date: 10 December' 26

Mode: Virtual

Time: 09:45 AM – 03:45 PM

About HTAIn-RRC

The Health Technology Assessment in India (HTAIn) initiative, under the Department of Health Research (DHR), Ministry of Health and Family Welfare, Government of India, promotes evidence-based healthcare decision-making and optimal resource allocation.

The Regional Resource Centre (RRC) for Health Technology Assessment at the Indian Institute of Science (IISc), Bengaluru, established on 11 April 2022, is one of the designated centers under the national HTAIn network. The Centre conducts interdisciplinary research in clinical effectiveness, systematic reviews, meta-analysis, health economics and economic evaluation to assess healthcare technologies and interventions. It also promotes research collaboration, academic training and capacity building in HTA and evidence-based healthcare.

About the Workshop

Systematic reviews and meta-analyses are essential tools for synthesizing scientific evidence and supporting evidence-based healthcare decisions. They provide a systematic approach to identifying, evaluating and combining research findings to inform clinical practice, health policy and Health Technology Assessment (HTA).

The one-day National Workshop on Systematic Review and Meta-Analysis (SRMA), organized by HTAIn-RRC, IISc Bengaluru, aims to provide participants with an understanding of systematic review methodology, including PICO, protocol development, literature searching, screening, data extraction, risk-of-bias assessment and meta-analysis. The programme will include expert-led sessions, software demonstrations and practical exposure to tools such as PubMed, PROSPERO, Rayyan, RevMan and R packages, enabling participants to strengthen their evidence synthesis and research skills.

Aim

To strengthen the methodological and practical capacity of researchers, healthcare professionals and academicians in conducting systematic reviews and meta-analyses for evidence-based healthcare research and decision-making.

Objectives

The specific objectives are to:

- Introduce the principles, importance and applications of systematic reviews and meta-analysis.
- Develop skills in formulating research questions using PICO and related frameworks.
- Familiarize participants with systematic review protocols and PROSPERO registration.
- Provide practical knowledge of literature searching, screening and study selection.
- Introduce data extraction, quality assessment and risk-of-bias evaluation.

- Explain statistical approaches to meta-analysis, including fixed-effect and random-effects models.
- Develop an understanding of heterogeneity, publication bias and sensitivity analysis.
- Introduce the application of RevMan and R software for conducting meta-analysis.
- Demonstrate the preparation and interpretation of forest plots and funnel plots.
- Familiarise participants with PRISMA guidelines and scientific reporting of systematic reviews.

Speakers / Resource Faculty

The following experts are proposed as resource faculty, subject to their confirmation.

Session 1: Foundations of Systematic Review: Protocol to Qualitative Synthesis

Dr. Bhavani Shankara Bagepally
MBBS, PhD (Clinical Neuroscience), MS (Health Technology Assessment)
Scientist-E, ICMR–National Institute of NCD Epidemiology, Bengaluru
Associate Professor (Honorary), Academy of Scientific and Innovative Research (AcSIR), India.

Session 2: Building on the Evidence: Statistical Methods & Meta-Analysis

Dr. Aamir Sohail
Assistant Professor, Department of Biochemistry, Patna University, Bihar.
Former Scientist-D, Indian Institute of Science (IISc), Bengaluru, and Health Policy Analyst, Department of Health Research (DHR), Government of India.

Session 3: From Evidence to Impact: Health Technology Assessment (HTA)

Dr. Sumirtha Gandhi
Co-Principal Investigator, HTAIn-RRC, & Assistant Professor, Department of Management Studies, IISc

Workshop Highlights

The workshop will cover the following academic and practical areas:

- Introduction to Systematic Review and Meta-Analysis.
- Formulation of research questions using PICO, PICOS and PECO.
- Development and registration of systematic review protocols.
- PRISMA 2020 guidelines and reporting standards.
- Literature searching using PubMed, Scopus and other bibliographic databases.
- Boolean operators, MeSH terms and search strategy development.
- Literature screening using Rayyan.
- Data extraction and evidence synthesis.
- Quality assessment and risk-of-bias tools, including RoB 2, ROBINS-I and Newcastle–Ottawa Scale.

- Fixed-effect and random-effects meta-analysis.
- Heterogeneity assessment and interpretation (I^2 and Cochran's Q).
- Forest plots, funnel plots and publication bias.
- Subgroup analysis, sensitivity analysis and meta-regression.
- Hands-on demonstration using RevMan and R software.
- Introduction to GRADE and certainty of evidence.
- Scientific writing and publication of systematic reviews and meta-analyses.

Proposed Programme Structure

❖ Who Can Apply?

The workshop is open to faculty members, scientists, clinicians, healthcare professionals, researchers, epidemiologists, biostatisticians, health economists, HTA professionals, public health practitioners, policymakers, innovators from startups and industries, PhD scholars and postgraduate students from medical colleges, universities and research institutions. Basic familiarity with health research and statistical concepts is desirable but not mandatory.

❖ Registration

Aspiring participants are requested to complete the online registration form within the stipulated deadline.

- ✓ **Registration mode:** https://forms.gle/2ntYHMGhqrW8NEZg6
- ✓ **Workshop mode:** Virtual
- ✓ **Number of participants:** Limited seats.
- ✓ **Selection criteria:** First Come, First Served basis, subject to eligibility and availability of seats.
- ✓ **Confirmation:** Selected participants will be informed through email.

Last date for submitting the registration form: 08 December 2026

Participants are encouraged to register early, as the number of seats are limited.

Certification

Participants who successfully complete the workshop and fulfil the prescribed attendance requirements will receive a Certificate of Participation/Completion from HTAIn- Regional Resource Centre, Indian Institute of Science (IISc), Bengaluru.

For Any Query, Contact

HTAIn Regional Resource Centre (RRC), Email: htain.rrc@iisc.ac.in

Expected Outcomes and Conclusion

The workshop is expected to strengthen participants' knowledge and practical skills in systematic review and meta-analysis, including literature searching, evidence synthesis, statistical analysis and interpretation using RevMan and R-based tools. It will promote high-quality research, evidence-based healthcare and collaboration among academic institutions and HTA research centres. The initiative reflects HTAIn-RRC, IISc Bengaluru's commitment to strengthening research capacity and supporting evidence-informed healthcare policy and decision-making in India.

HTAIn-Regional Resource Centre (RRC), IISc – Organising Team

Prof. Sai Siva Gorthi – Principal Investigator
Dr. Sumirtha Gandhi – Co-Principal Investigator
Dr. Vimali Murali– Scientist-D
Dr. Raju Sarkar – Scientist-C
Ms. Bhavana Singh – Health Economist
Ms. Linthoingambi Loitongbam – Field Investigator
Mr. Deekshith Pawar – Administrative Officer

Programme Agenda

One-Day National Online Workshop on Systematic Review and Meta-Analysis (SRMA)

HTAIn-RRC, Indian Institute of Science

Date: 10 December 2026 | Mode: Virtual

Time	Session	Topic	Key Areas
09:45–10:00 AM	Registration	Registration and Introduction	Participant registration, welcome and introduction to the workshop
10:00–10:15 AM	Workshop Overview	Overview of HTAIn-RRC, IISc Bengaluru	Introduction to HTAIn-RRC activities, objectives, ongoing projects and contributions to Health Technology Assessment (HTA) – **Prof. Sai Siva Gorthi, IISc Bengaluru**
10:15–10:30 AM	Inaugural Address	Introduction to HTA and SRMA	Role of HTA and Systematic Review and Meta-Analysis in evidence-based healthcare decision-making **– Dr. K. V. Jagadeesh, Department of Health Research (DHR)**
10:30–11:45 AM	**Session 1**	**Foundations of Systematic Review: From Research Question to Evidence Synthesis**	**Dr. Bhavani Shankara Bagepally**
			• Framing research questions using PICO/PECO and developing review protocols (PROSPERO and PRISMA-P)
			• Systematic literature search strategies using Boolean operators, MeSH terms and databases (PubMed, Embase and Cochrane Library)
			• Study selection, duplicate removal, screening workflow and PRISMA 2020 flow diagram
			• Standardized data extraction and management
			• Quality assessment and risk-of-bias tools: RoB 2, ROBINS-I and Newcastle–Ottawa Scale
			• Qualitative evidence synthesis, SWiM reporting and GRADE assessment
11:45 AM–12:00 PM	**Tea Break**		
12:00–01:15 PM	**Session 2**	**Statistical Methods and Meta-Analysis: From Individual Studies to Pooled Evidence**	**Dr. Aamir Sohail**
			• Fundamentals and principles of meta-analysis
			• Effect measures: Odds Ratio (OR), Risk Ratio (RR), Hazard Ratio (HR), Mean Difference (MD) and Standardized Mean Difference (SMD)
			• Fixed-effect and random-effects models
			• Assessment of statistical heterogeneity (I^2

			and Cochrane's Q)
			• Forest plots, subgroup analysis and sensitivity analysis
			• Publication bias, funnel plots and Egger's test
01:15–02:00 PM	**Lunch Break**		
02:00–03:15 PM	**Session 3**	**From Evidence to Impact: Application of Systematic Reviews in Health Technology Assessment (HTA)**	**Dr. Sumirtha Gandhi**
			• Introduction to HTA and its role in healthcare decision-making
			• Application of systematic reviews in clinical effectiveness assessment
			• Comparative effectiveness and evidence synthesis for health technologies
			• Linking clinical evidence with health economic evaluation and cost-effectiveness analysis
			• Application of SRMA in HTA reports and healthcare policy
03:15–03:30 PM	**Discussion**	**Interactive Q&A**	**Questions, discussion and interaction with resource faculty**
03:30–03:45 PM	Valedictory Session	Concluding Remarks and Vote of Thanks	Feedback, concluding remarks and vote of thanks – HTAIn-RRC, IISc Bengaluru