



INDIAN
INSTITUTE
of PUBLIC
HEALTH
SHILLONG

ESTABLISHED BY GOVT. OF MEGHALAYA AND PHFI

Annual Report 2022-2023

Indian Institute of Public Health Shillong



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1. Introduction

The Northeast Region of India (NER) continues to be confronted by the unfinished agenda of infectious diseases, nutritional deficiencies and unsafe pregnancies while simultaneously being faced with the emerging challenge of escalating epidemics of cancer and other non-communicable diseases. This composite threat to the nation's health and development needs a concerted public health response that can ensure efficient delivery of cost-effective interventions for health promotion, disease prevention and affordable diagnostic and therapeutic health care.

The NER, often described as 'poorly developed' in policy circles, consists of 8 states together, bordered by Nepal, Bhutan, China, Myanmar and Bangladesh. About 98% of the NER is bounded by international borders. It is well recognized that although the term 'northeast' is often understood to imply a homogenous entity of tribal lands, in reality, this is a hugely heterogeneous and diverse region of multiple cultures, worldviews, landscapes, and mixed values systems in a modernizing and ever-changing world. COVID-19 is not the only public health crisis to be dealt with, nor will it be in the future. There are outbreaks of swine flu, Japanese encephalitis, scrub typhus, enteric fever, and brucellosis on a yearly basis in the NER. Just as pressing is the persistent need for disease prevention in multiple domains involving nutrition, environmental exposures, maternal and child health, injury/violence prevention, mental health and more.

Public health challenges in the northeast region are a myriad and often require tailored approaches considering the differences in ethnicity, culture, food, and lifestyle within the NER and as compared to the other parts of India.

1.1. About Indian Institute of Public Health Shillong (IIPHS)

The Indian Institute of Public Health Shillong (IIPHS) was established by the PHFI in collaboration with the Government of Meghalaya in 2014 as a regional public health institute. IIPHS is intended to redress the limited institutional and systems capacity in public health in the north east region of India. In August 2020, the legal status of the institute changed and it became an independent entity under the IIPH Shillong Society.

On 19 August 2020, the Indian Institute of Public Health Shillong Society was registered under the Meghalaya Societies Registration Act XII of 1983. The objects of the Society are to promote health and wellbeing in all communities including tribal people and the weaker sections of society; to establish, develop, and maintain teaching and research institute/s including a university to promote research; to provide education, capacity building and cost-effective health delivery systems in the NER. The affairs of the society are overseen by the Governing Body comprising the Principal Secretary, Health and Family Welfare, Government of Meghalaya, the President of PHFI, the Director of IIPH-Shillong as well as public health specialists from Meghalaya and other experts from North-East India.

1.2. Infrastructure

The Government of Meghalaya (GoM) has provided interim premises in Lawmali, Shillong, where the IIPHS is currently operational (initial research activities commenced in 2012 from a research cell). The Institute became fully functional in 2015 at the interim campus provided by the Government of Meghalaya at Lawmali, Pasteur Hill, Shillong.



A Molecular Laboratory, under the Zoonotic Vector Borne Disease Project, has been under construction since February 2023. The laboratory is currently in its final construction stages and is anticipated to be operational by August 2023. The Government of Meghalaya is also in the process of identifying a suitable plot of land for the establishment of a permanent campus for the IIPHS.

With the growth of IIPH Shillong's activities, the campus at Lawmali was no longer sufficient for the team. Although, the government had initially identified additional space at the old NIFT campus, this did not become available. Hence, space was identified at Brookdene, Holy Cross, Dhanketi, Shillong. Some research activities of IIPHS started functioning from this second campus as of 1st August, 2023.



2. Academics

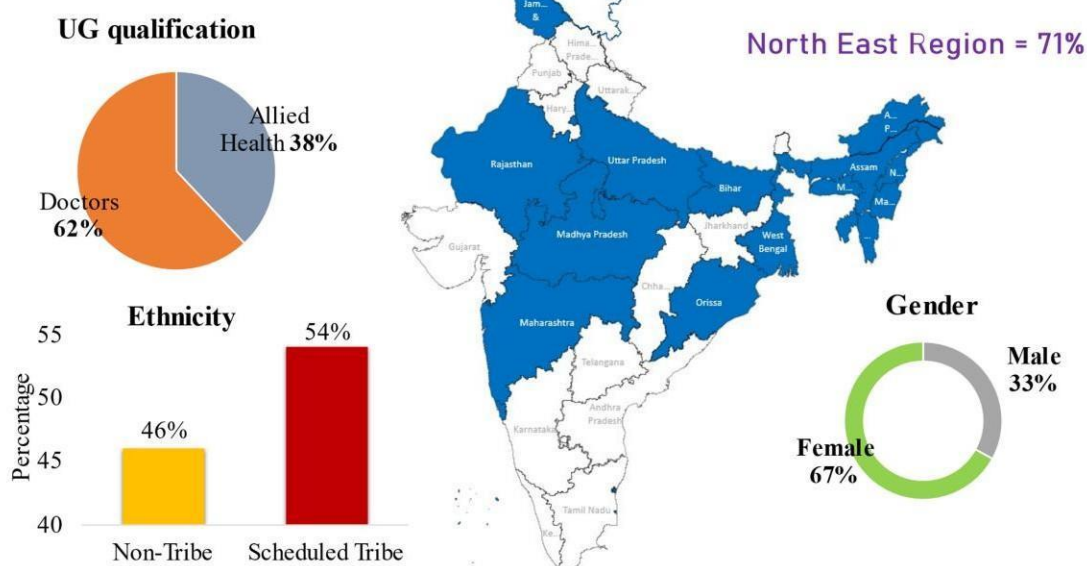
2.1. MPH at IIPHS

In response to the National Health Policy 2017, IIPHS started a full-time two-year training programme for Masters in Public Health (MPH) in 2019 in collaboration with the Martin Luther Christian University, Shillong. The 2-year full-time MPH programme for the first batch of 15 students was formally launched by the Hon'ble Chief minister and the Hon'ble Health Minister in 2019.

In 2020, despite the COVID crisis, classes for the second batch of 25 students from across the northeast and other states were conducted mostly in the online mode.



Distribution of our MPH Students 2019-2021



2.2. Bachelor of Science in Public Health (BSc PH)

Despite significant achievements over the past decade, public health challenges continue to prevail in India. While old threats continue to challenge health systems, new issues and challenges have appeared. Creation of a dedicated Public Health Cadre has been identified as one of the important prerequisites in moving towards improving health systems. Public health professionals help in bridging the gap between the clinical and managerial aspects of the program implementation and provide techno-managerial inputs.

Keeping this in mind, the IIPHS launched a Bachelor's Degree in Public Health (BSc PH) in 2021, in collaboration with the Martin Luther Christian University, Shillong.

The BSc PH course will attempt to prepare a competent cadre of professionals who have a basic understanding of the various aspects of public health and are able to apply this knowledge towards meeting public health challenges in the Indian context.

3. Faculty at IIPH Shillong

About ten faculty members are currently involved in research, supported by an additional team of about 35 research staff. Adjunct and visiting faculty also contribute to teaching and mentoring.

3.1. Core Faculty

Dr. Melari Shisha Nongrum



joined the IIPHS as Associate Professor in January 2022. Previously, she had worked in the Martin Luther Christian University for 14 years. She was the Associate Professor with the Department of Social Work and held the position as the Dean of the School of Social Work and the Faculty of Social

Sciences. She was also instrumental in setting up a research office that was aimed at enhancing the research capacity of faculty and students. She initiated the specialization of public health in the Department of Social Work. Her interests are social work in public health, indigenous knowledge systems and community development, which have been the focus of her research papers, in particular, nutrition, indigenous populations and food security. She has authored many newspaper articles for The Shillong Times and Mawphor regarding topics such as handwashing and nutrition (traditional foods to enrich diets, importance of the first 1000 days of a child's life etc.). Some of these were written in Khasi (local language) so that vital information regarding nutrition, health and hygiene is accessible to non-English speaking audiences. She has been awarded (as the Principal Investigator) a DST funded project related to enhancing the economic and social wellbeing of children, women, tribal youth in Meghalaya. She has also recently been awarded a Clinical Research Center (CRC) grant on Zoonotic and Vector Borne Diseases (ZVBD) by the DBT/Wellcome India Alliance in Meghalaya with co-PIs at IIPH Shillong and ICAR. The CRC on ZVBD will also support Clinical Research Fellowships (CRF) from DBT/Wellcome India Alliance and will result in much needed capacity building in Meghalaya. She is also a recipient of the prestigious Fulbright Scholarship.

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Dr. Rajiv Sarkar



is an Associate Professor at the Indian Institute of Public Health, Shillong. He has M.Sc. and Ph.D. degrees in epidemiology from Christian Medical College, Vellore with 10+ years of academic and industry experience in the design, oversight and analysis of a wide range of epidemiological studies – outbreak investigations, cross-sectional surveys, case-control studies, longitudinal cohorts, and clinical trials (both individual and cluster-randomised) and real-world studies.

He has co-authored 80+ peer-reviewed publications in national and international journals. In 2013, he received an Early Career Fellowship from the DBT/ Wellcome

Trust India Alliance, becoming the first public health researcher to receive the prestigious fellowship. He was recognised as an Emerging Leader in International Infectious Diseases by the International Society for Infectious Diseases in 2016. He is also an Associate Editor of the Epidemiology and Infection Journal and an Editorial Board member of the Journal of Public Health Policy.

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Dr. Eliza K Dutta



is an Assistant Professor and an India Alliance DBT/Wellcome Trust Early Career Fellow in Clinical Research & Public Health, at the Indian Institute of Public Health Shillong. She has a PhD in Health Sciences (Epidemiology) from the University of Pune, with more than 10+ years of total experience in public health research including the Global Burden of Diseases project, and other national and international projects on cancers, liver diseases and tuberculosis.

Her research interests include cancer epidemiology and genetics, women health beyond reproductive needs, health economics and ethics in research. She is also a contributor to the ongoing Lancet Citizen's Commission on reimagining India's health systems.

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Prof. Sandra Albert



is a dermatologist and public health professional. She is the founding Director of the Indian Institute of Public Health Shillong. She has an MD in Skin & Sexually Transmitted Infections from the Kasturba Medical College, Manipal, India. From clinical medicine she broadened her field of interest to public health and received a Doctor of Public Health (DrPH) from the London School of Hygiene & Tropical Medicine, UK in 2014.

Her research interests include health systems, health policy, skin disorders, sexual and reproductive health, vector borne diseases epidemiology, health economics and indigenous knowledge.

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Dr. Tiameren Jamir



is the Registrar and deputy director of the Regional Resource Hub, Health Technology Assessment in India (RRH-HTAI) at the Indian Institute of Public Health Shillong. He is also a Visiting Faculty at the Department of Allied Health Sciences, Martin Luther Christian University (MLCU).

He has an MBBS degree from Guwahati Medical College & Hospital and an MBA in Hospital & Health System Management from Birla Institute of Technology and Science, Pilani (BITS Pilani), Hyderabad. He has more than 15 years of experience in the medical and health field with interest in Emergency Medicine focused on Pre-Hospital Care and Systems research.

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Dr. Barilin Dkhar



is a Scientist-C in an ICMR-NCDIR funded project on Cancer at the Indian Institute of Public Health Shillong. She holds a Master's degree in Bio-Technology and a PhD in Zoology (Biological chemistry) from NEHU Shillong with post-doctoral experience as a DBT- Research Associateship awardee (2018).

She has contributed to scientific research through her work on Cochlea implants, diabetes, parasitology, protein expression and purification. Her research interests include medical biochemistry, enzymology, natural products, medicinal plants, and cancer epidemiology.

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Bindya Sara Babu



is a Research Fellow at the Indian Institute of Public Health, Shillong in the Regional Resource Hub-Health Technology Assessment, India (RRH-HTAI). She has an M.Phil. in economics from the University of Madras, Chennai, Tamil Nadu. Previously she worked with IIT-Madras and WTO, Delhi.

Her research interests include macroeconomics, growth and development, economics of the social sector and public economics.

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Uniqueky Gratis Mawrie



is a future faculty of IIPHS. She is currently pursuing a Research Degree at the London School of Hygiene and Tropical Medicine, UK. Her PhD work involves applying the One Health Approach, to explore the role of animals and environment in the transmission and sustenance of soil transmitted helminths in humans.

She has an MPH from the Sree Chitra Tirunal Institute of Medical Sciences, Trivandrum and a BSc Nursing degree from CMC, Vellore. She brings both clinical and public health experience to the institute.

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3.2. Adjunct Faculty



Sampath Kumar, IAS is presently the Principal Secretary to Health & Family Welfare Department and Programme Implementation & Evaluation Department at the Government of Meghalaya. He has conceptualized the innovative State Capability Enhancement Project (SCEP) as a means of strengthening state capacity, while successively tackling complex development challenges. He is an Edward S Mason

Fellow at Kennedy School of Government and holds a Masters Degree in Public Administration from Harvard University.



Emeritus Professor Richard Heller, of the University of Manchester, UK, and University of Newcastle, Australia has a medical degree and doctorate from the University of London. Previously he was the Professor of Clinical Epidemiology and Community Medicine and Director of The Centre for Clinical Epidemiology and Biostatistics at the University of Newcastle and consultant general physician at the John Hunter Hospital. Prof. Heller was involved with the International Clinical Epidemiology Network, for capacity building in medical schools across the developing world. As part of that, he developed a distance learning masters course at the University of Newcastle. Founder and coordinator of the Peoples-Uni (<http://peoples-uni.org>) which aimed to provide Public Health capacity building in developing countries at low cost. Research interests include causes and prevention of heart disease, the implementation of Evidence Based Practice, and developing measures to describe the population impact of disease risks and the benefits of interventions. He has approximately 400 publications in the peer reviewed literature.



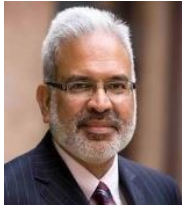
Dr. Laura Downey is a Senior Research Fellow at the George Institute for Global Health at Imperial College London. Previously, she was a technical advisor in the Global Health and Development Group at Imperial, and a core member of the International Decision Support Initiative (iDSI), an international collaborative platform that assists governments in low- and middle-income countries (LMICs) in using evidence to improve the value for money of healthcare investment. Dr. Downey has been closely involved in numerous health system reforms in India between 2015 and 2020 and remains a health policy mentor for the Indian Council of Medical Research. She has worked with country partners across Asia, Africa, and Europe in partnership with global institutions such as the World Health Organisation (WHO) and the World Bank. Dr. Downey has over 60 peer-reviewed publications and continues to actively contribute to research in health economics, particularly in relation to healthcare investment and priority-setting in LMICs. She has held research and policy positions at the National Institute of Health and Care Excellence (NICE), University College London (UCL), and the University of New South Wales, Australia.



Prof. Mark L. Wilson is an epidemiologist and population ecologist with broad research interests in infectious diseases, including the analysis of transmission dynamics, the evolution of vector-host-parasite systems, and the determinants of human risk. Over the past four decades, most research projects have aimed to improve understanding of the social, environmental and behavioural drivers of exposure, infection and disease, especially among underserved people. Efforts have been made to critically develop efficient study designs, thoughtful statistical analysis, and appropriate inferences. More recently, he has become engaged in applied research projects, including evaluating the effectiveness of interventions, and the role of social and economic barriers to their adoption. Some projects have included mixed methods approaches to assess knowledge and identify behaviours related to implementation of risk reduction measures.



Dr. Nanda Kishore is an anthropologist by training with over 20 years of experience in development sector and academia. He has a PhD in Medical Anthropology and Cultural Psychiatry, University College London, UK and an MPhil in Medical Anthropology, University of Hyderabad, Telangana. He also has an MA in Anthropology from the University of Hyderabad, Telangana. He worked for national and international development organisations before shifting to Indian Institute of Public Health Hyderabad, Public Health Foundation of India in 2009. Dr. Nanda is inspired by the philosophy of pragmatism and methods of ethnography and conducts research on contemporary social issues. He is concerned with attempts by persons and societies to secure well-being in the context of contradictions and uncertainties. Some research fields he is interested in are: Socio-Cultural and Ecological Factors of Health and Wellbeing, Mental Health, Health Policy and Health systems research, Tribal Health, Ethnography of Health and Healthcare, Technology for Health, Applied Medical Anthropology, Health Equity, Community based participatory research approaches, Human-centered Design, One Health and Citizen Science. Email: nandu.k@iiph.org



Prof. Rajan Madhok, MB BS MSc FRCS FFPHA medical graduate from Delhi, India he went to the UK in 1980 where over the years he held increasingly senior leadership positions as director of public health and medical director in various places in England. Throughout his career he has actively supported and led educational developments in academic and managerial roles.

He is committed to global and public health, capacity building and leadership development with a focus on human rights, ethics, and professionalism. He is keen to promote global learning and reflective practice – further details of his work are at www.ramareflections.com



Prof. Anura Viswanath Kurpad is a doctor, physiologist, and nutritionist, working at St John's Medical College, Bengaluru, where he is currently Professor of Physiology. He received his MBBS and MD from St John's Medical College, and PhD from Bangalore University in 1992. He was a postdoctoral Fellow at Cambridge University, UK, as well as a visiting Scientist at MIT, Cambridge, USA. He has published over 480 papers and has a H-index of 65 with over 24000 citations. In 2020, he was one of 3 Indian scientists in the top 2% of nutrition scientists worldwide according to the Stanford list. He is co-author of the popular Guyton's Textbook of Physiology (Asian Edition), which is now in its 3rd Edition, as well as a book on Nutrition and Diabetes. He serves as Associate Editor of the American Journal of Clinical Nutrition and Co-Editor of the Asia Pacific Journal of Clinical Nutrition. He is a Fellow of the Royal College of Physicians (London), Fellow of the National Academy of Medical Sciences and Fellow of the International Union of Nutritional Sciences. In 2015, he received the prestigious Margadarshi Fellowship of the Wellcome Trust/DBT India Alliance. His interests are in human, clinical and public health aspects of nutrition, applied throughout the lifecycle. In terms of specific nutrients, his interests are in the physiology and clinical aspects of human energy, protein and micronutrient (iron, vitamin A, B vitamins, calcium) metabolism. Prof. Kurpad works closely with

international and national policy and advisories. Beyond his work at the WHO, FAO and IAEA, he was the Chair of the Scientific Advisory Group of the Nutrition Division of the ICMR for 3 years, as well as Chair of the ICMR Expert Committee on Nutrient Requirement of Indians. He is also Chair of the Ministry of Health & Family Welfare's (MoHFW) Vitamin A policy subgroup. He was the Chair of the Scientific Advisory Committee of the National Institute of Nutrition (NIN). He is a member of the Niti Ayog's National Technical Board of Nutrition and the apex Scientific Committee of the Food Safety and Standards Authority of India (FSSAI). He is also a member of the Governing Body of the National Agri-Biotechnology Institute, Punjab.



Dr. Aritra Das is a medical doctor (MBBS from Calcutta University) with MS and PhD in Epidemiology from the School of Public Health, University of California – Los Angeles (UCLA), with more than 14 years of professional experience in various public health domains in India. He was awarded the NIH/Fogarty AIDS International Training and Research

Program scholarship for pursuing graduate and doctoral studies on HIV epidemiology. His research interests lie in Maternal, Neonatal and Child Health, Infectious diseases (HIV and visceral leishmaniasis) and Public Health Implementation Research. He has co-authored 42 articles (15 as the first author) in peer-reviewed international journals. His areas of work include, inter alia, conceptualizing and designing large observational studies and disseminating the findings with stakeholders such as donors, the provincial and the national Government. As the Consultant Epidemiologist of the Concurrent Measurement and Learning unit of the Bihar Technical Support Program, his current key responsibilities involve conceptualizing program evaluation designs and relevant scientifically valid studies, leading the overall analysis of data collected in various studies and identification of pertinent findings. Aside from this, he is responsible for managing the team of State and Regional M&E specialists and leading the technical and analytical capacity-building activities of the group of Regional and District-level M&E team members. He has worked with the Real-World Evidence division of a large CRO, where he was involved in the protocol writing, analysis plan preparation and study report writing for various pharmaceutical clients. He is proficient in using SAS for data management, exploration, and analytical exercises, including advanced regression modelling.



Dr. V Selvaraju, PhD, is an Economist with substantial work experience in health financing and policy. Over the past three decades, he worked in various capacities at Imperial College UK, CordAid, The Netherlands, World Health Organisation, World Bank, Abt Associates USA and other prominent development agencies as well as Governments in India, Indonesia, Bhutan and Afghanistan.

His primary areas of work include health insurance, health expenditure analysis, cost analysis, national health accounts, and performance-based financing, etc. He has published his research in peer-reviewed journals and books. He was invited, on several occasions, to contribute background papers for reports on health policy making in India. He served as a member of technical advisory groups and independent evaluation groups on health. Dr. Selvaraju is one of the founders of Indian Health Economics and Policy Association and served as its Founding Secretary until 2016.



Dr. Suveera Prasad is a Consultant Psychiatrist in General Adult, working in the UK for the last 18 years as a consultant. Dr. Prasad has done her medical training in Kerala and Post graduate training in Psychiatry in NIMHANS, Bangalore, India. After her Post Graduation in Psychiatry, she worked in the De-addiction Centre in NIMHANS and completed her thesis for DNB Psychiatry. She worked as a consultant in St. John's Medical College Hospital, Bangalore, India, before moving to the UK. She has done further courses in medical education through Sheffield University in the UK. Her areas of interest are Neuro-psychiatry, Perinatal psychiatry, and De-addiction/ substance misuse. Simultaneously, she has been involved in teaching and training of undergraduates, and postgraduates in Psychiatry, including, more recently, training nurse practitioners in the UK.



Dr. Shaibya Saldanha is an obstetrician & gynaecologist. She was, previously, a professor at the St John's Medical College Bangalore. Subsequently, she co-founded Enfold and steadily evolved into a sexuality activist with a strong focus on child rights. While continuing her clinical practice of 25 years, she trains stakeholders (medicos, counsellors, police, lawyers and judges, and the community at large) in setting up child protection systems.



Dr. Mayur Trivedi, PhD, has over 19 years of academic experience, his research is focused on health financing and insurance, health economics, the evaluation of health programs, and the health of marginalized communities. These research projects were funded by national and international agencies. He has pioneered research on health insurance for HIV. His recent research work was on Ayushman Bharat. He is also interested in public health film making. He says "I am driven to academia because of my interest and passion for facilitative teaching with the use of innovative pedagogy, including flipped classroom techniques. I teach courses on public health, demography, health economics, health financing, gender, and health".

4. Research Centres/ Projects at IIPHS

IIPHS has been successful in generating research grants from local and international funders for research and training in the northeast region. Thematic areas of work we have undertaken include: maternal and child health (immunization), adolescent health, sexual and reproductive health, epidemiology, nutrition, cancer epidemiology and mitigation, malaria, health economics and genetics.

4.1 Regional Resource Centre/ Hub for Health Technology Assessment in India (RRH- HTAI_n)

PI: Prof. Sandra Albert

Title - Regional Resource Hub for Health Technology Assessment in India (RRH-HTAI_n)

Funding Agency – Indian Council of Medical Research (ICMR)

Funding amount - INR 5055609.86/-

Collaborators - Department of Health Research, Government of India

Background - The RRH for the NER has been established at the Indian Institute of Public Health Shillong. HTAIn aims to evaluate the available evidence regarding cost and clinical effectiveness of health interventions that will help in reducing out of pocket expenditure and maximizing healthcare coverage. HTA is a method of synthesis that considers evidence regarding clinical effectiveness, safety, and cost-effectiveness funded by The Department of Health Research (DHR), Ministry of Health & Family Welfare (MoHFW), Government of India.

4.1.1 Assessment of PMJAY in Manipur

Title - Costing Study and Assessment of Manipur's Pradhan Mantri Jan Arogya Yojana Health Benefit Packages.

Funder - DHR-ICMR

Funding amount - INR 27,46,800/-

Collaborators - Department of Health Research, GoI, SHA Government of Manipur, PGI

Background – To achieve Universal Health Coverage, the Government of India is focused on the reduction of catastrophic health expenditure and ensuring access to essential and affordable healthcare services. AB-PMJAY is a centrally funded scheme launched on 23rd September, 2018 under the Ministry of Family Health and Welfare in India. The scheme aims to reduce the financial burden on the poor and vulnerable groups arising out of catastrophic hospital expenditure, while ensuring access to quality health services to all. It provides a coverage of INR 5,00,000 per family per year, covering ~10.74 crore families for almost all the secondary and tertiary care procedures in all the public and empanelled private hospitals across the country.

Objectives - The study has the following objectives:

- To assess costing of the existing packages based on burden of disease in state
- To assess appropriateness of packages being offered in the package by rationalization (e.g. based on utilization of services in comparison with disease burden)
- To make recommendations for expansions of health benefit packages (HBP) while also ensuring financial sustainability (e.g. FGD, IDI with state level stakeholders)

Methods - Sampling: Out of nine districts in Manipur, three districts are selected randomly and district hospital from public/private sector, CHCs, PHCs and SHCs have been selected of which includes - 3 District hospitals (Thoubal, Churachandpur, Tamenglong), 1 tertiary hospital and 3 private hospitals (Imphal)

System Costing: We use a mixed method approach to estimate costing, involving

both top down and bottom-up approach for more robust estimates and efficient estimation process. Both capital costs (cost of equipment or objects that have a working life of one year or longer and are not regularly replaced) and recurring costs, i.e. resources consumed within one year or have a working life of less than one year and must be regularly replaced, is determined. We estimated disease-specific costs as well as unit costs by the medical specialty, using OPD and IPD data from last year. Costs in peripheral levels of the health system are generally shared in nature, as various services are delivered through a common platform utilizing a common pool of resources, e.g. infrastructures and diagnostics equipment. Different apportioning factors will be computed to apportion the shared costs. A standard discounting rate of 3% is applied to convert the costs to current values. We propose to estimate unit costs of outpatient/inpatient care as the ratio of total annual costs for out/inpatient care and total number of patients visiting the hospitals in public/private sectors for consultation in the last one year.

Progress update- Data collection for the participating hospitals was initiated on 20th September, 2021. The data collection for the following hospitals (Shija hospital, Churachandpur, Tamenglong and Thoubal District hospitals) was completed on 25th June, 2022. Currently, data analysis is ongoing in collaboration with PGIMER, Chandigarh.



4.1.2. Cost effectiveness analysis of thiamine supplementation to pregnant and postpartum women to avert deaths among infants

Title - Cost effective analysis of thiamine supplementation among postpartum women to prevent infantile beriberi deaths

Funding Agency: - DHR-ICMR, MoHFW

Funding amount – under RRH

Collaborators - DHR, MoHFW and Makunda Hospital, Karimganj, Assam

Background - Thiamine deficiency results in disorders such as beriberi (heart failure), which in infants could result in high case-fatality of ~100% and neurological disorders (dry beriberi). Data from micronutrient assessment indicated thiamine intake was lowest in the North-East Indian states such as Manipur (0.5 mg), Meghalaya (0.57 mg), Assam (0.66 mg) v/s national 1.15mg (NIN) which is alarming. The fact that there are no simple diagnostic tests to detect thiamine 20 deficiency, hence early diagnosis and prevention of potential consequences are missed - leading to morbidity and mortality. There is increasing evidence that thiamine deficiency is contributing to maternal and infant deaths in the NER. State governments in NER often rely on central policy guidelines for programmatic implementation especially when there are cost implications.

Objectives:

- To determine the incremental cost effectiveness of thiamine supplementation as compared to standard of care among post-partum women to prevent infantile beriberi

Methods - A systematic review was conducted to extract the probability values and costs necessary for the effectiveness of thiamine supplementation in pregnant and postpartum women to prevent infantile beriberi in South East Asian Population. Values from the included studies were reviewed by an expert to obtain values to be inputted in the decision tree model. However, due to the dearth of data, the required values were not sufficient to be incorporated in the tree. Therefore, the team conducted clinical expert opinion interviews with clinicians from hospitals in four states. A decision tree and a Budget Impact Analysis (BIA) were done to estimate the CEA values.

4.1.3. Therapeutic Hypothermia using Phase Changing Material (Mira Cradle) to Reduce Mortality and Neuro-developmental Morbidity in Hypoxic Ischaemic Encephalopathy (HIE)

Title - Cost effectiveness of inducing Therapeutic Hypothermia using Phase Changing Material (Mira Cradle) to Reduce Mortality and Neuro-developmental Morbidity in Moderate and Severe Hypoxia Ischaemic Encephalopathy (HIE) **Funding Agency** - DHR-ICMR

Funding amount – under RRH

Collaborators – Department of Health Research, Government of India

Background - Globally 2.5 million newborn deaths occur annually contributing to ~47% of the under-5 child mortality. Birth asphyxia (BA), assumed to be related to

intrapartum hypoxia- ischemia, accounts for anywhere from 30 to 35 percent of neonatal deaths. In India, the reported incidence varies from 2 to 16.2% in community-based studies, with the reported case fatality rates ranging from 38.5 to 74%. Catastrophic deprivation of oxygen in the intrapartum period is thought to be directly responsible for 691,000 deaths and 1.02 million stillbirths each year, making it the fifth most common cause of childhood deaths under 5 years. For those infants that do survive, the multi-organ damage that can ensue means the risk of developing severe life-long morbidities is high. Intrapartum asphyxia results in a burden of 42 million disability years (DALYs). HIE occurs in about 1 – 2 per 1000 live births in developed countries and about 14 per 1000 live births in India. Phase-changing material is one of the alternative low-cost technologies used for cooling asphyxiated neonates. Studies have shown that inducing therapeutic hypothermia using PCM has a neuroprotective effect in newborns with moderate HIE in neonatal units. The study aims to perform a cost-effectiveness analysis on Mira cradle devices for cooling infants with HIE and the different costs related to the treatment of HIE.

Objectives:

- To conduct a systematic review of the available evidence on effectiveness in inducing TH using Phase Changing Material (MiraCradle) in HIE among neonates.
- To develop an economic model to estimate the cost effectiveness of PCM (MiraCradle) compared to other cooling devices/standard of care.
- To estimate the incremental costs per quality adjusted life years gained with the use of PCM (MiraCradle) over other cooling methods/standard of care for HIE.

Methods - A Systematic Literature Review (SLR) of all eligible randomized control trials, systematic literature reviews and meta-analyses were considered where authors analysed randomized control trials on therapeutic hypothermia vs. standard treatment protocol/ no treatment or low-equipped treatments. Studies including observational studies like a cohort, case-control, cross-sectional, quasi-controlled trials/non-randomised controlled trials, narrative reviews, and scoping reviews are excluded. Two reviewers were engaged in extracting information independently from the 54 pieces of literature selected for full-text review. We used Preferred Reporting Items for Systematic Review and Meta-Analysis to describe the screening and selection of literature based on inclusion and exclusion criteria. Among 627 hits with the use of different keywords and 62 duplicate articles were excluded. Among the rest, 560 records 457 were again excluded based on the exclusion criteria on title screening. Then 103 articles were included for abstract screening where 101 abstracts were screened and 54 were included for full-text screening.

Progress update- The systematic review and meta-analyses studies (Abate et al., 2021) of 13 randomized control trials to assess the effects of therapeutic hypothermia on hypoxic-ischemic encephalopathy showed that mortality is higher among control group provided with normal care compared to the group on which therapeutic hypothermia (11 studies) while 2 studies are against it. HELIX study (2021) conducted RCT? in 7 neonatal intensive care units of tertiary hospitals in

India, Bangladesh and Sri Lanka with an objective to investigate whether therapeutic hypothermia along with other services in neonatal intensive care units can successfully reduce the mortality or severe to moderate disability of neonates suffering from HIE in South Asia. It is evident that 50 per cent of infants in the hypothermia group and 47 per cent in the control group either died or suffered from disability with an RR value of 1.06(95% CI 0.87–1.30; p=0.55). The proposal was submitted for review at the 27th Technical Appraisal Committee held on 22nd of March, 2022. It was suggested that cost effectiveness study may not be conducted now and a comprehensive review for the effectiveness of the intervention may be done. The Committee suggested looking into NMS Report 2021 followed by a comprehensive systematic review of all the studies and trials to look for more evidence. The Systematic review as suggested has been completed and the manuscript is being prepared.

4.1.4 Cost-effectiveness Threshold (CET) for India

Title - Estimation of Cost-effectiveness Threshold (CET) for India

Funding agency- DHR-ICMR under RRH

Funding amount - INR 18,45,668/- (for Meghalaya center)

Collaborators - PGIMER, IIPHG, AIIMS (Bhub), JIPMER, AMS(Lucknow)

Background - Increasing healthcare costs and limited resources warrant the need of evidence-based priority setting followed by efficient resource allocation. Consequently, the use of Health Technology Assessment (HTA) and economic evaluations has gained importance worldwide as a tool to guide sustainable allocation of resources. To allow for replication of the evidence generated from an economic evaluation, it is important to quantify the results in terms of benefits that will be forgone if an intervention is funded by the government. A cost-effectiveness threshold (CET) is defined as a measure of cost per unit health outcomes which are forgone, i.e., it expresses the opportunity cost of displacing any existing service/program/health technology to fund the intervention under evaluation. However, there lies an uncertainty around the estimate of CET that should be used to judge the interventions that are under evaluation. India is still striving to achieve Universal Health Coverage (UHC) for which increase in resource allocation to health is imperative. In such a scenario, where the budget for health is in its expanding phase, valuation of societal preferences or the demand-side approach may be the preferred approach for estimation of CET. Contrary to this, for the countries which have already achieved the set standards of providing comprehensive care to all, valuation of the health opportunity cost or the supply-side approach appears to be a more relevant approach. The availability of CET is thus pivotal to precisely use the evidence generated by economic evaluations. The current attempt, therefore, aims to elicit the value of the willingness to pay (WTP) for a quality-adjusted life year (QALY) to estimate the value of CET for India.

Objective -

- To assess the willingness of pay (WTP) for a quality adjusted life year (QALY) gained using self-perspective in India.
- To assess the willingness of pay (WTP) for a quality adjusted life year (QALY) gained using societal perspective in India.

Method - The study was undertaken in 6 states of India. The selection of states was based on three criteria, i.e., income, health status and geographic location of the state. States thus selected were – Haryana, Uttar Pradesh, Gujarat, Odisha, Tamil Nadu and Meghalaya. A total sample of 10,603 was considered appropriate at the country level.

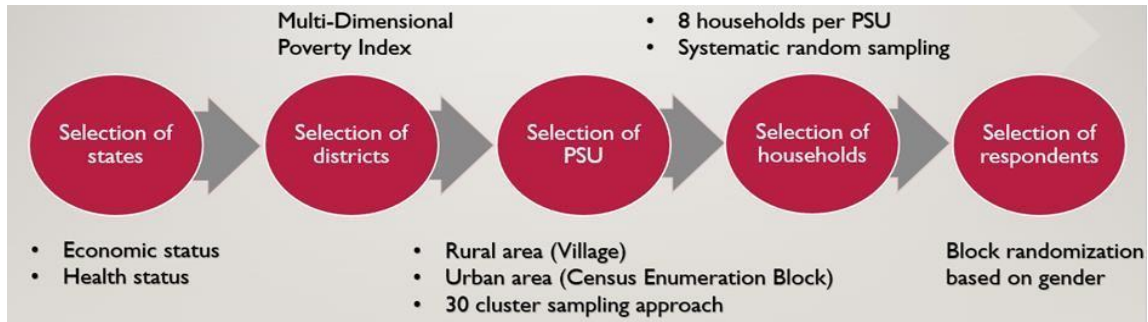


Figure 1: Sampling approach proposed in the study for estimation of cost-effectiveness threshold for India

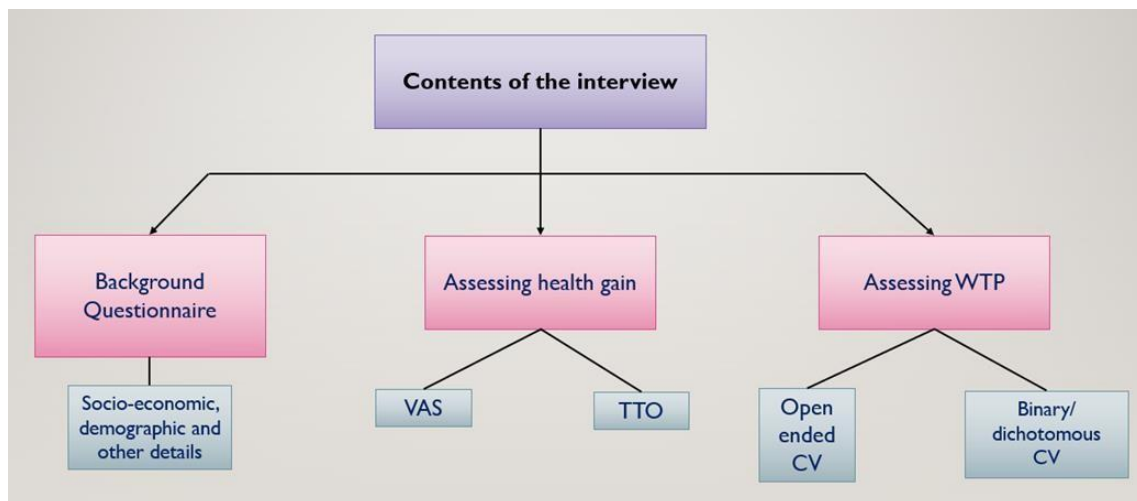


Figure 2: Components of interview for estimating willingness to pay per QALY

Progress report - The outcome report was presented in the 37th TAC meeting at New Delhi on 8th August 2023. The CET for India was worked out to be between 0.8 to 1.2 per QALY gained. The final report is awaited.

4.1.5 Pradhan Mantri Bhartiya Janaushadhi Pariyonjana (PMBJP)

Title - Cost Effectiveness of Pradhan Mantri Bhartiya Janaushadhi Pariyonjana (PMBJP) and its impact on Financial Risk Protection in India

Funder - DHR-ICMR under RRH

Funding amount - INR 4,68,720/- (for Meghalaya center)

Collaborators - PGIMER, PGIMS Rohtak, King Georges Medical University (UP), AIIMS Jodhpur, SMIMER Surat, IGIMS Patna, VIMSAR, Burla, SCTIMST,

Trivandrum, JIPMER Puducherry.

Background - “Jan Aushadhi” is the novel project launched by Government of India in the year 2008 for the noble cause – Quality Medicines at Affordable Prices for All. The Campaign was undertaken through sale of generic medicines through exclusive outlets namely “Pradhan Mantri Janaushadhi Kendra” (PMJAK) in various districts of the country. Pharmaceuticals & Medical Devices Bureau of India (PMBI) is the implementing agency of Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP). PMBI was established in December 2008 under the Department of Pharmaceuticals, Government of India. The Bureau has been registered as an independent society under the Societies Registration Act, 1860 as a separate independent legal entity in April 2010. However, this novel project launched by Government of India in 2008 had not reached anywhere near the desired objectives till 2012.

Objectives:

- To assess the coverage of PMBJP in India.
- To assess the impact of PMBJP on the out-of-pocket expenditure (OOPE), catastrophic health expenditure (CHE) and impoverishment rate (IR) attributed to medicines.
- To assess the cost (from payer’s/ government’s perspective) of implementing PMBJP in India.
- To assess the incremental cost of per unit reduction in the indicators of financial risk protection (out of pocket expenditure, catastrophic health expenditure, impoverishment rate) because of implementing Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP) as compared to baseline in India.
- To assess the incremental cost per quality adjusted life year gained as because of using branded medicines as compared to generic drugs (biosimilars in case of cancers) in the treatment regimens of the selected diseases.

Progress report - Data collection in all the sites have been completed. Data analysis is ongoing led by PGIMER. The progress report was presented at the 37th TAC meeting in New Delhi.

**4.2. The Centre for the Study of Complex Malaria in India (CSCMI)-
epidemiology, entomology and socio-behavioural studies**

PI: Dr. Sandra Albert

Funding Agency: National Institutes of Health, USA (through a collaborating institution (NLHMB))

Collaborators: New York University, USA, National Lutheran Health and Medical Board (NLHMB), University of Manchester, UK, National Institute of Research in Tribal Health, Jabalpur.

CSCMI is a collaborative initiative with NYU, USA, NLHMB, IIPHS and other partners. The aims of the Centre for the Study of Complex Malaria (CSCMI) are to develop the knowledge, tools, and evidence-based strategies needed to support Indian malaria intervention and control programs, and to build research capacity in India. With the aim to address the imbalance of epidemiological and transmission surveillance data for field sites in the state of Meghalaya.

Community based epidemiology, entomology and molecular-level studies have been conducted.

Three major studies conducted by CSCMI in Meghalaya:

4.2.1. Epidemiology Project

Cross-sectional, longitudinal, and clinic-based epidemiology studies to describe the burden of symptomatic and asymptomatic malaria and use genome sequencing devices to identify *P. falciparum* drug resistance alleles and *P. vivax* recurrences.

These studies have been conducted in malaria endemic villages of West Khasi Hills, West Jaintia Hills and South Garo Hills.

4.2.2. Entomology project

Vector studies including adult and larval surveys to characterize the prevalence and genetic diversity of different *Anopheles* species vectors, *Anopheles* population genomics, host seeking behaviour of *Anopheles* mosquitoes and insecticide resistance (using KDR sequencing and cone assays).



Adult Larval Collection from rice fields

4.2.3. Social and behavioral studies in malaria

These studies were conducted to: (i) observe how preventive measures such as indoor residual spraying (IRS), long-lasting insecticidal nets (LLIN) are implemented in practice; (ii) improve understanding on knowledge, attitude, and practices (KAP) within community and health system on malaria and its prevention; and (iii) undertake social network analysis to map the 'network of influence' in a village to identify potential behavior changes that could support a malaria elimination strategy.



(A)



(B)



(C)

Figure 3. Observation of IRS (A) preparation, (B) spraying and (C) wall marking.



Figure 4. SNA interview at Rongrigittim village, SGHs



Figure 5. SNA interview at Jadigindam village, SGHs

4.3 Epidemiological risk profile of gallbladder cancer study in North, East and North-East India

PI: Dr Eliza K Dutta

Funding agency: Early Career Fellowship from DBT/Wellcome Trust India Alliance

Funded amount: INR 1.7 crore

Collaborators: Assam Medical College, Dibrugarh; Dr Bhuvneshwar Borooah Cancer Institute, Guwahati; Jorhat Medical College and Hospital, Jorhat; Post Graduate Institute of Medical Education and Research, Chandigarh.

Background: Gallbladder cancer (CaGB) is one of the most lethal forms of malignancy of gastro-intestinal tract with an overall survival <5 years. Salient features of this cancer include a) non-specific presentation and asymptomatic progression, and thus detection at a very late stage with poor prognosis b) unique geographical distribution with cases aggregated in certain zones such as the Ganga- Meghna-Brahmaputra (GMB) plain. Population-based registry data from Assam (Kamrup district) report an age-standardized incidence of 16.2 per 100,000 females, only next to rates reported from Chile and Korea. Incidence of CaGB in the north and north eastern states is ~7 times higher than the incidence in the southern states. This risk is sustained even after migration from 'high-risk' north and north-eastern zones to the 'low-risk' southern regions (OR=1.3, 95% CI 1.02-1.82) Familial Relative Risk of 3.15 with 23% heritability has also been reported from the genome- wide association studies, providing another plausible explanation of skewed distribution of CaGBs in the country. We aim to study the cumulative risk conferred by the genetic susceptibility of single-nucleotide polymorphisms in the inflammatory and hepatobiliary pathways, across high-incidence regions in India, as there is still a paucity of studies with substantial epidemiological data supporting the findings.

Objectives:

- 1) Conduct a systematic review and meta-analysis to identify risk factors associated with CaGB in high incidence areas in India

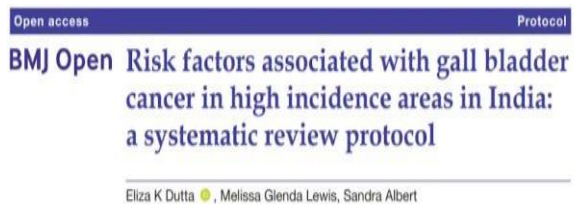
- 2) Determine associations between environmental, and genetic risk factors, and CaGB across regions through:
 - i) Exposure to pesticides and heavy metals
 - ii) Single Nucleotide Polymorphisms (SNPs) in inflammatory and hepatobiliary phospholipid transport pathway
- 3) Explore gene-environment interaction of selected SNPs and their expression across study groups

Methods: Hospital based 1:2 case-control study, using healthy controls (visitors of non-hepatobiliary cancers), residents of Assam/Punjab for more than 10 years continuously or intermittently. SNP identification to be conducted using restriction fragment length polymorphism and expression analysis to be conducted using rt-PCR at BBCI.



Progress update: April 2022 - 2023

1. Systematic review of risk factors associated with increased risk of gallbladder cancer in high-risk regions in India is completed.



Data has been compiled for a manuscript and under internal review by the study supervisor and mentor.

2. Recruitment has started in three sites, Assam Medical College, Dr Bhuvneshwar Barooah Cancer Institute, Guwahati and Post Graduate Institute of Medical Education and Research, Chandigarh.

4.4. Situational Analysis and Understanding influencing factors to address delays in cancer healthcare seeking in Meghalaya

PI: Prof. Sandra Albert

Funded by: NCDIR- Indian Council of Medical Research

Funded Amount: Rs. 23,17,640

Northeast India has the highest incidence of cancer in the country and has been witnessing an alarming rise in the number of cancer patients in recent years. Delay in healthcare seeking contributes to substantial increase in cancer morbidity and mortality. Lack of trust in the healthcare system, lack of access to healthcare services, limited early detection services and lack of knowledge of warning signs of cancer among general practitioners are some of the factors responsible for the delay in cancer care seeking. To prevent and control non-communicable diseases (NCDs), the National Program for Prevention and Control of Cancer, Diabetes, CVD and Stroke (NPCDCS) was launched in India in 2010 with a focus on health promotion, early diagnosis and screening and management of NCDs through NCD clinics, referral of cases, strengthening of infrastructure, capacity building, cost effective treatment and surveillance. However, in Meghalaya, the NPCDCS program has not been implemented uniformly throughout the state thereby contributing to the growing cancer burden in the State. This study aims to investigate the barriers and facilitators for healthcare seeking in cancer at the individual patient and the community levels, as well as identify the programmatic gaps of the NPCDCS program in Meghalaya.

The results highlight the major hurdles in the program implementation, which includes lack of manpower and training, lack of IEC materials and diagnostic tools for cancer awareness and screening. From the FGDs conducted with the ASHAs, it was found that the NPCDCS in Meghalaya mainly focuses on the other non-communicable diseases covered by the program and no proper training or awareness has been given to the ASHAs with regards to cancer.

The individual factors responsible for delayed health care seeking behaviors amongst cancer patients are associated with misconception about cancer and its treatment, fear and denial of cancer, attribution of symptoms to trivial conditions, and family responsibilities. Use of traditional herbal medications and financial constraint were the most common factors associated with prolonged patient delay. Family and friends' support is found to be the major enabling factor toward seeking treatment.

The community factors which are associated with delay in medical consultations were rural background, poor socio-economic status, longer distance from the centre, insufficient knowledge and fear of disease and treatment. Stigma was rarely encountered as one of the causes of delayed healthcare seeking in cancer patients.

4.5. Zoonotic and Vector Borne Diseases Research & Training Centre

PI: Dr. Melari S Nongrum; Co PI Dr. Rajiv Sarkar, Dr. Sandra Albert

Funded by: DBT/Wellcome Trust India Alliance

Funded Amount: Rs.9,97,76,600

India, and especially the north-eastern region (NER), is endemic for zoonotic and vector-borne diseases (ZVBDs) due to its unique cultural practices, predominantly non-vegetarian food habits, including consumption of bush-meat, and mixed-farming practices, which result in close contact of humans with livestock and other

domestic animals, with little awareness of disease risks. The interaction of humans or livestock with wildlife exposes people and their domestic animals to sylvatic disease cycles and the risk of wildlife pathogen spill-over, which may go undetected due to the paucity of infectious diseases surveillance in the NER.

This proposed initiative by three institutes from NER: Indian Institute of Public Health-Shillong, Indian Council for Agricultural Research and Nazareth Hospital, will bring together public health researchers, social scientists, laboratory microbiologists, clinicians, and disease modelers to address gaps in understanding threats posed by Zoonotic and Vector-Borne Diseases (ZVBDs) and Transboundary Animal Diseases (TADs) in northeast India.

This consortium will strengthen public-health research and training capacity by achieving the following objectives:

1. Establish and foster a ZVBD training and research centre to coordinate and strengthen research and training capacity for clinicians and public health personnel, while promoting post-graduate training (MPH/MSc/DNB/MPhil and/or PhD).
2. Characterize and evaluate risk factor patterns that facilitate transmission of regional ZVBDs by implementing population-based, clinical, and epidemiological studies to identify the hidden burden of undiagnosed infections, specifically six important zoonosis (Japanese Encephalitis, Scrub Typhus, Brucellosis, Leptospirosis, Cryptosporidiosis, H1N1-swine flu).
3. Monitor and forecast disease trends to enhance early cross-species detection of ZVBD outbreaks and TAD threats through syndromic surveillance, genetic identification of pathogens and simulation modelling of transmission dynamics. Real-time monitoring and syndromic surveillance in humans will be combined with laboratory determination of genetic relatedness of isolates from human and animal specimens.

Multiple sampling designs and data sources will be used to achieve the study objectives (see Figure 6), which will be conducted in 30 villages across three ecologically-different field sites with high potential for human-animal interaction.

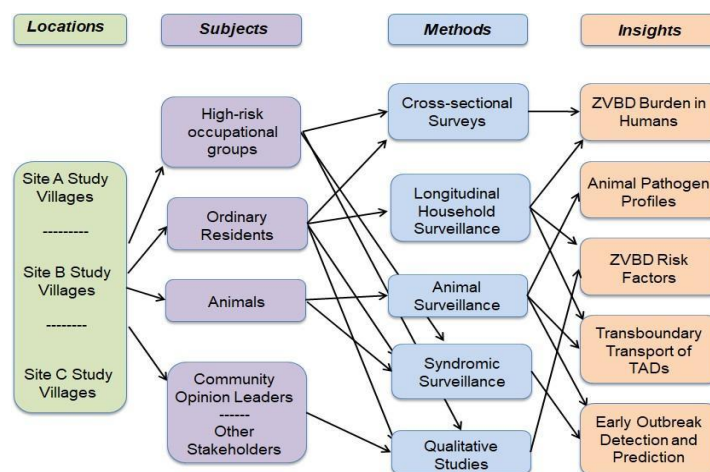


Figure 6: Study flowchart showing the subjects being studied, the methods to be employed, types of outcomes, and insights that are anticipated

A core component of this grant is to develop One-Health research capacity in the NE region, which will be achieved through the ZVBD Training and Research Centre that aims to train a trans-disciplinary team of young professionals, not only on ZVBDs, but also on research methodology and public health through long-term (doctoral/post-doctoral research, fellowships through clinical research and training program) as well as short-term (short courses and workshops on scientific writing and proposal development, epidemiology, biostatistics and laboratory methods) training.

The proposed research centre will address some of the key research gaps in ZVBD epidemiology, besides enhancing the research capacity in the region. The proposed syndromic surveillance system will supplement and strengthen existing disease surveillance initiatives for ZVBDs in the NER and can be expanded to cover other infectious diseases in future.

Progress update: April 2022-March 2023

The Zoonotic Vector Borne Disease Research and Training Centre Project commenced on January 1, 2022. The progress of the project for the period April 2022 to March 2023 is as follows:

Recruitment for the project positions have been completed. There were 30 villages selected based on diversity, climatic conditions, landscape, mixed population – tribal/ non tribal, agricultural patterns and animal husbandry from 3 districts, East Khasi Hills (7), Eastern West Khasi Hills (12) and Ri Bhoi District (11). The progress of Baseline Survey, Cross Sectional Survey and Environmental Mapping have been done in 21 villages in three districts (EKH, RB, EWKH). Basic trainings like Induction training, Good Clinical Practices Module, tools of data collection and Standard Operating Protocols (SOPs), Geographic Information System (GIS) were conducted for the staff.

Equipment and Laboratory

The Laboratory of IIPHS has been expanded and the construction is in progress. The equipment purchased as part of the project:

1. Class II B2 Biological Safety Cabinet
2. -20⁰ C Freezer
3. -80⁰ C Freezer
4. Elisa Plate Shaker
5. Kinetic Elisa Reader
6. Microplate Washer
7. Laboratory Centrifuge

4.6. Epidemiology of soil transmitted helminth infections in Meghalaya

PI: Dr. Rajiv Sarkar

Funder: Indian Council of Medical Research (ICMR)

Funding Amount: INR 13,90,332

Collaborator: Prof. Sitara S. R. Ajjampur, Christian Medical College, Vellore

Background: Soil transmitted helminths (STH) are an understudied, but important public health problem worldwide. Recent evidence, although still limited, indicates that there are certain STH species that have zoonotic potential, however this has not been fully explored. Meghalaya, a predominantly agrarian state in northeast India with a high animal-to-human ratio, provides an ideal setting for such studies.

Objectives:

- To ascertain the prevalence, intensity, and species distribution of STH infection in humans
- To explore the role of animals and environment as a reservoir for STH infection
- To identify the drivers of STH transmission in a predominantly agrarian, mountainous community with close human-animal interaction

Methods: A community-based cross-sectional study in 9 villages of three districts in Meghalaya (Eastern West Khasi hills, East Jaintia Hills and the Ri Bhoi) was conducted between October 2022 and March 2023. Fifteen households from each village were selected using a systematic sampling approach and two members (child <15 years and adult ≥15 years of age) were enrolled. Fresh faecal samples were collected from each participant and a structured questionnaire administered to assess the individual and household level risk factors of STH. Animal stool samples from domesticated animals and topsoil samples from within 2 meters of the front door of the participating households were also collected. The human stool samples were analysed for presence of STH using the Kato-katz method. The animal and soil samples linked to the individual/household positive samples were subjected to PCR analysis to identify zoonotic STHs. Risk factors for STH were examined using Generalized Estimating Equations that accounts for the clustered structure of data.

Key findings: A total of 296 human, 247 animal stool samples and 190 soil samples were collected from 151 households enrolled into the study. The overall STH prevalence was 5.4% (95% CI 3.1-8.6) with *Ascaris* being the commonest species identified. The STH prevalence was highest in under-five children. Majority of infected individuals had moderate-intensity infections as per the WHO criteria. Among the 10 animal stool samples tested by PCR, 8 were *Ascaris lumbricoides* and 1 was *Necator americanus*. Eleven of the 14 soil samples were positive for *Ascaris lumbricoides*, whereas one sample was positive for *Ancylostoma ceylanicum*, a zoonotic STH.

This study underscores the importance of applying the One Health approach for a comprehensive understanding of STH transmission in settings with close human- animal contact.

4.7. Effectiveness of SHG for breast and tobacco-related cancer prevention in Meghalaya - A quasi-experimental study

PI: Dr. Melari Shisha Nongrum

Funding agency: NCDIR-Indian Council of Medical Research

Funded amount: INR 60,15,318

Background: North-East India is known as the 'cancer hotspot' and East Khasi Hills

district of Meghalaya reports one of the highest burdens of cancers in the region. Unique socio-cultural factors such as integration of tobacco in the culture along with poor access to healthcare are some of the factors responsible for poor outcome indicators for cancers in the state. A situational analysis conducted on healthcare access showed a delay in uptake of cancer treatment along with widespread stigma associated with the disease. The traditional cancer awareness strategies do not seem to be working, therefore an exploratory bottom-up approach using community members (self-help group women) has been proposed. The cancer awareness material (intervention) will be prepared by the community, for the community to address the burden of cancer in the community.

Objectives:

- 1) To develop intervention for prevention of cancer using a participatory approach involving SHG women
- 2) Assess the effectiveness of the intervention in:
 - a) Improving awareness about cancer and its prevention
 - b) Re-enforcing health promotion
- 3) Identify implementation-related barriers and facilitators for scaling-up of the cancer-prevention intervention

Methods: We propose to develop and field test an intervention preventing cancer through a 'participatory learning' approach involving the existing women's SHGs in Meghalaya, targeting the top cancers viz, breast, cervix and tobacco-related cancers (mouth, oesophagus, lungs). Focused group discussion and key interview guides will be used to develop the intervention. This intervention will be tested in a different block using a quasi-experimental design. Frequency of tobacco consumption, self-breast examination and cancer stigma will be compared with the baseline level after the intervention has been implemented. The control arm will be the usual information education communication (IEC) materials used by the health system. Barriers and facilitating factors in developing and implementing interventions will also be documented for a potential scale-up in the state.

Progress update: April 2022-23

- a. Funding received from ICMR
- b. Permission to conduct the study in selected villages have been obtained
- c. Ethical clearance has been obtained

4.8. Optimization of supplementary nutrition provisions of the ICDS of India in collaboration with St. John's Medical college, Bangalore

PI: Dr. Sandra Albert

Funding agency: World Health Organization

Funded amount: INR 11,87,000

Collaborators: St John's Medical Research Institute, Bangalore

Overview of Research:

The ICDS, launched in 1975, targets early childhood care and development. Improving the nutritional and health status of children under 6 years is a key objective of the scheme which is operationalized through its Supplementary

Nutrition Program (SNP). Thus, there is a need to meet the energy and protein requirement of the SNP by optimizing its cost (with cost currently constrained Rs.8/day per child), but also to optimize many more nutrients, even though these are not in the SNP rules. Fat and select micronutrients are extremely important. This can be achieved by adding the right quantities of millets or fruits or vegetables, oil, or other quality foods such as milk to the SNP, thus diversifying its provisions. Thus, the objective for IIPHS is to quantify the current nutrient provisions of SNP and compute the nutrient gap (specifically for the regulated energy and protein rule, but also for forward looking recommendations that include as many nutrients as possible) in current ICDS SNP provisions (HCM and THR) in NER with data on current provisions collected through primary data sources by conducting interviews among government officials responsible for ICDS-SNP provision in the state Anganwadi workers, Anganwadi beneficiaries.

Objectives:

1. To determine the nutrient adequacy (of essential nutrients including iron, zinc, Vitamin A) of ICDS-SNP provisions (HCM and THR) in different states in India
2. To develop state-specific raw food, as well as recipe suggestions for HCM in the SNP, which would meet the energy and protein recommendations provided by the GOI, based on locally available foods and recipes. These state-specific suggestions will also meet forward looking recommendations for fat and micronutrients while limiting the quantities of sugar and salt.
3. To develop state-specific THR suggestions for children 6-36m, pregnant and lactating women, based on locally acceptable foods to meet the current SNP guidelines for energy and protein requirements, as well as forward looking recommendations for fat and micronutrient requirements, while limiting the quantities of sugar and salt.
4. To develop an easy-to-use web interface for SNP provision planners to perform linear programming to develop food/recipe combinations that would meet the requirements for the HCM and THR.
5. To perform a comparative cost analysis and nutrient analysis between the current SNP provisions and the suggested raw foods and recipes.

For the satellite centre (IIPHS), the specific objective is as follows:

Quantify the current nutrient provisions of SNP and compute the nutrient gap (specifically for the regulated energy and protein rule, but also for forward looking recommendations that include as many nutrients as possible) in current ICDS SNP provisions (HCM and THR) in different states with data on current provisions collected through primary data sources by conducting interviews among government officials responsible for ICDS-SNP provision in the state Anganwadi workers, Anganwadi beneficiaries.

Progress update:

Data as per study protocol has been collected from the 8 states from the NER. There were 16 Child Development Project Officers (CDPO), 16 Anganwadi Workers, 160 mothers of children who were engaged during the data collection including market survey in 32 markets.

New/upcoming initiatives

4.9 Title: Changing the Landscape of Soil Transmitted Helminths in India with Tropical Medicine Research Centre

PI: Dr. Rajiv Sarkar

Funding Agency: NIH-USA

Funding Amount: Rs. 80,00,000

5. Completed projects:

1. Exploring the reasons behind refusal of vaccines in Meghalaya- with support and funding from Directorate of Health Services (MCH&FW), Government of Meghalaya (2017-18).
2. Cost effectiveness analysis of hypothermia detecting devices, Funded by DHR under RRH-HTAI.
3. Economic evaluation of i-Stat (point of care testing device), Funded by DHR, under RRH-HTAI.
4. Impact assessment of the SALT (Stimulate, Appreciate, Learn, and Transfer) approach of community engagement to increase immunisation coverage through ownership - a mixed methods study in Assam, India (2016-18). The project was led by (PI) Prof Sandra Albert, Director and Professor, IIPH-S, Funder: International Initiative for Impact
5. A situational analysis and exploratory study of disease burden based on data from tertiary care hospitals in Shillong, Meghalaya. Funded by Government of Meghalaya (2015-2016).
6. Schools as a setting for Comprehensive Health Promotion: Preventive, Promotive, Curative, Referral and Outreach services. (2015-16). Funded by WHO (grant awarded to PHFI for 3 states, IIPH Shillong undertook the northeast activities).
7. Voices for health. Public Engagement Seminar on Cancers in the Northeast (2016). Funded by Wellcome Trust.
8. Opportunities of poor urban women to engage with health policies in an indigenous context-Strengthening Evidence-based Policy. A Case Study of Shillong, Meghalaya, India. As part of the Empowerment of Women and Girls project. Collaborative work with IDS. (2014-2015). Funded by DFID.
9. Medical Pluralism among the indigenous peoples of Meghalaya, Northeast India – Implications for health policy. Funded by Wellcome Trust, UK (2012-2014).
10. COVID-19 related studies -Knowledge, Attitude & Practices towards Hand Hygiene, Respiratory Etiquette & Community Quarantine in collaboration with Government of Meghalaya, May-June 2020
11. COVID-19 related studies - Vaccine hesitancy among health care workers and general population in Meghalaya in collaboration with Government of Meghalaya, May-June 2020.
12. COVID-19 related studies -Seroprevalence of SARS-CoV-2 antibodies in Meghalaya: A facility-based cross-sectional survey in collaboration with the state IDSP team, May-June 2020.
13. COVID-19 related studies -Effectiveness of step-up treatment using the combination of anti-histamines and steroids for treatment of COVID-19 in collaboration with Government of Meghalaya, May-June 2020.

6. Workshops/training/lectures/consultation/conference/seminars

6.1 Public Health Lecture Series/Guest lectures:

6.1.1 "Mobilizing action to address low child immunisation through Problem Driven Iterative Adaptation (PDIA) approach: A case study of Meghalaya"

Guest Faculty - Shri Sampath Kumar, IAS,
Principal Secretary, Health & FW, Meghalaya
Date - 28th May 2023
Venue - IIPHS, Lawmali Campus
Participants - 3rd Batch MPH,
Faculty



6.1.2 “Soil Transmitted Helminths”

Guest Faculty - Dr Sitara Swarna Rao Ajjampur, Professor of Microbiology, CMC Vellore

Date: 10th June 2022

Venue - IIPHS, Lawmali campus

Participants - MPH, BPH students and Faculty



6.1.3 “Health Financing”

Guest faculty- Dr. Grace Achungura, WHO India, Dr Matthew Jowett, WHO HQ, Mr Jaidev Singh Anand, WHO India

Venue- Indian Institute of Public Health Shillong, Lawmali campus

Date - 2nd September 2022

Participants - 3rd Batch, MPH



6.2 Workshop/Training/Seminar

6.2.1. Trainings on Nutrition & Food Safety

On the request of the Commissioner of Food Safety, Government of Meghalaya, 30 trainings were conducted on Nutrition and Food safety for ASHA/Anganwadi /MDM kitchen/Fair price shop dealers/public representative Dates: April 7-29, 2022.

Coverage: 30 Community and Rural Development (C&RD) blocks.2956 participants (711 AWWs, 654 ASHAs, 726 MDM workers, 477 fair price shop dealers, 66 school teachers and 275 belonging to public representatives like village/locality headmen and the public) from different 30 C&RD blocks.



Shella Block, East Khasi Hills



Chokpot Block, South Garo Hills



Saipung Block, East Jaintia Hills

**6.2.2. Two-day training workshop
on Economic Modelling**

Date - 24th and 25th May 2023

Venue - HTAI secretariat, DHR, New Delhi.



**6.2.3 Development of action plan for the IPSI
initiative for Comprehensive Primary Health
Care workshop**

Participating Partners - John Hopkins University,
AIIMS New Delhi, IIPHS and the Health
Department of Meghalaya

Date - 21st of April, 2023

Venue - Conference Hall, Pasteur Institute,
Lawmali Shillong



**6.2.4 Eat Right Millet Mela - The Commissioner
of Food Safety Govt. of Meghalaya, Shillong**

Date - 28th and 29th March 2023.

Venue - Malki football ground



Dr. Eliza Dutta and students of IIPHS at a stall in the Millet Mela.

6.2.5. State-level conference of Medical Superintendent for designing a comprehensive Tertiary Healthcare Mission - Dept. of Health & Family Welfare, Govt of Meghalaya

Date - 16th March 2023.

Venue - Marriott Courtyard, Shillong

Participants - Hon' Health Minister to Govt of Meghalaya, Dept. Health & Family Welfare Ampareen Lyngdoh, Principal Secretary, Commissioner & Secretary, Secretary, Health & FW. IIPH Shillong was represented by its Director Prof. Sandra Albert, faculty and BSc PH students.



Fig: (L-R) Dr. Ampareen Lyngdoh, Health Minister, Govt of Meghalaya; Director, IIPH Prof. Sandra Albert, Shri Ramkumar, IAS, and a dignitary deliberating on the healthcare issues of Meghalaya.

6.2.6. A 4-day training program on GIS and data extraction under the Zoonotic and Vector Borne Diseases and Training Centre Project

Resource person - Mr. J Senthil Kumar, Data Manager, Christian Medical College, Vellore

Date - 8th-11th March 23

Venue - IIPHS Lawmali, Campus followed by field visit to Ri Bhoi



6.2.7. 2nd International Symposium on Health Technology Assessment: ISHTA 2023

Date - 10th March 2023

Venue - Sushma Swaraj Bhavan, New Delhi

Chief Guest - Shri Jagdeep Dhankhar, Vice President of India



6.2.8. Training of Trainers and Surveyors for the Meghalaya Nutrition Study - an initiative by the Gov of Meghalaya, under the MECDD Mission, to conduct an independent (state-level) nutrition survey.

Date - 21st February 2023.

Venue - Conference Hall, MIIT, Dhanketi, Shillong

Resource persons - Dr Sandra Albert, IIPHS & Dr Ritu Rana, IIPHG



6.2.9. Health and Science Camp - Organised by IIPH Shillong

Date - 9th December 2023

Venue - Mawlyngkhung village in Umsning Block, Ri Bhoi District

Activity - Medical checkup was done on each patient by the doctors, blood pressure and Hb were also measured and this enabled the community members to understand their status. As part of the camp, there were several science-based activities aimed at engaging children, youth, and mothers to understand the science of most daily activities.



6.2.10. Human & Animal stool and Soil sample- collection and processing for detection of soil transmitted helminths as a part of the ICMR funded Project on Soil Transmitted Helminths,

Resource person - Prof (Dr.) Sitara Rao Ajjampur and team at The Wellcome Trust Research Laboratory, Division of Gastrointestinal Sciences, Christian Medical College Vellore

Date - 7th - 9th November 2022.

Participants from IIPHS - Mr Bandapkupar Mawkhlieng & Mr Peter J. Marbaniang



6.2.5. Second Scientific Writing Workshop - part of the Cohort who are analyzing the Global Adult Tobacco Survey 2016-17 for North East India.

Date - 24th - 26th August, 2022

Venue -Tata Institute of Social Sciences, Mumbai.

Participants from IIPHS - Dr. Melissa G Lewis and Dr. Melari Shisha Nongrum



6.2.6. Workshop on "Dengue is preventable, lets join hands" as a part of the National Dengue Day hosted by the office of the State Program Officer, NCVBDC, Meghalaya

Dated - 18th December, 2022

Venue - Pasteur conference hall, Lawmali

Resource person - Dr Rajiv Sarkar, Lead Epidemiologist, Indian Institute of Public Health, Shillong



6.2.7. Outreach event by the DBT/Wellcome Trust India Alliance in collaboration with Indian Institute of Public Health Shillong (IIPHS focusing primarily on Clinical and Public Health Research in India with the aim to help researchers in North-East India to know more about the opportunities that India Alliance provides to develop their research careers in clinical and public health research.

Date - 6th May 2022

Venue - IIPHS, Lawmali campus

Resource persons - Prof. Shah Ebrahim, The London School of Hygiene and Tropical medicine (LHSTM) and Dr Surender Mohan, Grants Adviser, India Alliance **Participants** - Students from institution like St Edmunds, MLCU, Clinicians from NEIGRIHMS, Bethany Hospital, and Faculty from ICAR and MLCU.



6.2.8. Food safety and Nutrition Training and Awareness Programme for Asha/Anganwadi/MDM Kitchen/Fair Price Shop Dealer - Office of the Asst. Commissioner Food Safety, Government of Meghalaya

Date- 22nd April 2022 onwards for a period of 1 week

Venue - C&RD blocks in East Khasi Hills and West Garo Hills



6.2.9. International Centers of Excellence for Malaria Research (ICEMR)

Workshop

Date - 13th & 14th February, 2023

Venue - Mayfair Hotel, Bhubaneshwar, Odisha

Participants - ICEMR Program Directors & Research Staff



6.3 Other Activities

6.3.1 Meeting on Public Health management cadre organized by the Secretary Health and FW, Government of India at India Habitat center, on 21st October 2023. IIPHS was represented by Prof, Sandra Albert, Director and two members of the faculty.



6.3.2 The World Health Day 2022 was celebrated with enthusiasm by the students of Indian Institute of Public Health, Shillong with focus on the current year's theme i.e. "Our planet, our health". A flash mob dance was organized at Khyndailad, Police Bazar Shillong to generate awareness on the health of individuals as well as the planet. One-to-one interviews among the students of St. Anthony's College and Shillong College to understand the perception of college students towards health and the environment was also conducted. A group interaction among individuals attending the Out Patient Department at Ganesh Das Hospital to spread awareness on preventive health practises and environment health was also organized.

Date - 7th April, 2022



6.3.3 Meeting with the Commissioner & Secretary, Health & FW, Government of Nagaland. The Indian Institute of Public Health Shillong (IIPHS), represented by the Director and the Registrar had a fruitful interaction with Shri Y. Kikheto Sema, IAS, Commissioner & Secretary, Health & FW Government of Nagaland at the Nagaland Civil Secretariat. The Commissioner & Secretary was informed on the various activities of IIPHS and possible areas of collaboration between the State and IIPHS was discussed in detail. He was also informed of the upcoming Regional Workshop on Health Technology Assessment which is to be held at Shillong in collaboration with the Directorate of Health Research, Ministry of Health & FW, Government of India.

Date - 31st March 2023



6.3.4 A special program on "Single motherhood-concerns and challenges" was organised by Doordarshan Kendra Shillong. Dr Melari Nongrum, Associate Professor, IIPHS participated as a panelist.

Date -15th July 2022



6.3.5 Consultative meeting to deliberate on Health Data Analysis needs in North East India was organised at Guwahati by the Population Council of India. Two of our senior faculty attended the meeting.

Dated - 10th February 2023

7. Membership to Expert Committees /Task force/Working Groups

- a. Prof Sandra Albert is a member of the Working group on Epidemiology Survey and Documentation constituted by the Interdisciplinary AYUSH Research and Development Task Force on Covid-19. Notification No. A.17020/1/2020-E.1 of Ministry of AYUSH.
- b. Dr Rajiv Sarkar, and Uniqueky Mawrie are members of the technical support group of the State response team for COVID-19, Government of Meghalaya
- c. Prof Sandra Albert is a member of the Medical Expert Committee on COVID-19 constituted by the Government of Meghalaya.
- d. Prof Sandra Albert is a commissioner on the Lancet Citizen's commission

8. Journal Articles

1. Passah M, Nengnong CB, Wilson ML, Carlton JM, Kharbamon L, Albert S. Implementation and acceptance of government-sponsored malaria control interventions in Meghalaya, India. *Malar J.* 2022;21(1):200 <https://www.ncbi.nlm.nih.gov/pubmed/35739533>
2. Carlton JM, Eapen A, Kessler A, Anvikar AR, Hoffmann A, Singh OP, Sullivan SA, Albert S, Sahu PK, Mohanty S, Wassmer SC. Advances in Basic and Translational Research as Part of the Center for the Study of Complex Malaria in India. *Am J Trop Med Hyg.* 2022;107(4_Suppl):97-106 <https://www.ncbi.nlm.nih.gov/pubmed/36228919>
3. Carlton JM, Sahu PK, Wassmer SC, Mohanty S, Kessler A, Eapen A, Tomko SS, Walton C, Joshi PL, Das D, Albert S, Peter BK, Pradhan MM, Dash AP, Das A. The Impact, Emerging Needs, and New Research Questions Arising from 12 Years of the Center for the Study of Complex Malaria in India. *Am J Trop Med Hyg.* 2022;107(4_Suppl):90-6 <https://www.ncbi.nlm.nih.gov/pubmed/36228922>
4. Dutta EK, Kumar S, Venkatachalam S, Downey LE, Albert S (2022) An analysis of government-sponsored health insurance enrolment and claims data from Meghalaya: Insights into the provision of health care in North East

5. Dutta EK, Lewis MG, Albert S. Risk factors associated with gall bladder cancer in high incidence areas in India: a systematic review protocol. *BMJ Open* 2022;12: e056849. doi:10.1136/ bmjopen-2021-056849.
6. Mawrie UG, Kumar S, Goswami B, Sarkar R, Albert S. The need for a holistic approach toward pandemic control: lessons from a cross-sectional study on COVID-19 in Meghalaya, India. *J Public Health Policy*. 2022. 43: 515-529. PMID: 36376454.
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9. Kynsai Ria C. Kharkongor, Sandra Albert & Glenn Kharkongor. Presumed courtship or territorial behaviour of the White-capped Redstart *Chaimarrornis leucocephalus*. *Indian Birds*. 2021; Vol. 17: No. 3. https://indianbirds.in/pdfs/IB_17_3_KharkongorETAL_WhitecappedRedstart.pdf
10. Kynsai Kharkongor, Glenn CK and S Albert: Brood parasitism on Red-billed Leothrix *Leiothrix lutea* in Meghalaya. *Indian Birds* 2020; Vol. 16 No. 4; https://indianbirds.in/pdfs/IB_16_4_KharkongorETAL_RedbilledLeothrix.pdf
11. Kessler, A., Shylla, B., Singh, U. S., Lyngdoh, R., Mawkhlieng, B., van Eijk, A. M., ... & Albert, S. (2021). Spatial and temporal village-level prevalence of Plasmodium infection and associated risk factors in two districts of Meghalaya, India. *Malaria Journal*, 20(1), 1-17.
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14. Sandra Albert, John Porter & Judith Green. Doktor Kot, Doktor Sla – book

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25. Shridhar K, Shrivastava A, Mitta S, Dutta E, Bumb D, Maranganty P, et al.

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9. Book Chapters

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2. Albert S. Indigenous peoples, food, and the environment in northeast India. In: Rawlinson MC, Ward C, editors. The Routledge Handbook of Food Ethics. NY: Routledge; 2017. p. 113-24.
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10.Reports

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11. Public engagement activities

11.1 Articles in Newspapers:

1. Scrub typhus-A common yet neglected disease in Meghalaya By Dr Barilin Dkhar and Dr Meban Aibor Kharkongor
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2. Rajiv Sarkar. Medical Experts speak on inevitable third COVID wave in Meghalaya <https://thenortheasttoday.com/tntvideos/features/impending-third-wave-in-meghalaya/cid3485031.htm>
3. Rajiv Sarkar: Alarming rise in COVID cases: Is State prepared enough?
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4. Rajiv Sarkar. Vaccination only protection against COVID, experts say
<https://theshillongtimes.com/2021/04/21/vaccination-only-protection-against-covid-experts-say/>
5. Sandra Albert. Novel Corona virus Covid-19 infection: A pragmatic approach
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6. Sandra Albert and Dr Glenn Kharkongor. Covid-19 Bulletin
<http://epaper.theshillongtimes.com/epapermain.aspx?pgno=7&eddate=2020-03-19&edcode=820009>
7. Sandra Albert and Glenn Kharkongor. Stages and life span of a pandemic: India and the world by
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<http://epaper.theshillongtimes.com/epapermain.aspx?pgno=7&eddate=2020-03-21&edcode=820009>
9. Sandra Albert and Glenn Kharkongor. Vaccines and medicines for COVID-19
<http://epaper.theshillongtimes.com/epapermain.aspx?pgno=10&eddate=2020-03-22&edcode=820009>
10. Sandra Albert and Glenn Kharkongor. Scenarios and strategy building for Meghalaya
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11. Sandra Albert and Glenn Kharkongor. Science must drive the Covid-19 decision making
<http://epaper.theshillongtimes.com/epapermain.aspx?pgno=7&eddate=2020-03-24&edcode=820009>
12. Sandra Albert. TB remains top infectious killer worldwide
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13. Sandra Albert and Glenn Kharkongor. Now is the time to prepare for the post-lockdown phase
<http://epaper.theshillongtimes.com/epapermain.aspx?pgno=7&eddate=2020-03-31&edcode=820009>
14. Sandra Albert and Glenn Kharkongor. Meghalaya's Covid strategy is on the right track
<http://epaper.theshillongtimes.com/epapermain.aspx?pgno=7&eddate=2020-04-08&edcode=820009>
15. Meban A Kharkongor and Sandra Albert. What about the others? Has health care for other patients been compromised

<http://epaper.theshillongtimes.com/epapermain.aspx?pgno=6&eddate=2020-04-30&edcode=820009>

16. 'Trajectory of pandemic in state one of the lowest in India' Interview of Rajiv Sarkar and Eliza Dutta published by The Shillong Times
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17. Sandra Albert Public health and medicine – is there a difference?
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11.2 Newspaper articles on other public health related issues

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2. Sandra Albert, Are medical colleges the answer for good health? Shillong Times, 16th March 2018
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4. Karter Lombi. Challenges of Hepatitis in the North East. The Arunachal Times, 28 July 2017
5. Samina Parveen. Blood Donation: The gift of Life. Shillong Times, 14 June 2017
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7. Anirban Goswami and. Jahnabi Hazarika. Myths about immunization hampering children's health. Shillong Times, 2 May 2017
8. Sandra Albert. State tops list of malaria cases in India. Shillong Times. April 25, 2017
9. Anirban Goswami. Encouraging community ownership for childhood immunization. The Sentinel April 29, 2018
10. S Albert. The Protection of Children from Sexual Offences (POCSO) Act. Shillong Times January 23, 2017.
11. Why are the women of Meghalaya so anaemic? Shillong Times. June 16, 2016.

11.3 Media Reports

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2. <https://youtu.be/yPiFenc5FZc> IIPH event covered by DD news Meghalaya as headline and full story
3. Malaria study centre launched in City, by Guardian News Bureau, Monday, September 25, 2017, The Meghalaya Guardian.
4. Event: Stakeholder engagement and launch event, State Convention Centre, Shillong, 22nd September 2017. Organized by the Indian Institute of Public Health Shillong (IIPH) in collaboration with the Department of Health & Family Welfare, Govt. of Meghalaya
<http://mg.glpublishations.in/index.php?mod=1&pgnum=3&edcode=1&pagedate=2017->

09-25&type

5. Meghalaya: Breakthrough in Malaria Research through Shillong's Centre for Study of Complex Malaria soon! by Reporter, Tuesday, September 24, 2017, The Northeast Today
6. News Clip by reporter in The Shillong Times on 23 September 2016 of Samina Parveen as a speaker.
Event: Programme on Health and Personal Hygiene as part of Swachh Bharat Pakhwada at NEEPCO Corporate Office Shillong
7. East Khasi Hills among areas with highest cancer cases in country, by Reporter, Wednesday, July 27, 2016, The Shillong Times.
Event: Voice for Health: Cancer in the North East – Public engagement event, State Convention Center, Shillong, 26th July 2016. Organized by Indian Institute Public Health, Shillong and Wellcome Trust/ DBT India Alliance
8. Imbalanced diet a cause of concern in M'laya, by Reporter, Wednesday, 10 August, 2016, The Shillong Times,
Event: State level Consultation on Accelerating Progress toward Good Nutrition for All in Meghalaya Insights from the India Health Report: Nutrition 2015; State Convention Center, Shillong, 9th August 2016. Organized by the Government of Meghalaya, Social Welfare Department, State Resource Centre for Women, Public Health Foundation of India (PHFI) and India Institute of Public Health Shillong (IIPH). Read more at <http://www.theshillongtimes.com/2016/08/10/imbanced-diet-a-cause-of-concern-in-mlaya/#jkXXSezk64poBjvB.99>
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Event: State level Consultation on Accelerating Progress toward Good Nutrition for All in Meghalaya Insights from the India Health Report: Nutrition 2015; State Convention Center, Shillong, 9th August 2016. Organized by Government of Meghalaya, Social Welfare Department, State Resource Centre for Women, Public Health Foundation of India (PHFI) and India Institute of Public Health Shillong (IIPH). Read more at: <http://www.sentinelassam.com/meghalaya/story.php?sec=2&subsec=8&id=277324&dtP=2016-08-10&ppr=1>Wednesday
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11. State fares poorly in child nutrition, Guardian News Bureau Shillong, Aug 9 2016, The Meghalaya Guardian
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12. Child stunting declines in Arunachal, Itanagar, Aug 12 2016, Echo of Arunachal Event: State level Consultation on Accelerating Progress toward Good Nutrition for All in Meghalaya Insights from the India Health Report: Nutrition 2015; State Convention

- Center, Shillong, 9th August 2016. Organized by the Government of Meghalaya, Social Welfare Department, State Resource Centre for Women, Public Health Foundation of India (PHFI) and India Institute of Public Health Shillong (IIPH).
13. Arunachal better in feeding practices: NFHS, Shillong, 12 Aug 2016, Independent Review (Arunachal Pradesh)
Event: State level Consultation on Accelerating Progress toward Good Nutrition for All in Meghalaya Insights from the India Health Report: Nutrition 2015; State Convention Center, Shillong, 9th August 2016. Organized by the Government of Meghalaya, Social Welfare Department, State Resource Centre for Women, Public Health Foundation of India (PHFI) and India Institute of Public Health Shillong (IIPH).
 14. Workshop on sexual abuse held in city, by Reporter, July 29 2016, The Shillong Times
Event: Workshop on Medico - Legal aspects of Management of Sexual Assault Victims, Conference Hall, Directorate of Social Welfare, 28 July 2016. Organized by the State Resource Centre for Women (SRCW) in collaboration with the Indian Institute of Public Health (IIPH) Shillong and The Society for informed, conscious and responsible existence (ICARE). Read more at:
<http://www.theshillongtimes.com/2016/07/29/workshop-on-sexual-abuse-held-in-city/#G4u7wIUkYrQ8w9ve.99>
 15. Sensitization on sexual abuse underlined, GUARDIAN NEWS BUREAU SHILLONG, AUG 1 2016, The Meghalaya Guardian
Event: Workshop on Medico - Legal aspects of Management of Sexual Assault Victims, Conference Hall, Directorate of Social Welfare, 28 July 2016. Organized by the State Resource Centre for Women (SRCW) in collaboration with the Indian Institute of Public Health (IIPH) Shillong and The Society for informed, conscious and responsible existence (ICARE)
 16. Why are the women of Meghalaya so anaemic? by Sandra Albert, Thursday, June 16, 2016, The Shillong Times: <http://www.theshillongtimes.com/2016/06/16/why-are-the-women-of-meghalaya-so-anaemic/#bv1pMSw8icQJj8I9.99>
 17. Meghalaya: Alternate models to address Shortage of medical specialists in the state, 25th Jan 2019, South Asia views:
Event: Final signing and handing over of MoU regarding implementation of ADARSH, between the State Government and Indian Institute of Public Health
Read more at: <http://southasiaviews.com/2019/01/25/meghalaya-alternate-models-to-address-shortage-of-medical-specialists-in-the-state/>

12. Conference/workshop presentations by IIPHS Research team

12.1 Oral:

1. Kessler A, Lyngdoh P, Das A, Walton C, Carlton JM, S Albert. Malaria in Meghalaya- evidence review, decadal data and new research initiatives. The 21st International Conference on Emerging Infectious Diseases (EID) in the Pacific Rim. 26th March 01st, 2019 in Vietnam by the Ministry of Health of Viet Nam and the CMSP.
2. Kessler A, Jamir L, Lyngdoh P, Mawkhlieng B, Khongwir CN, Nongdhar J, Marbaniang PJ, Manar C, Suting E, Challam M, Siangshai W, Sangriang I, Lamin O, Kshiar A, Singh US, Shylla B, Sullivan SA, Das A, Walton C, Carlton JM, Albert S. Malaria in Meghalaya: Analysis of existing literature and state control programme data with real-time surveillance. 14th International Conference on Vectors and Vector Borne Diseases. Bhubaneswar. 9-11

January 2019.

3. Das T. Estimation of Rural Credit Demand: A Study of Lower Brahmaputra Valley of Assam, Two Day International Conference on Interdisciplinary: Contemporary Research in Humanities, Social Sciences and Management Studies (COIN-2017), Meghalaya, 22nd July 2017.
4. Albert S. Impact assessment of the SALT (Stimulate, Appreciate, Learn, and Transfer) approach of community engagement to increase immunisation coverage through ownership - a mixed methods study in Assam, India. 3ie workshop Delhi, 2017.
5. S Albert. Process Monitoring. 3ie learning workshop Delhi, 2017.
6. S Albert. Overview Meghalaya – its people and health systems. Washington DC 2017
7. Hazarika J, Pramanik S, Ghosh A, Parveen S and Albert S. Impact assessment of the SALT (Stimulate, Appreciate, Learn, and Transfer) approach of community engagement to increase immunisation coverage through ownership - a mixed methods study in Assam, India, Community Health in the North East by Society for Community Health Awareness Research and Action (SOCHARA) and the Fellows Collective-Northeast, Shillong Meghalaya, 19th August 2016.
8. Kharlyngdoh D, Saprii L, Oosterhoff P, and Albert S. Digital Story Telling (DST) A qualitative method for documenting lived experiences, 5th Annual Public Health Foundation of India Research Symposium, New Delhi 2015.
9. Khyriem T, Kharlyngdoh D, Saprii L and Albert S, Compilation and ICD-10 coding of patient data from a public sector tertiary care hospital in Meghalaya, 6th Annual Public Health Foundation of India Research Symposium, New Delhi. 2016
10. Albert S. Health policy for heterogeneous populations. 5th PHFI Annual Research Symposium March 12, 2015, New Delhi.
11. Albert S. Integrating different medical systems for northeast India. At regional workshop on 'Health Assurance in India: The Road Ahead' on 12th August, 2015, Bhubaneswar, Orissa.
12. Albert S. Integrating different healthcare systems for northeast India. 2nd Annual Health Care Expansion Summit, North East Region 3rd–4th September 2015, Guwahati, Assam.
13. Albert S. Introduction to operational research. Operational Research in Public Health- Why, What, Role, Relevance. North East Zonal Operational Research Workshop NEIGRIHMS, Shillong, Meghalaya 05-06 Feb 2016.
14. Albert S. Panellist at seminar 'Trick or Treat' the future of healthcare access. Wellcome Trust, at British Council, New Delhi 22 Jan 2016.
15. Albert S. Discussant at Panel on LHT and AYUSH linkages: Epistemological and Institutional. Dialogue on Revitalization of Local Health Traditions. January 20-21, 2016, Azim Premji University, Bangalore.
16. Albert S. Public Health education and research in Northeast. Northeast health care summit. July 8-9, 2016, Guwahati, Assam.
17. Albert S. Chair public engagement seminar, Voice for Health: Cancer in the North East. Shillong, 26th July 2016. Organized by Indian Institute Public Health, Shillong and Wellcome Trust/ DBT India Alliance.
18. Das T. Session Chair- Economics, Two Day International Conference on Interdisciplinary: Contemporary Research in Humanities, Social Sciences and Management Studies (COIN-2017). 21st July 2017. Organized by Department

of Humanities and Social Sciences, National Institute of Technology, Meghalaya.

19. Albert S. Workshop on rape and child sexual abuse. Chaired panel discussion on the way forward. Shillong July 27, 2016.
20. Albert S. co-facilitator workshop on Medico - Legal aspects of Management of Sexual Assault Victims, Directorate of Social Welfare, 28 July 2016. Organized by the State Resource Centre for Women (SRCW) in collaboration with the Indian Institute of Public Health (IIPH) Shillong and The Society for informed, conscious and responsible existence (ICARE).
21. Albert S. Relevance of research in the postgraduate course. DERMACON-2015: National Conference of the Indian Association of Dermatology, Venereology & Leprology (IADVL); 2015 12th-15th February; Mangalore, India.
22. Kharlyngdoh D, Saprii L, Oosterhoff P, Albert S. Engaging with state and indigenous institutions – experiences and challenges of dissemination in Meghalaya. ResUp MeetUp symposium and training exchange; 2015 09th-12th February; Nairobi, Kenya.
23. Roshan Ronghang. Assessing the pattern of enrolment and claims in Megha Health Insurance Scheme (MHIS). International Seminar, Using Evidence for Decision-Making in Health Benefits Package Design, 25th- 26th February 2019; Guwahati, Assam, India

12.2 Posters

1. Albert S et al. Implementation and Acceptance of Government-sponsored Malaria Control Interventions in Meghalaya, India. ASTMH 71st Annual Meeting, Seattle, USA, Oct 2022.
2. Sarkar R et. al. Epidemiology of malaria in Meghalaya: implications for transmission interruption in endemic settings. ASTMH 71st Annual Meeting, Seattle, USA, Oct 2022.
3. Albert S et al. Malaria in Meghalaya- evidence review, decadal data and new research initiatives. The Gordon Research Conference on Malaria held June 30, 2019 - July 05, 2019 at Les Diablerets Conference Center in Les Diablerets, Switzerland.
4. Badondor Shylla, Epidemiology of Malaria in Meghalaya, 7th Annual Public Health Foundation of India Research Symposium, New Delhi 2018
5. Phibansuk Lyngdoh. Exploring the reasons behind refusal of immunization in Meghalaya, 7th Annual Public Health Foundation of India Research Symposium, New Delhi 2018
6. Parveen S, Saprii L, Kharlyngdoh D and Albert S, (Poster) Descriptive analysis of secondary data from tertiary care hospitals in Shillong India, 6th Annual Public Health Foundation of India Research Symposium, New Delhi 2016
7. Saprii L, Oosterhoff P, Kharlyngdoh D and Albert S, Participation of Indigenous Women in Influencing Sexual and Reproductive Health Policies: A Case Study of Shillong - Meghalaya, India 5th Annual Public Health Foundation of India Research Symposium, New Delhi 2015