



JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH



Maternal and Child Health Center India

Annual Report

International Vaccine Access Center,
Johns Hopkins Bloomberg School of
Public Health

2020





Director's Message

-Dr. Anita Shet, Director of Johns Hopkins Maternal and Child Health Center, India

On New Year's Day in 2021, approximately 68,000 babies were born across India. Their mothers would have traversed the arduous journey of pregnancy to reach the miraculous day of their birth. How many of these babies will be alive and thriving by the end of the year 2021?

About five decades ago, one in ten babies in India would not have made it past their first birthday. In the intervening years, infant mortality rate decreased by 75% and remarkable progress was made in many health fields. But the year 2020 was a year like no other. Eclipsing all other events, the COVID-19 pandemic brought undue suffering amongst families around the world. Disruptions in primary health services and immunization programs deeply affected the most vulnerable groups, especially women, adolescent girls, and children. Partial results from the National Family Health Survey round 5 (NFHS-5) from 2019-2020 revealed worsening child malnutrition indicators such as stunting and wasting. The slowing economy served to aggravate disparities and health inequities. Yet, 2020 was also the year in which the pivotal role of public health was recognized as the bedrock on which populations thrive.

The Johns Hopkins Maternal and Child Health Center in India was formed in early 2020, with the mission to strengthen public health education, accelerate research in maternal and child health, and support implementation of public health interventions that will reduce disparities and improve the lives of mothers and children in India, and bring us closer towards achieving the Sustainable Developmental Goals (SDGs).

We began this year with a rapid survey of experts to assess public health research priorities for India indicated that strengthening existing services rather than novel research was the need of the hour.

Preliminary results from a landscape analysis of public health institutions in India revealed the need to focus on inter-institutional partnerships and advocacy for careers in public health. A variety of research projects in maternal nutrition, newborn health, immunization coverage, health utilization, and COVID-19 infection and vaccine preparedness, are underway. We launched several online public health courses including, the 'COVID-19 response in India: The impact on women and children's health and wellbeing' course that was endorsed by the Health Minister of India. Our point of pride is the launch of a full scholarship for doctoral studies in maternal and child health at the Johns Hopkins Bloomberg School of Public Health.

In the few minutes that you have taken to read this, at least one mother and eight young children in India would have died. Many more would be consigned to lead a life of unnecessary struggle, where quality of life is given little or no importance. Clearly, there is work to be done. But this cannot be accomplished alone. In the coming years we will focus on sustainable partnerships, bound together with the common goal of improving health of women and children and whole communities. As we thus journey together, we remember the words of Rabindranath Tagore, a Nobel laureate from West Bengal, "Reach high, for stars lie hidden in you. Dream deep, for every dream precedes the goal."



Dr. Pradip Ghosh attends meeting to launch MCHI

The birth of the Maternal and Child Health Center India

The Maternal and Child Health Center India began with a grand vision of Dr. Pradip Ghosh, economist, entrepreneur, and philanthropist. Dr. Ghosh's vision is to highlight India's strengths and talents, elevate knowledge and learning and build a world-class school of public health in India. The Center was established in January 2020, with generous support from the Pradip and Kumkum Ghosh Family Foundation.

[from left to right] Professor Mathuram Santosham, Dr. Bevin Philip, Ms. Rebekah Ghosh, Chair David Peters, Mrs. Kumkum Ghosh, Dean Ellen MacKenzie, Dr. Pradip Ghosh, Dr. Orin Levine, Dean Emeritus Alfred Sommer, and IVAC's Executive Director Dr. William Moss attend the MCHI center launch.





Vision

A world in which every mother and child in India experiences optimal health and well-being, so that every family benefits, now and for future generations.

Mission

To strengthen public health capacity, accelerate research in maternal and child health, reduce gaps in knowledge translation, and support implementation of public health interventions that will reduce disparities and improve the lives of mothers and children in India.

Strategic Framework

Facilitate learning and capacity strengthening **1**

1.1 Develop and innovate a public health curriculum for maternal and child health.

1.2 Facilitate and support trainings to build the next generation of public health leaders.

1.3 Deliver public health trainings in collaboration with local and global institutions.

3.1 Build sustainability in core competencies in public health by facilitating the establishment of a school of public health in India.

3.2 Implement evidence-based interventions to address priorities in maternal and child health.

3.3 Monitor and evaluate program effectiveness and relevance over time to inform future initiatives.

Implement sustainable public health priorities **3**

Accelerate research and innovation **2**

2.1 Assess baseline needs for research programs in the areas of maternal, child, and newborn health.

2.2 Conduct planned research activities in partnership with local and global organizations.

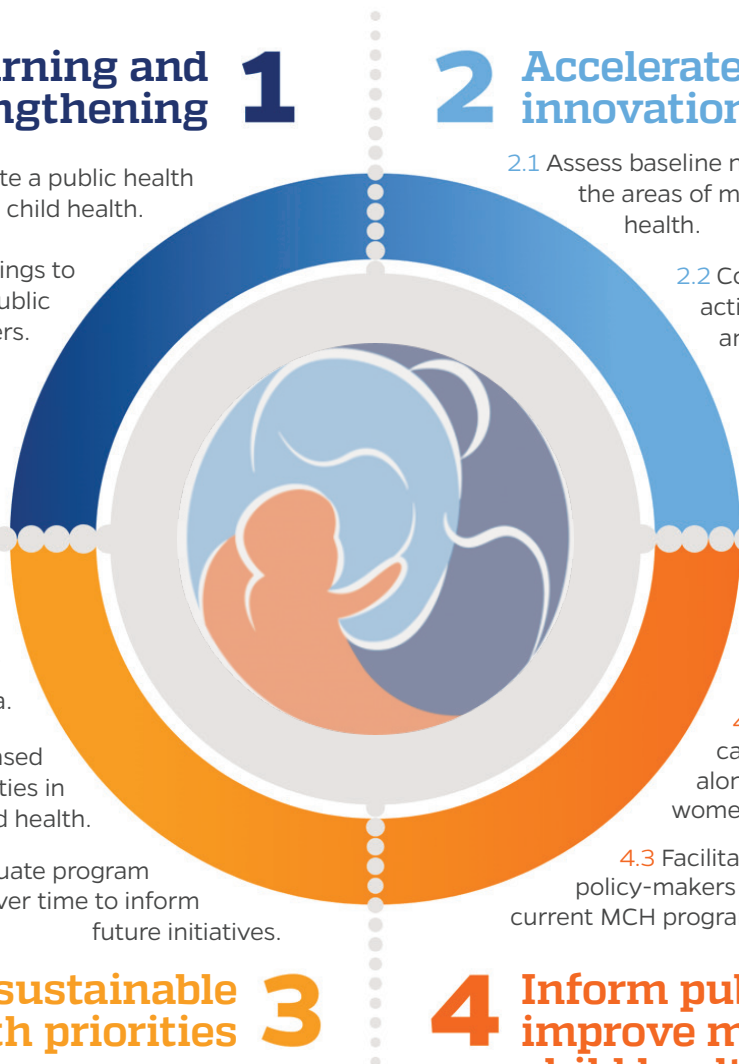
2.3 Integrate government programs, private sector partnerships, and innovation in MCH (maternal and child health) research.

4.1 Review evidence-based interventions for improving MCH interventions and public programs.

4.2 Determine how interventions can be bundled and delivered along the continuum of care for women and children.

4.3 Facilitate partnerships with policy-makers to address equity and quality of current MCH programs.

Inform public policy to improve maternal and child health **4**





International Institute of Innovation & Technology (I3T), Kolkata, West Bengal



All India Institute of Medical Sciences (AIIMS), Kalyani, West Bengal



icmr **NICED**
INDIAN COUNCIL OF MEDICAL RESEARCH
NATIONAL INSTITUTE OF CHOLERA AND ENTERIC DISEASES

Indian Council of Medical Research-National Institute of Cholera and Enteric Diseases (NICED), Kolkata, West Bengal



Child in Need Institute (CINI), 24 Parganas (S), West Bengal



Indian Institute of Technology (IIT), Kharagpur, West Bengal



Peerless Hospital and B.K. Roy Research Centre, Kolkata, West Bengal



Indian Institute of Health Management Research (IIHMR) University, Jaipur, Rajasthan



The British Medical Journal (BMJ)



Public Health Foundation of India (PHFI), New Delhi



Post Graduate Institute of Medical Education & Research (PGIMER), Chandigarh

Chittaranjan Seva Sadan and Shishu Sadan Hospital, Kolkata



Jhpiego



I3T INTERNATIONAL INSTITUTE OF INNOVATION & TECHNOLOGY

Partner Institutions



MCHI Education and Training

Landscape Analysis Initiative

To inform the curriculum strategy and priorities for MCHI, we undertook an analysis of the public health education training supply (what is currently being offered) and demand (what are the felt needs) in India. This entailed a desk review of institutions offering public training programs, as well as key informant interviews with leaders from these institutions.

Key learnings from the public health training landscape initiative

- There is demand for further high-quality public health education and training across India.
- In general, students who pursue public health jobs have a clinical background, but further diversification is necessary.
- There is a need to expand the demand for the workforce through creating stable career opportunities, particularly government positions.
- Credentials offered at the end of courses should be recognized by key stakeholders in country.
- Faculty and learner feedback needs to be effectively integrated into institutions to ensure that training programs are relevant and valuable.
- Mentorship should be encouraged in order to sustain motivation and overcome challenges in public health work.

Courses Offered This Year

Evidence on Policy seminar Series

Introduced students to evidence to policy continuum for critical health issues in India.

Dates: August 17-21, 2020

Partners: Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh; Global Health Strategies, New Delhi

Vaccine Economics for COVID-19: Teaching Vaccine Economics Everywhere (TVEE)

Equipped students to construct their own economic analysis of policy choices in vaccine introduction, allocation, financing, and logistics.

Dates: October 17 – December 13, 2020

Partners: IIHMR University, Jaipur

Instructors: David Bishai, MD, MPH, PhD - Johns Hopkins University
P.R. Sodani, MPH, PhD
Sunil Rajpal, PhD - IIHMR University
Susmita Chatterjee, PhD - George Institute for Global Health

Disease Costing in Low-and Middle-Income Countries

Offered practical instruction in how to create collect cost of illness data, apply different analytic strategies to different types of data, write analytical briefs, and present results to audiences from academic and programmatic backgrounds.

Dates: December 7-18, 2020

Partners: International Vaccine Access Center, Johns Hopkins University Bloomberg School of Public Health

Instructors: Cristina Garcia, PhD - Johns Hopkins University
Mr. Gatien de Broucker, MA, MHS - Johns Hopkins University



Featured Course

The COVID-19 Response in India: Impact on Women and Children's Health and Well-being

Dates: December 1, 2020 – January 31, 2021

Partners: Indian Institute of Technology, Kharagpur

Instructors:

Meike Schleiff, PhD, MSPH
Johns Hopkins University

Anita Shet, MD, PhD
Johns Hopkins University

Sangeeta Bhattacharya, MD
Indian Institute of Technology,
Kharagpur

On December 1, 2020, MCHI launched an open-access, free online course to examine the COVID-19 response in India, focusing on the impact of both direct and indirect effects of the pandemic across the country on women and children's health and well-being. Drawing from a wealth of insights from experts across the disciplines of child and maternal health, and facing a once-in-a-century global pandemic, the instructors developed a format that included 15 original lectures structured into seven different modules.

This course was not only an opportunity for the MCHI to face a global health crisis head-on, but served to spearhead the organization's overarching mission to improve public health capacity in maternal and child health in India through education

and training. Dr. Sangeeta Bhattacharya, one of the lead course faculty, principal investigator for the MCHI, and a faculty member at the Indian Institute of Technology in Kharagpur, states:

"The COVID-19 pandemic has placed all of us in the middle of a major global health crisis. I think this course allows us to learn from leaders who are on the front line of this crisis and have to weather it just like all of us. And I think this gives all of us perspective, understanding, and hope, something that we all need in a time like this."

Featured Learner

Dr. Aastha Kant, a PhD in the social sciences, joined the course from Mumbai, India. We asked her to share how she felt the course was relevant and could inform everyday life.

"It was both heartening and inspiring to learn about how women leaders attach more value to issues close to human development like nutrition, education, and sanitation, vis-a-vis men, who focus more on infrastructural development. The apt and contemporary examples cited in the course about women's decision making and leadership remain etched in my mind and will certainly guide the course of my everyday interactions."





Expert Guest Faculty for the course

Dr. K. Srinath Reddy, MD, DM, MSc - President, Public Health Foundation of India

Dr. Soumya Swaminathan, MD, DNB - Chief Scientist, World Health Organization

Dr. Madhu Gupta, MD, PhD - Professor, Post Graduate Institute of Medical Education and Research at Chandigarh

Dr. Gagandeep Kang, MD, PhD, FNA, FASc, FRS - Professor of Micrology, Wellcome Trust Research Laboratory, Division of Gastrointestinal Sciences, Christian Medical College (CMC), Vellore

Dr. Jayaprakash Muliylil, MD, PhD - Former Principal and Head, Department of Community Health, Christian Medical College, Vellore

Professor Nirmal Kumar Ganguly, MD - Former Director General of the Indian Council of Medical Research, Former Advisor, THSTI; Former President, JIPMER; Professor, Institute of Liver and Biliary Sciences

Dr. Samir Narayan Chaudhuri, MD - Secretary and Founder Director, Child in Need Institute (CINI)

Dr. Indrani Bhattacharyya, PhD - Chief Executive Officer, Child in Need Institute (CINI)

Dr. Sanjay Zodpey, MD, PhD - Vice President - Academics, Public Health Foundation of India, New Delhi, Director - Indian Institute of Public Health, Delhi

Dr. Anita Jain, MD, MHA - Clinical Editor, BMJ

Dr. Nivedita Gupta, MD, PhD - Scientist 'F' & In-charge Virology Unit, Division of Epidemiology & Communicable Diseases, Indian Council of Medical Research, Department of Health Research

MCHI Research Activities 2020 & Beyond

1. Identifying research priorities in maternal and child health in the pandemic era in India

Maternal and child health (MCH) outcomes have been key public health issues globally. In India, despite significant progress in the past decades, much needs to be achieved. We undertook a rapid assessment to identify key priorities for public health research in maternal and child health in India within the context of the COVID-19 pandemic, by surveying key stakeholders and experts in India.

KEY LEARNINGS FROM THE RESEARCH PRIORITIES SURVEY

DOMAIN	HIGHEST RANKED RESEARCH PRIORITY
Vaccine Preventable Diseases	Strengthening the public sector workforce
Outbreak Preparedness	Enhancing public health surveillance networks
Primary Health Care Integration	Nutrition education support through community workers
Maternal Health	Encouraging at least 4-8 antenatal visits during pregnancy
Neonatal Health	Neonatal resuscitation to reduce perinatal asphyxia
Infectious Diseases	Pediatric and maternal screening and treatment for tuberculosis

2. Comparing COVID-19 vaccine allocation strategies in India: a mathematical modelling study

Progress towards development and approval of SARS-CoV-2 vaccines has been extraordinarily fast; however, challenges of fair and optimal allocation remain. We developed a mathematical model to simulate different vaccine allocation strategies and identify strategies that could reduce morbidity and mortality associated with COVID-19 in the Indian context. We found that prioritizing vaccine allocation for older populations (i.e., >60 years) led to the greatest relative reduction in deaths, regardless of vaccine efficacy, control measures and rollout.

3. COVID-19-related disruptions to routine vaccination services in India: perspectives from pediatricians

The survey was able to capture the extent of suspension of vaccination services and drop in patient volumes between the months of April to September 2020. Pediatricians reported a slow recovery of services in September 2020, and expressed concerns about vaccine coverage gaps leading to non-COVID-19 related illnesses and deaths. Their responses highlighted the urgent need for concerted efforts to ensure that routine immunization and catch-up programs are implemented during this pandemic, which can sustain previous gains in vaccination coverage.

4. Serological Assessment for COVID-19 among Healthcare workers and Vaccine Preparedness (The SACH-VP Project)

The SACH-VP study is a prospective cohort study that aims to assess antibody responses to SARS-CoV-2 among a representative cohort of healthcare workers at hospitals in West Bengal, India. The SACH-VP study also aims to evaluate vaccine preparedness and perceptions of risk, benefits, and demand for a COVID-19 vaccine among healthcare workers.



5. Maternal nutrition during pregnancy and associated pregnancy, birth, and infant outcomes

The RMNCH+A (Reproductive, Maternal, Newborn, Child and Adolescent) program, launched by the Government of India in 2013, encompasses a bundle of several strategic interventions across various life stages aimed at improving both maternal and neonatal outcomes. We plan to first establish a platform for assessing ongoing interventions, then evaluate specific bundled interventions that will serve towards an overall systems-strengthening approach to help achieve improved pregnancy, birth, and infant outcomes.

6. Prevention of neonatal sepsis in the neonatal intensive care unit in West Bengal, India

The aim is to conduct a prospective cohort study to describe the epidemiology of culture-confirmed bloodstream infections among hospitalized neonates in hospitals in West Bengal. This study will use a novel infection prevention and control assessment tool, the Neo-IPCAT, to assess baseline infection prevention and control practices at participant sites and identify opportunities for improvement of these practices.

7. Maternal and Child Healthcare Utilization study

In early 2021, we plan to conduct a series of household-based surveys with communities in urban and rural settings. We plan to assess the effect of COVID-19 on disruption of services provided before, during and after childbirth. Further, we aim to understand health service utilization by mothers and caregivers for children under the age of 2 years with respect to illnesses and routine health services in the era of COVID-19.

8. Understanding the impact of the COVID-19 pandemic on dengue

Aiming to understand the effects of the COVID-19 pandemic on dengue, we compared dengue case counts in countries in the three years preceding the COVID-19 pandemic and during the pandemic (2019-2020). We found that a majority of countries have experienced declines in reported dengue case counts in 2020 compared to previous years; however, a few countries in Latin America and Asia have experienced unprecedented dengue outbreaks in 2020.

Publications

1. Foy, B. H., Wahl, B., Mehta, K., Shet, A., Menon, G. I., & Britto, C. (2020). Comparing COVID-19 vaccine allocation strategies in India: a mathematical modelling study. *International Journal of Infectious Diseases*.
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2. George, A., LeFevre, A., Schleiff, M., Mancuso, A., Sacks, E., & Sarriot, E. Hubris, Humility, and Humanity: Expanding Evidence Approaches for Improving and Sustaining Community Maternal, Newborn, and Child Health (MNCH). *BMJ Global Health*. 1-9.
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3. Shet, A., & Mehta, K. (2020). Refining Clinical Triage and Management of Dengue Infection in Children: A Timely Approach. *Indian Pediatrics*, 57(10), 895.
<https://doi.org/10.1007/s13312-020-1987-3>

4. Shet, A. Will the Pandemic Lead to Outbreaks of Other Maladies? (2020). *New York Times*.
<https://www.nytimes.com/2020/05/26/opinion/coronavirus-measles-disease.html>

5. Sacks, E., Schleiff, M., Were, M., Chowdhury, A. M., & Perry, H. (2020). Communities and Universal Health Coverage and Primary Health Care. 2020. *Bulletin of the World Health Organization*.
<http://dx.doi.org/10.2471/BLT.20.252445>

6. Schleiff, M., Kumapley, R., Freeman, P., Gupta, S., Rassekh, B., & Perry, H. A Comprehensive Review of the Evidence Regarding the Effectiveness of Community-based Primary Health Care in Improving Maternal, Neonatal, and Child Health: 5. Equity Effects. 7:1, 1-14. *Journal of Global Health*.
<https://doi.org/10.7189/jogh.07.010905>

7. Pradyumna, A., & Mehta, K. (2020). Perspectives on child health and well-being during the pandemic. *Learning Curve*, a publication from Azim Premji University, India. Issue 8.

8. Shet, A., Dhaliwal, B. K., & Bloom, D. (2021). We have built them, and people will come: A 'bottom-up' approach for COVID-19 vaccines. *VOX-EU*, Center for Economic Policy and Research.
<https://voxeu.org/article/bottom-approach-covid-19-vaccines>

Conference Abstracts

Banerjee, P., Brahmabhatt, H., Reddy, M., Bhattacharya, S., Majumdar, P., Gupta, S. D., Mangal, D. K., Zodpey, S., Shet, A., & Schleiff, M. Landscape Analysis of Public Health Education in India to Inform an Innovative Curriculum Design. To be presented at the Consortium of Universities for Global Health's 12th Annual Conference.



MCHI People

MCHI Team



Anita Shet, MD, PhD
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William Moss, MD
Senior Advisor



Parul Christian, PhD
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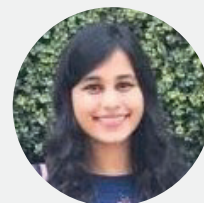
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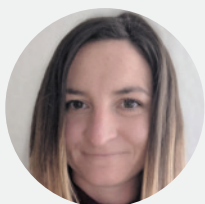
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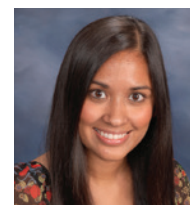
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Vimal Konduri
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Certificate program



Kescha Kazmi
Pediatric Infectious
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and part-time MPH
candidate



Vinayak Bhardwaj
DrPH program
(customized track)



Stacie Loisate
MHS student in infectious
disease epidemiology, the
Johns Hopkins Bloomberg
School of Public Health



Dr. Pranab Chatterjee

Dr. Chatterjee is a first year PhD student within the Department of International Health with a Global Disease Epidemiology and Control concentration, Johns Hopkins University Bloomberg School of Public Health, selected for the MCHI-Ghosh Scholar Program. Dr. Chatterjee's main interest is the development of training programs and research projects, with a specific focus on improvement of the health of mothers and children in India.



Mathuram Santosham

Senior Advisor

“One of the highlights of my career has been to observe the establishment of the Maternal and Child Health Center India (MCHI) in January 2020. I am deeply grateful for the generosity and vision of Dr. Pradip Ghosh who enabled the International Vaccine Access Center at Johns Hopkins University to establish the MCHI Center in collaboration with I3T in Kolkata. In the short period of time since its inception, the Center has made significant progress. I am optimistic that the MCHI will become a model Center in India.”

Partner With Us

The Maternal and Child Health Center strives to help every mother and child and every family achieve their full potential. Come partner with us and let us work hand-in-hand to achieve this goal.

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