

**ANNUAL REPORT
2021 - 2022**

Centre for Health Research and Development

Society for Applied Studies

"Enabling a World with Healthier Babies, Children and Mothers"

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From Our Leadership

As another year passes by working under the cloud of the pandemic, we are reminded of the resilience of the human spirit. We are immensely grateful to our team members who have worked with dedication and commitment. Each one of them have plodded on tirelessly and bravely through lockdowns, family crises and illnesses and have been available full time, when most of the world was moving on with an entirely reimagined work force and work ethos.



While there were some interruptions in the field work due to the lockdown, it was a great year for publication of research articles; we published 28 articles in peer reviewed journals and brought out two reports - "In Depth Analysis of Wasting and Severe Wasting in India" in collaboration with UNICEF India and Biotechnology Industry Research Assistance Council (BIRAC) and the Knowledge Integration and Translational Platform - KnIT: A Summary And Policy Brief that we believe will impact policy decisions.

We are happy that one of our Executive Committee members has been selected to be part of the WomenLift Health's 2022 Indian Leadership Journey.

We strengthened and expanded our collaborative network, disseminated research findings with the State and District functionaries. The Nutrition Division is working closely with NITI Aayog. We participated in the Rotavirus Vaccine Post Introduction Evaluation, March 2022 convened by the Ministry of Health and Family Welfare.

We feel very blessed to have wonderful people as our well-wishers, mentors, guides and collaborators. The Board of Governors, Scientific and Program Advisory Committee members and the Ethics Review Committee members have been invaluable in their constant support especially, with their time and counsel. Thank You! We are here today because of all of you.

Nita Bhandari, Sunita Taneja, Sarmila Mazumder, Temsunaro R Chandola,
Manju Bagdwal, Swati Naik

Centre For Health Research And Development Society For Applied Studies

The Centre for Health Research and Development, Society for Applied Studies (CHRD-SAS), New Delhi, is a premier research organization in India. It pursues research and innovation in communities, primarily at the population level. It develops and evaluates single and integrated interventions that can potentially achieve the desired health impact at different points in the life cycle for mothers and children.



Conduct high-quality scientific and implementation research to inform national policy to improve health and well-being of women and children in India and the developing world

Synthesize evidence and experiences for reorienting policy, strategy and delivery of healthcare for women and children



Rigorous team-based efforts to generate knowledge, develop and test interventions and tools; design innovative and implementable solutions to improve delivery to enhance impact

Strengthen research capacity by creating future investigators and health researchers with the desirable skills and expertise

Research Focus

Resource poor settings:

Prevention of diseases, deficiencies and disabilities of public health significance with special emphasis on newborns, children and mothers

Innovation in implementation of existing health care and social welfare programs to enhance reach and impact

Conduct research to support indigenous and partnered efforts at innovative and affordable technologies for children and women

Areas of Research



Women and Children

Health and Nutrition
Mental and Cognitive Sciences



Infectious Diseases

Evaluation of vaccines
Epidemiology and Surveillance



Knowledge Integration and Economic Analysis

WOMEN AND CHILDREN

Health and Nutrition

Research is dedicated to improving women's health during preconception, pregnancy and postnatal period and to understand the determinants of impaired growth and development in children.

CHRD-SAS has developed and evaluated multiple interventions to elucidate their clinical, biological and biochemical effects in the continuum from pre-conception, pregnancy and childhood on the health of women, and growth and development of children, and scaling up of efficacious interventions through implementation research.



Mental Health and Cognitive Sciences

The Mental Health and Cognitive Sciences Unit hosts a team of trained and experienced psychologists and public health researchers. The team conducts community-based randomized controlled trials. The research conducted primarily aims at understanding ways to accelerate development in children as well as addresses mental health issues in mothers, young children, and adolescents. The team is also working on newer tools to measure neurodevelopment in children such as eye tracking assessment and global scale for early development (GSED).



INFECTIOUS DISEASES

The focus of research is to generate population-based disease burden of major infectious diseases through surveillance, nutrition-infection cross talk and clinical evaluation of vaccines (phase II to IV trials).

Evaluation of Vaccines: CHRDSAS conducts Phase II and Phase III trials of national importance in infant and adult populations. CHRDSAS is part of the clinical trial network of National Biopharma Mission to support vaccine development. We have been awarded a grant for strengthening a GCP-compliant field site in an urban community in Delhi to accelerate Phase II/III COVID-19 vaccine trials in India, in collaboration with Hamdard Institute of Medical Sciences and Research under Mission Covid Suraksha by the Biotechnology Industry Research Assistance Council, Government of India.



Epidemiology and Surveillance

CHRDSAS conducts community-based longitudinal studies as well as hospital-based surveillance to estimate incidence of infectious diseases. A demographic and health surveillance has been established in the urban areas of Dakshinpuri, South Delhi for conducting epidemiology studies of relevant diseases in healthy cohorts to support vaccine development and evaluation in this population.



KNOWLEDGE INTEGRATION AND ECONOMIC ANALYSIS

Knowledge integration uses one or more of the following methods: review of available evidence, program evaluation reports, implementation research outputs, secondary analysis of data and reports of consultative groups.

Economic evaluation is the comparative analysis of alternative courses of action in terms of both their costs and consequences of programmes or interventions and, choices to be made in allocation of resources. The purpose is to identify the best course of action, based on the available evidence.

RESEARCH PROJECTS IMPLEMENTED DURING THE YEAR

Health and Nutrition

- Impact of a package of health, nutrition, psychosocial support, and water, sanitation and hygiene interventions delivered during preconception, pregnancy and early childhood periods on birth outcomes and on linear growth at 24 months of age (Women and Infants Integrated Interventions for Growth Study - WINGS)
- Impact of an integrated intervention package during preconception, pregnancy, and early childhood on biomarkers of infant growth in the first 6 months of life: A sub-study in WINGS
- Study on reproductive tract infections/sexually transmitted infections among urban and peri-urban women in North India
- Baseline characteristics, experiences and actions taken by women to address failure to conceive
- Postpartum contraceptive practices among women residing in urban and peri-urban low to lower-middle income neighbourhood in North India
- Availability and Readiness of Antenatal, Intrapartum and Postnatal Care Services - A Prospective Longitudinal Study on Maternal and Newborn Health
- Effect of biweekly preventive supplementation with multiple micronutrients and iron folic acid compared to iron folic acid alone in children aged 6 to 59 months on hemoglobin concentration and anemia prevalence: a randomized controlled trial in rural Haryana
- Effect of daily therapeutic supplementation with multiple micronutrients and iron folic acid compared to iron folic acid alone in mild to moderate anemic children aged 6 to 59 months on anemia cure and hemoglobin concentration: a randomized controlled trial in rural Haryana
- Effect of community-initiated kangaroo mother care in low birthweight infants on linear growth, infection reduction, breast milk properties and related biological outcomes
- Effect of COVID 19 pandemic and lockdown on utilization of essential health services, quality of life and psychosocial impact in urban and peri-urban low- to mid-socioeconomic neighborhoods in south Delhi
- Impact of an integrated health, nutrition and early child stimulation and responsive care intervention package delivered to preterm or term small for gestational age babies during infancy on growth and neurodevelopment.

Mental and Cognitive Health Sciences

- Developing a global harmonized scale to measure development in children under three years of age in partnership with WHO.
- Efficacy of supplementing milk cereal mixes with varying amounts of protein during 6-12 months of age for their effect on neurodevelopmental outcomes at 12 and 24 months of age

- Long term neurodevelopment of low birthweight infants receiving kangaroo mother care during neonatal period on neurodevelopmental outcomes at ages 6 to 7 years.
- Testing the robustness and the predictive value of eye tracking assessment in the early detection of common neurodevelopmental and behavioral problems in the first 24 months of life.
- Evaluating effect of a package of nutritional, WASH, medical and psychosocial care on neurodevelopment: Study nested within the WINGS to evaluate the effect of the package of intervention delivered to mother-child dyad from pre and peri-conception till child ages 24 months on neurodevelopmental outcomes at 24 months of age.

Evaluation of Vaccines

- CHRDSAS is involved in 9 COVID and 4 non-COVID phase II/III vaccine trials. These include safety and immunogenicity assessment studies for primary and booster dose administration of COVID vaccine candidates based on different technologies including protein sub-unit vaccines, viral vector vaccines and m-rNA based vaccines. The non COVID vaccines include new combination childhood and Chikungunya virus vaccine.
- We are part of the clinical trial network of NBM to support vaccine development.
- We have been awarded a grant for strengthening a GCP-compliant field site in an urban community in Delhi to accelerate Phase II/III COVID-19 vaccine trials in India" in collaboration with Hamdard Institute of Medical Sciences and Research, under Mission Covid Suraksha of National Biopharma Mission (NBM), BIRAC.

Epidemiology and Surveillance

- Established a demographic and health surveillance in an urban resettlement colony in Delhi (Dakshinpuri Environmental and Epidemiologic Surveillance System for Health and Disease - DEESHA) with the aim to study disease-specific epidemiology and conduct future vaccine trials.
- Participating in a multicentric randomized controlled trial to compare clinical outcomes in infants with possible serious bacterial infection who receive inpatient treatment vs outpatient treatment.
- Community-based cohort to estimate burden and spectrum of important infectious diseases of public health importance such as enteric fever, dengue in children 6 months to 15 years of age.
- Community-based surveillance for estimating disease burden and spectrum of dengue and chikungunya in children and adults aged 2-50 years.
- Hospital-based surveillance for estimating Shigella disease burden and outcomes.

Knowledge Integration and Economic Analysis

- Knowledge Integration and Translational (KnIT) Platform - Nutrition Domain Centre
- In-depth Analysis to Understand the Burden of Wasting and Severe Wasting and Associated Factors Among Under-five Children in India in collaboration with UNICEF
- Technical review on the design, implementation, analysis and interpretation of the initiative to assess the impact of the mainstreaming community-based management of acute malnutrition in India
- Assess the equity impact of community-initiated KMC (ciKMC) on survival during the first 180 days of life across axes of disadvantages like gender, caste, socioeconomic status.
- Assess the impact on ciKMC on catastrophic out-of-pocket expenditure and impoverishment due to cost of care seeking.
- A data science approach to develop growth cut-offs for graded care of malnutrition.
- Exploring risk factors of adverse maternal and child health outcomes using machine learning and other advanced data analytical approaches in partnership with the Indian Institute of Technology Delhi, under Grand Challenges Exploration India.
- Incremental costs of scaling-up Kangaroo Mother Care: results from implementation research in Ethiopia and India.
- Cost effectiveness analysis of the study on (multiple micronutrients and iron folic acid compared to iron folic acid alone) prevention and treatment of anemia in under five children
- Benefit cost analysis of WINGS to ascertain the outcomes (health benefits) in monetary terms based on reduction in morbidity, mortality and increase in productivity.

Platform for Research Excellence Related to National Aims (PRERNA) Young Investigators Program

The program is designed to nurture physicians who are determined to pursue a career in biomedical or health research to achieve Principal Investigators capabilities and leadership abilities. The program is in collaboration with Christian Medical College (Vellore) and KEM Hospital Research Centre (Pune). The inter-institutional character widens exposure and mentorship across different research domains. The 5-year program provides learning opportunities in research methods, ethics, laboratory exposure, data analytics and deeper understanding in the disciplinary areas of interest.



Science Meetings

Two virtual Science Meetings were conducted jointly with PRERNA partners - CMC, KEM, SAS.

Early Child Development

Early Child Development has emerged as an important public health issue in India and globally.

The purpose of the meeting was to gain an in-depth understanding of issues, particularly socioeconomic consequences of inadequate child development, techniques to assess development including novel e-interactive platforms as well as identify research priorities in the Indian context.

The meeting was held on June 16 and 17 followed by PICO development by PRERNA young scientists on Zoom. The webinar was open to all and was circulated widely through emails for participation.



Advances and research priorities in iron deficiency anemia during pregnancy and childhood

The objective of the meeting was to identify and prioritise research areas in iron deficiency anaemia during pregnancy and childhood and to develop research proposals in iron deficiency anemia during pregnancy and childhood in collaboration with national and international partners.

This three-day virtual science meeting held from February 14 to 16, 2022 included presentations from eminent speakers, discussions and question-answer sessions related to the presentations.



KEY HIGHLIGHTS

SAS is a partner in Clinical Development Services Agency (CDSA), Translational Health Science & Technology Institute (THSTI) Masters of Science (M.Sc.) Program in Clinical Research with specialization in Clinical Trials. The two-year post-graduate degree program's primary focus is to provide learning opportunities and a world-class platform to create high-quality human resources in the domain of clinical trials. Dr. Temsunaro Rongsen Chandola is a member of the Academic Committee constituted for the Program.

Master of Science (M.Sc.) Program in Clinical Research (Specialisation in Clinical Trials)

Course provider:

Clinical Development Services Agency,
Translational Health Science & Technology Institute

Supporting institutions:

Medical Research Council Clinical Trials Unit at University College London, United Kingdom; Christian Medical College, Vellore; Center for Health Research and Development - Society for Applied Studies, New Delhi; King Edward Memorial Hospital, Pune; Jagadguru Sri Shivarathreeswara University, Mysuru



Tarun Shankar Choudhary
PhD Candidate, PhD Research Fellow
Department of Global Public Health and Primary Care
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Dr. Tarun Shankar Choudhary, Adjunct Scientist at CHR-D-SAS was selected for PhD Research Fellowship in the Department of Global Public Health and Primary Care at University of Bergen (UiB). He joined on April 1, 2021.

Dr. Temsunaro Rongsen Chandola was selected for WomenLift Health's 2022 Indian Leadership Journey, a BMGF-funded initiative at Stanford University. The year-long program that is designed to give talented women leaders the tools - confidence, networks, understanding of barriers - along with peer, mentorship and coaching support to successfully use their voice, expertise and leadership skills for health impact. Naro was selected to be a part of an elite group of 30 women leaders working global health, who come from a wide range of sectors and discipline.



AMA | Special Committee

Guidelines for Reporting Trial Protocols and Completed Trials Modified Due to the COVID-19 Pandemic and Other Extenuating Circumstances: The CONSERVE 2021 Statement

Journal of the American Medical Association (JAMA) has published a special committee statement on reporting trial protocols and completed trials modified due to the COVID-19 pandemic and other extenuating circumstances. The statement is titled "Guidelines for Reporting Trial Protocols and Completed Trials Modified Due to the COVID-19 Pandemic and Other Extenuating Circumstances: The CONSERVE 2021 Statement".



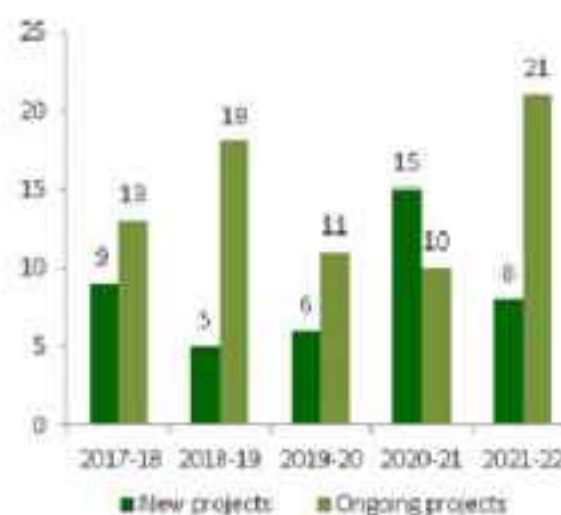
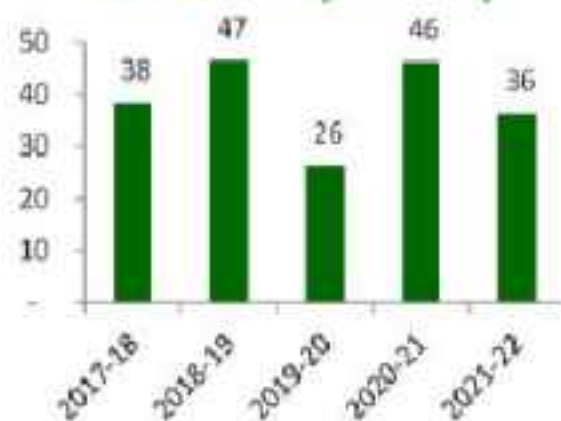
Dr. Nita Bhandari is a member of the Steering Committee for Public Health and Nutrition Program and the Working Group for Research Activities and Policy Implementation of the National Technical Board on Nutrition constituted by the Department of Biotechnology, Government of India. She is part of a team of 35 trialists, journal editors (*Lancet*, *JAMA*, *BMJ*, *PLOS*), ethicists, regulators and funders for the international project on CONSORT and SPIRIT Extension for RCTs Revised in Extenuating Circumstances (CONSERVE) to develop an extension to the [SPIRIT](#) and [CONSORT](#) reporting guidelines for reporting major trial amendments in response to COVID-19 and other extenuating circumstances.

- Dr. Sunita Taneja is a member of the WHO Guidelines Development Group to generate guidelines on the prevention and treatment of wasting in infants and children. The guideline include four overlapping areas of focus including growth faltering/failure in infants younger than six months; moderate wasting in infants and children aged six months and older; severe wasting and oedema in infants and children aged six months and older; and prevention of wasting.
- Drs. Sunita Taneja, Ranadip Chowdhury and Bireshwar Sinha are a part of the WHO Working Group for the Risk Stratification Collaborative Study to examine risks for newborn and child survival, health and development, which will contribute to the WHO Wasting Guidelines.
- Dr. Sarmila Mazumder is a member researcher of the Strategic and Technical Advisory Group of Experts (STAGE) led by the WHO for development of the Global Position paper and Implementation Guidance on Kangaroo Mother Care.
- Dr. Sarmila Mazumder served as a member of the WHO/UNICEF/LSHTM joint initiative to update guidelines on Every Newborn Measurement Improvement Roadmap.
- Dr. Ranadip Chowdhury awarded DBT/Wellcome Trust India Alliance received Intermediate (Clinical and Public Health) Fellowship Grant for the study, titled "Impact of an integrated intervention package during preconception, pregnancy and early childhood on biomarkers of infant growth in the first 6 months of life". He is also a member of the Advisory Group of the Tele-SWABHIMAAN Demonstration Programme, an integrated multisectoral strategy to improve girls' and women's nutrition before conception, during pregnancy and after birth being conducted in Telangana by International Institute for Population Sciences (IIPS), Mumbai.

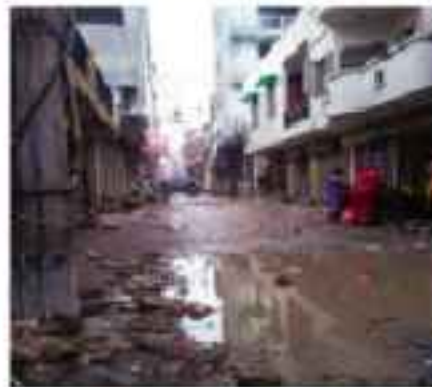
GRANTS AWARDED

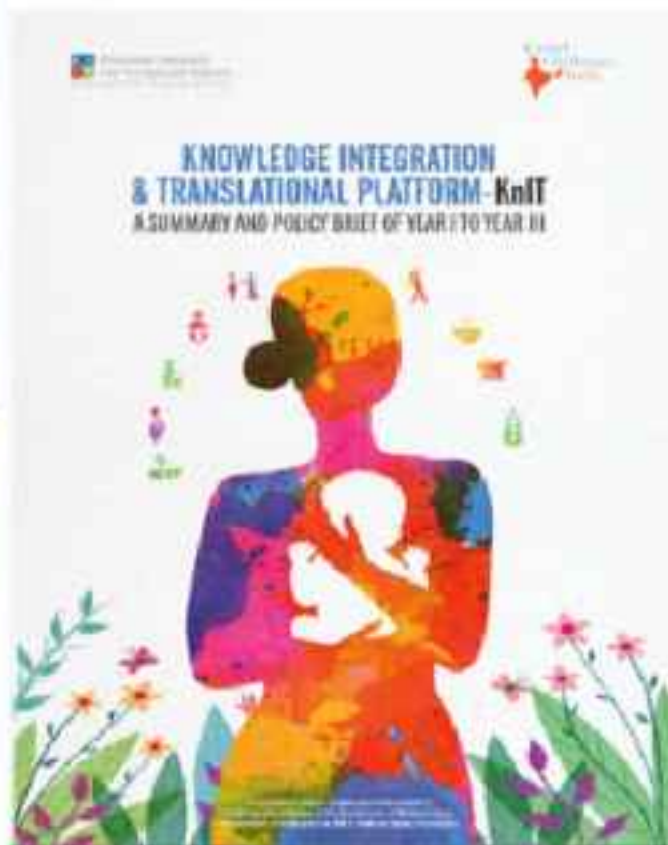
- Secured funding for the research project to assess the impact of integrated and concurrent delivery of health, nutrition, and early child stimulation and responsive care interventions delivered to term small-for-gestational age or preterm infants and their mothers during the first year of life. The "intervention package" aims to improve the growth and development of vulnerable babies and reduce undernutrition rates in childhood.
- Partnering with CMC and KEM in a pre-proof of concept study on microbiota-directed complementary foods to treat children with moderate acute malnutrition.
- Selected as one of the seven sites for the WHO-coordinated multi-country, multicenter randomized controlled trial that aims to evaluate the effect of approaches to prevent and manage growth faltering within the first 6 months of life on wasting-free survival at 6 months of age.
- Improving population-based treatment of pneumonia in under-five children in a north Indian district to achieve high population-based coverage.
- Selected as one of the Indian sites for the multi-country/multicentre implementation research on immediate Kangaroo Mother Care to generate evidence and develop optimal models for the scale-up of KMC provided immediately after birth for preterm and/or low birth weight infants in low- and middle-income countries.

Total Grants (in crores)



We established an urban Demographic and Health Surveillance site called the Dakshinpuri Environmental and Epidemiological Surveillance System for Health and Disease (DEESHA) in a low-middle-income setting in South Delhi as part of DBT's Resource of Indian Vaccine Epidemiology Network.





Knowledge Integration and Translational Platform (KnIT) - 2018

KnIT – The platform

The Knowledge Integration and Translational Platform (KnIT) was launched in 2016 and is a virtual knowledge ecosystem platform that connects the top research institutions and policy and practice implementation training for public health in India.

KnIT was set up as an enabler to the challenges of providing evidence for health policy generation and specifically targets Indian policy makers as the end users of the knowledge and research, especially at the State level. This is in keeping with the current health policy structure, where the members of legislatures are with the power. The aim is to ensure that the policy analysis and evidence generation is done with the understanding of developing and implementing cost-effective, sustainable interventions in settings of substantial health inequalities that are appropriate to the context of different states in the country.

KnIT currently has two parallel streams of work.

The first, knowledge synthesis, is the responsibility of domain domain experts in specific themes in public health and will be carried out through existing platforms in India such as through systematic analysis of publicly available data in the policy and implementation context.

The second, knowledge translation, is under the purview of the State Implementation Unit (SIU), a specialized unit that works with individual states to translate the synthesized knowledge and to package it for implementation.

Currently, KnIT Knowledge Synthesis focuses on five major, evidence and child health implementation domains.



Knowledge Integration and Translational Platform - KnIT: A Summary And Policy Brief Of Year I To Year III. Supported by Grand Challenges India at BIRAC, A joint funding initiative of the Department of Biotechnology, Government of India and the Bill & Melinda Gates Foundation,



Dr. Vinod K. Paul
DIRECTOR
at: BIRAC, Sector 10A
Gurgaon



Ministry of Health and Family Welfare
Government of India
New Delhi, India
Tel: 011-23396100, 23396101, 23396102
Email: health@pmu.gov.in

Foreword



Wasting is a public health problem that is causing the death of young and the aged. But the complexity of addressing malnourished children. One of the major challenges in India is to reduce malnutrition. Wasting has been found to be associated with stunted growth and developmental outcomes in children and young adults.

In a recent understanding of the malnutrition of wasting in India, especially for evidence and associated factors, a report including among the program officer, I can help reduce malnutrition with young children, children, adolescents and children. The National Program Director, Government of India, New Delhi, India (2018-2020) Director.

Government of India has been a leading partner in the development and delivery of the national government in addressing the Sustainable Development Goals as well as India's national health goals and targets.

The current report on malnutrition (wasting) from India and other to address critical questions and identify knowledge gaps in our understanding of wasting growth in the Indian context. I hope that the report will be a useful reference document for the NPHLS Network for public health and to develop evidence informed and effective strategies to address malnutrition in children among Indian women.

Vinod K. Paul
DIRECTOR



"In Depth Analysis of Wasting and Severe Wasting in India" prepared by The Knowledge Integration and Translational Platform at CHRD-SAS in collaboration with UNICEF India and the Program Management Unit (PMU) at the Biotechnology Industry Research Assistance Council (BIRAC).

MEETINGS, TRAININGS, WORKSHOPS

- Our team conducted trainings on Overview of Good Clinical Practice and Overview and New Drugs and Clinical Trials (NDCT) Rules 2019 for the HIMSR faculty in Mar 2022.



Dr. Temsunaro Chandola with Dr. TS Rao, Member, SAS Board of Governors



Alok Arya with students at HIMSR

- Dr. Temsunaro Rongsen-Chandola participated in the Rotavirus Vaccine Post Introduction Evaluation conducted by the Ministry of Health and Family Welfare, Government of India.

- Mr. Alok Arya was invited for a guest lecture on "Informed Consent" for students of Masters in Public Health at HIMSR, March 28, 2022



- Ranadip Chowdhury presented "Iron intake target in low-and-middle income countries: Should it be IOM RDA/WHO RNI or are requirements higher?" as an Expert Speaker in the Nutrition track focused on Iron Innovation in Fortification to Address Iron-Deficiency Anemia at the Grand Challenges Annual Meeting, November 2021.

- Rukman Manapurath, one of the young investigators, selected for poster presentation on "Effect of Folate and/or Vitamin B12 Supplementation Between 6 to 30 Months of Age on Markers of Cardiovascular Illness at School Age: A Secondary Analysis" at NUTRITION 2022 LIVE ONLINE, American Society for Nutrition flagship meeting. He was awarded Global Nutrition Early Career Scholar Award.

- Nonita Dudeja, selected for poster presentation on "Factors associated with incidence of Enteric Fever in a Paediatric Cohort in North India" at the 2021 International Conference on Typhoid and Other Invasive Salmonellosis, December 2021.

- Drs. Ranadip Chowdhury, Ravi P Upadhyay, Bireshwar Sinha, Tarun Choudhary, Barsha Pathak, Rukman Mecca Manapurath, Sunita Taneja, Sarmila Mazumder, Temsunaro Rongsen-Chandola and Nita Bhandari participated in the WHO-coordinated series of systematic reviews and meta analyses to summarize available evidence on the effect of different mineral (Iron, Zinc, Calcium and Phosphorus), vitamin (Vitamin A, Vitamin D) and multiple micro-nutrient supplementation during infancy on mortality, morbidity, growth, and neurodevelopmental development in preterm or LBW infants who are fed mother's own milk or donor human milk. The findings were presented at the WHO Guideline Development Group meeting in November 2021.

COLLABORATORS



National

- All India Institute of Medical Sciences, New Delhi
- Batra Hospital and Medical Research Centre, New Delhi
- BPS Kharipur Medical College Hospital, Sonapat, Haryana
- Christian Medical College, Vellore, Tamil Nadu
- District Hospital, Sonapat, Haryana
- Dr. Dangs Lab, New Delhi
- Hamdard Institute of Medical Sciences and Research, New Delhi
- Indian Institute of Technology, New Delhi
- Kamla Nehru Hospital, Indira Gandhi Medical College, HP
- KEM Hospital Research Centre, Maharashtra
- Max Superspeciality Hospital, Saket, New Delhi
- National Institute of Biomedical Genomics, Kalyani, West Bengal
- Post Graduate Institute of Medical Research (PGIMER), Chandigarh, Haryana
- St. John's Research Institute, Bangalore, Karnataka
- Strand Lifesciences, Gurgaon, Haryana
- Translational Health Sciences Technology Institute, Haryana
- UNICEF, India
- Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi



International

- Centers for Diseases Control, Atlanta, USA
- Centre for International Health, University of Bergen, Norway
- Children's Investment Fund Foundation, UK
- Department of Infection and Immunity, University College of London, UK
- Emory University, USA
- Harvard School of Public Health, USA
- International Food Policy Research Institute, USA
- John Hopkins University and Bloomberg School of Public Health, USA
- London School of Hygiene and Tropical Medicine, UK
- Tampere Center for Child Health Research, Tampere University, Finland
- World Health Organization, Geneva, Switzerland



Visit to NIBMG, Kalyani by Drs. Bireshwar Sinha and Ranadip Chowdhury; Meeting with Dr. Partha Majumder and Souvik Mukherjee



PSBI Study team's visit to Himachal Pradesh

KEY COLLABORATIONS

Hamdard Institute of Medical Sciences and Research and associated Hakeem Abdul Hameed Centenary Hospital (HAHCH), Jamia Hamdard

Our collaboration with HIMSR and associated HAHCH Hospital has strengthened over the past one year.

The institutions were jointly awarded a grant under the DBT, Government of India Programme "Mission COVID Suraksha" for strengthening and capacity building for conduct of COVID vaccine trials in the country. Under this grant, a dedicated Clinical Research Centre has been set up in 1500 sq ft area in the hospital premises wherein all vaccine trial activities like participant consenting eligibility assessment, vaccine storage and administration, and document storage are being conducted. We have also developed a database of adult and pediatric volunteers for vaccine trials through this grant.



SAS Group with Drs. TS Rao and Pratima Ray



Consenting



Screening



Inauguration held on December 10, 2021



Observation and emergency management



Clinical Research Centre Building Entrance

State Government of Haryana

Memorandum of Understanding for Collaboration in Implementation Research and Intervention Scale Up for Accelerated Decline in Child Mortality and Improved Child Growth and Development.

SAS has been allotted a floor in the sub-divisional hospital in Hodal block of Palwal district, Haryana for on of the research project. The research team, data management team and all study activities including organization of trainings are carried out from the hospital.

State Government of Himachal Pradesh

Project-specific collaborations with hospitals
Strengthening of health systems with government

WHO Collaborating Centre for Research, Community-based Action and Programme Development in Child Health

The association with the World Health Organization as a WHO collaborating centre (WHO CC) has facilitated to define the aims and objectives that are coherent with WHO research priorities. Being a WHO CC, has endowed us with better research opportunities through collaborative research and linkages with other research organizations. It has also paved way for capacity building of the researchers, especially of the young investigators.

The research projects conducted by CHRD-SAS are of national importance and aligned to WHO's research agenda. CHRD-SAS has completed numerous research projects in collaboration with WHO and is currently involved in 10 projects. WHO also provides technical support for some of the important research projects conducted by CHRD-SAS .



Our Offices

Different teams continue to operate out of our offices based at different locations in Delhi-NCR.

Research Coordination and Management Support Office in Kalu Sarai, New Delhi: Around 9000 sq ft built up area spread over 5 floors for senior management, scientists, data management, accounts, HR and administrative teams.



Clinical Science Centre, Delhi, New Delhi 15,000 sq ft built-up area for screening, enrollment, randomization, assessment, collection and storage of biological specimens, patient monitoring and outpatient care for evaluation of vaccines and diagnostics and other health care technologies. This office is also the base for all teams working in urban areas in Delhi.

Population Science Research Centre in Palwal, Haryana: Around 17500 sq ft built-up area in Tatarpur, District Palwal for teams working on population science studies and major intervention trials in Haryana.

Also houses a 1320 sq ft archival facility with indexed and restricted access.



Data Management Centre

Real-time cloud-based data management using tablets and mobile phones with GCP and regulatory compliant processes, web-based electronic tracking of patient management and compliance

Specialized systems for security, fire safety, restricted access server rooms as per global standards



Geographical Information System Lab

Equipped with high processing desktop to enable processing and storage of spatial data, with Basic version of ESRI ArcMap 10.8 installed for the real time mapping using NRSC cartosat3 data. GIS integrated demographic health surveillance will provide high resolution spatial data for the development and understanding of health and socio-economical conditions in the population.

Infant and Child Cognition Assessment Lab

The lab hosts a battery of psychometric tests such as Bayley's Scale of Infant and Toddler Development, Ages and Stages Questionnaire, Global Scale for Child Development



Clinical and Research Laboratories, SAS (CRL-SAS)

CRL-SAS is a Good Clinical Laboratory Practices compliant research lab that supports ongoing research studies at CHRD-SAS through specimen collection at home, study clinic or laboratory, processing, storage and transportation as per project requirements. The Institutional Bio-Safety Committee oversees the environmental and occupational health and safety aspects of the functioning of the laboratory. As a part of the Government of India's DRIVEN project, the lab successfully underwent environmental and safety due diligence in 2022. The lab was audited by an independent auditor for safety measures and was declared compliant for facility design, good safety practices, personnel training and awareness, fire, electrical, chemical, equipment and environment safety, waste management and emergency response plan. stems for home and lab collection of samples, processing, quality control and storage. Designated areas for specimen receiving and processing, bacteriology, immunology, hematology, biochemistry, documentation, washing, sterilization, vaccine storage, biospecimen storage and biomedical waste management area.

Over the years, the lab has developed a rich repository of biospecimens including serum from mothers and infants, breast milk from lactating mothers and saliva from mother infant pairs at several time points. These are stored in liquid nitrogen storage tanks and -80°C deep freezers, at different facilities under strict temperature-controlled conditions. Specimens have been tested to estimate the overall and age-specific burden of Dengue fever in a pediatric cohort in Delhi.



Liquid Nitrogen Storage Tanks



Sample Storage in Cryoboxes



Blood sample collection



Biosafety Cabinet



Automated Blood Culture

OUR TEAMS

There are research groups around each scientific program. These programs are led by investigators (MD, MPH, PhD) supported by skilled research associates who are responsible for the field operations and implementation. There are in built quality control systems in place as well as quality assurance checks. Research groups link with partner hospitals or laboratories depending on the need. The data management centre is compliant with regulatory guidelines. All research data under different domains is managed in-house at the centre.



ORGANIZATIONAL BOARD AND COMMITTEES

Board of Governors

Nita Bhandari, President
Ramanjit Kaur Johal, Vice President
Rahul Khare, Secretary
Manju Bagdwal, Assistant Secretary
TS Rao, Treasurer
Partha Majumder, Member
Temsunaro Rongsen-Chandola, Member

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Dr. Rajat Goyal, Country/Regional Director, International AIDS Vaccine Initiative, New Delhi
Dr. RM Pandey, Professor & Head, Department of Biostatistics & Professor In-charge, Clinical Epidemiology Unit, All India Institute of Medical Sciences, New Delhi
Dr. Satinder Aneja, Professor, Department Pediatrics, Sharda University, Greater Noida, UP
Dr. Siddharth Ramji, Neonatologist and Pediatrician, Maulana Azad Medical College, New Delhi
Dr. T Ramamurthy, Director, National Institute of Cholera and Enteric Diseases, Kolkata, WB

Internal Complaints Committee

Nita Bhandari
Medha Shekhar
Ranadip Chowdhury
Pradeep Kumar
Swati Naik
Anisha Banerji, Independent Member
Savita Sapra, Independent Member

Child Protection Committee

Nita Bhandari
Tarun Shankar Choudhary
Swati Naik
Rahul Khare, Independent Member
Savita Sapra, Independent Member

Ethics Review Committee

CHRD-SAS Ethics Review Committee is registered with the Department of Health Research (DHR), Ministry of Health and Family Welfare (MoHFW), Government of India.

The committee is constituted and functions in accordance with the ICMR National Ethical Guidelines for Biomedical and Health Research Involving Human Participants, 2017.

7 full review meetings were conducted virtually during the year 2021-2022. The list of members is as follows:

- Dr. Binoo Nayar (Chairperson - Clinician), Senior Chief Medical Officer, School Health Services, Central Zone, Municipal Corporation of Delhi
- Dr. Sarmila Mazumder (Member Secretary), Senior Scientist, Centre for Health Research and Development, Society for Applied Studies, New Delhi
- Dr. Rajat Goyal (Basic Medical Scientist), Country Director (India), International AIDS Vaccine Initiative, New Delhi
- Prof. Pratima Ray (Basic Medical Scientist), Professor, Department of Biotechnology, Jamia Hamdard, New Delhi,
- Dr. Jeeva Sankar (Basic Medical Scientist), Additional Professor, All India Institute of Medical Sciences (AIIMS), New Delhi
- Dr. Satinder Aneja (Clinician), Former Director-Professor & Head, Department of Pediatrics, Lady Hardinge Medical College, Delhi
- Colonel Gian Sagar (Legal Expert), Retired Army Officer
- Mrs. Medha Shekhar (Legal Expert), Coordinator, Centre for Health Research and Development, Society for Applied Studies, New Delhi
- Dr. Rajib Dasgupta (Social Scientist), Professor and Chairperson, Centre of Social Medicine and Community Health, Jawaharlal Nehru University, New Delhi
- Dr. Sanghmitra Acharya (Social Scientist), Professor, School of Social Science, Jawaharlal Nehru University, New Delhi
- Mrs. Runa Ghosh (Social Scientist), Senior Research Assistant, Centre for Health Research and Development, Society for Applied Studies, New Delhi
- Mrs. Girija Sapra (Community Representative), Retired Teacher, Manava Bharati India International School, New Delhi
- Mrs. Kiran Kanda (Community Representative), Teacher, Manava Bharati India International School, New Delhi

Institutional Committees

CHRD-SAS has constituted institutional committees to streamline the organizational policies and procedures and provide guidelines for decision making processes. The committees include:

- Human Resources
- Institutional Biosafety Committee
- Travel and Transportation Committee
- Technical and Purchase Committee
- Finance, Administrative and Legal: Advise is sought from independent experts whenever required.

We have formulated clear, well-written policies and procedures to ensure transparency and accountability including internal and external audits.

CHRD-SAS INTERNSHIP PROGRAM

We offer short term internships to students of Public Health and other streams like data management and finance for not-for-profit organizations.

Two MPH students from the Department of Community Medicine at Hamdard Institute of Medical Sciences and Research joined two-months internship program in Quarter 4, 2021.

A student of Business Management Studies (BMS) course, Delhi University completed one month internship in accounting and finance and a B-Tech (Computer Science) student from JC Bose University of Science and Technology, Faridabad joined six months internship program in database management system.



Interns from Hamdard Institute of Medical Sciences and Research with Dr. Chandola and Swati Naik

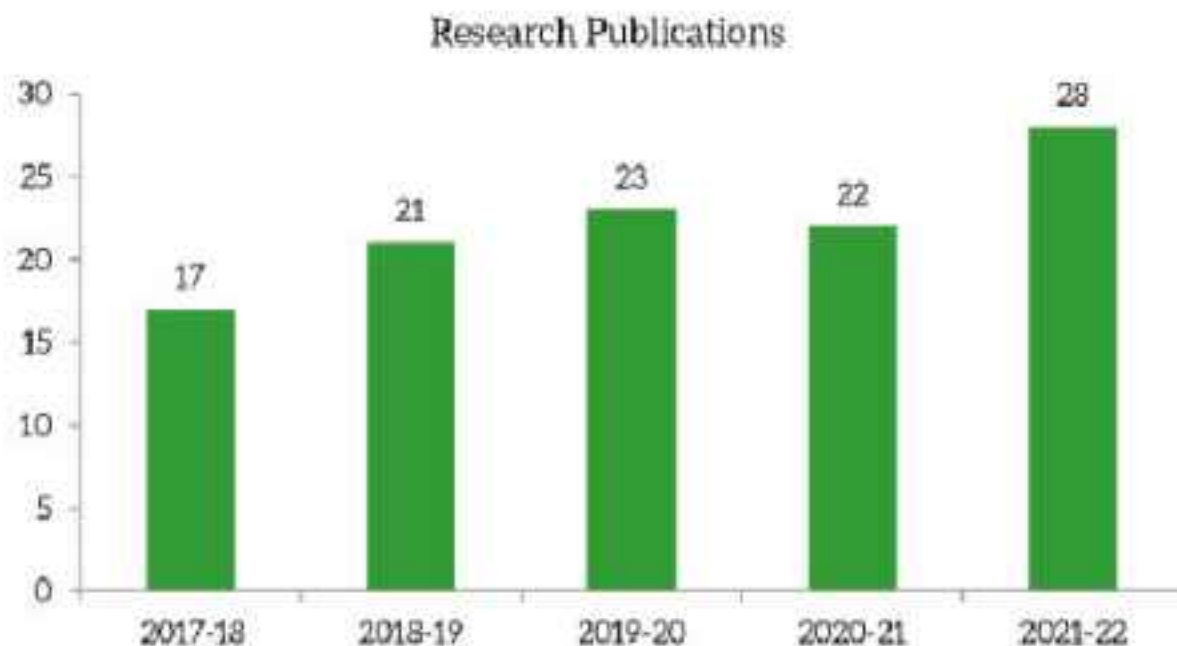
SUPPORT DURING COVID-19 PANDEMIC

During the pandemic, the organization ensured that teams followed COVID-appropriate behaviour by providing masks, sanitizers; reducing home visits by enabling study data collected virtually, free transportation for the teams, vaccination facilitated in collaboration with Hamdard Institute of Medical Sciences and Research.



"COVID-19 Care Team" comprising of physicians, nutritionists and psychologists constituted to support the employees, their families and friends affected by the Coronaviruses. Pulse oximeters, thermometers, BP apparatus, oxygen concentrators were shared; medicines were provided free-of-cost.

RESEARCH PUBLICATIONS IN PEER-REVIEWED JOURNALS



1. Sinha B, Dudeja N, Mazumder S, Kumar T, Adhikary P, Roy N, Rongsen Chandola T, Mehta R, Raina N, Bhandari N. Estimating the Impact of COVID-19 Pandemic Related Lockdown on Utilization of Maternal and Perinatal Health Services in an Urban Neighborhood in Delhi, India. **Front Glob Womens Health**. 2022 Mar 29;3:816969. doi: 10.3389/fgwh.2022.816969.
2. Dhabhai N, Chaudhary R, Wi T, Mburu G, Chowdhury R, More D, Chatterjee L, De D, Kabra R, Kiarie J, Habib N, Dang A, Dang M, Mazumder S. Prevalence of reproductive tract infections including sexually transmitted infections among married women in urban and peri-urban mid to low socioeconomic neighbourhoods of Delhi, North India: an observational study protocol. **BMJ Open**. 2022 Mar 18;12(3):e059583. doi: 10.1136/bmjopen-2021-059583.
3. Adhikary P, Roy N, Mburu G, Kabra R, Habib NA, Kiarie J, Dhabhai N, Chowdhury R, Mazumder S. Characteristics, experiences and actions taken by women to address delayed conception: A mixed-methods cross-sectional study protocol. **PLoS One**. 2022 Mar 11;17(3):e0264777. doi: 10.1371/journal.pone.0264777.
4. Manapurath R, Gadapani B, Pereira-da-Silva L. Body Composition of Infants Born with Intrauterine Growth Restriction: A Systematic Review and Meta-Analysis. **Nutrients**. 2022 Mar 4;14(5):1085. doi: 10.3390/nu14051085.
5. Veeraraghavan B, Pragasam AK, Ray P, Kapil A, Nagaraj S, Perumal SPB, Saigal K, Thomas M, Gupta M, Rongsen-Chandola T, Jinka DR, Shastri J, Alexander AP, Koshy RM, De A, Singh A, Evelyn Ebenezer S, Dutta S, Bavdekar A, More D, Nayakanti RR, Jacob JJ, Amladi A, Anandan S, John J, Kang G. Evaluation of Antimicrobial Susceptibility Profile in Salmonella Typhi and Salmonella Paratyphi A: Presenting the Current Scenario in India and Strategy for Future Management. **J Infect Dis**. 2021 Nov 23;224(Supple 5):S502-S516. doi: 10.1093/infdis/jiab144.
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8. Mohan VR, Srinivasan M, Sinha B, Shrivastava A, Karungo S, Natarajan Sindhu K, Ramanujam K, Ganesan SK, Karthikeyan AS, Kumar Jaganathan S, Gunasekaran A, Arya A, Bavdekar A, Rongsen-Chandola T, Dutta S, John J, Kang G. Geographically Weighted Regression Modeling of Spatial Clustering and Determinants of Focal Typhoid Fever Incidence. *J Infect Dis.* 2021 Nov 23;224(Supple 5):S601-S611. doi:10.1093/infdis/jiab379.
9. Raut S, Apte A, Srinivasan M, Dudeja N, Dayma G, Sinha B, Bavdekar A. Determinants of maternal influenza vaccination in the context of low- and middle-income countries: A systematic review. *PLoS One.* 2022 Jan 26;17(1):e0262871. doi: 10.1371/journal.pone.0262871.
10. Bahl S, Dhabhai N, Taneja S, Mittal P, Dewan R, Kaur J, Chaudhary R, Bhandari N, Chowdhury R. Burden, risk factors and outcomes associated with gestational diabetes in a population-based cohort of pregnant women from North India. *BMC Pregnancy Childbirth.* 2022 Jan 14;22(1):32. doi: 10.1186/s12884-022-04389-5.
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17. Choedon T, Sethi V, Chowdhury R, Bhatia N, Dinachandra K, Murira Z, Bhanot A, Baswal D, de Wagt A, Bhargava M, Meshram II, Babu GR, Kulkarni B, Divakar H, Jacob CM, Killeen SL, McAuliffe F, Alambusha R, Joe W, Hanson M. Population estimates and determinants of severe maternal thinness in India. *Int J Gynaecol Obstet.* 2021 Dec;155(3):380-397. doi: 10.1002/ijgo.13940.
18. Sethi V, Choedon T, Chowdhury R, Bhatia N, Dinachandra K, Murira Z, Bhanot A, Baswal D, de Wagt A, Bhargava M, Meshram II, Babu GR, Kulkarni B, Divakar H, Jacob CM, Killeen SL, McAuliffe F, Vergehese M, Ghosh S, Hanson M. Screening and management options for severe thinness during pregnancy in India. *Int J Gynaecol Obstet.* 2021 Dec;155(3):357-379. doi:10.1002/ijgo.13939.
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Presence on Social Media

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