Centre for Chronic Disease Control

A World Health Organization (WHO) & Indian Council of Medical Research (ICMR) Collaborating Centre

Annual Report 2024

Centre for Chronic Disease Control

A New Delhi Based Not-for-Profit Organization engaged in Chronic Disease Research and Prevention

Envisions to reduce chronic disease burden and promote innovative science that has the potential to improve human health through implementation and translational research.

Registered under Society Registration Act XXI of 1860 [Reg. no #38393 of 2000] on Dec 21, 2000 Compliant with Foreign Contribution (regulation) Act (FCRA), 2010 with Registration Number: 231660448

RECOGNITIONS

A Scientific & Industrial Research Organization (SIRO), recognized by Department of Scientific & Industrial Research (DSIR), Ministry of Science and Technology, Government of India.

A WHO Collaborating Centre for Surveillance, Capacity Building and Translational Research in Cardio-Metabolic Diseases.

An ICMR Collaborating Centre of Excellence

Centre for Chronic Disease Control

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Institutional Ethics Committee

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Director's Message

Prof. D. Prabhakaran
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As we reflect on the past year, I am immensely proud to share the continued progress and growing public health impact of the work carried out by the Centre for Chronic Disease Control (CCDC). Since our establishment in 2000, CCDC has remained unwavering in its core mission to advance science, develop and deliver transformative solutions for chronic disease prevention and control in India and across other low- and middle-income countries (LMICs) facing similar challenges. This year marks a special milestone. We are completing 25 years since inception, and the journey has been an exciting period in terms of improving public health through science, innovation, collaboration and capacity development. It is a moment to both celebrate our achievements and reaffirm our firm commitment to evidence-based and impactful work, that can improve population health.

In 2024, we have expanded the scope and depth of our work. Our re-designation as a World Health Organization (WHO) Collaborating Centre has further strengthened regional partnerships in cardio-metabolic disease prevention, public health surveillance, and implementation science. We remain deeply engaged in capacity development across Southeast Asia, training the next generation of public health researchers and practitioners. In addition, we have been designated as the most engaged ICMR Collaborating Centre of Excellence which adds another feather to our cap.

Some of the key research endeavours are summarised below. The prestigious ICMR funded Yoga-Based Cardiac Rehabilitation in Heart Failure (Yoga-CaRe HF) trial, has enrolled over 2700 participants. The program has delivered 10,000+ supervised yoga sessions and 1,000 counselling sessions across 15 hospitals, involving 50+ cardiologists.

We have shown considerable progress in the Strengthening Ambulatory Care for Non-Communicable Diseases (NCDs) in India (STAR-NCD) project, which is a National Health Research Priority Project (NHRP) of ICMR. We have continued to engage with the Government of Tripura and are co-designing the implementation strategy in collaboration with the All India Institute of Medical Sciences Delhi. In addition, we have embarked on another NHRP of ICMR – the DIGICARE project – which aims to improve the effectiveness of digital health interventions being used in the National Programme for NCDs. We are currently working closely with the Government of Himachal Pradesh in the co-design of various strategies for this project.

Our flagship project RAHAT (Rural Health Care Transformation) a Centre for Advanced Research funded by ICMR, has officially launched its first pilot sites in underserved rural districts, focusing on health systems strengthening and community-driven interventions. There is considerable enthusiasm among our partners (six medical colleges located in various parts of India), and we are certain that it will provide much needed answers on redefining and transforming rural healthcare delivery. This work will also provide a vanguard for research capacity strengthening in medical institutions across India.

Our long-standing GEOHEALTH programme funded by the National Institutes of Health (NIH) continues its excellent work on building a strong and comprehensive environmental health research portfolio on topical issues of public health relevance for India including air pollution and heat. Our unique nation-wide exposure assessment models for air pollutants and ambient temperature allow

assessment of health effects across datasets including longitudinal studies and registries in India through collaborative partnerships. Data from the first phase already informs regional policy dialogues and mitigation strategies. Our collaboration on an NIHR grant with Sri Chitra Thirunal Institute and University of Birmingham is exploring an intervention for NCD risk management in flood prone Kerala and Bihar.

Through the BRIDGE Centre for Digital Health, our assisted telemedicine initiative - DigiSetu - has significantly expanded healthcare access and promoted digital health literacy among underserved communities. Through the recently awarded prestigious UK National Institute for Health and Care Research (NIHR) RIGHT Call 7 grant, technology-enabled Mobile Health Units (MHUs) will be deployed across several states in the country, delivering medical consultations, diagnostics, and treatments directly to elderly individuals living in remote and hard-to-reach areas.

As part of our strong emphasis on science-to-policy translation, several of our colleagues continue to support the Government of India and state authorities on policy development in digital health, environmental risk reduction, and cost-effective ambulatory care models for NCDs.

We're also proud to share that our research output continues to grow - with over 60 peer-reviewed publications in high-impact journals this past year, further cementing our role as a global leader in chronic disease research and implementation science.

As we approach our 25th anniversary at the end of 2025, we take this moment to honour the contributions of our colleagues, partners, collaborators and supporters. We remain deeply committed to delivering innovative, cost-effective, and equitable solutions that will continue to shape the future of healthcare in India and beyond while scaling our capacity-building efforts for diverse audiences from academia to government representatives.

With renewed vigour and purpose, we look forward to the next chapter of our journey - one where science, technology, innovation and compassion come together to transform lives, advance population health and strengthen healthcare services.

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I. Introduction

Centre for Chronic Disease Control (CCDC) is leading efforts to reduce the burden of chronic diseases in India and low-and middle-income countries (LMICs) while promoting innovative scientific solutions. Located in New Delhi, India, CCDC is an independent, not-profit, biomedical research organization passionate about advancing research on chronic diseases.

Vision

Reduce chronic disease burden and promote innovative science that has the potential to improve human health through implementation and translational research.

Mission

Address the growing challenge of chronic diseases in developing countries through:

- **Knowledge generation**, which can inform policies and empower programs for the prevention and control of such diseases; and
- **Knowledge translation**, which can operationalize research results by bridging the critical gaps between relevant research and effective implementation. This is achieved through analytic work, capacity building, advocacy, and development of educational resources for enhancing the health of people and empowerment of public health professionals.

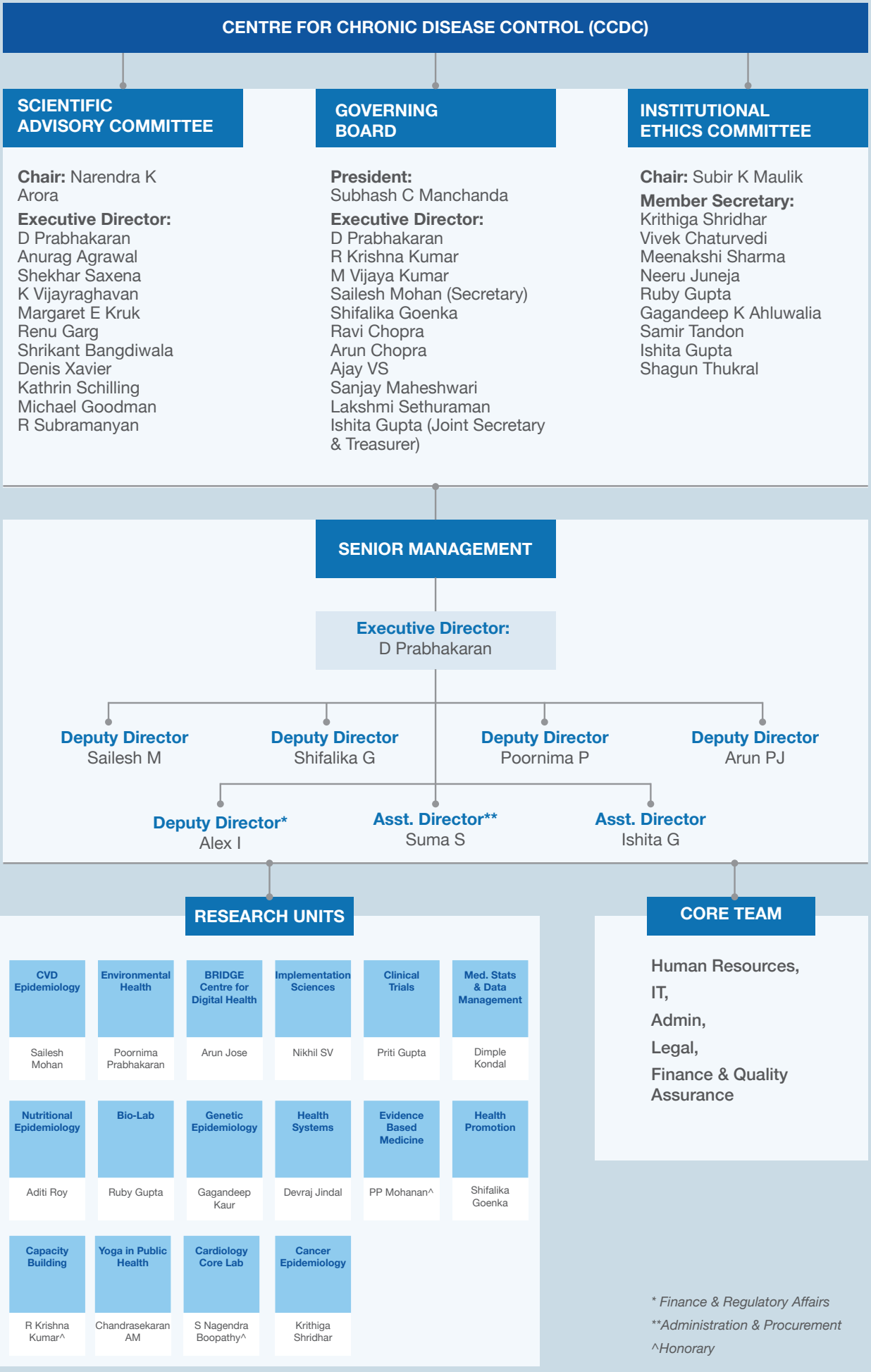
II. Governance

CCDC is guided by a 12-member fully empowered, Governing Board with representatives from multiple scientific constituencies. The members offer strategic direction and establish overarching policies for CCDC.

The Board comprises the President (Prof. Subhash Chander Manchanda), the Secretary (Prof. Sailesh Mohan), and ten other eminent scientific luminaries. The Governing Board is advised by the Scientific Advisory Board, comprising of (inter)nationally renowned academicians, and is chaired by Prof Narendra K Arora.

An Institutional Ethics Committee oversees the ethical conduct of research at CCDC. CCDC adheres to the highest standards of transparency and financial responsibility and has been audited by Duke Clinical Research Institute, Price Waterhouse Coopers (PWC)/KPMG, Indegene, etc. Our organogram is depicted in Figure - 1.

FIGURE 1: ORGANOGRAM



RESEARCH EXCELLENCE

III. Research Excellence

With 25 years of experience, CCDC is redefining chronic disease research by converging science, technology, and innovation. We maintain a strong focus on chronic non-communicable diseases, including:

- Cardiovascular Disease
- Other Vascular Diseases
- Diabetes
- Cancers
- Mental Health

Our focus has further expanded to include several cross-cutting sectors such as environmental health, reproductive health, nutrition, and digital health. CCDC research has produced major insights into the epidemiology, developmental origins, and biomarkers of CVD and diabetes in India. Translation research has facilitated the development of low-cost solutions, including combination drugs for primary and secondary prevention of CVDs in South Asia.

100+
Research **Projects**

1,000+
Scientific **Publications**

Research Focus

- Track the growing epidemic of **chronic diseases** and its determinants across various population groups
- Identify potential context-specific, **low-cost interventions** to address the growing epidemic of chronic diseases
- Build national and international **capacity** for chronic disease research
- Contribute to **national health policy** and evidence-based guideline development
- Determine the quality of **chronic disease care** at different levels of the health system and develop cost effective, technology-enabled models of care including assisted telemedicine to improve health outcomes

Epidemiology

01 | Personalized and Precise Disease Prediction to Promote Cardiovascular Health: Insights from One of the Largest Cohort

PROJECT

Precision Cardiovascular Disease Phenotyping and Pathophysiological Pathways in the CARRS Cohort (Precision-CARRS)

(January 2021-February 2027)

This study aims to transform the paradigm of cardiovascular health by shifting the approach from late-stage risk identification and imprecise phenotyping to early risk identification and precision medicine. The goal is to enable early detection and prediction of heart disease and stroke.

The study aims to estimate the prevalence, incidence, and predictors of subclinical and clinical vascular and myocardial disease, with an exploration of pathophysiologic pathways by investigating:

a. The role of environmental exposures (air pollution/built environment) on the development of subclinical and clinical vascular and myocardial disease

b. Multi-omic determinants of subclinical and clinical vascular and myocardial disease

c. Spousal and behavioral influences on subclinical and clinical vascular and myocardial disease.

The study has been funded by the National Heart, Lung, and Blood Institute (NHLBI), National Institutes of Health (NIH), USA.

Top Publications of 2024

1. Rate and risk factors of kidney function decline among South Asians with type 2 diabetes: analysis of the CARRS Trial (BMJ Open Diabetes Res Care) - In South Asian urban diabetes clinics, patients showed an eGFR decline twice as fast as international averages. Diabetic retinopathy, prior cardiovascular disease, and statin use were linked to faster decline. No difference was seen between intervention and usual care groups, highlighting the need for targeted kidney-protective strategies.

2. Longitudinal associations between ambient PM 2.5 exposure and lipid levels in two Indian cities (ISEE - Environmental Epidemiology) - In Chennai and Delhi, higher ambient PM2.5 levels were linked to changes in lipid profiles, including increased LDL-C, TC, and TRIG, with varying patterns by city and exposure level. HDL-C generally rose with short-term exposure but declined with higher long-term exposure. These results highlight the complex associations between air pollution and lipid metabolism in South Asian populations, underscoring the need for further research to inform targeted interventions.

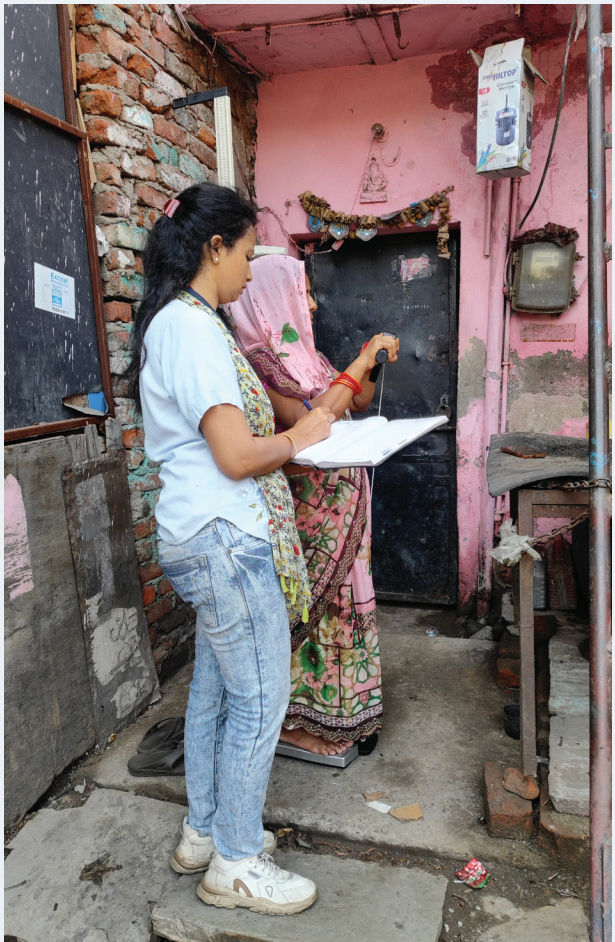
3. Prospective Study on Kidney Dysfunction Markers and Risk for Mortality among South Asians (Kidney International Reports) - In a 7-year study of urban South Asians, elevated UACR (≥30 mg/g) and reduced eGFR (<45 ml/min/1.73 m^2) were strongly linked to higher mortality risk. Albuminuria and low kidney function accounted for 24.4% and 13.4% of deaths, respectively. These findings support the need for routine screening and interventions to reduce albuminuria and preserve kidney function.

4. Association of pro-inflammatory cytokines, adipokines and hepatokine with incident diabetes in India: a nested case-control study within CARRS cohort (Acta Diabetol) - Higher levels of TNF-α and MCP-1, and lower levels of IL-6, were linked to increased diabetes risk among South Asians. However, these associations weakened after accounting for family history, highlighting the need for further research into the role of inflammatory biomarkers in diabetes development.

5. Natural History of Type 2 Diabetes in Indians: Time to Progression (Diabetes Care) - It reveals a rapid progression from prediabetes to diabetes among Indian individuals. While individuals spend an average of 34.5 years in normoglycemia (normal blood sugar), the transition to prediabetes (Impaired Glucose Tolerance or IGT) and subsequent progression to diabetes is relatively quick. This study highlights the importance of early detection and management of prediabetes to delay or prevent the progression to type 2 diabetes in the Indian population.

6. Evaluating Bias with Loss to Follow-up in a Community-based Cohort: Empirical Investigation from the CARRS Study (Journal of Epidemiology and Community Health) - In a 9.5-year follow-up of over 12,000 urban Indians, loss to follow-up was low (3.1%) and showed minimal impact on study bias. Younger, unmarried individuals and those with fewer assets were more likely to be lost. Retention strategies, such as ongoing communication and sharing health information, contributed to sustained participation.

More than 14,300 participants have been interviewed, with bio samples collected from 10,900 participants and imaging studies conducted on 4,300.



02

Epidemiology of Multimorbidity in Indian Population

(September 2021-August 2026)

Multimorbidity, or the presence of two or more chronic conditions in an individual, is becoming increasingly common with rising life expectancy and the growing burden of NCDs. While it is more prevalent among older adults and those from lower socioeconomic backgrounds, younger age groups are also experiencing a rise in multimorbidity. However, India lacks accurate data on its incidence and impact, particularly in terms of disability-adjusted life years and quality-adjusted life years.

The Study aims to assess the incidence, predictors, trends, and health-economic impact of multimorbidity in Indian adults aged ≥40 years. This will help identify its causes and guide the development of targeted prevention and treatment strategies.

Total data collected for 12,229 participants aged 40 years and above in 2024.

Follow up data collection started from Jan 2025.

03

HFpEF in Indians - Understanding Heart Failure with Preserved Ejection Fraction in Indians

(January 2022-May 2026)

Over half of all heart failure patients have HFpEF, which is more common in older, diabetic, obese, and hypertensive individuals and has a prognosis as poor as those with reduced ejection fraction. This Study will use symptoms, dynamic echocardiography, and NTproBNP to assess heart failure stages, while also identifying, verifying, and validating the proteomics profile of HFpEF patients. The goal is to replicate HFpEF protein biomarker findings from the U.S.-based MASALA study to better understand its burden and causes in Indians

This is funded by the University of California San Francisco (UCSF).

So far, only one treatment has been shown to improve outcomes in HFpEF patients, highlighting the need to better understand its diverse phenotypes and underlying biological and physiological mechanisms.

04

Oral Microbiota and Early Oral Cancer (MICRO-ORAL): A Pilot Study to Standardize Sequencing of Oral Microbiota in Saliva Samples

(January 2023-March 2024)

This project, using de-identified stored saliva samples and epidemiological data of participants diagnosed with primary oral tongue cancers and age-sex matched cancer-free controls, addressed the following objectives:

1. Standardized laboratory methods for sequencing of oral microbiota in saliva samples
2. Generated preliminary data for oral microbiota in stored saliva samples using 16S rRNA illumina sequencing
3. Set-up a research consortium on 'human microbiome studies'
4. Explored differences in oral microbial composition in early- and late-onset oral tongue cancer cases compared to cancer free controls

The Study was funded by Yusuf Hamied Faculty Fellowship, Columbia Global Centres, Mumbai, India.

Over 50% of orodigestive cancers were found to be associated with specific microbial infections.

Trials

01 | Streamlining Hypertension Management: Unlocking the Potential of Single-Pill Combinations in India

PROJECT

Improving Hypertension Management: Single-Pill Combinations in South-Asian Ethnicity

(August 2022-August 2024)

TOPSPIN is a multi-center, individual randomized single-blind, parallel-group, three-armed superiority trial comparing the efficacy of three single pill combinations (SPCs) of two anti-hypertensive agents on 24-hour ambulatory systolic blood pressure (ASBP) among individuals with hypertension in India. The study is supported by Imperial College, London. The study is completed in Aug 2024 and results presented as a Late Breaker at the American Heart Association – Scientific Sessions 2024 and accepted for publication at the nature medicine.

Overall Impact

a. All the three single pill combinations resulted in a significant reduction in 24-hour ambulatory and clinic blood pressure and the reductions were with the three combinations.

b. The trial found that with combination pills can improve blood pressure control rates (both conservative 140/90 mm of Hg and more current recommended 130/80 mm of Hg) superior to control rates reported worldwide.

c. The combination strategy was well tolerated with very few adverse and serious adverse events noted in the study group.

d. There were modest differences in various blood parameters which could be of relevance in specific to diabetes prone South-Asian ethnicity.

This study was conducted across 35 sites in India and recruited 1981 participants.

02 | Integrating Yoga into Heart Failure Care: A Holistic Approach to Well-being

PROJECT

Addressing the Unmet Cardiac Rehabilitation Needs in Heart Failure Care with Yoga-Based Comprehensive Holistic Cardiac Rehabilitation

(Feb 2022 to Aug 2026)

Yoga-based Cardiac Rehabilitation in Heart Failure (Yoga-CaRe HF), a prospective, multi-center open-label randomized controlled clinical trial, is a structured holistic CR program. The study is funded by the Indian Council for Medical Research (ICMR), New Delhi.

The study intends to:

a. Test the effectiveness of the Yoga-CaRe program on cardiovascular events and quality of life in patients with heart failure and reduced ejection fraction

b. Evaluate the mechanisms through with the CR exerts potential benefits in three mechanistic sub-studies supported by ICMR, CCRYN, New Delhi Apple India

This project is an ICMR Task Force initiative under the non-communicable disease division of the ICMR, India.

The project tests the utility of a yoga based cardiac rehabilitation, a homegrown innovative, potentially low-cost delivered by a qualified Yoga & Naturopathy doctor in improving health of patients with heart failure. The findings could inform public health policies, leading to scalable, culturally appropriate, integrated holistic care to reduce the unmet needs of cardiac rehabilitation in resource-constrained settings.

This is an ongoing trial, with 2616 participants as on 31st March 2024 across 15 clinical sites in India.

Yoga-CaRe HF

03 | Exploring Factors Influencing the Implementation of a Polypill Strategy for HFrEF

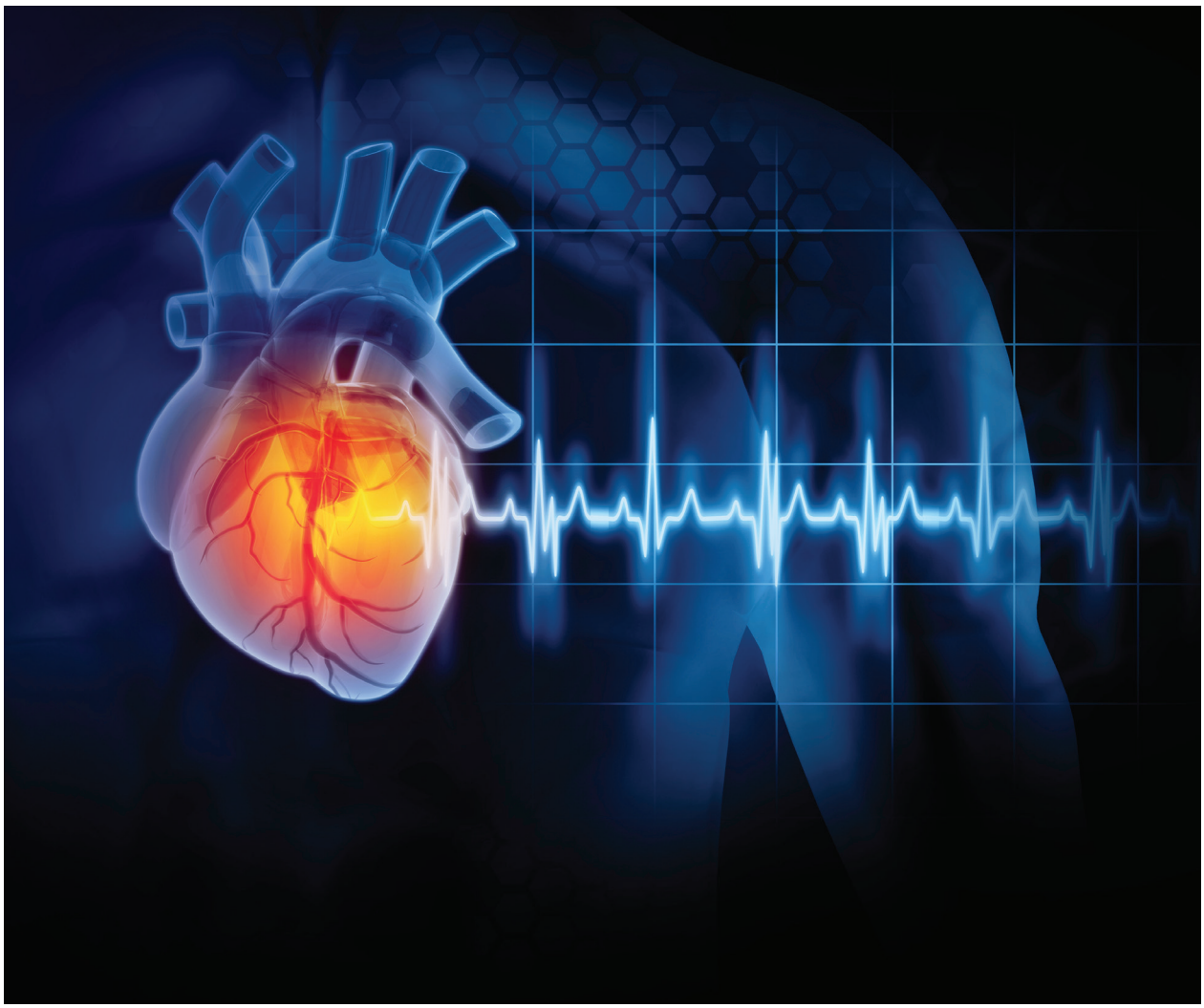
PROJECT

Heart Failure Polypill in India: A Late-Stage Implementation Strategy

(September 2022-August 2024)

The study evaluated the acceptability, feasibility, appropriateness, readiness, and capacity for Heart Failure with reduced Ejection Fraction (HFrEF) polypill implementation through an exploratory sequential mixed methods study by using methods outlined by the Consolidated Framework for Implementation Research (CFIR) to assess the intervention, actors, inner/outer contexts, and process of implementation through a focus group discussion with the key stakeholders followed by a consensus meeting using a modified Delphi method.

This study was conducted by Washington University in St Louis in collaboration with CCDC.



04

PROJECT

Co-designing and Implementing an mHealth Intervention to Help People with Lived Experience of Hypertension in Primary Care to Reduce Blood Pressure: A Hybrid Type-1 Effectiveness Implementation

(November 2024-October 2028)

Hypertension remains a growing challenge in India, with low awareness, treatment, and control rates. While existing government efforts focus on healthcare providers, there is little support for people to self-manage their condition. This project aims to bridge that gap by developing, implementing, and evaluating a patient-facing mHealth intervention using the "Person-Based Approach."

The study aims to:

a. Conduct formative research to understand stakeholder perspectives, needs and challenges in self-management of hypertension

b. Co-design a mHealth intervention with people with lived experience of hypertension to better manage their condition

c. Implement the intervention and evaluate its effectiveness on key clinical and implementation outcomes.

The envisaged impact is to improve the care for patients with hypertension and reduce cardiovascular disease risk and mortality.

Environmental Health

01 | Mapping Environmental Exposures Across Lifecourse: A Multidisciplinary Approach

PROJECT

GEOHealth Health Effects of Selected Environmental Exposomes Across the Life CourSe (HEALS)

(June 2022-February 2027)

The study aims to extend exposure assessments to include a range of air pollutants: particulate matter with aerodynamic diameter <2.5mm (PM2.5), nitrogen dioxide (NO2) and ozone (O3), and extremes of temperature to assess the exposomes at fine spatio temporal resolutions across different locations in India. It brings together multidisciplinary group of researchers, mentors, and program faculty to build the capacity of public health professionals to generate data needed to address the unique characteristics of exposures in the country.

The study has been funded by the National Cancer Institute (NCI), National Institute of Environmental Health Sciences (NIEHS) of the National Institutes of Health through Fogarty International Center (FIC).

A consortium of Indian cohorts was developed, comprising six cohorts from seven sites and totaling approximately 50,000 participants. These cohorts represent different stages of life and are aimed at examining the health effects of air pollution and temperature extremes across the lifespan. To understand the variation in sources of pollutants across seven Indian cities and different seasons, data on ambient air pollutants were collected from 67 sites. In addition, individual-level exposures are being assessed through 24-hour personal monitoring in a subset of individuals at these locations.

A total of 14 short courses and workshops, along with one webinar, were organized across various locations in India, providing training to over 376 researchers. In 2025 alone, four short courses and workshops were conducted, training 111 researchers throughout the country.

02 | Early Child Development & Learning in Deprived Urban Environment Influence of Pollution (ECD-Urban Pollution)

(September 2021-August 2026)

About half of all children under five across LMICs are not developing to their full physical or mental potential. Neurotoxic pollutants pose a critical threat to a child's physical environment affecting development and yet haven't received the due attention in global health research.

Using a community-based prospective study design, the fellowship project, supported by the Wellcome-DBT India Alliance Early Career Fellowship, aims to examine:

- Whether an increase in exposure to neurotoxic heavy metal lead is associated with a decrease in developmental (cognitive, language, motor, and socio-emotional) and pre-academic skills (literacy and numeracy) in 500 preschool children (~3-6 years) living in a resource-poor urban environment with documented lead sources
- Investigate if an increase in exposure to ambient particulate matter less than 2.5 micrometers (PM2.5) moderates the observed association of children's lead levels with developmental and pre-academic skills.

Data collection for the study has engaged 637 families through public anganwadi centers and recruited participants from 58 public and private preschools. Blood lead levels were measured in 501 children, revealing significant exposure, particularly in areas with a history of battery recycling.

03 | Improving Primary Healthcare for Patients with Non-communicable Diseases During Severe Flooding in India

(April 2024- March 2029)

Non-communicable diseases like diabetes, heart disease, and lung diseases require continuous care, but extreme weather events (EWEs), particularly flooding, disrupt treatment and worsen health outcomes. India, with one of the highest global burdens of diabetes and heart disease, faces increasing flood-related healthcare challenges.

The NIHR Flood Project aims to enhance preparedness and resilience in managing NCDs during flood emergencies by integrating advanced flood forecasting with systematic community and health system disaster preparedness. It will be conducted in Kerala and Bihar, two flood-prone states with different geographic and socioeconomic conditions, to develop interventions. It aims to:

a. Strengthen patient and health system preparedness for managing NCDs during flood emergencies

b. Implement and test an integrated hydro-climatic community and primary care intervention for annual monsoon floods

c. Utilize Hydrologic Ensemble Prediction (HEP) for advanced flood forecasting to enable timely healthcare responses

d. Reduce morbidity, hospitalizations, and mortality related to NCDs during extreme weather events

e. Develop scalable and transferable solutions for other flood-prone regions in India and Southeast Asia

04 | Assessing the Economic Impact of Addressing Air Pollution in Two Indian cities

PROJECT

Air Pollution Investment Case: Amritsar and Gurugram; funded by United Nations Development Programme (UNDP)

(June 2022- Jan 2024)

The project aims to address pollution as a key environmental determinant of non-communicable diseases (NCDs). In India, we carried out an Investment case for Amritsar and Gurugram, where we calculated the cost of disease burden caused by ambient air pollution in the cities. By performing a return-on-investment analysis, we recommended evidence-based interventions for reducing air pollution to city stakeholders, evaluating financial returns in comparison to costs for mitigation strategies.

Impact & Outcomes

a. Laid a solid groundwork for creating plans to safeguard public health and reduce the economic ramifications of air pollution

b. Enable decision-makers to allocate resources efficiently, justify investments to stakeholders, evaluate effectiveness, and quantify economic and public health benefits

Health Systems

01 | Addressing Inequities and Enhancing Primary Healthcare Access in Rural India Through Digital Health Solutions

PROJECT

Centre for Advanced Research for RurAl Health cAre Transformation (RAHAT) funded by the Indian Council of Medical Research (ICMR)

(July 2024-July 2029)

Rural India faces healthcare challenges due to a dual burden of disease—persistent pre-transitional illnesses alongside a prevalence of chronic conditions. Emerging threats like environmental pollution, climate change, and new or re-emerging infections further complicate the landscape. Despite these issues, access to timely, affordable, and appropriate healthcare remains a gap.

This study aims to address rural India's healthcare challenges by conducting high-quality research to find effective and scalable solutions and improve access to essential health services.

Objectives:

To enhance the research capacity of medical students by implementing short certificate courses across all the years of the project, fostering a robust foundation for evidence-based practices.

To establish a comprehensive rural research infrastructure at participating institutions, providing a platform for health research and knowledge exchange.

To formulate a participatory rural healthcare model by engaging communities and leveraging task shifting strategies along with digital health interventions.

To implement and evaluate the programme's effectiveness and impact on health outcomes using a quasi-experimental study design and a mixed methods approach to capture perceptions of both the community and healthcare providers.

To assess the health system changes resulting from the initiative using the RE-AIM (Reach, Effectiveness, Adoption, Implementation, and Maintenance) framework, with PROGRESS-Plus (Place of residence, Race/ethnicity/culture/ language, Occupation, Gender/sex, Religion, Education, Socioeconomic status, social capital. Plus refers to: 1) personal characteristics associated with discrimination (e.g. age, disability) 2) features of relationships (e.g. smoking parents, excluded from school 3) time-dependent relationships (e.g. leaving the hospital, respite care, other instances where a person may be temporarily at a disadvantage).

The following six study sites have been selected as partners for this study:

State	Medical Institute
Tripura	Agartala Government Medical College, Agartala
Karnataka	Yenepoya Medical College, Mangalore
Tamil Nadu	Madras Medical College, Chennai & PSG Institute of Medical Sciences & Research, Coimbatore
Punjab	Christian Medical College & Hospital, Ludhiana
Maharashtra	BKL Walawalkar Rural Medical College, Dervan

Overall Impact

To tackle these challenges and gaps in health service delivery, the study will focus on **building research capacity of medical students,** bringing in a paradigm shift in health service delivery by leveraging digital advancements and improving the overall health of the communities by better engagement and mobilization.

The Centre for Advanced Research (CAR) for Rural Health Care Transformation (RAHAT) aims to address inequities and improve access to quality primary healthcare in rural India by harnessing integrated digital health solutions.

02 | Addressing Existing Implementation Gaps in Coverage, Retention, and Quality of Ambulatory NCD Care

PROJECT

Strengthening Ambulatory Care for NCD in India (STAR-NCD): An Implementation Research

(March 2024-February 2027)

NCDs like Type 2 diabetes, hypertension, and chronic respiratory diseases are a health challenge in India. Strengthening ambulatory care services is crucial for ensuring equitable, high-quality, and accessible treatment for NCDs within the public health system. The STAR-NCD project aims to enhance the coverage, quality, and equity of ambulatory care services for common NCDs through a **co-designed district-wide implementation model within India's national NCD program (NP-NCD)**. It aims to:

a. Assess the current status of coverage, service quality, and equity in ambulatory NCD care at different levels, including the barriers and facilitators in delivery and utilization of NCD care

b. Co-design the implementation strategies and develop a model for improved delivery of NCD care

c. Implement the model iteratively, study its outcomes (coverage, quality of service delivery, and equity) and finalize the implementation model for scaling

d. Determine the incremental cost implications from a health system perspective for the developed implementation model

The study is being conducted across four districts—Gomati (Tripura), Faridabad (Haryana), Nagpur (Maharashtra), and Chittoor (Andhra Pradesh). CCDC is leading the study in Tripura.

Following formative data collection, codesign workshops are being conducted in a bottom-up manner with different stakeholders to understand context-specific challenges and potential solutions to strengthen ambulatory care for NCDs.

STAR-NCD is funded by the Indian Council of Medical Research (ICMR) under the National Health Research Priority (NHRP) projects.

03 | Star Arogya Digi Seva: Bridging Healthcare Gaps through Telemedicine Innovation in Tamil Nadu and Andhra Pradesh

PROJECT

Study to Assess the Feasibility and Effectiveness of Integrated Assisted Telemedicine and Community Outreach Through Mobile Health Units

(August 2024-December 2024) | Baseline Study Phase

The Star Arogya Digi Seva study is an initiative aimed at assessing the feasibility and effectiveness of integrating assisted telemedicine services with community outreach through Mobile Health Units (MHUs) in rural and underserved areas. It seeks to address critical healthcare challenges like access, continuity of care, and patient satisfaction, particularly in managing chronic conditions like hypertension. It leverages technology to deliver healthcare services to marginalized populations, overcoming barriers like geographical remoteness, financial constraints, and healthcare infrastructure limitations.

The study employs a pre-post quasi-experimental design to evaluate outcomes, focusing on changes in health-seeking behavior, healthcare access, and utilization. The project covers **five MHU sites across eight districts in Tamil Nadu and Andhra Pradesh**.

So far, 1,745 households have been surveyed, with 10% of MHU patients interviewed for detailed insights. The initiative is supported by Star Health and Allied Insurance.

Other Projects

01 | iMedrix - Clinical Validation Study of BP Band: A Continuous, Cuffless Blood Pressure Monitoring Device

(April 2024-February 2025)

The Study aims to prove the clinical validity of BP Band, a cuffless blood pressure measuring device that can improve hypertension management by enabling continuous, non-invasive BP monitoring.

The Band combines photoplethysmography (PPG) signals with deep-learning techniques for accurate estimation, offering a user-friendly alternative to traditional methods. Its adoption can enhance patient compliance, help in the early detection of BP anomalies, and reduce the burden of cardiovascular disease globally.

85 participants have been recruited for the study till date.

CAPACITY BUILDING

01 | COALESCE: Building Capacity for Chronic Disease Research and Action in India and Ethiopia

PROJECT

The COllaborative Research, Implementation, And LEadership Training to AddresS Chronic Conditions across the Life CoursE (COALESCE)

(September 2019-May 2024)

This program was co-designed by collaborators at Emory University (USA), the CCDC (India), and Addis Ababa University (Ethiopia) to enhance capacity for research and action for chronic diseases in India and Ethiopia.

The program has been funded by the Fogarty International Center at the National Institutes of Health (NIH).

Overall Impact

The program aspires to facilitate locally driven research and implementation that can shape chronic disease priorities, programs, and policies of the future. Four fellows completed their fellowships in 2024 in the following areas:

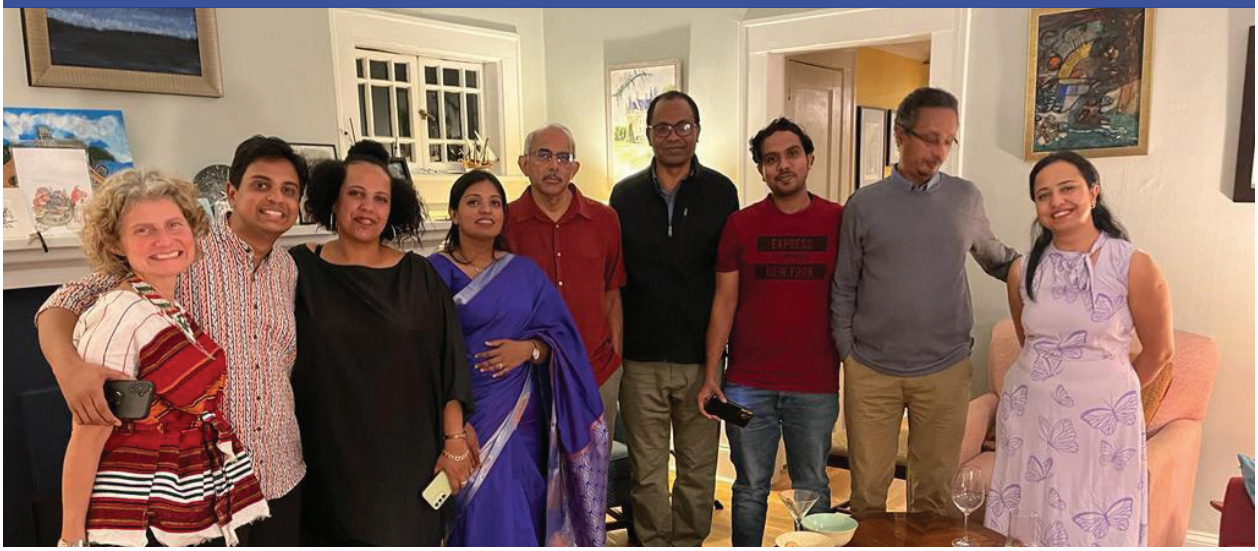
a. Acceptability and feasibility of measuring physiological response to stress in infants

b. Evaluating the prolonged effects of early glycemic strategies on metabolic memory in diabetes

c. Exploring the identity and journey of cancer survivorship in Kerala, India

d. Using oculomics-based retinal biomarkers with artificial intelligence to differentiate diabetic endotypes

The fellowship benefited around 13 Postdoctoral Fellows from India, with 4 completing their fellowship in 2024.



02 | Cardiology Masterclass: Empowering Cardiology Education

PROJECT
Empowering Cardiology Education: Cardiology Masterclass

(October 2024-March 2025)

Launched in 2021, the Cardiology Masterclass is a specialized educational program designed to equip DM/DNB trainees & early career cardiologists with new and practical knowledge. It helps them build a strong clinical foundation across all aspects of cardiology and improve their presentation and communication skills.

The clinical grand rounds follow a standardized, student-led, case-based format guided by renowned cardiologists, offering insights into diverse cardiac conditions. Additionally, special sessions cover advanced topics such as heart disease, diagnostics, and imaging.

Over the past four years, the program has conducted 62 sessions, each with an average attendance of 171 participants. Additionally, 1,078 attendees have benefited from insights shared by 161 faculty members. The program is supported through sponsorship from Lupin Limited.

03 | Endocrinology Masterclass: Advancing Clinical Excellence in Endocrinology'

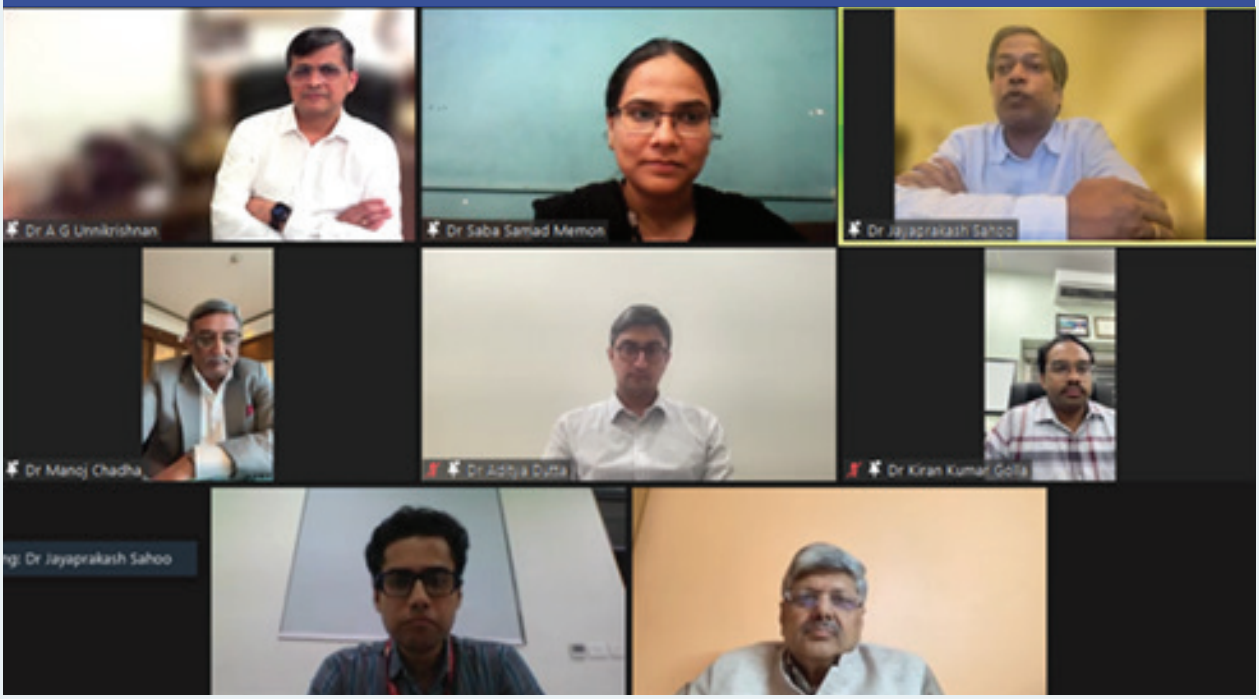
PROJECT
Endocrinology Masterclass

(July 2024-June 2025)

Launched in 2021, the Endocrinology Masterclass is a specialized educational program designed to equip DM/DNB trainees & early career endocrinologists with practical knowledge. It helps them build a strong clinical foundation across all aspects of endocrinology and improve their presentation and communication skills.

The clinical grand rounds follow a standardized educational process using real clinical materials. Additionally, inter-institutional quiz sessions are conducted to provide a well-rounded curriculum covering aspects including diagnostic procedures and imaging.

The program has conducted 65 sessions, with an average of 116 participants per session. Featuring insights from 157 faculty members, it has trained over 559 DM/DNB fellows nationwide. The program is supported by sponsorship from SUN Pharmaceuticals.



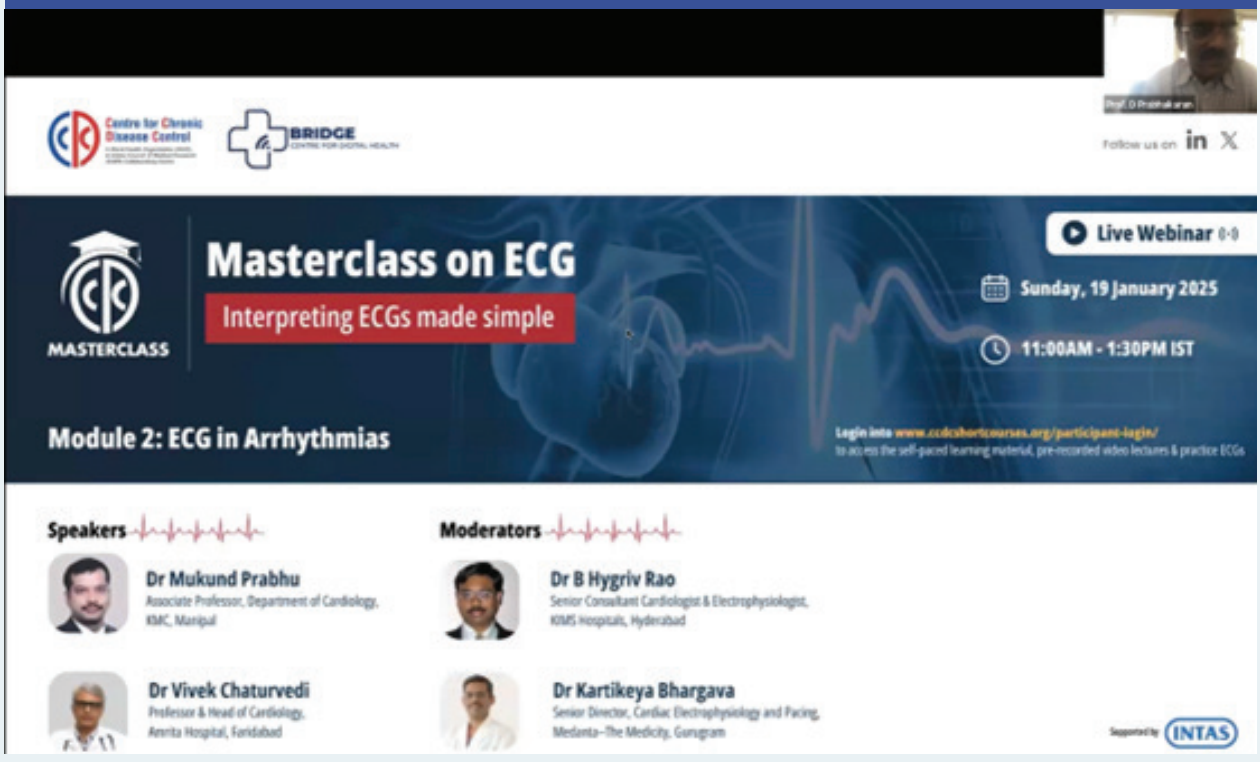
04 | Short Course on ECG: Simplifying ECG Interpretation Through an Integrated Hybrid Learning Model

PROJECT
Advancing Cardiology Education: Short Course on ECG

(September 2024 -May 2025)

The Masterclass on ECG is a short certification course designed and implemented by the BRIDGE Centre for Digital Health at the CCDC. It is designed for MBBS and MD physicians, aiming to enhance their skills in accurately interpreting ECGs, improving diagnostic precision to prevent and manage cardiovascular conditions. Through standardized teaching protocol and evidence-based learning modules, the course also seeks to update physicians on the latest advancements in the field.

The program has trained 4,851 physicians across three cycles. The ongoing cycle, launched in Dec '24, aims to train 1,500 physicians in two batches over the span of eight months. The course is sponsored by INTAS Pharmaceuticals.



05

PROJECT

Certificate Course in Yoga-based Cardiac Rehabilitation Program for Patients with Acute Myocardial Infarction

(Feb 2025 to January 2027)

This short-term certificate course, launched in collaboration with S-VYASA University, Bengaluru, is designed to address the growing need for cardiac rehabilitation in society. It specifically trains Yoga and Naturopathy doctors (BNYS), qualified AYUSH medical practitioners, in the effective delivery of Yoga-based Cardiac Rehabilitation (Yoga-CaRe) for patients recovering from a heart attack. The first cycle of this program was launched in February 2025. The course is delivered by an expert faculty comprising cardiologists, rehabilitation specialists, and Yoga & Naturopathy doctors with extensive experience in managing heart failure and cardiac recovery.

With support from Central and State Government institutions and universities, the program is planned to be expanded nationwide, aiming to create a broader impact and make cardiac rehabilitation more accessible across the country.

ADVOCACY & OUTREACH

Our Team at Multiple Platforms

PRESENTER NAME:

Dr Poornima Prabhakaran

Climate Change and its impacts on health and the health sector to an audience of health representatives from mostly OECD countries, representatives from think tanks, academia and policymakers.

Paris, France — January 2024

OCCASION

OECD Meeting

Climate Change and Impacts on Global Health

London — September 2024

OCCASION

European Society of Cardiology Congress

Panelist at Global Science Summit

Denmark — May 2024

OCCASION

Global Science Summit by Novo Nordisk Foundation

Climate migration and Health; Equity and socioeconomic dimensions of health

Confederation of Indian Industry (CII) Public Health Summit on Climate and Health: Pathways to Resilience and Adaptation

IHC, New Delhi — October 2024

OCCASION

CII Health Summit

Our Team at Multiple Platforms

PRESENTER NAME:

Prof. D. Prabhakaran

TITLE OF THE TALK/PRESENTATION

Environmental pollution and cardiovascular disease

Mexico

EVENT

31st Inter-American Congress of Cardiology and 80th Anniversary of the SIAC

June 5, 2024

TITLE OF THE TALK/PRESENTATION

Innovations to improve control of hypertension

Shanghai, China

EVENT

18th Oriental Congress of Cardiology Together with The World Congress of Cardiology (OCC-WCC 2024)

June 27, 2024

TITLE OF THE TALK/PRESENTATION

How task sharing interventions for CVD risk reduction and lipids managements impacts low And middle income countries

Shanghai, China

EVENT

18th Oriental Congress of Cardiology Together with The World Congress of Cardiology (OCC-WCC 2024)

June 29, 2024

TITLE OF THE TALK/PRESENTATION

Indoor air pollution in SE Asia

Shanghai, China

MEETING

18th Oriental Congress of Cardiology Together with The World Congress of Cardiology (OCC-WCC 2024)

June 29, 2024

TITLE OF THE TALK/PRESENTATION

The cardiovascular consequences of climate change

London, UK

EVENT

ESC Congress 2024

August 30, 2024

TITLE OF THE TALK/PRESENTATION

Dynamics and Determinants of CVD and Diabetes in South Asians: Learnings from a quarter century of research

Birmingham, UK

EVENT

South Asian Health Foundation 25th Annual Conference

November 7, 2024

TITLE OF THE TALK/PRESENTATION

International Collaboration in Multinational Clinical Trials

Chicago, US

EVENT

American Heart Association's Scientific Sessions 2024

November 15, 2024

TITLE OF THE TALK/PRESENTATION

Fixed-dose combination therapy: Opportunities and challenges for improved CVD prevention

Chicago, US

EVENT

American Heart Association's Scientific Sessions 2024

November 18, 2024

TITLE OF THE TALK/PRESENTATION

Innovations to prevent cardiovascular diseases

Hamilton, Canada

EVENT

Symposium on the occasion of the 25th Anniversary of PHRI

November 22, 2024

TITLE OF THE TALK/PRESENTATION

Why do South Asians have high risk for CVD and Diabetes?

San Fransisco

EVENT

APPLE Event

November 19, 2024

Our Team at Multiple Platforms

PRESENTER NAME:

Prof. D. Prabhakaran

TITLE OF THE TALK/PRESENTATION

Environmental Pollutants and CVD

Mexico

EVENT

31st Inter-American Congress of Cardiology and 80th Anniversary of the SIAC

October 17, 2024

TITLE OF THE TALK/PRESENTATION

Diet and Cardiometabolic Diseases

New Delhi

EVENT

Nutrition Course

November 13, 2024

TITLE OF THE TALK/PRESENTATION

Why do South Asians have a high risk for CVD and diabetes?

Hyderabad

MEETING

Sajja Foundation Oration

October 10, 2024

TITLE OF THE TALK/PRESENTATION

Bridging Clinic, Epidemiology and Biobanking: Lessons to Oncology from Precision Cardiology

New Delhi

EVENT

5th ICGA meeting

September 20, 2024

TITLE OF THE TALK/PRESENTATION

Building the evidence base for Dissemination and Implementation: A Population and Public Health Perspective

Heidelberg, Germany

EVENT

Heidelberg University

October 8, 2024

TITLE OF THE TALK/PRESENTATION

Innovations to combat CVD

Birmingham, UK

EVENT

Grand Rounds, University of Birmingham

September 24, 2024

TITLE OF THE TALK/PRESENTATION

Why do South Asians have a high risk for CVD and diabetes?

Leicester, UK

EVENT

Grand Rounds, University of Leicester

September 4, 2024

TITLE OF THE TALK/PRESENTATION

Life's Simple 7 for a Healthy Heart

New Delhi, India

EVENT

Public Lecture, India international Centre

August 3, 2024

TITLE OF THE TALK/PRESENTATION

Why do South Asians have a high risk for CVD and diabetes?

Mumbai, India

EVENT

Oration, Association of Coronary Surgeons of India

July 20, 2024

TITLE OF THE TALK/PRESENTATION

Adipocentric paradigm in CVD management

New Delhi, India

EVENT

ACC Asia 2024

August 18, 2024

TITLE OF THE TALK/PRESENTATION

Potential ideas for nutrition research in India: From Biology to Policy

New Delhi, India

EVENT

ICMR, Priority Setting workshop

July 4, 2024

TITLE OF THE TALK/PRESENTATION

Continuum of Care

Shanghai, China

EVENT

OCC-WCC

June 27, 2024

TITLE OF THE TALK/PRESENTATION

Indoor Air Pollution in South East Asia

Shanghai, China

EVENT

OCC-WCC

June 28, 2024

TITLE OF THE TALK/PRESENTATION

Task Sharing Interventions

Shanghai, China

EVENT

OCC-WCC

June 28, 2024

TITLE OF THE TALK/PRESENTATION

Foundational Concepts in Care Integration : A Case Study

New Delhi, India

EVENT

ACC Asia 2024

August 17, 2024

Our Team at Multiple Platforms

PRESENTER NAME:

Dr Nikhil S V

TITLE OF THE TALK/ PRESENTATION	LOCATION	MEETING	DATE
Community-based interventions to address hypertension in India	New Delhi	Hypertension in Focus: An Anthropological Exploration to Health and Wellness	October 20, 2025

PRESENTER NAME:

Dr Gagandeep K Ahluwalia

TITLE OF THE TALK/ PRESENTATION	LOCATION	MEETING	DATE
Invited talk on "Mediating role of epigenetic modifications on the cardiovascular health effects of air pollution exposure"	Amity University, Noida	54th Annual Conference of Indian Anthropological Society at Department of Anthropology, from 26-27 September 2024.	September,27, 2024
Oral Presentation titled, "DNA methylation as a potential mediator between ambient PM2.5 exposure and myocardial infarction in Indian population"	Santiago, Chile	36th Annual Conference of the International Society for Environmental Epidemiology, organized by University of Chile and University of Talca from 25-28 August 2024.	August, 28, 2024

PRESENTER NAME:

Dr Aastha Aggarwal

TITLE OF THE TALK/ PRESENTATION	LOCATION	MEETING	DATE
Mental health across different stages of life (Podcast speaker)	Online (https://www.indiaalliance.org/news/wmhd-aastha)	DBT-Wellcome Trust India Alliance podcast series on World Mental Health Day	2024
Unified Front: Integrating survivor perspectives for effective cancer research and translation (Moderator)	National Institute of Nutrition, Delhi	5th ICGA Conference: Unlocking Insights: Data-Driven Discovery in the Indian Cancer Landscape	Septembe, June 2024

Our Team Members in Various Platforms

PRESENTER NAME:

Siddhartha Mandal

TITLE OF THE TALK/ PRESENTATION	LOCATION	MEETING	DATE
Linkages between ambient PM2. 5 and cardiovascular mortality in a large urban cohort in two Indian cities	In person	ISEE, Chile, Santiago	September 2024
GEOHealth Health Effects of Selected Environmental Exposomes Across the Life CourSe (HEALS)-India	In person	ISEE, Chile, Santiago	September 2024

PRESENTER NAME:

Siddhartha Mandal, Jyothi S Menon, Kritika Anand

TITLE OF THE TALK/ PRESENTATION	LOCATION	MEETING	DATE
Characterizing environmental health risks across India starting from two cities: Research and training through the GEOHealth Project	In person	HSPH	October 2024
Chemical characterization and source identification of indoor PM2.5 in urban and rural households in India	In person	ISEE, Chile, Santiago	Aug-2024
Developing a global methodology to estimate health and economic impact of ambient PM2.5 [oral presentation] Developing an investment case for ambient air pollution in two cities of India [poster]	In person	ISEE, Chile, Santiago	Aug-2024

Our Team Members in Various Platforms

PRESENTER NAME:

Jyothi S Menon

TITLE OF THE TALK/ PRESENTATION	LOCATION	MEETING	DATE
Investing in Clean Air - A Global Methodology and Pilot Results from Nigeria	Virtual	GEOHealth network meeting	May 2024

PRESENTER NAME:

Suganthi Jaganathan

TITLE OF THE TALK/ PRESENTATION	LOCATION	MEETING	DATE
Air pollution and health	Virtual	GEOHealth network meeting	May 2024

PRESENTER NAME:

Prashant Rajput

TITLE OF THE TALK/ PRESENTATION	LOCATION	MEETING	DATE
Speciation data collection	Virtual	GEOHealth network meeting	May 2024

Other Contributions

CCDC's Communication Management for the International Society for Cardiovascular Disease Epidemiology and Prevention

CCDC undertakes communication management activities for the International Society for Cardiovascular Disease Epidemiology and Prevention which includes hosting and maintaining the ISCEP website and other social media handles (Twitter, LinkedIn and Facebook).

Meetings & Workshops 2024

TOPIC

Short course on Built Environment and Health: Housing, Neighborhoods, and Beyond

Coimbatore, Tamil Nadu — December, 2 to 6, 2024

TOPIC

RAHAT Project Protocol Finalisation Workshop

Gurgaon, Haryana — November, 28 & 29, 2024

TOPIC

Short course on Climate Change: Impacts on Health and Health Systems

Chennai, Tamil Nadu. — November, 11 to 15, 2024

TOPIC

Short Couse on Understanding Public Health Nutrition: Towards Policy and Action

New Delhi — November, 10 to 13, 2024

TOPIC

Training program for Mechanistic Sub-study under the Yoga-CaRe program

New Delhi — November, 8 & 9, 2024

TOPIC

Training program for Mechanistic Sub-study under the Yoga-CaRe program

Dharwad, Karnataka — October, 22 & 23, 2024

TOPIC

Short course on Metals and Health

Coimbatore, Tamil Nadu — August, 5 to 9, 2024

TOPIC

A Workshop on Introduction to Environmental Health and Air Pollution Epidemiology

Bhubaneswar, Odisha — July, 22 to 26, 2024

TOPIC

India Implementation Research Training Course

Gurgaon — April, 23 & 24, 2024

TOPIC

Yoga-CaRe HF trial Training of Yoga-CaRe instructors

New Delhi — April, 15 & 16, 2024

TOPIC

Golden Jubilee Celebration of the Cardiology Masterclass

Chennai — March, 17, 2024

TOPIC

50th Cardiology Masterclass and Launch of 2nd Edition of Tandon's Textbook of Cardiology

New Delhi — March, 16, 2024

TOPIC

50th Endocrinology Masterclass (Virtual)

Virtual Event — August, 24, 2024

TOPIC

Roundtable Discussion - Investment Case for Air Pollution Reduction, India

New Delhi — August, 20, 2024

TOPIC

Clinical Validation of BP Band Device Study Observers Training under the iMedrix Study

Bengaluru — November, 26, 2024

TOPIC

Workshop on study tools finalization under the STAR-NCD Initiative

New Delhi — May, 10 - 11,2024

TOPIC

Training for Project Scientists under the STAR-NCD Initiative

Vellore — July, 11 to 13, 2024

TOPIC

Revisiting implementation strategies based on formative research & Workshop to operationalize the management of Chronic Obstructive Pulmonary Disease in public health care system under the STAR-NCD Initiative

New Delhi — October, 10 to 11, 2024

Awards and Recognitions

1 **Prof. D. Prabhakaran:** has been elected President-Elect of the World Heart Federation Board for his exceptional leadership and global commitment to advancing cardiovascular health.

2 **Prof. D. Prabhakaran:** delivered the prestigious Dr. B.C. Roy Memorial Oration at the 76th Annual Conference of the Cardiological Society of India, held in Lucknow from December 5 to 8, 2024.

3 **Dr. Ishita** - received the Academic Consortium for Clinical Research in India (ACCRI), 4th National Award for Excellence in Academic Clinical Research, Early Career Category during the 17th Indian Society for Clinical Research (ISCR), 2-3 Feb 2024 at Hyderabad for her research: Epidemiological pattern of COVID-19 and its association with periodontal health in an urban Indian cohort.

4 **Dr. Jyothi S Menon**, - received the "LMIC Best Abstract Award" at the 36th annual conference of the International Society for Environmental Epidemiology held at Santiago, Chile during August 25-28, 2024.

5 **The Centre for Chronic Disease Control (CCDC)** has been recognized by the Indian Council of Medical Research (ICMR) as one of the six most engaged Collaborating Centers of Excellence (CCOEs) in 2024.

PUBLICATIONS IN SCIENTIFIC JOURNALS | JAN-DEC. 2024

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2. Banerjee A, Prabhakaran D, Khaw KT, Sun MC, Irazola V, Danaei G, Perel P. Cardiovascular Disease Training Programmes: Three Schemes to Train Leaders for Future Challenges. Glob Heart. 2024 Oct 7;19(1):77. doi: 10.5334/gh.1361. PMID: 39398099; PMCID: PMC11469547.

3. Min Feng Ooi B, Muschialli L, Kondal D, Andia G, Ng Ho Tsun I, Huang HYR, Singh K, Aggarwal A, Ali MK, Tandon N, Narayan KMV, Mohan V, Dhillon PK, Gillespie TW, Prabhakaran D, Goodman M, Shridhar K. Individual-level determinants of breast and cervical cancer screening and early testing in two regionally representative urban Indian populations. Prev Med Rep. 2024 Sep 6;46:102883. doi: 10.1016/j.pmedr.2024.102883. PMID: 39309700; PMCID: PMC11415582.

4. Chaturvedi A, Prabhakaran D. Transforming Cardiovascular Care With Digital Health: The Past, Progress, and Promise. JACC Adv. 2024 Aug 8;3(9):101183. doi: 10.1016/j.jacadv.2024.101183. PMID: 39220713; PMCID: PMC11364112.

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8. Singh K, Nikhare K, Gandral M, Aithal K, Patil SG, Mp G, Gupta M, Madan K, Sawhney J, Ali K, Kondal D, Jindal D, Mendenhall E, Patel SA, Narayan KV, Tandon N, Roy A, Huffman MD, Prabhakaran D. Rationale, Design and Baseline Characteristics of a Randomized Controlled Trial of a Cardiovascular Quality Improvement Strategy in India: The C-QIP Trial. Am Heart J. 2024 Jul 19:S0002-8703(24)00174-1. doi: 10.1016/j.ahj.2024.07.008. Epub ahead of print. PMID: 39033994.

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Facilities and Resources

Laboratory and Bio-Repository Facilities

CCDC has established a Biochemistry Laboratory to conduct a wide range of biochemical analyses on biological specimens collected from epidemiological studies. The facility is equipped with advanced technology, including a high-throughput auto-analyser (ci4100 from Abbott), spectrophotometer, centrifuges, ultra-low and deep freezers (-80°C and -20°C), an ELISA reader, and other essential laboratory equipment. Since its inception, the lab has conducted over **750,000 tests** on **60,000 samples**, covering routine, specialized, and nutritional biomarker tests.

The biorepository facility at Ashoka University, Sonepat, houses 27 ultra-low (-80°C) and 4 deep (-20°C) freezers, storing 750,000+ aliquots of blood and urine samples from over 60,000 participants. The laboratory and biorepository have established de-identification protocol for collection, storage at the facility

Key Aspects

QUALITY STANDARDS

Part of RIQAS, UKNEQAS, and EQUIP (CDC, Atlanta) for external quality control.

Impact

Conducted 750,000+ tests covering plasma glucose, lipids, liver and kidney function, insulin, inflammatory markers, and nutritional biomarkers.

Future Developments

Introducing liquid nitrogen storage for enhanced long-term sample preservation.

Data Management and Statistics

The CCDC Data Management team is a skilled and versatile group, equipped with advanced statistical and data management capabilities that cater to a wide range of research needs. Their expertise spans experimental design, complex data analysis, and the management of large datasets, making them an asset for any research project.

A. Statistical Expertise

- Proficient in analysis for Randomised trial, Cluster Randomized Trials and Step Wedge Design Trials.
- Skilled in Survival Analysis, Multistate Models, Multiple Imputation for missing data, Multilevel Modelling, and Mediation Analysis for causal inference.
- Experienced in handling large datasets from sources like NFHS (National Family Health Survey) and DLHS (District Level Household Survey).
- Capable of supporting research in environmental health by managing and analysing complex datasets.

B. Data Management Capacity

- A well-defined data repository governed by stringent SOPs ensures data consistency, completeness, and quality throughout the data lifecycle.
- Expertise in designing and developing databases tailored to project needs, compliant with 21 CFR Part 11 guidelines. Rigorous User Acceptance Testing (UAT-1 and UAT-2) ensures database integrity and reliability.
- Advanced tools for real-time data collection progress tracking, interactive dashboards, and detailed reporting enhance transparency and decision-making.
- Proactive monitoring mechanisms allow for immediate interventions to maintain data integrity and adapt to evolving project requirements.

C. REDCap Proficiency

- Extensive experience in using REDCap for web-based data capture in research studies. Key features include:
    * Validated data capture with robust audit trails.
    * Automated data exports to statistical packages.
    * Integration with external data sources.
- Successfully completed 15+ projects across various database platforms and currently managing 18+ ongoing projects using REDCap.

D. Data Management Plan

- Customized data management plans for each project, ensuring transparency and consistency.
- Strict methodologies for data cleaning, ensuring accountability and high-quality data throughout the lifecycle.

E. Central Statistical Monitoring (CSM)

- Utilizes freely available statistical tools (Kirkwood et al., 2013) to assess site performance, identify outliers/inliers, and evaluate correlations among covariates.
- Supports in-person site monitoring visits and ensures adherence to study protocols, maintaining data integrity.

Key Strengths

- Ability to design and implement databases and data management systems tailored to specific project requirements.
- Adherence to **21 CFR Part 11** and other industry standards.
- Advanced monitoring and reporting tools provide actionable insights for informed decision-making.
- Proven track record in maintaining data security and integrity across multiple projects.

Applications

- The team's expertise is applicable across a wide range of fields, including:
- Leveraging secondary data sources like NFHS and DLHS.
- Designing and managing data for cluster randomized and step wedge trials.
- Supporting environmental epidemiology with robust data management.
- Providing end-to-end data management solutions for diverse research methodologies.

IT Infrastructure

CCDC has its own Department of Information Technology (IT), which is committed to meeting the computing demands of researchers and staff. CCDC offices' IT Infrastructure is enabled with the latest technologies. Each office has an independent Internet Leased Line (1:1) with adequate Internet bandwidth being distributed to each computing device. Local Area Networks (LANs) are secured by UTM (Unified Threat Management) to prevent various network threats such as spyware, virus etc.

Some of the technology platforms/ Services in use are:

a. Microsoft Office 365 for email service.

b. Microsoft Entra ID is being used as Azure AD, O365 apps & Microsoft defender.

c. Central file sharing server with RAID 0 for NAS OS & RAID 6 for data storage having 80 TB of usable space which is only accessible using LAN or VPN.

d. Backup: OneDrive is installed on all endpoint with auto backup of folders placed on desktop.

e. Licensed version of Microsoft Windows, Microsoft Office, SPSS, STATA for data management and analysis, Endnote, Adobe Dreamweaver, Acrobat Writer and Adobe Photoshop.

f. Sophos Central Intercept with XDR is installed on the endpoints which are not connected to Entra ID.

Collaborators

NATIONAL

INTERNATIONAL

APPENDICES

APPENDIX 1

सूचना का अधिकार
RIGHT TO INFORMATION

दूरभाष/TEL : 26962819, 26567373
(EPABX) : 26565694, 26562133
: 26565687, 26562144
: 26562134, 26562122
फैक्स/FAX : 26960629, 26529745
Website : http:/www.dsir.gov.in
(आईएसओ 9001:2008 प्रमाणित विभाग)
(AN ISO 9001:2008 CERTIFICED DEPARTMENT)

सत्यमेव जयते

भारत सरकार
विज्ञान और प्रौद्योगिकी मंत्रालय
वैज्ञानिक और औद्योगिक अनुसंधान विभाग
टेक्नोलॉजी भवन, नया महरौली मार्ग,
नई दिल्ली - 110016
GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
Department of Scientific and Industrial Research
Technology Bhavan, New Mehrauli Road,
New Delhi - 110016

F.No. 14/483/2008-TU-V

Date: 27th March 2023

The Executive Director
Centre for Chronic Disease Control (CCDC)
4th Floor, Plot No. 47,
Sector-44,
Gurgaon – 122002, Haryana

Subject: **Renewal of Recognition of Scientific and Industrial Research Organisations (SIROs).**

Dear Sir,

This has reference to your application for renewal of recognition of **Centre for Chronic Disease Control (CCDC), Gurgaon, Haryana** as a Scientific and Industrial Research Organisation (SIRO) by the Department of Scientific and Industrial Research under the Scheme on Recognition of Scientific and Industrial Research Organisations (SIROs), 1988.

2. This is to inform you that it has been decided to accord renewal of recognition to **Centre for Chronic Disease Control (CCDC), Gurgaon, Haryana from 01.04.2023 to 31.03.2026.** The recognition is subject to terms and conditions mentioned overleaf.

3. Receipt of this letter may kindly be acknowledged.

Yours faithfully,

(Dr. P.K. Dutta)
Scientist - 'G'

APPENDIX 2

No. 0300025502021
Government of India
Ministry of Home Affairs
Foreigners Division
(FCRA Wing)

1st Floor, Hall No. 1, Open Gallery Major Dhyan Chand National Stadium
India Gate Circle
Dated: 20-10-2022

To,
The Chief Functionary,
Centre for Chronic Disease Control
Flat No 70 Pocket -1 Sector - 2 Dwarka 110070

Subject: Renewal of Registration under Foreign Contribution (Regulation) Act,

Sir/Madam

With reference to your application dated **04-05-2021** seeking renewal of registration under the Foreign Contribution (Regulation) Act, 2010, I am directed to convey the approval of competent authority for renewal of registration of your Association in terms of the provisions contained in Section 16 of Foreign Contribution (Regulation) Act, 2010 read with Rule 12 of Foreign Contribution (Regulation) Rules, 2011 as amended from time to time, as follows:-

Registration Number **231660448**

Nature : **Educational,Social**

2. The association shall receive foreign contribution only in its designated/exclusive bank account **40019185368** in **STATE BANK OF INDIA, 11Sansad Marg, New Delhi 110 001, SANSAD MARG, Delhi, Delhi, 110001** as mentioned in its application for online application for grant of renewal of registration.

3. In terms of section 18 of the Foreign Contribution (Regulation) Act, 2010 read with Rules 17 of the Foreign Contribution (Regulation) Rules, 2011, as amended from time to time, you are advised to furnish intimations online within the prescribed time to the Central Government of the amounts of each foreign contribution received by you, the source and the manner in which the foreign contribution was utilised, as per the provisions of the Act and the Rules. An association is required to furnish the return even when the particulars are 'NIL'. The FC-4 form is required to be submitted online on this Ministry's website https://fcraonline.nic. The Bank Account mentioned in your application should be used for receiving foreign contribution and no other amount should be credited to this account. The Association should immediately intimate online, within 15 days, in Form FC-6 to this Ministry regarding any change in the name of the Association, aims and objects, its address and Bank/Bank Account.

4. The association cannot bring out any publication (registered under PRB Act, 1867) or act as correspondent, columnist, editor, printer or publisher of a registered newspaper or engage in the production or broadcast of audio news or audio visual news or current affairs programmes through electronic mode or any other electronic form or any other mode of mass communication at a later stage thereby attracting provisions of the Section 3(1) (g) and (h) of the FC(R) Act, 2010. In addition to this, the association is forbidden from getting involved in any activity of political nature.

5. Transfer of foreign contribution has been made completely prohibited under amended section 7 of the Foreign Contribution (Regulation) Act, 2010.

6. Physical inspection of the activities done by the Association may be carried out at any time by this Ministry.

7. You are requested to familiarize yourself with the provisions of Foreign Contribution (Regulation) Act, 2010 and Foreign Contribution (Regulation) Rules, 2011, as amended from time to time, available at this Ministry's website https://fcraonline.nic.in/ to ensure strict compliance of the Act/ Rules. Failure to comply with any of the provisions of said Act/ Rules will make you liable for action under the relevant provisions of the Foreign Contribution (Regulation) Act, 2010.

8. This renewed certificate is valid for a period of five years with effect from **01-04-2023**.

9. The email containing the renewed registration certificate may be sent immediately to the Bank mentioned above.

10. The renewal of registration is subject to compliance of the provisions of Foreign Contribution (Regulation) Act, 2010/ Foreign Contribution (Regulation) Rules, 2011, as amended from time to time, by the association and also to the final outcome of enquiry/ case, if any, pending against the association.

10B .

11. This is a digitally signed certificate to be validated digitally using the signature panel using Adobe Acrobat Reader (Ver 5.0 or above). The digital intimation is authenticated by a digital signature obtained from a certifying authority under the Information Technology Act 2000.

12. Banks are requested to verify online the validity of the certificate using fcraonline.nic.in.

Yours faithfully

Gopesh Kumar
Section Officer
Tel. 01123438245

Centre for Chronic Disease Control

A World Health Organization (WHO) & Indian Council of Medical Research (ICMR) Collaborating Centre

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www.ccdcindia.org