

ANNUAL REPORT 2024



Solving public health
problems through innovative
scientific research

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Government of the People's
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Canada 

icddr,b is an international health research institute based in Bangladesh. Policymakers and practitioners utilise our evidence and expertise to improve health outcomes and prevent premature death and disability worldwide. Established more than 60 years ago, we continue to provide life-saving services to the people of Bangladesh and nurture the next generation of global health leaders. Our work has a substantial impact in Bangladesh and globally.



VISION

A world in which more people survive and enjoy healthy lives.



MISSION

To solve public health problems through innovative scientific research.

OUR JOURNEY

In 1960, at the onset of a major cholera pandemic, the then South East Asian Treaty Organization (SEATO) established a small laboratory in Dhaka named Cholera Research Laboratory to be operated under the National Institutes of Health (NIH), USA. Later in 1978, this became the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b) through a Government Ordinance. This was followed by a World Health Organization (WHO) meeting in Geneva in 1979, chaired by UNDP and attended by 50 participants from 26 developing and developed countries, and agencies. A memorandum of understanding was immediately signed by eighteen of those countries and agencies endorsing the centre as an international entity.

icddr,b now operates under the icddr,b Act 2022 of the Government of Bangladesh as an autonomous, international, philanthropic, and non-profit centre for research, education, training, and clinical service.

With funds from the Government of Bangladesh, Canada, and others, icddr,b has produced some major breakthroughs in scientific innovation, treatment, patient management and disease prevention, and helped save millions of lives globally.



VALUES

EXCELLENCE

We are single-minded in our pursuit of scientific rigour and operational efficiency.

INTEGRITY

We are a responsible and accountable organisation committed to the highest standards of behaviour.

INCLUSIVITY

We work collaboratively throughout the organisation and with our partners.



Read more:
<https://www.icddr.org/features/celebrating-six-decades-of-scientific-research-saving-millions-of-lives-globally>

5 Dec **1960**

Established

9 Dec **1978**

Ordinance

Feb **1979**

Internationalisation

20 Nov **2022**

icddr,b Act

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Established in 1990, the Diagnostic Services Laboratories are a vital part of icddr,b's Clinical and Diagnostic Services (CDS), providing high-quality laboratory testing for clinical care and research. They also develop innovative diagnostic tools to strengthen public health. Revenue from these services plays a crucial role in supporting free treatment at icddr,b hospitals.	
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MESSAGE FROM THE BOARD CHAIR



Dear Colleagues and Supporters,

2024 was a year of perseverance and progress. At icddr,b, our commitment to impactful science has never been more vital. From strengthening pandemic preparedness to improving newborn survival and controlling antimicrobial resistance, the initiatives featured in this Annual Report reflect the breadth and depth of our contributions to global health.

Under the leadership of Dr Tahmeed Ahmed, our scientists advanced research that directly influenced policy, informed practice, and improved lives in Bangladesh and beyond. Their work—from pioneering genomic surveillance of SARS-CoV-2 to managing the largest documented *Candida blankii* outbreak—has cemented icddr,b's place at the forefront of scientific innovation in resource-limited settings.

I am especially proud of two well-deserved global recognitions. Dr Ahmed was named a Goalkeepers Global Goal Champion by the Bill & Melinda Gates Foundation for his leadership in developing microbiome-directed therapeutic food to fight malnutrition. Dr Firdausi Qadri received both the ASTMH Clara Ludlow Medal and the VinFuture Prize, celebrating her extraordinary contributions to infectious disease research.

As global priorities shift, we urge our partners and donors to remain engaged. Your continued support is essential for ensuring that science in the Global South remains strong, sustainable, and transformative.

Yours faithfully,

Nancy Y. Cheng, FCPA, FCA
Chair, Board of Trustees
July 2025

MESSAGE FROM THE EXECUTIVE DIRECTOR



Dear Friends of icddr,b,

In 2024, icddr,b continued to advance science that saves lives. From tackling emerging pathogens to improving care for vulnerable populations, our teams delivered impactful research with both local relevance and global significance.

Guided by our 2023–2027 Strategic Plan, we strengthened operational efficiency and research excellence. Our Internal Oversight team completed multiple audits and reviews that improved accountability and cost-effectiveness across divisions, reinforcing our commitment to responsible governance.

Despite unprecedented challenges, including the passing of our esteemed colleague Dr Pui-Ying Iroh Tam and anticipated disruptions to several USAID, CDC, and NIH-funded projects due to shifting US priorities, our resolve remains strong. We call upon our global partners to stand beside us during this testing time. Research in developing countries cannot thrive without international solidarity.

Our Public Health Impact initiatives demonstrated sustainable results: the scale-up of bubble CPAP across Africa, genomic surveillance of deadly pathogens, and large-scale outbreak responses. In our Spotlight section, you will discover the science behind innovations like mRNA-based vaccines and cutting-edge pathogen detection.

I invite you to explore the 2024 Annual Report, which highlights how our science continues to shape healthier futures across Bangladesh and the Global South.

With gratitude for your support,

Warm regards,

Dr Tahmeed Ahmed

Executive Director

July 2025

ABBREVIATION

A	ACTB	Alliance for Combating Tuberculosis in Bangladesh	IDD	Infectious Diseases Division
	ARF	The Animal Resources Facility	iGC	icddr,b Genome Centre
B	Bubble CPAP	Bubble Continuous Positive Airway Pressure	ISID	International Society for Infectious Diseases
C	CCHPS	Climate Change, Health and Population Science	L	LBW Low Birth Weight
D	DGHS	Directorate General of Health Services	LMICs	Low- and Middle-income Countries
	DR-TB	Drug-resistant TB	M	MD-BEP Microbiota Directed Balanced Energy Protein
E	EED	Environmental Enteric Dysfunction		MDCF Microbiota-directed Complementary Food
	EmONC	Emergency Obstetric and Newborn Care	N	NCDs Non-Communicable Diseases
	EPTB	Extrapulmonary Tuberculosis		NIH National Institutes of Health
	ESG	Environmental, Social, and Governance		NiV Nipah Virus
F	FCDO	Foreign, Commonwealth and Development Office	O	OED Office of Executive Director
	FDMNs	Forcibly Displaced Myanmar Nationals	S	SEARO WHO Regional Office for South-East Asia
G	GAC	Global Affairs Canada		SRB Sex Ratio at Birth
	GAMA	Global Action for Measurement of Adolescent Health	SRHR	Sexual and Reproductive Health and Rights
	GBS	Guillain-Barré Syndrome	SVPE	Small Volume Plasma Exchange
	GBSS	Gender-Biased Sex Selection	T	TCV Typhoid Conjugate Vaccine
	GFATM	The Global Fund to Fight AIDS, Tuberculosis and Malaria		TFT Two-finger Test
	GoB	Government of the People's Republic of Bangladesh		THF Teknaf Health Facility
H	HDSS	Health and Demographic Surveillance System		TTU Technical Training Unit
	HPV	Human Papillomavirus	U	UCL University College London
I	icddr,b	International Centre for Diarrhoeal Disease Research, Bangladesh		USAID United States Agency for International Development
				VAC Violence Against Children
				VAW Violence Against Women
			W	WHO World Health Organization
			Z	ZD Zero-dose



2024 IN NUMBERS

A snapshot of icddr,b funding, research, training, and clinical services

INCOME 2024

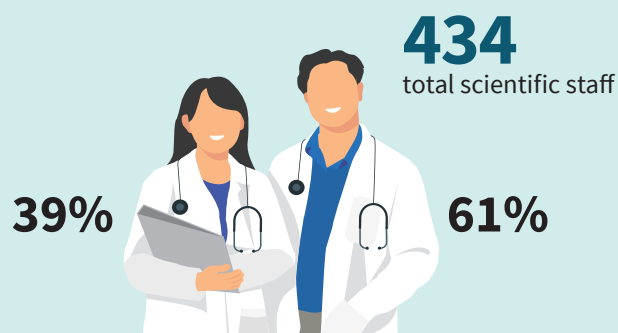
Total income USD **77.7** million

Breakdown of total income:

- USD **66.2** million restricted grants contributions
- USD **1.8** million unrestricted grants contributions
- USD **5.9** million income from laboratories
- USD **0.8** million other restricted income
- USD **3.0** million other unrestricted income

Note: Restricted (research-specific grants), Unrestricted (operations and development grants)

NUMBER OF STAFF



GRANTS AND PROJECTS



127
new grants



368
ongoing projects



COLLABORATION

105
national
collaborations



186
international
collaborations

DIAGNOSTIC SERVICES



762

types of tests are offered



835,074

tests were carried out

CONTRIBUTION



93

national policy/
programme review committees
with icddr,b representation^[1]

99

international
policy/programme review
committees with icddr,b
representation



TUBERCULOSIS DIAGNOSIS



21.75

million

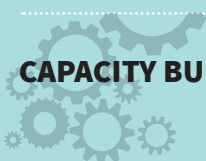
individuals were screened
16.15 mil. adult | **5.6** mil. children

53,643

cases detected
44,735 adult | **7,908** children



CAPACITY BUILDING



607

individuals participated in
icddr,b training courses



149

students participated in the orientation
programme for medical students

170

interns attended field
experience/internship
programme



1

faculty position held by icddr,b
scientist at the James P Grant
School of Public Health, BRAC
University

22

icddr,b scientists and staff contributing
to teaching at the James P Grant School
of Public Health, BRAC University

TREATMENT AT DHAKA, MATLAB AND TEKNAF HOSPITALS

305,125

patients treated in 3 hospitals

47%



53%

Under
5 years of age

56.5%



5 years and
above

43.5%

289
Forcibly
Displaced
Myanmar
Nationals
(FDMNs)



(further details are provided under Clinical and Laboratory Services section)

ARTICLES AND CITATION



471

original papers
published^[2]



72,030

citations (2020-2023)

[1] Including two members on Bangladesh's new Health Sector Reform Commission.

[2] with icddr,b scientists as authors

GLOBAL HEALTH IMPACT

This section highlights the impactful initiatives and research that influenced global health in 2024.

WORLD HEALTH ORGANIZATION APPROVAL OF SINGLE-DOSE HPV VACCINE

Cervical cancer, primarily caused by persistent infection with the human papillomavirus (HPV), remains a leading cause of cancer-related deaths among women globally. Every year, over 660,000 new cases are detected, and a woman loses her life to the disease every two minutes. Despite being preventable through early vaccination, the disease continues to take a disproportionate toll in low- and middle-income countries (LMICs), which account for nearly 90% of all cervical cancer deaths. The challenge lies not in the absence of vaccines but in their accessibility and delivery, especially in resource-constrained settings where multi-dose regimens create financial and logistical barriers.

icddr,b contributed to a major international trial evaluating Cecolin®, a bivalent HPV vaccine developed by Inovax in China. The

randomised, controlled, open-label, non-inferiority phase 3 study enrolled over 1,000 healthy girls aged 9 to 14 in Bangladesh and Ghana. The trial compared the immunogenicity and safety of different dosing schedules of Cecolin® with those of Gardasil®, the widely used quadrivalent vaccine. The findings demonstrated that even a single dose of Cecolin® produced comparable immune responses to a single dose of Gardasil®. The study also found that longer intervals between two doses improved immune responses and that a mixed-dose schedule—one dose each of Gardasil® and Cecolin®—was highly immunogenic, allowing for greater flexibility in HPV vaccination.

These findings were published in *The Lancet Infectious Diseases* and provided critical evidence for the World Health Organization's landmark recommendation on 4 October

2024 endorsing a single-dose HPV vaccination schedule. Cecolin® was officially added to the WHO's list of approved HPV vaccines for public use, representing a vital policy shift that enables countries to protect more adolescent girls using fewer resources.

This new option is not only more affordable but also easier to administer, especially in low-resource environments. It is expected to ease global HPV vaccine shortages and facilitate integration of HPV vaccination into national immunisation programmes, particularly in LMICs. In Bangladesh, where HPV vaccination is being offered to school-age girls nationwide, this development promises to accelerate progress towards eliminating cervical cancer.

icddr,b's research continues to play a transformative role in shaping

global immunisation strategies and advancing equitable access to life-saving vaccines—helping ensure that cervical cancer can one day be consigned to history.

Agbenyega T, Schuind AE, Adjei S, Antony K, Aponte JJ, Buabeng PBY, Clemens JD, Hossain L, Kemp TJ, Mercer LD, Pinto LA, Qadri F, Sukraw K, Bhat N, Zaman K. Immunogenicity and safety of an *Escherichia coli*-produced bivalent human papillomavirus vaccine

(Cecolin) in girls aged 9-14 years in Ghana and Bangladesh: a randomised, controlled, open-label, non-inferiority, phase 3 trial. *Lancet Infect Dis.* 2025 Mar 19; S1473-3099(25)00031-3. doi: 10.1016/S1473-3099(25)00031-3. Epub ahead of print. PMID: 40120597.

BANGLADESH'S MATERNAL AND NEWBORN HEALTH PROGRESS OFFERS GLOBAL LESSONS

Bangladesh's dramatic reduction in maternal and newborn mortality over the past two decades stands as a powerful example for other low- and middle-income countries. A 2024 study by icddr,b and Johns Hopkins University highlights how early investment in family planning, community-based health services, and cross-sectoral development laid the foundation for sustained progress.

From revitalising community clinics and prioritising essential medicines to expanding girls' education and strengthening rural transport, Bangladesh's approach has been

both holistic and locally grounded. These strategies led to sharp increases in facility deliveries—especially through private clinics—and expanded access to emergency obstetric care, even as home births remained common.

While progress has slowed in recent years, the evidence is clear - Bangladesh's coordinated efforts saved hundreds of thousands of lives. However, to sustain momentum, the country must now focus on quality of care, equitable access, and regulation of for-profit services to reduce financial strain and improve outcomes.

For countries seeking to achieve similar gains, Bangladesh offers a compelling blueprint—grounded in evidence, driven by equity, and powered by community-led innovation. The world would do well to study and adapt these lessons.

Hossain AT, Hazel EA, Rahman AE, Koon AD, Wong HJ, Maïga A, Akseer N, Tam Y, Walker N, Jiwani SS, Munos MK, Arifeen SE, Black R, Amouzou A. Effective multi-sectoral approach for rapid reduction in maternal and neonatal mortality: the exceptional case of Bangladesh. *BMJ Glob Health* 2024;9(Suppl 2):e011407. doi: 10.1136/bmjgh-2022-011407. PMID: 38770805



BUBBLE CPAP - FROM BANGLADESH TO GLOBAL PNEUMONIA CARE

Pneumonia remains the leading infectious cause of death in children under five, claiming one life every 43 seconds worldwide. In low- and middle-income countries, where access to intensive care is limited, oxygen therapy is critical for survival. Since 2013, icddr,b's Dhaka Hospital has pioneered a life-saving innovation - bubble continuous positive airway pressure (bubble CPAP).

Bubble CPAP is a simple, low-cost system that delivers oxygen through nasal prongs. When the patient exhales, air travels through a water-filled tube, creating bubbles. These bubbles generate back pressure, which helps keep the lungs of the patient open—a crucial function when pneumonia causes the lungs to collapse or lose volume. By restoring lung capacity, bubble CPAP improves oxygen exchange and significantly reduces respiratory distress.

A long-term study at icddr,b found that bubble CPAP reduced pneumonia-related mortality by 75% compared to the WHO-recommended low-flow oxygen therapy. It also decreased the need for mechanical ventilation and cut oxygen costs from USD 30,000 to USD 6,000 annually.

After initial success in Bangladesh, icddr,b partnered with Ethiopia's Armauer Hansen Research Institute (AHRI) to test bubble CPAP in 12 secondary hospitals. The results were similarly powerful - fewer treatment failures, lower death rates, and shorter hospital stays. Based on this evidence, the Ministries of Health in Ethiopia, Malawi, and Nigeria, with support from the European Union, are now scaling up bubble CPAP in 37 hospitals across Africa.

This innovation shows how locally developed, low-cost innovation can transform global child health. With

ongoing implementation research and international partnerships, icddr,b's bubble CPAP stands as a model for sustainable health solutions—shaping policy and saving lives well beyond Bangladesh.

Chisti MJ, Clemens JD, Shahunja KM, Shahid ASMSB, Sarmin M, Afroze F, Shaly NJ, Kabir F, Rahman AE, Arifeen SE, Ahmed T, Duke T. Implementation of bubble continuous positive airway pressure for children with severe pneumonia and hypoxaemia in intensive care unit of Dhaka Hospital, Bangladesh – effect on pneumonia mortality. *Pediatric Pulmonol* 2024 Apr; 59(4): 1028-1037. doi: 10.1002/ppul.26881.

Gebre M, Haile K, Duke T, Faruk MT, Kamal M, Kabir MF, Uddin MF, Shimelis M, Beyene T, Solomon B, Solomon M, Bayih AG, Abdissa A, Balcha TT, Argaw R, Demtse A, Weldetsadik AY, Girma A, Haile BW, Shahid ASMSB, Ahmed T, Clemens JD, Chisti MJ. Effectiveness of Bubble Continuous Positive Airway Pressure for Treatment of Children Aged 1–59 Months with Severe Pneumonia and Hypoxemia in Ethiopia: A Pragmatic Cluster Randomised Controlled Clinical Trial. *Lancet Global Health* 2024 May;12(5):e804-e814. doi: 10.1016/S2214-109X(24)00032-9. PMID: 38522443

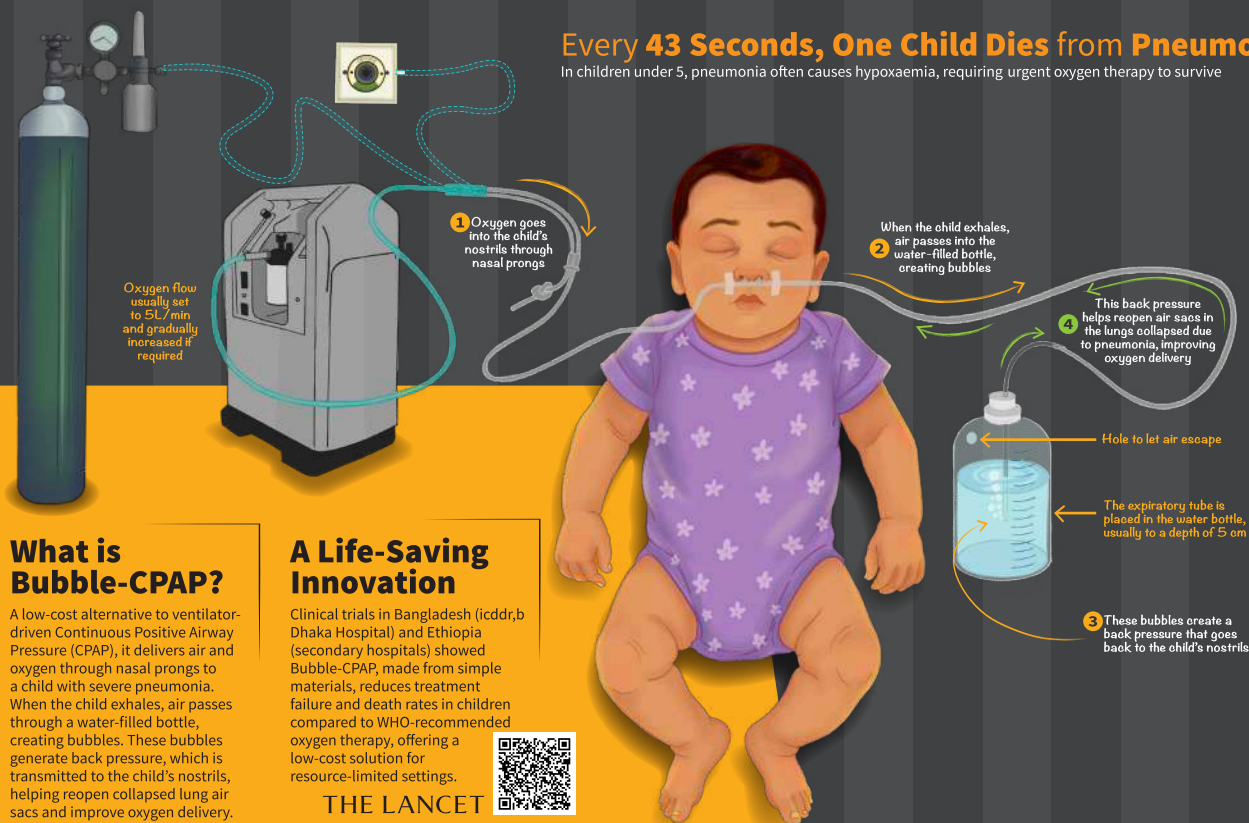


Bubble CPAP

A life-saving, low-cost treatment solution for children with severe **pneumonia and hypoxaemia**

Every 43 Seconds, One Child Dies from Pneumonia

In children under 5, pneumonia often causes hypoxaemia, requiring urgent oxygen therapy to survive



What is Bubble-CPAP?

A low-cost alternative to ventilator-driven Continuous Positive Airway Pressure (CPAP), it delivers air and oxygen through nasal prongs to a child with severe pneumonia. When the child exhales, air passes through a water-filled bottle, creating bubbles. These bubbles generate back pressure, which is transmitted to the child's nostrils, helping reopen collapsed lung air sacs and improve oxygen delivery.

A Life-Saving Innovation

Clinical trials in Bangladesh (icddr, Dhaka Hospital) and Ethiopia (secondary hospitals) showed Bubble-CPAP, made from simple materials, reduces treatment failure and death rates in children compared to WHO-recommended oxygen therapy, offering a low-cost solution for resource-limited settings.

THE LANCET



Media Coverage on Bubble CPAP



Countries using bubble CPAP

Bangladesh
Ethiopia
Nigeria
Malawi



SPOTLIGHT ON MAJOR ACHIEVEMENTS AND INNOVATIONS

This section highlights a selection of our ongoing research initiatives with potential to significantly advance global health.

SINGLE-DOSE TYPHOID VACCINE OFFERS HIGH SHORT-TERM PROTECTION

Typhoid fever is a life-threatening infection spread through contaminated food or water, affecting 9 million people annually and causing 110,000 deaths, mainly among children in South Asia and Africa. Unfortunately, only two WHO-approved typhoid conjugate vaccines are currently available, and supply remains insufficient to meet global needs.

icddr,b, in collaboration with the University of Oxford, conducted a landmark trial in Mirpur, Dhaka, to assess the long-term effectiveness of the typhoid conjugate vaccine (TCV), Vi-TT, among children aged 9 months to under 16 years. Vaccinations took place in 2018–2019, with follow-up analysis completed in 2023.

The findings confirmed high protection—ranging from 80% to

96%—within the first two years of vaccination across all age groups. However, vaccine effectiveness declined after three to five years, especially among children vaccinated before the age of two. In contrast, those vaccinated at age two or older retained protection of 59% to 85%, suggesting stronger, more sustained immunity.

The study also observed a threefold increase in typhoid incidence among children vaccinated earlier compared to those vaccinated in 2021, further pointing to waning protection over time in younger children. This raises the possibility that a booster dose may be necessary for long-term protection in this age group.

These findings offer critical insights for high-burden countries introducing TCVs at scale. They

highlight the need for continued surveillance, especially in urban populations, and further data on vaccine durability and its role in reducing antimicrobial resistance.

Bangladesh's experience provides valuable evidence to inform global policies, including optimal timing and dosing strategies, in the effort to reduce typhoid morbidity and mortality worldwide.

Qadri F, Khanam F, Zhang Y, Biswas PK, Voysey M, Mujadidi YF, Kelly S, Bhuiyan AI, Rajib NH, Hossen I, Rahman N, Islam S, Pitzer VE, Kim YC, Clemens JD, Pollard AJ, Liu X. 5-year vaccine protection following a single dose of Vi-tetanus toxoid conjugate vaccine in Bangladeshi children (TyVOID): a cluster randomised trial. *Lancet*. 2024 Oct 12; 404(10461): 1419 – 1429. doi: 10.1016/S0140-6736(24)01494-6. PMID: 39396349.

ADVANCING NIPAH VIRUS SURVEILLANCE, DIAGNOSIS, AND PREVENTION

Nipah virus (NiV), a deadly bat-borne virus with a case fatality rate of around 72%, remains a serious public health threat in Bangladesh. It can cause severe brain inflammation and respiratory illness, and spreads from bats to humans, sometimes through person-to-person transmission. Since its emergence in 2001, NiV has caused regular outbreaks in the country.

In 2024, icddr,b—along with IEDCR, US CDC, and CEPI—continued the world's longest-running human NiV surveillance, identifying five cases and expanding to three new sites. This sustained effort has shaped national policy, including the establishment of a dedicated Nipah hospital. For the first time, post-mortem sampling was introduced to better understand the disease, with one NiV case identified through this approach.

To address the urgent need for faster diagnosis, icddr,b developed a rapid, low-cost diagnostic system using isothermal amplification technology. This test detects Nipah virus RNA in just 15 minutes and could be deployed in peripheral hospitals using a mobile suitcase laboratory—offering a powerful tool for early detection and outbreak containment.

In parallel, icddr,b's One Health laboratory used Oxford Nanopore technology to retrieve 21 new genomic sequences of the Nipah virus, helping global efforts to develop vaccines and track virus evolution. To better understand immune response, new biosensors and ELISA tests were also validated to detect antibodies in people and animals.

Beyond laboratories, icddr,b also led an awareness campaign reaching

over 33,000 students directly and over 167,000 community members indirectly in high-risk districts. The campaign aimed to educate school and college students on how to prevent infection ahead of Nipah season.

Together, these efforts underscore icddr,b's leadership in pandemic preparedness through cutting-edge research, diagnostics, and community engagement.

Bergeron É, Chiang CF, Lo MK, Karaaslan E, Satter SM, Rahman MZ, Hossain ME, Aquib WR, Rahman DI, Sarwar SB, Montgomery JM, Klena JD, Spiropoulou CF. Streamlined detection of Nipah virus antibodies using a split NanoLuc biosensor. *Emerg Microbes Infect.* 2024 Dec;13(1):2398640. doi: 10.1080/22221751.2024.2398640. PMID: 39194145

NEW HOPE FOR GUILLAIN-BARRÉ SYNDROME TREATMENT

Guillain-Barré syndrome (GBS) is a rare but serious illness that causes the body's immune system to attack its own nerves. It can lead to sudden muscle weakness, numbness, and even paralysis, making it difficult for people to walk, move, or even breathe. Although treatments exist, they are expensive and often out of reach for people in low- and middle-income countries like Bangladesh.

To address this challenge, researchers at icddr,b conducted a phase 2 clinical trial of a low-cost, bedside-friendly method called Small Volume Plasma Exchange (SVPE). This technique removes harmful substances from the blood,

similar to the standard plasma exchange method, but at a much lower cost. The trial showed that SVPE proved to be just as effective as the intravenous immunoglobulin (IVIg) and plasma exchange (PLEX) treatment of GBS. This promising approach could save lives by making GBS treatment accessible for more people in resource-limited settings.

In a separate breakthrough, icddr,b scientists also took part in a global trial of a new targeted treatment called ANX005—a monoclonal antibody that blocks a specific part of the immune system responsible for nerve damage in GBS. The trial involved 241 patients, with 196

enrolled from Bangladesh. The results showed that ANX005 is safe and effective, and it may soon become the first US-FDA approved targeted therapy for GBS.

These discoveries not only bring hope to GBS patients in Bangladesh but also open the door for new treatments for other serious immune-related and neurological diseases, including Huntington's disease and lupus.

Through pioneering research, icddr,b continues to play a critical role in developing affordable, effective therapies that can transform lives in the global south and beyond.

FIRST-EVER PAEDIATRIC NCD SERVICES IN PRIMARY CARE

Non-communicable diseases (NCDs) and mental health challenges are a growing threat to children and adolescents globally, undermining development and increasing risks of illness, disability, and early death. While often associated with adults, over 2.1 billion individuals under 20 are either living with NCDs or exposed to their risk factors—especially in low-income settings.

In Bangladesh, the government has been providing NCD services for adults through dedicated NCD Corners at Upazila Health Complexes. However, no such services existed for children. To bridge this gap, icddr,b, in partnership with the

Non-Communicable Disease Control (NCDC) Programme, Directorate General of Health Services (DGHS), Ministry of Health and Family Welfare, and UNICEF, developed and piloted the country's first comprehensive paediatric NCD service delivery model within the public primary healthcare system.

The pilot, implemented in Kishoreganj and Bagerhat, covers 530 Community Clinics, 20 Upazila Health Complexes, and 2 District Hospitals. A rigorous prioritisation process led to the selection of six key paediatric NCDs - bronchial asthma, nephrotic syndrome, thalassemia, iron deficiency anaemia, congenital heart

disease, type 1 diabetes mellitus, and epilepsy. National treatment protocols and tailored training modules were developed and rolled out to over 180 frontline healthcare providers.

To enhance monitoring and integration, icddr,b supported the MIS of DGHS to introduce digital tracking of paediatric NCDs via OpenMRS, linked to DHIS-2.

This initiative, if proven successful, will not only fill a crucial gap in child health services but also set the stage for policy development and national scale-up of paediatric NCD care in Bangladesh.

DIGITISING MATERNAL HEALTH AND TRANSFORMING EMONC SERVICES

Maternal complications during labour and childbirth remain a significant yet largely preventable threat in Bangladesh. To enhance data quality and continuity of care, the Government of Bangladesh, with icddr,b's technical facilitation and USAID's financial support, introduced the Digital Emergency Obstetric and Newborn Care (EmONC) Register—a pioneering shift from paper records to a digital platform.

The digital register was piloted in selected facilities in Dinajpur and Kushtia districts, including district hospitals and Upazila Health Complexes in Kumarkhali and Hakimpur. Its implementation was systematically evaluated using WHO-defined metrics.

A structured stakeholder engagement approach—identifying, sensitising, involving, and engaging health authorities, facility administrators, healthcare providers, and partner organisations—proved crucial to success. The digital register, designed collaboratively, includes mandatory data entry fields, error detection features, and real-time monitoring dashboards.

Evaluation outcomes exceeded WHO benchmarks, underscoring this innovation's effectiveness. As Bangladesh advances its digital health agenda, this locally-led and context-specific solution represents significant progress toward improved maternal and newborn health outcomes.

Jabeen S, Chandrima RM, Hasan M, Rahman MM, Rahman QS, Akm TH, Dewan F, Alim A, Nadia N, Mahmud M, Sarker MH, Islam J, Islam MS, Ashrafee S, Haider MS, Chisti MJ, Sheikh MZH, Miah MS, Al-Mahmud M, Ameen S, Ahmed A, El Arifeen S, Rahman AE. A context-driven approach through stakeholder engagement to introduce a digital emergency obstetric and newborn care register into routine obstetric health care services in Bangladesh. *J Glob Health*. 2024 May 10;14:04098. doi:10.7189/jogh.14.04098. PMID: 38721686

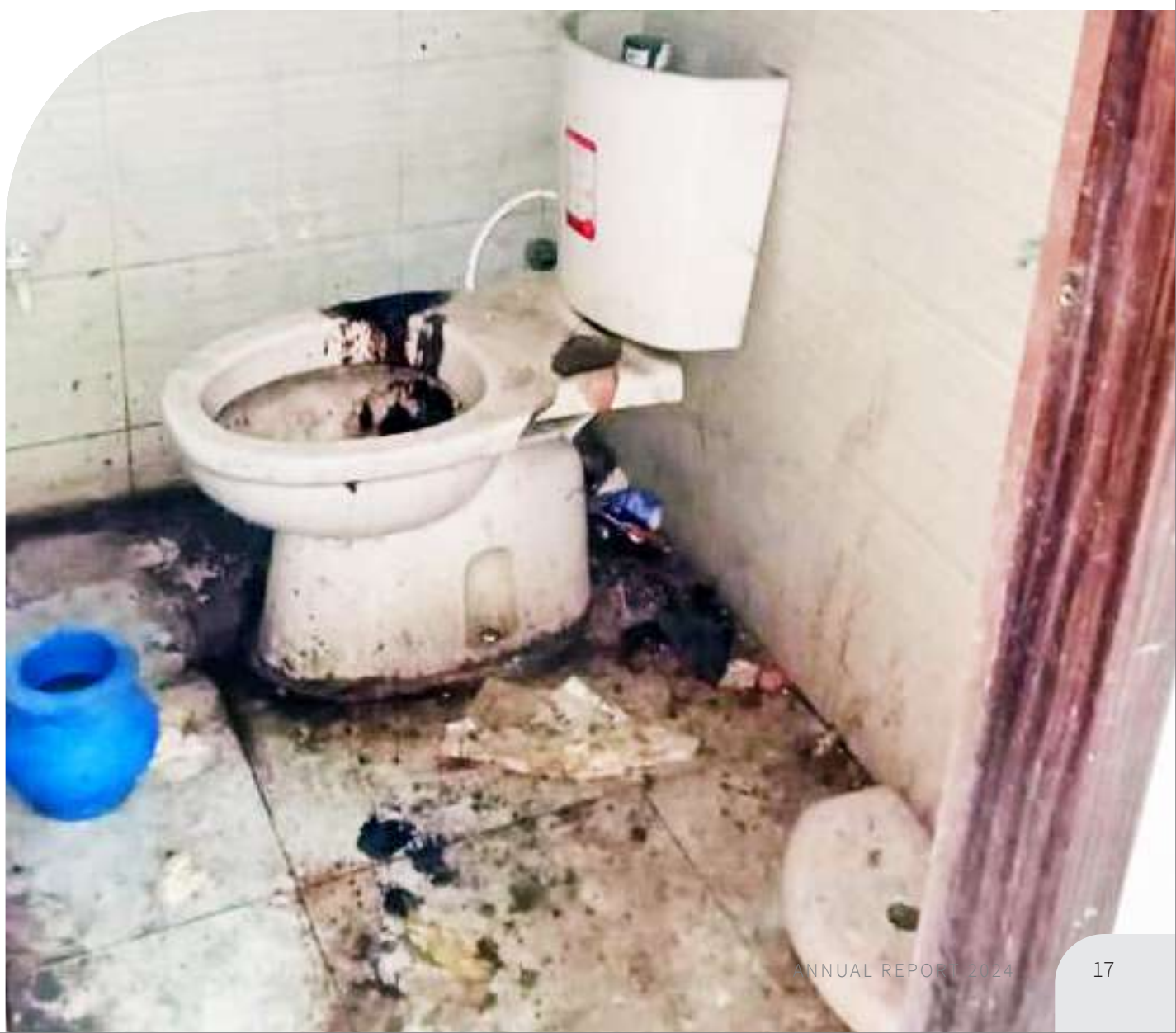
Jabeen S, Rahman M, Siddique AB, Hasan M, Matin R, Rahman QS, Akm TH, Alim A, Nadia N, Mahmud M, Islam J, Islam MS, Haider MS, Dewan F, Begum F, Barua U, Anam MT, Islam A, Razzak KSB, Ameen S, Hossain AT, Nahar Q, Ahmed A, El Arifeen S, Rahman AE. Introducing a digital emergency obstetric and newborn care register for indoor obstetric patient management: An implementation research in selected public health care facilities of Bangladesh. *J Glob Health*. 2024 May 10;14:04075. doi:10.7189/jogh.14.04075. PMID: 38722093

POOR SANITATION CONDITIONS IN DHAKA HOSPITALS UNDERMINE PATIENT SAFETY

A recent icddr,b-led study has revealed alarming gaps in sanitation across 12 government and private hospitals in Dhaka. Assessing 2,459 toilets, the study found that while 68% of government and 92% of private hospital toilets were functional, only 33% and 56% respectively were clean. Toilets were often unhygienic, with visible faeces, strong odour, pests, and waste. Less than 1% had disability access and just 3% had bins for menstrual waste disposal.

The toilet-to-user ratios were far below the recommended standards. In outpatient facilities, there was one toilet for every 214 users in government hospitals and 94 in private ones—far from WaterAid’s guideline of one toilet per 20–25 people. In inpatient settings, the national WASH standard of one toilet per six beds was also unmet, with 17 users per toilet in government hospitals and 19 in private hospitals on average.

Conducted in collaboration with the University of Technology Sydney and the Directorate General of Health Services, the findings underscore the urgent need for investment in hospital sanitation infrastructure, including facilities for women and persons with disabilities, to safeguard public health and advance the SDGs.



UNDERSTANDING GUT DAMAGE THAT AFFECTS CHILD GROWTH

icddr,b is helping lead global research on Environmental Enteric Dysfunction (EED), a gut condition that damages the small intestine. This makes it harder for children to absorb nutrients, which can lead to poor growth and possibly affect brain development. In 2024, icddr,b and international partners published key findings from the EED Biopsy Consortium in a leading nutrition journal.

As part of this research, icddr,b scientists used RNA sequencing to study small intestine (duodenal) tissue from children with EED. They found increased immune activity in the gut, especially in IL-17 and JAK-STAT signalling pathways. At the same time, there were fewer antioxidant and detox functions, indicating how ongoing inflammation causes damage and weakens the gut's ability to recover.

The team also used tissue testing to discover protein patterns that

clearly separate EED from other diseases like celiac disease. This means EED can now be identified more accurately. They also developed a special scoring system that highlights five key signs of gut damage to help doctors better diagnose the condition. These are blunted villus architecture, increased intraepithelial lymphocytosis, goblet cell depletion, Paneth cell depletion, and reduced intramucosal Brunner's glands.

Although EED can lead to stunting (short for age) in children, the research showed that gut damage and poor growth don't always go hand in hand—other factors also play a role. icddr,b tested non-invasive tools, such as stool tests and sugar absorption checks, and found them helpful for spotting EED in children. The studies also linked viruses like norovirus and bacteria such as Shigella and ETEC to more serious gut damage.

These findings from icddr,b offer new ways to detect and treat EED, giving children a better chance to grow up healthy.

Denno DM, Ahmed S, Ahmed T, Ali SA, Amadi B, Kelly P, Lawrence S, Mahfuz M, Marie C, Moore SR, Nataro JP, Petri WA Jr, Sullivan PB, Tarr PI; EEDBI Consortium. The Environmental Enteric Dysfunction Biopsy Initiative (EEDBI) Consortium: mucosal investigations of environmental enteric dysfunction. *Am J Clin Nutr.* 2024 Sep;120 Suppl 1:S4-S14. doi: 10.1016/j.ajcnut.2024.02.003. PMID: 39300662.

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A NEW FOOD SUPPLEMENT TO BREAK THE CYCLE OF UNDERNUTRITION

In Bangladesh, over 30% of women of reproductive age are undernourished—a rate significantly higher than in many other countries. Globally, the number is staggering, with an estimated 200 million women affected.

This is a serious issue because when mothers are malnourished, it increases the risk of babies being born too small or becoming sick.

These children are also more likely to stay malnourished as they grow up, passing poor health from one generation to the next.

To help stop this cycle, icddr,b scientists are exploring how a mother's gut health—especially the tiny living organisms in her intestine, known as the microbiota—can affect her baby's development even before birth. These microbes and

their by-products may be passed to babies during pregnancy or breastfeeding. Studies show that mothers and children living in the same community often share similar gut damage due to undernutrition and poor sanitation.

Following new WHO antenatal care guideline, icddr,b researchers developed a new nutrition supplement called MD-BEP



(Microbiota Directed Balanced Energy Protein) for pregnant women. It builds on their earlier research and includes ingredients that support healthy gut microbes. The goal is to create a food that not only improves nutrition for mothers but

also promotes better growth in their babies by improving gut health.

To test how well it works, MD-BEP will be compared with another common supplement made from different ingredients, called

ready-to-use supplementary food-balanced energy protein (RUSF-BEP). This research could help shape the future of pregnancy nutrition in low-resource settings, offering a promising way to reduce malnutrition across generations.

KEY PROJECTS AND INITIATIVES

This section highlights icddr,b's critical projects addressing tuberculosis, HIV and AIDS, and sexual and reproductive health and innovations.

COMBATING TUBERCULOSIS IN BANGLADESH

In 2024 alone, ACTB identified nearly 48% of all childhood TB cases reported nationally, marking a significant breakthrough in paediatric TB detection.

Since 2020, icddr,b has been leading USAID's flagship tuberculosis programme in Bangladesh—the Alliance for Combating Tuberculosis

in Bangladesh (ACTB)—to support the National TB Control Programme. The initiative focuses on improving detection of childhood TB, drug-

resistant TB, and TB among high-risk groups, expanding preventive treatment, engaging private and civil society actors, and introducing new technologies and operational research to inform national policy. In 2024, the programme received a three-year extension, expanding to 20 new districts across Chattogram, Barishal, and Khulna.

To strengthen TB diagnosis, ACTB expanded the intervention with ultra-portable, AI-equipped X-ray machines to 14 additional districts in 2024, including remote areas of the Chattogram Hill Tracts. A total of 165,754 people were screened, diagnosing 6,152 people with TB cases (PWTB). To decentralise care for drug-resistant TB (DR-TB), over 700 health workers were trained and new treatment regimens (BPaL



and BPaLM) were introduced across DOTS centres.

For extra-pulmonary TB (EPTB), the programme supported free Xpert Ultra testing at three icddr,b centres and partnered with private diagnostics. This led to the bacteriological diagnosis of 1,375 people with EPTB in 2024. TB screening was also integrated into

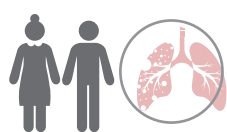
all BADAS-affiliated diabetic clinics, screening over 1.45 million diabetic patients and diagnosing 4,459 PWTB.

To raise awareness, ACTB launched community campaigns across Rajshahi division, reaching 120,000 people with key messages on childhood TB. A school-based campaign and quiz competition, the

“Health Olympiad,” reached over 96,000 students from nearly 6,000 schools.

Through these multifaceted efforts—spanning diagnostics, treatment, policy, and awareness—icddr,b and USAID’s ACTB continue to accelerate Bangladesh’s progress toward ending TB.

ACTB ACHIEVEMENTS (MARCH 2020 – JANUARY 2025)



53.5 million
people screened,
1,398,633 tests
done



152,282 people
with **TB cases** diagnosed,
including **18,722** children
(About 48% of national child TB cases
in 2024 identified through ACTB)



5,656 drug-
resistant TB (DR-TB)
patients treated



231,537
screened via AI-
powered mobile X-rays

Improved **TB diagnosis** among **diabetics**
and through private provider referrals

TB Service and **Treatment** Centres (TBSTCs) established
to bridge public private gaps

COMBATING HIV AND AIDS IN BANGLADESH

icddr,b’s HIV and AIDS programme continues to support the health and dignity of marginalised populations through prevention, treatment, and holistic social support. In 2024, the programme expanded to address broader health and social challenges through community empowerment, SRHR research, digital outreach, and biomedical innovations.

Over 220 gender and sexually diverse people and people recovering from drug use received financial and psychosocial support for small businesses, while more than 100 gained vocational skills. In

partnership with the German Federal Ministry for Economic Cooperation and Development (BMZ), this initiative helped participants reintegrate into society with improved health and confidence.

As part of the AdSEARCH project, icddr,b led the first-ever sexual and reproductive health and rights (SRHR) surveillance of key populations—including female sex workers (FSW), men who have sex with men (MSM), male sex workers (MSW), and hijra — in Dhaka and Jashore. The findings revealed gaps in services and high rates of

sexually transmitted infections (STIs), HPV infection, unintended pregnancies, and unsafe abortions. Findings prompted new studies and innovations, including an ICT-based SRHR service package, facility readiness mapping and mental health intervention trials.

A virtual HIV prevention initiative for self-identified gay men—who do not take services from drop-in services—was scaled up, with 732 syphilis cases and 117 new HIV diagnoses. Over 40% of these cases were students, highlighting adolescent and youth vulnerability.

Biomedical tools like pre-exposure prophylaxis (PrEP) were scaled up and post-exposure prophylaxis (PEP) was introduced, showing high adherence rates and expanded access. A new lay provider model allowed trained peers to deliver HIV tests in communities,

reaching over 2,000 key populations in just four months.

icddr,b also introduced specialised ulcer care for opioid substitution therapy (OST) clients—improving outcomes for this overlooked group

and reinforcing our commitment to inclusive, evidence-based care.



Scan to watch the life-changing story of Shundori.

INNOVATING TO ADDRESS SEXUAL AND REPRODUCTIVE HEALTH AND RIGHTS

AdSEARCH is a cross-divisional initiative of icddr,b that aims to advance research, policy, and innovation on sexual and reproductive health and rights (SRHR) in Bangladesh. Supported by the Global Affairs Canada (GAC), the project began in March 2021 and spans rural and urban areas with 45 research studies addressing SRH burdens, complications, gender equity, and care-seeking behaviours.

AdSEARCH has launched Bangladesh’s first life-course cohort studies with adolescents, newly married couples, pregnant women, and female garment workers. It also explored infertility, climate-linked SRHR vulnerabilities, the health needs of transgender individuals and sex workers, and the accuracy

of maternal death reporting through surveillance.

Through collaboration with public health facilities, the project has helped standardise maternal and adolescent health services at Upazila Health Complexes by strengthening relevant standard operating procedures (SOPs). It is also working on national registries for infertility, high-risk pregnancies, and fistula, and is contributing to the Bangladesh Health Facility Survey.

In 2024, AdSEARCH awarded eight new most promising Proof-of-Concept (PoC) grants—six to icddr,b innovations and two to externals. These include the TEntrol trial to reduce unnecessary C-sections, SafeMe board game for adolescent

SRHR education, Meno-Chat for menopause support, and FertiMeter, a free diagnostic tool for polycystic ovarian syndrome (PCOS), among others.

The project also delivers services directly to women and girls through icddr,b’s Uddipto Counselling Corner and strengthened services in partner hospitals. It reached over 155,000 beneficiaries with screening, counselling, and maternal care, including antenatal and postnatal check-ups.

Through pioneering research and scalable innovations, AdSEARCH is creating meaningful change in SRHR policies and services across Bangladesh.

45
studies
unpacking the
SRHR landscape



12
studies to
understand burden
and distinct SRHR
Needs

5
studies to
identify gaps in
current SRH
service provision

25
innovation studies to
generate new evidence
by developing and
testing solutions

3
studies from
project
components

15
International peer
reviewed articles with
170+ citations



38
GoB stakeholders
engaged as
co-investigators



94
Capacity Building
sessions with 2600+
participants



STRATEGIC OVERVIEW: **ALIGNING WITH OUR SCIENTIFIC GOALS**

An overview section that maps out the year's key achievements and activities against each strategic goal of our strategic plan.

GOAL 2.1

ADDRESS HEALTH RISKS RELATED TO CLIMATE CHANGE

Bangladesh is highly vulnerable to the health impacts of climate change, especially in coastal and densely populated areas. Rising temperatures, salinity, sea-level rise, and extreme weather events are linked to increasing risks such as hypertension, heat stress, food insecurity, and displacement.

icddr,b's Climate Change, Health and Population Science (CCHPS) initiative is addressing these emerging threats through research and innovation. Drawing on longitudinal data from three Health and Demographic Surveillance System (HDSS) sites, covering nearly half a million people, CCHPS investigates how climate variables affect health. Findings include associations between water salinity and high blood pressure, and between temperature shifts and birth outcomes.

The initiative also tests climate adaptation solutions such as Jutin houses (a durable roofing material made from jute fibre and resin), models for community resilience, and food system stability. A cholera early warning system is in development using disease and climate data, and microbiome studies are exploring the effects of salinity exposure.

CCHPS collaborates globally, including with the Environment and population health in the Bay of Bengal (EnHealth-BOB) network, to inform integrated climate-health policies for vulnerable populations.

INVESTIGATING CLIMATE CHANGE, SALINITY AND THEIR EFFECTS ON GUT HEALTH

A new Wellcome-funded study by icddr,b and the Wellcome Sanger

Institute explores how rising sea levels and saline drinking water affect the gut microbiome and health in coastal Bangladesh. Using health and demographic surveillance data from Chakaria, researchers will examine

microbial changes in human and environmental samples across varying salinity levels. This project aims to uncover links between climate stressors and rising rates of gastrointestinal illness, hypertension, and poor nutrition.



Findings will support evidence-based interventions and create a valuable data resource for global climate-health research.

Read more: <https://www.icddrb.org/press-releases/icddrb-centre-for-climate-change-and-health-icch-launched-in-chakaria-a-platform-for-measuring-global-climate-related-health-impacts-in-bangladesh-16-01-2025>.



GOAL 2.2

ACHIEVING GENDER EQUALITY AND PROMOTING SRHR

In line with our commitment to address health risks related to gender, and sexual and reproductive health and rights (SRHR), we study: (1) violence against women and children; (2) child marriage; (3) key populations; and (4) SRHR.

Three in four women in Bangladesh experience intimate partner violence. In 2023–2024, we developed the Economic Coercion Scale-20 (ECS-20) and assessed women’s experiences of violence over time, including the intersection with violence against children. We also examined the implementation of the 2018 ban on the two-finger test (TFT) for rape evidence, revealing regional disparities in compliance.

Bangladesh has one of the highest rates of child marriage in the world, with one in two girls marrying before 18. We evaluated the Tipping Point programme, which aimed at reducing child marriage by empowering girls and addressing harmful social norms. The intervention reduced child marriage among girls who attended a high number of group sessions and significantly reduced girls’ depression and disability burden.

We are mapping SRHR service facilities for key populations and rolling out an ICT-based mHealth platform in response to low SRHR service uptake.

Under AdSEARCH, we are testing over 20 innovative approaches to SRHR programming.

INDUCED ABORTION AFTER ADVENT OF FETAL SEX DETECTION TECHNOLOGY AND CHILD SEX AT BIRTH

Despite Bangladesh’s patriarchal structure and strong son preference, the national Sex Ratio at Birth (SRB) remains normal. Using icddr’s Matlab HDSS data (1982–2018;

N=206,390 births), we assessed ultrasonography’s impact on Gender-Biased Sex Selection (GBSS). Post-ultrasound introduction in 2001, women with induced abortion history showed higher likelihood of male births (AOR 1.08; CI:1.02–1.15). These findings suggest potential GBSS in specific sub-groups, underscoring the need for further

investigation in regions with skewed SRB.

Naved RT, Antu JF, Pervin K, Haider MN, Hanifi SMA. Induced abortion after advent of fetal sex detection technology and child sex at birth. BMC Public Health. 2024 Aug 13; 24(1):2205. doi: 10.1186/s12889-024-19706-0. PMID: 39138458

ENDING THE TWO-FINGER TEST IN BANGLADESH'S RAPE EXAMINATIONS

This study explored the implementation of the 2018 High Court ban on the Two-Finger Test (TFT), an unethical and scientifically discredited method used in rape examinations. While the ban is largely upheld in Dhaka, its continued use in Rangpur and Dinajpur stems from lack of awareness, belief in its evidentiary value, and inadequate training. Interviews with health, legal, and NGO stakeholders highlighted the urgent need for cross-sectoral collaboration and better training.

Findings informed the national SOP on gender-based violence response and were presented at the SVRI Forum 2024 in Cape Town.

LONGITUDINAL INSIGHTS INTO ADOLESCENT MENTAL HEALTH IN RURAL BANGLADESH

Adolescent mental health is a growing public health concern, with violence against women (VAW) and children (VAC) recognised as major contributors. Using longitudinal data from the MINIMat cohort (2001–2020) in rural Bangladesh, icddr,b assessed

how VAW and VAC affect anxiety and depression in 791 adolescents. VAC directly influenced anxiety and depression in both boys and girls. VAW indirectly affected girls' mental health through maternal distress and increased VAC, while boys were less affected. Findings highlight the gendered vulnerability of girls and the need for strategies that challenge societal norms and reduce exposure to violence to safeguard adolescent mental health.

Antu JF, Naved RT. Pathways through which violence against mothers and children affect mental health of children in adolescence: Analysis of MINIMat cohort data. *J Adolesc Health*. 2025.

GOAL 2.3

PREVENT AND CONTROL NCDS

The Non-Communicable Disease Unit at icddr,b continues to identify impactful and cost-effective solutions for the prevention and management of NCDs across all stages of the life cycle, both in Bangladesh and beyond. Our multi-component intervention for hypertension control in rural areas has informed the DGHS's national guideline for treating hypertension and diabetes and contributed to strengthening primary care through algorithm-based digital platforms.

Our current work focuses on generating research-driven evidence and implementing best practices—both from Bangladesh and the Global South—to enhance NCD services at primary healthcare level for adults and children alike. We also analyse existing datasets to explore how NCDs intersect with infectious diseases, nutrition, environmental change, genomics, and mental health, supporting evidence-based decision-making and improved care quality, especially during emergencies.

In partnership with the Government of Bangladesh and regional institutions, we are committed to developing scalable, low-cost solutions for early NCD detection using a life-course approach. We also invest in capacity building, including training the next generation of NCD researchers, to ensure sustainable, long-term impact.

PREDICTING DIABETES RISK IN MOTHERS WITH PREGNANCY-RELATED DIABETES

A multi-country study that included icddr,b found that 14.5% of mothers who experienced gestational diabetes went on to develop type 2 diabetes within 1.8 years after

childbirth. Oral glucose tolerance test (OGTT) results were found to be an effective predictor of post-pregnancy risk. Briefly, those with a single fasting abnormality had the lowest risk (3.8 per 100 women-years), while women with three abnormal values faced the highest (19.0). These findings highlight the need for iterative screening during pregnancy and

targeted follow-up screening in high-risk mothers.

Gupta Y, Kapoor D, Lakshmi JK, Praveen D, Santos JA, Billot L, Naheed A, de Silva HA, Gupta I, Farzana N, John R. Antenatal oral glucose tolerance test abnormalities in the prediction of future risk of postpartum diabetes in women with gestational diabetes: Results from the LIVING study. *J Diabetes*. 2024 May;16(5):e13559. doi: 10.1111/1753-0407.13559. PMID: 38708437

TACKLING ENVIRONMENTAL RISKS OF NCDs IN COASTAL AREAS

icddr,b hosts the NIHR Global Health Research Centre for Non-Communicable Diseases and Environmental Change in partnership with Imperial College London, the George Institute (India), Sri Ramachandra Institute, and University of Brawijaya (Indonesia). The Centre works to strengthen

NCD services in primary care and address environmental risks—particularly drinking water salinity—in Bangladesh’s coastal regions. In 2024, icddr,b hosted the inaugural NIHR GHR Centres Symposium, attended by 60 delegates from five countries, with participation from the Environment Minister, and the British High Commissioner.

As part of the project, water salinity was assessed in about 150 villages in

Khulna and Satkhira; 36% of Koyra’s and 8% of Assasuni’s drinking sources were saline. A multi-sectoral intervention is being co-designed with stakeholders to reduce risks of cardiovascular and kidney disease, with implementation set for 2025–2026. The initiative also builds local research capacity through hands-on training for early- and mid-career researchers and students.

GOAL 2.4

IMPROVE HEALTHCARE IN URBAN POPULATIONS AND ACHIEVE UNIVERSAL HEALTH COVERAGE

Scientists across all four of icddr,b’s divisions are working to improve health and increase access to healthcare among urban populations. Bangladesh is rapidly urbanising, and by 2050, half of its population is expected to live in urban areas. Urban environments—particularly informal settlements—pose unique health challenges due to overcrowding, poor sanitation, limited social support, and environmental and commercial health risks. Government healthcare provision remains limited in urban centres compared to rural areas, pushing many to rely on an unregulated private sector. High out-of-pocket expenses, inequities, inefficient human resource management, and poor governance further restrict access, especially for new migrants and the urban poor.

icddr,b maintains an Urban Health and Demographic Surveillance System (UHDSS) in over 40,000 households across informal settlements in Dhaka, Gazipur, and Narayanganj city corporations, alongside developing data collection systems for monitoring and evaluation. These research platforms enable us to understand health patterns, assess risk factors, and design and test innovative service delivery models.

NUTRITION SERVICES MODEL IN DHAKA SLUMS

icddr,b’s Nutri-CAP project in Bauniabadh slum, Mirpur, trains local women to deliver nutrition counselling to children, adolescent girls, and pregnant women. Focusing on healthy pregnancy weight gain, improved dietary diversity, and WASH practices, the intervention included regular monitoring of weight, haemoglobin, blood pressure, and glucose. The initiative led to improved maternal weight gain, better diets among adolescents, and enhanced hygiene practices—offering a promising, locally anchored model for urban nutrition services.



CRITICAL GAPS IN SLUM HEALTHCARE

Since 2015, icddr,b's Urban HDSS has tracked health trends in slums, identifying birth asphyxia and pneumonia as leading causes of death in neonates and children. Data show many mothers rely on unqualified providers for treatment of respiratory infections in children under two. Care-seeking from qualified providers is linked to maternal education, household wealth, and slum residency duration. A 6,989 birth cohort revealed a caesarean rate of 27.7%, posing serious concerns for out-of-pocket costs and access to high quality delivery care in the public sector.

Billah MA, Islam MZ, Chowdhury R, Shafique S, Sarker BK, Bhuiyan MMA, Alam SS, Kim M, Matin MZ, Jahangir MA, Ferdous J, Vandenen M, Alam AMR, Hanifi SMA, Razzaque A, Rahman A Causes of under-five mortality using verbal autopsies in urban slum areas in Bangladesh: a cross-sectional analysis of surveillance data. J Glob Health Rep. 2024 Sep;8:e2024015. doi:10.29392/001c.117622

Razzaque A, Chowdhury R, Mustafa AG, Billah MA, Naima S, Shafique S, Sarker BK, Islam MZ, Kim M, Jahangir MA, Matin Z, Ferdous J,

Vandenen M, Rahman A. Caesarean delivery and neonatal mortality: evidence from selected slums in and around Dhaka city, Bangladesh- A prospective cohort study. J health Popul Nutr. 2024 May 18;43(1):69. doi: 10.1186/s41043-024-00563-x. PMID: 38762527

STRENGTHENING PANDEMIC PREPAREDNESS IN URBAN SLUMS

The Women RISE Bangladesh study, led by icddr,b with International Development Research Centre (IDRC), Institute of Epidemiology Disease Control And Research (IEDCR), and SickKids, Canada, developed a gender-transformative intervention to improve pandemic preparedness among urban poor women. Co-created with communities, it focused on health, nutrition, equity, and decent work. Policy dialogues identified gaps in service delivery, data, and coordination. Findings highlight the need for systems-thinking and gender-responsive governance to protect vulnerable working women and support universal health coverage and future pandemic resilience in informal urban settings.

COUNTRY LEARNING HUB FOR IMMUNISATION EQUITY

In support of Gavi 5.0 (2021–2025), Bangladesh's Zero-dose (ZD) Country Learning Hub is working to identify and reach children missing out on vaccines. Recent icddr,b study finds that 7.7% of children are ZD and 24% under-immunised (UI), especially in hard-to-reach haor, hilly, coastal areas and urban slums. Key drivers include low maternal education, limited reproductive autonomy, lack of antenatal care, and poor media access. Systemic barriers—such as health workforce shortages, transport challenges, and population mobility—further limit coverage. Addressing these gaps is critical to achieving immunisation equity and leaving no child behind.

Jannat Z, Das H, Ali MW, Alam N, Chowdhury MEEK, Sarker BK, Rahman MM, Mahmood SS, Rahman MM, Morgan C, Oliveras E, Correa GC, Reynolds HW, Wahed T, Uddin MJ. Identifying the zero-dose and under-immunized children in Bangladesh: Approaches and experiences. PLoS One. 2024 Oct 28;19(10):e0312171. doi: 10.1371/journal.pone.0312171. PMID: 39466797

GOAL 2.5

PREVENTING AND CONTROLLING INFECTIOUS DISEASES

We are committed to preventing and controlling infectious diseases by understanding infections, risk factors, and transmission dynamics. Our research explores mortality and morbidity causes in humans and animals, the role of the microbiome, genome, antibiotic resistance, and environmental contaminants. We will study vaccines, therapeutics, diagnostics, and interventions for endemic and pandemic threats, and respond to pandemics, emergencies, and disasters.

Bangladesh remains burdened with pneumonia, respiratory infections, tuberculosis, diarrhoea, and enteric fever, which cause nearly one in five deaths. Rapid urbanisation has increased populations in slums, hotspots for infectious diseases due to poor conditions. Dengue, Nipah virus, and COVID-19 are significant threats, with multidrug-resistant tuberculosis also critical.

Our expertise in laboratory, clinical, and population-based research enables us to track infections and respond to outbreaks. We focus on disadvantaged populations, combining vaccination and treatment to halt disease transmission.

Our priorities include assessing infection burden and transmission, identifying vulnerable populations, and investigating causes of morbidity and mortality. We will monitor antimicrobial resistance, develop prevention strategies, and scale up vaccines, therapeutics, diagnostics, and interventions to address both endemic and pandemic threats. Through these efforts, we aim to meet Sustainable Development Goals 3, 6, and 11.

SIMPLE STEPS REDUCE DEADLY ANTIBIOTIC RESISTANCE IN NEWBORNS

The Antibiotic Resistance in Communities and Hospitals (ARCH) study in a Dhaka neonatal intensive care unit (NICU) revealed that nearly 75% of newborns were colonised with carbapenem-resistant *Klebsiella pneumoniae*, indicating hospital-based transmission. In response, icddr,b and the US CDC implemented targeted infection prevention strategies, including improved hand hygiene, environmental cleaning, staff training, and regular compliance audits. These low-cost interventions led to a 30% drop in colonisation and over 50% reduction in bloodstream infections. The findings, featured in CDC's Global IPC Newsletter, demonstrate how simple, evidence-based measures can reduce antimicrobial resistance and protect newborns in resource-limited hospital settings.



spread-studies.html

Read more: <https://www.cdc.gov/international-infection-control/php/stories/ar-spread-studies.html>

OCV SHOWS HIGH PROTECTION IN OLDER CHILDREN AND ADULTS

Following a 2022 cholera outbreak in Dhaka, a reactive vaccination campaign using Euvichol-Plus allowed icddr,b to assess the vaccine's effectiveness. Interim analysis of 226 cases and 552 controls

revealed that two doses provided 66% overall protection against medically attended cholera and 69% protection against moderate to severe dehydration. However, effectiveness was notably higher among individuals aged five and older, with minimal protection seen in children aged 1–4 years. These findings support targeted use in future outbreak responses.

Khanam F, Islam MT, Ahmmed F, Rajib MNH, Hossen MI, Chowdhury F, Khan AI, Bhuiyan MTR, Haque S, Biswas PK, Bhuiyan AI, Khan ZH, Amin MA, Rahman A, Rizvi SMS, Shirin T, Islam MN, Tiffany A, Breakwell L, Qadri F, Clemens JD. Evaluation of oral cholera vaccine (Euvichol-Plus) effectiveness against *Vibrio cholerae* in Bangladesh: an interim analysis. *BMJ Glob Health*. 2025 Feb 3;10(2):e016571. doi: 10.1136/bmjgh-2024-016571. PMID: 39900426

DENV-2 BEHIND BANGLADESH'S DEADLIEST DENGUE OUTBREAK

In 2023, Bangladesh experienced its worst dengue outbreak in history, with 1,705 deaths and over 321,000 hospitalisations. A recent icddr,b study linked this surge to the dominance of the DENV-2 serotype, responsible for 74% of tested cases. DENV-1 and DENV-3 were also detected, with DENV-1 being more common in rural areas. Contributing factors included urban crowding, erratic rainfall, poor planning, and inadequate mosquito control. As past outbreaks show, dominant strains can persist for years. The findings highlight the urgent need for targeted mosquito control and a universal vaccine to combat all dengue virus types and prevent future epidemics

Hasan A, Zamil MF, Trina AT, Biswas RSR, Kumkum A, Ahmed D, Alam MS. Resurgence of Dengue Virus Serotype 2: Findings from the 2023 Bangladesh Outbreak. *Am J Trop Med Hyg*. 2024 Jul 9;111(3):617-621. doi: 10.4269/ajtmh.24-0229. PMID: 38981496

ADVOCATING FOR JAPANESE ENCEPHALITIS VACCINE IN BANGLADESH

icddr,b's economic analysis of Japanese encephalitis (JE) over a decade (2011–2021) revealed the substantial burden of the disease. The cost-effectiveness analysis showed that JE vaccination could avert \$981 per disability-adjusted life year (DALY), \$9,964 per case, and \$49,819 per death, making a strong case for national vaccine rollout. These findings, combined with strategic advocacy, influenced policymakers to expand the JE vaccination plan from just four to 27 high-risk districts. The nationwide introduction not only reduces illness and death but also contributes to global efforts to eliminate JE as a public health threat.

Nguyen A, Sultana R, Vodicka E, Tasnim Z, Mehedi K, Islam MM, Al Murad SMA, Ullah MR, Sultana S, Shirin T, Pecenska C. Cost-effectiveness Analysis of Japanese Encephalitis Vaccination for Children < 15 Years of Age, Bangladesh. *Emerg Infect Dis*. 2024 Dec;30(12):2593-2603. doi: 10.3201/eid3012.231657. PMID: 39592391.

Sultana R, Slavkovsky R, Ullah MR, Tasnim Z, Sultana S, Khan S, Shirin T, Haque S, Hossen MT, Islam MM, Khanom JA, Haque A, Nazneen A, Rimi NA, Hossain K, Islam MT, Hasan S, Yazdany MS, Ahsan MS, Mehedi K, Marfin AA, Letson GW, Pecenska C, Nguyen ALT. Cost of acute and sequelae care for Japanese encephalitis patients, Bangladesh, 2011–2021. *Emerg Infect Dis* 2023 dec;29(12):2488-2597. doi: 10.3201/eid2912.230594. PMID: 37987586

APRIL TO SEPTEMBER DEFINED AS BANGLADESH'S FLU SEASON

Influenza surveillance by icddr,b and IEDCR, active since 2007 across 19 hospitals, has identified April to September as Bangladesh's peak flu season. Supported by US CDC and WHO, the surveillance tracks trends and virus strains among patients with fever and cough. While flu circulates year-round, most cases occur during this period. Experts recommend vaccination between February and March, prioritising children, pregnant women, the elderly, healthcare workers, and people with chronic conditions. Among 115,000 hospitalised patients studied, 11% tested positive for influenza, with older adults and those with chronic illnesses facing higher death risks.

EARLY NIPAH DIAGNOSIS AND IMMUNE MONITORING

icddr,b has developed a low-cost, isothermal-based diagnostic system to detect Nipah virus (NiV) in peripheral hospitals, enabling quicker diagnosis and response. For vaccine development, 21 new human NiV genome sequences (from

2016–2023 outbreaks) were retrieved using a culture-independent MinION sequencing platform. A new biosensor has also been validated to detect NiV antibodies in clinical and animal samples, supporting surveillance and outbreak investigations. Additionally, ELISAs have been developed to measure NiV-specific antibodies, offering insights into immune responses and informing future treatment strategies.

Bergeron É, Chiang CF, Lo MK, Karaaslan E, Satter SM, Rahman MZ, Hossain ME, Aquib WR, Rahman DI, Sarwar SB, Montgomery JM, Klena JD, Spiropoulou CF. Streamlined detection of Nipah virus antibodies using a split NanoLuc biosensor. *Emerg Microbes Infect.* 2024 Dec;13(1):2398640. doi: 10.1080/22221751.2024.2398640. Epub 2024 Sep 9. PMID: 39194145; PMCID: PMC11391874.

ONE HEALTH STUDY REVEALS KEY DRIVERS OF ANTHRAX TRANSMISSION

Researchers from icddr,b's One Health Research Unit and IEDCR investigated 26 anthrax outbreaks in Bangladesh to identify risk factors for cutaneous anthrax, which has caused repeated outbreaks since 2010. The study found an overall attack rate of 20%, with most cases linked to prior skin injuries during meat handling

or the slaughtering of sick livestock. These findings underscore the urgent need to prevent the slaughter of ill animals to reduce human exposure and control future outbreaks.

Chowdhury S, Islam MS, Haider N, Hossain MB, Alam MA, Sharif MA, Uzzaman MS, Rahman M, Rahman M, Haque F. Risk factors associated with cutaneous anthrax outbreaks in humans in Bangladesh. *Front Public Health.* 2024 Oct 15;12:1442937. doi: 10.3389/fpubh.2024.1442937. PMID: 39473598

EMERGENCE OF A NEW CANDIDA AURIS STRAIN IN BANGLADESH

Candida auris is a deadly, drug-resistant fungus spreading in hospitals worldwide. A study by icddr,b's Genome Centre found a new strain—Clade VI—emerging in Bangladesh. Among samples from ICU and NICU patients in two Dhaka hospitals, most belonged to Clade I, common in South Asia. However, two samples formed a completely new genetic group, now named Clade VI, and were taken from newborns a month apart. This discovery marks the first use of whole-genome sequencing in Bangladesh to study *C. auris* and highlights the urgent need for national surveillance to track its spread and resistance to antifungal treatments.



Khan T, Faysal NI, Hossain MM, Mah-E-Muneer S, Haider A, Moon SB, Sen D, Ahmed D, Parnell LA, Jubair M, Chow NA, Chowdhury F, Rahman M. Emergence of the novel sixth *Candida auris* Clade VI in Bangladesh. *Microbiol Spectr*. 2024 Jul 2;12(7):e0354023. doi: 10.1128/spectrum.03540-23. PMID: 38842332

LARGEST EVER *CANDIDA BLANKII* OUTBREAK DETECTED IN NEWBORN UNIT

Candida blankii, a rare and drug-resistant fungal pathogen, has caused the world's largest known outbreak in a neonatal intensive care unit (NICU) in Bangladesh, according to surveillance by icddr,b's mycology team. Previously, the largest reported

outbreak involved just nine cases. In contrast, icddr,b identified over 100 infections in a single NICU over three years, highlighting a critical underreporting issue due to limited diagnostics. As most global cases involve newborns, the team is now investigating possible environmental sources to curb further spread. This outbreak underscores the urgent need for better fungal surveillance and hospital infection control.

REDUCING BIRD FLU RISKS IN LIVE BIRD MARKETS

Live bird markets are considered hotspots for avian influenza

spillover. Under USAID's STOP Spillover initiative, icddr,b piloted a shop-level intervention to improve biosecurity through renovations and staff training. While virus presence wasn't fully eliminated, lower viral loads were observed in air, cages, and customer areas. Waste effluent samples showed a significant drop in virus positivity (37.5% vs 100%). To improve early detection, a new mobile app, 'Socheton', was launched in two Dhaka markets to report bird deaths and flu symptoms. With 335 reports submitted, it is now being integrated into the national disease surveillance dashboard.

GOAL 2.6

IMPROVING MATERNAL, NEWBORN AND CHILD HEALTH THROUGH IMPROVED UNDERSTANDING, ESPECIALLY OF NEGLECTED ISSUES, AND INNOVATIONS

We are committed to improving maternal, newborn, child, and adolescent health by addressing newborn deaths and researching early childhood development. Our goal is to enhance outcomes by identifying high-risk pregnancies and developing innovative management strategies. We will investigate risk factors for major health conditions, including mental health, affecting women, children, and adolescents.

Globally, a woman dies every two minutes from pregnancy-related complications, and 5.2 million children under five die annually. Despite progress, Bangladesh faces high maternal and newborn mortality rates, with over 50% of women delivering at home without skilled birth attendants.

Our track record includes scaling up interventions like family planning, magnesium sulphate for pre-eclampsia, and zinc for diarrhoea. We influenced policies on chlorhexidine for umbilical cord care and early home visits after childbirth.

We are prioritising the reduction of inequities, focus on high-risk pregnancies, and develop interventions for early childhood stimulation and adolescent health, aligning with SDGs 3 and 5.

ADVANCING NEWBORN CARE THROUGH DELAYED CORD CLAMPING

Delayed cord clamping (DCC) significantly enhances newborn health by improving iron storage, yet practices remain inconsistent in Bangladesh. A qualitative study

in Kushtia district's secondary-level health facilities showed providers prefer clamping after one to three minutes, influenced by international guidelines, peer training, and cultural factors. Observed variability underscores a clear need for standardised guidelines, formal training, and policy interventions to

address the gaps between provider perceptions and actual practices.

Jabeen S, Salam SS, Gillespie S, Hasan M, Islam S, Chowdhury AT, et al. (2024) Delayed cord clamping: Perceptions, practices and influencers among the healthcare providers of selected healthcare facilities in Bangladesh. *PLoS One* 2024 Dec 5;19(12):e0313938. doi:10.1371/journal.pone.0313938. PMID: 39637014

CASH-LINKED PARENTING SUPPORT ENHANCES CHILD GROWTH AND MATERNAL WELLBEING

A cluster randomised trial in urban Bangladesh found that integrating parenting interventions into the government's unconditional cash transfer programme improved children's cognitive, language, and motor development, while also reducing maternal depression and increasing father's involvement. While parenting programmes have shown success in rural areas, this is among the first to demonstrate impact in urban low-income settings. Further economic evaluation is needed to assess cost-effectiveness, and an effectiveness trial is recommended to support future scale-up.

Hossain SJ, Rahman SM, Fisher J, Rahman A, Tofail F, Hamadani JD. Effect of a parenting and nutrition education programme on development and growth of children using a social safety-net platform in urban Bangladesh: a cluster randomised controlled trial. *Lancet Reg Health Southeast Asia*. 2024 Mar 19;25:100388. doi: 10.1016/j.lansea.2024.100388. PMID: 38550293

Hossain SJ, Tofail F, Rahman A, Fisher J, Hamadani JD, Rahman SM. Parenting with nutrition education and unconditional cash reduce maternal depressive symptoms and improve quality of life: findings from a cluster randomised controlled trial in urban Bangladesh. *Glob Health Action*. 2024 Dec 31;17(1):2426784. doi: 10.1080/16549716.2024.2426784. PMID: 39560615

ASSESSING DATA QUALITY IN BANGLADESH'S HEALTH INFORMATION SYSTEMS

A data quality assessment of Bangladesh's health information systems revealed strengths and gaps.

DGHS facilities had a high report submission rate (98%) but 35% of the data were missing, with only 50.3% completeness at sub-district level. DGFP data were fully complete but often used default zeros, affecting accuracy. Both systems showed strong inter-indicator consistency (98%) and low outlier rates (under 3%). Data accuracy ranged from 75–92% for DGHS and 92–96% for DGFP. Improving training, digital infrastructure, and data reporting—especially at lower-level facilities—is vital for strengthening reproductive health monitoring.

Huda FA, Mahmud MU, Islam TT, Akter S, Kabir SF, Hossain MS, Ashrafi SAA, Uddin MN, Habib F, Gibbons SK, Owolabi OO. Assessing the quality of data for selected reproductive health indicators in designated public health facilities in Bangladesh. *J Glob Health* 2024 Dec 6;14:04259. doi: 10.7189/jogh.14.04259. PMID: 39639564

GOAL 2.7

REDUCE MATERNAL, ADOLESCENT AND CHILDHOOD MALNUTRITION

We are dedicated to addressing maternal, adolescent, and childhood malnutrition, aligning our efforts with Sustainable Development Goals 2 and 3. Approximately two billion individuals worldwide suffer from malnutrition, contributing to 45% of annual deaths among children under five.

In Bangladesh, the double burden of malnutrition affects over half of the population, with 350,000 children experiencing severe acute malnutrition and over one million suffering from moderate acute malnutrition. Additionally, 24% of children under five are stunted, 12% of women are underweight, and around 15% are of short stature. Currently, the prevalence of wasting in children remains high at 11%. Bangladesh will need to reduce the prevalence of stunting by 40% and wasting to less than 5% in order to meet global nutrition targets. The first 1,000 days of life are critical, yet undernutrition often begins before birth due to maternal deficiencies and continues due to poor infant feeding and limited dietary diversity.

Our comprehensive research, spanning from fundamental laboratory investigations to assessments of preventive and treatment programmes, aims to inform policy development and create scalable solutions. Our key priorities include preventing and treating childhood malnutrition, achieving food security, enhancing adolescent nutrition, and improving maternal nutrition. We leverage multi-omics technologies and data science to understand and address nutritional challenges. Through cross-departmental collaborations. We also tackle related areas such as water, sanitation, hygiene, and maternal health. Our goal is to generate impactful interventions and contribute to achieving global nutrition targets by 2027.

ANAEMIA AMONG ADOLESCENT GIRLS, PREGNANT AND LACTATING WOMEN

Nutrition researchers at icddr,b recently documented a high prevalence of anaemia among adolescent girls, pregnant women, and lactating mothers in southern rural Bangladesh. This cross-sectional study revealed that over half of the adolescent girls and a substantial number of pregnant and lactating women were affected by anaemia. The main contributing factors were poor dietary intake, low socio-economic conditions, and limited access to healthcare. These findings highlight the critical need for targeted nutritional interventions and stronger health systems to address anaemia in these at-risk populations. The study offers vital evidence to guide policymakers and programme planners in developing effective strategies for the prevention and management of anaemia, with the goal of improving health outcomes for mothers and adolescents in rural communities.

Ara G, Hassan R, Haque MA, Boitchi AB, Ali SD, Kabir KS, Mahmud RI, Islam KA, Rahman H, Islam Z. Anaemia among adolescent girls, pregnant and lactating women in the southern rural region of Bangladesh: Prevalence and risk factors. *PLoS One*. 2024 Jul 10;19(7):e0306183. doi: 10.1371/journal.pone.0306183. PMID: 38985720

HOME-BASED NUTRITIONAL SUPPORT IMPROVES PREGNANCY WEIGHT GAIN

Inadequate pregnancy weight gain is a major public health issue in low- and middle-income countries (LMICs), often leading to preterm

birth, low birth weight, and delivery complications. To address this, scientists at Nutrition Research Division investigated whether home-based nutritional support could improve weight gain during pregnancy among women living in Dhaka's urban slums. Pregnant women were enrolled before 16 weeks of gestation and followed until delivery. The intervention group received monthly home visits from trained health workers recruited from the community, who provided personalised nutritional counselling and daily supplements, including iron-folic acid, calcium, and vitamin D. The control group received routine care without additional support. Of the 396 participants, women in the intervention group gained significantly more weight during pregnancy (9.8 kg vs. 8.5 kg), and experienced lower rates of preterm birth. The findings suggest that targeted, home-based nutritional counselling and supplementation can meaningfully enhance pregnancy weight gain in resource-constrained settings. This community health worker model offers a promising approach that could be adapted for similar contexts to improve pregnancy weight gain and birth outcomes.

GEOGRAPHICAL VARIATION AND SOCIOECONOMIC INEQUALITIES OF LOW BIRTH WEIGHT

Each year, 20 million neonates are born with low birth weight (LBW), with 90% of these births occurring in low- and middle-income countries. In rural Bangladesh, limited data exists on the geographical and socioeconomic disparities of LBW, as well as its link to maternal dietary

diversity. Researchers from the Nutrition Research division analysed data from a large-scale evaluation programme involving 4651 children under five and their mothers. The study found that 13.5% of children were born with LBW, with higher rates in the poorest households (16%) compared to wealthier ones (10%). Inadequate maternal dietary diversity, particularly among adolescent mothers, increased LBW risk. These findings emphasise the need for targeted nutrition interventions.

Tariqujjaman M, Tanha AF, Rahman M, Karmakar G, Mahfuz M, Hasan MM, Rahman AE, Ahmed A, Arifeen SE, Ahmed T, Sarma H. Geographical variation, socioeconomic inequalities of low birth weight, and its relationship with maternal dietary diversity: Insights from the maternal infant and young child nutrition programme in Bangladesh. *J Glob Health*. 2024 Oct 11;14:04209. doi: 10.7189/jogh.14.04209. PMID: 39391893

MICROBIOTA-DIRECTED COMPLEMENTARY FOOD ENHANCES LINEAR GROWTH IN UNDERNOURISHED CHILDREN

Globally, around 150 million children under five are stunted, and 50 million suffer from wasting. Current interventions have limited success in addressing long-term impacts like poor growth and cognitive delays. Our previous study showed that microbiota-directed complementary food (MDCF) improved weight gain more than standard ready-to-use supplementary food (RUSF). Building on this, a randomised trial was conducted by icddr,b researchers among children with moderate malnutrition, many of whom were also stunted. It was

found that those who received MDCF had better length-for-age Z-scores (LAZ) after two years. These improvements were linked with beneficial gut microbiota changes and increased concentrations of circulating biomarkers associated

with growth and development. These observations suggest MDCF sustains benefits well beyond the acute treatment phase.

Mostafa I, Hibberd MC, Hartman SJ, Hafizur Rahman MH, Mahfuz M, Hasan SMT, Ashorn P,

Barratt MJ, Ahmed T, Gordon JL. A microbiota-directed complementary food intervention in 12-18-month-old Bangladeshi children improves linear growth. *EBioMedicine*. 2024 Jun;104:105166. doi: 10.1016/j.ebiom.2024.105166. PMID: 38833839

GOAL 2.8

ENHANCE LABORATORY SERVICES AND SUPPORT GENOMICS RESEARCH

We are committed to enhancing laboratory services and supporting genomics research by continuously developing our research infrastructure. Our state-of-the-art laboratories for human, animal, and microbial research are among the best equipped in the region. Accredited for 177 test parameters under ISO 15189 and ISO 15190 standards, the diagnostic labs support both icddr,b research and external clients, with proceeds funding humanitarian projects. In 2024, laboratory services supported 43 research projects across icddr,b and published seven original research papers.

We invest in cutting-edge equipment and staff training to maintain high-quality operations and expand services. Our field sites, integral to our research, support large-scale clinical trials and demographic surveillance. The Matlab site, the longest-running in the Global South, exemplifies our capability in health and demographic surveillance.

In 2024, the icddr,b Genome Centre (iGC) generated over 3,200 high-quality sequences, supporting 34 projects with partners including Stanford, Johns Hopkins, and UK universities. With the NextSeq 2000 platform, iGC expanded its work in microbial genomics, human genetics, and precision medicine, while venturing into epigenetics and transcriptomics. The Centre hosted a national seminar on cancer biomarkers and trained 30 participants, including six international trainees. Generating over \$216,000 in revenue, iGC advanced both scientific impact and sustainability—positioning itself as a global hub for genomic research and innovation.

GENOMICS UNCOVERS NEW ANTIBIOTIC RESISTANCE THREATS IN BANGLADESH

The ARCH study, supported by the CDC, used advanced genome sequencing to investigate antimicrobial resistance (AMR) in Bangladesh. Analysing over 2,500 bacterial samples from hospitals and communities, it found 80% carried antibiotic-resistant bacteria. Resistance to carbapenem—a last-resort antibiotic—was higher in hospitals (37%) than in communities (9%). The study also identified *Morganella morganii*, a rare, highly

resistant bacteria misclassified as *E. coli*. Genetic analysis revealed new resistance patterns, showing how bacteria spread between hospitals and communities. These findings are helping shape national AMR policies and highlight the need for better testing, antibiotic use, and infection control across Bangladesh.

UNCOVERING VARIANT SHIFTS TO GUIDE PUBLIC HEALTH IN BANGLADESH

icddr,b and partners led the National SARS-CoV-2 Variant Surveillance (NSVS) programme, sequencing over

2,200 COVID-19 genomes between June 2021 and December 2022. This collaborative initiative involving 13 hospitals and 4 major institutes created a robust surveillance framework to track emerging variants across Bangladesh. The data revealed the progression of dominant strains—from Delta, likely introduced from India, to several Omicron subvariants (BA.1, BA.2, BA.5, and XBB) with different impacts on transmission and vaccine effectiveness. Omicron caused more infections among vaccinated individuals compared to Delta. The variants contributed

to two major COVID-19 waves, each with distinct symptoms and clinical outcomes. By combining real-time sequencing with standardised data collection and quality controls, the project strengthened Bangladesh's pandemic response capacity. It also placed local virus evolution within a global context, showing how variants spread across regions. The study highlights the importance of genomic surveillance in informing national public health decisions and shaping future outbreak preparedness.

Jubair M, Hossain MM, Begum MN, Moon SB, Islam S, Karim MY, Rahman S, Khan MH, Habib MT, Shirin T, Qadri F, Rahman M. A Strategic Framework of SARS-CoV-2 Genomic Surveillance in Bangladesh. Influenza Other Respir Viruses. 2024 Oct;18(10):e70019. doi: 10.1111/irv.70019. PMID: 39440811.

ARF SUPPORTS CRITICAL AND ETHICAL ANIMAL RESEARCH

The Animal Resources Facility (ARF), one of Bangladesh's NIH-certified animal labs, upheld high ethical

standards in 2024, supporting icddr,b and 66 external institutions including leading pharmaceutical companies. It enabled critical research using animal models and bioassays, adhering strictly to the 3Rs principle. ARF also conducted hands-on and virtual training for 88 researchers from universities and research organisations, helping build national capacity in ethical animal research and supporting pharmaceutical development and quality testing.

GOAL 2.9
IMPROVE HOSPITAL SERVICES AND CLINICAL RESEARCH

We are committed to improving the clinical services provided by icddr,b-operated hospitals and laboratories, and enhancing patient outcomes through research-informed care. Detailed information on these activities is provided in the following sections of this report.



CLINICAL AND LABORATORY SERVICES

Our hospitals in Dhaka, Matlab, and Teknaf Health Facilities provide free care and support extensive clinical research and training. Since 1990 the Diagnostic Services enhance public health with world-class disease diagnostics and quality lab services, supporting both research and patient care.

DHAKA HOSPITAL

Established in 1962, icddr,b's Dhaka Hospital has evolved into the world's largest diarrhoeal disease treatment and research facility, offering completely free care—including diagnostics, food, and medication. It provides comprehensive services for diarrhoea, malnutrition, pneumonia, sepsis, and routine immunisation in partnership with EPI. The hospital also offers breastfeeding support, nutritional rehabilitation, and innovative therapies such as Bubble CPAP for children with severe pneumonia. Recognised for its emergency response capacity, the hospital efficiently manages seasonal diarrhoeal outbreaks and has saved countless lives through timely intervention. Its impact extends globally—icddr,b experts are regularly deployed by WHO and GOARN to assist in diarrhoea-related emergencies worldwide, sharing protocols, training staff, and advising on community engagement. Rooted in a humanitarian mission, Dhaka Hospital continues to serve as a vital safety net for vulnerable populations while generating knowledge that informs global health policy and practice.

TREATMENT:



Diarrhoea



Malnutrition



Pneumonia



EPI
vaccination



SRHR
counselling



Breast feeding
counselling

204,339 individuals received treatment

43.2% 88,320 female  **56.8%** 116,019 male 

133,413 are under five children

 **65.3%** of total patients

MATLAB HOSPITAL

Established in 1963, icddr,b's 120-bed Matlab Hospital is a hub for public health research and innovation, renowned for pioneering trials on ORS, zinc, and vaccines. Each year, it provides free treatment to around 80,000 patients—over 60,000 in its diarrhoea unit and about 20,000 mothers and children in its MCH unit. Diarrhoea cases are now seven times higher than two decades ago, partly because patients from 35 sub-districts travel up to 100 km, bypassing other health centres to get treatment here. The hospital also conducts diarrhoeal disease surveillance and monitors antimicrobial resistance. The MCH unit offers ANC, delivery, PNC, and pneumonia care. Its Kangaroo Mother Care (KMC) service managed 248 preterm and low birth weight babies in 2024, including 12 under 1,200g. Matlab blends frontline care with groundbreaking research in rural Bangladesh.

TREATMENT:



Diarrhoea



Malnutrition



Pneumonia



Maternal and Child Health Care



79,445

patients received treatment

60,702

cases of diarrhoeal diseases treated

44.5%

female



55.5%

male



18,743

individuals received maternal and child health care

85.1%

female



14.9%

male

50,152

are under five children



63.1% of total patients

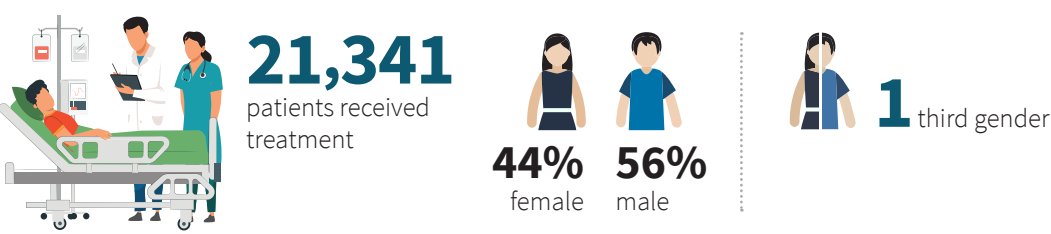
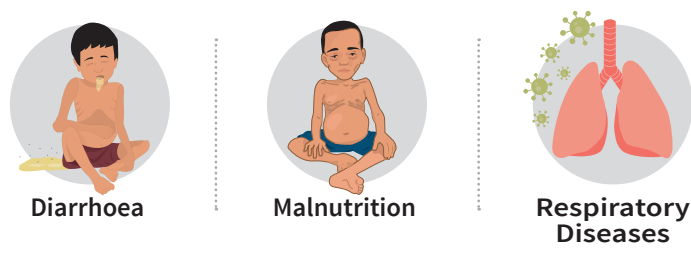


TEKNAF HEALTH FACILITY

In 2024, icddr,b's Teknaf Health Facility (THF) continued to serve both the host community and Forcibly Displaced Myanmar Nationals (FDMNs), providing care to over 21,000 patients. Respiratory illnesses remained the most common reason for consultation, reaffirming THF's core focus on treating conditions such as asthma, pneumonia, COPD, and tuberculosis. Diarrhoeal diseases, urinary tract infections, enteric fever, and dengue also featured prominently, reflecting ongoing vulnerability to infectious diseases in the region. Children under five made up a significant portion of patients, with many requiring care for acute malnutrition.

This year, THF expanded its services to include sexual and reproductive health, with antenatal care, pregnancy ultrasonography, STD screening, and basic mental health support introduced in collaboration with IOM. These services were well-received, but limitations in staffing and resources constrained further expansion. Despite challenges, THF remained a critical access point for integrated, free healthcare in a remote and underserved region.

TREATMENT:



289 Rohingya or FDMNs (5% of total patients)

8,759 are under five children
(41% of total patient)

Number of Cases Related to MHPSS, SRH & USG for Pregnancy Profile in 2024

Year	MHPSS	STD	ANC	Ultrasonography (Pregnancy Profile)
2024	175	180	676	457



DIAGNOSTIC SERVICES LABORATORIES

Established in 1990, the Diagnostic Services Laboratories are a vital part of icddr,b's Clinical and Diagnostic Services (CDS), providing high-quality laboratory testing for clinical care and research. They also develop innovative diagnostic tools to strengthen public health. Revenue from these services plays a crucial role in supporting free treatment at icddr,b hospitals.

A SELF-SUSTAINING UNIT

In 2024, the laboratories conducted 835,074 tests, serving 237,719 paying clients and 37,788 internal patients, including hospital, staff clinic, and research clients. These services generated USD 3.11 million in revenue, directly supporting free care for icddr,b's hospital patients. The unit includes clinical service labs, a Media Laboratory, Quality Assurance Unit, and Sample Reception Units.

QUALITY ASSURANCE AND ACCREDITATION

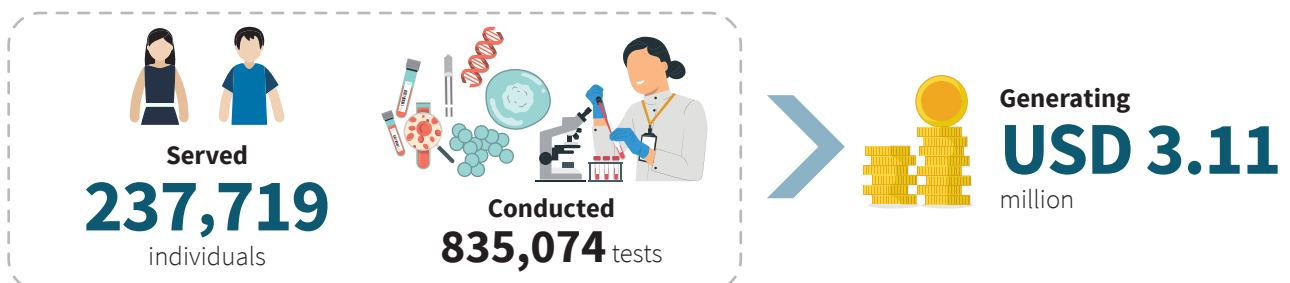
icddr,b remains the first in Bangladesh to achieve and maintain ISO 15189 and ISO 15190 accreditations, currently covering 177 test parameters. The QA Unit extended its Quality Management System (QMS) to research laboratories and conducted 46 in-house training sessions for 445 participants. The team also participated in 43 External Quality

Assurance System (EQAS) panels under the College of American Pathologists (CAP).

RESEARCH SUPPORT

In 2024, the laboratories supported 43 research projects across icddr,b, contributing not only diagnostic services but also expertise in test interpretation and analysis.

HIGHLIGHTS OF 2024



Supported **43**

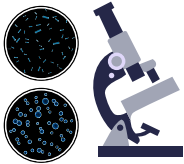
research projects,
offering both testing and
analytical input



Maintained

ISO 15189 and

ISO 15190 accreditation for
177 test parameters



Delivered

243,630

solid media plates and
295,530 broth media tubes

Autoclaved
21,147 kg
of fresh materials and
decontaminated **16,483** kg
of biohazard waste



Launched **Executive
Health Check-up Clinic** in
two centres, serving 1,073
clients with strong demand

Opened a new
**sample collection
centre in Motijheel,**
expanding outreach



ENVIRONMENTAL, SOCIAL, AND **GOVERNANCE (ESG)**

In 2023, icddr,b formally initiated reporting on its Environmental, Social, and Governance (ESG) efforts—marking a strategic step towards institutional sustainability and accountability. Building on a legacy of responsible science and service, these efforts reflect our commitment to reducing environmental impact, enhancing community wellbeing, and upholding robust governance practices.

Environmental sustainability remained a strong focus across operations. Energy-saving measures were widely adopted, from motion-sensor lighting and R600a gas-based appliances to filtered tap water systems and digital documentation to promote a paperless culture. Facilities Management led initiatives in eco-friendly procurement, employee awareness programmes, and the use of reusable and rechargeable items to further reduce waste and resource use.

Our infrastructure and construction practices embraced greener alternatives. We used energy-efficient materials like ACC blocks and dry partitions, while construction waste—including bricks, aluminium, and glass—was recovered and repurposed. Hazardous polyethylene was sterilised and recycled, contributing to a circular economy. Food waste in the cafeteria was minimised through precise portioning. Additionally, the safe reuse of refrigerants and recycling of batteries and lubricants reflected a conscious effort to reduce hazardous waste.

As part of sustainable transport planning, icddr,b operated 30 staff buses daily, significantly reducing reliance on individual vehicles.

Looking ahead, icddr,b is exploring installation of a solar power system capable of generating 440 KWP monthly and planning to replace over 100 air conditioners with a centralised, energy-efficient HVAC

system—expected to significantly reduce overall power consumption.

Social responsibility remained embedded in our service delivery, as exemplified by free care for vulnerable populations at Dhaka and Matlab Hospitals and the Teknaf Health Facility. These centres provided integrated services across diarrhoeal disease, malnutrition, pneumonia, maternal and child health, and reproductive care—benefiting tens of thousands of underserved patients each year.

icddr,b's governance practices continued to be shaped by transparency, quality assurance, and scientific ethics. Our internationally accredited laboratories, ethical research standards, and long-standing collaboration with national and global partners ensured institutional integrity. These ESG pillars strengthen our ability to serve communities today while safeguarding the health of people and the planet for generations to come.

COLLABORATIONS

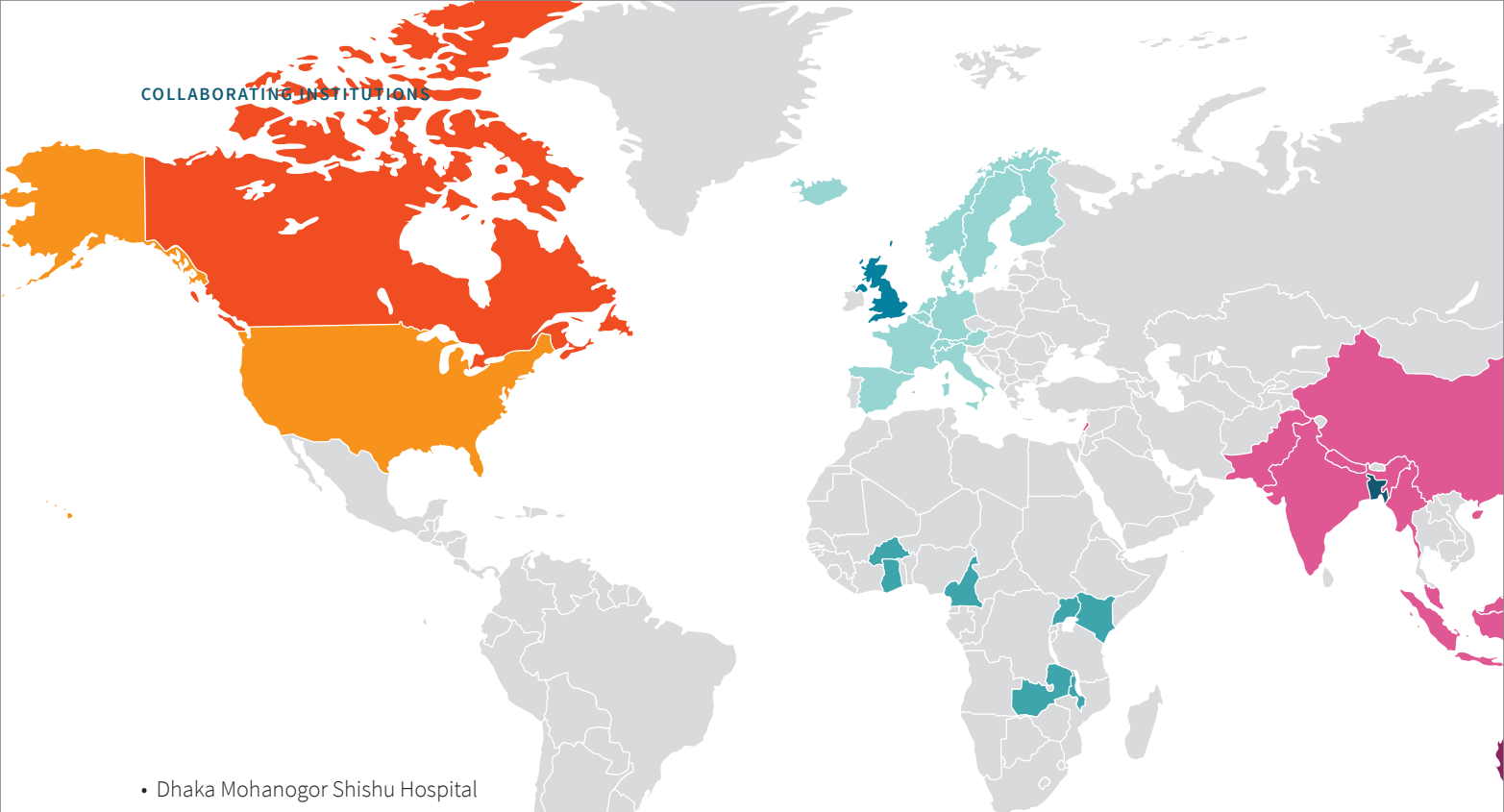
Collaborations are central to our work. We work with multiple governments, academic and NGO partners in Bangladesh, ensuring a strong focus on local health issues, and have long-standing ties with scientific collaborators in leading research institutions worldwide.

We are also members of a range of regional networks and work closely with partners across South Asia and the Global South.

COLLABORATING INSTITUTIONS

BANGLADESH

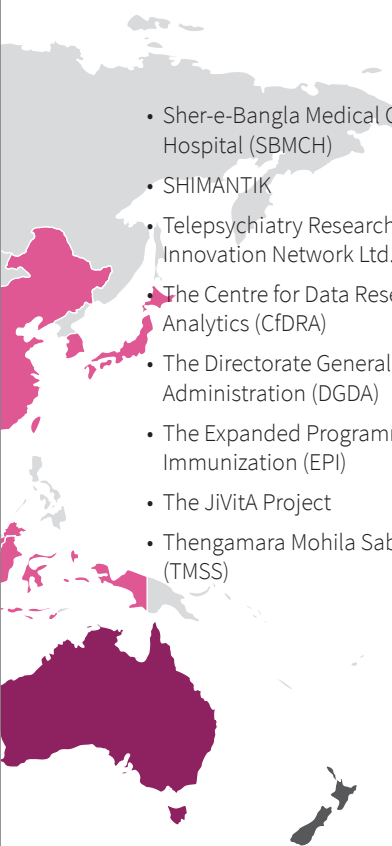
- 3 DEVs IT Ltd
- a2i
- Ahsania Mission Cancer & General Hospital
- AMZ Hospital Ltd
- Asgar Ali Hospital
- National Tuberculosis Control Programme (NTP)
- BACC Women's and Children Hospital
- Bangabandhu Sheikh Mujib Medical University and Hospital (BSMMU)
- Bangabandhu Sheikh Mujibur Rahman Science and Technology University (BSMRSTU)
- Bangladesh Agricultural University
- Bangladesh Bureau of Statistics
- Bangladesh Cancer Society Hospital and Welfare Home
- Bangladesh Forest Department
- Bangladesh Institute of Child Health (Dhaka Shishu Hospital)
- Bangladesh Institute of Research and Rehabilitation in Diabetes
- Bangladesh Krira Shikkha Protishtan (BKSP)
- Bangladesh Livestock Research Institute (BLRI)
- Bangladesh Meteorological Department (BMD)
- Bangladesh Midwifery Forum
- Bangladesh National Nutrition Council (BNNC)
- Bangladesh Neonatal Forum
- Bangladesh University of Engineering Technology (BUET)
- BCSIR
- Bio Farma
- BRAC
- BRAC University
- Center for Women and Child Health (CWCH)
- Child Health Research Foundation
- Chittagong Medical College and Hospital
- Chittagong Veterinary and Animal Sciences University
- Communicable Disease Control
- Community Based Health Care (CBHC)
- Cumilla Medical College Hospital (CuMCH)
- Damien Foundation Bangladesh
- Dcastalia Limited
- DocTime Limited
- Department of Agricultural Extension (DAE)
- Department of Environment (DOE)
- Department of Fisheries
- Department of Livestock Services (DLS)
- Department of Pharmaceutical Sciences, College of Pharmacy, DU
- Department of Public Health Engineering (DPHE)
- Department of Social Service
- Dhaka Infectious Diseases Hospital (DIDH)
- Dhaka Medical College and Hospital (DMCH)



- Dhaka Mohanogor Shishu Hospital
- Dhaka North City Corporation
- Directorate General of Family Planning (DGFP)
- Directorate General of Health Services (DGHS)
- Directorate of Secondary and Higher Education (DSHE)
- DWASA
- Eclipse Enterprise Ltd
- Enam Medical College & Hospital
- EPI Headquater
- Friendship
- Global Health Development (EMPHNET)
- ideSHi /CMBT (Institute for Developing Science & Health Initiatives)
- Incepta Pharmaceuticals
- Institute of Child and Mother Health (ICMH)
- Institute of Child Health & Dr. M R Khan Shishu Hospital (ICHSH)
- Institute of Epidemiology Disease Control and Research (IEDCR)
- Institute of paediatric Neurodisorder and Autism (IPNA), BSMMU
- Institute of Public Health Nutrition (IPHN)
- International Centre for Genetic Engineering and Biotechnology (ICGEB)
- Ipas, Bangladesh

- Jaago Foundation
- Jahurul Islam Medical College Hospital (JIMCH)
- Jalalabad Ragib-Rabeya Medical CollegeHospital (JRRMCH)
- Jashore 250 bed General Hospital (JGH)
- Khulna Medical College Hospital
- Kurmitola General Hospital (KGH)
- LAMB Hospital
- Lutheran Aid to Medicine in Bangladesh (LAMB)
- M Abdur Rahim Medical College Hospital (MARMCH)
- MAMM's Institute of Fistula & Women's Health
- Mohammadpur Fertility Services and Training Centre (MFSTC)
- Mugda Medical College Hospital
- National Centre for Hearing and Speech for Children (SAHIC)
- National Centre for Tuberculosis and Research (NCTBR)
- National Heart Foundation and Research Institute
- National Institute for Population Research and Training (NIPORT)
- National Institute of Cardiovascular Diseases (NICD)

- National Institute of Diseases of Chest and Hospital (NIDCH)
- National Institute of Ear, Nose and Throat (ENT)
- National Institute of Infectious Diseases
- National Institute of Neurosciences and Hospital (NINS)
- National Malaria Elimination Programme (NMEP)
- National Tuberculosis Control Programme (NTP)
- Non-Communicable Disease Control (NCDC)
- North South University
- Obstetrical and Gynecological Society of Bangladesh (OGSB)
- Oxfam GB
- Poeticgem International Ltd.
- Projahnmo Research Foundation
- Rajshahi Medical College and Hospital
- Refugee and Migratory Movements Research Unit (RMMRU)
- Shaheed Suhrawardy Medical College (SSMC)
- Shahjalal University of Science and Technology
- Sheikh Russel National Gastroenterology Institute & Hospital

- 
- Sher-e-Bangla Medical College Hospital (SBMCH)
 - SHIMANTIK
 - Telepsychiatry Research & Innovation Network Ltd.
 - The Centre for Data Research and Analytics (CfDRA)
 - The Directorate General of Drug Administration (DGDA)
 - The Expanded Programme on Immunization (EPI)
 - The JiVitA Project
 - Thengamara Mohila Sabaj Sangha (TMSS)

- University of Dhaka
- World Vision Bangladesh

AFRICA

- Agogo Presbyterian Hospital
- Centre Pasteur du Cameroun
- Institut de Recherche en Sciences de la Santé (IRSS)
- Kenya Medical Research Institute (KEMRI)
- Makerere University
- Right Track Africa (RTA)
- The Queen Elizabeth Central Hospital (QECH)
- University Teaching Hospital Lusaka
- UNZA School of Medicine

ASIA

- Action Research & Training for Health (ARTH)
- Aga Khan University
- Beijing Zhifei Luzhu BioPharmaceutical Co., Ltd
- BioFarma Indonesia
- Center for Public Health Kinetics

- Christian Medical College, Vellore
- Gennova Biopharmaceuticals Ltd
- International Vaccine Institute (IVI)
- IAMEN Innovax BIOTECH Co.Ltd
- Korea Environment Corporation
- Lebanese University
- Malaria Research Centre, New Delhi
- National University Hospital (NUH)
- National University of Singapore
- Nepal Medical College Teaching Hospital
- Oxford University Clinical Research Unit Nepal
- PATH Center for Vaccine Innovation and Access (CVIA)
- Population Council Consulting Pvt Ltd (PCC)
- Serum Institute of India Ltd
- Sinovac Biotech Co
- The Regional Integrated Multi-Hazard Early Warning System (RIMES)
- University of Nagasaki
- University of the Ryukyus
- University of Tsukuba
- XIAMEN Innovax BIOTECH CO.Ltd

AUSTRALIA

- Charles Sturt University
- Deakin University
- George Institute for Global Health
- Griffith University
- Menzies School of Health Research
- The University of Western Australia
- University of Auckland
- University of Melbourne
- University of New South Wales
- University of Sydney
- University of Technology Sydney
- Walter and Eliza Hall Institute of Medical Research

CANADA

- McGill University
- Scik Kids Peter Gilan Centre for Research and Learning

- The Hospital for Sick Children
- University of Alberta
- University of Montreal
- University of Waterloo

EUROPE

- Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC), Italy
- CIRI, France
- Erasmus MC University Medical Ctr Rotterdam, Netherlands
- European Vaccine Initiative, Germany
- EveliQure Biotechnologies GmbH, Austria
- Finnish Institute for Health and Welfare THL, Finland
- Fondation Mérieux, France
- Goteborg University, Sweden
- GlaxoSmith Kline Pharmaceuticals, UK
- IHE Delft Institute for Water Education, Netherlands
- Institut Pasteur, France
- Karolinska Institute, Sweden
- Ludwig-Maximilians University of Munich (LMU), Germany
- Norwegian Institute of Public Health, Norway
- Norwegian University of Science and Technology, Norway
- Pompeu Fabra University, Spain
- Radboud University Medical Center, Netherlands
- San Raffaele Scientific Institute, Italy
- Statens Serum Institut, Denmark
- Tampere University, Finland
- TDR, WHO, Switzerland
- Technical University Berlin (Technische Universität Berlin), Germany
- University Clinic Saarland, Germany
- University of Amsterdam, Netherlands
- University of Bergen, Norway
- University of Leipzig, Germany
- Uppsala University, Sweden
- World Health Organization (WHO), Switzerland

USA

- Albert Einstein College of Medicine
- Bill & Melinda Gates Foundation
- Biomedical Advanced Research & Development Authority
- Boston University School of Public Health
- Centers for Disease Control and Prevention (CDC)-Atlanta
- Columbia University
- Cornell University
- Cummings School of Veterinary Medicine
- DAI Global, LLC,
- Duke University Medical Center
- EcoHealth Alliance
- Emory University
- Envivo Bio Inc
- Fighting Infectious Diseases in Emerging Countries (FIDEC)
- Fred Hutchinson Cancer Research Center
- Frederick National Laboratory for Cancer Research
- Harvard Medical School
- Harvard TH Chan School of Public Health
- International Food Policy Research Institute (IFPRI)
- International Rescue Committee (IRC)
- John Snow Research & Training Institute, Inc
- Johns Hopkins Bloomberg School of Public Health (JHBSPH)
- Johns Hopkins University School of Medicine
- Leidos Biomedical Research Inc
- Mailman School of Public Health, Columbia University
- Massachusetts General Hospital (MGH)
- Moderna TX Inc 200 Technology Square
- Muhimbili University of Health and Allied Sciences
- New York University
- North Carolina State University
- The Ohio State University
- PATH, USA

- Pennsylvania State University
- Pure Earth
- Rollins School of Public Health
- RTI International
- Sam Houston State University
- Save the Children
- Scripps Research
- Stanford University
- Stanford University School of Medicine
- The Consortium for Conservation Medicine
- The Emmes Company, LLC
- Tufts University
- U.S. National Poultry Research Center
- UMass Chan Medical School
- United Nations Children's Fund (UNICEF)
- United States Department of Agriculture
- University at Albany
- University at Buffalo
- University of California
- University of California, Berkeley
- University of California, Davis
- University of California, Los Angeles (UCLA)
- University of California, San Diego
- University of Chicago
- University of Colorado School of Medicine
- University of Florida
- University of Georgia
- University of Houston
- University of Illinois
- University of Iowa
- University of Leeds
- University of Maryland School of Medicine
- University of Maryland, Eastern
- University of Michigan
- University of North Carolina (UNC)
- University of North Carolina School of Medicine
- University of Notre Dame (UND)

- University of Oregon
- University of Texas Health Sciences Center
- University of Utah
- University of Vermont
- University of Virginia
- University of Virginia Health System
- University of Washington
- US Food and Drug Administration (US-FDA)
- USDA Agricultural Research Service (ARS)
- Vanderbilt University
- Washington State University
- Washington University School of Medicine

UK

- Bangor University
- Golden Community
- GSK Medicines Research Centre
- Harvard University
- Imperial College London
- Liverpool School of Tropical Medicine
- London School of Hygiene and Tropical Medicine (LSHTM)
- Loughborough University
- Queen Margaret University
- University College London
- University of Aberdeen
- University of British Columbia
- University of Cambridge
- University of Exeter
- University of Glasgow
- University of Nottingham
- University of Oxford
- University of Southampton
- Wellcome Trust Sanger Institute

OTHERS

- The University of the West Indies

PUBLICATIONS

We are committed to the rapid and full publication of research findings in international peer-reviewed journals. Publication in the peer-reviewed scientific literature is a key indicator of quality and an important step in disseminating information to scientific, practitioner, policy and programme communities.

HIGH-PROFILE PUBLICATIONS IN 2024

icddr,b researchers made notable scholarly contributions, producing 475 original publications, slightly up from last year and contributing to more than 150 additional works, including letters, editorials, book chapters, and abstracts. Their

research has been published in top-tier journals, including the New England Journal of Medicine, *The Lancet*, Lancet Global Health, Lancet Infectious Diseases, Nature and Vaccine. This body of work not only represents the individual

efforts of our researchers but also the result of fruitful collaborations with both national and international colleagues, underlining icddr,b's commitment to global scientific advancement.

Book
Chapters

6



Original
Papers

475

Abstracts in
conference
proceedings

92



Reports/
Monographs

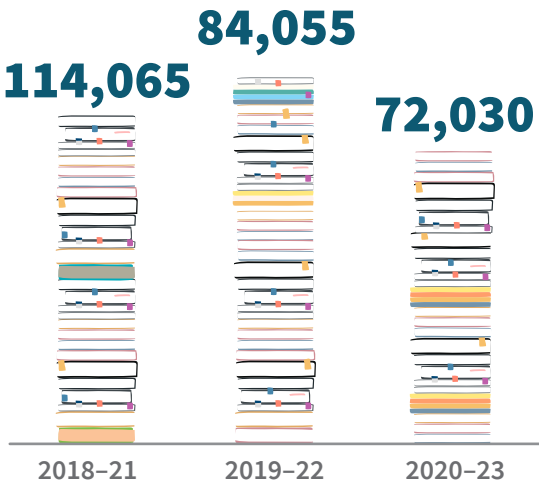
1

Letters,
Editorials, etc.

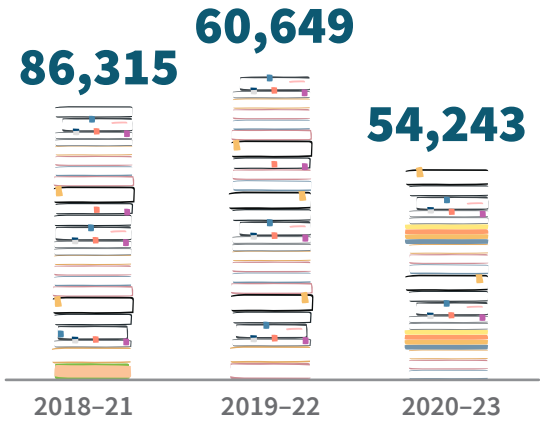
51



CITATIONS I: ALL PAPERS



CITATIONS II: PAPERS IN HIGH-IMPACT JOURNALS
(Impact factor 5 and above)



[Data extractions date: 16 March 2024
Database used: Scopus and Journal Citation report in Web of Science]



AWARDS AND ACHIEVEMENTS

This section highlights notable awards and achievements of our esteemed researchers, scientists, and staff, showcasing their contributions to research, innovation, and excellence in their respective fields. These accolades reflect their dedication to advancing knowledge and making a significant impact globally.

DR TAHMEED AHMED

Dr Tahmeed Ahmed, Executive Director of icddr,b, has received two prestigious awards for his pioneering work in child nutrition. He was named a Goalkeepers Champion 2024 by the Bill & Melinda Gates Foundation for his contributions to developing microbiome-directed therapeutic food (MD-RUTF), an innovative solution combating childhood malnutrition. The award was presented during the Goalkeepers event in New York, alongside global leaders including President Lula of Brazil and India's Ratan Tata.



He also received the Public Health Excellence Award from the Public Health Foundation, Bangladesh, during the 10th International Public Health Conference in Bogura, recognising his three decades of service to public health.

In addition, he joined the UN General Assembly's Science Summit as a panellist to discuss the vital role of the gut microbiome in improving child health.



DR FIRDAUSI QADRI

Dr Firdausi Qadri, Senior Scientist, received two prestigious international accolades for her groundbreaking contributions to global health. She was awarded the Clara Southmayd Ludlow Medal by the American Society of Tropical Medicine and Hygiene (ASTMH) in New Orleans, USA, on 13 November 2024, recognising her resilience and pioneering efforts in tropical medicine. Shortly after, she received the 2024 VinFuture Special Prize for Innovators from Developing Countries, which includes a prize of USD 500,000. Dr Qadri's award celebrates her work in developing affordable vaccines for cholera, typhoid, and HPV to benefit vulnerable populations, particularly women and children.



DR SAYERA BANU

Dr Sayera Banu, Senior Scientist and Head, PEI, IDD, has been selected to serve as a member of the Core Group of the Public- Private Mix for TB Care and Prevention (PPM Working Group).

Dr Banu also received the BAS-Dr Sultan Ahmed Choudhury Science and Technology Gold Medal Award 2019.



DR MD KHALEQUZZAMAN

Dr Md Khalequzzaman, Emeritus Scientist received the BAS Gold Medal Award 2018 in Biological Sciences.



ASHABUL ISLAM

Ashabul Islam, Research Assistant, IDD was honoured with the prestigious Fondation Mérieux Young Scientist Award at the 13th GABRIEL Network meeting. The award recognises Ashabul and his team's advanced work in tuberculosis biomarker research and his presentation introduced a novel approach to enhancing the diagnosis and treatment of extrapulmonary tuberculosis (EPTB).



DR QUAMRUN NAHAR

Dr Quamrun Nahar, Head of Research, MCHD has been selected to join the Global Action for Measurement of Adolescent Health (GAMA) Advisory Group (AG). The group consists of 26 global experts, including 6 young experts, from 18 countries across all WHO Regions.



DR LUBABA SHAHRIN

Dr Lubaba Shahrin, a Scientist at Dhaka Hospital, has been selected as a CAPGAN Council member for the Clinical Practice (Joint) role in the council meeting.

**DR MD. ZAKIUL HASSAN**

In recognition of contributions to the field of international infectious diseases, Dr Md. Zakiul Hassan, Associate Scientist, IDD, was selected as a 2024 ISID Emerging Leader in International Infectious Diseases by the International Society for Infectious Diseases (ISID). The ISID Emerging Leaders Programme recognises early-career excellence in infectious diseases, fostering capacity building to develop global infectious disease leadership.

**DR MUNIRUL ALAM**

Dr Munirul Alam, Senior Scientist of IDD and Head of Molecular Ecology and Metagenomics Lab, was elected as the President of Bangladesh Society for Microbiologists (BSM), the apex body of microbiologists, for 2024-2025.

He was also honoured with the BAS-Dr M.O. Ghani Memorial Gold Medal Award 2019.

**DR MOHAMMAD JOBAYER CHISTI**

Dr Mohammad Jobayer Chisti, Senior Scientist, received the BAS-Dr M. Innas Ali Memorial Gold Medal Award 2022.

**DR SHAMS EL ARIFEEEN**

Dr Shams El Arifeen, Senior Scientist and Senior Director, MCHD, was honoured with the BAS-Dr Sultan Ahmed Choudhury Science and Technology Gold Medal Award 2017.

**DR JASMIN AKTER**

Dr Jasmin Akter, Assistant Scientist at the Emerging Infections and Parasitology Laboratory, IDD, achieved the Wellcome Early Career Award 2023.



DR ALIYA NAHEED

Dr Aliya Naheed, Senior Scientist, was honoured with the BAS-Dr Sultan Ahmed Choudhury Science and Technology Gold Medal Award 2021.



MAHBUB-UL ALAM

Mahbub-Ul Alam, Associate Scientist at HSPSD, recently joined the Technical Advisory Committee (TAC) of the PRO-WASH & SCALE programme for 2023-2027.



MOHAMMAD SOHEL

Mohammad Sohel, FCCA, ACA (England & Wales), Senior Manager, Internal Audit under Internal Oversight department, achieved the Certified Internal Auditor (CIA) qualification from the Institute of Internal Auditors (IIA), USA.



MUSAID KAMRUZZAMAN

Musaid Kamruzzaman, Manager, Talent Rewards, Human Resources, obtained his global HR certification from the Society for Human Resource Management (SHRM), the preeminent worldwide renowned Human Resources organisation, and is now an HR Certified Professional (SHRM-CP).



MD. AL-FARUQUE

Md. Al-Faruque, Bio-Medical Engineer, qualified NSF 49 Basic Field Certifier Accreditation Exam, which was held at the NSF facility in Gurgaon, India. He is the 5th person in Bangladesh, who has qualified in this exam.

FINANCE

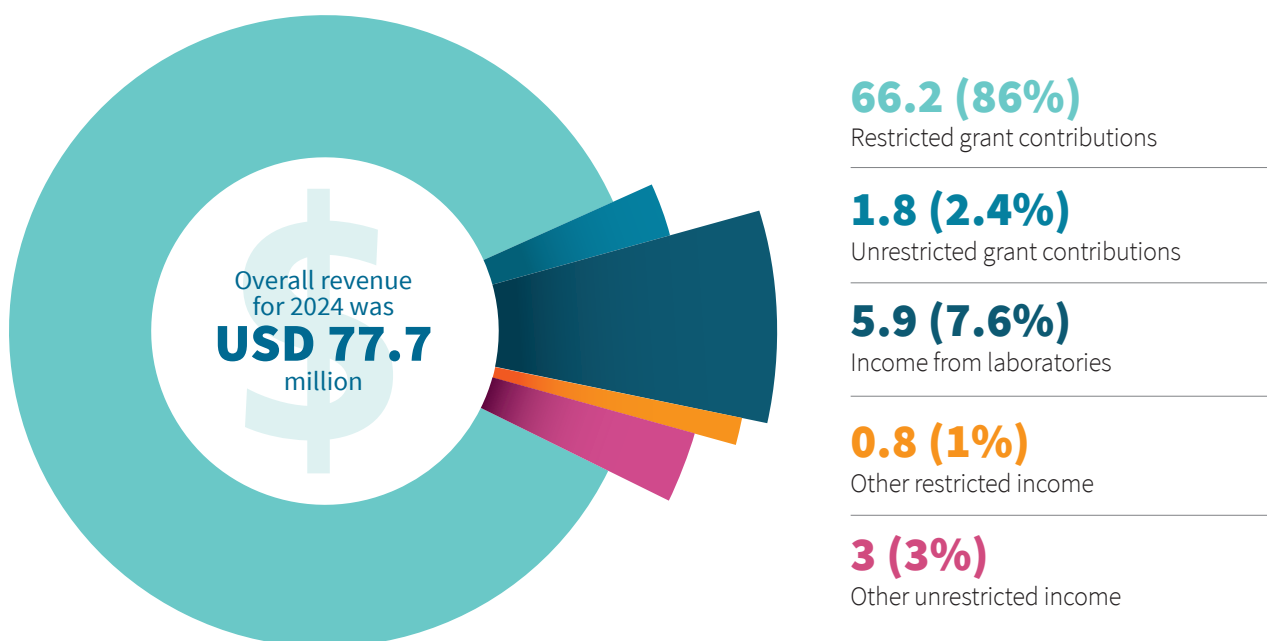
icddr,b's overall revenue for 2024 was USD 77.7 million, compared to total expenditure of USD 73.2 million, resulting in a net surplus of USD 4.5 million for the year.

REVENUE

Our overall revenue for 2024 is USD 77.7 million (see below), reflecting a slight increase of 0.54%, which amounts to USD 0.4 million compared with 2023. Research grant income for 2024 rose by 1.6%, totalling USD 1 million compared to 2023. Unrestricted lab income increased by USD 0.2 million, primarily due to heightened demand.

BREAKDOWN OF REVENUES 2024

(in USD millions)



EXPENDITURE

- Overall expenditure for 2024 was USD 73.2 million, representing a decrease of 0.1% equivalent to USD 0.1 million (approx.) compared with 2023.
- The bulk of total expenditure, namely 60%, pertained to staff salaries and benefits. Other significant costs included: supplies and materials at 13%, collaborative partnership costs at 5%, travel and vehicle hire charges at 6%, rent, communication and utilities at 2%, and training, dissemination and staff development at 2%.

BREAKDOWN OF EXPENDITURE FOR 2024

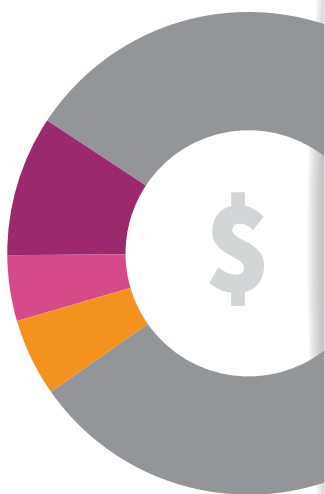
(in USD millions)

81.8%
Programme costs

9.2%
Management and
administration
costs

4.5%
Laboratory costs

4.5%
Hospital costs



DETAILED EXPENDITURE FOR 2023: (in USD millions)

National staff	USD 38.0
International staff	USD 4.0
Emeritus staff	USD 1.7
Supplies and materials	USD 9.6
Collaborative partnership costs	USD 3.9
Travel and vehicle hire charges	USD 4.4
Rent, communication and utilities	USD 1.8
Training, dissemination and staff development	USD 1.6
Other operational costs	USD 8.2

ABBREVIATED STATEMENT OF FINANCIAL POSITION

(in USD millions)

	31 December 2024 USD	31 December 2023 USD
Assets		
Total non-current assets	58.7	54.1
Total current assets	89.4	75.3
Total assets	148.1	129.4
Liabilities and funds		
Non-current liability	3.4	3.4
Total current liabilities	61.7	53.5
Total liabilities	65.1	56.9
Total funds	83.0	72.5
Total funds and liabilities	148.1	129.4

OTHER KEY FINANCIAL STATISTICS FOR 2024

- At the end of the year, icddr,b had net assets amounting to USD 83.1 million, which increased by USD 10.6 million, equivalent to 14.6%. This was result of a 10.4% increase in investments, a 16.2% growth in cash balances, and a 5% decrease in the end-of-service benefits liability.
- Total funds stood at \$83 million, which increased by USD 10.5 million, equivalent to 12.7%.
- Cash and cash equivalents totalled USD 73.5 million at the year-end.
- Accounts receivable (debtors) increased by 28.6% due to an increase in the supply stores' cost.
- Accounts payable reduced by 1.9% as a result of reduced tax liabilities.
- The current ratio (liquidity) is 1.45, increased by 0.04% compared with 2023.
- Investments in the Endowment Funds rose by 10.4%, primarily due to increases in market value and, a small increase in donations.
- Loans and advances rose by 51% owing to the substantial increase in supplier-related advances.

icddr,b received an unqualified (clean) audit opinion on its financial statements for 2024 from Rahman Rahman Huq, Chartered Accountants.

We are deeply grateful to our donors, including governments, foundations, institutions, corporations, development agencies, NGOs and multilateral organisations, for their support of our work.



BOARD OF TRUSTEES

icddr,b's Board of Trustees consists of 13 professionals and researchers from both developed and developing countries.

As of December 2024

The icddr,b Act 2022 established the current Board of Trustees, expanding on the earlier ordinance. The Government of Bangladesh nominates four members, while WHO and UNICEF each nominate one. The Executive Director serves as Member-Secretary.

Operating under the Act and its Rules of Procedure, the Board is responsible for fund oversight, budget approval, strategic policy direction, monitoring implementation of the Strategic Plan, appointing and evaluating the Executive Director, and maintaining a clear distinction between governance and management.

CHAIR



MS NANCY Y CHENG

Chair, Board of Trustees
Former Assistant Auditor General
Canada

MEMBER SECRETARY



DR TAHMEED AHMED

Executive Director
icddr,b

NOMINATED BY THE GOVERNMENT OF BANGLADESH



M.A. AKMALL HOSSAIN AZAD

Secretary, Health Services Division
Ministry of Health and Family Welfare
(MoHFW)
(From Sep 2024 - Nov 2024)



JAHANGIR ALAM

Secretary
Health Services Division, MoHFW
(From Dec 2023 - Aug 2024)



SHAHRIAR KADER SIDDIKY

Secretary
Economic Relations Division
Ministry of Finance
(From Nov 2023)



SHARIFA KHAN

Former Secretary
ERD and Alternate Executive Director
(AED), World Bank Group
(From Jul 2022)



MD. HUMAYUN KABIR

Team Leader
Preparation of PIP for 5th HPNSP
Ministry of Health and Family Welfare
(From Nov 2023)

NOMINATED BY UNICEF



DR PETER HARVEY

Adviser (Water, Sanitation, and Hygiene)
UNICEF Regional Office for South Asia
(until Jan 2024)



DR FRANCIS ODHIAMBO

Regional Adviser for Water, Sanitation
and Hygiene at UNICEF
(From Sep 2024)

NOMINATED BY WHO



DR SUMAN RIJAL

Director, Communicable Diseases
WHO Regional Office for South-East Asia
(SEARO)

INDEPENDENT MEMBERS



AMOL KHISTY

Expert, Finance & Accounting Services



DR SISWANTO

Former Senior Adviser Science
Research and Innovation,
WHO-SEARO, New Delhi, India



ANDREA J LUCARD

Executive Vice President, External
Relations, Medicine for Malaria Venture,
Geneva, Switzerland



DR OGUTU BERNHARDS RAGAMA

Chief Research Officer, Kenya Medical
Research Institute



DR FRED BINKA

Professor of Clinical Epidemiology,
University of Health and Allied Sciences,
Ho, Ghana



PROFESSOR ROSALIND LOUISE SMYTH *CBE FMedSci*

Vice Dean (Research), UCL Faculty
of Population Health Sciences,
Vice President (Clinical) Academy
of Medical Sciences, Chair Medical
Research Council Training and Careers
Group, Professor of Child Health, UCL
Great Ormond St Institute of Child
Health, UK



DR HANNA MARIA NOHYNEK

Chief Physician, Infectious Diseases
Control and Vaccines, Department of
Health Security at the Finnish Institute
for Health and Welfare, Finland

SCIENTIFIC ADVISORY GROUP

In June 2014, icddr,b's Board of Trustees established a world-class Scientific Advisory Group (SAG) to strengthen research capacity, mentor young scientists, enhance international collaboration, and align research activities with institutional priorities, including expanding work beyond Bangladesh.

CHAIR



PROFESSOR ROBERT E BLACK

Chair, Board of Trustees
Former Assistant Auditor General,
Canada

MEMBERS



PROFESSOR ZULFIQAR A BHUTTA

Robert Harding Chair in Global Child Health & Policy, Inaugural Ibn Sina Scholar in Global Health
Co-Director, SickKids Centre for Global Child Health, The Hospital for Sick Children
Professor, Departments of Paediatrics, Nutritional Sciences and Public Health, University of Toronto,
Canada



PROFESSOR NICHOLAS ROBERT THOMSON

Head of Microbes, Faculty, Parasites and Microbes, Sanger Institute, Cambridge, and
Professor, London School of Hygiene and Tropical Medicine, UK

**PROFESSOR JEFFREY I. GORDON**

Dr Robert J. Glaser Distinguished University Professor, and Director, The Edison Family Center for Genome Sciences & Systems Biology, Washington University School of Medicine, USA

**PROFESSOR SARA BENNETT**

Professor and Associate Chair, International Health, and Director, Health Systems Program, John Hopkins University Bloomberg School of Public Health, USA

**PROFESSOR ABDULLAH H. BAQUI**

Professor, Department of International Health; and Director, International Center for Maternal and Newborn Health, Johns Hopkins Bloomberg School of Public Health, USA

**MOHAMMAD SHAMSUDDUHA (SHAMS)**

Professor of Water Crisis and Risk Reduction at the Department of Risk and Disaster Reduction at University College London (UCL), UK

**DR ANASTASIA JESSICA GAGE**

Professor, School of Public Health and Tropical Medicine Tulane University, USA

MEMBERS FROM THE BOARD OF TRUSTEES**DR FRED BINKA**

Professor of Clinical Epidemiology, University of Health and Allied Sciences, Ho, Ghana

**DR SUMAN RIJAL**

Director, Communicable Diseases, WHO SEARO

**PROFESSOR ROSALIND LOUISE SMYTH CBE FMedSci**

Vice Dean (Research), UCL Faculty of Population Health Sciences, Vice President (Clinical) Academy of Medical Sciences, Chair Medical Research Council Training and Careers Group, Professor of Child Health, UCL Great Ormond St Institute of Child Health, UK

**DR HANNA MARIA NOHYNEK**

Chief Physician, Infectious Diseases Control and Vaccines, Finnish Institute for Health and Welfare (THL), Finland

SENIOR LEADERSHIP TEAM

Our staff of over 5,400 is led by Executive Director Dr Tahmeed Ahmed and the Senior Leadership Team. Together they are responsible for the day-to-day running of the organisation and are accountable to the Board of Trustees.

SENIOR LEADERSHIP TEAM

As of December 2024



DR TAHMEED AHMED
Executive Director



DR MD. MUSTAFIZUR RAHMAN
Acting Senior Director
Infectious Diseases Division
(from Nov 2024)



DR SAYERA BANU
Acting Senior Director
Infectious Diseases Division
(Sep 18 – Nov 21, 2024)



DR PUI-YING TAM
Senior Director
Infectious Diseases Division
(Aug 12 – Sep 17, 2024)



DR FIRDAUSI QADRI
Acting Senior Director
Infectious Diseases Division
(until Aug 11, 2024)



DR ANISUR RAHMAN
Acting Senior Director
Maternal and Child Health Division
(from Dec 2024)



DR SHAMS EL ARIFEEN
Senior Director, Maternal and
Child Health Division
(until Nov 2024)



DR THADDAEUS DAVID MAY
Senior Director, Nutrition Research
Division
(from Nov 2024)



DR SARAH MARIA SALWAY
Senior Director, Health Systems
and Population Studies Division



THOMAS LIAM BARRY
Director, Finance



HUGUES BELLO
Director, Human Resources
(until March 2024)



**BRIGADIER GENERAL (RETD.) DEWAN
SHAIKH MD SHAHEEDUL ISLAM**
Chief Engineer, Facilities Management



SHIBLEE SAYEED
Senior Manager, Research
Administration

SECRETARIAT



TANZILA GHANI
Executive Assistant to
Executive Director



**BRIGADIER GENERAL (RETD.)
DR MD. FAZLUL KABIR**
Head, Clinical and Diagnostics
Services



DR MD. MUSHARROF HOSSAIN
Acting Director, Human Resources
(from April 2024)



ARMANA AHMED
Head, Development



**BARRISTER MOHAMMAD NAFIU
ALAM**
Head, Regulatory and Legal Affairs

OBSERVERS



MR NAGARAJAN NAGARAJAN
Director, Internal Oversight



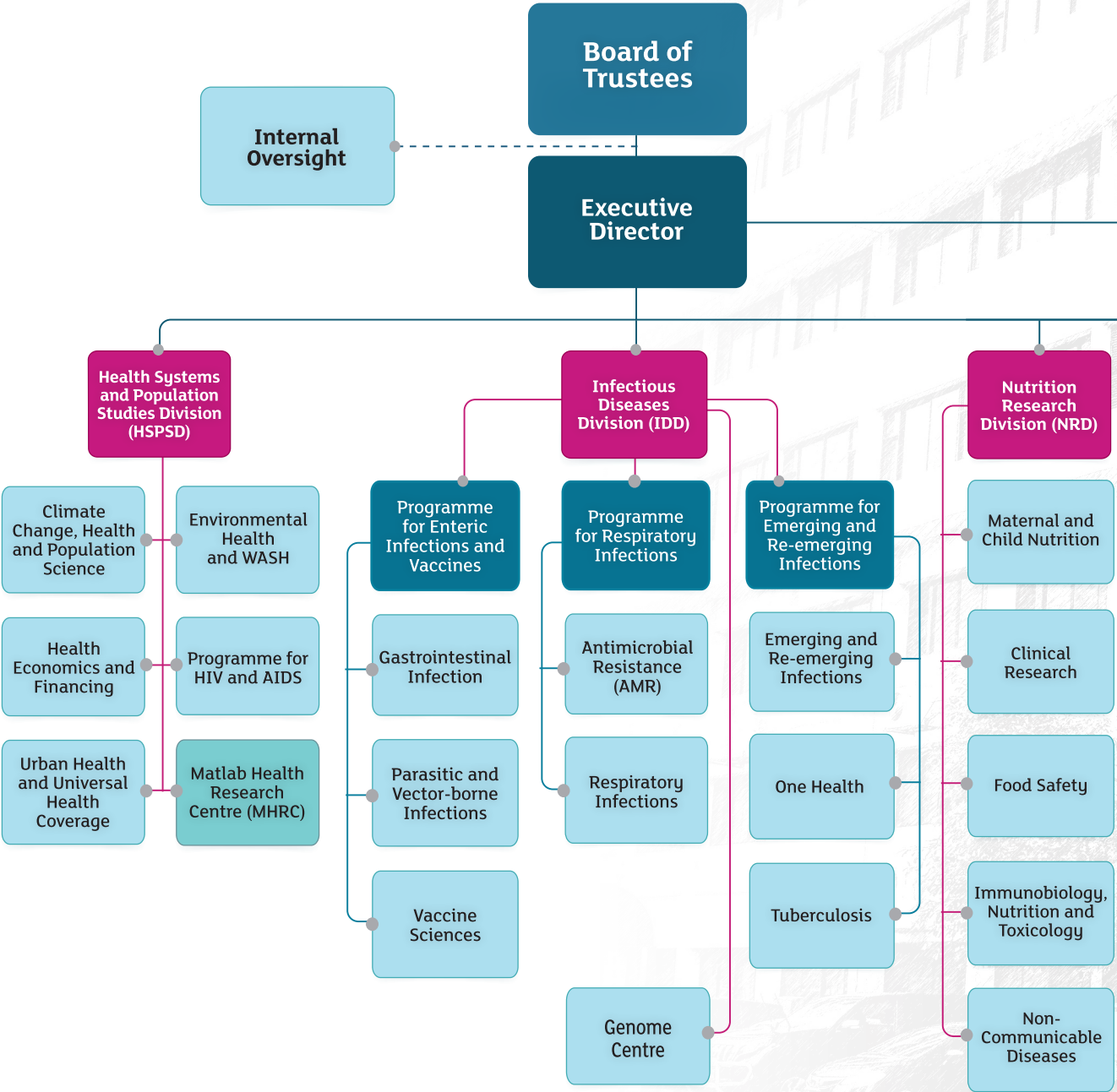
TANVIR AZAD CHOWDHURY
Head, Information Technology

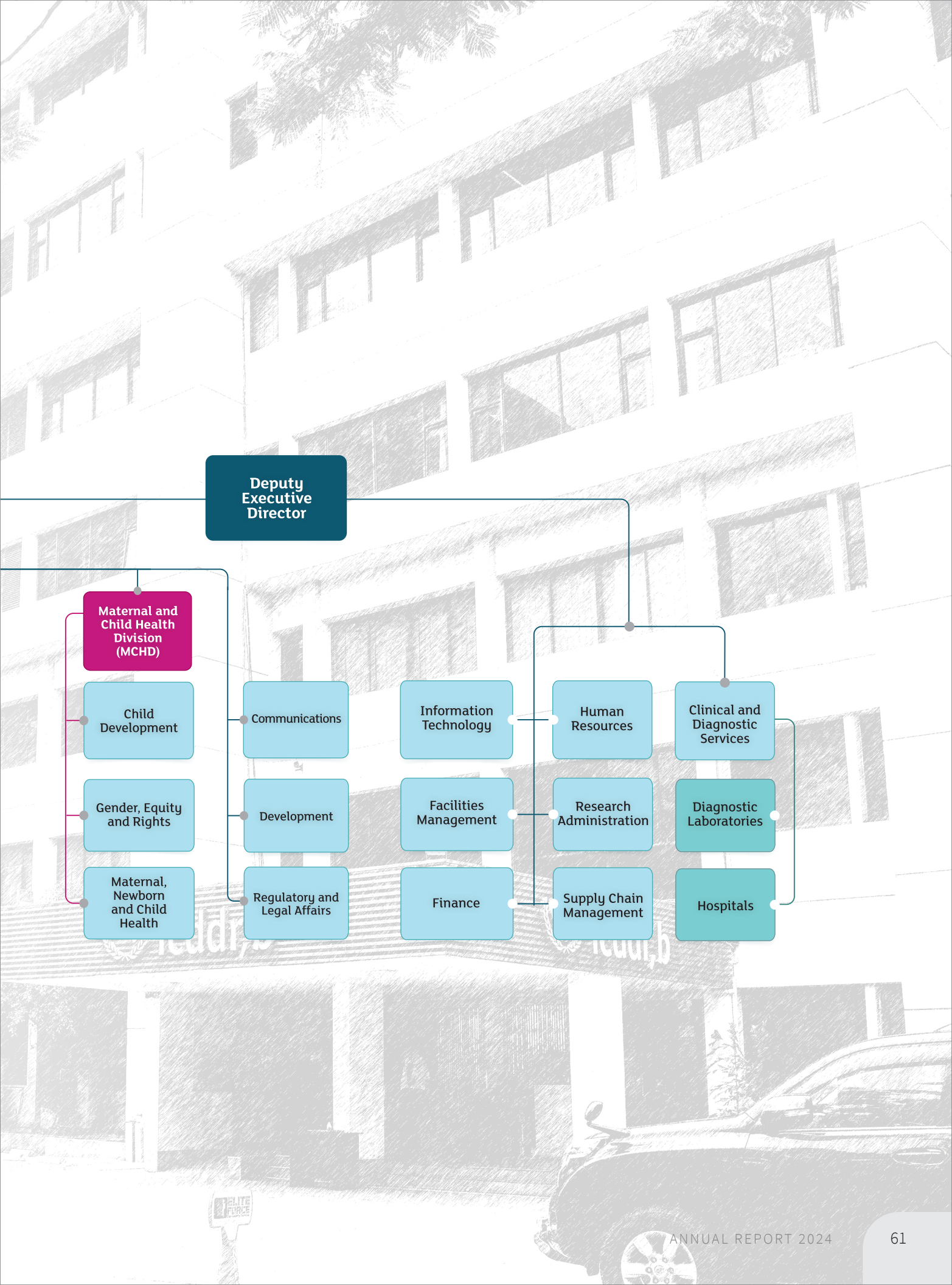


A K M TARIFUL ISLAM KHAN
Senior Manager, Communications

ORGANOGRAM

In alignment with the new strategic plan for 2023-2027, we have restructured our institution in consultation with the Board of Trustees and the Scientific Advisory Group. The new organogram is designed to enhance our delivery of strategic goals.





**Deputy
Executive
Director**

**Maternal and
Child Health
Division
(MCHD)**

**Child
Development**

**Gender, Equity
and Rights**

**Maternal,
Newborn
and Child
Health**

Communications

Development

**Regulatory and
Legal Affairs**

**Information
Technology**

**Facilities
Management**

Finance

**Human
Resources**

**Research
Administration**

**Supply Chain
Management**

**Clinical and
Diagnostic
Services**

**Diagnostic
Laboratories**

Hospitals

TECHNICAL TRAINING UNIT

icddr,b offers a wealth of training opportunities for researchers, practitioners, policymakers, and others from Bangladesh and around the world. As a leader in ground breaking research and global life-saving solutions, we foster a nurturing environment for young and enthusiastic researchers to grow professionally and academically.

icddr,b remains a global leader in developing life-saving solutions, with a strong focus on nurturing future public health professionals. Through its Technical Training Unit (TTU), established in 1978, icddr,b continues to build sustainable research capacity and strengthen the global health workforce. To date, TTU has trained over 70,000 participants from 87 countries, offering transformative learning rooted in scientific excellence, innovation, and practice-based public health solutions.

TTU provides dynamic training opportunities in core research theory, quantitative and qualitative methods, ethical standards, scientific communication, and results-oriented monitoring. Its programmes serve as a unique platform for cross-disciplinary collaboration and experiential learning. Strategic partnerships with national and international academic institutions further extend its reach and impact, aligning with global efforts to achieve the Sustainable Development Goals.



INTERNAL TRAINING

TTU plays a key role in developing the skills of icddr,b staff, especially early- and mid-career researchers. In 2024, two staff training courses were delivered in collaboration with the Infectious Diseases Division (IDD) and the Office of Executive Director (OED), training 98 participants (58 male, 40 female). Additionally, two courses were conducted for interns, reaching 70 participants (21 male, 49 female).

OPEN TRAINING

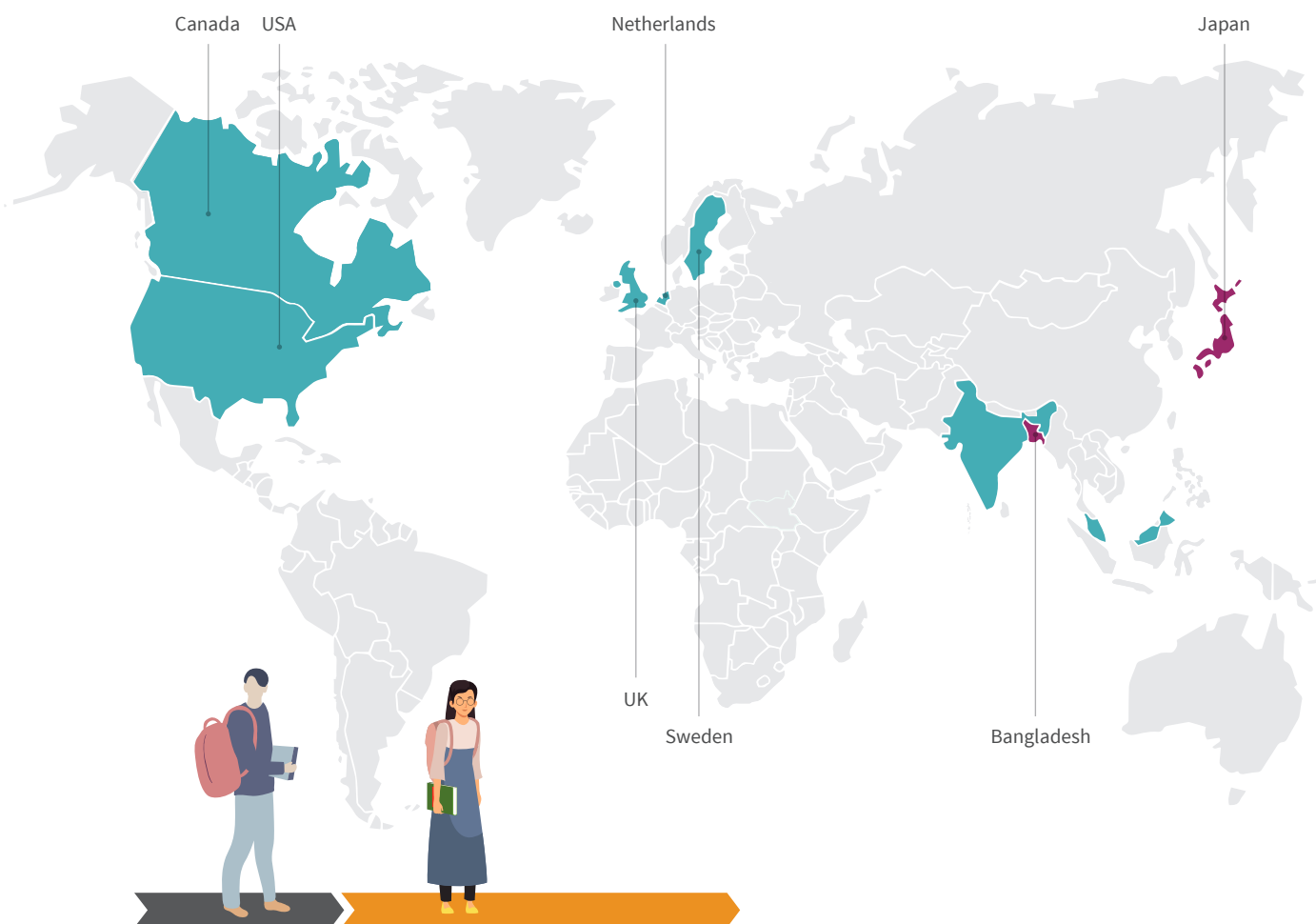
TTU conducted 17 open training courses in 2024 (9 in-person, 8 blended), enrolling 439 national participants (186 male, 253 female). These included four internally organised with IDD and two external collaborations with Bangabandhu Sheikh Mujib Medical University (BSMMU) and BRAC University, involving 145 participants.

STUDENT FIELD EXPERIENCE/ INTERNSHIP PROGRAMME

This programme provides hands-on learning under the guidance of icddr,b scientists. In 2024, 170 students and interns (55 male, 115 female) from 60 institutions (42 national, 18 international) enrolled. Among them, 22 participants came from Canada, India, Japan, Malaysia, Sweden, the UK, and the USA.

ACADEMIC ORIENTATION

TTU hosted academic orientation sessions for undergraduate and postgraduate students from various institutions. In 2024, 149 students (48 male, 101 female) from Bangladesh and Japan participated, gaining insights into icddr,b's public health innovations and global impact.



VISITORS AND GUESTS

Here's a selection of esteemed guests who visited icddr,b in 2024, highlighting our global partnerships and impact.

12 December 2024

THE LANCET ONCOLOGY EDITORIAL BOARD



icddr,b welcomed The Lancet Oncology Editorial Board, led by Editor-in-Chief Professor David Collingridge, along with distinguished oncologists

and dignitaries from SAARC countries. Among them was Dr AFM Kamal Uddin, Scientific Secretary of the Oncology Club, Bangladesh, and Associate

Professor (CC) at the Department of Radiation Oncology, National Institute of ENT (NIENT).

The delegation toured key facilities at icddr,b, including the Dhaka hospital, Breastfeeding Counselling Corner, the Uddipto's Sexual and Reproductive Health Rights (SRHR) Counselling Corner, the ICU, Nutrition Rehabilitation Unit (NRU), and the Genome Centre. Dr Md. Mustafizur Rahman, Senior Scientist and Head of the Genome Centre, provided an overview of the Centre's initiatives in advancing cancer diagnostics in Bangladesh.



Professor Muhammad Yunus and Dr Tahmeed Ahmed with the The Lancet Oncology Editorial Board members during the launch of The Lancet Oncology series on Cancer Care and Outreach in SAARC countries

27 November 2024

UK FOREIGN, COMMONWEALTH AND DEVELOPMENT OFFICE DELEGATION

A delegation from the UK Foreign, Commonwealth and Development Office (FCDO) visited icddr,b on 27 November 2024. Ms Camilla Sugden, Team Leader of FCDO's South Asia Regional Department; Mr James Goldman, Deputy High Commissioner, British High Commission Dhaka and Development Director, FCDO Dhaka Office; Dr Duncan Overfield, Deputy Development Director, FCDO Dhaka Office; Dr Rashid Zaman, Counsellor and Health Adviser, FCDO Dhaka Office, were among the visitors. Dr Tahmeed Ahmed and other high officials welcomed them.



Reflecting on the visit, Mr James Goldman remarked, “We were all inspired by your work and left with

plenty of food for thought regarding the future of our health partnerships in Bangladesh and globally.”

22 October 2024

MR STEPHEN WEAVER, HEAD OF DEVELOPMENT COOPERATION, GLOBAL AFFAIRS CANADA



Mr Stephen Weaver, Head of Development Cooperation, Global

Affairs Canada (GAC) accompanied by Ms Farzana Sultana, Development

Advisor, GAC, Dhaka office, paid a visit to icddr,b on 22 October 2024. The distinguished guests were warmly received by Dr Tahmeed Ahmed, along with other senior officials. They toured the Emergency Unit, Intensive Care Unit, and the Nutrition Rehabilitation Unit of the Dhaka Hospital. They also visited the Mucosal Immunology and Vaccinology Laboratory. Dr Tahmeed Ahmed offered a comprehensive overview of icddr,b's work and discussed the significant impact of Canada's support to our work.

26 May 2024

DR CHRISTOPHER MACLENNAN, HONOURABLE DEPUTY MINISTER FOR CANADA'S INTERNATIONAL DEVELOPMENT-GLOBAL AFFAIRS CANADA

Dr Christopher MacLennan, Honourable Deputy Minister for Canada's International Development-Global Affairs Canada, praised icddr,b as "an absolutely inspiring example of skill, compassion, competence, and innovation in the service of Bangladesh and the world" during his visit on 26 May 2024 accompanied by H.E. Ms Lilly Nicholls, High Commissioner of Canada to High Commission of Canada to Bangladesh. Dr Tahmeed Ahmed, welcomed the visitors for a tour of the icddr,b Dhaka hospital. They explored icddr,b's lifesaving innovations and



activities and learned about the AdSEARCH Project supported by Global Affairs Canada. This includes

SRHR counselling, services to Key Populations, and the Essential Gynaecological Skills package.

22-26 April 2024

DR FREDDY KARUP PEDERSEN AND DR ANJA POULSEN



Renowned paediatricians Professor Dr Freddy Karup Pedersen and Dr Anja Poulsen from Denmark visited

icddr,b hospitals in Dhaka, Matlab, and Teknaf from 22 to 26 April 2024. Their visit aimed at assessing the

feasibility of training collaboration among icddr,b, the Danish Infectious Diseases Society, and the Global Health Unit at the University Hospital of Copenhagen. They also visited the Diagnostic Laboratories, Technical Training Unit (TTU), Matlab Surveillance System, and various nutrition research programmes conducted by icddr,b in different refugee camps in Cox's Bazar. Their visit aimed at assessing the feasibility of training collaboration among icddr,b, the Danish Infectious Diseases Society, and the Global Health Unit at the University Hospital of Copenhagen.

27 February 2024

MS JANE PALMER, DEPUTY DIRECTOR, GLOBAL AFFAIRS CANADA

Ms Jane Palmer, Deputy Director at Canada's International Development – Global Affairs Canada, visited icddr,b on 27 February. Welcomed by Dr Tahmeed Ahmed and members of the senior leadership team, she toured the Emergency Unit, Intensive Care Unit, and Nutrition Rehabilitation Unit. Her gracious words, "Wonderful to visit icddr,b again and to see your wonderful work. Very proud to be an icddr,b partner," resonate with icddr,b's spirit and the commitment



we share with our partners. The visit was a testament to the profound

impact of our collaboration and the enduring support from Canada.

20 February 2024

MS ISABELLA JETTÉ, ENVIRONMENT SPECIALIST, GLOBAL AFFAIRS CANADA



Ms Isabella Jetté, Environment Specialist, Global Affairs Canada (GAC), HQ, Ottawa, accompanied by Farzana Sultana, Development Advisor, GAC, Dhaka, paid a visit to icddr,b on 20 February 2024. Dr Tahmeed Ahmed, along with several senior officials, welcomed

them. The visitors toured the Emergency Unit, Intensive Care Unit, Nutrition Rehabilitation Unit, and Stool Decontamination Facility of Dhaka Hospital. Later, they had a discussion that included the upcoming autoclave-based disposal system. Isabelle Jetté

was impressed with the current medical waste management system at icddr,b and our plan to bring in new technologies for sustainability regarding waste management. She also appreciated our work related to WASH, biosafety, and climate change.

RECOGNISING OUR SUPPORTERS

We are indebted to the foundations, institutions, corporations, development agencies, NGOs and multilateral bodies that support our work.

TOP 10 DONORS DURING 2024

Donor partners		Restricted (USD)	Unrestricted (USD)	Total (USD)
1	USG - United States Agency for International Development (USAID)	13,940,536		13,940,536
2	Bill & Melinda Gates Foundation	13,241,167		13,241,167
3	Global Affairs Canada (GAC)	5,750,039		5,750,039
4	USG - Centers for Disease Control and Prevention (CDC)	5,276,482		5,276,482
5	United Nations Development Group (UNDG)	4,712,644		4,712,644
6	USG - National Institutes of Health (NIH)	4,559,589		4,559,589
7	USA - Other than USG	2,495,109		2,495,109
8	The Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM)	2,363,966		2,363,966
9	Government of the People's Republic of Bangladesh (GoB)	1,007,672	1,828,178	2,835,850
10	Foreign, Commonwealth & Development Office (FCDO)	784,428		784,428

A complete list of donors is provided in Note 23 to the financial statements:
www.icddrb.org/about-us/reports/financial-reports

CORE DONOR FUNDING

We are deeply grateful for the unwavering core support provided by the Governments of Bangladesh and Canada.

This essential funding enables us to:

1. Advance strategic research priorities in line with the global development agenda, driving innovation in capacity building, policy advocacy and evidence-based decision-making.
2. Enhance financial resilience by reducing reliance on volatile project-based funding, ensuring greater autonomy to pursue high-impact research and fund critical initiatives that other donors may overlook.
3. Sustain and modernise vital infrastructure, including disease surveillance systems, cutting-edge laboratories, and icddr,b's humanitarian hospitals, which deliver free healthcare to underserved communities, fostering scientific breakthroughs and equitable health solutions.
4. Strengthen institutional systems by enhancing financial management, human resources, communications, supply chains, and monitoring and evaluation—maximising operational efficiency and cost-effectiveness.
5. Secure a sustainable future by investing in long-term research excellence, ensuring icddr,b remains a global leader in generating life-saving knowledge.

ANNUAL REPORT 2024



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