

glimpse

Autumn 2012

Fighting Cholera in Sierra Leone
Solutions for Better Nutrition
Nationwide TB Survey Results

Editor's Note



Abbas Bhuiya, Ph.D.
Interim Executive Director

Welcome to the Autumn edition of *Glimpse*, in which we share with icddr,b's achievements over the last three months.

icddr,b's mission is to improve the health of people living in poverty in Bangladesh and similar low income countries around the globe – through research, training and services. In all these areas, the last quarter has been extremely productive.

With cholera continuing to pose a public health challenge in countries around the world, our emergency response team travelled to Sierra Leone in September to help tackle a serious outbreak there. We thank our physicians and scientists for their

commitment to this endeavour, which has saved a significant number of lives in that country. Meanwhile, closer to home, in collaboration with the Center for Molecular Dynamics Nepal, our scientists were able to identify, and help manage a cholera outbreak in Nepal.

Tuberculosis still poses a major public health threat in Bangladesh. In this issue of *Glimpse*, we cover a discussion of the latest prevalence survey to be undertaken here, as well as the trialling of new technologies that could speed up TB diagnosis, and capacity building within Government institutions.

With nutrition's elevated role on the global health agenda, our Centre for Nutrition & Food Security continues to move forward with its innovative research, and the dissemination of their results. This last quarter saw the release of a new baseline study on infant and young child feeding practices here in Bangladesh, with our scientists sharing their findings in a number of public forums.

icddr,b is committed to translating its knowledge into policy and practice. That objective is currently being supported by the TRAction (Translating Research into Action)

project. We report on a number of activities that have taken place through the generous support of this USAID-funded initiative.

As an international institution, one of icddr,b's great strengths is the ability to attract staff of the highest calibre from around the world. In August, we welcomed Dr. James Heffelfinger to Dhaka. Dr. Heffelfinger has been seconded to us from the Centers for Disease Control and Prevention in Atlanta as the Director of our Centre for Communicable Diseases. Prior to joining icddr,b, Dr. Heffelfinger served as chief of the Behavioral and Clinical Surveillance Branch in the CDC Division of HIV/AIDS Prevention, and we look forward to benefitting from his experience as he joins our senior management team.

Finally, we are delighted to announce that we have signed new core donor agreements with DFID and Sida. Our relationship with both organisations has been enormously productive over the years, and we look forward to our continued partnership.

We hope you enjoy reading these and other stories in this edition of *Glimpse*. ■

For more than 50 years, icddr,b has provided practical, low-cost solutions to the health problems affecting billions of people living in poverty in Bangladesh and across the globe. The institution's unique proximity to the health challenges of the developing world, both urban and rural, allows for the development of evidence-based interventions that are relevant, rigorously tested, translatable, and scalable in resource-limited settings.

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Cholera Response in Sierra Leone



Dr. P.K. Bardhan (left, front row) and Dr. Azharul Islam Khan (centre) with participants from the Ministry of Health and sanitation after completion of the training-of-trainers programme held in Freetown

By the time icddr,b's emergency response team arrived in Sierra Leone at the end of September, a cholera outbreak had killed 271 people and 18,508 cases had been recorded, located in all but one of the country's 13 districts. Heavy rains, overcrowded living conditions and poor sanitation were to blame for the deteriorating situation. The World Health Organization (WHO), through its Global Outbreak Alert and Response Network, called on icddr,b experts Dr. P.K. Bardhan, Dr. Azharul Islam Khan and Dr. Md. Sirajul Islam to provide technical assistance and training.

During its three-week assignment in Freetown, and travels to more remote areas of Sierra Leone, the icddr,b team worked closely with international experts and the country's Ministry of Health and Sanitation to develop early detection programmes. The icddr,b doctors trained local healthcare providers in case management and reporting. Through their investigations, they discovered that many of the case fatalities were due to an inconsistent definition of diarrhoea and the inappropriate use of ORS and intravenous saline and antibiotics.

While based at the National Central Public Health Reference Laboratory in Freetown, Dr. Sirajul Islam facilitated a WHO training for laboratory scientists and technologists on identification of bacterial pathogens.

"Prior to our arrival to Sierra Leone," he said, "[They] had very little knowledge about how to deal with the cholera outbreak. But they were very fast learners."

To facilitate the emergency response team's efforts, AmeriCares sent a shipment of medical aid as part of the Global Cholera Preparedness Programme announced with icddr,b at the 2011 Clinton Global Initiative. Thanks to a grant from the Merck Company Foundation, the shipment contained sufficient ORS, intravenous fluids, antibiotics, syringes and other medical supplies to treat up to 15,000 patients at Ministry of Health and Sanitation cholera treatment centres in six districts.

By the end of the team's assignment, case fatality rates had decreased nationwide, with significant decreases in the hardest hit districts (for example, 7.2 to 3.9 percent in Moyamba in the south and 4.1 to 2.7 percent in Tonkolili in the north). Case fatality rates continue to decline, and WHO is following icddr,b's recommendations for continued management of the outbreak, including a nationwide scale-up of Oral Rehydration Solution.

For over 20 years, icddr,b has helped manage cholera outbreaks throughout the world, including in the Democratic Republic of the Congo, Pakistan, Zimbabwe, Haiti and most recently in Kenya, Somalia, the Philippines and Nepal. ■

Cholera Surveillance in Nepal

icddr,b recently assisted the Kathmandu-based Center for Molecular Dynamics Nepal (CMDN) in detecting a cholera outbreak in Nepal as part of an ongoing cholera surveillance and detection project. Entitled *Epidemiology and Ecology of Vibrio cholerae Causing Endemic Cholera in Nepal*, the collaborative project is led by Dr. Munirul Alam, a senior scientist with icddr,b's Centre for Food & Waterborne Diseases.

In mid-June, CMDN requested that icddr,b corroborate a cholera outbreak investigation in Doti in western Nepal. Dr. Alam's team spent five days providing on-site training and assistance to CMDN on the collection and processing of clinical and environmental samples. This allowed CMDN staff to collect and isolate more strains of *V. cholerae* and prepare them, in order to investigate a possible second outbreak in the Bajhang district detected by CMDN on 25 July.

"We are obviously happy to be able to assist our Nepalese colleagues in outbreak investigation and cholera detection," said Dr. Alam. "This collaboration will help us build a regional network to jointly address major public health disasters in this region."

According to CMDN, Nepal lacks the institutional capacity to conduct epidemiological and related research, disease surveillance and policy analysis or to design, manage and evaluate such programmes. The collaboration established between icddr,b and CMDN carries significant public health implications for the South Asia region. ■

Better Nutrition for Better Child Health



Poor nutrition among children is a major public health challenge throughout the developing world and is the underlying cause of 35 percent of child deaths and 11 percent of the total global disease burden. According to the *Millennium Development Goals Report 2012*, "An equally important indicator of overall child health and nutritional status is stunting, defined as low height for age. Millions of children remain at risk for diminished cognitive and physical development resulting from long-term undernutrition."

While Bangladesh is home to 2.3 percent of the world's population, it shares 6 percent of the global underweight problem. At two recent events to address this issue, icddr Nutrition & Food Security Director Dr. Tahmeed Ahmed joined other experts in health and nutrition to discuss infant and young child feeding practices.

On 26 August, icddr hosted the 7th regional meeting of the South Asian Infant Feeding Research Network to tackle the lack of maternal

education that leads to poor infant and young child feeding practices. Proposed interventions in Bangladesh seek to improve maternal nutrition and care; encourage breastfeeding within one hour of birth, exclusive breastfeeding for the first six months of life, and to achieve timely, adequate, safe and appropriate complementary feeding and micronutrient intake in the following 18 months.

At the 8 September Alive & Thrive initiative roundtable, *Infant and Young Child Feeding Practices in the Community*, organised by *The Daily Star* and BRAC, Dr. Ahmed pointed out that Bangladesh has one of the highest levels of stunting in the world, at 41 percent—even greater than that of Sudan at 40 percent. This is among the findings of a UNICEF/EU-supported survey undertaken by the Centre for Nutrition & Food Security in 15 sub-districts of Bangladesh. According to the *Baseline Assessment of Maternal and Young Child Nutrition Security Initiative in Bangladesh*, 33 percent of children surveyed were underweight and 11 percent were wasted.

Sixty-nine percent of children between ages 6 and 23 months were not fed according to infant and young child feeding guidelines.

Dr. Ahmed emphasised that food security for families is essential to preventing malnutrition. "Nearly 30 percent of our population does not have access to food that will enable them to lead a healthy life. It is a matter of serious consideration," he noted. The study provided valuable insights for understanding what evidence-based, cost-effective, high-impact interventions are required.

Among the suggested interventions are nutrition counseling for prospective and new mothers, distribution of micronutrient powder, food security intervention and hand washing and hygiene behavior change programmes. The study findings generated by icddr also feed into UNICEF and the European Union's outreaching strategies to prevent malnutrition and ensure food security in developing countries, especially on the African continent. ■

Bangladesh Enters the Global Health Market

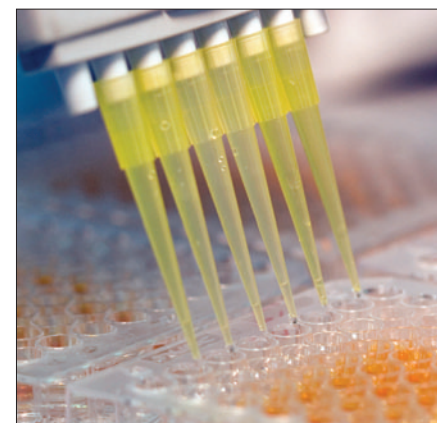


icddr, the Canadian High Commission in Dhaka and the Canadian Chamber of Commerce hosted a seminar entitled *Bioequivalency Studies in Bangladesh: Opportunity for Investment* on 29 August at the Hotel Ruposhi Bangla. The seminar discussed the need for Bangladesh to meet global ethical drug standards (bioequivalence and bioavailability) in order for its pharmaceutical products to enter highly regulated markets.

Towards this goal, icddr has partnered with McGill University in Canada and the Centennial Group in the US to establish the Bangladesh Clinical Research Organisation. This independent, public-private partnership is funded by local and foreign investors to the tune of US\$50 million with full Government of

Bangladesh support. It will benefit Bangladesh in two ways. Whether performing clinical trials on generic drugs or early research on new drug development, clinical research organisations offer a valuable service to the pharmaceutical industry. As a critical partner in the venture, icddr will conduct clinical studies for the Bangladesh Clinical Research Organisation, which will help Bangladesh claim a share of the US\$20 billion clinical research market that has been expanding in Asia over the last decade.

As the Bangladesh Clinical Research Organisation enables Bangladeshi pharmaceuticals to meet international standards, the country can export generic drugs to high-end markets like those in Europe and North America. While the world's total generic drug



market is US\$170 billion, Bangladesh only sees a US\$50 million share of that revenue at present. Entry into the global health sector in this way could earn US\$16 billion in the next three years. ■

Partnership with the Swedish Government



Ms. Karin Rohlin, Head of Development Cooperation & Deputy Head of Mission at the Embassy of Sweden and icddr,b's Interim Executive Director, Dr. Abbas Bhuiya sign an agreement that will provide icddr,b with SEK 54 million (\$8 million) of institutional support and project funding over the next three years

icddr,b and Swedish International Cooperation Agency (Sida) entered a new phase in their long term collaboration with the signing of a new agreement on 11 October. Representatives from SIDA and icddr,b signed an agreement at the Embassy of Sweden in Dhaka, that will provide icddr,b with SEK 54 million (\$8 million) of institutional support and project funding over the next three years.

Signing on behalf of Sida, Ms. Karin Rohlin, Head of Development Cooperation and Deputy Head of Mission at the Embassy of Sweden said "We are delighted to continue our partnership with icddr,b: an institution that has made significant contributions to improving the health of the people of Bangladesh." "Sida has been a firm friend of icddr,b's for over 30 years," added icddr,b's Interim Executive Director, Dr. Abbas Bhuiya, who signed the agreement on behalf of icddr,b. "We are very grateful to Sida, and to the Swedish people, for their continued support." ■

Required Reading



Foodborne and water-borne pathogens continue to be a major cause of mortality in developing countries and the cause of significant morbidity in developed nations. Understanding the molecular basis of pathogenesis, its evolution and spread is critical to the development of new strategies for disease prevention and

control. The application of genomic technologies in recent years has led to a deluge of information in this area, making it difficult for researchers to keep abreast of developments.

Edited by the Director of icddr,b's Centre for Food & Water Borne Diseases, Dr. Shah M. Faruque and written by leading experts—including several former and current icddr,b scientists—*Foodborne and Waterborne Bacterial Pathogens: Epidemiology, Evolution and Molecular Biology* provides a timely overview of the field. Many of the important findings described in the book are based on original research done at icddr,b.

For more information, log on to: <http://www.horizonpress.com/foodbornepathogens>. ■

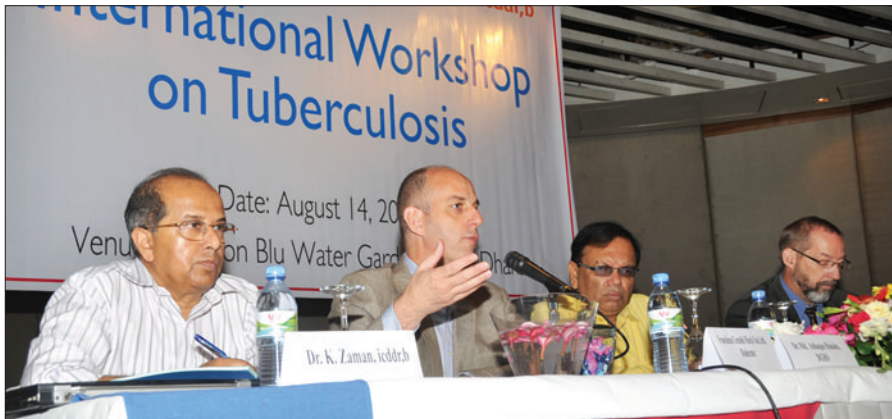
The SIDA/icddr,b Relationship

Established in 1965, Sida reports to the Swedish Ministry of Foreign Affairs and operates according to the directives of the Swedish Parliament and Government. As well as contributing to icddr,b's institutional development, for almost 30 years Sida has supported a wide variety of research programmes, including disease investigation, prevention and control, healthcare enhancement, diverse public-health ventures, reproductive health systems, and gender issues.

Sida-funds actively encourage and support icddr,b scientists, in particular mid and junior scientists, to apply for core research funds for protocols through a competitive call for research proposals.

As global players, such as the Gates Foundation and UN Foundation's Every Woman Every Child initiative, increasingly turn to icddr,b as a regional and global advocacy and policy resource, the benefit of Sida's support in advocacy and policy cannot be understated. Moreover, the strong Sida-icddr,b partnership recognises icddr,b's ongoing role as a cornerstone of public health research at a country, regional, and global level. ■

Eradicating Tuberculosis in Bangladesh



Dr. K. Zaman (left) with distinguished guests at the international workshop on Tuberculosis in Dhaka

icddr,b is working with the Government of Bangladesh and non-governmental organisations to achieve the ambitious aim of eliminating tuberculosis in Bangladesh. On 14 August, icddr,b hosted an international workshop at Dhaka's Radisson Blu Water Garden Hotel to discuss findings of the National Tuberculosis Prevalence Survey 2007-2009.

Commissioned by the World Health Organization (WHO) and the National Tuberculosis Control Programme and conducted by icddr,b, the survey sought to provide a better estimate of the prevalence of TB in Bangladesh, and to assess the impact of TB control activities in the country. Fifty thousand

individuals age 15 and above took part in the survey. Results revealed that TB prevalence was significantly lower than previous estimates, down to 79.4 per 100,000 people from 870 per 100,000 in the 1987-1988 survey.

A workshop was organised by the USAID-funded Translating Research into Action (TRAction) project, which has a special focus on maternal, newborn and child health; nutrition; population and family planning; and tuberculosis. Among the key recommendations that emerged from the gathering were to analyse remaining data from the survey and propose ways in which these findings can lead to policy.

icddr,b senior scientist and epidemiologist with icddr,b's Centre for Child & Adolescent Health Dr. K. Zaman presented the findings and highlighted several issues related to this survey and to TB control in Bangladesh. "This workshop represented an excellent opportunity for all the stakeholders to discuss the challenges and way forward in addressing TB in Bangladesh," he said.

Also, on 16 September, Dr. Tahmeed Ahmed, director of the Centre for Nutrition & Food Security, represented icddr,b at a roundtable organised by The Daily Ittefaq and BRAC on the NTP's achievements and way forward. Having carried out the largest survey in the world on childhood TB in rural Bangladesh, he noted, "Although we have ways and means to detect and treat TB among adults in the country, childhood TB remains neglected."

According to Dr. Ahmed, "Its diagnosis is based on a constellation of signs, symptoms, results of chest X-rays and the TB skin test. However, diagnosis needs to be scaled up all the way to the Upazila Health Complex level. Only this can identify the thousands of children with TB in the villages of Bangladesh." ■

Combating a Killer

Around onethird of all TB cases are thought to go undetected, causing serious difficulties in treatment, and in controlling the spread of the disease. icddr,b works to identify simple techniques for detection and diagnosis of TB. In 2010, we were issued our first patent from the Director of the U.S. Patent and Trademark Office (United States Patent US7638271) for inventing a new diagnostic method for tuberculosis, called antibodies produced by peripheral blood lymphocytes in culture supernatant, or ALS.

More recently, a pilot study, undertaken with a team of researchers from the Netherlands, has demonstrated the effectiveness of "electronic nose" technology to diagnose TB. Look for more on that study, published this November in the journal *Tuberculosis* in the next issue of *Glimpse*.

icddr,b also helps build the capacity of national institutions through technical assistance. At the end of May we partnered with the Switzerland-based Foundation for Innovative New Diagnostics to sign a consultancy agreement. This collaboration will help upgrade the biosafety level of the National Tuberculosis Referral

Laboratory, located in the National Institute of Diseases of the Chest and Hospital, Dhaka.

Over the last two decades, icddr,b's scientists have undertaken significant research on TB. Through valuable insights that have been gained on the effective means of TB surveillance, detection, prevention and cure, icddr,b offers the global health community the opportunity to apply the lessons learned and knowledge gained to eliminate TB from countries where the disease is still prevalent, especially in Asia (which accounts for 60% of new cases globally) and Africa. ■

Building Capacity on Knowledge Translation

National-level decision makers, donors and programme implementers often lack the evidence required to successfully implement effective interventions. The USAID-funded Translating Research into Action (TRAction) project at icddr,b aims to enhance the capacity and skills of policy programme managers in the Bangladesh health and family planning sector so that they might easily access, assess, evaluate, adapt and apply research evidence into health policymaking.

During this quarter, TRAction worked with government stakeholders, local and international NGOs to host a number of capacity-building courses for icddr,b researchers and government health sector policymakers in Bangladesh:

How to Write a Knowledge Translation Brief: This three-part training course was held on

the main campus for 10 icddr,b researchers and three programme managers from the Ministry of Health and Family Welfare's National Institute of Population Research and Training. It focused on creating short documents that describe the rationale for a policy or programmatic course of action.

Bangladesh Demographic Health Survey Report Writing: This workshop, held on the main campus, facilitated preparation of the comprehensive 2011 report through instruction to 16 participants from government agencies and research organisations.

Evidence for Policymaking in Reproductive Health: This series of four executive training workshops took place in Rajshahi, Khulna, Sylhet and Barishal. A total of 106 policymakers, programme

managers and service providers in the health sector took part to enhance their capacity to apply research evidence to policymaking for reproductive health programmes in Bangladesh.

Promotion of Family Planning Methods: This workshop featured Professor John Cleland of the London School and Hygiene & Tropical Medicine sharing his global perspective on family-planning trends, as well as presentations from government and NGO representatives.

Monitoring & Evaluation of Population Health and Nutrition Programmes: This workshop helped 25 mid-level professionals from USAID-supported organisations enhance their M&E skills—particularly for family planning, maternal and child health, HIV/AIDS and nutrition programmes. ■

Promoting Universal Health Coverage

The World Health Organization (WHO) and other international bodies recommend ambitious reforms for universal health coverage that are being taken up by a growing number of low- and middle-income countries. Universal health coverage aims to promote access to quality comprehensive healthcare for all according to need at a cost everyone can afford.

To achieve universal health coverage in Bangladesh, it is important to develop a common understanding among research and academic communities, civil society and operational partners (public, private and NGOs). Towards that aim, icddr,b, in collaboration with BRAC University's James P. Grant School of Public Health, inaugurated Bangladesh's first *Introductory Course on Universal Health Coverage* on 2 July.



Participants at the Introductory Course on Universal Health Coverage

The course is part of the capacity-building agenda of the Centre of Excellence for Universal Health Coverage, an icddr,b/James P. Grant School of Public Health venture launched in April 2011 with funding from the Rockefeller Foundation. icddr,b Interim Executive Director

Dr. Abbas Bhuiya and School of Public Health Dean Dr. Tim Evans welcomed 20 participants to the two-day course held at the school's icddr,b main campus location. Of the attendees, 11 came from icddr,b, five from BRAC and four from other organisations. ■

Welcome to the New Centre for Communicable Diseases Director



On 7 August, scientist and infectious disease specialist Dr. James Heffelfinger joined icddr,b as the new director of the Centre for Communicable Diseases. Seconded to icddr,b from the US Centers for Disease Control and Prevention (CDC), Dr. Heffelfinger will also lead the CDC's International Emerging Infections Program in Bangladesh and serve as CDC country director.

Dr. Heffelfinger originally graduated with a degree in history from the University of California, Berkeley. Based on his experience as an ambulance driver during college, he decided to pursue a medical degree. He completed an internal medicine

residency at the University of Minnesota and an infectious diseases fellowship at the University of California, San Francisco. He began work at the CDC in 1997.

Between 1999 and 2001, Dr. Heffelfinger did a preventive medicine residency in Seattle, Washington, and obtained a Master's in Public Health at the University of Washington. Prior to joining icddr,b, he served as chief of the Behavioral and Clinical Surveillance Branch in the CDC Division of HIV/AIDS Prevention.

Dr. Heffelfinger takes over as Centre for Communicable Diseases director from Dr. Stephen P. Luby, who made significant contributions to icddr,b during his eight-year tenure, especially in the area of training. This culminated in the unprecedented achievements of 24 of icddr,b's young researchers at the 2012 *International Conference of Emerging Infectious Diseases held in Atlanta, Georgia in March 2012*, where they made history with a record number of presentations on emerging infectious disease research.

As Dr. Heffelfinger said upon his arrival in Dhaka, "Helping to develop the young scientists and researchers of Bangladesh is one of the CDC's key objectives in Bangladesh, I am looking forward to continuing this tradition." ■

Congratulations!

Congratulations go to the third graduating class of the MPH-Plus programme! icddr,b works to develop Master's-level public health professionals with advanced knowledge and expertise in research on chronic diseases. Our Centre for Control of Chronic Diseases collaborated with the James P. Grant School of Public Health, BRAC University and the Institute of Development Studies in the United Kingdom in 2010 to launch this six-month course. Each year, six graduates from the James P. Grant School of Public Health are offered places in the MPH-Plus programme. As a leader in training public health professionals from all over the world, icddr,b continues to forge new relations with international academic institutions to offer world class post graduate programmes which are unique in creating future leaders in the arena of global health. ■



icddr,b thanks its core donors for their continued support



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