

glimpse

Achieving MDGs in Bangladesh

Mobile Technology Saves Lives

Technical Assistance Abroad

Editor's Note



John D. Clemens, MD
Executive Director

Welcome to this issue of *Glimpse*, in which we share with you the achievements of icddr staff during the second quarter of 2013.

At a United Nations event in New York this May, UN Secretary-General Ban Ki-moon recognised icddr's contribution to health-related MDG targets being met in Bangladesh. I believe successful collaborations and international partnerships are key to taking icddr's innovative approach to health challenges, proven in Bangladesh, further onto the international stage.

Sharing my vision for icddr is new Board of Trustees Chair Dr. Richard Smith. icddr announced his appointment at the 15-16 June board meeting, and I look forward to working

with him and the rest of the board as we further the goals of the Strategic Plan 2020.

This quarter, our scientists published 73 original papers, including two in *The Lancet*; four book chapters, papers in conference proceedings, and monographs; and one editorial. Our Technical Training Unit offered courses for 139 participants on epidemiology and biostatistics, qualitative research methodology, health equity and more.

icddr contributed to the largest global study on diarrhoeal diseases in developing countries—the Global Enteric Multicenter Study (GEMS), whose findings provide the clearest picture yet of the impact, causes, prevention and treatment of diarrhoeal diseases, which still kill 800,000 children annually. icddr is also playing a key role in the fight against polio by undertaking vital research on the efficacy of polio vaccines and the design of schedules for national immunisation programmes.

Our international experts travelled to Sierra Leone and North Korea in the second quarter to conduct a post-epidemic evaluation of the 2012 cholera outbreak response and to offer training in the treatment of severe acute malnutrition, respectively. We thank them for their hard

work and willingness to share their expertise with those living in the world's most challenging places.

Again this quarter, we received international media attention—twice in the May blog and pages of UK weekly *The Economist*. Whether studying migration in Bangladesh or implementing our standardised birth mat to identify postpartum haemorrhaging, our scientists use research and innovation to improve health outcomes for those living in Bangladesh and around the world.

Even as we look to the future of icddr, we owe a debt to the innovators of the past. This summer, we mourned the loss of tropical medicine researcher and inventor of the cholera cot, Raymond Watten.

His 1958 customisation of an army cot provided the means for collecting and measuring the stool output of cholera patients. This simple tool proved vital to icddr's own historical research into oral rehydration solution.

Our dedicated staff still uses the "Watten Cot" today to treat diarrhoeal disease. This quarter, they saw 34,448 patients at the Dhaka Hospital, 11,080 at the Matlab Hospital and 5,830 at the Mirpur Treatment Centre. We thank them for their service. ■

For more than 50 years, icddr 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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UN Secretary General Commends icddr,b



From left to right: Tina Rosenberg, Secretary-General Ban Ki-moon, Permanent Representative Abdul Momen and John D. Clemens, MD.

United Nations Secretary-General Ban Ki-moon applauded icddr,b and the Government of Bangladesh (GoB) for developing innovative solutions to the world's "most pressing global health challenges."

Nearly 150 people from the public and private sectors of the US and Bangladesh attended an event hosted at the UN headquarters 6 May in New York. The event, *Meeting the Challenges of MDGs and Beyond: icddr,b's Innovative Approach*, featured a panel moderated by Tina Rosenberg, Pulitzer Prize winner and co-writer of *The New York Times* "Fixes" column.

The secretary-general reflected on his "inspirational" visit to icddr,b in 2011, saying he "learned most of all that Bangladesh takes partnerships for health very seriously" and indicating that such partnerships have helped save lives around the world.

He noted the progress that has been made in improving the health of women and children and highlighted that icddr,b has been "among the driving forces of this effort." Mr. Ban urged icddr,b and the GoB to share lessons learned and to continue to innovate and partner to find sustainable solutions.

UN Permanent Representative of Bangladesh Abdul Momen and Permanent Representative of Norway Geir Pedersen co-hosted the event. Mr. Momen noted that "the successful collaboration between the GoB and icddr,b has translated into effective action for achieving MDGs 4 and 5."

Mr. Pedersen added that icddr,b has been central to a number of key global health interventions, and our dedication to saving lives through research and treatment is a pivotal example of how

the challenges of the health MDGs can be met.

In addition to Mr. Ban and the permanent representatives, panel members included John D. Clemens, MD, icddr,b executive director; Leith Greenslade, MDG Health Alliance's Child Health Pillar co-chair; Dr. Scott Ratzan, UN Innovation Work Group co-chair and Global Corporate Affairs for AB-InBev vice president; and Sanjay Wijesekara, UNICEF's Water, Sanitation, and Hygiene chief and icddr,b board member.

It was a pleasure to welcome former executive directors Dr. William B. Greenough and Dr. David A. Sack to the event, which gave incoming Executive Director Dr. Clemens an opportunity to share his vision for the future of icddr,b. Dr. Clemens spoke of "continuing to serve as a test bed for the development and evaluation of innovative interventions for public health."

He emphasised that icddr,b is well-positioned to continue making contributions and developing solutions to major, intractable health challenges that require "big science" and international collaboration. ■



Former icddr,b executive directors, Drs. William B. Greenough and David A. Sack, joined current Executive Director John D. Clemens, MD, (centre) at the UN event.

Post-epidemic Evaluation in Sierra Leone

Dr. Azharul Islam Khan, chief physician and head of Dhaka Hospital's Diarrhoeal Diseases Unit, travelled to Sierra Leone last spring at the invitation of GOARN (Global Outbreak Alert and Response Network) and the World Health Organization (WHO). There, he conducted a post-epidemic evaluation of the 2012 cholera outbreak response.

The cholera outbreak killed almost 300 people and affected 12 of the country's 13 districts with a cumulative of 22,971 reported cases and a case fatality rate of 1.30 percent. It led to the government declaring a public health emergency, setting up a presidential taskforce on cholera, and establishing a Cholera Control and Command Centre to provide coordination and technical assistance. Health development partners, including icddr, were called on to provide assistance in managing the outbreak.

To assess the overall outbreak response and preparedness initiative, Dr. Khan compiled findings on case management, infection control and logistics. He undertook a complete audit of 49 deaths from 13 health facilities across seven districts. "I hope that the evaluation report will be a valuable tool for a multi-sectoral/multi-year plan to combat cholera outbreaks in



Technical expert Dr. Khan with a WHO consultant (left) and a clinician from Sierra Leone (centre) during a previous visit to the country in 2012.

Sierra Leone, as well as a useful resource in other African countries during cholera endemics," said Dr. Khan.

Among the recommendations were to include and coordinate all relevant ministries; add health emergency response into the national budget; develop guidelines for resource mobilisation and allocation; increase training for health workers and incentives to recruit rural clinic staff; provide district support and supplies for documenting outbreaks; standardise protocols; provide community education; enforce sanitation laws and improve waste management; and develop a cholera-specific field

assessment tool to ensure quality of care, planning, implementation and evaluation of health facilities.

The evaluation was jointly supported by the national cholera task force multi-sectoral coordination committee, chaired by the Ministry of Health and Sanitation (MoHS). WHO experts and GOARN partners.

Dhaka Hospital Chief Physician Dr. P.K. Bardhan and Environmental Microbiology Lab Head Dr. Md. Sirajul Islam followed Dr. Khan to Sierra Leone to share their technical expertise with clinicians and professionals working in the country's government laboratories.

The icddr team's original visit to Sierra Leone was sponsored by AmeriCares as part of the Clinton Global Initiative commitment that icddr signed with the nonprofit humanitarian organisation in 2011. icddr and AmeriCares are committed to preparing for and responding to outbreaks of cholera and other causes of acute watery diarrhoea (AWD) with an emergency preparedness initiative.

The cholera preparedness platform (cholera kit and global response plan) secures necessary supplies, expertise and financial resources to ensure a timely response to international requests for support during the critical early stages of a cholera outbreak. ■



Photo courtesy, WHO

Cross section of partners at the presentation of the draft report of the post-epidemic evaluation at the Ministry of Health and Sanitation, Freetown.

Understanding Diarrhoeal Diseases



Diarrhoeal disease is the second leading cause of death in children under five years old. It is preventable and treatable.

The Centre for Nutrition & Food Security has contributed to a new international study that provides the clearest picture yet of the impact and most common causes of diarrhoeal diseases.

The Global Enteric Multicenter Study (GEMS) is the largest study ever conducted on diarrhoeal diseases in developing countries, enrolling more than 20,000 children under age five from seven sites across Asia and Africa. The Bangladesh site was Mirzapur, a sub-district just north of Dhaka. Study findings were published in *The Lancet* this July and provide guidelines on prevention, treatment and research on childhood diarrhoeal diseases.

In Bangladesh, diarrhoea is no longer a major killer of children under five—the latest survey has it ranked ninth. However, globally 760,000 children die annually, and it is ranked second only to pneumonia as the leading cause of death among young children.

“Better information is critical to changing the way we fight diarrhoeal diseases,” said Dr. A.S.G. Faruque, principal investigator at the Bangladesh trial site. “GEMS shows us clearly how

we can target our approach and where we need to invest our resources to make a difference.”

According to the study, “Interventions targeting four pathogens (rotavirus, *Cryptosporidium*, ST-ETEC and *Shigella*) can substantially reduce the burden of moderate-to-severe diarrhoea. New methods and accelerated implementation of existing interventions (rotavirus vaccine and zinc) are needed to prevent disease and improve outcomes.”

Funded by the Bill & Melinda Gates Foundation and coordinated by the University of Maryland School of Medicine’s Center for Vaccine Development, GEMS adds to the scientific evidence cited in the first-ever Integrated Global Action Plan for the Prevention and Control of Pneumonia and Diarrhea (GAPPD) recently announced by the World Health Organization and UNICEF. ■

World Malaria Day Observed

Bangladesh successfully reduced deaths from malaria by 60 percent—three years ahead of its projected 2015 Millennium Development Goal. However, work remains to be done in certain areas of the country. The Centre for Population, Urbanisation & Climate Change’s malaria project marked World Malaria Day on 25 April with a community rally and presentation in Bandarban.

Located in the Chittagong Hill Tracts of southeastern Bangladesh, Bandarban is one of the three most malaria-prone districts of the country. In recent years, the battle against this mosquito-transmitted parasitic infection there has faced the challenge of multi-drug resistance. The remote nature of the region, lack of trained medical personnel and inci-

dence of asymptomatic malaria continue to hamper detection and treatment.

Representatives from icddr, BRAC and the Bandarban Hill District Council discussed these issues and more with the local population. Medical Officer Dr. Chai Shwai Prue presented icddr, b research, conducted in the region since 2006 and being incorporated into the National Malaria Control Programme.

Our *Mapping Malaria Epidemiology in Bangladesh* regional study, for instance, highlights the usefulness of mobile



Deputy Commissioner Mr. K.M. Tariqul Islam and Civil Surgeon Dr. Maung Te Zaw with the rally on the World Malaria Day.

phones in detecting malaria cases in remote areas. Field Research Manager Jacob Khyang noted that, “of the 509 symptomatic malaria cases diagnosed during the two-year study period, 265 (52 percent) were detected because of an initial mobile phone call.” ■

Towards a Polio-Free World

Dr. K. Zaman, senior scientist and epidemiologist, joined almost 500 leading scientists and health experts from 80 countries around the world on 11 April to endorse, on behalf of icddr, a comprehensive new strategy to secure a lasting polio-free world by 2018.

The *Scientific Declaration on Polio Eradication* urges governments, international organisations and civil society to seize the historic opportunity to protect the world's most vulnerable children from this debilitating but preventable disease.

"Polio cases are at an all-time low, falling a staggering 99 percent from 350,000 in 1988 to just 223 in 2012. The disease is now endemic in only three countries—Afghanistan, Pakistan and Nigeria. Now is the time, for concerted action," said Dr. Zaman.

The declaration calls for full funding and implementation of the Eradication

& Endgame Strategic Plan developed by the Global Polio Eradication Initiative (GPEI). The plan seeks to eradicate both the wild poliovirus and the circulating vaccine-derived poliovirus. (In very rare instances, the vaccine-virus can genetically change into a form that can paralyse.) It estimates that ending the disease entirely by 2018 can be achieved with an investment of approximately US\$5.5 billion and calls for adequate funding.

icddr is contributing to the fight against polio by undertaking vital research on the efficacy of polio vaccines and the design of schedules for national immunisation programmes. At present,



two major studies (see sidebar) are being conducted in collaboration with the US Centers for Disease Control & Prevention (CDC). Their findings will help guide the Eradication & Endgame Strategic Plan. ■

Informing Public Policy

An *Assessment of the immunogenicity of three doses of bivalent, trivalent or type one monovalent oral poliovirus vaccines provided at 2 or 4 week intervals* study is being conducted in infants six weeks of age. The randomised clinical trial will assess the immune response in 1,000 infants following administration of three types of oral poliovirus vaccine: trivalent OPV (tOPV), monovalent OPV type 1 (mOPV1) and bivalent OPV types 1 and 3 (bOPV).

The results of this study will guide the implementation of new strategies that may: 1) improve the quality of the response to outbreaks following importation of wild poliovirus type 1 by shortening the interval at which

several OPV doses are provided, 2) prevent alternate outbreaks of type 1 and type 3 poliovirus by using bOPV in outbreak responses in countries with weak routine immunisation systems, and 3) prevent the emergence of type 2 vaccine-derived poliovirus through the replacement of tOPV with bOPV in immunisation campaigns and routine immunisation programmes.

With the interruption of polio transmission, Bangladesh is at a critical juncture. Steps to reduce the risks associated with the emergence of vaccine-derived poliovirus type 2 (VDPV2) include testing a potential new combination of existing polio vaccines to reduce risks of VDPV2 emergence in Bangladesh.

An ongoing study in Mirpur, entitled *Phase III clinical trial to assess the immunogenicity of a sequential dose of fractional inactivated polio vaccine (f-IPV) and oral polio vaccine (OPV)* will enroll 1,170 six-week-old infants and compare immunogenicity of the poliovirus types 1, 2 and 3 between different study arms. The results of the study will guide the design of a new routine immunisation schedule for children that eliminates the risks of paralysis due to vaccine-derived poliovirus from type 2.

Drawing on our expertise in the field of vaccine science, icddr is making a significant contribution to the global effort through generating evidence-based research to inform public policy. ■

Technical Assistance to North Korea

Dr. Tahmeed Ahmed, director of the Centre for Nutrition & Food Security, travelled to the Democratic People's Republic of Korea (DPRK) in March at the invitation of the country's Ministry of Public Health (MOPH) to train a core team of senior MOPH paediatricians on inpatient management of severe acute malnutrition (SAM).

Despite best efforts by the MOPH since the late 1990s, when it adopted WHO-recommended protocols for the management of SAM, the 2012 national nutrition survey showed that 27.9 percent of children under five years are stunted and 7.2 percent are severely stunted, with four percent suffering from acute malnourishment.

A review of the national community-based management of acute malnutrition approach, first introduced in 2008, identified the need to update guidelines and training materials based on new international findings on the inpatient



Dr. Tahmeed Ahmed (circled) with SAM training participants.

management of SAM.

Tailoring these to the country context was equally important. The MOPH, with support from UNICEF, invited Dr. Ahmed as a technical consultant to Pyongyang and Hamhung to assist. Previously, staff had participated in SAM training at icddr in 2011.

Dr. Ahmed reviewed the national guidelines on SAM, suggested changes and updated training materials. The programme

trained 15 senior paediatricians in the case management of SAM and established a core team of facilitators, who can train and mentor health professionals.

Thirty-one senior doctors of provincial paediatric hospitals from the 10 provinces of the DPRK were trained in the case management of SAM. Dr. Ahmed also organised trainings on the management of diarrhoeal disease and childhood tuberculosis, other common illnesses in the country. ■

Grand Challenges Award for Food Safety Campaign



Dr. Aliya Naheed

Dr. Aliya Naheed, Centre for Equity & Health Systems associate scientist, was among 59 health innovators worldwide to receive this year's Grand Challenges Canada (GCC) award on 30 April. The US\$100,000 prize will allow her to carry out her innovative research to promote food safety among street vendors in Bangladesh. Dr. Naheed's proposed will evaluate the impact of behaviour-change communications and hygiene interventions on street

vendor practices in Dhaka.

"In Bangladesh, a relatively large segment of the urban population is heavily dependent upon low-cost and easily available street food," said Dr. Naheed. "However, safety is lacking due to contamination by sewage and unhygienic preparation." Dr. Naheed proposes delivering behaviour-change messages to vendors via a health voucher system.

By agreeing to participate, 100 mobile vendors will receive free healthcare services through the existing government urban primary healthcare facilities, with the cost of treatment borne by the study. The study also will provide water storage vessels with Halotab purification tablets, soap and a water-free gel hand sanitiser to use in food preparation.

Health education sessions will promote

safe food handling practices to the vendors, with messages reinforced in weekly individual follow-up visits by the study team and small monthly group sessions. The same behaviour-change materials will be used for community health education sessions to promote awareness about street food safety and neighbourhood interventions to customers.

Increased awareness within the community about street food safety, the study asserts, will make those vendors who use safe practices more attractive to customers. With this model, vendors and their patrons mutually reinforce each other to everyone's benefit. The intervention's demonstrated success would help to scale-up the proposed model through the existing municipal urban primary healthcare programme. ■

Dr. Richard Smith Appointed BoT Chair



tution," said Dr. Smith in his address to staff. "icddr,b has made a major contribution to improving the health of people in Bangladesh and other low-income countries, and I'm confident it can do still more."

An alumnus of Edinburgh University, Dr. Smith is a medical doctor with a long and distinguished career

for his services to medical journalism.

Dr. Smith is currently director of UnitedHealth's Chronic Disease Initiative, having served as chief executive of UnitedHealth Europe from 2004 to 2007.

Together with the National Heart, Lung, and Blood Institute (one of the U.S. National Institutes of Health), the initiative funds 11 centres in low- and middle-income countries doing research and building capacity on non-communicable disease.

In addition to his academic pursuits, Dr. Smith has extensive experience in fundraising and management, with a management science degree from the Graduate School of Business at Stanford University, California. We welcome Dr. Smith and look forward to working with him to achieve our Strategic Plan 2020. ■

The Board of Trustees announced Dr. Richard Smith as its new chair at the bi-annual meeting this June in Dhaka. Dr. Smith takes over from Dr. Elizabeth Mason, who has stepped down due to her ongoing commitments at the World Health Organization. She will remain a board member.

"I feel honoured to be associated with icddr,b—it is a remarkable insti-

in public health that includes medical publishing, teaching, lecturing and serving on numerous other boards.

He is best known for his pioneering work at the *BMJ* (formerly the *British Medical Journal*), where he served as editor, in addition to chief executive of the BMJ Publishing Group.

In January 2000, he was awarded a CBE (Commander of the British Empire)



Canada



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