

# glimpse

Hand Washing for Better Nutrition

Rising Stars in Global Health

Award-Winning Research



# Editor's Note



John D. Clemens, MD  
Executive Director

Welcome to the year's first edition of *Glimpse*, in which we share news of icddr's most recent achievements. I am honored to introduce this issue as the new executive director. This is an extraordinary time to be working together to bring improved understanding and effective solutions to the health problems of people in need. Special thanks to Dr. Abbas Bhuiya for his leadership as interim executive director prior to my arrival.

In the last three months of 2012 icddr doctors and nurses treated 30,137 patients at the Dhaka Hospital, 7,405 at the Matlab Hospital and 4,166 at the Mirpur Treatment Centre. That is 4,663 more patients treated than in the previous quarter. A rise

in seasonal illnesses like pneumonia, in part, accounts for the increase. Lower respiratory tract infections are the leading cause of death in young children in Bangladesh. Indoor exposure to particulate matter (PM), produced by the burning of biomass fuel for cooking and heating, increases the risk for pneumonia among young children.

According to icddr research, interventions to reduce biomass burning for cooking could result in a daily PM reduction of 40 percent among low-income residents of Dhaka. There is some evidence to suggest that interventions could also lower the incidence of low birth weight (LBW) babies, to which 28 percent of all global neonatal deaths are directly attributed.

A statistician with our Centre for Reproductive Health is leading a study to see if the intervention reduces LBW. A modified, clean-combustion cooking stove, as part of a model kitchen, could have a great impact on both child and maternal health. This is among three proposals that won a Rising Stars in Global Health award in November from Grand Challenges Canada.

icddr is committed to sharing the knowledge it generates. In the past quarter, a number of senior scientists presented their research at two international scientific conferences and

published 47 original papers, four books/chapters and four letters. Our Technical Training Unit offered three courses for national and international students and public health professionals, and we collaborated on Bangladesh's first Field Epidemiology Programme and held the first international Conference on Biosafety & Biosecurity.

Reflecting a commitment to share our expertise globally, we continued our work in Africa. Dr. Azharul Islam Khan, head of the Dhaka Hospital's Diarrhoeal Diseases Unit, travelled to the world's largest refugee camp in Dadaab in Northern Kenya. From 6 to 15 December 2012, he worked to build capacity among healthcare workers and laboratory technicians in cholera case management and diagnosis. This was a follow-up to training conducted in May 2012 as part of our Global Cholera Preparedness Initiative with AmeriCares.

None of this work would be possible without support from our funders. We are grateful to DFID for its ongoing support and to DFID teams—Research Evidence Division (London) and Bangladesh—for their work in developing the latest funding commitment of GB£20 million for institutional and research support until March 2017. We thank all of our partners and donors for the valuable support. ■

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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# Leading the Way in Biosafety & Security

Endorsing biosafety and biosecurity in biomedical research and diagnostic laboratories is an international priority, given the global threat of terrorism. icddr works to foster and enhance biosafety and biosecurity principles, practices and capabilities in the research and diagnosis of disease-causing agents in Bangladesh.

We partnered with the Bangladesh Biosafety & Biosecurity Association (BBBA), and other sponsors, to organise the country's first international conference on the topic on 6-7 December 2012. Held at Dhaka University, Biosafety & Biosecurity in Developing Countries offered a platform for developing a strategic capacity-building road map.

The December conference builds on the work of icddr's Biosafety Head Dr. Asadulghani, who founded the BBBA and leads our Biosafety Level 3 (BSL 3) Laboratory—the first fully certified biosafety laboratory of its kind in the country.

Since beginning operations on icddr's main campus in 2010, the BSL 3 Lab's internationally certified personnel have assisted the Government of Bangladesh with research on deadly diseases and trained practitioners in the safe and secure handling of potentially infectious microorganisms and other biological hazards. ■

## Rising Stars in Global Health

Grand Challenges Canada (GCC) awarded US\$100,000 to three icddr researchers in round one of its Rising Stars in Global Health programme on 24 November 2012. The entries from icddr were among 51 winners from 18 low- and middle-income countries, chosen for their innovative approach to solving global health problems.

The three winning projects from icddr are: 1) *Simple Inexpensive Safety Kitchen and Low Birth Weight in a Resource-poor Setting: A Randomised Controlled Trial*; 2) *Use of Mobile Phones for Improving Low Immunisation Coverage among Children Living in Rural Hard-to-reach Areas and Urban Streets of Bangladesh* and 3) *Self-financed Health Scheme of Labour Cooperative for Accessing Quality Healthcare of Informal Sector Workers*.

### The 100-Dollar Kitchen



A demonstration model of the 100-Dollar Kitchen with improved cook stove in Shahjadpur sub-district.

Low birth weight (LBW) is a major adverse pregnancy outcome in resource-poor countries, accounting for about 28 percent of all global neonatal deaths. Women's exposure to smoke from biomass cooking fuels has an association with LBW. Nevertheless, the International Energy Agency estimates that biomass fuels, such as wood and dung, will continue to provide 30 percent of global energy in resource-poor settings through 2050.

Mr. Anisuddin Ahmed, statistician with the Centre for Reproductive Health, has made simple modifications to transform

the ordinary stove, used in rural households in most developing countries, into a simple and environmentally friendly model. With GCC funds, he will conduct a cluster randomised control trial of a locally made, inexpensive, prefabricated model with an improved clean-combustion cook stove—called the 100-Dollar Kitchen for its low cost. Volunteering for the study are 1,200 pregnant women at 8- to 12-weeks of gestation.

### Better Immunisation Coverage

Full child and maternal immunisation could save millions of lives between now and 2015. In Bangladesh, immunisation coverage among children living in rural hard-to-reach districts and urban streets remains at just 42 to 60 percent. To address the problem, Dr. Jasim Uddin, scientist with the Centre for Equity & Health Systems, developed an intervention using mobile phones.

His research, funded by the GCC award, is conducted in collaboration with local mobile phone companies. It will establish a computerised database, auto registration and a reminder system to register every birth and corresponding location electronically. With this intervention, Dr. Uddin hopes to improve immunisation rates among children living in areas with low coverage.

### A Universal Health Coverage Plan

Reliance on out-of-pocket payments in low- and middle-income countries results in a heavy economic burden and/or barrier to adequate healthcare. Dr. A.M. Jahangir Khan, health economist with the Centre for Equity & Health Systems, is researching how workers in the informal sector can be brought into universal health coverage through cooperative-based, self-financed health schemes.

icddr is a breeding ground for scientific talent and known for developing innovative, low-cost, scalable solutions. We congratulate our Rising Stars in Global Health award winners! ■

# Making the Hygiene/Nutrition Connection

Could hand washing put Bangladesh on a new path to public health change? icddr believes it can. It celebrated Global Hand Washing Day in mid-October 2012 with an awareness-raising campaign at a Dhaka-area high school.

The Centre for Communicable Diseases contributed to the celebrations, in collaboration with the Bangladesh Department of Public Health Engineering, UNICEF, Unilever Bangladesh and others. The programme stressed the importance of hand washing with soap and water to prevent disease.

This simple intervention can reduce—by 24 to 40 percent—the incidence of diarrhoea and pneumonia, which are the two biggest killers of children in Bangladesh.

But while tackling mortality is crucial, addressing morbidity is just as important. icddr research shows that reducing childhood illness through better hygiene practices can go a long way towards ending the devastating cycle of malnutrition in Bangladesh.

Through its public health partnerships, icddr is exploring the connection between water, sanitation, hygiene (WASH) and nutrition for those living in poverty.

Centre for Nutrition & Food Security Director Dr. Tahmeed Ahmed discussed the connection at a 17 October Dhaka roundtable, Bridging WASH and Nutrition. Citing results of the latest *Bangladesh Demographic and Health Survey*, he said, “The prevalence of stunting, which denotes chronic malnutrition, is as high as 41 percent in Bangladesh—higher than in Uganda, Sudan and Nepal.

“But even if we scale up all direct nutritional interventions, we can perhaps

prevent stunting by only 30 percent. This is because poor nutrition is also a result of the lack of other interventions, including those related to water, sanitation and hygiene.”

Dr. Ahmed’s study found high levels of contamination in complementary food, given to children over six months of age. By one account, fewer than five percent of mothers wash their hands before feeding their babies with their fingers. “The small intestine of the infant becomes home to pathogenic germs and bacteria that not only cause diarrhoeal disease, but

if it can be performed at a convenient location that contains a consistent stock of soap and water,” Dr. Unicomb said.

A&T integrated findings from the collaborative study into its existing complementary feeding intervention to improve the health of children ages 6 to 23 months.

icddr likewise partnered with UK-based WaterAid in October to conduct a nationally representative baseline survey of hygiene facilities, knowledge and practices in Bangladesh. Findings will inform areas of focus for the National Hygiene Promotion Strategy.

Partnering to design, test and evaluate interventions is the WASH Research Group’s mandate. Most recently, it applied its evaluation of the two-year, 30-million-person UNICEF Sanitation, Hygiene Education and Water Supply in Bangladesh (SHEWA-B) project to the Gates Foundation-funded *WASH Benefits* pilot study. Analysing data from this evaluation revealed that chil-

dren of mothers who washed their hands during food preparation and after fecal contact had significantly less diarrhea.

Former CCD Head Dr. Stephen P. Luby, Professor of Medicine, Stanford University, USA, led the *WASH Benefits* pilot that will inform a larger, randomised control trial to measure the impact of water, sanitation, hand washing and nutritional interventions during the first two years of life in rural Bangladesh.

The trial will take place over the next two years, in collaboration with the Centre for Nutrition & Food Security. Findings will inform Government of Bangladesh WASH and nutrition initiatives. ■



Students at a Dhaka-area high school test the icddr-designed hand washing stations for Global Hand Washing Day 2012.

also change the mucosal architecture of the small intestine and prevent the absorption of nutrients. This ultimately leads to malnutrition,” he noted.

The CCD’s WASH Research Group Head Dr. Leanne Unicomb says the connection between WASH and nutrition continually surfaces in her research. When Washington, DC-based Alive & Thrive (A&T) considered adding hygiene as part of a nutrition intervention, it contacted icddr to conduct the *Collaborative Study on Hand Washing and Child Feeding*, released in April 2012.

“Our study of 2,100 families highlighted that hand washing can be readily practiced



# Moving Forward in the Fight Against Cholera



Dr. Azharul Islam Khan (centre) with some of the participants and organisers at the end of a training session in Dadaab, Kenya.

The *New York Times* applauded icddr's recent cholera response work in Sierra Leone, Kenya and Somalia on 12 December 2012. The newspaper credited us with preventing a "significant number of deaths," thanks to the Global Cholera Preparedness model we announced with AmeriCares at the 2011 Clinton Global Initiative (CGI) annual meeting in New York. The initiative combines icddr's technical support in treating cholera and other diarrhoeal diseases with the US humanitarian organisation's expertise in delivering medical supplies in emergency situations.

Titled *Moving Forward in Tough Times*, the article is the third mention for icddr this year in *The New York Times*. Such coverage is a direct result of the Communications & Development team's efforts to ensure that icddr receives proper credit for its achievements and becomes better

known within the broader global health community. The article can be found at <http://opinionator.blogs.nytimes.com/2012/12/12/making-progress-in-hard-times/>.

icddr experts not only work on-site during a cholera outbreak, but also subsequently return to build capacity among healthcare workers and laboratory technicians in case management and diagnosis. These experts include Dr. Azharul Islam Khan, Head of the Dhaka Hospital's Diarrhoeal Diseases Unit. Dr. Khan visited the world's largest refugee camp in Dadaab in northern Kenya from 6 to 15 December 2012.

The trip was a follow-up to training programmes held in May 2012 as part of the Global Cholera Preparedness initiative and was supported by the United Nations High Commissioner for

Refugees (UNHCR) and the International Medical Corps. Dr. Khan first travelled to the region with an icddr emergency response team in September 2011.

This was in partnership with WHO, UNICEF and Muslim Aid to combat a cholera outbreak in the Somali capital of Mogadishu and in the refugee camps in neighbouring Kenya.

During the team's first visit, it reviewed existing control and prevention guidelines and provided training to health personnel and auxiliary staff from around 70 NGOs and government organisations. For his follow-up visit this past December, Dr. Khan provided refresher training to 30 local clinicians caring for internally displaced people and refugees from neighbouring Somalia. He also oversaw the clinicians as they, in turn, trained community health workers on community-based diarrhoeal disease management.

During the sessions, priority was given to logistics planning and supply distribution. Safe environmental practices were identified as strong elements in tackling diarrhoeal diseases at the community level. "It was a pleasant surprise to find the high level of confidence and hope among healthcare providers," said Dr. Khan. "It was very satisfying to see that clinicians I had trained earlier had successfully combated a diarrhoea/cholera outbreak in July." ■

## In Partnership with DFID

icddr signed a partnership agreement with the UK's Department for International Development (DFID) in mid-November 2012. The resulting grant provides GB£20 million as institutional and research support for icddr through March 2017. This funding will help generate research

in key areas including reproductive, maternal and child health and nutrition with a particular focus on the most vulnerable.

Through this agreement, icddr will produce research on national trends in health, nutrition, poverty reduction and climate change.

Like icddr, DFID believes that high-quality research in strategic areas,

innovative solutions to public health problems and translation of knowledge into policy and practice will have significant impacts on health and poverty both in Bangladesh and beyond. DFID has been a strong supporter of icddr for more than a decade, and this new agreement will strengthen the partnership further. We thank DFID for its generous support. ■

# International Recognition for Research

icddr received international recognition for innovative research at two global health events last quarter—the Second Global Symposium on Health Systems Research (HSR) in Beijing, China, and the 61<sup>st</sup> American Society of Tropical Medicine and Hygiene (ASTMH) annual meeting in Atlanta, Georgia, USA.

A group of 30 icddr researchers and scientists participated in the Beijing Symposium, hosted by the Peking University Health Science Center from 31 October to 3 November 2012. Researchers,

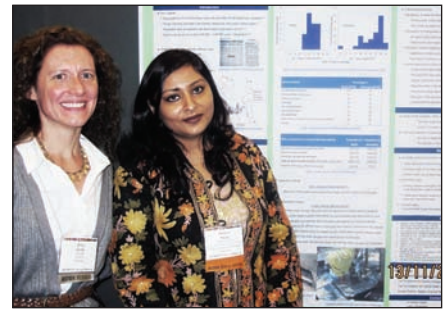


Scientist Dr. Jasim Uddin with his poster at the Beijing symposium.

policy-makers, funders, implementers, civil society, media representatives and other stakeholders gathered for the event. They shared new evidence, identified opportunities and gaps, built understanding across disciplinary boundaries and discussed ways to support HSR in low- and middle-income countries.

Several icddr researchers presented papers during the thematic plenary sessions, while more than a dozen others made poster presentations highlighting their work. Of the 500 posters displayed during the symposium, icddr's *Improving Low Child Immunisation Coverage in Rural Hard-to-Reach Areas of Bangladesh: Impact of Package of Interventions* was one of only nine winners.

The ASTMH conference is the largest gathering of its kind, bringing together world-class experts in malaria, polio, dengue fever, cholera, tick-borne diseases and drug-resistant tuberculosis to discuss global healthcare, tropical medicine and



Dr. Farhana Haque (right), with Epidemiologist Dr. Emily Gurley, in front of her poster in Atlanta.

the control and prevention of infectious and other diseases.

At this year's 11-15 November meeting, the ASTMH/Bill & Melinda Gates Foundation Travel Award went to Dr. Farhana Haque, outbreak investigator with the Centre for Communicable Diseases. The award recognised the quality of her abstract, *Cholera Outbreaks in Urban Bangladesh in 2011*. The work of both Dr. Uddin and Dr. Haque highlights the contributions that icddr research makes to reducing the public health burden of communicable disease in Bangladesh. ■

# New Facility Helps Battle Kala-azar

Visceral leishmaniasis (known locally as kala-azar) is a serious public health problem in Bangladesh, where 20 million people (18 percent of the total population) are at risk, with a trend of rising incidence. There is no vaccine for this disease and, if left untreated, it can have a fatality rate as high as 100 percent within two years.

icddr's years of research into kala-azar prevention, detection, diagnosis and treatment provides valuable inputs into the Government of Bangladesh's drive to eliminate kala-azar from the country by 2015. The most recent initiative is the opening of the Kala-azar Research Centre (KRC), first of its kind in South Asia.

Located in the Mymensingh district of northern Bangladesh, one of the most endemic kala-azar regions, the 25-bed

KRC will provide free treatment for kala-azar patients for the next five years.

The KRC is the result of collaboration between the Bangladesh Ministry of Health and Family Welfare, the Drugs for Neglected Diseases initiative (DNDi), the Japan International Cooperation Agency (JICA) and the Japan Science and Technology Agency (JST). icddr developed the KRC's research infrastructure, JICA donated laboratory equipment worth US\$371,000 and DNDi contributed to the structural renovation of the Mymensingh



Inauguration of the Kala-azar Research Centre in Mymensingh.

Medical College's SK Hospital, where the KRC is based.

Kala-azar (Hindi for "black fever") is caused by the *Leishmania donovani* parasite, transmitted by the bite of the infected female sand fly, which attacks the internal organs, or viscera. ■

# Boosting Healthcare Systems

icddr,b, GSK (GlaxoSmithKline) and AmeriCares have entered into a two-year partnership, worth almost US\$500,000. This will enable icddr,b to build the capacity of three hospitals in Bangladesh through training and improved standard of care.

GSK has made a commitment to reinvest 20 percent of profits into local markets. The British pharmaceutical giant expressed interest in funding the initiative after icddr,b and US humanitarian organisation AmeriCares made a *Commitment to Action* at the 2011 Clinton Global Initiative (CGI) annual meeting.

With this funding, icddr,b will implement Clinical Governance, a codified system used in the UK, and will train around 500 health workers in two non-governmental hospitals and one governmental hospital to improve standards of clinical practice.

These hospitals already collaborate in



Left to right: icddr,b's Head of Clinical Governance & Systems Lutfe Ara, Deputy Executive Director Dr. Abbas Bhuiya and GSK's Managing Director Mr. M. Azizul Huq.

Bangladesh's national influenza surveillance project. Together with the Government of Bangladesh's Institute of Epidemiology and Disease Control Research (IEDCR) and the US Centers for Disease Control &

Prevention, icddr,b manages this network.

The project will work to increase the number of qualified healthcare workers and address the inequity in healthcare between rich and poor. ■

# icddr,b Joins Global Action for World AIDS Day



Dr. Tasnim Azim giving a presentation at the National AIDS Congress 2012.

Researchers from the Centre for HIV & AIDS joined with the Bangladesh Ministry of Health and Family Welfare's National AIDS/STD Programme to mark World AIDS Day on 1 December 2012.

The event began with a rally in Dhaka attended by thousands of activists. As one of the key stakeholders of the national HIV/AIDS response, icddr,b took the lead during the scientific sessions and

National AIDS Congress that followed. Staff also distributed HIV/AIDS materials and publications and offered voluntary counselling and testing (VCT) sessions.

icddr,b remains concerned that, while Bangladesh is categorised as a low-prevalence country (last surveillance conducted in 2007 found national prevalence of HIV < 1%), the formal and informal sex trade, low levels of condom use and unsafe injection practices

make the country vulnerable to HIV. icddr,b works to prevent the escalation of the HIV epidemic through monitoring and evaluation, enhanced understanding of underlying factors and evidence-based prevention programming, training and clinical services.

The theme of the congress, set by the United Nations, was ambitious—Getting to Zero: Zero New Infections, Zero Discrimination and Zero AIDS-Related Deaths. The programme laid out 10 goals to achieve by 2015. Centre for HIV & AIDS Director Dr. Tasnim Azim, in her presentation, spoke about epidemiological scenarios, trends and projections in Bangladesh.

Other icddr,b speakers provided an overview of the HIV prevention programme for MSM (Men Who Have Sex with Men) and *Hijras* (transgendered people) in Bangladesh and a summary of key findings and recommendations from the two days of sessions. ■



# Introducing icddr,b's New Executive Director



Executive Director John D. Clemens, MD giving his welcome address to icddr,b staff at the main campus.

he was awarded the Sabin Gold Medal in 2010.

Dr. Clemens worked as a research scientist at icddr,b from 1983 to 1988. He has served as chief of epidemiology at the University of Maryland's Center for Vaccine Development and at the National Institute of Child Health and Human Development and was founding director-general of the International Vaccine Institute in Seoul, Korea.

On behalf of the staff and board, Board of Trustees Chair Dr. Elizabeth Mason, welcomed Dr. Clemens upon his appointment: "He is an outstanding individual, who is admired and respected in his field. We have every confidence that Dr. Clemens will continue to build icddr,b's reputation as a leading public health institution, committed to generating and translating knowledge into practice and policy." ■

icddr,b's new executive director, John D. Clemens, MD is an expert in vaccine development and evaluation in developing countries. He comes to us from the University of California Los Angeles' Fielding School of Public Health, where he was professor and vice chairman of epidemiology and founding

director of the Center for Global Infectious Diseases.

Dr. Clemens' scientific career has spanned academia, the US government and international organisations. He led the team that developed the first low-cost oral vaccine against cholera, which was recently deployed in Haiti. In recognition of his work,



icddr,b thanks its core donors for their continued support



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