On June 16th, we celebrate the International Day of the African Child. In light of this important day, we are highlighting some of the significant challenges and differences that children face in developing countries versus developed countries.

The first 28 days of life – the neonatal period – are the most vulnerable time for a child’s survival. Children face the highest risk of mortality in their first month of life. Globally, 2.6 million children died in the first month of life—approximately 7,000 newborn deaths every.

However, when looking at this figure more closely, it becomes apparent that the burden of mortality is extremely different between developed and developing countries. For comparison, in Uganda in 2017, between 30,000 and 46,000 neonates died, whereas in Canada it was between 1,000 to 1,500.

If we consider the root causes, these babies are not dying from medical causes such as prematurity or pneumonia. They are dying because their families are too poor or marginalized to access the care they need. Of all the world’s injustices, this may be the most fundamental.

Low levels of access to maternal and newborn health services provided by skilled health providers correlate strongly with high newborn mortality rates. In Somalia, a country with one of the world’s highest newborn mortality rates (39 deaths per 1,000 livebirths), there is only one doctor, nurse or midwife for every 10,000 people. In the Central African Republic, where the newborn mortality rate is 42 deaths per 1,000 livebirths, there are only three skilled health workers per 10,000 people. In comparison, Norway, which has a newborn mortality rate of 2 deaths 1,000 livebirths, has 218 skilled health workers per 10,000 people.

Improving access to maternal and newborn health services is therefore a necessary first step in bringing down rates of newborn mortality. And yet, if the quality of services is inadequate, the mere presence of a
On May 3rd, 2018, a group of expert clinicians, researchers and educators met with a goal to advance collaborative efforts on sepsis reduction. Hosted by the Center for International Child Health and Healthy Starts at the BC Children’s Hospital Research Institute, this was a catalytic opportunity for collaboration and cooperation.

Sepsis has been named as the most expensive in-patient cost in American hospitals in 2014 at nearly $27 billion each year. Forty percent of patients diagnosed with severe sepsis do not survive. In Canadian hospitals, sepsis is more common than cardiovascular disease, and has a higher fatality rate. In children, sepsis is the most common cause of mortality in the developing world. Despite its primacy, it is largely neglected globally, and especially in resource-poor environments.

As the roundtable discussion started, it became increasing evident that one of the largest barriers to neonatal sepsis is the lack of a consensus driven definition. Followed by one participants comment; “You can’t study what you can’t define.” In practice, a syndromic definition is often used in resource-limited settings. This is not ideal as it will identify too many patients causing high sensitivity and low specificity.

It was also argued that the current definition of sepsis may have the wrong focus. The current definition requires an infection by invasive pathogens. However, an inflammatory process could drive sepsis. If the definition is solely focused on infections, it may miss a large portion of patients.

After the roundtable discussion, there was a full day of speakers and presentations on various topics related to sepsis that was open to the general public. The event gathered significant participation and momentum to continue to drive efforts to advancing diagnosis and treatment of sepsis globally.

Learn more about the CICH’s efforts to combat sepsis.
On April 19th, the Center for International Child Health hosted our first ever Global Health Showcase Dinner funded by Global Affairs Canada to spotlight various efforts and programs in global health being kick-started in Vancouver. Amongst the 30 attendees, were medical residents, physicians, nurses, specialists, researchers, and fundraisers, all with a common interest in global health.

The evening showcase of global health initiatives included, Dr. Srinivas Murthy’s talk on the rise of Diphtheria in Myanmar/Bangladesh, Sumedha Sharma’s presentation of PRE-EMPT: a program reducing the global impacts of pre-eclampsia, an impactful video showcasing the Smart Discharges program in Uganda, and Dr. David Goldfarb’s overview of a scalable neonatal package of care in Malawi.

Dr. Odion Kalaci and Dr. Mara Tietzen spoke about their experience taking part in global health electives in Africa. Dr Kalaci has gained valuable experience in Ghana and China, while Dr. Tietzen worked in South Africa. Both residents expressed their passion to make a difference abroad, but noted that the experience had an even greater impact on their personal and professional development back home in Canada.

Catering for the event was provided by Tayybeh: A Celebration of Syrian Cuisine an organization that supports Syrian women through their traditional home cooking. Tayybeh was founded by Nihal Elwan who wanted to aid newly landed Syrian women who faced difficulties networking and finding full-time employment in Metro Vancouver. Elwan brought together four Syrian women to cook up traditional dishes from their home cities of Aleppo, Homs, Daraa, and Idlib for interested locals. The concept took off and Tayybeh has been in high demand for events and parties ever since.

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Announcing our CICH Trainee Grant Winners!

The results of the 2018-2019 Global Health Trainee Grant Competition are in! This year, we selected 6 trainees to receive support for their global health electives in Uganda, South Africa, and Bangkok.

See a full list of grant recipients on the News & Events tab of the CICH webpage.
Diphtheria in the 21st Century

Diphtheria once was a major cause of illness and death among children. Prior to treating diphtheria with antitoxin, up to half of the people who got the disease died from it. There is now a vaccine that prevents diphtheria that has led to only a handful of cases in Canada in the past decade.

However, the disease continues to cause illness globally. Diphtheria is highly contagious and under-vaccinated populations living in crowded unsanitary conditions facilitate the spread of large outbreaks.

Bangladesh is currently trying to cope with 650,000 Rohingya refugees from neighbouring Myanmar, and due to lack of access to health care, poverty, unsanitary conditions and lack of education, diphtheria has infected more than 7,000 and killed hundreds, with children under 15 disproportionately affected. Dr Srinivas Murthy, from BCCH’s intensive care unit, witnessed this first hand. He recently returned from Bangladesh, where he was working with the World Health Organization to help manage the diphtheria outbreak.

The Rohingya – a marginalized and discriminated community in Myanmar – have historically had limited access to health services in their home country. Now in the refugee camps, they are living up to 30 people per dwelling, facilitating transmission of infectious diseases. Vaccination campaigns and the mobilization of healthcare resources has led to a significant decline in the case count of Diphtheria, although with the forthcoming monsoon season, the risk of re-emergence remains.

Medical Students Learn How to Improve Patient Care in Uganda

In Uganda, 55 out of every 1,000 children born will die before their fifth birthday – eleven times more children than in Canada. Two second year medical students at BC Children’s, Laura and Ross, spent one month at Soroti Regional Referral Hospital in Uganda learning why,
For Laura, “our afternoons of research were far more emotionally tolling than I expected. My project involved talking to parents in the paediatric ward, and asking them how they paid for their clinical care if the public system didn’t cover the cost. Our translator helped the parents to share their struggles: inability to pay for school fees, massive debts to families and neighbours, and the sale of their livestock and land in order to support their children in hospital. It was simultaneously heartbreaking and heartwarming to know the extent to which families were willing to go to nurse their children back to health. I learned an astonishing amount about the barriers that these families faced, and gained newfound appreciation for our Canadian system.”

One highlight for Laura was learning the value of checking children’s conjunctiva to diagnose anemia, dehydration, and jaundice. Ross also worked closely with Ugandan medical staff to identify strategies to improve patient care: “we tried to find ways to optimize hand hygiene in the hospital. Working through some pitfalls like a lack of running water and gloves on some days, we were able to identify key areas of improvement.”

Deborah Amakye-Ansah: Visiting Nurse from Kumasi, Ghana

Nurse Deborah Amakye-Ansah from Kumasi, Ghana is currently in the middle of her two month training program at BC Children’s Hospital. As part of the Pediatric Endocrinology Training Centers for Africa (PETCA) fellowship program, arranged by Dr. Jean-Pierre Chanoine, Deborah will become the first trained pediatric endocrine nurse upon her return to the Komfo Anokye Teaching Hospital in Ghana.

Deborah has already been hard at work during her first weeks at the Endocrine Clinic and the diabetic clinic at BC Children’s Hospital. She is being trained on intake at the clinics, communicating with patients, and conducting patient follow-ups.

There are some interesting differences from the Ghanian and Canadian health system. One major difference Deborah noted was that in Kumasi, she gives her personal phone number to every patient that she works with. This helps with follow-up care as it allows patients to ask follow-up questions without having to trek far distances to return to the hospital.

Deborah has also remarked on the much higher number of patients seen at BCCH per day compared to the number of patients seen in Kumasi. She is impressed with the early diagnosis of diabetes and the variety of screening tests available for children. In Ghana, the hospital lacks the equipment and resources to do such testing.

Deborah is having a great experience in Vancouver and would like to thank the nurses at BC Children’s Hospital for their hospitality!

For more information about Global Pediatric Endocrinology and Diabetes Visit the [GPED website](#).
From June 9 - 13th 2018, the Center for International Child Health will attend the 9th Congress of the World Federation of Pediatric Intensive & Critical Care Societies (WFPICCS) in Singapore. This leading pediatric congress is the platform to advance professional knowledge, enhance skills, share best practices, and engage with colleagues from across the globe, all striving towards a world where each child has the best chance for survival and quality of life.

The Center for International Child Health at BC Children’s Hospital, in partnership with WFPICCS, will officially launch the Pediatric Sepsis CoLab, a new international data sharing network to improve pediatric sepsis mortality globally.

Worldwide, at least 7 million people die every year due to sepsis (severe infections), the majority in low- and middle-income countries. Most of these deaths are treatable and preventable. To help us prevent these deaths we need to collect accurate information on patients to help health care workers make individual treatment decisions. In addition, collecting this data can also help hospitals gain insight into facility-wide processes, leading to a better understanding of the safety, quality and efficiency of their care. Unfortunately, accurate data collection is often challenging in under-resourced countries.

This international network will share information and data to further shared priorities among collaborators to improve sepsis treatments and outcomes.

To find out more visit us online at WFPICCS and the Sepsis CoLab.
BCCHR Pediatric Grand Rounds: Dr. Zulfiqar Bhutta
July 6th, 2018
8:30 - 9:30 am

On July 6th, Dr Zulfiqar Bhutta will be visiting Vancouver and presenting at the BC Children’s Hospital Grand Rounds. The event will take place from 830-930 am at the Chan Center at the BC Children’s Hospital Research Institute.

Dr. Zulfiqar A. Bhutta is the Inaugural Robert Harding Chair in Global Child Health at The Hospital for Sick Children (SickKids), Co-Director of the SickKids Centre for Global Child Health and the Founding Director of the Centre of Excellence in Women and Child Health at the Aga Khan University, unique joint appointments.

Dr. Bhutta has won several awards, including the Tamgha-i-Imtiaz (Medal of Excellence) by the President of Pakistan for contributions towards education and research (2000), the President of Pakistan Gold Medal for contributions to Child Health in Pakistan (2004) and the Outstanding Pediatrician of Asia award by the Asia Pacific Pediatric Association (2006). He is the first dual recipient of the Aga Khan University Distinguished Faculty Award for Research (2005) and Award of Distinction (2012).

With a vast portfolio, Dr. Bhutta’s research interests are numerous. He leads large research groups based in Toronto, Karachi and Nairobi with a special interest in research synthesis, scaling up evidence-based interventions in community settings and implementation research in health systems contexts. In particular, his work with community health workers and outreach services has influenced integrated maternal and newborn outreach programs for marginalized populations all over the world. In addition to his long-standing research interests in newborn and child survival, maternal and child undernutrition, early childhood development and micronutrient deficiencies, Dr. Bhutta’s current research on adolescent and reproductive health has led to several major contributions to the evidence base, including publications in the Journal of Adolescent Health and the Lancet.

For more information, visit Pediatric Grand Round (Schedule and Recordings).

Healthy Starts Special Seminar: Dr. Matt Wiens
July 16th, 2018
10:00 - 11:00 am

If you are interested in attending our session, please get in touch with Alexia Krepiakevich.

For more information on the conference, visit the National Nurses Association of Kenya (NNA-Kenya) website.
The Centre for International Child Health and Healthy Starts invite you to a special summer seminar with Dr. Matt Wiens:

**Smart Discharges: An evidence based approach to improve post-discharge outcomes for children in Uganda**

Dr. Wiens joins us from Uganda where Smart Discharges is currently operating in 5 hospitals across the country. The program combines a simple mobile app, referrals to a local clinic for follow-up health care, and a kit that includes education, basic hygiene and health materials. With its targeted approach, it is helping to prevent the unnecessary use of limited resources, such as antibiotics.

The research team has found that certain routine information collected at admission can accurately identify kids who are at high risk of death following discharge. Come to the seminar and learn more about the risk assessment when the child is being admitted to the hospital, and how this impacts long-term outcomes.

[Click here to RSVP.](#)

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**Publication Spotlight: March 2018 - May 2018**

### Advocacy in Pediatrics: It’s Part of Patient Care

**Barbara Fitzgerald**

Jake was a five–year–old who had just been taken into foster care. I saw him at his school for developmental concerns. His mom told me that she had moved to Vancouver to escape an abusive relationship and an unhealthy lifestyle. She was looking for housing and in the meantime was “couch surfing” with various friends and acquaintances. Social services intervened and placed her son in foster care. I confirmed with the social worker that her lack of housing was considered a Child Protection issue and she was obligated to remove him. Jake was in foster care because his mom could not afford to pay rent in Vancouver. I watched him hold tightly to his mother as the social worker took him away. He cried out to his mother to let him stay with her. She silently watched him leave with tears streaming down her face. What is the correct response for a physician in a situation where the child’s problem is caused by poverty?

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### Targeted Interventions in Critically Ill Children with Severe Dengue

**Ranjit S, Ramanathan G, Ramakrishnan B, Kissoon N**

Outcomes of dengue infections are usually excellent; however, mortality in severe dengue (SD) shock can be as high as 44%–72%, with fluid overload (FO) and malignant edema due to capillary leak being major contributors. While FO has been alluded to both in the World Health Organization (WHO) guideline and our dengue publications, therapeutic interventions to manage malignant edema and prevent treatment morbidity have not been fully described. Cognizant of this shortcoming, we focused on several pathophysiology-based Intensive Care Unit (ICU) and emergency department (ED) interventions which may be useful in severe and refractory dengue shock. In this prospective
observational study, we aimed to determine the effect of these proactively applied interventions on mortality, positive fluid balance (PFB), ventilator requirements, Pediatric ICU (PICU) days, and mortality as compared to a matched retrospective cohort with SD who received standard therapy (ST) as per the WHO guidelines.


Want to share something you've recently published? We’d love to hear from you.

Funding Opportunities

UNITAID Call for Proposals: Better Tools for Integrated Management of Childhood Fever

Application Deadline: August 17, 2018

Pneumonia (24%), diarrhoea (15%), and malaria (9%) remain the leading causes of death in children ages 1 – 59 months, and malnutrition is an underlying factor associated with nearly half of under-five deaths. Both pneumonia and malaria are febrile illnesses, and common causes of diarrhoea in children (e.g. rotavirus, Escherichia coli) can also include fever.

Evidence suggests that many non-malarial fevers are not appropriately managed due in part to a lack of diagnostic tools, leading to: inappropriate treatment including overuse and wastage of both malaria medicines and antibiotics; increased spread of antibiotic resistance; and high costs related to the management of drug-resistant patients. Moreover, missed opportunities to effectively treat sick children can result in severe disease (including severe malaria), which is often overlooked and contributes directly to increased child mortality.

Hypoxaemia, or low oxygen saturation in the blood, is a key indicator of severe disease that requires onwards referral and treatment, including oxygen therapy. While screening for hypoxaemia with pulse oximetry is currently recommended at primary health care and is included in the Integrated Management of Childhood Illness (IMCI) guidelines, this is rarely implemented due in large part to a lack of tools adapted for use in these settings in LMICs.

Unitaid is soliciting proposals for the following interventions aimed at accelerating the availability, adoption and scale-up of improved tools to identify severe disease including:

- Pilot implementation of pulse oximeters adapted for point-of-care use in children in primary health care settings in LMICs
- Large-scale field evaluations, market entry and market access activities, for multimodal devices, namely large-scale field evaluation and validation studies in LMIC settings

For more information visit the Unitaid website.

Operating Grant: AMR Point of Care Diagnostics in Human Health

Antimicrobial resistance (AMR) is a serious and growing global public threat that requires a global unified response. Governments and health organizations around the world are increasingly paying more attention to the significant threat that AMR poses to modern medicine and the health of the global population. In Canada and around the world, the effectiveness of antimicrobials has been declining due to the development of resistance.

The CIHR AMR initiative aligns with the research component of the existing Federal Framework on AMR, which aims to promote innovation through funding collaborative research and development efforts on antimicrobial resistance both domestically and internationally, as well as Tackling Antimicrobial Resistance and Antimicrobial Use: A Pan-Canadian Framework for Action.

Under the AMR initiative, CIHR has launched the Antimicrobial Resistance: Point of Care (POC) Diagnostics in Human Health program. Phase 1 aimed to advance innovative AMR point-of-care...
diagnostics closer to a stage of clinical readiness; five teams were funded. CIHR is now launching a Phase 2 open competition, which aims to further accelerate development of technologies or tools that have passed the preliminary design developmental phase.

The main goal of this funding opportunity is to further facilitate and improve the development of clinically relevant point-of-care diagnostic tools in AMR that will improve rational use of antibiotics and improve clinical management.

For more information visit the CIHR website.

Have questions, suggestions, or something to share? Email us at cichinfo@cw.bc.ca so we can include it in our next quarterly eUpdate.