SickKids Centre for Global Child Health (C-GCH)

2019-2020 Annual Report

Executive Summary:

The Centre for Global Child Health (C-GCH) is the dedicated hub for global child health-focused activities at SickKids. C-GCH supports SickKids' mission to partner locally and globally to improve the health of children through the integration of care, research and education. C-GCH actively contributes to SickKids' vision of 'Healthier Children. A Better World.' as well as a broader global child health agenda through collaborative research grounded in scholarship, sustainable capacity building through education, and the use of evidence to advocate for improved maternal, newborn, child and adolescent health, in partnership with local, national and international stakeholders.

Major accomplishments in 2019/20:

In 2019/20, C-GCH's main objective was to continue to solidify its expertise and academic leadership in global child health among its many local, national and global stakeholders and maintain efficient operations as a growing Centre. To a large extent, this has been accomplished. Collectively, key highlights include:

- Continued to successfully expand the C-GCH research portfolio activities across a range of global priority areas for maternal newborn, child and adolescent health and nutrition with gender as a cross-cutting theme.
- Expanded C-GCH program offerings through the International Program Evaluation Unit (IPE), which offers technical support and expertise to implementing agencies (Canadian-based international NGOs), governments and funders in the areas of design and evaluation of large-scale programs.
- Continued to build a robust project management and technical team to support ongoing C-GCH projects, including partnerships with NGOs funded by Global Affairs Canada, which support programing in low and middle-income countries (LMICs) that will strengthen health systems; reduce the burden of diseases; improve nutrition; and ensure accountability for results.
- Continued the work of the successful BRANCH consortium to support the evaluation of reproductive, maternal, newborn and child health in conflict settings and displaced populations; the work has led to over 20 publications of country case studies and systematic reviews as well as a five paper Lancet series (expected to be published by September 2020).
- Built a coalition of academic groups to conceptualize, develop strategies to enhance implementation of health and health-related Sustainable Development Goals and specifically develop and launch a special Lancet series on child health redesign across 0-19 years of age (expected end of 2020).
- Submitted a five-year proposal to Global Affairs Canada to continue work in Ghana while also expanding and scaling up the successful programming from Ghana to other LMICs in Sub-Saharan Africa.
- Partnered with four Canadian NGOs on the submission of five-year proposals to Global Affairs Canada that focus on health services enhancement for youth.
- Launched a new capacity building program with the Government of Barbados to establish Barbados as a Centre for Paediatric Excellence in the Eastern Caribbean (2020-2027).
- SickKids-Caribbean Initiative (SCI) Phase 2 continued to focus on strengthening overall sustainability of the initiative, which aims to improve the diagnosis, management and tracking of paediatric cancer and blood disorders in the region.
- Planning and executing C-GCH wide engagement activities led by C-GCH Committees, including the development of a Gender Equality Framework, which may help to inform an organization-wide strategy for gender equity.
- Completed an annual Catalyst Grant competition with nine applicants and two successful proposals by two junior applicants (Mariella Munyuzangabo and Jo-Anna Baxter) on 'Using deep learning to improve the efficiency and sensitivity of literature reviews' and 'Investigating pathways between maternal nutritional status, breastmilk composition, and infant linear growth in rural Pakistan'.
- Continued to host a successful C-GCH Global Leadership Series, a periodic event inviting global leaders to SickKids to present on their specific areas of expertise and engage with Centre members, other SickKids staff

from across the hospital, students and stakeholders from partner institutions (U of T, neighbouring hospitals, etc.). Presentations were also webcast and posted online.

- The Global Child Health fellowship program is a two-year academic fellowship that aims to train the next generation of leaders in global child health. We welcomed one fellow into the program in 2019/20: Dr. Kun Tang, an assistant professor at the Research Center for Public Health, Tsinghua University (supervisor, Dr. Zulfiqar Bhutta). Two excellent fellows were selected to begin the program in September 2020. There continues to be significant interest in the program: We received 40 applications from candidates spanning 17 different countries for the 2021 cohort.
- Fellows in the Post-Doctoral Research Fellowship in Fetal, Child and Adolescent Growth and Development program lead the design and execution of quantitative research studies on topics related to the causes or consequences of linear growth faltering (or stunting) of fetuses, children and/or adolescents in LMICs or other vulnerable populations. In 2019, we welcomed Dr. Liina Mansukoski from Finland into the post-doctoral program (supervisors, Drs. Daniel Roth and Diego Bassani).
- In November 2019, C-GCH launched the Microbiome, Infections, and Childhood Growth and Development Fellowship program. Applicants will take a lead role in the design and execution of quantitative research studies covering a wide range of population health topics including the development of the early infant and maternal microbiome, risk factors for infection and/or microbial dysbiosis, and the influence of early life exposures (i.e., infection, exposure to medicines, etc.) on outcomes including linear growth and cognitive development of children in LMICs. The selection process for the first cohort of fellows is ongoing.
- In March 2020, C-GCH became the host Secretariat for NCD Child, a global multi-stakeholder coalition that champions for the rights and needs of children, adolescents, and young people living with or at risk of developing non-communicable diseases.
- Successful implementation of a C-GCH communications strategy tailored to global audiences yet aligned with Hospital and Foundation communications.
- Used innovative virtual tools to continue our capacity building programs during the COVID-19 pandemic and launched a series of projects to support COVID response in relation to capacity development of paediatricians globally and child health and nutrition activities in South Asia in partnership with UNICEF and WHO.
- Significant recognition for C-GCH and its members:
    - Successful bid to house the NCD Child Secretariat at C-GCH
    - Dr. Diego Bassani selected to co-lead the Maternal & Child Health panel of reviewers of IDRC's Research Quality Plus initiative
    - Dr. Zulfiqar Bhutta named among Top 1% Highly Cited Researchers Globally
    - Dr. Bhutta named among top 0.01% of cited scientists globally (Stanford)
    - Dr. Bhutta awarded Distinguished University Professorship, Aga Khan University
    - Dr. Bhutta inducted to the U.S. National Academy of Medicine
    - Dr. Kevon Dindial, SickKids-Caribbean Initiative Fellow from Trinidad awarded the CanMEDS Fellows Collaborator Award
    - Dr. Shaun Morris awarded the American Academy of Pediatrics Ontario Chapter's Paediatrician of the Year Award
    - SickKids-Ghana Paediatric Nursing Education Partnership (PNEP) Nursing Education Team awarded The Grace Evelyn Simpson Reeves Awards for Excellence in Nursing, Innovation Team category

GLOBAL CHILD HEALTH RESEARCH

New Grants in 2019-20

- Drs. Robert Bandsma and Zulfiqar Bhutta are Co-Investigators of a Canadian Institute for Health Research, Canadian Microbiome Initiative 2 Team Grant (Principal Investigator, Dr. John Parkinson) for 'A mechanistic understanding of the impact of pathogen-microbiome dynamics on maternal and infant nutrition during pregnancy in young women' (2019-2024). Dr. Parkinson was a recipient of a C-GCH Catalyst Grant in 2015, and findings from that grant will be utilized in this CIHR-conducted research.
- Drs. Diego Bassani and Daniel Roth (Co-Principal Investigators), Eric Ohuma (C-GCH Fellow) and Seungmi Yang (McGill University) received a Canadian Institutes of Health Research (CIHR) grant for 'An application of

Super-Imposition by Translation And Rotation (SITAR) modelling to population-level child height trajectories of children aged 0-5 years using data from 145 Demographic Health Surveys (DHS) from 64 countries between 2000 and 2018' (2020-2023). The proposal was rated first in the category among 35 proposals, out of which only six were funded.

- Dr. Zulfiqar Bhutta received funding from United Nations Children's Fund (UNICEF) for 'Situational Analysis of Adolescent and Youth Health and Wellbeing in Kyrgyzstan and Development of Theory of Change Framework'.
- Dr. Bhutta received funding from International Development Research Centre (IDRC) for 'Evidence on Child and Adolescent Health Interventions for the Lancet Optimising Child Health Series 2020' (2019-2021). The objective is to contribute to knowledge in child and adolescent health including sexual and reproductive health and build relevant capacities to improve the health of 5-15 year-old children and adolescents.
- Dr. Bhutta received funding from the Bill & Melinda Gates Foundation for 'Stunting Exemplars Phase 2'. The project aims to generate evidence on how childhood stunting reduction can be accelerated in high burden countries, using mixed methods, and to disseminate findings to inform global best practices and national-level decision-making.
- Dr. Bhutta received funding from Gates Ventures for 'Preventing linear growth faltering in children in LMICs: a series of systematic reviews of interventions and implementation effectiveness and comprehensive case studies of exemplary stunting prevention initiatives'.
- Dr. Bhutta received funding from Aga Khan Foundation for 'Central Asia Stunting Initiative'. The project aims to address the causes of stunting in 447 remote and marginalized communities in Afghan Badakhshan, Gilgit-Baltistan and Chitral (GBC) and Gorno-Badakhshan Autonomous Oblast (GBAO).
- Dr. Bhutta received funding from Gates Ventures for 'Knowledge Synthesis and Translation Platform' (2019-2021). The purpose of the project is to deliver customized desk-based research services to Gates Ventures on a range of global child health-related topics.
- Dr. Avram Denburg received a Canadian Institutes of Health Research (CIHR) grant for his Access to Childhood Cancer Essentials (ACCESS) work in collaboration with the American Childhood Cancer Organization and key health system stakeholders across East Africa (Ethiopia, Kenya, Rwanda, Tanzania and Uganda) to improve availability, accessibility and acceptability of essential medicines required to treat childhood cancer (2019-2021). The ultimate aim of this work is to inform policy and programming for enhanced harmonization of care, and to prompt opportunities for coordinated procurement of childhood cancer drugs across the region.
- Dr. Helen Dimaras is Co-Investigator for 'Effective Vision Screening for Preschool Children'. PI: Agnes Wong, Daphne Maurer was awarded funding from PSI Foundation (2019-21).
- Dr. Sumit Gupta was awarded a 2019 C-GCH Catalyst Grant to study the cost-effectiveness of childhood cancer treatment in Sub-Saharan Africa. The objective of the study is to determine the cost and cost-effectiveness associated with delivering childhood cancer treatment in a diverse range of established Sub-Saharan African LMIC treatment units. Representatives from Kenya, Tanzania, Zimbabwe and Nigeria met at a preliminary meeting on March 6, 2019 in Cairo, Egypt. Data collection commenced in May 2019 in four main sites in Kenya, Tanzania, Zimbabwe and Nigeria.
- Nancy Dale (Dr. Stan Zlotkin's Post-Doctoral student) was awarded a 2019 C-GCH Catalyst Grant for her project entitled 'Improving the Outcomes of Community-based Management of Acute Malnutrition' working in collaboration with Dr. Chris Parshuram.

See page 9 for full list of 2019-20 publications (n=132).

CAPACITY BUILDING THROUGH EDUCATION

The **SickKids-Caribbean Initiative (SCI)** builds sustainable, local capacity to diagnose, treat and track paediatric cancers and blood disorders in the Caribbean region. After a very successful Phase 1 (2013-2018), SCI began Phase 2 in 2018-19. In Phase 2, SCI continues to leverage robust partnerships with The University of the West Indies, ministries of health, and hospitals in six Caribbean countries to build SCI's successes. Key milestones reached include:

- Expert consultation on 510 paediatric cancer and blood disorders cases from the Caribbean region (2013-2020).
- 330 specialized diagnostic tests completed at SickKids for patients with newly diagnosed leukemia to assist in timely, accurate diagnosis of children in the Caribbean region (2013-2020).
- As of 2020, SCI supported the delivery of 93,868 newborn screening tests for SCD in Jamaica and St. Lucia.
- Six telemedicine education sessions held in 2019/20, with strong participation from all Caribbean partner sites.
- Third Caribbean haematology/oncology fellow completed training at SickKids and fourth fellow began third year of training.
- In 2019/20, 12 nurses from SCI partner countries began the third cohort of the SCI-University of the West Indies School of Nursing Paediatric Haematology/Oncology Nursing post-basic diploma program at UWI St. Augustine campus, Trinidad.
- Facility-based training/quality improvement education collaboratively developed and delivered in two partner sites: Princess Margaret Hospital, The Bahamas, and Eric Williams Medical Sciences Complex, Trinidad and Tobago.
- Patient Education Materials Subcommittee delivered sickle cell disease toolkit for Caribbean sites.
- Immunophenotyping capacity development at Jamaica's National Public Health Lab.
- 687 patients registered in local paediatric oncology databases (2013-2020).
- One peer-reviewed article, one poster presentation and three invited lecturers at national and international meetings.
- SCI-PERCC study continued, focusing on understanding the state and determinants of paediatric cancer and sickle cell disease drug access in the Caribbean region.
- Ongoing collaboration with the American Society of Hematology on the Children's International Consortium on Acute Leukemia to implement a standardized clinical protocol for the treatment of childhood acute lymphoblastic leukemia (ALL).
- SCI participation and leadership at PAHO meeting and action planning focused on health systems strengthening for childhood cancer in the Caribbean.

The **SickKids-Ghana Paediatric Nursing Education Partnership (PNEP**) was launched in January 2015 with funding from Global Affairs Canada and SickKids Foundation. The ultimate goal of the five-year program (2015-2020) is to contribute to reducing preventable deaths and improving wellbeing for newborns and children in Ghana, and advance both child health and the profession of nursing in Ghana through practice-focused paediatric nursing education. Successful operations from the past year now mean that PNEP will either meet or surpass all set targets. Key milestones from this past year include:

- 501 nurses enrolled in or graduated from the one-year nursing education program across three training sites, meaning PNEP will surpass its goal of training 500 paediatric nurses by 2020.
- 99% of graduates remained in the Ghana health system one year after program completion and are being recognized as leaders in paediatric care in their workplaces.
- Successfully completed the deliveries of all Continuing Professional Development (CPD) courses that resulted in the training of over 1000 health workers in topics including nutrition, sickle cell disease and newborn care.
- Full complement of faculty onboarded: 5 full-time lecturers, 14 clinical educators, 4 clinical coordinators and 150 preceptors.
- Nurses' knowledge and confidence in key areas of clinical practice increased significantly at program end in all cohorts.
- Final results from the clinical competency examinations also showed that after completing the one-year program, all nurses acquired the clinical skills necessary to deliver paediatric care.
- Results from graduate follow-up activities showed that 14 months after program completion all graduates reported high levels of job satisfaction and higher levels of confidence as paediatric nurses.
- Graduates are regarded as leaders and are initiating activities, advocating for change, and teaching their peers specific skills.
- Promotional materials including PNEP Quarterly newsletters and C-GCH Twitter shared PNEP's achievements and stories from students, graduates and faculty on their experiences with PNEP.

Specialized Newborn Care Education (SNCE) was launched in partnership with Amref Health Africa, as part of the Canada-Africa Initiative to Address Maternal, Newborn and Child Mortality, a program implemented by a consortium of Canadian organizations in Ethiopia, Kenya, Malawi and Tanzania from March 2016 to March 2020, funded by Global Affairs Canada. Key milestones included:

- Development of a specialized newborn care education module delivered in collaboration with Amref Health Africa to nurses, midwives, doctors, clinical officers and other health workers in Ethiopia and Malawi and development of an essential newborn care education model delivered in Tanzania to meet the local priority.
- Overall, 183 participants have been trained including 68 health workers in Malawi, 45 in Tanzania and 70 in Ethiopia. Of the participants in Tanzania, 15 were trained in Specialized Newborn Care and 30 received Essential Newborn Care training.
- An evaluation of the three Malawi deliveries was completed in 2018 in order to assess the retention of knowledge, confidence and skills after specialized neonatal care training, and to provide refresher training.

The **Sickle Cell Disease Newborn Screening in Ghana Project** is a multi-year (2017-2019) collaboration between C-GCH and Korle Bu Teaching Hospital (KBTH) in Accra, Ghana, to implement a sickle cell disease (SCD) newborn screening program at KBTH. The project focuses on building capacity within KBTH to screen and identify SCD-positive babies as early as possible and provide them with the simple treatments they need to reduce illness and death. Ultimately it is expected that the project will be able to serve as a model for other SCD centres across Sub-Saharan Africa. Key project milestones include:

- 8,337 babies screened as of February 2020.
- Recruitment and training of four dedicated nursing staff at the sickle cell clinic.
- Educational workshop for mothers of sickle cell patients at the clinic.
- Nursing seminar for World Sickle Cell Day.
- Planning of newborn screening at community sites.

Please see page 7 for major project timelines.

KNOWLEDGE SYNTHESIS, TRANSLATION & ADVOCACY

C-GCH continued in its role as Secretariat for **The Coalition of Centres in Global Child Health (The Coalition),** the **Home-Fortification Technical Advisory Group (HF-TAG)** and the **Global Sickle Cell Disease Network (GSCDN).** In 2019/20 the Centre was successful in its bid to host the Secretariat for **NCD Child**, a global multi-stakeholder coalition that champions for the rights and needs of children, adolescents, and young people living with or at risk of developing non-communicable diseases (NCDs).

Key 2019/20 **Coalition** milestones include:

- The Coalition started a curated library of online, open-access resources, which now houses more than 300 resources.
- Two ‘Hot Topic Symposia’ sessions entitled ‘Life-saving Innovations in Low and Middle-Income Country Settings: Common Challenges and Solutions’ and ‘Addressing Threats to Mental Health in Children in Conflict & Disaster Settings’, and a ‘Meet the Professor Breakfast Session’ were conducted at the annual Pediatric Academic Societies Meeting.
- Six new Steering Committee members from four new countries.

Key 2019/20 **HF-TAG** milestones include:

- The Report of the WHO Expert Committee 2019 recommended and approved the addition of multiple micronutrient powders (MNP) to the core list of the 7th WHO Model List of Essential Medicines for Children (EMLc) 2019 for the prevention of anaemia in infants and children. As part of the EMLc, MNP are now one of the 460 products deemed essential by the WHO for addressing key public health needs among children.
- As reported in UNICEF's NutriDash 2.0 database, MNP were used in over 54 countries reaching more than 18 million children in 2018. HF-TAG completed an initial policy and nutrition indicators assessment of the 61 Scaling Up Nutrition (SUN) countries to better understand country-level challenges regarding scaling up the program, including sustainability.
- After hosting the HF-TAG Secretariat for five years at the Centre, HF-TAG will be entering into a new hosting partnership with another organization, to be announced later in 2020. This new partnership will enable HF-TAG to expand its global reach and deepen relationships with program implementers within the nutrition community. The Centre will remain a member of HF-TAG's Executive Committee.

Key 2019/20 **GSCDN** milestones include:

- Updated website to improve user accessibility and experience.
- A meeting entitled 'Improving Outcomes for Sickle Cell Disease in Low-resource Settings: Bridging the Implementation Gaps' at the 2019 American Society of Hematology (ASH) Annual Meeting.
- Participated in the WHO-World Bank AFRO consultation on addressing sickle cell disease.
- Regional Consultation on WHO PEN and integrated outpatient care for severe, chronic NCDs at first referral level hospitals in the African Region (PEN Plus), in Rwanda.

Key **NCD Child** milestones include:

- Participated in the 3rd Global NCD Alliance Forum 'Bridging the Gap'; hosted a pre-forum workshop entitled 'Elevating the youth NCD agenda to high-level stakeholders', and co-hosted two forum workshops entitled 'Transforming the narrative of childhood obesity' and 'Accountability in the era of the E-cigarette Epidemic'.
- Established a new three-year strategic plan and secured funding for operations and programing for the next three years.
- Completed two regional workshop series reports on advocacy for the prevention and management of NCDs, and on collaboration between the health and education sectors as key drivers of the response to NCDs.

C-GCH Global Leadership Series: Held two lecture sessions with global speakers in 2019/20. Approximately 150 guests attend each session (in person and via webcast). 2019/20 sessions included:

- Dr. Jean Humphrey, Professor, Center for Human Nutrition, Department of International Health, Johns Hopkins Bloomberg School of Public Health and Director, Zvitambo Institute for Maternal and Child Health Research, Zimbabwe, who presented the results, policy and programming implications of the WASH Benefits and SHINE Trials.
- Dr. Jessica Fanzo, Bloomberg Distinguished Associate Professor of Global Food and Agriculture Policy and Ethics, Berman Institute of Bioethics, the Bloomberg School of Public Health; Dr. Sorrel Namaste, Senior Nutrition Technical Advisor, The Demographic and Health Surveys Program, ICF; Dr. Lynnette M. Neufeld, Director, Knowledge Leadership, GAIN presented on promoting healthy diets for children and adolescents in LMICs at our other GLS session.

C-GCH hosted the Gairdner Global Health Symposium with Gairdner Foundation, Grand Challenges Canada and CAMH featuring keynote speaker Dr. Vikram Patel, 2019 John Dirks Canada Gairdner Global Health Laureate.

Major Boards and Committees: Drs. Bhutta and Zlotkin provide advocacy for global child health through their involvement in national and international boards and committees including:

- Dr. Zlotkin is Board Chair of the Canadian Partnership for Women and Children's Health (CanWaCH)
- Dr. Zlotkin is Co-Vice-Chair of the Scientific Advisory Committee for Grand Challenges Canada
- Dr. Zlotkin is a Board member of the Global Alliance for Improved Nutrition (GAIN)
- Dr. Bhutta is a member of the technical steering committee of several major international projects funded by the Bill & Melinda Gates Foundation, Wellcome Trust, World Health Organization & European Union.

New Collaborations:

- Drs. Robert Bandsma and Zulfiqar Bhutta were the scientific chairs of the highly successful Scientific Meeting of Commonwealth Association of Pediatric Gastroenterology & Nutrition (CAPGAN) Conference held at SickKids in October 2019, the first ever meeting in Canada in the 40-year history of CAPGAN.
- Dr. Bandsma was one of 35 invited international panelists for a World Health Organization (WHO) meeting to develop new strategies to address severe malnutrition, held at WHO Head Quarters in Geneva, Switzerland.
- As Director of the International Program Evaluation Unit, Dr. Diego Bassani collaborated with Global Affairs Canada and International Development Research Centre to develop a data platform cataloguing measurement tools for MNCH and SRHR in conflict settings, in addition to two software systems for data collection and evidence synthesis.
- Dr. Bassani was part of the group that developed the Thrive Partnership for Impact document, a framework and toolkit that are part of an innovative model for transparent cooperation, practical evidence-based decision-making,

and collective engagement across diverse stakeholders, including government, civil society, academia, multilaterals, and private enterprises in Canada.

- Dr. Bassani is a Lead Instructor at the Dalla Lana School of Public Health, PhD and Master's Level Course CHL7001H Large Scale Impact Evaluation. He is also developing a version of the course focused on increasing the evaluation skills of program implementation and government staff in LMICs.
- Dr. Bhutta co-hosted a large international conference entitled 'Food Environment Technical Workshop: Measuring the Food Environment of Children and Adolescents in LMICs' with the Centre for Global Child Health, the Lawson Centre at the University of Toronto, and GAIN (Global Alliance for Improved Nutrition), held on January 20-21, 2020 at SickKids.
- As Co-Directors of Policy and Economics Research in Childhood Cancer (PERCC) at SickKids, Drs. Sumit Gupta, Avram Denburg and Sue Horton (University of Waterloo) partnered with World Child Cancer UK on a multi-site project, supported by the Optimus Foundation, which aims to improve childhood cancer treatment outcomes in Sub-Saharan Africa through establishing Centres of Excellence for paediatric oncology in Ghana. PERCC is contributing to the project in several ways, including improving the design and delivery of Early Warning Signs and Symptoms training; studying the determinants of drug access; and improving the collection of data on patient outcomes to inform new initiatives to improve care.
- The Lancet Oncology Commission on Sustainable Paediatric Cancer Care is a joint partnership between PERCC, St. Jude Children's Research and Hospital and the Harvard T.H. Chan School of Public Health. The Commission undertook a comprehensive analysis to develop an investment case for funding management and control of childhood cancer. The Commission report was published in *The Lancet Oncology* in March 2020.
- In 2018, the WHO launched a Global Initiative in Childhood Cancer with the aim of improving the global cure rate to 60% by 2030 and averting one million deaths. PERCC was invited to participate in the initial stakeholder's meeting held in Geneva in the summer of 2018. Since then, PERCC leadership have been part of several of the Initiative's working groups, as well as being invited to regional workshops in Peru, Ghana, and the Caribbean.
- After significant advocacy on the part of PERCC, the Pan American Health Organization (PAHO) held its first ever meeting on childhood cancer in the Caribbean and Latin American regions. PERCC leadership helped to organize this meeting and gave several keynote addresses to ministerial representatives from across the region. Building on this success and after further advocacy, in February 2020, PAHO convened Caribbean stakeholders representing government, academia, and civil society for a two-day meeting on building regional and national childhood cancer strategies. PERCC leadership played an integral role in the organization and conduct of the meeting, and will be key to regional initiatives moving forward from the meeting.
- Dr. Helen Dimaras (Co-PI) is collaborating with Vera Essuman (University of Ghana/Korle Bu Teaching Hospital) on Ghana's National Retinoblastoma Strategy, which includes determining baseline incidence, referral pathway and outcomes of retinoblastoma in Ghana.
- Dr. Stanley Zlotkin and Claudia Schuaer were successful in a bid to the World Health Organization (WHO) to include micronutrient powders (MNP) for the prevention of anaemia in infants and children on the WHO Model List of Essential Medicines for Children (EMLc), a core guidance document to help countries prioritize medicines that should be widely available and affordable throughout health systems.

EDUCATION

- The Global Child Health fellowship program is a two-year academic fellowship that aims to train the next generation of leaders in global child health. We welcomed one fellow into the program in 2019/20: Dr. Kun Tang, an assistant professor at the Research Center for Public Health, Tsinghua University (supervisor, Dr. Zulfiqar Bhutta). Two excellent fellows were selected to begin the program in September 2020. There continues to be significant interest in the program: We received 40 applications from candidates spanning 17 different countries for the 2021 cohort.
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- The 2019/20 C-GCH Catalyst Grant competition awarded catalyst grants to two junior applicants (Mariella Munyuzangabo and Jo-Anna Baxter) on 'Using deep learning to improve the efficiency and sensitivity of literature reviews' and 'Investigating pathways between maternal nutritional status, breastmilk composition, and infant linear growth in rural Pakistan'.
- Research students (masters, doctoral, undergraduate, observers, medical, fellows) from various institutions, including University of Toronto, Dalla Lana School of Public Health, Munk School of Global Affairs, DeGroote School of Business, McMaster University, University of Western Ontario, University of Windsor are affiliated through Centre faculty.
- Weekly Research Seminar Rounds – sessions on a variety of topics with attendance average of 45 attendees per session.

SOCIAL MEDIA

- Following approval from SickKids Communication & Public Affairs, C-GCH launched its Twitter account @SickKidsGlobal in January 2014. Since then, the Centre has amassed over 4,810 quality followers, in every continent, through leveraging key global milestones to highlight C-GCH members and work. Twitter is a useful tool to communicate with peers, students, global child health advocates and policymakers in real time, all over the world. We have trained 17 active Centre members on Twitter. Based on our current followers, we have a potential audience of 16 million users.

MAJOR PROJECT TIMELINES

Project Name	Start Date	End Date					
Capacity Building		2020	2021	2022	2023	2024	2025
SickKids-Ghana Paediatric Nursing Education Partnership (PNEP)	2015						
Specialized Newborn Care Education (part of CAIA-MNCM)	2016						
SickKids-Caribbean Initiative (SCI) – Phase II	2018						
Shaw Centre for Paediatric Excellence (Barbados)	2020						to 2027
International Program Evaluation (IPE)							
Canada-Africa Initiative to Address Maternal, Newborn and Child Mortality	2016						
Access to Quality Care through Extending and Strengthening Health Systems	2016						
Supporting Systems to Achieve Improved MMCH in Kigoma Region	2016						
Strengthening Health Outcomes for Women and Children	2016						
Co-Lab: Improving Measurement of SRHR (Bassani)	2018						
Research (Sample of multi-year projects awarded external grants)							
Global Exemplars in Stunting Reduction (Bhutta)	2016						
Research…of Prosocial Games for the Prevention of GBV (Barwick)	2017						
Healthy Young People Everywhere (HYPE) IKT Platform (Barwick)	2017						
Building Knowledge and a foundation for Healthy Life Trajectories (Roth)	2017						
Measurement and monitoring of the food environment… (Bhutta)	2017						
Supporting Women and Girl in Pakistan… (Bhutta)	2017						
Newborn Sickle Cell Disease Screening and Longitudinal Cohort… (Odame)	2017						
Transition to Scale of the Integrated Newborn Survival Kit (iNCK) (Morris)	2018						
Early Prevention of Severe Infections in Infants (SEPSIS) Trial' (Roth)	2018						
Effect of maternal vitamin D supplementation during pregnancy… (Roth)	2018						
The role of organelle dysfunction in the pathophysiology of SAM (Bandsma)	2018						
Lancet 'Transforming Child & Adolescent Health' Series 2020 (Bhutta)	2018						
Countdown to 2030 Objectives 2 and 3 (Bhutta)	2018						
Assessment and Development of Implementation Models of Health… (Bhutta)	2018						
'…impact of pathogen-microbiome dynamics' (Parkinson, Bhutta, Bandsma)	2019						
Access to Childhood Cancer Essentials (ACCESS) (Denburg)	2019						
Knowledge Synthesis and Translation Platform (Bhutta)	2019						
'…Super-Imposition by Translation And Rotation modelling…' (Bassani, Roth)	2020						

Appendix B – Publications

Daniel AI, Chidzalo K, Voskuijl W, et al, **Bandsma RHJ.** A quantitative cross-sectional survey of psychosocial stimulation and counselling interventions at nutritional rehabilitation units in Southern Malawi. Malawi Med J.

Connors J, Dunn KA, Allott J, **Bandsma R**, et al. The relationship between fecal bile acids and microbiome community structure in pediatric Crohn's disease. The ISME Journal. 2019 Epub ahead of publication.

Daniel AI, Chatenga H, Chimera B, et al, **Bandsma RHJ**. The introduction of a paediatric nutrition support program led by a clinical dietitian at a low-resource hospital setting in Malawi. Glob Health Action. 2019; 12(1): 1656452.

Njunge JM, Gwela A, Kibinge NK, et al, **Bandsma RHJ**. Biomarkers of post-discharge mortality among children with complicated severe acute malnutrition.Sci Rep. 2019 Apr 12; 9(1): 5981.

Childhood Acute Illness and Nutrition Network (**Bandsma RHJ)**. Childhood acute illness and nutrition (CHAIN) network: a protocol for a multi-site prospective cohort study to identify modifiable risk factors for mortality among acutely ill children in Africa and Asia. BMJ Open 2019 May 5; 9(5): e028454.

Daniel AI, Arvidsson Kvissberg ME, et al, **Bandsma R**, Bourdon C. Urinary Organic Acids Increase After Clinical Stabilization of Hospitalized Children With Severe Acute Malnutrition. Food Nutr Bull. 2019 Jul 14:379572119853930.

Bourdon C, Lelijveld N, et al, **Bandsma R**. Metabolomics in plasma of Malawian children 7 years after surviving severe acute malnutrition: "ChroSAM" a cohort study. EBioMedicine. 2019 Jul; 45: pp. 464-472.

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