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UBC Action on Sepsis



Impact now: Improving maternal, newborn and child health in Africa through innovative solutions

November 18th, 2019 to November 20th, 2019

IMPACT NOW 2019 MEETING REPORT

Impact Now Coordinating Committee – Maggie Woo Kinshella

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The Impact Now conference, held November 18-20th, 2019 in Stellenbosch, South Africa brought together **100 delegates** from **18 countries** representing **62 organizations**. Delegates joined from Australia, Botswana, Canada, Switzerland, Cameroon, United Kingdom, Ghana, Kenya, Malawi, Mozambique, Netherlands, South Sudan, Tanzania, Uganda, United States, South Africa, Zambia and Zimbabwe. Our diverse backgrounds included Neonatology, Medical Anthropology, Infectious Diseases, Management and Bioengineering, but delegates were united by a shared passion to improve Maternal, Newborn and Child health globally.

Sponsored by the Peter Wall Institute for Advanced Studies, the Innovating for Maternal and Child Health in Africa (IMCHA) initiative and the Centre for International Child Health, the objective of the meeting was to foster discussion and new collaborations for driving the implementation of innovations with real-world impact in improving the health of mothers and children in low- to middle-income countries (LMICs). Our unique group of assembled experts from around the world actively participated in discussions and networking – fueled by delicious coffee breaks provided by the Stellenbosch Institute for Advanced Studies (STIAS) and interactive panel discussions!

Globally 5.6 million children die before they reach their fifth birthday, many in the first month of life. This includes 2.8 million in sub-Saharan Africa alone. It is estimated that 300,000 women die from complications pregnancy and childbirth. Almost all of these deaths occur in low-resource settings and most are preventable. Innovations in technology, health systems, financing and society have an enormous potential to reduce both maternal, newborn and child mortality. In our three days together, we highlighted the current gaps in knowledge and health services, as well as technologies and innovations that may lead possible solutions. As a key element of these discussions, we shared our stories and experiences on implementation with each other. There was a common feeling that we need to close the gaps - not just in health disparities between populations but also between maternal and newborn health and between disciplines.

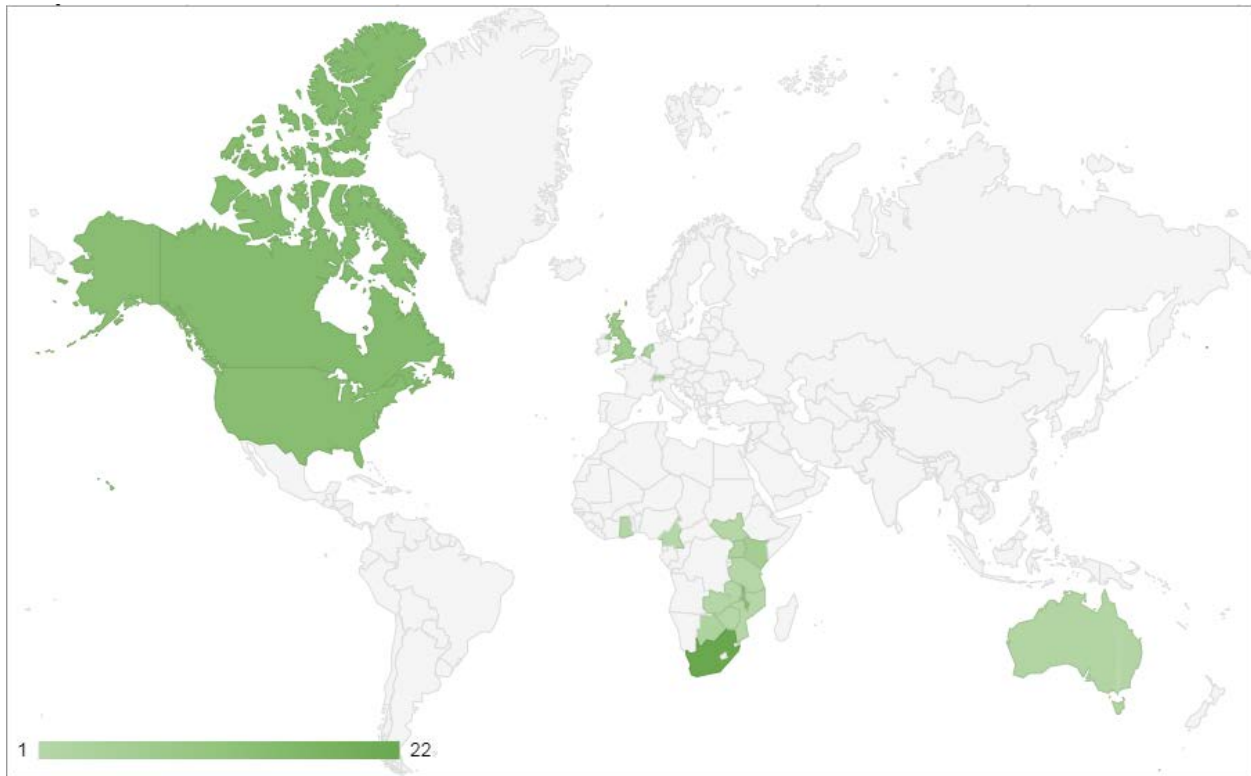
We express a heartfelt thank you to all of the Impact Now delegates for their contributions to the meeting and hope the conversations continue. We would also like to share a special thank you to moderators, presenters and sponsors!



Organizations represented at Impact Now:

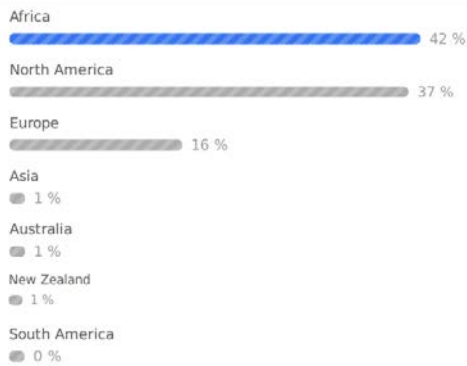
- 3rd Stone Design, United States
- African Population and Health Research Center, Kenya
- Aga Khan University, Kenya
- AMREF Malawi, Malawi
- Amsterdam UMC, Netherlands
- BC Children's Hospital and Sunny Hill Health Centre for Children, Canada
- BC Children's Hospital Research Institute, Canada
- Bluebird, South Africa
- Burnet Institute, Australia
- Cameroon Association of Critical Care Nurses, Cameroon
- Canadian High Commission to South Africa
- Center for International Child Health, Canada
- Children's Hospital of Philadelphia, United States
- Clinton Health Access Initiative, Mozambique
- Dalhousie University, Canada
- D-Rev, United States
- Eerste River District Hospital, South Africa
- ETH Zürich, Switzerland
- FREO2 Foundation, Australia
- GE Healthcare, Kenya
- Great Ormand Street Hospital Institute of Child health, United Kingdom
- Jinja Regional Referral Hospital, Uganda
- Kamuzu Central Hospital, Malawi
- Kamuzu College of Nursing, Malawi
- KEMRI/Wellcome Trust, Kenya
- Kids Medicare, South Africa
- King's College London, United Kingdom
- Komfo Anokye Teaching Hospital, Ghana
- London School of Hygiene & Tropical Medicine, United Kingdom
- Malawi-Liverpool Wellcome Trust, Kenya
- Masimo International, United States
- Massachusetts General Hospital, United States
- Mbarara University of Science and Technology, Uganda
- McMaster University, Canada
- Ministry of Health and Wellness, Malawi
- Muhumbili National Hospital, Tanzania
- Neopenda, United States
- Neotree, United Kingdom
- Northwestern University Kellogg School of Management, United States
- Paediatric and Child Health Association in Malawi, Malawi
- Pearlstem, South Africa
- Princess Marina Hospital, Botswana
- Red Cross War Memorial Children's Hospital, South Africa
- Rice University, United States
- Save The Children, Kenya
- Stellenbosch University, South Africa
- University College London, United Kingdom
- University of Alabama at Birmingham, Centre for Infectious Disease Research in Zambia
- University of Botswana, Botswana
- University of British Columbia, Canada
- University of California, San Francisco, United States
- University of Cape Town, South Africa
- University of KwaZulu-Natal, South Africa
- University of Liverpool, United Kingdom
- University of Malawi College of Medicine, Malawi
- University of Nairobi, Kenya
- University of North Carolina at Chapel Hill, United States
- University of the Western Cape, South Africa
- University of the Witwatersrand/Fort Hare/Walter Sisulu, South Africa
- University of Zimbabwe College of Health Sciences, Zimbabwe
- VIA Global Health, South Africa
- Walimu, Uganda

Our global delegates including great representation from Eastern and Southern Africa:



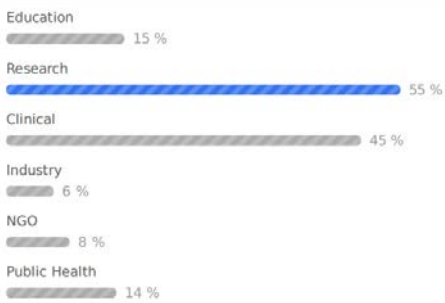
Where were you born?
(1/2)

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What is your primary profession?

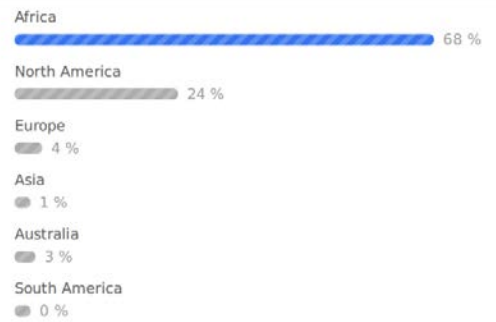
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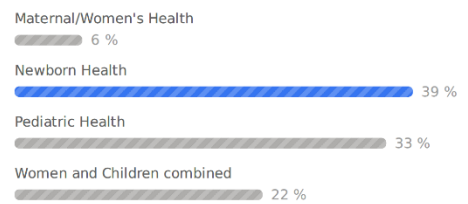
Where do you currently work?

068



What is your primary area of focus?

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Jennifer Cooper from the Canadian High Commission to South Africa opening Impact Now 2019

Welcoming by the High Commission of Canada to South Africa

We were honoured by an inspiring opening by Jennifer Cooper, Head of Development and Cooperation at the High Commission of Canada to South Africa. Her presence was especially meaningful as our meeting was sponsored primarily by Canadian institutions and initiatives, including the [Peter Wall Institute for Advanced Studies](#) at the [University of British Columbia](#), the [Innovating for Maternal and Child Health in Africa \(IMCHA\)](#) initiative and the [Centre for International Child Health](#).



Impact Now 2019 Co-Chair, Dr David Goldfarb, speaking to a full room on the Monday 18th November morning

Current critical gaps and what is needed in maternal, newborn and child health in Africa



Joy Lawn presenting " Bridging gaps for Maternal-Newborn health – where, what, and how in the next decade?"

“What do women want?” Joy Lawn challenges us as we kick off the Impact Now 2019 conference.

With a lens on gender and on Africa, Joy highlighted how all women have a shared desire for respect and healthy outcomes for themselves and their babies. She motivated us to bridge gaps in maternal-newborn health, included moving beyond the “one at a time syndrome” and seeing a competition of mother versus baby when in fact, strengthening care for both is synergetic and mutually beneficial. She urged us to not waste our innovation on one outcome, one exposure, but instead strive towards integrating multiple innovations to increase efficiency and sustainability. This will lead to more lives saved and improved human capital. While many global health conversations focus on childhood infections, including pneumonia, malaria, diarrhoea and AIDs, missing from the conversation are preterm births, birth complications, neonatal infections and congenital conditions. Coincidentally, World Prematurity Day was on November 17, one day after the start of Impact Now. Joy shared that preterm births are the top cause of child deaths and an important cause of disability and loss of human capital. Birth complications accounts for 11% of child deaths and neonatal infections another 11% of deaths, yet aetiology remains largely a mystery for the latter. Family planning and reducing risky births are key to reducing mortality at birth but reproductive health and rights is particularly prone to “political black holes”. More women than ever are delivering at hospitals yet there is a quality gap in care received, including underuse of some facilities and overuse of others. Health system strengthening that invests in midwives and neonatal nurses, basic supplies, behaviour change to prevent hospital acquired infections and address antimicrobial resistance would have immediate impact. As Joy shared, we “could save 2 million lives a year by closing this quality gap.” Stillbirths is another missing area of focus in maternal, newborn and child health in Africa and research into stillbirths is one key way that can help bridge the maternal-newborn health divide.



Professor Elizabeth Molyneux sharing her insights on innovations where resources are scarce

Based on her decades of experience caring for neonates and children in Malawi as former Head of the Paediatric Department at the University of Malawi College of Medicine and Queen Elizabeth Central Hospital (QECH) in Blantyre, Elizabeth Molyneux discussed innovations in low resource settings. Frugal innovations include lean tools simplified for low resource settings, opportunistic solutions with newly available technology, contextualized adaptations such as urinary sticks for cerebrospinal fluid (CSF), and bottom up, grassroots innovations.

Innovations in resource constrained settings need to be:

- Easy to use
- Safe
- Robust
- Reliable
- Repairable
- Inexpensive
- Portable
- Cleanable
- Have available parts
- Have a comprehensible manual
- Easy/quick assembly
- Easy to store away

< Tweet +



Melissa Morgan Medvedev
@melissacmorgan

"Any problem can be solved with a little ingenuity." Inspirational talk by Liz Molyneux based on her decades of experience caring for neonates & children in #Malawi Preceded by an amazing opening talk by @joylawn #impactnow2019 #EveryNewborn



Tweet your reply

Innovators can help translate DIY efforts into validated equipment. This requires closely working with low-resource health settings to understand local needs and technology appropriate for local resources.

Doreen Ramogola-Masire, Peter von Dadelszen and Niranjana 'Tex' Kissoon shared their thoughts on maternal, newborn and child health issues in sub-Saharan Africa that will be critical to tackle in the next five years. Key priorities include investment in girls' nutrition, contextualized discovery science in resource-constrained settings and improvements in utilizing data to inform research, innovations and interventions.



From left to right: Professors Doreen Ramogola-Masire, Peter von Dadelszen and Niranjana 'Tex' Kissoon

Innovations and technologies

We were inspired by an all-women panel of maternal and newborn health innovators in the Prototype to Product panel. Bioengineer Rebecca Richards-Kortum shared the incredible story of Pumani, a low cost standalone bubble continuous airway support (CPAP) device to support neonates with respiratory distress first prototyped in an undergraduate class at Rice University in partnership with Queen Elizabeth Central Hospital in Malawi. Through its scale up across Malawi, Rebecca learned that a nurse-led CPAP service can be implemented and sustained at a national scale, starting with a partnership with the Malawian Ministry of Health and by introducing CPAP as a part of a package of good essential newborn care to strengthen local health system. The Pumani journey led to many other innovations and expanded to include engineers at Malawi Polytechnic as well.



Prof Joy Lawn @joylawn · 1d

Rare dynamic panel all-women innovators. 2 eggs:

20yr journey antishock garment

#maternal haemorrhage.

10yr journey Pumani bubble #cpap now in #nest360.

Both partner with @3rdstonedesign

Tips=Early CE mark. Preservice training.

Gov input early. Resilience. Humour.

#impactnow2019



Rebecca Kortum and 8 others

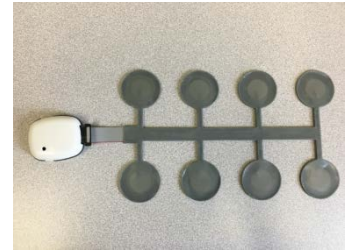


We continued to be inspired by maternal health expert and midwife, Suellen Miller, on her story of the NSAG, the non-pneumatic anti-shock garments that helps saves women's lives during obstetric hemorrhage, which is the leading cause of maternal deaths around the world. Suellen recounted the over 20 year journey from taking an innovation developed by NASA for astronauts to maternal health, through piloting, observational studies, and large multi-country randomized controlled trials to test its efficacy. Advocacy with the World Health Organization (WHO), working with manufacturers, conducting implementation studies, and scaling-up and implementing the garments as a part of the WHO post-partum hemorrhage bundles (the current stage) were also key parts of the journey.

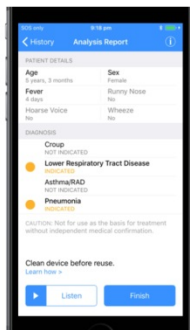
Both Pumani and the NSAG were developed in partnership with [3rd Stone Design](#). Words of advice from Danica Kumara, 3rd Stone Design's Director of Product Management:

- Fancy prototypes not required – just need understanding of technology and clinical need
- Expect the design to change and engage with manufacturers early
- Cost is not static and depends heavily on volumes and initial investments
- A clinical need does not necessarily equate to market demand so it is important to set realistic goals early to guide spending
- Plan early on quality and regulatory certifications – it will always take longer than you think and it is recommended to work with someone to help navigate the constantly evolving regulatory systems
- Products don't sell themselves – advice to narrow focus on key customers before going broad
- Getting innovations on the market is just the beginning! Sustaining costs are usually higher than development
- Sales is a vivid indicator of impact!

Innovations and technologies continued to be featured in our elevator pitch style Tech Talks. Chishamiso Mudenyanga of CHAI started the talks with Triage Meter Pro, a PLGF biomarker test identifying women at risk for pre-eclampsia in Mozambique. He was followed by Sona Shah of Neopenda, who shared her work with the neoGuard wearable vital signs monitoring system. In an especially proud moment, Guy Dumont presented on BabyKICK, a movement sensor to be worn by pregnant women to monitor fetal movement through ballistography, a concept that was brainstormed in the previous innovations workshop and was now presenting a prototype. Rita Owino from GE Healthcare presented on the Vscan Access, an ultrasound device designed for primary healthcare workers in resource constrained setting and Oxylink by FREQ2 was presented by Roger Rassool as a pediatric oxygen systems service for low resource health facilities. Grant Aaron from Masimo International turned the tables on us by prompting discussion on communicating clinical needs to industry.



The BabyKICK prototype, conceptualized in the previous innovations workshop!



*From top left, clockwise:
ResAppDx, FREQ2,
Pumani, NSAG,
Triage Meter Pro,
Neoguard, Vscan,
Neotree*

Digital health was also an area of interest with seven groups presenting their systems at the “Digital health: Solutions for real world problems” session. We heard from:

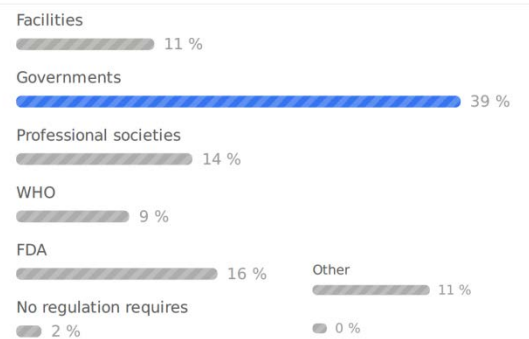
- Darryl Vine on Bluebird, a cloud-based infection control and antimicrobial stewardship solution implemented at the Nelson Mandela Children’s Hospital.
- Matthew Wiens on Smart Discharges, a mHealth app that helps improve pediatric post-discharge outcomes. This intervention consists of education and a post-discharge back-referral for follow up in the community, and when evaluated in Uganda they found increases in health seeking after discharge and in required post-discharge re-admissions.
- Michelle Heys, Simbarasche Chimhuya and Msandeni Chimue on Neotree, a tablet based app that combines immediate data capture by front line health workers and evidence-based clinical decision support and newborn care education currently being piloted in Harare Central Hospital in Zimbabwe and Kamuzu Central Hospital in Malawi.
- Dustin Dunsmuir on Pocket Doc, a triage app and clinician dashboard to help prioritize pediatric patients and reduce the time to life-saving treatments, currently being tested in Uganda.
- Peter Moschovis on ResAppDx, an app that can distinguish between coughs of various diseases such as asthma, bronchiolitis, and pneumonia which is being considered for global child health.
- Xoliswa Majola on the Artermis Platform, a cloud computing based real-time analytics of physiological data for neonatal and paediatric critical care in small and remote hospitals. It is currently being set up in South Africa.
- Data Santorino on PRISMS (Protecting Infants Remotely by SMS) to provide instant clinical management suggestions based on routine assessment findings, continuous newborn care education and collects newborn care data for surveillance, health planning and quality improvement.

The seven digital health systems presented highlight the need to support quality care in resource-constrained health facilities. These small, rural, remote or simply disadvantaged hospitals and health centres are often led by nurses, midwives and clinical officers rather than doctors and specialists. They often exist within poor health system contexts plagued by medical staff shortages, staff rotations and infrastructural gaps. While these digital health systems help support decision-making and surveillance, key questions in the discussion at the meeting arose around:

- 1) Oversaturation of digital health apps and would health professionals get app fatigue?
- 2) Who should regulate digital health solutions? Many of us felt that local governments would be the most feasible.
- 3) How can these digital health solutions be sustained by the government when funding from research and implementation projects end?



Who should regulate digital health solutions (1/2) 057



From innovations to implementation



Marleen Temmerman presenting an inspiring talk on translating between evidence, policy and practice

Marleen Temmerman teleconferenced in on Tuesday morning, demonstrating our meeting objective of innovative solutions with all of the implementation factors that entails, to present on “From evidence to policies and best practices.” Marleen shared her story from working in Nairobi at a maternal health facility on the eve of the AIDs epidemic and trying to understand the impact of the disease on reproductive health, to a professor at Ghent University in Belgium and founding the International Centre of Reproductive Health at Ghent University and sister organizations in Kenya and Mozambique. She went on to become elected as a senator in the Belgian Parliament and continued as the Director for the Department of Reproductive Health and Research at the WHO and currently, she is the department chair of Obstetrics and Gynaecology and the Director of Women’s Health and Research at the Aga Khan University East Africa. Through her inspiring presentation, Marleen highlighted the need to see issues from multiple perspectives, the importance of fighting against unacceptable burden of preventable maternal, neonatal and child deaths and advocating for research, women’s health and rights. She discussed and highlighted in her own narrative the importance of inspired leadership.

“If you go into our ministries of health, you will see many beautiful documents...The commitment to implement is there but the actual implementation is not there yet” shared Queen Dube in her passionate talk on key takeaways on successful implementation. Raising awareness and getting acquainted with the issues is only the first step in creating change. From



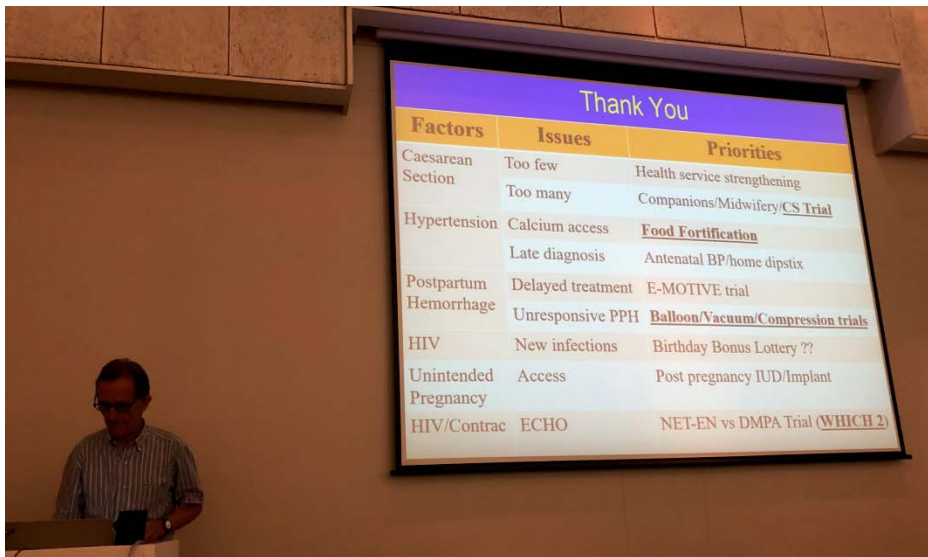
Queen Dube presenting on the stages of change

awareness and commitment to implement needs movement towards preparations to implement, implementation, integration into routine practice and sustaining practice for the institutionalization of changes.

Key takeaways from Queen’s experience with neonatal care in Malawi:

- Consider the mother’s point of view
- Mentorship with actual practice in the wards over hotel based training the trainer workshops
- Political buy-in is essential but need to consider both internal pressures of national politics and external influences such as IMF structural adjustment that can constrain what politicians can do
- Effective data systems to understand impact
- Improved infrastructure and care capacity and the basic need for health systems strengthening – basic newborn care first!
- Implementation research such as the “Integrating a neonatal healthcare package for Malawi” IMCHA project to understand barriers and facilitators of scaling up newborn technologies at district hospitals

Next, we dove into women’s health in context elaborating on gender in MNCH and how to advocate for reproductive health and rights in unsupportive political landscapes with presentations by Lynette Kamau, Justus Hofmeyr and Doreen Ramogola-Masire. Justus Hofmeyr presented a comprehensive and evidenced based overview on the best bets for reducing maternal mortality, highlighting that family planning and reproductive health is a key part of reducing maternal mortality efforts.



Professor Justus Hofmeyr on best bets to reduce maternal mortality



“Too often we see gender norms inhibiting women from seeking health services for themselves and their children. This inequality can be addressed by seeing gender as an integral consideration in health programming” said Lynette Kamau in her talk on gender issues in maternal, newborn and child health innovations.

Key gender issues to consider in the development of innovations and implementation:

- Decision-making to access care
- Access to MNCH services
- Receiving and providing health care services

Gender responsive approaches in MNCH:

- Purposefully engage men
- Education on power-based societal structures
- Using cultural practices as an entry point
- Involving women in community decision-making processes
- Information and education

Key questions in the discussion at the meeting arose around:

- 1) Do you feel that women’s mental health around reproductive health, pregnancy and childbirth is something that needs to be addressed?
- 2) Gender analysis are becoming required funding in some countries. In your experience, has this improved the quality of studies from these countries (e.g. Canada)? – Lynette said yes!
- 3) What are your thoughts on advocating for reproductive rights in SSA, including access to safe abortions?
- 4) What can we do as change agents in SRHR with unfavourable political contexts?
- 5) Gender issues in neonatal care: Is it incorporated in the maternal aspect of care or perhaps currently missing?



Lynette Kamau on gender issues in MNCH innovations



From left to right: Doreen Ramogola-Masire, Justus Hofmeyr and Lynette Kamau

Botswana as a case study in implementation

Botswana, a land-locked country about the size of France in Southern Africa with a population of 2.2 million people, emerged as a fascinating case study on implementation in the meeting. Spanning across the women's health in context and the kangaroo mother care sessions, the combination of Doreen Ramogola-Masire and Thabiso Mogotsi's presentations some lessons learned around implementation.

Doreen gave an inspiring presentation on setting up a national adolescent HPV vaccination program:

- Learning from the HIV/AIDs epidemic that devastated the country, understood early on that political will is needed for cervical cancer prevention
- HPV vaccine demonstration project with girls in grade 4-6 launched in 2013 and lessons learned for national roll-out in 2015
- Early collaboration and coordination between Ministry of Health, Ministry of education, parents, and communities.
- Advocating with vaccine company for support.
- HPV vaccine is now offered at every school around the country. 97% of in-school 9-11 year old girls received two doses of HPV vaccine in 2015. In the following years, only 9 year old cohort required to continue maintaining national coverage.



Thabiso described the challenges with the kangaroo mother care ward at the tertiary hospital in Botswana:

- Mothers were generally positive about KMC. Medical professionals and mothers viewed the time spent with their babies and rapid weight gain while in KMC as positives of the program.
- However, the lack of regular health worker checks, lack of education provided about KMC and lack of education in preparation for discharge negatively impacted mothers' experiences.
- KMC data is not currently being collected.
- There were gaps in policy, staffing, facilities, equipment and supplies, feeding practices and around discharge and home care in the KMC services provided.
- While the KMC ward existed, it was largely unsupported in terms of staffing and care.



The two presentations highlights key themes explored in the opening talks on implementation by Marleen and Queen of inspired leadership and the importance of political buy-in, importance of effective data systems and standardizing sources of information collection and tracking, setting up locally contextualized infrastructure and scale-up programs and consideration of local perspectives of caregivers involved.

Kangaroo mother care as a case study on implementation

The session on kangaroo mother care included Melissa Medvedev, Linda Nyondo-Mipando, Tamanda Hiwa and Thabiso Mogosti and highlighted some of the complexities even with a low technology intervention. Speaking of the OMWaNA trial, Melissa described the study with critical care babies instead of using KMC only when babies were stable as it is typically done, which would miss a vulnerable group of babies. With babies in critical situations, it further emphasizes the importance of innovative monitoring equipment. Linda shared findings from interviews with caregivers on KMC as part of the “Integrating a neonatal healthcare package for Malawi” IMCHA project. Linda discussed that the community perceptions of KMC are largely positive but highlighted the large burden placed onto mothers and their need for support in the process. There were interesting gender dynamics and Linda recommended dropping “mother” from KMC to reframe the practice as something anyone could do, even the father. Tamanda presented on a mentorship program initiated by the Malawi newborn care IMCHA project with nurse champions at district hospitals to strengthen KMC and breastfeeding support practice. Thabiso as mentioned earlier, described some of the challenges of KMC in Botswana where it is practiced but unsupported. These presentations on kangaroo mother care demonstrated how low technology interventions still need some technologies and there is a large need for consideration of implementation context.



From left to right: Kondwani Kawaza, Linda Nyondo-Mipando, Thabiso Mogosti, Tamanda Hiwa, Melissa Medvedev and David Goldfarb in the KMC panel

Closing the gaps from care to quality care

The last session of the implementation day, the “From evidence to implementation” session further explored the processes of implementation introduced by Queen Dube at the beginning of the day. From quality guidelines and checklists described by Ellen Chirwa, to health worker perspectives of barriers and facilitators to bubble CPAP use described by Maggie Woo Kinshella, to testing the quality and evaluating various newborn technologies in Kenya by Jesse Coleman, it speaks to an overall theme of the meeting that innovating according to a clinical need and getting the innovations out there is not the end of the story. Scale up is a process that requires investment in infrastructure and basic needs of a health facility, capacity building of its staffing and deep understanding of local contexts. Implementation research is important to bridge the divide from provisioning of care to quality care, a critical area of need that Joy Lawn discussed in the opening keynote. Effective means of training and building capacity of staff as well as dissemination of research to policy makers rather than traditional outputs of publications were key topics that emerged in the discussion.

In one word, what do you think are the biggest challenges to implementation?

050



Idea pitches

We are also very excited to have hosted five idea pitches at our event! As a part of pushing the agenda forward, we wanted to provide a space for new concepts to present on their ideas and get feedback and build connections with our diverse and knowledgeable delegates. After presenting the ideas, the innovators then held brainstorming and networking discussions over lunch to build an email list of people interested and to further develop the concepts. Our idea pitches included:

- Marceline Tutu van Furth (am.vfurth@amsterdamumc.nl) on a stickerchart to help children's adherence to medication. Ideas to develop with different images for age and gender. It can be used as a 'talking tool' and effective for patients as well as family members. It is cost effective and can be used for any chronic disease or treatment regimen.
- Bridget Freyne (bridgetfreyne@gmail.com) on Geo-link, a system to integrate mother-infant dyad biometrics, geolocation and perinatal data to improve quality and continuity of care.
- Pui-Ying Iroh Tam (irohtam@mlw.mw) on Paediatric Research in Antimicrobial Stewardship and Management (PRISM), a network of researchers in the topic to share information and collaborate with each other. As Pui-Ying notes, antimicrobial stewardship and management is "as important as global warming" with increasing antimicrobial resistance as well as an antibiotic discovery void in the past 30 years.
- Linda Nyondo-Mipando (lmipando@medcol.mw) on a WhatsApp group for bubble CPAP including a training module and detailed flow diagrams transmitted via the social media platform that many nurses already use. The WhatsApp group would form a community of practice around bubble CPAP and a consultant skilled in bubble CPAP can periodically join to respond to queries. A review of discussion topics raised in the chat could be compiled to generate a FAQ for Malawi.
- Pascal Lavoie (plavoie@cw.bc.ca) on VideoOx, a smartphone app to integrate video images (activity/tone, skin colour/ perfusion, abdominal distension), clinical variables (gestational age, birth weight, admission weight and days of age) and probe (for heart rate, respiratory rate and oxygen saturation) for neonatal sepsis identification.



Some images of the innovation round tables over lunch

For more information on these ideas, please check out the abstract booklet where they are described in more detail. If you're interested in any of these ideas and would love to stay connected, please contact the innovators through their emails listed above.

Focusing on sepsis

On the third day of Impact Now 2019, we brought the discussions from the past two days together with the emerging challenge of sepsis in maternal, newborn and child health and how to address the rising tide of antimicrobial resistance. We had three electrifying presentations that helped introduce the key issues in maternal, paediatric and neonatal sepsis. Ellen Chirwa presented on the management of puerperal sepsis in Malawi and described challenges in diagnosis, treatment and infection prevention. She recounted a narrative where the clients were asked to buy brown sugar, vinegar and hydrogen peroxide because of a lack of wound dressing supplies on the ward. Niranjan “Tex” Kissoon presented on the important issue of pediatric sepsis: a recent systematic review and meta-analysis estimated 3 million cases of neonatal sepsis and 1.2 million cases of sepsis in children (Fleishmann et al 2018). Tex highlighted that warming climate and more disease outbreaks, increasing urbanization, humanitarian crises and agricultural uses of antibiotics all contribute to antimicrobial resistance as an increasing threat to global health. Kondwani Kawaza brought the discussion to the experience of neonatal sepsis at a tertiary hospital in Malawi and the documented rise in gram negative organisms and a shift in both blood stream infections and antimicrobial resistance to younger babies. The panel discussion was joined by Pui-Ying Iroh Tam in addition to Ellen Chirwa, Niranjan “Tex” Kissoon and Kondwani Kawaza.



Msandeni Chiume, one of the co-moderators of the sepsis panel along with Pascal Lavoie



From left to right: Kondwani Kawaza, Niranjan “Tex” Kissoon, Ellen Chirwa and Pui-Ying Iroh Tam

The Pediatric Sepsis Data CoLaboratory (Sepsis CoLab) is a new international data-sharing network for collaboration to address pediatric sepsis mortality and morbidity. The majority or deaths due to sepsis occur 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. Unfortunately, accurate data collection is often challenging in under-resourced countries. The [Centre for International Child Health \(CICH\)](#) at BC Children's Hospital and the [World Federation of Pediatric Intensive and Critical Care Societies \(WFPICCS\)](#) have entered into a partnership and have launched this global network for collaboration.



The Sepsis CoLab session, chaired by Mark Ansermino and Tex Kissoon, discussed the use of the data-sharing network and what it could do for individuals globally. The session hosted a panel discussion, with Suiyven Elvis from Cameroon, John Appiah from Ghana, Angela Dramowski from South Africa and William Macharia from Kenya. These participants vocalized the way the CoLab could improve the quality of care in their facility and how it will help with research in the future. For more information or if you have questions, please contact Alexia Krepiakovich at alexia.krepiakovich@cw.bc.ca



From left to right: John Appiah, William Macharia, Suiyven Elvis, and Angela Dramowski

Summary: Hot topics and key themes raised at the meeting

Some of the key issues that were raised at the meeting:

- There is a need for innovations and research around stillbirths.
- Better integration between maternal and newborn health: we have the information but a need for better coordination. This is an area where innovations in digital health, especially big data management, can be very helpful. These challenges can be found in low- and middle-income countries (LMICs) as well as in high-income countries (HICs). This may be an opportunity for African leadership and reverse innovation learning from resource-constrained settings.
- Sepsis as an important topic with potential to bring diverse groups together and reduce the gaps between maternal, neonatal and pediatric care as infections exists on a continuum.
- Innovations on their own is not enough. There is a need to advocate to decision makers and understand the socio-political and cultural contexts for effective scale up.
- There is also a need to be aware of local cultural and economic constraints and work with locally appropriate channels for effective and sustainable implementation.
- Another hot topic of discussion was where innovations are not successful. The challenges of regulation and the need to plan for long term manufacturing and marketing was highlighted.
- There was keen recognition of leadership and the need for local champions and ownership, both at a higher level such as the Ministry of Health but also at the everyday level such as with nurse-led mentorship at the wards. Champions are needed to push for change until the tipping point where there is critical mass towards sustained practice.
- The importance of listening to women and communities.

- “The need for more advocacy to address maternal and neonatal health challenges. The need to facilitate access to more data. Focus and prioritization of sepsis”
- “We are doing a lot but can do even more together”
- “Linking maternal health with neonatal well-being essential.”
- “A lot of work is happening, even more coordination can be done”
- “We need joint efforts to the problems that seem impossible”
- “Lots of room for collaboration”
- “We need to move from getting acquainted to implementing and sustaining”
- “Need for data and collaboration”
- “Sustainability is key.”
- “Let’s act to get impact!”
- “Data matters, get baseline, make comparisons”
- “Maternal and newborn linkage. Keep stillbirths in the picture”
- “Slow but impactful ideas matter”
- “Importance of working together towards the same goal”
- “Collaboration is essential”
- “Collaborate more and provide mentoring as opposed to training.”
- “ The need for collaboration”
- “You must have basic resources, water, electricity, antibiotics, etc for many of these very impressive Innovations to work!”
- “Simple tech can make huge impact”
- “Improved collaboration for data”
- “Need to collaborate more and do more advocacy”
- “There is need to translate our science (research) into action. Therefore we need to bring the knowledge generated to policy makers and those that have influence over the healthcare system so that they can buy in our recommendations. Just publishing is not enough.”
- “The need to implement, and continuously strive to collect data to improve quality”
- “Remove silos and improve communication among researchers, clinicians, others developing technologies for maternal/newborn/pediatric health”
- “Stillbirths should be a focus for innovators!”
- “We are doing a lot but can do even more together”



Brainstorm and collaborating together at the innovation round tables

IMPACT NOW

18 November 2020 -
20 November 2020



JOY LAWN, ELIZABETH MOLYNEUX, MARLEEN TEMMERMAN, QUEEN DUBE, NIRANJAN 'TEX' KISSOON, REBECCA RICHARDS-KORTUM, SUELLEN MILLER, JUSTUS HOFMEYR, PETER VON DADELSZEN, DOREEN RAMOGOLA-MASIRE, KARA PALAMOUNTAIN, DANICA KUMARA, MARK ANSERMINO, LYNETTE KAMAU, LINDA NYONDO-MIPANDO, KONDWANI KAWAZA, PUI-YING IROH TAM, PASCAL LAVOIE, MSANDENI CHIUME-CHIPHALIWALI, MELISSA MEDVEDEV, GUY DUMONT, DARRYL VINE, MATTHEW WEINS, MICHELLE HEYS, DUSTIN DUNSMUIR, PETER MOSCHOVIS, XOLISWA MAJOLA, DATA SANTORINO, TAMANDA HIWA, THABISO MOGOTSI, ELLEN CHIRWA, JESSE COLEMAN, JEFF PERNICA, MAGGIE WOO KINSHELLA, BELLA HWANG, ELVIS SUIYVEN, JOHN APPIAH, ANGELA DRAMOWSKI, WILLIAM MACHARIA, CHISHAMISO MUDENYANGA, SONA SHAH, RITA OWINO, ROGER RASSOOL, GRANT AARON, A.M. TUTU VAN FURTH, BRIDGET FREYNE

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