RWANDA GLOBAL HEALTHCARE SUMMIT

BOOK OF ABSTRACTS

18 - 20 November | Kigali , Rwanda

BS INVESTMENTS BE STILL INVESTMENTS

Republic of Rwanda
Ministry of Health

rbc Rwanda Biomedical Centre

Rwanda Convention Bureau

Full Programme

Thursday 18th November 2021		
KCC	**AD12**	**MH2 & MH3**
07:30-08:30	**Arrival of Delegates**	
OPENING CEREMONY		
08:30-11:00		**Master of Ceremony:** Dedo Mate-Kodjo & Walter Muparadzi **Opening & Welcome Remarks:** RBC Director General - Dr Sabin Nsanzimana **Guests:** ▪ WHO Country Representative- Dr. Brian C. Chirombo ▪ Enabel – Mr. Dirk Deprez ▪ Med Aditus- Dr. Dhiren Thakker **Plenary Discussion: Global Health Funding, Delivery and Innovation in the Era of COVID-19** **Moderator: Dedo Mate-Kodjo** • Rwanda Biomedical Centre Director General: Dr Sabin Nsanzimana • WHO Country Representative: Dr. Brian Chirombo • Med Aditus CEO and Founder: Dr Dhiren Thakker • WaterAid: Dr. Om Prasad Gautam • Partners in Health: Dr. Joel Mubilingi • ZIPLINE: Sineka Samuel Siabnaa
COFFEE BREAK – 11:00		
KCC	**AD12**	**MH3**
	Cancer and Palliative Care	**Universal Health Coverage**
11:30-13:00	• **11:30-11:45:** Discovering innovations in managing cancer care in resource-limited settings - **Dr. Cyprien Shyirambere (Butaro Hospital)** • **11:45-12:00:** Using EMR to improve Cancer Care during the COVID-19 Pandemic - **Nadine Karema (Partners in Health)** • **12:00-12:15:** Global oncology in Africa- a call for equity - **Dr Cristina Stefan (Romania)** • **12:15-12:30:** Continuing Medical Education in Gynaecology Oncology - **Dr. Lisa Bazzett- Matebele (USA)** • **12:30-12:45:** Testimony and success story on surviving cancer - **Mr. Vincent Keunen (Belgium)** • **12:45-13:15: Question & Answer Session**	• **11:30-11:45:** Service delivery, Health Financing and Governance - **Dr. Corneille Ntihabose (DG- MoH)** • **11:45-12:00:** How WASH improvement in HCFs helps in attaining universal health coverage - **Dr. Nurullah Awal (WaterAid)** • **12:00-12:15:** Universal Health Coverage for East Africa - **Dr. Murthy Venkateswaran (New Zealand)** • **12:15-12:30:** Delivering routine universal primary health care services to youth in post-schooling education and training, in South Africa, during the COVID-19 pandemic - **Dr. Ramneek Ahluwalia (South Africa)** • **12:30-12:45:** UHC as a tool for Population Health Management in African countries - **Patricia Manthe (Netherlands)** • **12:45-13:00:** Investing in Nursing and Midwifery to achieve Universal Health Coverage and SDGs - **Faustine Uwingabire (Rwanda)** • **13:00-13:30: Question & Answer Session**
LUNCHTIME – 13:00 – 14:30		
KCC	**Reproductive, Maternal, Newborn, Child and Adolescent Health - AD12**	**Transforming the Health Sector through Integration of Digital Technologies- MH3**

Full Programme

11:30-13:00	• **14:30-14:45:** Maternal Near-Miss Audit in Rwanda: quality assessment project - **Dr Véronique Zinnen (Enabel)** • **14:45-15:00:** Harnessing digital innovation for NCD's among the paediatric population "lessons during the COVID-19 pandemic – **Dr. Angela Migowa (Kenya)** • **15:00-15:15:** Global Health Prospective: A Need for Paradigm Shift for Improving Child Health in Africa – **Dr Senait Kebede (USA)** • **15:15-15:30:** Quality of HMIS maternal, child and community health data in 7 districts of Rwanda – **Ir. Evelyne Bocquet (Enabel)** • **15:30-15:45:** Let's dance for MDGs but tighten the belts for SDGs: Experience from good performers – **Dr. Calliope Simba (Japan)** • **15:45-16:00:** Using SBC programming to address nutrition gaps – **Jeanne d'Arc Nyirajyambere (Rwanda)** • **16:00-16:15:** The role of WASH in the addressing sustainable improvements in health outcomes for newborn and maternal health - **Dr. Mercy Masoo- (WaterAid)** • **16:15:1645: Question & Answer Session**	• **14:30- 14:45:** The integration of technologies in the medical and public health field - **Muhammed Semakula (RBC)** • **14:45-15:00:** How Digital Workflows and Data Integrity Revolutionize Supply and Operations in Healthcare Delivery - **Dr. Jason Cross (USA)** • **15:00-15:15:** The growing importance of digital health and mHealth in LMIC • **15:15-15:30:** Bringing care closer to patients - **Dino Celeste (South Africa)** • **15:30- 15:45:** Closing the gap: ICT accelerating WASH data collection and use to improve quality of case in health care facilities - **Sineka Samuel Siabnaa (ZIPLINE)** • **15:45-16:15: Question & Answer Session**
END OF DAY 1		

FRIDAY 19th NOVEMBER 2021		
Exhibition is on-going at the exhibition site in front of the MHs		
KCC	**Plenary Discussion** **Making Medicines/Vaccines Locally - Innovations/Business- MH3** **Moderator: Samuel Sineka Siabnaa** Dr. Dhiren R. Thakker- Med Aditus (USA) Dr. Jason Cross- Rymedi (USA)	
	One Health Approach	**Mental Health and Addiction**
10:45-12:00	• WASH a universal connector for a sustainable one health approach- **Tayo Bankole -Bolawole (WaterAid)** • Environmental health, WASH, communicable diseases and health systems, including health-seeking behavior and community health worker resources- **Dr. David Musoke (Makerere University)** • How WASH, antimicrobial resistance (AMR) and infection, prevention and control (IPC) can come together within the One Health Approach- **Dr. Nurullah Awal (Bangladesh)** • **11:30-12:00: Question & Answer Session**	• **10:45-11:00:** Prevalence of mental disorders and associated factors among general population and genocide survivors in Rwanda – **Dr. Jean Damascène Iyamuremye (RBC)** • **11:00 -11:15:** The Role of NGOs in the fight against addiction in Rwanda – **Dr. James Ngamije (Rwanda Youth Impact)** • **11:15-11:30:** Depression and alcohol use disorder among youth in Rwanda – **Dynamo Ndacyayisenga (RBC)** • **11:30-11:45:** Prevalence of drugs and substance abuse amongst adolescents: A pilot study in 7 districts - **Dr. Darius Gishoma (UR) and François-Régis Habarugira (Enabel)** • **11:45-12:00: Question & Answer Session**

Full Programme

	Environmental health, WASH, communicable diseases and health systems, including health-seeking behaviour and community health worker resources	**Healthcare Quality & Patient Safety**
14:00-17:00	How WASH, antimicrobial resistance (AMR) and infection, prevention and control (IPC) can come together within the One Health approach	• Doing the right thing at the right time for the right person and having the best possible result - **Dr. Magret Maulana (Zimbabwe)** • Essential WASH for Safe, Quality and Dignified Care - **Natasha Mwenda** • The use of Augmented reality in addressing medical device maintenance, Case study ARguideMEDx - **Patricia Manthe (Netherlands)** • **12:00-12:30: Question & Answer Session**
END OF DAY TWO		

DAY THREE

SATURDAY 20th NOVEMBER 2021		
Exhibition is on-going at the exhibition site in front of the MHs		
KCC	**AD12**	**MH2 & MH3**
07:30- 09:00	**BUSINESS TO BUSINESS BREAKFAST MEETING** • Dr. Dhiren R. Thakker- Med Aditus USA • Ezekiel Sai- Sanitas Hospital Tanzania • Dr. Jean C. Nyirinkwaya - La Croix du Sud • Maurice Kwizera- WaterAid • Turker Koksal **- TKI Germany** • Dr. Magret Maulana- PSMI Zimbabwe • Sunil Savio Pereira **- Baltell India**	
KNOW YOUR HOST		
09:20-11:00	Gisozi Genocide Memorial Visit	
11:00-12:30	Zipline Muhanga Tour	
END OF SUMMIT		

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DAY ONE SESSIONS

Cancer & Palliative Care

Dr. Cyprien Shyirambere (Butaro Hospital)

Discovering innovations in managing cancer care in resource limited settings

- Cancer is a growing global health challenge with an expected spike of new cases from 18.1 million in 2018 to 21.4 million by 2030.
- In the context of poor health care systems and impoverished communities, the scarcity of accessible diagnostic and treatment services leads to poor health outcomes and negatively impact achievement of major health targets (UHC) and SDG by 2030.
- Decentralising affordable cancer diagnostic and treatment services for patients can potentially increase access to these services, mitigate the risk of enduring catastrophic expenditures and contribute towards achieving the UHC goal.
- Over the past twenty years, Rwanda has recorded key health improvement indicators including: Increases in life expectancy (from 48.6 in 2000 to 67.4 in 2015). Decline in maternal mortality (from 1,071 in 2000 to 210 per 100,000 live births in 2015). Rapid high coverage of the community based insurance (CBI) that covers 94% of Rwandans. Concurrently, New HIV infections that dropped from 21,000 in 2000 to 5,300 2000 in 2019) However, similar gains have yet to be recorded in the prevention and control NCDs where age-standardised NCD mortalities rate slightly decreased from 894.9 to 548.6 deaths per 100,000 people from 2000 to 2016. Some of the key existing hurdles in NCD care in Rwanda include the lack of trained providers, inadequate and inequitably distributed advanced treatment options, limited access to drugs and early diagnosis services at all levels of the health care system.

Nadine Karema

Partners In Health

Using EMR to improve Cancer Care during the COVID-19 Pandemic

Purpose

- Continuum of care by ensuring that patients with abnormal initial tests are linked to timely diagnosis and care.
- Decentralization of cancer screening
- Easier clinical documentation and tracking of patients in a cervical cancer screening and breast cancer early detection program.

Implementation Success

- Multi-institutional and multi-disciplinary collaboration to build and refine tool
- Successful uptake and accountability by a number of providers with little prior experience with the tools.
- A high number of patient visits entered into the EMR, facilitating assessment of the screenings.

Implementation Challenges

- Form completion burden for clinicians, requiring simplification of data entry
- High rates of incomplete data at the beginning, requiring the inclusion of more validation rules
- Variable connectivity
- Enhancement of tool
- Remote support for high-level issues + lesson sharing via Whatsapp/Phone

Results

- 22 informatics trainers trained over 269 clinicians at 81 health facilities from June 29th - November 2020.
- 13783 patients had cervical screening data entered, with discrepancies of 1-4% between patients entered and requested HPV tests.

Conclusion

- Building an informatics system to facilitate cancer early detection and patient follow-up in rural low-resource health facilities is feasible.
- Continuous adaptation, training, and multidisciplinary cross-institutional collaboration are key.

Next Steps

- Clinician focus groups to assess barriers and guide continued tool refinement.
- Continued implementation and training in reports to identify missed visits and re-engage patients in care.
- Assessment of tool's impact on care delivery.

Dr. Cristina Stefan (South Africa)

AFRICAN CANCER INSTITUTE
AFRIKA KANKER-INSTITUUT

Global oncology in Africa-a call for equity

Global oncology has recently emerged as a new topic amongst all interested in global or public health. Cancer has overtaken death numbers the number of cardiac patients even in developed countries and we expect even a sharper rise in the very near future.

Even though global oncology does not yet have a definition accepted by all, the fundamentals are related to the reduction in the great disparity between ways of preventing, diagnosing or treating the disease in the world or in other words the place of birth should not be identified with the chances of survival and quality of care. Global oncology can be shortly defined as equity for all, for every patient, every day.

Africa is making strides for a better future for all African cancer patients living on the large continent and global partnerships and collaboration among nations should take place by exchange of information and knowledge, by optimizing the delivery of care for all, by finding solutions for the financial treatment of cancer and by streamlining health policies and governance.

Dr. Lisa Bazzett-Matebele (Botswana)

Continuing Medical Education in Gynaecology Oncology

Cervical cancer is responsible for more cancer deaths in Rwandan women than any other cancer. This is also true in many LMICs around the world. In May 2018 the Director-General of WHO announced a global call to action towards the elimination of cervical cancer and in 2020 it was adopted by the World Health Assembly. November 17, 2021, marks the one-year anniversary of the Cervical Cancer Elimination Day of Action, where we celebrate our global achievements in the fight against cervical cancer. We will review the impact cervical cancer has on women throughout the world with a special focus on Rwanda and our continued progress toward elimination.

Universal Health Coverage

Dr. Nurullah Awal (WaterAid Bangladesh)

How WASH improvement in HCFs helps in attaining universal health coverage

Dr. Nurullah, who also holds the Chair of the WASH Working Group of the Global Task Force for Cholera Control (GTFCC) will set the context for this session as we explore and invite dialogue on how WASH, antimicrobial resistance (AMR) and infection, prevention and control (IPC) can come together within the One Health approach. As moderator of this session, Dr. Nurullah will bring his health and WASH expertise and share reflections from Bangladesh.

WASH in health care facilities (HCFs) is a global initiative, underpinned by the agreed WHA Resolution 72.7, to integrate and align WASH components towards improved, acceptable, accessible, and comprehensive health care. WASH plays a vital role in all four components of universal health coverage - promotive, preventive, curative, and rehabilitative. WaterAid's innovative, context-specific interventions demonstrate ample examples in Bangladesh and other countries to improve the use of health care facilities and enhance health system development. WASH interventions ensure safe and running water, separate and gender-friendly toilets, create hand washing options, and enhance inclusiveness alongside capacity development of the clinic management committee.

These measures increase a multitude of factors of patient care including decreased pressure in higher-level facilities; nurturing higher confidence and participation among local stakeholders; in addition to enhanced governance and accountability measures.

WaterAid Bangladesh (WAB) has developed the WASH guideline for the community clinics, the first and primary tier of health care, which has been endorsed by the government of Bangladesh. These guidelines and the following interventions helped WAB understand where to direct WASH investments effectively at the secondary level in the sub-district hospitals and then also at the district level health facility towards comprehensive health coverage.

Dr. Murthy Venkateswaran (New Zealand)

SANITAS HOSPITAL
Keeping Africa Healthy

Universal Health Coverage for East Africa

The United Nations (UN) Sustainable Development Guidelines (SDG), as well as World Health Organization (WHO), wish for each nation to offer Universal Health Cover (UHC) to their citizens as a "means-blind" duty. Each nation in the world claims to want the same but no nation is anywhere close to achieving anything close to this goal. Rwanda is about 90% there with regard to "primary healthcare" alone.

What I understand and mean by UHC is "head-to-toe, primary prevention, acute care, chronic care and palliative care" to every man, woman and child in the nation regardless of their ability to pay for it. Under the current, "Fee for Service" (FFS) model or some hybrid of some sort, this goal is decidedly not possible to achieve. Human greed cannot be overcome by any form of altruism. The current model is open to abuse and is rampantly abused by all three stakeholders – the patient, the provider and the sponsor (insurance, government, donor) – and the allocated funds do not reach the target in its entirety. No amount of "technology" will help either. Economies of scale will only help to an extent but is not possible everywhere and the FFS model does not yield to economies of scale either.

Is there an alternate model? Decidedly, YES. I shall explain this model in my presentation and am happy to help nations in the EAC successfully develop and implement this to their people very quickly and be the first in the world to successfully offer their citizens UHC despite not being rich nations. We can be the trail blazers for the world to follow.

Dr. Ramneek Ahluwalia (South Africa)

HIGHER HEALTH
Higher Education & Training: Health, Wellness and Development Centre

Delivering routine universal primary health care services to youth in post schooling education and training, in South Africa, during the COVID-19 pandemic

Affiliations:

1. HIGHER HEALTH, Centurion, South Africa
2. University of Johannesburg, Johannesburg, South Africa

Issue: COVID-19 has the potential to disrupt essential systems for health and undermining existing programmes to address youth health & wellness priorities.

Background: The Post Schooling Education & Training (PSET) sector is home to over 2,5 million youth, mostly between 15 – 24 years old, who face disproportionately high vulnerabilities to health and wellness challenges, such as HIV/TB/STIs, unplanned pregnancies, Mental Health, Gender-Based Violence, Alcohol, and Drug Abuse, among others. As early as the pandemic was declared a national disaster, we began building comprehensive programs, systems, and controls to respond to the pandemic and ensure the PSET sector returned to safe teaching and learning.

Objectives: We aimed to safeguard graduate throughput, skills, and competencies development, and subsequent youth participation in the economy; through a concerted response to COVID-19 and continued provision of routine services on equally existent and persistent student health and wellness challenges.

Methods: We leveraged on systems built for COVID-19 response by developing a COVID-19 screening volunteers training program that included an emphasis on promotion and mobilization of students to take up routinely provided HIV/TB/STI & SRH as well as GBV & Mental Health Services. We enrolled students in routine health programs at COVID-19 screening stations. We re-designed our flagship First Things First Student Health and Wellness activations to comply with the new guidelines on gatherings and extended service delivery through outreach activations at residences on and off-campus. We partnered campus management to ensure the Second Curriculum Extramural Peer-to-Peer health and wellness education programme was integrated as part of the formal academic cycle and conducted more frequent smaller groups student health and wellness dialogues sessions and other peer to peer activities such as adherence and survivor clubs, etc.

Results: Between January and December 2020, a total 772 001 students were reached in Universities and Technical Vocational Education Training Colleges with student health and wellness programmes through First Things First Student Health and Wellness activations as well as Second Curriculum Extramural Peer to Peer health and wellness education programme on HIV/TB/STI, SRH as well as Gender Based Violence & Mental Health. In addition, we have established a network of over forty-five thousand capacitated individuals, across all our campuses, through continuous remote and on-campus trainings, building capacity with management, frontline and academic staff, student support services, student leadership and the general student body on understanding the virus and how to manage the effects of COVID-19 in the post-school environment.

Conclusion: In the face of continuously unfolding global pandemics; COVID-19 response interventions need to leverage on, and incorporate, existing programmes, systems, and capacity to ensure the gains realized in responding to epidemics such as HIV and TB are not reversed.

Patricia Manthe (Netherlands)

UHC as a tool for Population Health Management in African countries

Born at the end of 2013, operated in stealth mode for two years, and operationalized since 2015, MEDx eHealthcenter has been on a long journey of SDG 3.8 as defined by the UN agenda. Since its creation, it has done advocacy and change management around UHC across emerging countries and has developed a few products that will later elaborate.

We live in a world that has gone through an incredible transformation in the last decades. Those transformations did impact not only our economy but also our society and biosphere. Our biggest challenge is to build back better those different layers while leaving no one behind. That will entail strongly rebuilding the trust between the different generations, the societal entities, and the ecosystem. Healthcare is a critical component to ensure harmony for the Younger and next generation.

We are strengthening the fabric and foundation of local health systems. We do this in two ways. Firstly, by helping governments and institutions articulate their UHC ambitions into concrete plans and find answers to questions such as 'what to prioritize in the short-mid term?', 'What competencies to get around the table or where to find them?' and 'How to qualify risks in the UHC context and manage them?'. Secondly, by driving holistic and more integrated solutions to local health systems before the successive waves of health crisis hit.

To achieve this, we work with diverse professionals and partners to bridge the cultural or communication gaps to consumers and introduce a genuinely international perspective to drive optimal outcomes in local health systems.
Our Products' portfolio includes the digital Hospital, an offline medical record card, and the ARGuide for smart medical equipment maintenance. Previous and current projects with customers have entailed the development of smart solutions to manage the penetration of healthcare services and to manage the maintenance of medical equipment to prolong the exploitation of public Health assets in medical facilities in emerging countries.

The Key MEDx solution is best described as a one-stop-shop for healthcare transformation, and our digital hospital is an end-to-end or (global IT SAAS i.e., (Software as A Service), that offers seven core capabilities organized around the patient and relevant to Primary, secondary, and tertiary care (serving both healthcare service clients and providers). (check our Client Demo: https://www.wecashup.cloud/techcrunch-pres/test.html).

Our Scope cuts across the seven foundational pillars of health systems, including material care (equipment, technology & infrastructure), medicinal care (pharma & labs), medical care (human capital), financial care, institutional care (policy capital), patient care and family care. We aim for smart solutions to enable sustainability and scalability to drive outcomes at scale.

Fauste Uwingabire (Rwanda)

Investing in Nursing and Midwifery to achieve Universal Health Coverage and SDGs

Nurses and midwives serve beyond just being at the entry point of the healthcare system; They are the backbone of an effective health system. They are often based in the community and come from the community they serve! They play a critical role in providing evidence-based health solutions, and connect families/ communities from all areas (rural, remote, urban) to the health system.

Nurses and midwives are also critical to achieve any health related national-global goal as their role encompasses the promotion of health, prevention of illness and care of the physically and mentally ill, people of all ages with different abilities.

Investing in those professions is one of the essential global goal implementation strategies. The investment needs to be understood beyond just increasing their number but also investing for their quality education; sub-specialization in various clinical and non-clinical domains (leadership, education public health); fair employment and remuneration of those cadres.

Nursing leadership & management

Nurses represent the largest group of health services providers at all levels. Having prepared nurses for leadership roles is a critical aspect of health institutions success, as they model and support their fellow students to be the best they can be. Leadership drives the process to reach the vision; strive to increase innovation in a culture of evidence-based practice.

Though globally; many health institutions/organizations/ programs are more medical driven; Since the time of Florence Nightingale, Nurses successfully contributed to the advanced health system we do have today. Nurse leader-managers are key to strategic planning in their organization; They usually handle a variety of managerial duties, such as employee hiring, training, performance reviews, budget planning and support for professional development. They shape, improve, and even create new policies within their organization. It is time to recognize that they can achieve more and successfully lead and manage small or large health organizations/ institutions.

Reproductive, Maternal, Newborn, Child and Adolescent Health

Dr Véronique Zinnen

Enabel

Maternal Near-Miss Audit in Rwanda: quality assessment project

The multifactorial nature of quality of care requires a systematic approach to its assessment and improvement. It is in this context that clinical audit can serve as an instrument for evaluating and improving the quality of care.
Clinical audit is a quality improvement cycle that involves measurement of the effectiveness of healthcare against agreed and proven standards for high quality and taking action to bring practice in line with these standards to improve the quality of care and health outcomes.

Auditing maternal deaths is a classic approach to assess the functioning of the health care system and identify gaps in service delivery. Because maternal deaths are rare events to monitor in depth and regularly the quality and performance of obstetric services delivered at health facility, WHO introduced in 2004 the near-miss audit approach to complement the maternal death review. Indeed, for every woman who dies from pregnancy or childbirth-related causes, it is estimated that twenty more suffer from pregnancy-related complications. These women who nearly escape death are categorized under “near miss” meaning “a woman who nearly died but survived a complication that occurred during pregnancy, childbirth or within 42 days of termination of pregnancy.”

The near-miss case review approach has been introduced in Rwanda one year ago but information on the quality of the implementation is missing as well as the methods used and the follow-up of the recommendations.

The Barame project is supporting the process of maternal and neonatal case audits introduced and conducted by the Maternal, Child, Community health (MCCH) division. The project, together with the MCCH division, are intending to evaluate the quality of the recent near-miss audit implementation in the seven districts of Barame intervention by using a checklist developed by WHO in 2015. The objective is to ensure that the approach is implemented according to the standards and guidelines by staff correctly trained. It is essential to ensure that clinical audit methods are understood and applied as they should before to improve the quality of obstetric care and further reduce maternal morbidity by this approach.

Dr. Angela Migowa (Kenya)

Harnessing digital innovation for NCDs among the paediatric population "lessons during the COVID-19 pandemic

Therapeutic Advances in Drug Safety *Original Research*

Effect of a voice recognition system on pediatric outpatient medication errors at a tertiary healthcare facility in Kenya

Ther Adv Drug Saf
1–10
DOI: 10.1177/
2042098418781520

Angela N. Migowa, William M. Macharia, Pauline Samia, John Tole and Alfred K. Keter

Abstract

Background: Medication-related errors account for one out of every 131 outpatient deaths, and one out of 854 inpatient deaths. The risk is threefold greater in the pediatric population. In sub-Saharan Africa, research on medication-related errors has been obscured by other health priorities and poor recognition of harm attributable to such errors.

Our primary objective was to assess the effect of introduction of a voice recognition system (VRS) on the prevalence of medication errors. The secondary objective was to describe characteristics of observed medication errors and determine acceptability of VRS by clinical service providers.

Methods: This was a before–after intervention study carried out in a Pediatric Accident and Emergency Department of a private not-for-profit tertiary referral hospital in Kenya.

Results: A total of 1196 handwritten prescription records were examined in the pre-VRS phase and 501 in the VRS phase. In the pre-VRS phase, 74.3% of the prescriptions (889 of 1196) had identifiable errors compared with 65.7% in the VRS phase (329 of 501).

More than half (58%) of participating clinical service providers expressed preference for VRS prescriptions compared with handwritten prescriptions.

Conclusions: VRS reduces medication prescription errors with the greatest effect noted in reduction of incorrect medication dosages. More studies are needed to explore whether more training, user experience and software enhancement would minimize medication errors further. VRS technology is acceptable to physicians and pharmacists at a tertiary care hospital in Kenya.

Dr Senait Kebede (USA)

Global Health Perspective: A Need for Paradigm Shift for Improving Child Health in Africa

Over the past decades, considerable attention was devoted to maternal, newborn, child, and adolescent health (MNCAH). This has resulted in a significant reduction in maternal and under 5 mortalities compared to the 1990s. However, still, millions of mothers, new-born and children die each year from preventable diseases. The majority of these deaths occur in low- and middle-income countries (LMIC) with Africa bearing the highest burden. The situation is further complicated by the current COVID-19 pandemic that threatens the reversal of the gains so far made through disruption of MNCAH services and diversion of meager resources.

Multiple global initiatives have shaped the MNCAH agenda with a shift of focus from individual services to addressing determinants of health and improving quality of care. Most countries have made considerable progress while many others particularly in Africa continue to lag behind. This could be explained by the prevailing weak health system which includes lack of effective approaches for sustainable delivery of improved quality of care. This highlights the need for rethinking current models of engagement towards tailored solutions for resilient health systems in improving care for newborns and children. Among the priorities may include national leadership, capacity building, and alignment of partnerships and resources to meet national MNCAH agenda.

The presentation highlights current situations, challenges, opportunities, and future directions to achieve better outcomes for neonatal, child, and adolescent health in Africa.

Global Health Perspectives: HIV/AIDS in Africa

It is now 40 years since the first HIV/AIDS case was reported. The disease generated unprecedented support from clinicians, researchers, political leaders, and other stakeholders. The successful advocacy, scientific collaboration, and resource mobilization resulted in unparalleled achievements in diagnostics, treatment, and preventive interventions to control the epidemic. The progress has been sustained in high-income countries (HIC) while there remains more to be done in low- and middle-income countries (LMICs), particularly in the African region.

In the African continent, generally, a steep decline in deaths has been observed mainly through increased access to testing and treatment. However high burden countries continue to report rising numbers of people living with HIV/AIDS. Among the reasons include poor coverage to treatment and prevention services among adolescents and key populations, lack of harmonized approach for children with HIV, and failure to integrate HIV into other services.

The presentation highlights the perspectives in the context of challenges, opportunities, and future directions.

Ir. Evelyne Bocquet

Enabel

Quality of HMIS maternal, child and community health data in 7 districts of Rwanda

The Rwanda Health Information System (HMIS) has markedly improved over the years, from its creation in 1998 to its integration in the District Health Information System version 2 (DHIS2) in 2012. Lots of effort is made to produce monthly data and to ensure the quality of the data in compliance with "Standard Operating Procedures" and "Data Quality Audits". However, despite all these efforts, gaps remain in the availability of qualitative and accurate data. A baseline assessment of the quality and use of Maternal, Child, and Community Health data in 7 districts of Rwanda is conducted by Barame/Enabel (Belgian Development Agency) in collaboration with the MCCH Division of the Rwanda Biomedical Center (RBC) to support the management of maternal, neonatal, child and community health data.

Methods

Ten national key indicators concerning maternal, child, and community health have been selected and their quality will be reviewed in the health facilities of 7 districts using contextualized WHO tools. Moreover, interviews will be conducted with data managers of each health facility visited to have a deeper understanding of the root causes preventing data to be of good quality.

Results and way forward

The results of this baseline study such as good practices, priority issues regarding data quality will be taken into account to design interventions aiming to improve MCCH data quality. Later on, strategies to improve the use of maternal, newborn, child, and community health information will be developed to, in fine, enhance the quality of monitoring and decisions made at the operational level.

Dr. Akintije Simba Calliope, MD, PhD (Japan)

Let's dance for MDGs but tighten the belts for SDGs: Experience from good performers

The health of mothers and their children (new-born) is of critical importance, both as a reflection of the current health status of a large segment of the world's population but also as predictors of the health of the next generation. A range of indicators of maternal and neonatal health exist, those primarily affecting pregnant and postpartum women (including indicators of maternal sickness and death) and those that affect the health and survival of infants (including infant mortality rates; birth outcomes; prevention of birth defects; access to preventive care; and fetal, perinatal, and other infant deaths).

Various factors such as toxic exposure (such as air pollution, tobacco...), maternal habits, psychosocial factors, socioeconomic status, chronic stress, and infection such HIV/AIDS may impact pregnancy outcomes. These outcomes include spontaneous abortion, preterm birth and low birth weight alterations in the development of the foetus. Western countries have seen an increase in obstetric pathologies related to lifestyle and diet, such as gestational diabetes among others where they are focusing their efforts. However, for sub-Saharan countries, the most important objective is to reduce maternal and neonatal deaths due to preventable causes, reduce the incidence of infectious diseases and their transmission from mother to foetus.

Many countries, not only developed but also a few in Africa, have achieved MDGs 4 and 5. However, we should not relax and celebrate such incredible achievements, rather the time to march the sustainable goals must be combined with the ability and efforts to learn from those who have performed better prior to MDGs era and have been recording low rates of MMR and INMR. What did they do and what can we learn from them, such cases including Japan.

Jeanne d'Arc Nyirajyambere (Rwanda)

Using SBC programming to address nutrition gaps

A USAID Hinga Weze project (2017-2022) sought to use the Social Behavior Change approach to address nutrition gaps among women of reproductive age (15-49) in rural districts (10) through formative research. The purpose was to capture the knowledge, motivation, attitudes, and behaviors towards the use of household incomes for purchasing nutritious foods, food safety knowledge, maternal and child nutrition to inform the project programming to improve nutrition.

The research sampled 23 focus group discussions (FGDs) with mothers of reproductive age (15- to 49-years- old) and their partners, one in every sector in HW targeted districts, between August and September 2018. 110 district staff and community-based volunteers (CBVs) participated as key informants to complement the primary qualitative data from the parents in the study.

Much as the findings found that the majority of mothers practiced exclusive breastfeeding at birth, households eat what they produce and spend very little income on purchasing food later on nutritious foods with a good understanding of personal hygiene and sanitation; but they had no knowledge of food safety, food allergies, and adoption of proper hygiene, sanitation, and food safety practices which are key to nutrition.

The research thus led to HW developing a tailored SBC strategy based on the socio-ecological framework Model (CDC 2008) recognizing behavior change to be achieved through activities that target four levels of SBC programming to benefit its beneficiaries holistically: it hinged on Intrapersonal, interpersonal processes including formal and informal social networks and social support systems, such as family, friends, colleagues, and peer networks; Community and institutions, and informal networks tackling Institutional factors to enable nutrition knowledge among farmer communities.

Dr. Mercy Masoo

The role of WASH in addressing sustainable improvements in health outcomes for newborn and maternal health

WA launched the Healthy Start campaign in 2015 which, in collaboration with Government health services, looked at supporting through service delivery and advocacy interventions a comprehensive WASH approach to healthcare facilities. Healthy Start had the added aim to improve the health and nutrition of newborn babies and children by advocating for WASH to be integrated into health policy and delivery locally, nationally, and internationally. The WHA resolution 72 on WASH in health care facilities was passed in 2019. WA takes advantage of our participation in the Summit to share our experience in several programme countries on the importance of WASH not only as an important factor in prevention of disease but also critical to improvements in health outcomes for newborn and maternal health

Muhammed Semakula

Rwanda Biomedical Centre
Healthy People, Wealthy Nation

The integration of technologies in the medical and public health field

The integration of technologies in the medical and public health field seems to be a sustainable solution for emerging epidemics worldwide, including early detection of disease, epidemic surveillance, case identification, contact tracing, virtual health care, and preventing diseases through predictive models. The Government of Rwanda adopted digital health as a strategy of controlling and preventing pandemics.

Rwanda's healthcare system has responded to the COVID-19 pandemic with innovative interventions to prevent and contain the virus and utilized adaptive and innovative technology and robust risk communication and community engagement to deliver an effective response to the COVID-19 pandemic. The country builds on existing IT infrastructures to elaborate effective contact tracing systems to reduce the risk of transmission.

Rwanda used robots in treatment centres to carry out tasks like checking vital signs to reduce exposure of healthcare workers. A surveillance system of influenza was transformed to provide an early warning of suspected COVID-19 Cases in health facilities. Rwanda used real-time analytical platforms to visualize data and help in data-driven decisions.

The future of public health is likely to become increasingly digital, and lessons learned on using digital health in COVID-19 pandemic are being extended to other diseases to strengthen pandemic management and future preparedness for any emerging pandemic diseases.

Dr. Jason Cross (USA)

Rymedi

How Digital Workflows and Data Integrity Revolutionize Supply and Operations in Healthcare Delivery

The COVID-19 pandemic accelerated digitization agendas across healthcare to enable remote care and enhance tracking and reporting. However, difficulty coordinating between complementary components of the patient care cycle, digitizing in their own silos, continues to hamper COVID-19 and other healthcare responses. Data privacy, security, integrity, and compliance concerns remain bottlenecks to digitally coordinating across the care continuum. This presentation describes how a blockchain-based Connected Health Platform is clearing that bottleneck and improving multi-party coordination in testing, treating, and monitoring COVID and other diseases. These examples demonstrate how greater trust in processes and data across decentralized organizations points the way toward massively scalable reinvention of the organizational and business models of healthcare delivery. Digital health tools become valuable beyond the immediate impact of their assistive or monitoring functions. They also connect patients, providers, administrators, regulators, and product suppliers in networks where greater coordination and trust enable qualitatively new ways to improve healthcare quality and access. Patient care-focused digital health tools are thus providing the means of radically innovating healthcare logistics, administration, finance, R&D, and ultimately policy, with feedback loops in both directions. In this way, digital health is accelerating more systemic health system-wide transitions better conceptualized as "connected health."

Dino Celeste (South Africa)

Digital Health Interventions for Disease Control & Surveillance in Africa

Introduction: The growing importance of digital health and mHealth in LMICS

Digital healthcare is growing, and it is just the tip of the iceberg when we consider the overwhelming possibilities and promise they offer for transforming healthcare services. This will transform and make value-additions to patient care across the African continent. On paper, digital health sounds like an easy enough concept – utilizing technological innovations to enhance the health and well-being of individuals. The reality, however, is something broader and more extensive. The term 'digital health' encompasses everything from Artificial Intelligence to mobile healthcare apps and wearable gadgets, from electronic records to robotic caregivers. Various applications of digital transformation have permeated the healthcare sector through cultural change and disruptive technologies.

The incredible advancement of mobile communications has created an opportunity to reduce the cost to serve, extend the reach and improve the quality of healthcare.
Healthcare services through mobile technology have the potential to be life-changing for millions of Africans as this can save lives and promote healthier communities across the countries.

Mobile Health or mHealth describes any health or wellness-related information, service, application, or device that relies on mobile communication technology in its delivery, and is accessed through the mobile network. This includes devices embedded with SIM technology, mobile monitoring and data collection of health-related indicators, SMS-based advocacy and awareness campaigns, wellness and health applications, remote monitoring and diagnosis and the provision of broadband and data capabilities.

The benefits of mobile technology, combined with the improvement that mobile phones offer over PDA in terms of data loss and uploading difficulties, make mobile phones a feasible and cost-effective method of data collection that needs to be further deployed across the national healthcare ecosystem.

The need for digital health

The goals of digital health are complex and diverse – prevention of disease, reduction in healthcare costs, customization of medicines as per patient requirements, and assistance with monitoring and managing chronic conditions.

In healthcare, these goals stand to benefit both healthcare providers and their patients. Data collection gives digital health the opportunity to improve patient lifestyles and maintain optimum health for longer. As a result, they require fewer physician visits.

Digital health tools like healthcare apps are useful for identifying symptoms of new illnesses or the worsening of existing conditions. They allow medical professionals to step in earlier and shorten the length of the disease or provide relief from symptoms. Thus, digital health not only improves a patient's quality of life but it also decreases the overall expenses incurred by a patient over their lifetime, reducing bills for patients and care providers alike.

There is also increasing recognition that digital technologies can support treatment adherence and medication compliance. Examples include the use of video phone calls for observation of medication ingestion, and for a live discussion of any problems or concerns; the use of short message service (SMS), i.e. text messaging) for ongoing communication between patients and providers; and the use of SMS or electronic medication monitors (MMs) for automatic reminders, and/or for real-time monitoring of medication self-administration which is then fed back to providers.

Case Study: Digital Technologies in TB

The use of digital health applications to improve treatment support for active TB patients also appeals to TB programme managers, because of affordable mobile electronic devices in many settings. The potential of these technologies to support patient-centered interventions, a key element of the End TB Strategy, has been recognized in recent years by the World Health Organization (WHO).

Digital interventions are gradually being integrated into practice, and are tested and evaluated in field trials focused specifically on TB prevention and care. Literature suggests that some digital interventions can potentially improve medication adherence and patient outcomes.

While evidence remains incomplete, and generalisability limited, the studies reviewed suggest these technologies may be at least as effective as the standard of care. Compared with direct in-person treatment observation, VOT and MM technologies may improve efficiency, save money and reduce the burden on patients and healthcare workers. As a result, SMS and other technologies which can communicate via cellular or internet networks, such as video-observed therapy (VOT) and the Medication Event Monitoring System, and other electronic medication monitors (MMs), are being employed.

TB is one of the biggest causes of death in South Africa and a web-based solution developed by Nelson Mandela University's Centre for Community Technologies (CCT). The solution enables healthcare practitioners to track, trace and monitor TB patients and is currently being piloted in a low-income setting in Port Elizabeth, South Africa. The solution, DigiTB allows healthcare workers to create an electronic medical record for a patient, capture patient data and record medication compliance. The pilot project will run for six months.

Video observation treatment (VOT) is added to the solution, enabling the healthcare workers to observe treatment compliance without being physically present. This implies that the patient does not have to go to the clinic and the healthcare worker does not have to visit them at home. It limits stigmatization and enhances the safety of the community healthcare worker, a much-needed feature during the Covid-19 pandemic. The solution also monitors treatment adherence via a 'Pill count' functionality. The medication and dosage dispensed to a patient are captured on the application. If the patient complies with the prescribed dosage, the number of pills should tally with the number of remaining pills, calculated at the backend of the application. Patients who default on treatment are being flagged by the system.

Another unique feature of the solution is heat maps, which indicate where 'TB hot spots' or high concentration of TB patients are. The spatial reference data (GPS coordinates) of where TB patients live, work, socialize and the routes they travel that is collected when a patient is registered on the application or during home visits, are used to populate the maps.

The evidence base from studies on digital technologies targeting TB is slowly growing. Reports suggest that certain digital technologies can support treatment efforts while reducing both patient and provider costs, as well as patient inconvenience. Worldwide, patients and providers are increasingly using mobile devices to communicate. It is thus important to understand how technologies could best be used to provide better patient-centred support and to allocate resources more judiciously.

Other Examples of Digital Health Interventions

Digital Health and mHealth interventions offer great potential to address health care challenges in LMICs and can enable and catalyze cost-effectively:

- Disease Surveillance & Control
- Registries & Vital events tracking
- Sensors & Point-of-Care diagnostics
- Health Data Recording & Monitoring
- Access-to-healthcare Program Monitoring
- Health Products Consignment Stock Management
- Adverse Events Reporting & Post Marketing Surveillance
- Community Health Workers Fieldwork Monitoring & Evaluation
- Supply Chain Track & Trace to eliminate medicine counterfeiting and illegal imports.

Conclusion: Digital Health capacity building to Prepare for the worst and plan for the best

The current practice of vaccination in most LMIC countries is that healthcare professionals are still using paper-based immunization registers to capture patient immunization data. Therefore, the lack of digital citizen records and the constant displacement of the population around LMIC make it almost impossible to have a clear view of vaccination campaign status and efficiencies. The major challenge with this is that data storage is very poor.

The Covid-19 pandemic is occurring in a new world, where the reach of technologies allows to reinvent and deploy more efficient and secure ways in testing and immunization campaigns as well as patient records. In order to properly manage the Covid19 pandemic and be ready for the next communicable disease outbreak, African countries should use the current momentum to build digital health infrastructure across their respective healthcare ecosystem.

In order to improve the performance and outcomes of current Covid19 and future immunization programs as well as to make surveillance more effective, countries should build solid electronic immunization records to capture and store vaccination records, track outcomes and monitor post- marketing surveillance. Such digital tools will help both the state and private sectors to cope with vaccination campaigns to come and improve long-term data storage and retrieval.

Sineka Samuel Siabnaa

zipline

ZIPLINE AT WORK: DELIVERING CANCER MEDICATION IN RWANDA

PIH contacts

Zipline to support with delivering ca medications

PIH delivers medications to Zipline's distribution centers via ground transportation

Zipline sends medications on-demand to local district hospitals via Zipline drones

Patients access medications at local district hospitals

Instant resource mobilization

Zipline's autonomous system can respond to surges or changes in demand in minutes and can immediately scale to meet new requirements.

Real time visibility & tracking

Get full visibility into your supply chain with real-time tracking - all orders are GPS-tracked and all events are timestamped.

Continuous & resilient operation

Zipline reduces risk and increases operational continuity with autonomous delivery capable of simultaneous delivery to dozens of locations.

Ellen Greggio

Closing the gap: ICT accelerating WASH data collection and use to improve quality of case in health care facilities.

Leveraging increase ICT access and use, WaterAid supports evidence generation around environmental determinants in Health. Applying sector best practices (e.g. WHO TrackFin) and with reference to specific SDGs targets, WaterAid is working to generate increased data availability and analysis of water, sanitation, hygiene, environmental cleanliness and solid waste data in Health Care Facilities in Uganda, Zambia, Malawi to inform on WASH in health improvements needed and to highlight the fundamental role of WASH in health outcomes.

Dr. Joel M. Mubiligi

Partners In Health

Emerging Discoveries and Health Research - Panelist

Innovation is often interpreted to be a new technology or new piece of equipment but identifying underutilized platforms and tools that already exist in the health system, and leveraging them to deliver better quality care for patients is also innovation. Could a mother attending an antenatal or postnatal care visit or the vaccination of her child be offered complementary services such as STI tests, TORCH tests, family planning counseling, nutrition, and depression screening? Could we leverage the Electronic Medical Records system to send automated text messages to cancer patients whose appointment is coming up to reduce the likelihood that they will miss an appointment?

When we think about innovation at PIH, we consider how we can work with MOH to create additional value for patients so every patient can trust that their next interaction with a health provider will take into account not only their current complaint or reason for visiting, but their holistic health and wellness as a human being.

Through close collaboration with government, PIH seeks to identify and explore opportunities to create more value by integrating other services within existing models, alongside enhanced infrastructure and equipment investments for service delivery, and training such as point of care diagnostics at health center level. The innovations we can most look forward to in healthcare delivery are ones that are easy to integrate within the existing health system and save patients' valuable time.

Prof Wim de Villiers

Stellenbosch
UNIVERSITY
IYUNIVESITHI
UNIVERSITEIT

COVID-19-related Research at Stellenbosch University

As the COVID-19 pandemic is spreading around the world, it causes numerous challenges – also for South Africa and the African continent. Stellenbosch University (SU), in line with its strategic framework and the focus on research for impact, is committed to contributing to global efforts to overcome the pandemic. The university's researchers are currently involved in and have now initiated, various research activities related to the pandemic.

Researchers from SU's Department of Economics, for example, contributed significantly to research that helped produce findings on data collected from South Africans on vaccines, employment, early childhood development, and hunger. The results of the survey show that the effects of the pandemic are far-reaching and ongoing. Other research involves The South African Centre for Epidemiological Modelling and Analysis, a Department of Science and Innovation and National Research Foundation (DSI-NRF) Centre of Excellence, hosted at SU, which has been developing models to evaluate the spread of COVID-19 in African countries.

Through this research, SU is realizing its vision to be Africa's leading research-intensive university.

In this presentation I will focus on some of the most important COVID-19-related research developments at SU.

DAY TWO SESSIONS

Making Medicines/Vaccines Locally

Dhiren R. Thakker, Ph.D.

MED ADITUS

The Med Aditus Paradigm for Expanding Access to Quality Medicines with Novel Pharmaceutical Manufacturing Technologies and Business Models

High-quality, life-saving medicines are out of reach for many patients in sub-Saharan Africa (SSA). It is widely accepted that increasing local manufacture of pharmaceutical products in SSA is the only long-term and sustainable solution. Despite the significant effort by individual countries and regional/continent-wide initiatives, the pharmaceutical industry in SSA is growing slowly. Supply disruption caused by COVID-19 and poor access to COVID-19 vaccines in SSA has brought into sharper focus the urgency for disruptive changes to spur local/distributed pharmaceutical manufacturing capability and capacity. Portable continuous modular manufacturing technology, coupled with blockchain-powered intelligent data management systems will bring disruptive changes that can lead to the rapid growth of local production of pharmaceutical products.

Features such as small footprint, easy assembly on-site, flexible production output, in-line sensors, ability to run 24/7, and immutable and fully trackable data with an ability to securely share data only with intended receivers using encryption keys make it possible to start small and yet produce pharmaceuticals at the international quality standards, and to scale the operations for rapid expansion. Further, we will discuss a business model that leverages multiple strategic partnerships, which is more likely to sustain and grow than a “do it alone” model, in resource-constraint environment.

Healthcare Quality & Patient Safety

Dr. Margaret Maulana (Zimbabwe)

PSMI

PREMIER SERVICE MEDICAL INVESTMENTS (Pvt) Ltd

Doing the right thing at the right time for the right person and having the best possible result

Quality has been defined by the federal Agency for Healthcare Research and Quality (AHRQ) as “doing the right thing at the right time for the right person and having the best possible result.” Patient safety is simply defined by the World Health Organization as “the prevention of errors and adverse effects to patients associated with health care”. Healthcare Service providers should take a comprehensive approach to evaluate the quality and safety of each patient’s experience. The main components of these patient care delivery model, listed below, are supposed to be continuously reviewed, analysed and improved upon.

Healthcare service providers should evaluate the quality of care by measuring whether it is effective, timely, safe and responds to patients’ preferences and needs. Our Quality Improvement Model should be based on the expectation of continuous improvement where performance is evaluated in an atmosphere that supports openness and transparency. Utilizing the "Quadruple Aim" approach developed by the Institute for Healthcare Improvement (IHI), Healthcare service providers should utilize multiple approaches to measure the delivery of quality patient care. Enhancing the Patient Experience, Improving Population Health, Reducing Costs, and Improving Provider Work Life

Patient Safety Key Facts; The occurrence of adverse events due to unsafe care is likely one of the 10 leading causes of death and disability in the world. In high-income countries, it is estimated that one in every 10 patients is harmed while receiving hospital care. The harm can be caused by a range of adverse events, with nearly 50% of them being preventable. Each year, 134 million adverse events occur in hospitals in low- and middle-income countries (LMICs), due to unsafe care, resulting in 2.6 million deaths. Another study has estimated that around two-thirds of all adverse events resulting from unsafe care, and the years lost to disability and death (known as disability adjusted life years, or DALYs) occur in LMICs.

Globally, as many as 4 in 10 patients are harmed in primary and outpatient health care. Up to 80% of harm is preventable. The most detrimental errors are related to diagnosis, prescription and the use of medicines. In OECD (Organization for Economic Co-operation and development) countries, 15% of total hospital activity and expenditure is a direct result of adverse events. Investments in reducing patient harm can lead to significant financial savings, and more importantly better patient outcomes. An example of prevention is engaging patients, if done well, it can reduce the burden of harm by up to 15%.

Natasha Mwenda

WaterAid

Essential WASH for Safe, Quality and Dignified Care

Water, sanitation and hygiene (WASH) is a foundational element in sustaining an enabling environment for quality of care and patient safety. For health workers including cleaning staff, WASH is not a 'nice to have' it is essential for creating conditions for infection, prevention and control, and dignified care for all patients. Globally, 70% of health workers are female. And women seeking care, such as time of labour and delivery or as caregivers for family members, rightfully require WASH in health care facilities to support health care seeking behaviours, safety and dignity. Ensuring the WASH and health sectors work together as one is critical yet there is much yet to be done as exemplified in the work of WaterAid and others towards achieving inclusive WASH in healthcare facilities.

Patricia Manthe (Netherlands)

The use of Augmented reality in addressing medical device maintenance, Case study ARguideMEDx

'How Can Real-time visualization applied to preventive and routine maintenance of ultrasound equipment improve access to maternal care services in Africa?'

We performed a comparative analysis on 24 operators separated into four groups of six, each on a single support and the same evaluation criteria. We decided to label the experiment as successful when we could sell our solution to the healthcare facility or obtain two letters of intent. So, we decided to persevere.
In the end, we can detect a card and display the corresponding maintenance operation using a mobile application on a phone or a tablet.

Significant benefits to public health and the economy derive from the proposed ARguideMEDx solution, including direct and indirect—all anticipated benefits are defined based on either quantifiable or non-quantifiable parameters. However, since these benefits are not fully quantifiable, non-quantifiable considerations have become important in the overall economic justification of the Project. Evaluation of the significant benefits includes avoidance of productivity losses due to Machine downtime and avoiding the much higher costs of corrective maintenance from OEM engineers by other means. However, it is not possible to quantify all the benefits expected in monetary terms. Although the B/C analysis is performed, the ARguideMEDx benefits from increasing accuracy in more complex tasks, making pressured jobs less stressful, and reducing the time to complete tasks, and other benefits are expected. If no preventive maintenance systems are provided in the country, public health will become progressively worse, which is already deplorable in most areas.

Providing quality medical services involves correct and efficient resource management and planning. An essential element in achieving this is balancing costs involved in new equipment and its maintenance. Proper use and proper care of medical equipment must be supported by a clear policy in the field, technical guidance, and practical tools for maintaining the functional parameters of medical equipment. Using valuable medical equipment will significantly improve the quality of the medical act and the efficiency of such a service. Consistent management practices in this area will help increase efficiency in the field of health.

An analysis of the maintenance of medical equipment is made to assess the lifespan of that equipment, which can be extended or shortened depending on the actions taken. Equipment maintenance is crucial for its lifespan. If maintenance periods are not met on time and regularly, it will damage medical equipment to the point where it will cost more to repair than replace. If no decisions are made at all in the maintenance of medical equipment, it will degrade irreparably. The importance of maintenance activities consists of efficient equipment management; this task requires extensive information about the medical device. Therefore, it is necessary to know the history of the equipment, how it has been exploited in the past, say if the situation is improving, and learn from previous cases.

Finally, records provide staff with valuable technical information and evidence to use when they need arguments or need help or additional resources. The maintenance of the database system helps to keep track of repair services and other actions for optimal operation of medical equipment. The ARguideMedx solution, whose value proposition is SPOC (Single Point Of Contact) for maintenance activities, is currently the best in class as a quality optimization tool for your healthcare facility.

Mental Health and Addiction

Dr Jean Damascène Iyamuremye

Rwanda Biomedical Centre
Healthy People, Wealthy Nation

Prevalence of mental disorders and associated factors among general population and genocide survivors in Rwanda

Introduction: The burden of mental health illnesses poses serious public health challenges worldwide. Rwanda's mental health profile has been characterized by a high prevalence of mental disorders particularly due to the country's horrific experience of the 1994 Genocide against the Tutsi which took about 1,000,000 lives. The overall objective of the Survey was to estimate the prevalence of common mental disorders, identify risk factors associated with common mental disorders, and assess the knowledge and utilization of mental health services by the general population.

Methodology: RMHS is was nationwide cross-sectional study which combined two distinctive samples, notably; a sample for the general population and a particular sample for Genocide survivors. For the general population survey, sampling procedures were carried out in two stages including: random sampling of 240 clusters from a national frame, and a systematic sampling of 30 households per clusters selected based on eligible households identified through listing process. Purposive sampling procedure was used for Genocide survivors' survey taking into consideration the proportion of Genocide survivors living in each district. The main survey instrument for RMHS was the Mini-International Neuropsychiatric Interview version 7.0.2 for DSM-5.

Results: The survey revealed that Major depressive episode was the most prevalent mental disorder with 12% in the general population followed by panic disorder with a prevalence of 8.1%. PTSD and obsessive-compulsive disorder showed similar prevalence levels of 3.6% followed by epilepsy whose prevalence is 2.9%. Among the general population, 61.7% were aware of where they could seek support for mental health while only 5.3% reported having utilized mental health support. The survey also found that Major depressive episode was the most prevalent (35%) disorder among genocide survivors followed by posttraumatic stress disorder with 28% and panic disorder with 27%. Obsessive-compulsive disorder had a considerable prevalence of 11.6% followed by major depressive disorder with psychotic features (7.1%), psychotic disorder (6%), and social phobia with 5%. Among 1271 Genocide survivors, 76.2% were aware of the availability of mental health services and 14.1% reported having used mental health services.

Conclusion: The survey revealed a picture of the high prevalence of different mental disorders in both the general population and Genocide survivors and the low utilization of available mental health services. A comprehensive approach to mental health is needed for the prevention of mental disorders and promoting quality mental health care services.

Dr. James Ngamije

The Role of NGOs in the fight against addiction in Rwanda

Background

Drug abuse among the youth in Rwanda is a public health concern and family challenge and health facilities and other key personnel in fight against addiction are under-resourced to cater to the mental health needs of youth with addictions. However, in other settings, non-governmental organizations (NGOs) such as Rwanda Youth Impact in collaboration with Turkey green crescent and Rwanda biomedical centre (RBC), aim to play significant roles by complementing governments' efforts in the prevention of addictions among the vulnerable groups through TBM Training program among task force in 30 districts and districts hospitals. The program aimed to raise awareness of various addictions such as tobacco, alcohol, drugs, and technology in general, especially children and youth, and to prevent the use of these substances with knowledge and awareness. In order to assist youth from rehabilitation services, and to connect with their families and communities, RYI wants to train parents on the "healthy Life Parental Training Module. Presently, no study exists that examines the contributions of NGOs in addiction prevention in the Rwandan context. This study sets out to explore the role of RYI in the prevention of drug abuse in Rwanda.

Method

Using a descriptive qualitative design, six staff (directors and medical doctors) from RYI were interviewed online using semi-structured interview guide. The interviews were analysed using the thematic analysis within an inductive approach.

Results

The results showed that RYI in collaboration with Turkey green crescent and RBC aimed to provide TBM program that is aimed to raise awareness on addictions starting with task forces of 30 districts and district hospital' health care. These efforts are frustrated by limited financial supports. Our results underscore the need for government and other agencies to collaborate with NGOs such as RYI involved substance misuse prevention and intervention programs.

Dynamo Ndacyayisenga

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Depression and alcohol use disorder among youth in Rwanda

Abstract

Depression and alcohol use disorder are psychiatric conditions that constitute major public health problems among youth in Rwanda. Their comorbidity worsens the management and rehabilitation of their victims because those conditions share some similar signs and one can cause another and vice versa. People with comorbid alcohol use disorder and depression develop anxiety and symptoms of addiction. Through our daily activities in the treatment and rehabilitation centers you find that youth are a more vulnerable category that experience relapses to both conditions. Management and rehabilitation of those two complicated disorders require more attention and call for a good diagnosis and treatment. There is not enough information regarding the epidemiology and characteristics of that phenomenon of comorbidity between the two mentioned conditions in Rwanda. Our study investigated the comorbidity of depression and alcohol use disorder among youth in Rwanda as well as its risk factors.

Methods: A cross-sectional study using survey data from Rwanda Mental Health Survey (RMHS) 2018. The sample was computed at the District level and used the sampling frame for 2012 Rwanda Population and Housing Census (RPHC) with enumeration area (EA) as primary sampling units. To get the sample of the population under this investigation only participants aged between 14 to 30 years were selected.

Results: The prevalence of depression among youth is 16.76% while the prevalence of alcohol use disorder is 4.09%. The comorbidity of depression and alcohol use disorder was calculated and found to be 23.14% of depressed among youth with alcohol use disorder. In multivariate analysis, sex of youth, age, residence, education level and religion were all associated with the comorbidity between depression and alcohol use disorder.

Conclusion: There is a significant prevalence of alcohol use disorder among depressed youth with a positive association with risk factors related to socio-demographic characteristics, calling for a strong understanding of clinicians in considering these factors while treating alcohol use disorder and/or depression among surveyed youth in Rwanda.

Keywords: depression, alcohol use disorder, comorbidity, youth

Dr. Darius Gishoma (UR) and François-Régis Habarugira (Enabel)

Prevalence of drugs and substance abuse amongst adolescents: A pilot study in 7 districts

Background: Drug and substance abuse is a common phenomenon among adolescents and young adults worldwide. Studies have shown that alcohol and illicit drug abuse are also a growing problem in Africa. The research aimed at determining the prevalence of alcohol and drug use by adolescents and young adults in 7 districts: Gakenke, Gisagara, Karongi, Nyamasheke, Nyarugenge, Rulindo and Rusizi.

Methods: 3301 adolescents and young adults aged between 13 and 24years, from 7 selected districts participated in this cross-sectional study. Participants responded to a series of questions exploring lifetime use, annual use and last 30 days use of alcohol and other substances, substance use disorders. A qualitative study design was used to explore lived experiences and opinions of participants on the topics and themes covered in the survey. The study questions were explored by conducting individual interviews with key informants, selected based on their roles and responsibilities. Fifty (50) participants out of fifty-six participants (50/56 =89%) of this survey included stakeholders drawn from health workers, local leaders, technicians and other leaders involved in fighting against the consumption of drugs and substance abuse.

Results: In the past 30 days, 28.5% of adolescents reported to have used alcohol; 4.4% reported to have used cannabis, while the reported prevalence for cigarettes, opiates and cocaine was respectively 2.9%; 0.2%; 0.1%.

Current use of alcohol and other substances was significantly associated with age >18, male gender, living in urban areas, history of unintended pregnancy, family history of alcohol or drug problem, family conflict, serious physical violence in the family circle, and history of anxiety and depressive disorders. Youth currently using cannabis were more likely to report unprotected sexual practice in the past 12 months (OR=3.4398, p<0.001) compared to those who did not use cannabis. Youth using alcohol were also more likely to report unprotected sex in the past 12 months compared to those who did not use alcohol (OR=3.3113, p<0.001).

WATERAID Side Event

WaterAid

The Global healthcare summit, being organized under the auspices of the Rwandan Ministry of Health and facilitated by Be Still Investments, aims to spark a global conversation on the healthcare of today, the pandemic preparedness, and to raise the social consciousness of global health in 2021 and beyond. The summit also aims to feature a range of pertinent topics that seek to empower and enable stakeholders to address the sustainable development goal of Health and Wellbeing for all.

The Rwanda Global Healthcare Summit 2021 is expecting over 1200 delegates consisting of Health Ministers, Representatives of African Governments, development partners including donors and other international agencies, high profiled health experts and hospitals decision-makers, health procurement managers, pharmaceutical and biomedical engineers, among others.

Why is WA getting engaged in this?

Given the mission of the Global Healthcare Summit, WaterAid sees this is a real opportunity to advocate for a WASH integration agenda into the health sector through connecting water, sanitation, and hygiene (WASH) in health across thematic areas of the Summit.

The current pandemic illustrates the vital importance of continued investment in comprehensive disease prevention measures, which are critical to strengthening preparedness and response to other diseases including cholera and neglected tropical diseases, as well as emerging health threats such as antimicrobial resistance.

Building health systems resilience and strengthening pandemic preparedness and response is unachievable without adequately addressing the most fundamental pillars of public health which is a comprehensive WASH service.

WA in 2015 launched a campaign called “The Healthy Start” which looks at supporting through service delivery and advocacy interventions, in collaboration with Government health services, to provide a comprehensive WASH approach to healthcare facilities. Healthy Start aims to improve the health and nutrition of newborn babies and children by advocating for WASH to be integrated into health policy and delivery locally, nationally and internationally.

The World Health Assembly at its 72nd sitting in 2019, passed a resolution on WASH in a healthcare facilities. WA continues to support national governments where we work to take forward the 8 tenets of the Resolution.

The Rwanda Global healthcare summit is an opportunity to identify key stakeholders for face-to-face advocacy for WASH in healthcare facilities (HCF). We will also take advantage of this space, to strategically position WASH not only as an important factor in the prevention of disease but also critical to improvements in health.

Objectives of the WA side event

WA is organizing this side event with the following broad objectives:

To increase prioritization of sustainable WASH as central to resilient and thriving communities

To increase political leadership and prioritization to deliver sustainable & effective nation-wide Hygiene Behaviour Change

Specific objectives of the event include:

- Demonstrate our work on Integrated and inclusive WASH and WASH in HCF
- Influence and expand the Summit's programme to include WASH in health and pandemic preparedness.
- Serve as a platform to launch our Hygiene for Health Campaign (H4H) and build momentum post Healthy start.
- Expand the network and potential partners for future interventions for WaterAid.
- Use the event for global exposure through event organizer's digital and printed brand exposure before, during and after the event throughout the year-round marketing activities.

WASH in One Health Approach Session Participants

Dr. Nurullah Awal, Health Advisor, WaterAid Bangladesh

Dr. Nurullah, who also holds the Chair of the WASH Working Group of the Global Task Force for Cholera Control (GTFCC) will set the context for this session as we explore and invite dialogue on how WASH, antimicrobial resistance (AMR) and infection, prevention and control (IPC) can come together within the One Health approach. As moderator of this session, Dr. Nurullah will bring his health and WASH expertise and share reflections from Bangladesh.

Olutayo (Tayo) Bankole-Bolawole, Regional Director, WaterAid East Africa

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Dr. David Musoke, Senior Lecturer, Department of Disease Control and Environmental Health, School of Public Health College of Health Sciences, Makerere University, Uganda

Dr. Musoke will share his expertise on environmental health, WASH, communicable diseases and health systems, including health-seeking behaviour and community health worker resources. As a team member of the Drivers of Resistance in Uganda and Malawi (DRUM) Consortium, Dr. Musoke can share emerging learnings in understanding how, within a One Health approach, WASH practices intersect with antimicrobial resistance (AMR) and reflect on the role of WASH in this holistic framework for human, animal and environmental health.