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- How to decolonize Global Health
 - Innovations in Health Professions Education (HPE) for the new normal: experiences from FAIMER
 - Should Africa continue COVID-19 vaccination to 70% target?
 - Community contribution to the control of Ebola outbreaks in Uganda, 2000-2022



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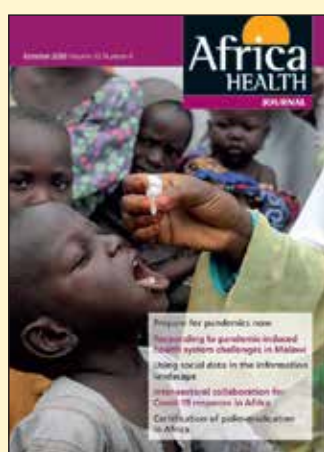
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Emerging Infectious diseases are still a threat to Global Health



Elsie Kiguli-Malwadde
(kigulimalwadde@achest.org)

Emerging Infectious diseases do not seem to be giving Global Health a break. As COVID 19 is being contained and Monkey pox did not cause much havoc, Ebola is now threatening as it reappears in Uganda. Uganda has had sporadic outbreaks of Ebola, however this outbreak has been different in that no index case has been identified. The Africa Health Journal October issue has dedicated an article on Ebola written by experts from Uganda who have been at the forefront of fighting this disease since the early days of its emergence.

The opinion piece is on "Decolonising Global Health" which is a concept that is filling the global Health airwaves at the moment. Francis Omaswa bases the opinion on discussions that were held at the African Forum for Education and Research in Health (AFREhealth) symposium which was held in August 2022 at Harare, Zimbabwe. He defines it as movement that fights against entrenched systems of dominance and power imbalance in the work to improve the health of populations. He goes on to say that the south has to accept and take some responsibility towards decolonisation. He offers some examples where this has been successfully done.

There are two articles on "Innovations in Health professions Education (HPE) for the new normal". Both highlight the changes that had to be made during and after the COVID 19 pandemic. The Foundation for Advancement of International Medical Education and Research (FAIMER®) global programs team, describes the FAIMER Institutes that offer global FDPs in HPE and the pivots made in response to the COVID-19 pandemic; as well as the implications for Health Professions Education (HPE) and Faculty Development Programs (FDPs) with a special focus on Africa. They highlight how they had to innovate and adapt to the "new normal" to convene faculty and offer new skills to them. This is a bit similar to what Joan Shepard, the Principal, National School of Midwifery in Sierra Leone talks about. She describes how teaching Midwifery was

impacted in the COVID-19 Pandemic and Post Pandemic periods. She narrates her experience on what challenges both faculty and students faced and also how they had to be innovative and adapt to the new situation. Both highlight the role of online training in the new normal, one at a local level in Sierra Leone and another at a global level. It has been noted that though COVID 19 was a big challenge to the education sector worldwide, it never the less has had some positive impact in that the educators have had to relook at the way they deliver their curriculum content and also become innovative in their approaches. There has been a significant increase in the use of Information Computer Technology (ICT) even in Low/Mid Income Countries (LMICs) like Sierra Leone. This has challenged these countries to invest more in ICT.

Okoro et al posed an interesting question as to whether Africa should continue to implement COVID-19 vaccination to 70% target? They say that early evidence indicated COVID 19 was unlikely to adversely impact prevailing life expectancies in Africa thus calling for a response sensitive to this insight. They noted that three years of the pandemic are not evolving the same way everywhere and therefore, Africa ought to recalibrate its response to COVID-19 beyond focusing on high immunization coverage of vulnerable groups. That vaccination towards the 70 % target is not helpful considering the deepening widespread poverty and social desperation. They collate the data on the pandemic, on funding and also on how the funding to other diseases in Africa is being affected. They conclude that repeated universal inoculation against every imaginable variant of a constantly changing virus is simply unsustainable in Africa without further borrowing. There is more on COVID 19 by Ivor Campbell, CEO of Snedden Campbell, a UK-based recruitment agency for the global medical technology industry, he gives an account on the benefits of COVID 19 especially where technological advance is concerned. Talking about the advance in the manufacture of vaccines,

artificial intelligence, telehealth, block chain technology, 3D printing and more.

Jim Campbell et al present a commentary on Africa's workforce challenges, and related Health Workforce (HWF) policy, planning, governance, and collaborative partnership issues. They highlight the collaboratives supporting Africa drive the Health Workforce agenda but also note that despite the gains in this area pre COVID 19, the gap in the LMICs remains big. This has been further aggravated by the COVID 19 pandemic. They recommend more inclusive multisectoral engagement and partnership with stakeholders, including the private sector and civil society so as to make things better in the region.

Juliet Nabyonga-Orem works for the World Health Organisation (WHO) as a Medical Officer in charge of health policies, strategies and governance gives an overview on the different drivers of inequalities in maternal and child health services in low-income countries. She links this to the achievement of Universal Health Coverage. She advocates for strengthening health research and information systems to guide development of refined approaches in tackling inequalities so as to generate granular data that can benefit the low-income countries to come up with evidence based solutions.

There are also two articles on health and safety at the workplace and how they can be mitigated.

There is our usual medicine digest and quiz, plenty of news and advertisements.

The AHJ is available online as an open access web-based publication (Africa-health.com). This website is active daily with current affairs, social media such as Twitter, Facebook and is visited by a large audience. Those wishing to advertise are welcome to use the print and electronic channels of the AHJ using guidelines that are in the journal.

How to decolonize Global Health



Professor Francis Omaswa - African Center for Global Health and Social Transformation

During the African Forum for Research and Education in Health (AFREhealth) conference held in Harare, Zimbabwe last August, 2022 there were some presentations on the topic of decolonization of global health which generated vigorous discussions. I have since taken more interest on this subject and have been surprised to find that the subject of globalization is huge with many websites addressing diverse aspects of the subject including a group focusing on decolonizing contraception!

There are a number of highly regarded schools of public health and other institutions that are introducing new programs for students under Schools of Decolonizing Global Health and awarding Masters of Public Health degrees in Decolonizing Global Health.

So, what is decolonization with respect to global health? Decolonization of global health is variously defined as a movement that fights against entrenched systems of dominance and power imbalance in the work to improve the health of populations. This power imbalance may take place between countries, institutions, in commerce and trade in health commodities and in the policy dialogue arena. Generally, the imbalance and inequity is between previously colonized regions on the one hand and the successors of the colonizer countries and regions on the other hand. It is between the governments and institutions and individuals in the global north and the global south or the so-called rich and poor countries. At individual level, relics of our colonial history have left behind overt and covert ingrained perceptions and attitudes of superiority that result in behavior that patronizes colleagues and institutions based on which region we originate from. The net result is that a small outsider elite gets to determine what health interventions get implemented in what context, what resources go to whom, and, in short, who lives and who dies.

At the level of institutions, there are many organizations active in global health that knowingly or unknowingly perpetuate the very power imbalances they claim to rectify, through extractive attitudes, policies and practices that concentrate resources, expertise, data and branding within high-income country institutions.

We also have philanthro-capitalism where global resources are concentrating in fewer and fewer hands and some of these companies and foundations are able to fund the global health industry and exercise disproportionate power in global health decision making by moving global health governance from democratic spaces to secretive high-diplomacy affairs away from the public arena.

On the other hand, before piling all the blame on our northern colleagues, we from the south have to accept and take some responsibility. I have participated in high level negotiation spaces on global health issues where our delegations from the global south have gone to meetings not well prepared, in small numbers

compared to our northern partners and we have lost arguments because of our own weaknesses.

An example is the decision to vest the leadership of the Global Fund to Fight Aids, Malaria and TB with a country partnership; the Country Coordinating Mechanism (CCM) and not with government agencies was forced on Southern delegations by Northern partners because we had not prepared our arguments well and in advance which the others had done.

On other hand when we have been well prepared we have got our way. An example here was the drafting and adoption of the WHO Code on the International Recruitment of Health Personnel at the World Health Assembly (WHA). In this case we held an African and partner retreat in Madrid one week ahead of the WHA where we rehearsed the arguments and procedures for adoption of the Code and everything went exactly as we planned.

At country level, where I served as Director General of Health Services as well as donor coordinator in the health sector, I worked well with the Hon. Minister of Health, Crispus Kiyonga to ensure that we led the policy dialogue with partners. The Sector Wide Program that we implemented worked well producing results which attracted more and more donors. Based on this experience I am convinced that when countries lead donors will follow, especially when positive results in health outcomes can be demonstrated.

Returning to the discussion on decolonization of global health, I want to argue that the solution to the current imbalances starts with the southern partners taking charge and demonstrating leadership in our countries. With the political independence that we won over half a century ago we have the mandate and duty to show this leadership with respect our health policies and health systems. When we are clear about what we want to do for the good health of our people the northern partners will respect us and will not find it easy or possible to overturn our policies and programs. There is plenty of evidence for this from African countries that take clear positions that are followed by northern partners who have good intentions. Those with wrong intentions are shown the road to the airport and they go away and stay away.

Similarly, global health sector negotiations need high quality advance preparation, consultation and solidarity among southern countries. If this approach is adopted at the African Regional level and in partnership with other southern countries, I have no doubt that global health will be decolonized. Some attitudes and mindsets die hard and persist but their negative consequences on the health of our people will be negligible.

Francis Omaswa, African Center for Global Health and Social Transformation. fomaswa@achest.org

The 39th global TUFH conference: Moving Forward Together: Unity for Health for All

Reported by Elsie Kiguli-Malwadde

The Network Towards Unity for Health (TUFH) held its annual symposium on August 16-19, 2022, in Vancouver, British Columbia (BC). There were 140 physical attendees, 186 attended virtually. The participants were from 40 countries. It was organized in conjunction with the Coordination Centre of BC, and BC Patient Safety and Quality Council. This was the first conference to have a face to face component since the COVID-19 Pandemic. The last 2 TUFH conferences having been virtual.

TUFH is an international, intersectoral and intergenerational organization that fosters equitable community-oriented health services, education and research, with the goal of improving health locally and globally. We convene innovative health care organizations, universities, community institutions, and thought leaders from all over the world. The theme of the Vancouver conference was "Moving Forward Together: Unity for Health for All". The subthemes were:

- Building Better Together
- Harmony for a Healthy World
- Social Responsibility: Healthcare Conducted Where People and Place Matter
- Learning with Indigenous Peoples Towards Advancing Equity & Wellbeing

The meeting was attended by many people from all over the world. The program varied and was thrilling with 7 Keynotes, 6 workshops, 8 TUFH documentaries, 21 TUFH talks and 268 oral presentations. Those who attended were able to engage in the Keynote Sessions, TUFH Documentaries, TUFH Talks, Workshops, and Oral Presentations. They participated in networking sessions on specific topics—and explored new professional relationships. They learned about local Indigenous cultures and health. They reflected on TUFH's journey over the past 10 years and provided their input into new goals for the next 10 years. Some had exciting private experiences with an Indigenous healer on site. Conference on the Move Visits where participants experienced local community life were organized.

There were also times for relaxation and networking at the opening and closing ceremonies for participants during the reception, and evening events, including a Cultural Dinner and Dance and student gathering. Participants received a warm welcome from the local partners.

Some of the highlights from the Keynote speeches included one that was given by Rabia Khan, an Epidemiologist and Disease detective who uses data and evidence to create real change in the world. Her topic was "Beyond the new normal- what would that look like?". She noted that two years of COVID-19 are behind us and that it is reasonable to think there might be some sense of a return to normalcy, and look away from crisis response. She said that there was no going back to how things were. She asked the audience to be cautious about the talk by businesses and governments on



building back better and moving towards a new normal because hidden in the various invocations of building back better are likely to be disparate visions of what better actually means and who will benefit from it. It is up to each one of us to either help redefine the new normal or sit back and watch it unfold. She explored ideas that could help us start this important conversation about what the future could entail and how we as health professionals can reimagine the future and work towards improving health locally and globally.

Professor Francis Omaswa, the Executive Director of African Centre for Global Health and Social Transformation (ACHEST) gave a key note speech on "Social Responsibility: Healthcare conducted where People and Place matter". He noted that social responsibility calls upon individuals to be accountable for fulfilling their civic duty to benefit society while society also supports individuals. He also said that social responsibility for health is based on the principle that good health starts with individuals who have responsibility for their health through adhering to a lifestyle that does not lead to the loss of health. He noted that individuals within families and communities create conditions for healthy people to remain healthy; ensuring access to household hygiene, quality food, housing, and psychosocial support, among others. He gave an example from Uganda, where during Covid-19, Village Covid Taskforces were established to meet regularly, and mobilize individuals, households, and communities. The communities hence worked with Community Health Workers to provide home-based care and refer suspected cases. The key lessons learned were that organized communities are capable of finding solutions for their health needs and working better with the upstream health system to create conditions that enable socially responsible behavior while holding duty bearers to account.

The health of indigenous people was extensively discussed noting that many face barriers to healthcare, because of lower levels of education, inadequate housing and crowded living conditions, lower income levels, higher rates of unemployment as well as higher rates of incarceration. Many models to address this inequity were discussed.

All in all, it was a successful conference.

Elsie Kiguli-Malwadde is the secretary General of the Network TUFH

THE 5th ANNUAL AFREhealth SYMPOSIUM, 2022

Dr. Elsie Kiguli-Malwadde reports on the highlights of the 2022 AFREhealth symposium.

This year the African Forum for Research and Global Health (AFREhealth) held its 5th annual symposium in Harare, Zimbabwe at the Harare International Conference Centre, from 2nd to 4th August, 2022. This was a face-to-face event. It was an exciting affair considering that the 2021 symposium was held virtually because of the COVID19 pandemic.

AFREhealth is an interdisciplinary health professional grouping that seeks to work with Ministries of Health, training institutions and other stakeholders to improve the quality of health care in Africa, through research, education and capacity building. It is a conglomerate of individuals, institutions, associations and networks from all the geographic and linguistic regions of Africa; namely Anglophone, Francophone, Lusophone and Arabophone countries. Membership is open to African and external stakeholders committed to an Africa with strong, self-sustaining and robust health systems. It was launched by the joint leadership of MEPI (Medical Education Partnership Initiative) and NEPI (Nursing Education Partnership Initiative) during the MEPI/NEPI Symposium in Nairobi on 2nd August 2016; through adoption of the Nairobi Resolution on AFREhealth. The Vision of AFREhealth is to 'be a responsive and leading African forum in the pursuit of excellence in health research, education and service provision'. Its mission is to 'provide African leadership for responsive health professions education, training, research and service delivery' through: (a) Partnership/Collaboration, (b) Networking, (c) Advocacy, (d) Resource mobilization, (e) Strategic communication, (f) Sharing best practices, (g) capacity building, and (h) Transformation of responsive health professions education.

The symposium attracted 200 participants from 19 countries; bringing together many health professionals from all over Africa and the rest of the world. It deliberated on important topics aimed at finding solutions to the health challenges faced in Africa; and to chart a future for AFREhealth.

The theme of the conference was "Covid-19 Pandemic and Post Pandemic Issues for Health Professions Education, Research and Service Delivery". The President of AFREhealth from Malawi, Prof Abigail Kazembe observed that the theme was timely because there is need to respond to post COVID-19 pandemic challenges; and to also be prepared for the next pandemic. The subthemes of the symposium were carefully chosen to start to address the emerging issues, including:

- Innovations in health professions education – lessons from Covid-19 pandemic state for post pandemic period;
- Collaboration in research – African initiatives for strengthening research and collaboration across the continent and beyond;
- Impact of the Covid-19 pandemic on service delivery and the requirements for quality-of-care post pandemic;
- Leadership in Africa on decolonization, climate change, research and development.

The conference was preceded by pre-conference meetings convened by the University of California San Francisco. The pre-conference meetings addressed the basics of project and change management for busy clinicians, and mentoring the mentors. Both of these discussions were well attended and generated a lot of interest.

A Governing Council meeting and an Annual General Meeting were held during the Conference. There was a change of leadership of the organization during the conference. A new President, Executive Council and Governing Council were installed. Appreciation awards were given to the outgoing Governing Council.

The main Symposium itself had 5 plenary sessions with 20 plenary speakers, 15 from Africa and 5 from outside Africa. There were 95 abstract presenters, 65 presenters gave oral presentations while 30 presented posters. There were 6 satellite sessions on various topics like Grant Writing for Success, Enabling Medical Education Capacity-Building in Africa and Experience with Interprofessional Education (IPE). All the presentations were very engaging and all sessions were well attended throughout the conference. All this information can be accessed at the AFREhealth website: <https://afrehealth.org/2022symposium/>.

One of the topics that kept cropping up during the conference was decolonization of Global Health. Three plenary speakers addressed the topic; with Dr. Catherine Kyobutungi, the Executive Director of the African Population and Health Research Center based in Nairobi, Kenya talking about "Actions for Decolonizing Global Health". Dr. Ndola Prata, from the University of California, Global Health Institute (UCGHI) talked about "Decolonising Global Health: Challenges and Opportunities for Research and Training in Sexual and Reproductive Health". Dr. Thirusha Naidu from the University of KwaZulu-Natal talked about "Decolonizing global health: A case of Low-income countries". All these topics generated a lot of interest and discussions. At the end of it all, Prof Francis Omaswa, the Executive Director of the African Center for Global Health and Social Transformation called on Africans to change their mindset and narrative from blaming colonization to providing ideas on how to change Africa into a dynamic and vibrant continent. He noted that Africa is rich in resources, be it physical or the necessary human capital. It is up to the Africans to take advantage of these and move forward.

Congratulations AFREhealth

Elsie Kiguli-Malwadde is the President of AFREhealth

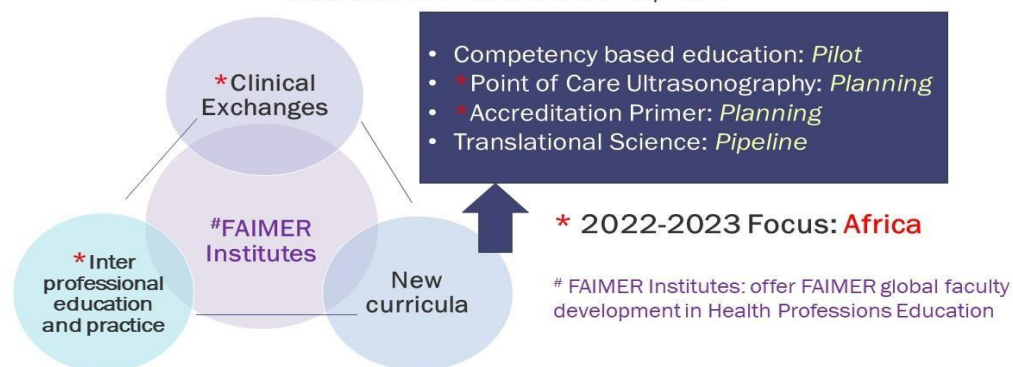
Innovations in Health Professions Education (HPE) for the new normal: experiences from FAIMER

This article summarizes the Foundation for Advancement of International Medical Education and Research (FAIMER®) global programs, describes the FAIMER Institutes that offer global Faculty Development Programs (FDPs) in HPE; the pivots made in response to the COVID-19 pandemic; and the implications for HPE and FDPs with a special focus on Africa. “Please visit FAIMER, a member of Intealth at www.faimer.org”

Figure 1: FAIMER Global Programs illustrating the range of the programs, highlighting those focused-on Africa for 2022-2023

FAIMER: Foundation for Advancement of International Medical Education and Research

FAIMER Global Programs integrate our international partnership to advance health care education and workforce development



While online learning has been gaining momentum over time, (1) the onset of the COVID-19 pandemic in 2020 can be considered a tipping point that resulted in a rapid transition to this mode (1,2).

Globally, education institutions adapted to the “new normal”, whilst facing challenges such as limited resources and training of faculty (1,3). Faculty development programs (FDPs) have been considered critical for transformational reform in health professions education (HPE) (4). While it became imperative for FDPs in HPE to innovate to remain relevant during this time of crisis, this has also resulted in increasing changes in practice.

FAIMER Global Programs

FAIMER Global Programs integrate FAIMER’s international partnerships to advance HPE and workforce development. Figure 1 illustrates the range of these programs, highlighting those focused-on Africa for 2022-2023. FAIMER Institutes, offering global FDPs in HPE, were the earliest programs; these form the core of FAIMER global programs and are described in the next section. The Interprofessional Education and Practice (IPE) student exchange

program for the health professionals is offered in Africa in partnership with the African Forum for Research and Education in Health (AFREhealth). A program to increase physician workforce through post graduate exchanges is being developed. Finally, FAIMER new curricula are evolving to meet current needs. Professional development in competency-based education was piloted in 2021-2022 as a virtual program and will be offered as full program for global faculty in 2023. FDPs in point of care ultrasonography (POCUS) and a training program in accreditation are in planning stages, and FDPs in translational science are in the pipeline. This article focuses on the pivots made in response to the COVID-19 pandemic by the FAIMER Institutes, the earliest and oldest FAIMER Global program.

FAIMER Institutes

For two decades FAIMER has offered global FDPs in HPE, leadership, and community building for health professions educators through its International FAIMER Institute (IFI) based in the USA and FAIMER Regional Institutes (FRIs) globally.

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International FAIMER Institute (IFI)

The IFI had its origins as the FAIMER Institute. Launched in 2001 in Philadelphia, this part time 2-year FDP consisted of two annual 2-3 week-long intense immersion experiences onsite surrounded by online components. The program used interactive, transformative learning experiences across four curricular themes: program management and evaluation, education methods and assessment, leadership and management, and education research and scholarship. Education innovation projects by fellows at their home institution provide experiential learning and formed the central focus of the program. Cultural humility and collaboration were values intertwined throughout. In 2020, with the pandemic, IFI became a totally online program (described below).

FAIMER Regional Institutes (FRIs)

FAIMER utilized an adapted Hub-and-Spoke model for the development of FRIs (Figure 2), fostering mutual partnership and collaboration. FRIs were modeled on the IFI curriculum with local adaptation. Over 20 years, 11 FRIs were developed, centered in Brazil (2007-2017), Chile (serving the Latin American region), China (2 FRIs), Egypt (serving the Middle East and North African region), India (4 FRIs), Indonesia, and South Africa (serving the Sub Sahara African region; 2008-2021). The IFI and the FRIs have resulted in almost 2000 Fellows forming a global network of health professions educators from 55 countries.

Figure 2: FAIMER mutual partnership model for development of FAIMER Regional Institutes (FRIs)

FAIMER: Foundation for Advancement of International Medical Education and Research

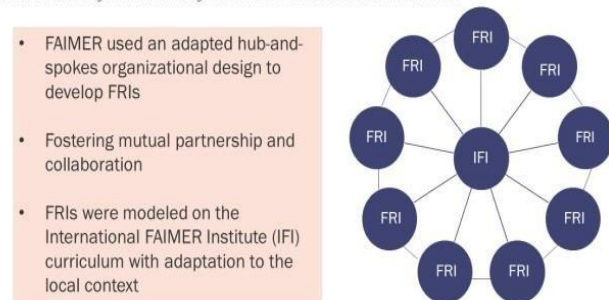
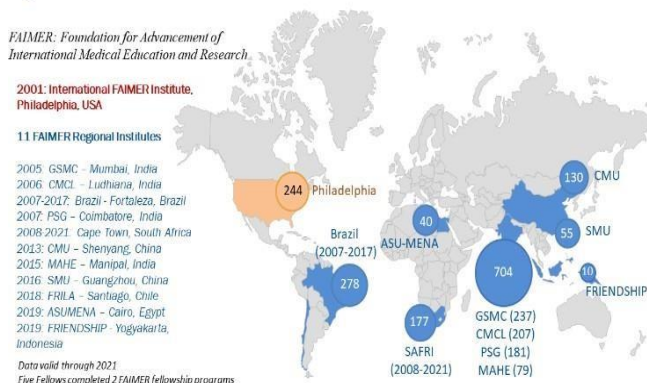


Figure 3. Location of FAIMER Institutes and number of FAIMER Fellows in each Institute



Program Evaluation

Systematic program evaluation has been underway since the first institute began. Fellows reported an increase in knowledge, skills, and competence in HPE (5). Similar results were found across all programs, indicating the curriculum was effective globally. Fellows reported that their education innovation projects were institutionalized, replicated, or expanded, resulting in institutional outcomes (6,7). Moreover, Fellows became leaders in HPE in their regions, influencing national policies (8).

10 Africa Health

Pivots made in response to the COVID-19 pandemic

In 2020, with the COVID-19 pandemic, the FAIMER Institute became the IFI, reflecting the pivot from a hybrid residency model to a fully online Fellowship. The IFI uses Moodle™ as the Learning Management System (LMS) and the Zoom platform for synchronous learning.

Three pivots by IFI

The major impact has been in curriculum delivery, with less change in curriculum content. Our first pivot in 2020 was prompted by a series of interrelated challenges. Fellows are located around the world, encompassing a 14-hour time difference between China and Mexico, with tremendous variability in internet connectivity. They are also busy health professionals who were facing unforeseen clinical challenges during the pandemic. We designed an extended curriculum spread over 10 months each year, with 80% asynchronous work (planned to be completed in 6-8 hours per week) and 20% synchronous learning. The IFI team of global faculty redesigned the teaching-learning materials over a 4-month period and began the online IFI in July 2020.

Feedback from Fellows indicated they wanted more synchronous sessions, despite some Fellows having to be present at 7am, many attending during working hours, and others at 9pm. Thus, for our second pivot in 2021, we redesigned the IFI curriculum as an 8-month program with almost 60% synchronous sessions. In reality, many Fellows could not consistently attend the synchronous sessions because of changing clinical responsibilities; others were unable to attend because they were ill with COVID and got behind in the work; and 3 of 20 eventually dropped out as they were not able to participate due to their clinical responsibilities.

In 2022, the third pivot started as IFI faculty team undertook a major curriculum revision to ensure content relevance and learning opportunities that successfully engage fellows online. In June 2022, the revised IFI curriculum was deployed, designed to be an effective and feasible online program. A major change was to create a two-week Intensive Instruction Phase with virtual synchronous sessions from 7-11am UTC-4 Monday through Friday, making it more feasible for fellows to block off a short, concentrated time, and incorporating active small-group online activities for community building. Fellows and their Deans were notified of this requirement. This Intensive Instruction Phase is followed by the Implementation Phase in which the synchronous sessions once or twice a month are interspersed with asynchronous activities.

Pivots by FAIMER Regional Institutes

Similarly, FRIs pivoted to different forms of curriculum delivery. This has varied from completely online for the FRI in Mumbai, India, a mix of online and onsite participants during the residential component for the two FRIs in China, among other variations. FRIs have used different platforms - Google classroom, their university LMS, Microsoft Teams, or other platforms for program delivery.

As the FRIs pivoted we partnered with our FRI leaders to have virtual monthly meetings of the Directors and Faculty of the FAIMER Regional Institutes (DAFFRI). Program leaders shared curriculum delivery experiences, learned from each other, shared resources and faculty and formed a network of support to enhance the experience of the Fellows in these changed times. Many spinoffs from DAFFRI have resulted, such as FRIs collaborating in projects for teaching specific new teaching/learning strategies during DAFFRI meetings and developing a systematic system for sharing materials across programs.

Building a global online community of practice

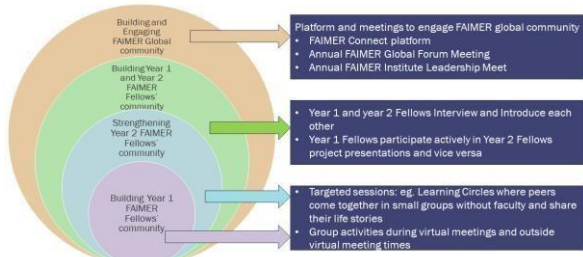
Building a community of practice has been core to the FAIMER Fellowship and crucial for the success of the programs over 2 decades (9,11). The challenge now is to build a close, tight knit, trust-based community when the fellows are not meeting in person. Figure 4 shows our nested approach to building an online community of practice.

The first two levels are individual cohorts - building a community of year 1 Fellows, and then strengthening that community for year 2 fellows. This is achieved by several strategies, including: learning circles in which the peers come together in small groups without faculty and share their life stories (11); small group activities during synchronous sessions; and group activities outside the virtual meetings. The third level builds community across the two cohorts, which previously could be achieved efficiently when Fellows met in person onsite. Online, we designed activities for fellows to interact such as year 1 and year 2 fellows interviewing and introducing each other; and year 1 participating in year 2 project presentations and giving feedback and vice versa. Pre-recorded project presentations were used to overcome unstable internet connectivity in some areas to ensure a smooth experience.

The biggest challenge we have faced is building an online global community of ALL FAIMER fellows, work that is still in progress. In 2021, we launched the annual FAIMER Global Forum meeting for the global community to come together, showcase their work in HPE and engage in discussions in relevant areas in HPE and workforce development. We also started the annual virtual FAIMER Institute Leadership Meet that brings together the institutional leaders from schools and universities where FRIs are located to engage in strategic thinking and planning for the growth, development, and expansion of the programs. In 2022 we launched FAIMER Connect, a virtual platform to engage global community. This is the first time FAIMER has had the technology to connect the entire FAIMER community of about 2000 individuals from over 55 countries. Teams from DAFFRI are strategizing various activities for engagement using this platform.

Figure 4: Nested approach to building an online FAIMER community of practice within and between classes and across the globe

Figure 5: Nested approach to building an online FAIMER community of practice within and between classes and across the globe
FAIMER: Foundation for Advancement of International Medical Education and Research



Evaluation of online programs

Program evaluation is ongoing and initial evaluation findings suggest there is no difference in gains in knowledge, skills, and competencies between the onsite and online format, which is encouraging. It is too early to measure the outcomes of the online format at institutional and national levels, although Fellows demonstrated leadership in pivoting to online learning during the COVID-19 pandemic and teaching other faculty in their institutions and nationally (12).

Implications

The changes made in response to the COVID-19 pandemic hold many implications. The online program is cost-effective and feasible for participants, and it appears that the online format is here to stay. The format enables FAIMER to enhance its contribution globally.

The FRIs continue to offer programs either in an online-only format or hybrid, depending on the current status of COVID-19 in their respective regions, and draw on experiences with the online IFI. We have successfully piloted FDP in competency-based education as a one-year virtual program and are planning to offer this program through FAIMER to serve the global needs and through FRI in India to serve the local needs.

We applied our experiences with the online FAIMER Fellowship to design our new curricula which are either fully online or will have considerable online components. We are expanding our reach through exploring partnerships to start new FRIs. In partnership with Makerere University School of Medicine, Kampala, as host university and Mbarara University of Science and Technology Faculty of Medicine, Mbarara, as regional partner, we are starting a new FRI in Uganda in 2023 to serve the Eastern Africa region. Maintaining FAIMER's commitment to Africa, we aim to expand regional access to HPE expertise and pilot a multiple partnership model for FAIMER to use in future partnerships. Our partners in Africa are crucial for the success of the programs to enhance HPE and workforce development in this region.

Conclusion

FAIMER has developed a successful model for advancing HPE globally; mutual partnerships and collaborations have been and will continue to be a cornerstone for programs for the HPE community. The sustainability, growth, connectivity, and impact continue in the online format; this is encouraging because online education in all spheres, including global FD is the new reality. A major challenge remaining is to design teaching/learning activities that maintain human interactions; these will be crucial for impactful online programs. Sharing the experiences of IFI and FRIs will be useful to meet these needs as we continue to build global capacity in HPE.

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Lessons from COVID-19 Pandemic: Teaching Midwifery at the National Level in Sierra Leone in the Pandemic and Post Pandemic.

Dr. Joan Shepherd relates the impact of COVID 19 pandemic on midwifery Education in Sierra Leone.

Background

The contents of this article are drawn from personal experiences and National response by the Ministry of Health and Sanitation during the COVID-19 pandemic in the midst of teaching in a midwifery training school. Teaching Midwifery in COVID-19 Pandemic and Post Pandemic periods impacted on the way student midwives were taught. Contextual issues are highlighted during the COVID-19 Pandemic in the Midwifery Education profession. But more specifically, the impact of Covid-19 on midwifery education basically around the way students were taught, classroom spacing rearrangement and institutionalizing national protocols and guidelines on prevention of COVID-19 spread among staff and students.

Introduction

Sierra Leone had an incredible low rate of Covid- 19 Infection. Since confirmation of the first case in March 2020, there have been 7,704 confirmed cases of COVID-19 with 125 deaths reported in 2022 as the country was at CDC Level 1 rating. Unlike other countries round the world reporting cases of Covid-19 infections since its outbreak in December 2020, Sierra Leone, referred to as the "Athens of West Africa" was fortunately amongst the very last countries to record a case of Covid-19 among its citizens. However, this Victory did not last very long as the 1st case of Covid-19 infection was reported in March 31 2020. Corona is finally Here!! The first Index (COVID-19) case in Sierra Leone was linked to a male Sierra Leonean returning home from a trip abroad from France. He was tested positive for the virus while on Mandatory Government Quarantine in Sierra Leone at a hotel specially allocated for people traveling to the country from overseas.

The resultant reaction of the news of the first Covid-19 case in the country brought about heightened levels of anxiety and fear given the high number of people who had died from the disease in other countries. Additionally, it triggered a general state of scare and unbelief in the general populace and acceptance of the reality was met with mixed reactions. Persons returning home to Sierra Leone from other countries or visitors traveling to the country were the most feared or suspected of coming in with the virus. The blame was levied on those who returned home from traveling abroad as the country was free of the disease up to the time the index case was recorded. Equally so, frontline clinical staff supporting critical care patients with and without COVID-19 were seen as suspect or carriers of the infection.

The impact of COVID-19 on Education

The capacity of Sierra Leone to respond to the COVID-19 pandemic was credited to the fact that the country had in place preventive systems following the Ebola outbreak in 2014. Lessons learnt from

the Ebola outbreak served as an eye opener and resilient structures were in existence as there were existing precautionary measures in place for the Ebola response in the country. Precautionary measures had to be urgently put in place while at the same time educational adjustments had to be made to ensure infection transmission is

The impact of COVID-19 on midwifery education in Sierra Leone

Midwifery is an indispensable profession as midwives are the frontline workers in Maternal and Child Health and are the key to achievement of Safe Motherhood.

In the midst of the Covid-19 pandemic women and girls in their reproductive years needed services related to the health and well-being. At the moment, Sierra Leone has three (3) Midwifery Training Schools and the fourth one is currently under construction. The National School of Midwifery in Freetown offers Diploma in Midwifery to Registered Nurses for 18 Months Period, while the School of Midwifery Makeni and School of Midwifery in Bo offers Certificate in Midwifery program for State Enrolled Community Health Nurses (SECHNs) for a period of two years. With reference to the National School of Midwifery, the total number of student midwives in class was one hundred and thirty-seven (137) in 2021 and one hundred and seventeen (117) in 2022.

As COVID-19 (SARS CoV-2) infections began to be reported around the world, Sierra Leone responded by shutting down public places such as Churches, Mosques and Educational Institutions to contain the spread of the virus. Teaching in a Health Educational Institution as the National School of Midwifery with a class size of over 100 students became a challenge. Such a high number of persons congregating for the purpose of learning qualified as a "Super Spreader" by all means under the given circumstances and means of infection transmission routes. Temporary closure of schools was seen as an emergency measure to stop the spread of the infection and midwifery schools were affected as well. Consequently, there were cancellation of examinations and other public gatherings. The school at the time had plans to graduate newly-qualified midwives. There was the need to seek approval from the National COVID emergency response team prior the graduation ceremony (NACOVERC). The total number of guests had to be reduced, the hall had to be large enough to create spacing at one meter for each person coupled with use of face masks as well as hand hygiene measures. Evidence of preventive measures adhered to existing protocols for public gathering was securely put in place. Preventive measures were adopted by the National School of Midwifery including other health training institutions and the National COVID-19 Guidelines and Protocols were enforced accordingly. These measures included:

- Social/Physical distancing protocols
- Hand Washing and Hygienic practices
- Mouth Etiquette

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- Use of Face mask of varying types (Cloth, Surgical masks etc).
- Stay home if sick, seek medical attention if having symptoms of Covid-19.

Teaching/Learning Barriers: Implementation Challenges

Several barriers created challenges which were encountered in the teaching and learning environment that affected the quality of teaching.

• Unfavorable Environmental Conditions:

Concerning physical infrastructure there was inadequate space in the classrooms thus social distancing was impracticable and classroom space and sitting arrangements had to be altered. A change in sitting arrangements was done to ensure physical distancing which was virtually impossible with large classes of students. One meter spacing was done where possible. For example, in the skills laboratory there were insufficient mannequins and anatomical models for small group sessions. This proved a challenge considering the large numbers of students.

• Vaccine related fears:

Adverse drug reaction was reported among some health workers and other people, this further compounded the response for vaccine uptake among students. Fears, doubts and anxiety among students was created as a result.

• Improper use of masks:

This was also a problem as Wrong type of masks worn by students and even the right ones were not properly applied, and in many times were incorrectly applied for example positioned under the chin. Proper securing and disposal of masks was also a challenge. Masks were kept in purses and bags after use among other items creating risks of contamination. They were recycled and reused. Excuses for not wearing masks were that they were too tight, uncomfortable or suffocating so they only put on when they saw a Lecturer approaching the class. Some said they could not breath through them or were allergic to them. Other simply said they were difficult to use.

• Mental/Psychological Inconveniences:

Suppression of nature: Natural normal reflexes such as sneezing and coughing became a big problem. Sneezing and coughing by students or faculty was now an Alarm Bell!!! There was difficulty in distinguishing a normal Sneeze or cough from COVID induced sneezing and coughing. So, comments like "So I'm not supposed to sneeze now because of Corona?" or "I have been sneezing before so why not now?" were common among students. Suppression of sneezing habits and shouting from colleagues to "Please put on your Masks"!! could be commonly heard.

• Non-Compliance:

Some Students became complacent post-Ebola and felt their resistance to COVID-19 was stronger if they have beaten Ebola therefore, they did not take the necessary protective measures.

• Technological Barriers:

Utilisation of technologies became the new normal and in many cases students had limited computer skills. ICT received much prominence and computer literacy was a great challenge for some students. Although some were technologically inclined and were using smart Phones, they had limited access to computers. The majority did not have emails. This made it difficult to use educational videos or do it yourself return demonstration to assess competency of students. Where Internet Facilities were availed, they were misused and this led to restrictions to free access at School. The use of WhatsApp was encouraged but non-adherence

to ground rules was difficult to enforce as students posted various non-educational materials on the forum. Online Teaching, Zoom Meetings/Teams Meeting were often disrupted due to internet connectivity challenges as well as electricity connectivity issues.

• Financial Implications:

Access to and use of modern technology in a low-resource country has been inadequate over the years. This posed problems. The cost of Data to access Internet on phone or computer was very high and not affordable for all students. At the same time some did not have computers or smart phones.

Teaching/Educational platforms during the COVID-19 outbreak: Solutions/Innovative Approaches Adopted

Teaching/Learning approaches and strategies previously used by the school became redundant, unsuitable or obsolete under the prevailing circumstances. In order to curb the spread of infection among students and staff and to adhere to national protocols, there was need to come up with innovative ways to facilitate teaching and learning in the midst of the pandemic. The faculty explored use of innovative methods of training in order to maximize the educational experience for students through:

- Small Group Sessions for Demonstrations
- Small group sessions
- Dividing classes for lectures into two batches.
- Limited class contacts for face-to-face sessions
- WhatsApp messages
- Telephone calls
- Peer-to-peer contact
- Study groups
- Post-pandemic era: post-pandemic COVID-19 lessons

Some recommendations have been suggested as follows:

• The intake of students should be regulated by the Sierra Leone Nurses and Midwives Board/Council, not more than 50-60 for new intake and new courses to avoid overcrowding. There is need to open up more schools at regional levels to ease the burden on the existing schools, so the moratorium by the Nurses and Midwives Board on opening of on new schools was revisited. Assessment of Nursing and Midwifery training institutions should be done periodically by the Board using the Accreditation Standards tools. Supportive supervisory visits to clinical placement sites where students are posted is critical. Curricula reviews and Integration of new modules such as Infection Prevention and Control (IPC), Integrated Disease Surveillance and Response (IDSR), and ICT courses for midwives is now of great relevance. Assessment of clinical placement sites for adherence to COVID-19 protocols by staff and students must be carried out regularly. It has been noted that lessons learnt from Ebola and now COVID-19 make Sierra Leone stronger and resilient in the face of emerging threats.

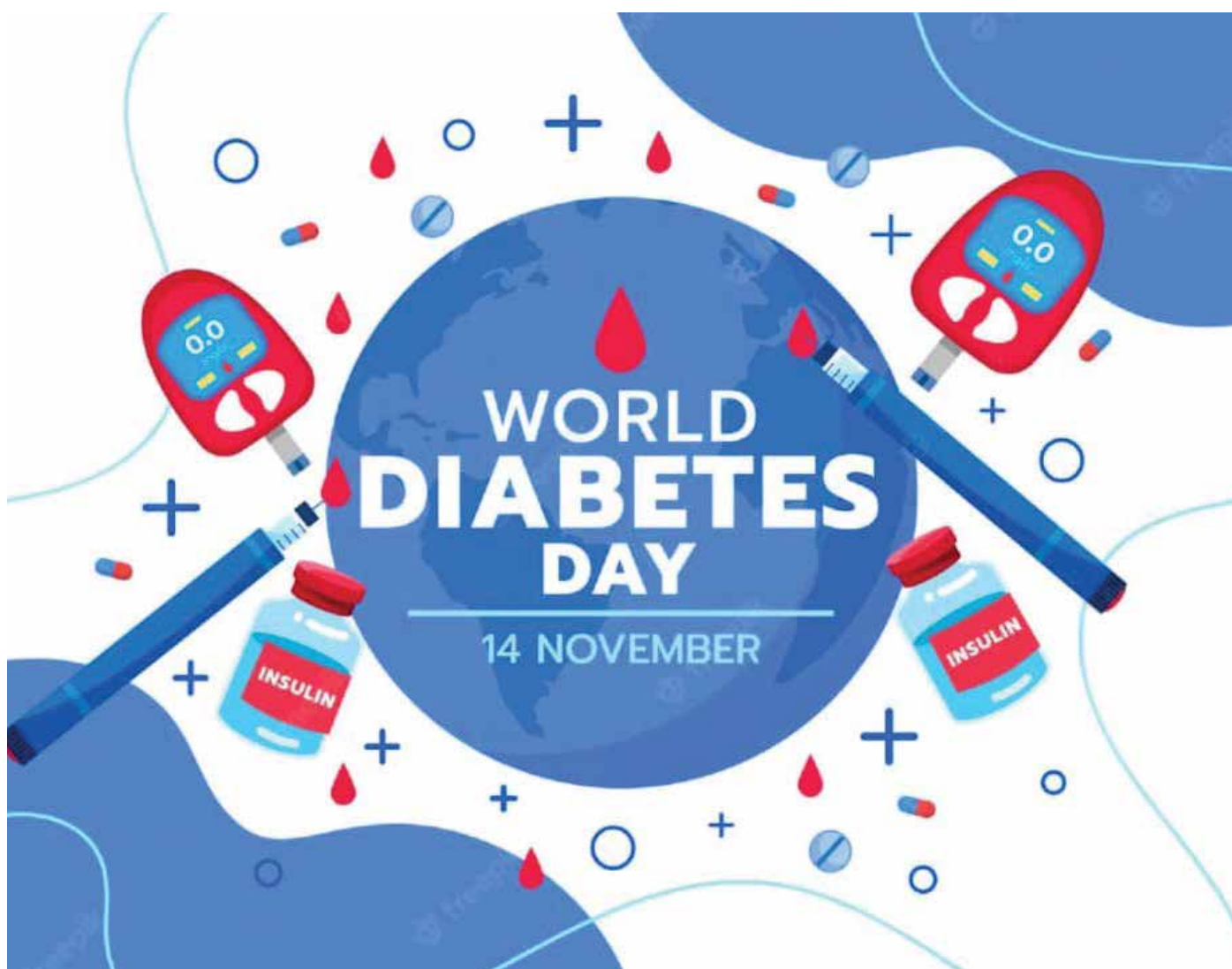
• Preparedness: Response and Alert Systems in place Post-Ebola/ Post-Covid-19. Resilient, Responsive systems and Processes should be instituted. Robust Infection and Prevention protocols through adherence is an issue Respiratory Etiquette, Hand Hygiene is a Must!. Implementation of Policies, SOPs, Guidelines and Protocols must be adhered to. All Educational Institutions should ensure students are professionally socialized to practice Infection Prevention Control

(IPC) at all times not only during public health emergencies or events of pandemic nature.

- Beneficiaries of services: In the midst of pandemics, the quality of midwifery services suffer as there is more focus on keeping oneself alive and as well thinking of personal protection. This should be kept in mind so that moving forward these services are not neglected.
- Adequate Resources be provided in the clinical placement sites: PPE and environmental conditions that impact on the ability of students to practice in the real-life settings must be prioritized.
- Pedagogical Approaches: Adapt, transform: Adopt Effective Teaching and Learning Techniques for Competency Acquisition be used.
- Training of Educators: Educators and lecturers must update their knowledge on current trends and educational advancements in pandemics.
- Creating safe environments for teaching and learning should be prioritized.
- Utilization of innovative and appropriate technology that will suit the present educational needs should be encouraged.

CONCLUSION

Covid-19 and other infectious diseases have impact on midwifery education. Emerging diseases have serious implications for the way health training institutions deliver teaching and learning strategies to learners. Emerging diseases and other Public Health events have serious implication for the future of health training institutions. Educators should be in a constant state of preparedness: "No Virus should take them by surprise anymore". Infection prevention and control (IPC), Integrated Diseases Surveillance and Response WHO Module IDSR/IHR, IPC and ICT Modules are a must for students if they are going to stand the test of future outbreaks that interferes with their learning. Supportive Supervision is key to ensuring all students adhere to protocols and standards to protect themselves and others. Stronger training institutions should emerge after pandemics as lessons learnt should make us more resilient to future outbreaks.



Should Africa continue COVID-19 vaccination to 70% target?

A team of experts review the necessity to meet the 70% target for COVID 19 vaccine for Africa.



Training on use of PPE courtesy of Cooper Inveen (Photo courtesy of Reuters)

Background

This contribution extends previous submission¹ showing COVID-19 seems less an existential health threat to Africa to warrant extraordinary expenditure that may not represent the best value for money. Specifically, “if vaccinating 70% of populations everywhere² is the only way to protect everyone, how has Africa largely unvaccinated (<4 % vaccination rate) recorded incomparably fewer COVID-19 deaths than highly vaccinated (over 60%) regions also increasingly inoculating minors?” This question arose at a time of inequitable access to vaccines which framed Africa as victim.² Recent data³ also show fewer than 3% of global COVID-19 deaths thus far this year occurred in Africa where mortality is projected to decline 94% in 2023 unlike regions with vaccination near or over 70% coverage where most deaths happened. This communication argues that inoculating to 70% coverage is unfeasible and could further hurt Africa in ways probably unintended.

Global Covid-19 vaccination and Africa

Recent estimates⁴ indicate early COVID-19 vaccination saved more people than died except in Africa. Specifically, of an estimated 14.4 million to 19.8 million excess mortality averted worldwide in

2021 through COVID-19 vaccination, 466,400 were saved in Africa from an estimated 1.6 million excess deaths versus 4,469,000; 5,811,000; 565,8000; 2,429,000 and 992,800 in the Americas, Europe, South East Asia, Oceania and Mediterranean corresponding to vaccination rates of 58.30%, 56.50%, 35.40% and 28.10% relative to 5.48% in Africa.⁴ Other estimates also indicate disproportionate deaths in Africa in 2021 from inadequate vaccination.

Covid-19 deaths versus Malaria mortality

Surprisingly, Africa recorded 3.95% of the cumulative COVID-19 deaths globally as of September 1, 2022 versus over 20% in regions with higher vaccination (Table 1). This compares to 1,134,000 Malaria deaths in Africa in two years to December 2021 responsible for 96% of Malaria mortality worldwide⁵, meaning 343% more Africans died from Malaria than from COVID-19. Given this sustained disparity in mortality (Fig.1), it seems reasonable to expect higher funding for Malaria, particularly with over 5 million COVID-19 deaths predicted by June 2021 not evident.⁶

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Table 1:

Table 1: COVID-19 DEATHS BY REGIONS AND SELECTED VARIABLES AS AT SEPTEMBER 1, 2022

Region	Deaths and (deaths/106)	% Vaccinated (fully)	Boosters/100 persons	Aggregate Covid-19 loans (in 106 Dollars) and (%)	Loan-Death ratio (in US Dollars)
Africa	256,555 (184)	22.3	3.4	25.934 (15.20%)	101,085.54
Asia	1,472,393 (314)	71.9	33.4	17.021 (9.98%)	11,560.09
Europe	1,926,126 (2,565)	66.3 (EU 73.3)	43.1(EU 56.3)	6.676 (3.91%)	3,466.02
North America	1,498,296 (2,513)	64.4	39.7	0	0
Oceania	18,693 (421.47)	62.7	40.5	2.622 (1.54%)	140,266.41
South America	1,324,959 (3,054)	76.8	52.9	118.315 (69.37%)	89,297.10
World	6,496,957 (821)	62.2	30.6	170.568	

Figure1:

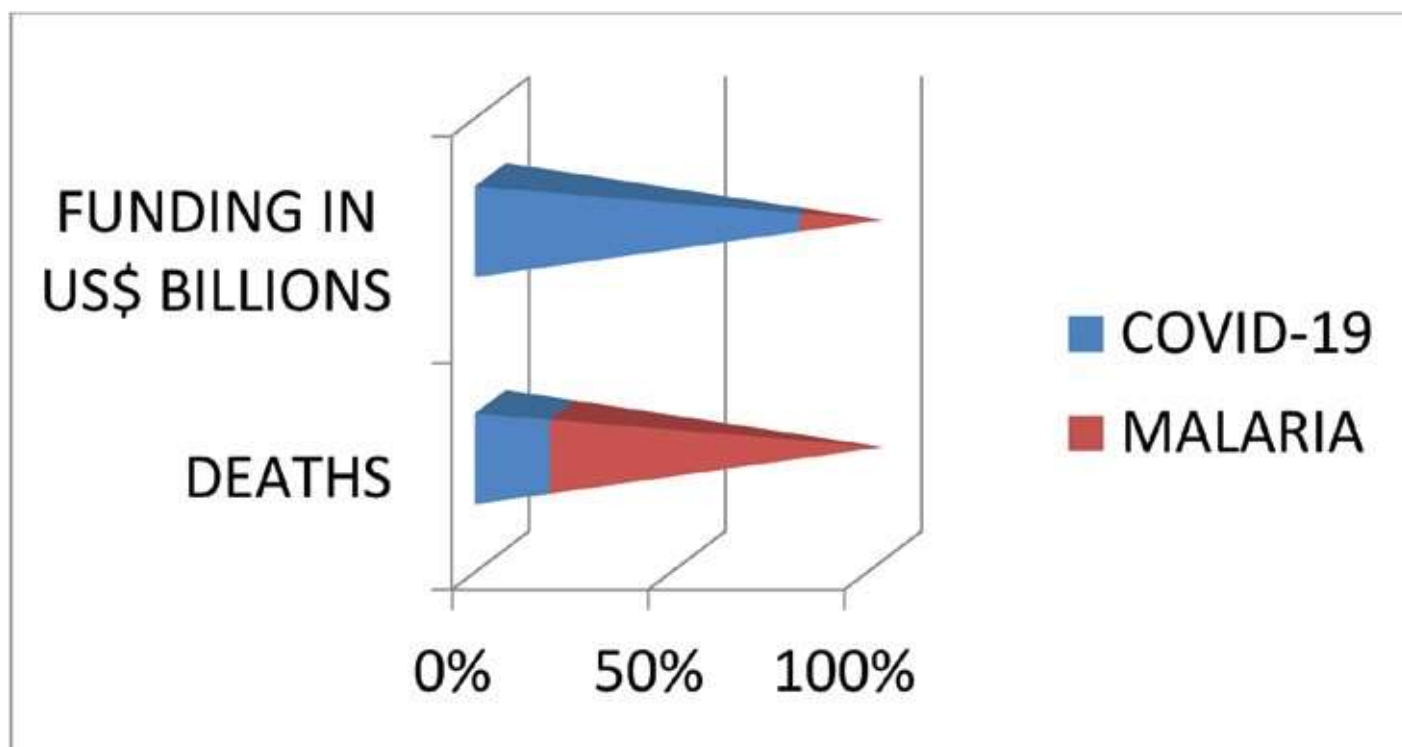


FIGURE 1: FUNDING VERSUS COVID-19 AND MALARIA DEATHS IN AFRICA AS AT SEPTEMBER 1, 2022
(Constructed with data in References 3,5,7)

Covid-19 versus Malaria Funding

Paradoxically, 25.934 US\$ billion from IMF went to COVID-19 response versus 6.3 US\$ billion for Malaria; showing COVID-19 was over 400% better funded from IMF source alone than Malaria killing 343% more (Fig.1). Africa also has the second-highest COVID-19 indebtedness to IMF and Loan-to-death ratio of US\$ 101,085/death (Table 1), raising questions of inefficient spending. And its debt profile became 63.1% and 60.3% of GDP in 2020 and 2021 respectively versus 55.4% in 2019 while revenue projections for 2020 and

2021 declined as the economy contracted 13.6% and 9.3 % of GDP respectively relative to pre-pandemic estimates of 2019.^{7,8} Specifically, public health measures introduced in 2020 to limit COVID-19 spread slowed many economies in Africa and pushed others into recession^{7,8}; thereby dragging 29 million into extreme poverty in 2021; a figure likely to rise in 2022 with events in Ukraine. Indeed, Africa requires \$424 billion to recover from this damaging economic impact of COVID-19 according to African Development Bank.

Are covid-19 loans all inevitable?

Many regions were caught unprepared including Africa where the worst was expected given its struggling health systems. Early evidence⁹ nonetheless indicated COVID-19 was diverging to two regional epidemics with different severity; one with terrifying daily mass deaths; another mainly in Africa unfolding at a 50% or more lowly risk gradient for severe outcomes still evident (Table 1). This demanded a response sensitive to Africa's reality. Pandemic preparation:

As daily images of corpses piling up in hospitals, etc and empty streets in Europe and China were beamed globally; a heightened state of preparedness including emergency health procurement became evident. However, what emerged largely across Africa was underutilization of capacity, sometimes up to 60%¹⁰ with many ICUs, Quarantine centers, etc. hurriedly procured closing.

Purchasing more vaccine doses

Africa is borrowing to vaccinate 70% of its population at an estimated cost of 12-15 billion US Dollars.¹¹ Towards this, Africa's \$30.5 billion debt service obligations in 2021 were re-scheduled by rich countries and IMF cancelled \$485 million debt for low-income countries which also benefited Africa.^{7,8,11}

Donor driven-COVAX was to deliver 50% of doses required to vaccinate 40% of Africa's population by December 2021 to protect everyone and prevent under-vaccinated populations becoming incubator for deadlier mutations that could threaten global health and delay economic recovery worldwide.^{2,4,11} Also, African Union purchased more doses financed by AFREXIM for distribution to member States according to need. Sadly, these initiatives largely fell short despite economic reliefs Africa received and sovereign debts involved. Strikingly, some 40% of Africa's external debt stock of \$702.4 billion in 2020 involved lenders with a large chunk of COVID-19 economic reliefs granted Africa going to private lenders.¹¹ And evidence indicates countries in Africa procuring additional vaccine doses could be paying higher than rich countries; some over 200% more.¹¹ Even so, Africa missed the global vaccination targets of 2021 and 2022 due to supply chain issues linked to hoarding and nationalism; echoing previous observations with HIV/AIDS, Ebola, HINI, and Smallpox pandemics where the global response seem more about purchasing power and region than need. This is worsened by widespread vaccine hesitancy; despite SARS-CoV-2 evolving into explosively more contagious omicron sub-lineages.

Natural infection as mass immunization against COVID-19

Three years into COVID-19, it seem evident neither vaccine-induced immunity nor from prior infection, prevents re-infection, this is however unlikely to cause severe disease, except in those 50+ years with multiple comorbidities who constitute under 8% of

Africa's population³. This natural immunity appears long lasting and modifies the clinical severity of COVID-19 in ways comparable to vaccines alone, sometimes more so. The evidence is compelling, growing and also increasingly show¹² an initial response to a first encounter with SARS-CoV-2 can shape the pattern of subsequent immune protection against variants emerging further down the line regardless of how the virus is mutating. Coincidentally, sero-prevalence surveys indicate over 65% of Africa's population already exhibit antibodies to SARS-CoV-2 as of December 2021¹², signaling high population immunity despite low vaccination [Table 1]. This observation seems parallel to Africa's incomparably low COVID-19 mortality; a protection probably boosted by repeated exposure to an ever-increasing contagious virus with diminishing lethality.³

To reach this point, Africa suffered unbelievable lack of access to incredibly life-protecting vaccines with lives saved as percentage of COVID-19 deaths being 63.2% for Africa versus 153%, 226.2%, 548.1%, 200.54% and 1056.4% for the Americas, Europe, South East Asia, Eastern Mediterranean and Western Pacific regions corresponding to vaccination rates of 5.48% (Africa) relative to 58.30%, 56.50%, 35.40%, 28.10% and 62.40% as a few powerful countries stockpiled vaccine doses beyond their immediate need only releasing some to Africa after its time of dire need in 2021.⁴

Contextually therefore, accumulating further sovereign debts just to keep vaccinating towards 70% coverage when high population immunity appears evident is double jeopardy and tantamount to borrowing to acquire that already present. Luckily, experts and policy makers^{12,13} behind Africa's technical response to COVID-19 are embracing the uncomfortable reality of a two-tier global vaccination order (Table 1) with Africa at the back of the priority queue and focusing more on extensive immunization of the most vulnerable as previously submitted.¹ Nevertheless, mixed messaging persists with some advocating COVID-19 vaccination as primary health service and routine immunization.^{2,13} The benefit of such repeated universal vaccination remains unclear given current evidence and is probably unsustainable without more foreign loans. Clearly, solidarity which promised protection for everyone in need, failed woefully in Africa.^{2,4,13,14}

COVID-19 VACCINES AND INTERNATIONAL LAW

Allowing millions in low-income populations to die from lack of access to incredibly life-saving interventions developed mostly with public funds while big pharmaceutical companies earn billions in profits from prioritising high-income nations, despite global solidarity on how to end the pandemic everywhere fueled intense international debate on ownership rights of COVID-19 Vaccines. This prompted India and South Africa to approach World Trade Organization (WTO) in 2020 requesting for a "patent right waiver" to increase supply and local manufacturing of COVID-19 vaccines, tests and therapeutics. Majority supported the request sometimes presented as "we're not safe until we're all safe".¹¹ However, a few countries linked to the industry opposed it saying it will stifle innovation despite WTO rules guiding waivers during global crisis as COVID-19 was initially framed and robust provisions for it.¹⁵ Moreover, patent laws across jurisdictions appear similar in allowing for bypass of Intellectual Property (IP) rights during existential crisis through Compulsory License to third party even without recourse to or approval of IP owners. This requires compensations to IP owners for losses at economic rates.

With such conditions, it was therefore not entirely surprising that after almost two years of intense discussion sometimes polarized; the waiver ratified in June 2022 came not only late as COVID-19 severity was diminishing globally, but restrictive excluding some countries like China with huge manufacturing capacity to rapidly upscale vaccines availability. The waiver also seems unlikely to hold beyond 2027 and excludes tests, equipment and other extremely lifesaving therapeutics.⁽¹⁴⁾ This is the dilemma some condemn and

others hailed as a new dawn for humanity. Fortunately, Africa's predominantly youthful population remains less prone to adverse outcomes despite being least vaccinated globally (Table 1). Indeed, the cumulative mortality data (Table 1, Fig. 1) and diminishing case fatality aligns with previous suggestion that Africa may be less vulnerable to severe outcomes of coronaviruses and influenza pandemics.

Consequently, it remains to be seen how accumulating further debts to pay towards 70% global vaccination target is in Africa's best interest when malaria which kills far more remains underfunded.

Instructively, while emphasis is shifting from minimizing transmission to preventing disease severity^{2,13}, life-saving therapeutics like Paxlovid required to do so remain excluded as low-cost generics in the waiver ratified in June 2020.⁽¹⁴⁾ Therefore, inequity in access to life saving interventions persists only shifting to therapeutics as unutilized vaccine doses accumulate and COVID-19 evolving in ways that demands a different approach to minimize its deadliest outcomes.

Conclusion

With Catastrophe predicted not evident as SARS-CoV-2 lethality diminish globally, the worst seems behind Africa. Specifically, mortality data reflects more about the dominant disease behavior of SARS-CoV-2 than the impact of any intervention in Africa including vaccination; which remains the lowest globally. Therefore, continuing vaccination towards 70% target could signal Africa's COVID-19 response remains guided by a worst-case scenario, and not how the pandemic has unfolded and evolving.

Luckily, COVID-19 increasingly looks different in different regions, thus, Africa can find its own way out of the pandemic. Repeated universal inoculation against every imaginable variant of a constantly changing virus is simply unsustainable in Africa without further borrowing, and increasing dependence on others that could benefit from Africa's high vaccination but chose to withhold badly needed vaccine doses when it mattered most.

Going forward, Africa's response needs re-setting in the context of what is now known about local disease behavior of SARS-CoV-2. In particular, Africa's vaccination priority ought to align more with local reality and shift beyond protecting the most vulnerable to discontinuing a global inoculation strategy which prioritizes other people's fear of Africa's low vaccination enabled in the first place by the same powers. Doing so is urgent if social disorder arising from mounting COVID-19 debts is to be averted. Finally, Africa requires health systems that optimize resources to meet its own priorities.

DEDICATION

This work is dedicated to Pius Abioje, PhD, Professor of African Religious Studies, and University of Ilorin, Nigeria for his unwavering commitment to a better Nigeria.

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Driving the global health workforce agenda

Jim Campbell et al present a commentary on Africa's workforce challenges, and related Health Workforce (HWF) policy, planning, governance, and collaborative partnership issues.

Two decades of sustained goodwill and collaboration has shaped the global health workforce agenda. Recognition of the importance of health and care workers as key enablers of strong and effective health systems is heightened in many places and calls for further action and investment are growing.

Partnership collaboratives that are driving this global agenda have been key to achievements made to date. Among these partnerships is the WHO-led Global Health Workforce Alliance/Network, which has provided a platform for key stakeholders and workforce experts from across multiple disciplines and sectors to collaborate on the design and implementation of innovative solutions to advance the HRH agenda, in line with the evolving global context and needs. These partnerships are invaluable for helping governments, partners and stakeholders to effectively respond to national workforce priorities through evidence-based policy and decisions, which further draw on the contextual adaptation of the WHO Global Strategy on Human Resources for Health: Workforce 2030, and the recommendations of the report of UN High-level Commission in Health Employment and Inclusive Economic Growth and its Working for Health Five Year Action Plan for Health (2017-2021) agenda.

The success of these partnerships lies in how they have convened multisectoral stakeholders - including ministries of health, finance, education, and employment - around the inputs needed to protect, invest in, and safeguard the health workforce, both as a fundamental human right and an enabler for delivering quality health services across the spectrum of promotion, prevention, response, and recovery. Investing in our health and care workers, with an emphasis on strengthening primary health care, improves access and health outcomes for all. Additionally, multisectoral collaboration and engagement on workforce initiatives increases governments' ability to deliver core public health functions, create employment and economic opportunities for women and youth, enhance social protection and cohesion, and provide the foundation for responding to emergencies.

At this year's Seventy-fifth World Health Assembly in May 2022, reporting on the human resources for health agenda reflected measurable progress achieved against the Global Strategy on Human Resources for Health: Workforce 2030, notably a reduction of the global health workforce gap from 18 million in 2016 to 15 million in 2020. This figure is projected to fall further to 10 million by 2030.¹ However, these figures reflect pre-pandemic projections; data reported by 194 Member States in 2020 reflects an estimated global health workforce of 65 million, a growth of 29% since 2016.

However, of great concern is that most of this workforce shortfall remains in the African and Eastern Mediterranean regions, and principally among low-income countries. As many high-income countries recover from the pandemic and look to close their own workforce gaps through active recruitment, those countries with the largest shortfalls are most at risk of losing their health workers through increased trends which we are now seeing in international health worker mobility and migration. The latest indications

based on the fourth round of reporting on the WHO Global Code of Practice on the International Recruitment of Health Personnel, conducted from March 2021 to March 2022, show that around 15% of the global health and care workforce are working outside their country of birth or of initial professional qualification.²

Workforce outcomes of the Seventy-Fifth World Health Assembly in the African context

Momentum generated through the Seventy-fifth World Health Assembly reflects renewed global, regional, and national commitment to address persistent health workforce constraints, the impact of which have been magnified throughout the COVID-19 pandemic. However, together we need to take advantage of the post-pandemic opportunity to align our collective efforts around one consistent health workforce agenda, that reduces existing fragmented and siloed approaches to addressing workforce constraints. We have seen systemic shortcomings in public health functions and emergency preparedness and response capacity further eroding already fragile health systems. Countries at all stages of economic development have struggled to maintain essential health services, with most countries attributing the key challenges faced in large part to limited health worker availability.³ Meanwhile a proliferation of workforce initiatives have emerged in recent times, quite often driven by theme or occupation (e.g., for building public health core capacity and functions, or for mobilizing community health workers).

While health workforce shortfalls have hindered health system performance, the pandemic's impact on health and care workers themselves has been immense. At least 115,500 health and care workers have died, and many more have endured persistently higher risks of infection; extended working hours; elevated stress, burnout, anxiety, and other mental health issues; as well as violence, harassment, and discrimination. The latest data from WHO shows that although 90% of health and care workers are fully vaccinated, based on data reporting from 138-member states on COVID vaccination uptake, only 56% of health and care workers in the Africa region are fully vaccinated.⁴ Many of these challenges are not new, but the pandemic has magnified these and broadened their impact globally. In the African context, many of these challenges were observed in previous emergencies like the Ebola virus disease outbreak, the HIV/AIDS epidemic or in situations of fragility, conflict, and violence.

We cannot - must not - fail to learn and act upon the lessons again.
We cannot fail our health and care workers again.
We cannot fail to act and invest in protecting, growing, and safeguarding the health workforce again.

Addressing these issues requires a significant change in our traditional approaches to workforce governance, planning, resourcing, and management. This can only be achieved through a more inclusive multisectoral engagement and partnership with

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stakeholders, including the private sector and civil society. Key to the success of this approach is intentional investment to build a critical mass of competent human resources for health expertise that is capable of driving evidence-based policy, decisions and investments that are aligned with one common global health workforce agenda that informs and drives regional and national priorities and actions. These human resources for health experts and champions will need the skills, competency, and political support to convene and leverage all sectors and key stakeholders around our common workforce vision.

At this year's 75th World Health Assembly over 100 Member States, including the Africa group, co-sponsored Resolution 75.17 'Human Resources for Health',⁵ which puts forward our common agenda for protecting, safeguarding, and investing in the health and care workforce, as set out in the four Human Resources for Health DG report submissions to WHA75.⁶ Through this resolution, Member States endorsed the new Working for Health 2022-2030 Action Plan and its progression model, which sets out a framework for how African countries can generate and leverage additional domestic and development investments in health worker skills, education, and jobs, including through its Multi-partner Trust Fund (MPTF) implementation and financing mechanism. Contextual and country-led adaptation of the Action Plan can help facilitate and convene all partners under country-led strategic workforce investment plans that draw on multisectoral partnership and collaboration as an enabler of workforce policy, planning and implementation.

Explicit to the human resources for health agenda and the Action Plan is the aim of leveraging collaborative support to tackle the systemic issue of fiscal space restrictions. These restrictions result in a demand and supply paradox for some low-income countries with critical health worker shortages: where budget constraints appear to prevent absorption of additional health workers, resulting in unemployment, even as population needs exceed capacity.

Sub-regional platforms and mechanisms can play a strong collaborative role within the African region, and where marked progress is being made. For example, countries in the West African Economic and Monetary Union (WAEMU) have collectively developed a multisectoral regional health workforce investment plan as well as country specific investment plans. These have resulted in the ability to challenge wage bill fiscal constraints to increase the numbers of health workers in rural and underserved areas, as part of a drive to create 40,000 new health workers jobs by 2022. In the Southern Africa Development Community, Member States have developed a regional health workforce investment strategy that calls for an additional 40% in domestic and development investments in the health workforce over the next 10 years, to meet priority population health needs and demand. Further, the new African Union Health Workforce Task Team⁷ represents a continent-wide initiative to align stakeholders and resource mobilization to build a fit-for-purpose health workforce. In its first quarter, the task team already has attracted significant resource support.⁸

How the global workforce agenda and movement responds to the key challenges faced

As a key driver of health workforce action, commitments and investment, the Working for Health Action Plan targets many of the long-standing workforce constraints and challenges: persistent underinvestment, shortages, skill-mix imbalances, and maldistribution. Similarly, it addresses related issues that impinge upon the practice environment, including suboptimal working conditions, lack of support, inequity and disparities that further undermine workforce motivation, retention, and performance.



*Training on use of PPE courtesy of Cooper Inveen
(Photo courtesy of Reuters)*

Aligned to the Action Plan and its agenda, a new WHO Global Health and Care Worker Compact provides a welcome technical reference and policy guidance to ensure that adequate and appropriate measures are taken on workforce safeguards, protection, and the promotion of occupational health and safety, rights and decent work. The four domains of the care compact - protecting health workers, providing support, safeguarding rights and inclusivity, along with the recommended enabling actions will aid countries to adopt holistic approach to the workforce that drills down into the root causes of workforce shortages, including their impact on those who deliver services.

Following on the fourth round of reporting on the Code and recognizing the grave concerns expressed by Member States and other stakeholders, WHO will reconvene the Expert Advisory Group to review the Support and Safeguard List,⁹ which is composed of those 47 countries with the most pressing UHC-related health workforce needs. The advisory group will consider the acute impact of the pandemic, service disruptions and additional country vulnerabilities and will recommend supports and safeguards that should be targeted at a revised range of priority countries to stem and address health worker migration.

Finally, the global agenda adopted by the World Health Assembly will enable countries to make the best use of the existing workforce through enhanced high-quality skills, transformative competency-based education and learning, and the adaptation of innovative technologies and tools including telemedicine and e-health. Achieving and sustaining progress towards global health goals such as universal health coverage and health security requires a health and care workforce that can deliver the full range of essential public health functions, including emergency preparedness and response. As countries recover and turn attention to investments in health systems to meet diverse challenges, now is an opportune time to bolster the public health workforce, including those personnel charged with emergency preparedness and response functions. The Public health and emergency roadmap¹⁰ launched in April 2022 is the result of joint efforts across leading public health and emergency response experts, organizations and associations.

The anticipated acceleration of our common workforce protection, safeguarding and investments agenda requires effective global advocacy, coordination, partnership, and collaboration. Similarly, sustained levels of domestic and international financing must be both generated and maximized to meet recurrent and operational health workforce expenditure needed to meet population health needs and thus achieve global ambitions toward universal health

coverage and the Sustainable Development Goals. This can only be realized with effective leadership that is government-led, multisectoral, and based on mutual partnership with all institutions, organizations, and stakeholders united to mobilize domestic, development and catalytic financing, cross-sectoral collaboration, and technical assistance. A key entry point is working within, strengthening, and adapting existing governance structures, systems, and collaborative partnerships around our one common workforce agenda.

Unity of effort must drive contextualization and evidence-based implementation of the latest key workforce strategies, tools, and guidance, including the global strategy for human resources for health, the working for health 2022-2030 action plan, the global code of practice on international recruitment, the global health and care worker compact, the health labour market analysis guidance, the national health workforce accounts, the global competency and outcomes framework for UHC, and the roadmap for national workforce capacities to implement public health functions including emergency preparedness and response. This means that, more than ever we will need to build the core capacity and capabilities for enabling a unified approach to effective workforce leadership, governance, policy, planning and management, and ensure that the means and resources that are required for this are visibly embedded within broader health systems strengthening programmes and initiatives.

As countries move forward within the ongoing COVID-19 pandemic, and their priorities shift towards recovery, it is imperative that we clearly illustrate the need for targeted and sustained health workforce investment. The “investment case” must clearly illustrate the economic, labour, gender and social derivatives and benefits of health workforce investment, in addition to the evident health and global health security returns. We must think broadly. Healthy children who learn become healthy adults who earn; a village with a school and sanitation will better retain health workers.

In an uncertain economic landscape, our case must be compelling and unified to build stronger post-pandemic workforce capacity and capability. Effective partnership and collaboration across regional and global initiatives should channel efforts to support national strategies and supplement domestic financing. However, given the multiple competing priorities, and the demands that is placed on post-pandemic recovery efforts, our ability to secure sustained and targeted investment in the workforce remains uncertain.

This is where the need to leverage effective partnership, collaboration, and financing on our common workforce agenda across multiple global initiatives and programmes is critical. For example, this agenda should help channel our efforts towards directing other emerging initiatives at global, regional, and country level to support and supplement domestic financing for health systems resilience and readiness. This includes working through the emerging World Bank Financial Intermediary Fund for Pandemic Prevention, Preparedness and Response as a mechanism for financing global health security, which aligns with the Working for Health Action Plan Multi-Partner Trust Fund and its agenda. Another opportunity to advance the common workforce agenda is the joint African Union and Africa CDC health workforce task team established as part of the emerging post-pandemic recovery ‘new public health order’ declaration initiative to build back better public health capacity and capability. Additionally, the new US government ‘global health workforce initiative’ aims to invest upwards of US\$1 billion in targeted support to those countries that are at most risk of delivering universal health coverage and their SDG targets.

The way forward

In the words of Professor Francis Omaswa, “health is made at home, and hospitals are for repair”. We need to advocate for evidence-based arguments to drive the importance of investment and

partnership in the health workforce to deliver essential services, and public health functions. Changing the prevailing narrative of health as a cost drain on scarce resources, rather than a key enabler of health, inclusive economic growth and social protection requires a coordinated political and technical approach.

Health and care workers are the backbone of strong health systems. We must urgently build and expand the global health workforce around our common agenda, including the core capacity and capabilities that are required to plan, implement, measure and advocate for these workers at subnational, national, regional, and global levels. This calls for human resources for health leaders, planners, and decision makers to work in collaboration with government, partners, and key sectors to develop and implement strong, economic, and evidence-based investment cases for enhancing skills, education, and jobs, and to translate these into measurable health, economic and social benefits.

As we look ahead to the Fifth Global Forum on Human Resources for Health in April 2023, and to the United Nations High-level Meeting on Universal Health Coverage in September 2023, there is an opportunity to reinforce our collective efforts to drive our common health workforce agenda. Now is the time to renew and refresh our efforts to harness the power and strength of this renewed global movement and agenda and put the necessary steps in place to deliver the credible political and technical approach for the future.

We must build upon the marked progress made by the global health workforce network collaboratives and other major initiatives, and on the lessons from the pandemic to create a new global model of collaboration. Under the leadership of WHO, a strategic and functional multisectoral advisory group of experts (mSAGE) will be established in 2023 as the principal global policy and advisory platform and inclusive coalition for delivering on our workforce agenda and its mandate. This mSAGE will support Member States to tap into the levels of domestic and external financing and investments needed to meet their critical health workforce priorities and needs.

Let us reconvene, refresh, resource and recommit to building the health workforce the world wants and needs to ensure Health for All.

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Towards Universal Health Coverage, the need for innovative approaches to reach women and children in low-income countries.

Juliet Nabyonga-Orem gives an overview on the different drivers of inequalities in maternal and child health services in low-income countries.

Background

Poor health indicators and sub-optimal access to health services especially for women and children is a long-standing concern especially in low-income countries. Looking at Sub-Saharan Africa, annual rate of reduction in maternal mortality ratio between 2000 – 2017 was very low at only 2.8% from 878 to 524 per 100,000 live births¹. Similarly, for child survival, the period between 1990 – 2020 registered a modest reduction in Under 5 mortality rate from 181 – 74 deaths per 1,000 births – an annual reduction rate of 3.0%.² In an effort to address the poor health outcomes, the Sustainable development goals (SDG) agenda sets ambitious targets committing countries to reduce maternal mortality ratio to less than 70 per 100,000 live births (SDG target 3.1) and reduce under-5 mortality to at least as low as 25 per 1,000 live births (SDG target 3.2) by 2030.³

Attainment of Universal health coverage (UHC), defined as “all people having access to needed health services (including prevention, promotion, treatment and rehabilitation) of sufficient quality to be effective; [and to] ensure that the use of these services does not expose the user to financial hardship”⁴; serves as an overarching aspiration that can guarantee equitable access to need maternal and child health services, among others, and subsequently attainment of set targets. However, coverage with essential health interventions remain low and progress towards UHC a distant milestone especially in African countries.

Low and inequitable health service coverage in low-income countries

A recent analysis⁵ covering the period 2000 – 2019, to assess progress in the universal health coverage service coverage index (UHC SCI), shows substantial progress with the global population weighted index improving from 45 in 2000 to 68 in 2019. The UHC SCI is computed from 14 indicators that address four programs namely reproductive, maternal, new-born and child health (RMNCH), infectious diseases, noncommunicable diseases, and service capacity and access. Global progress notwithstanding, regional inequalities are stark with the WHO African region registering the lowest average score in 2019 of 46 compared 79 in the WHO European Region. In the case of Africa attaining the set target of UHC SCI of 80 by 2030 is still a long way off. Looking at Reproductive, maternal, new-born and child health (RMNCH) sub-index, global progress was registered between 2000 – 2019 with the average score improving from 68 – 76. However, low, and lower – and middle-income countries registered lower scores.

Persistent inequalities in accessing reproductive, maternal and child health services.

Drivers of inequalities in accessing health services disproportionately affect women and children. Wanjala B (2014) documented gendered asset inequalities in Africa and highlighted the less opportunities accorded to women regarding access to land,

their predominant engagement (compared to men) in informal and small scale less paying entrepreneurial economic activities with low returns, lower access to formal finance systems and lower political capital.⁶ Evidence shows that more educated women have better health seeking behaviour and coverage of interventions is higher among this group compared to less educated women or women with no education. However, access to education and retention in schools is lower for girls compared to boys⁷

These drivers of inequalities also explain the varied performance on the UHC SCI index with high income countries performing better than low-income countries. Favourable RMNCH sub-index coverage scores are registered among the rich (median coverage of 74% among the richest quintile compared to 61% among the poorest quintile), educated and urban dwellers.⁵ Selebano & Ataguba, in their study of 12 countries in South African Development Cooperation (SADC); reported that wealth, education and the number of children explained the observed inequalities in antenatal care (ANC) coverage.⁸ They further report that the majority of women who had not attended even one ANC visit were in the poorest quintile. Mwase et al reports similar findings concluding that household wealth, literacy, distance from the health facility impact coverage of maternal health services.⁹

Apart from the socioeconomic drivers of inequalities, women face additional challenges that relate to the health system, models of health service delivery, poor quality of health services, societal and cultural norms and household power imbalances. Hay et al argue that the restrictive gender norms (dictating what women can and cannot do, need for husband's consent regarding their health) are replicated and reinforced in health systems with resultant gender inequalities in health.¹⁰ Gender disparities are also documented in the health workforce with low representation of women at senior levels of the medical profession and predominantly at the lower level (nurses, nurse midwives and community health workers) and in the informal unpaid health sector as care givers – aligned with women's traditional gender role as caregivers^{11, 12}

Silal et al¹³ argue that inadequate attention has been paid to patient-oriented barriers in accessing maternal services, which include affordability, availability and acceptability. They further assert that these are also unequally distributed between social economic groups and geographical areas. They are not entirely wrong in their argument since rural areas are characterised by fewer and lower skilled health providers and ill-equipped health facilities. Arsenaault et al also reported substantial variations in quality of health services across regions in Kenya with a 25% gap between the capital city and rural regions which impacted utilisation of maternal health services.

Cost is a documented barrier to accessing health services more so for women who already have less economic possibilities. Keya et al highlight the high transport cost as a barrier to access services for women especially in rural areas where providers are few and distanced.⁽¹⁴⁾ A systematic review by Dahab & Sakellariou¹² noted that transport costs to health facilities, economic, cultural beliefs, poor quality care and lack of family support were major barriers to

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utilisation of maternal health services.

Are reforms designed to improve equitable coverage of maternal health services effective?

Countries have implemented different reforms in order to improve access to maternal health services and health outcomes but, the results are varied and the question as to what works is yet to be answered. A systematic review by Dzakpasu et al¹⁵ assessed the impact of user fee abolition on utilisation of maternal health services and concluded that although generally there was a positive direction showing some evidence of increased facility delivery following fee removal, there was little evidence on tackling inequalities in accessing care. Increase in government funding for health, to increase coverage of essential health services also shows inconsistent results and Kruk et al.¹⁶ It has been reported that this does not automatically result in increased skilled birth attendants among the poor.

Attempts have also been made at addressing demand side barriers in accessing maternal health services through provision of voucher schemes. Ahmed et al¹⁷ report positive results in Bangladesh both in increased uptake of maternal services and a reduction in the socio-economic inequality in access. However, also note that use of maternal health services remained pro-rich implying the inadequacy of a solely demand sided intervention.

India implemented a broad approach; the National Health Mission, whose objective was to reduce maternal and child deaths through ensuring continuum of maternal health care services. The strategy was multifaceted and included increase in public financing for health, bottom-up planning to ensure focus on local health needs and community participation and empowerment. Contrary to envisaged objectives, pro-rich inequity increased with women's education and access to media partially explain this phenomenon.¹⁸

Do the different drivers of inequalities impact the different interventions differently?

One could argue that drivers of inequalities do not impact uptake of health services in equal measure. For example, Wariri et al¹⁹, in their study of multi dimension equity gaps of immunisation systems in West Africa, found that drivers of inequalities in BCG, and DTP3 coverage and dropouts included level of wealth, geographical region (whether high or low coverage) and mother's education. Rural or urban residence and child's sex had minimal influence.

Nkoki et al²⁰ also highlight the varied impact of the different drivers of inequalities in their study on inequalities in child mortality, HIV transmission and vaccination coverage in South Africa. They found that whereas favourable outcomes in indicators of interest (Infant mortality, HIV transmission, Immunisation coverage) were recorded among wealthier populations; despite the fact that services were provided free at the point of access.

Gender considerations in unique contexts

Diseases outbreaks and their containment measures, fragile and conflict settings, may worsen gender disparities in access to health services. Learning from the Covid-19 pandemic and associated containment measures, disruption in continuity of essential health services was reported in many countries.

The repurposing of health facilities for Covid-19 patients case management, varied levels of lockdown restricting movements and fear of contracting Covid-19 from health workers; resulted in reduction in access to essential health services. In the case of East and Southern African countries, the services impacted

most were maternal and new-born, immunisation, child health and tuberculosis services.²¹ Decker et al²² documented gender disparities in accessing contraception (favouring men); inability to meet basic economic needs affecting women more than men, women having lower decision control to move out of the house, menstrual hygiene access challenges and gender-based violence.

Conflict and fragile setting perpetuate disparities in service delivery as health service providers work under stressful conditions, often in isolated settings with minimal support, providing care of suboptimal quality. Currie et al²³ documented similar findings in Afghanistan further noted the need to understand factors that may explain acceptance of mistreatment in childbirth to improve quality of maternity health services in fragile and conflict affected settings.



Mother and child (Photo courtesy of Health Newborn Network)

What needs to be done

Strengthen health research and information systems to guide development of refined approaches: Tackling inequalities needs more granular data than majority of health information systems in low-income countries can provide. This is further compounded by the complexity in the approach to categorise “disadvantaged women” to ensure no one is left behind. Ahmed et al caution against blanket approaches and draw our attention to that category of women in double jeopardy. The “disadvantaged within a disadvantaged society” for example the poorest and least educated, poor women in urban informal settlements on rural areas, the uneducated with no voice and the least educated among the inadequately educated. Health information systems must be strengthened to provide timely good quality and disaggregated data. Zhao et al²⁴ bemoan major gaps in health data in the 47 least developed countries they studied, highlighting the long survey cycles and lack of appropriate survey instruments as major hurdles to overcome.

The Covid-19 pandemic has underscored the need to embrace digital technologies in data collection and management. This will enable real time data collection to inform response efforts, monitor equitable continuity of essential health services, gather data on barriers to accessing services and enable collection of household level data through use of mobile technologies.

Multipronged approaches to concurrently tackle supply and demand side barriers: Gender inequalities in social determinants relate to inequalities in access to health services, education, economic opportunities, and participation in decision making. As such, attempts to improve women's health must be embedded within the development goals of the country and required investments made to tackle drivers of inequalities.

Designing context specific and tailored approaches: Arguments raised by some scholars asserting that different drivers impact uptake of the different maternal and child health services differently calls for strong research and analytical capacities to guide designing of responsive service delivery models. Real time evidence needs to inform decision making and guide designing of corrective measures.

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Four Common Work-Related Minor Injuries that Often Go Unnoticed and Can Lead to Long-Term Health Issues

Susanne McGraw describes common work related injuries.



Susanne McGraw, Head of Personal Injury at Watermans

In the workplace, accidents can be quite frequent, and some can result in serious and minor injuries. It has been estimated that 270 million workplace injuries occur across the world each year.

When it comes to Britain, work-related injuries and health issues tend to be on the daily agenda too. Every year, about 1.7 million employees will suffer from some sort of occupational ill health, and 0.4 million will end up picking up non-fatal injuries.

In the event of an accident that has happened due to the employer's negligence and has had a negative impact on the person's life, workers can file a work accident claim to receive well-deserved compensation.

That said, it is common for less resounding incidents to go unnoticed. But the truth is, in the long run, they can gradually escalate into a bigger problem, causing extended pain and suffering.

Here, we take a look at habitual, work-related minor injuries and health problems that are often overlooked when, in reality, they shouldn't be.

1. Slips, trips and fall-induced injuries

Slips and trips are the most recurring cause of injury in the workplace. In fact, they are responsible for more than one-third of all significant injuries and can often lead to further accidents, such as falls from height and into machinery.

Slips and trips are so common because they can easily happen in any environment, from 'standard' offices to construction sites. Tendentially, they occur when floors are wet or contaminated due to poor maintenance and housekeeping. As they are a very frequent form of accident,

it is easy to brush off the episode if there is no noticeable, immediate consequence.

However, slips, trips, and falls can originate an array of severe injuries and health issues. For instance, they may result in head and brain injuries, cuts, lacerations, soft tissue injuries to the back, and fractures. Some of these injuries may show very feeble symptoms at first. But if ignored and left untreated, they can quickly worsen and have a negative impact on the lives of those affected.

2. Whiplash injury

The nature of some jobs may require workers to hit the road on a daily basis. From couriers and florists to dog groomers and street food restaurateurs,

there are many occupations where driving is an inescapable part of the job description.

When out and about, especially during rush hours, mishaps can take place at every turn. Even slamming the breaks to avoid colliding with another vehicle or a pedestrian can be harmful. You are likely to suffer an abrupt movement of the head and neck, which may result in whiplash injury. The effects of whiplash can take up to 24 hours to manifest and could be confused for tiredness or a normal headache. However, in some instances, whiplash can become a serious, long-standing condition that causes chronic pain, concentration and memory problems, and inability to sleep soundly.

Susanne McGraw, Head of Personal Injury at Watermans, said: "As part of a team of personal injury lawyers, I support many people who have suffered a whiplash injury when at the wheel of their vehicle. Most of them will recover within days, whereas others have to deal with its effects for weeks or even months.

"My recommendation is to seek medical assistance as soon as possible. This will give you the chance to get the treatment you need and alleviate feelings of discomfort in a timely manner."

3. Noise-Induced Hearing Loss (NIHL)

Work-related hearing problems affect about 14,000 employees in the UK every year. This is usually the result of spending prolonged hours in a loud environment, especially when sounds surpass 85 decibels. For instance, workers who handle electric hand tools or other sound-emitting equipment have a good chance of suffering from NIHL.

The problem with NIHL is that it tends to happen and escalate gradually. This means it is difficult to catch before the damage has ultimately been made. It is likely that the sufferer will not even realise that it's occurring until it is too late. It is important to look out for subtle symptoms such as sensations of 'fullness' in the ears and an intermittent or continuous buzzing. If you notice you are struggling to hear people talking a few feet away, you should start asking yourself why, especially if you work in a noisy environment.

To prevent NIHL, make sure you always wear noise-reducing earmuffs. Where possible, it is wise to collaborate with your employer to find methods to both measure and control noise levels.

4. Repetitive strain injury

Repetitive strain injury (RSI) is a common injury that happens when muscles, tendons, and nerves carry out the same action. Manual occupations often require you to perform specific motions repeatedly. This, in turn, can favour physical damage over an extended period of time.

Susanne McGraw, Head of Personal Injury at Watermans, a legal firm specialising in personal injury.

Because the damage is gradual, RSI can go unnoticed for a long time, and it usually affects the hands, wrists, elbows, neck, and shoulders. If not diagnosed early, RSI can deteriorate and become chronic, making the recovery process very challenging. Some of its most prominent causes are constant movements such as typing, poor ergonomic conditions, and not taking regular breaks.

One of the problems with RSI is that its symptoms are easily neglected. At the start, it will only manifest itself through tingling and sensory disturbances in the forearm and hand, which quickly subside as you rest your limbs for a short while. This can wrongfully tempt people to postpone seeking medical advice.

One of the best ways to prevent RSI issues is to assume a straight sitting posture with relaxed arms and shoulders. Not only that, but it's also to vary your movements as much as possible and avoid repetitive motions.

From whiplash and repetitive strain to noise and slip-induced injuries, there are many issues that can emerge as a result of work accidents and habitual job duties. If you start experiencing mild symptoms that you cannot explain, don't put up with it – make sure to see your doctor. A medical appointment can nip the problem in the bud, sparing you from chronic pain and suffering in the long term.

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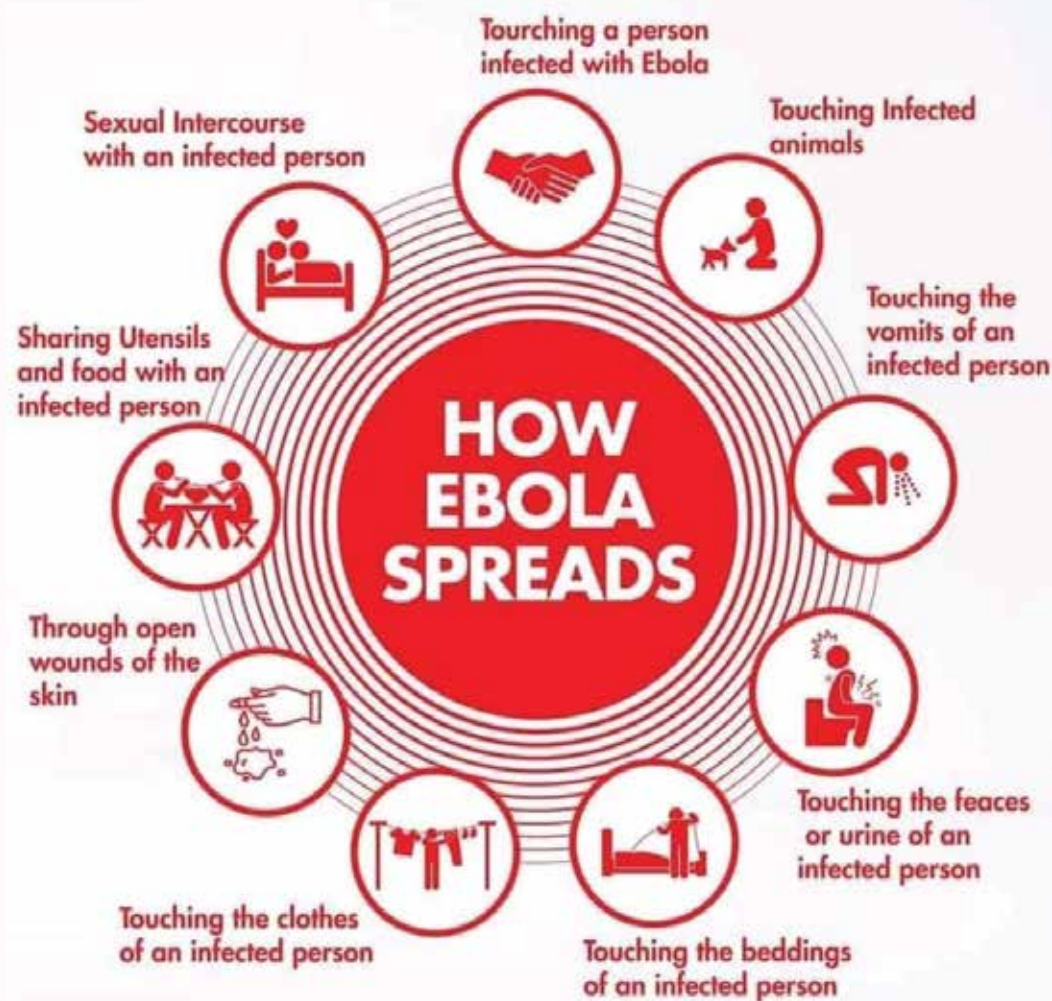
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What has COVID-19 done for us?



Ivor Campbell
CEO of Snedden Campbell

The early 2020s will be studied by historians as a time of global uncertainty when an unknown pathogen caused a public health emergency that brought the world to the brink. It may also be remembered as a time of unparalleled co-operation and advancement in technologies, prompted by the COVID pandemic, that provided enduring benefits for generations to come.

Just as the two world wars of the 20th Century were the deadliest and most attritional in history, they also triggered developments in medicine, jet propulsion and cryptology that ultimately led to the general prescribing of penicillin, mass air transit and the dawn of the computer age.

The quickest and most obvious legacy of COVID was mass vaccination programmes around the world which has already led to a step change in public perceptions of diagnostics and population-wide inoculation.

The profile it gave to the industry has since led to greater investment in methods and devices for detecting a wide range of conditions. In addition, we can expect established, over-the-counter tests for things like fertility and pregnancy to become more informative. Diagnosing serious illnesses, including cancers and heart disease, is likely to become simpler and quicker, because of advances in diagnostic technology created by interest in the sector generated by COVID.

Also, by improving testing and diagnoses, we need to ensure that we are not widening health inequalities. Those who push for better and earlier treatment tend to be educated, middle class people with a bit of money who are used to dealing with systems and being heard. There's a whole other class of poorer, particularly older people, who are less likely to push and more likely to accept what they are told.

So, what other than advances in diagnostic technology, has the experience of COVID given us? Here are just a few examples.

Artificial Intelligence

AI has changed the way disease outbreaks are monitored and managed, saving lives. During the pandemic applications included tracking people with novel strains by detecting visual signs of the virus on computerised tomography (CT) lung scans and monitoring changes in body temperature through the use of wearable sensors.

AI has also been applied to open-source data track the spread of the disease allowing public health planners to predict potential new case numbers by area as well as identifying most at-risk populations.

Other applications include delivering medical supplies by drone,

disinfecting patient rooms, and scanning approved drug databases for medicines that might work against the virus.

Blockchain

Blockchain technology – normally associated with the production of cryptocurrencies – emerged as a key technology to help decision makers produce fast, robust, transparent, and inexpensive solutions during an unprecedented public health emergency. As well as helping to track the spread of the disease, it was also used to managing insurance payments and maintain medical supply chains and donation tracking pathways. Blockchain technology was particularly useful in monitoring outbreaks by creating ledgers that were both secure and could be updated hundreds of times per day. It also improved diagnostic accuracy and treatment effectiveness, streamlined isolation of outbreak clusters, tracked drug supply chains and supplies, managed clinical data, and identified patterns of symptoms.

Telehealth technologies

In the face of extraordinary restrictions on population movement and contact, new and more creative uses of existing telehealth technologies were required to permit clinicians to continue treating patients while complying with contact and travel rules and stay-at-home orders.

Because of the high virulence of the disease, especially within hospitals, telehealth technologies became a cost-effective means of slowing transmission rates, reducing pressures on hospital capacity by filtering out those with moderate symptoms and keeping them at home.

Telehealth technologies permitted physicians to continue consulting by using audio-visual, real-time, two-way interactive communications including video 'visits' through webcam-enabled computers, tablets, and smartphones, chatbots and automated algorithms.

3D Printing

Travel and contact restrictions coupled with a need for new and previously little used medical hardware – including ventilator valves, breathing filters, test kits and face mask clasps – to help treat COVID-19 also posed a novel, logistical problem.

The use of 3D printing as a disruptive technology came into its own, keeping costs down and saving lives. It allowed hospitals and public health authorities to use computer aided design (CAD) and locally sourced materials to produce often small numbers of critical products. One area in which 3D printing was crucial was in development of entirely new products, including plastic door handle adaptors that enable easy elbow opening to prevent the further spread of the virus.

Ivor Campbell, CEO of Snedden Campbell, a UK-based recruitment agency for the global medical technology industry, carlos@carlosalbamedia.co.uk

Gene-editing technologies

From public health officials reporting the COVID outbreak to the World Health Organization (WHO), it took scientists only a fortnight to isolate the virus and figure out the full sequence of its genetic material. The disclosure of the genetic code went a long way to pinpointing the origins and the spread of the disease, and also to pharmaceutical targets for drug development. Advancements in gene-editing technologies – in particular of CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats)-Cas9 (CRISPR-associated protein 9) – were instrumental in developing a vaccine.

Nanotechnology

Nano-based products were developed and deployed to assist in the containment, diagnosis and treatment of COVID-19. Nanotechnology is a multi-disciplinary field that utilises nano-sized particles and devices for different applications, including diagnostics, targeted drug delivery and production of therapeutic materials. Nanoparticles of gold and silver have been used in biomedical and diagnostic applications, for the detection of viral particles. Nanotechnology has been shown to help treat viral infections through various mechanisms. Nanoparticles can act as antiviral drug delivery systems, interacting and binding to a virus, thereby preventing it from attaching and entering a host cell.

Synthetic biology

COVID presented an ideal, real-world test-case for scientists to use biology, engineering, genetics, chemistry, and computer science to substantially alter the genotype of the virus. In the context of the pandemic, synthetic biology is seen as the next phase in the progress of vaccination development. Because it is being utilised as a design tool, it is helping to make vaccines more effective than ever.

The Bill and Melinda Gates Foundation and the National Institutes of Health invested in synthetic biology to help engineer vaccines that would be scalable to a level of billions as well as being able

to work without refrigeration. The synthetic biology body Ginkgo Bioworks gifted \$25m of resources to public and private teams to help cure, prevent and treat novel coronaviruses. In addition, several companies worked to develop experimental vaccines containing synthetic strands of RNA or DNA that code for protein molecules on the surface of the virus.

Drones

Throughout the pandemic, drones have been deployed on the front line to help contain the spread of COVID. As well as being used for purposes of disinfection, street patrols, food and medicine delivery in quarantined districts, the Chinese government adapted and co-opted industrial drones to help improve disease detection and crowd management. Devices were used to monitor quarantine measures, to facilitate aerial broadcasting, conduct aerial thermal sensing, monitor traffic, and deliver medical supplies in infected areas, often replacing helicopter patrols for law enforcement and transportation.

Robots

Robots were also used to help contain the spread of COVID, including disinfecting hospitals, decontaminating public and private spaces and handling biohazardous waste as well as delivering food and medication. Robots continue to be used for a range of clinical functions, including taking patients' temperatures and substituting as medical assistants to help minimise person-to-person transmission. Self-navigating, ultraviolet, disinfection autonomous robots were deployed to decontaminate hospitals, isolation wards, intensive care units and operating rooms by spreading UV light to destroy pathogens. In China robots were adapted to provide security, inspection, and delivery services. In Hong Kong and South Korea, the Israeli Temi robot was used in nursing homes to allow families to communicate with quarantined residents through video calls, as well as being utilised in hospitals, airports, and offices.

TRANSMISSION OF EBOLA

Ebola is a serious and often deadly disease. It is spread through direct contact with the following:

- Soiled clothing of an infected person
- Unsterilised equipment used by an infected person
- Handling wildlife whether alive or dead
- Body fluids such as blood, saliva, faeces, vomit, urine and sweat of an infected person
- Blood
- Saliva
- Vomit
- Faeces
- Urine
- Sweat

Report all suspected cases to the nearest health facility immediately.
OR send a FREE SMS to Ureport on: 8500 or call toll free on: 0800 100066

EBOLA: SIGNS AND SYMPTOMS

- Fever
- Vomiting
- Bloody diarrhoea or urine
- Headache
- Body weakness
- Sore throat
- Muscle pain
- Bleeding from body openings

World Health Organization

unicef for every child

Five Ways Technology is Improving Health & Safety for Construction Workers



Jonathan Beadle, Commercial Manager at Van Ninja

For construction workers, there are many dangerous risks to face. In fact, the cost of injuries within the industry across the UK has reached more than a staggering £16.2 billion a year, truly emphasising the impact that working on a building site can have. However, despite the overwhelming findings, there are more ways to offer protection thanks to advanced technology. But how exactly does this work? Here, with some help from van leasing company, Van Ninja, we delve into five ways technology is helping to improve the health and safety of the construction sector.

1. Wearable technology

While Personal Protective Equipment (PPE) is an essential measure for construction workers to ensure their health and safety, that's not to say there's no room for improvement; in fact, there are more items that workers can wear to protect themselves. Wearable technologies are yet another way that safety can be improved in the construction industry, with many helping monitor vital signs, identify collisions, and keep track of workers who are working unaccompanied. So, if workers are using van leasing to go from site to site, you can keep an eye on them for their safety.

When out and about, especially during rush hours, mishaps can take place at every turn. Even slamming the breaks to avoid colliding with another vehicle or a pedestrian can be harmful. You are likely to suffer an abrupt movement of the head and neck, which may result in whiplash injury.

Susanne McGraw, Head of Personal Injury at Watermans, said: "As part of a team of personal injury lawyers, I support many people who have suffered a whiplash injury when at the wheel of their vehicle. Most of them will recover within days, whereas others have to deal with its effects for weeks or even months. My recommendation is to seek medical assistance as soon as possible. This will give you the chance to get the treatment you need and alleviate feelings of discomfort in a timely manner."

Exoskeleton is one example of wearable technology which assists the workers' physical support when there is a high risk of injury.

2. Site sensors

There are many risks that can affect the health of a construction worker, but with site sensors, there's extra protection in place against these. With site sensors, many things such as noise levels, temperature, and dust particulates can be monitored to protect the workers from high exposure. Across the construction site, these sensors can be implemented to inform the employees if they are in danger of passing the exposure limit.

3. Digitalised safety processes

Turning the safety process to digital instead of having a pile of paperwork will not only provide more time to be used elsewhere, but also contribute

to the safety process of the construction site. Digital sign-offs allow for more traceability, and you can rest assured that you have clarity of what's going on throughout the construction site, thanks to real-time visibility, even if you aren't on-site. In addition to this, consistent standards can be implemented across various sites, even for different types of construction work. With consistency across teams and visibility over the sites, you can rely on this technology for a safer working environment.

4. Drones to monitor sites

It's essential for site workers to be aware of hazards to avoid major injuries. Thankfully, technology can monitor sites to improve workers' safety. Drones are excellent for construction companies as they can be used for an aerial inspection of their site, which offers a wide view of the area and the surrounding environment. Given their ability to reach elevated areas and places that may be deemed unsafe, the inspection is much more accurate and efficient. With this technology, any safety hazards can be spotted prior to work being carried out to identify any procedures that need to be in place.

5. Digital training sessions

Training is important in any job role for upskilling, but for the construction industry in particular, it is vital due to the many physical health risks like back injuries and the harmful chemicals in paints. By streamlining training sessions, all workers across several sites can learn the same information, avoiding miscommunication that could be spread through in-person training through multiple sites. As well as this, sessions can be recorded for workers to revisit to refresh their memory, ensuring excellent safety conditions as employees can become much more familiar with necessary procedures.

Technology provides an abundance of opportunities for many different industries, but given the risks for construction workers, the advancements are particularly useful for this sector due to the ability to improve safety.

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Inter Professional Education (IPE) and Team Based Practice in Africa: The Missing Link

Godwin N. Aja highlights the need to broaden and diversify the operational definition and application of IPE to emphasize collaboration and teamwork beyond the clinical setting.

Introduction

Interprofessional education (IPE) is a unique model of educating students for careers in the health sector, where collaboration and teamwork are critical skills required to maximally address the health needs of society. However, it seems that the words, “collaboration” and “teamwork” in the IPE concept is often preferentially (mis) applied, to suggest collaboration and teamwork with mostly professionals within the clinical/institutional setting and does not usually include other “professionals” associated with the health system. The health sector is complex, diverse and encompasses other professionals. This paper highlights the need to broaden and diversify the operational definition and application of IPE to emphasize collaboration and teamwork with extra-professionals, super-professionals and the supra-professional to optimally and holistically address the health needs of the community to ensure universal health coverage.

Generally, the health care system is made up of an array of health professionals working together to improve health and wellbeing. Some health professionals work with colleagues in the same disciplinary field (intra-professionals) and others work with professionals outside their professional boundaries (inter-professionals). For example, in intra-professional education, students in the same health professional discipline learn to work together, usually in the educational, institutional or health care settings. An example is when a family/community medicine student works together with a colleague(s) in family/community medicine (the same discipline) to solve a problem(s) related to their specialty. Similarly, the student in internal medicine, obstetrics and gynecology, etc, can work intra-professionally (within their disciplinary team) to learn and/or address health needs. On the other hand, interprofessional education may involve students from different specialties/fields working with other students outside their specialty area to address a health problem of common interest. For example, inter-professional education occurs when a family/community medicine student work together with students in internal medicine or obstetrics and gynecology, public health, radiology, etc, (across disciplinary teams) to address health needs.

Interprofessional education tends to lean towards collaboration across disciplinary teams within the healthcare subsystem, rather than with other professionals in the larger health system. The health system is bigger, more complex and sophisticated, and requires diverse professionals. When viewed with the health system lens, interprofessional education of students can be broadened to include collaboration and teamwork with the other “professionals” engaged with the health system. These “other” professionals, in their own rights, are the extra-professionals (citizens/people/consumers/communities/patients, NGOs, CBOs, FBOs), super-professionals (government/policy makers), and the supra-professional (God).

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Interprofessional education in the era of the humongous Africa's health challenges

The achievement of universal health coverage may depend on health professionals working with other professionals outside the conventional academic disciplinary groups to address the increasing burden of disease in Africa. It has been reported that six countries in Africa (South Africa, Mozambique, Nigeria, Zambia, Tanzania, and Uganda) are among nine countries with the highest estimated share of worldwide new HIV infections in 2020;¹ the WHO African region remains one of the hardest hit areas with 96% of all malaria death and 95% of all malaria cases;² Africa continues to carry the highest burden of malaria globally;³ less than 20% of population in Africa did not have at least one COVID-19 vaccine dose as at end of February 2022;⁴ and average life expectancy at birth for those born in 2021 is about 63 years and may be worse by the time the population of Africa doubles in the coming years.⁵ Sadly, there is imbalance in the delivery of curative and preventive services, skewed investment in human resources for health, dysfunctional governance structure/leadership, limited financial resources for health, uncoordinated dissemination of health information and neglect in the development of African traditional medicines.

Interprofessional education of students has been tested and practiced in developing and developed countries. It is a key strategic approach aimed at preparing well equipped health professionals to confront the numerous global health challenges, particularly in Africa, where the highest burden of disease exists. Interprofessional learning takes place when students learn concurrently to solve a particular issue within the framework of their own profession. van Diggele et al ⁶ defines interprofessional education (IPE) as, “a critical approach for preparing students to enter the health workforce, where teamwork and collaboration are important competencies.” Buring et al ⁷ considers IPE as, “an important pedagogical approach for preparing health professions students to provide patient care in a collaborative team environment. Interprofessional-education (IPE) refers to “occasions when two or more professions learn from and about each other to improve collaboration and the quality of care.” ⁸ Effective collaboration and teamwork require being aware of other healthcare professionals and their contributions to patient care, as well as knowledge of each other's roles, good communication and negotiation skills, a willingness to work together, trust related to one's own competence and competence in one's abilities. ⁹ Thus, “an integrated approach to addressing disease program outcomes, health systems and determinants of health,” ¹⁰ is desirable in the interprofessional education of students.

The health system is bigger than the healthcare subsystem. Therefore, interprofessional education should not only be about the professionals in the field of medicine or nursing or medical laboratory science but also other professionals involved in “addressing the priority health concerns of the community, region, and/or nation they have a mandate to serve.” ¹¹ Collaboration and teamwork with extra-professionals, super-professionals and the supra-professional are key to addressing human health needs at both the institutional, clinical and community levels.

Extra-professional collaboration and teamwork in interprofessional education

Interprofessional education can be a unique model of educating students for careers in the health sector, where collaboration and teamwork with extra-professionals (citizens/people/consumers/communities/patients, non-governmental organizations (NGOs), community-based organizations (CBOs) and faith-based organization (FBOs)) are critical skills required by students to maximally address the health needs of society. Collaborating with the citizens/people/consumers/communities/patients provides an avenue to listen to their values and perspectives regarding the quantity and quality of care, while collaborating with NGOs, CBOs and FBOs may reveal incredible community resources for addressing numerous health concerns.

Super-professional collaboration and teamwork in interprofessional education

The super-professionals (government and policy makers) play important roles in the advancement of health by improving the way the health system works, paying particular attention to governance, funding, and providing services in order to safeguard government's social role in health improvement. This is particularly so in Africa. The policy makers strive to create trustworthy and thorough evidence that supports the numerous and complex essential decisions regarding how to arrange the various components of the health system and bring about desired improvements. Therefore, interprofessional education can be a unique model of educating students for careers in the health sector, where collaboration and teamwork with the super-professionals are critical skills required by students to maximally address the health needs of society.

Supra-professional collaboration and teamwork in interprofessional education

There are tons of scientific evidence on the role of spirituality in health care.^(12,13,14) Hence, interprofessional education of students for careers in the health sector requires collaboration and teamwork with God (or the transcendent, as some people may prefer), via spiritual care professionals in the healthcare or community settings, in order to fully address society's health demands.

No one professional is an island

The concept of interprofessional education seems to revolve around the popular maxim that, "no one professional is an island." Interprofessional education of current and future health professionals is germane. No health professional should feel that his/her contribution to the health cure or care services is more important than that of others. A robust interprofessional education of students calls for African health professionals and institutions to partner with each other (south-south collaboration) to promote the intra-professional, extra-professional, super-professional and supra-professional collaborative experiences of health professions students to create better future health for Africans. The great thing about south-south collaboration among African health professionals and institutions is that it allows for equal access to information, training, funding, conferences, publishing opportunities, thereby promoting interdependence, sustainability, manpower retention and in general horizontal relationships. African-based health professionals and institutions can also partner with others in Europe and North America (north-south collaboration) to enrich the experiences of students through intra-professional, extra-professional, super-professional and supra-professional engagements.

Conclusion

There is a missing link in the definition and operationalization of the concept of interprofessional education. The health sector is complex, diverse and encompasses other professionals, thus, requiring health professionals to work together with other stakeholders (particularly communities and policy makers) to effectively and efficiently provide need-based health to Africans. Therefore, African health professionals, working collaboratively, can contribute to (re)building better health systems to address the current, emerging, and re-emerging challenges that have bedeviled Africa. There is the need to broaden and diversify the operational definition and application of interprofessional education of students to emphasize collaboration and teamwork with extra-professionals, super-professionals and the supra-professional to optimally and holistically address the health needs of the community and to ensure universal health coverage.

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Community contribution to the control of Ebola outbreaks in Uganda, 2000-2022

Samuel Okware describes the role that communities have played in the control of Ebola outbreaks in Uganda from 2000 to 2022.

Introduction

Ebola virus disease (EVD), commonly known as Ebola is a highly fatal emerging infectious disease common in man and non-human primates. Ebola is an acute infectious febrile illness caused by the Ebola virus and usually associated with bleeding manifestations. Five major types exist. The most deadly include the Zaire ebolavirus, the Sudan ebolavirus and the Bundibugyo ebolavirus. Milder species includes the Cote d'Ivoire ebolavirus with a single reported fatality and the Reston ebolavirus. The first recognised outbreak of Ebola occurred simultaneously in 1976 in Yumbuku in DR Congo near the Ebola river and the neighbouring Nzara community in South Sudan. ¹ Ebola has no known cure. Case fatality is high at 80-90% for the Zaire ebolavirus and 53-70 % for the Sudan ebolavirus. The largest outbreaks occurred in 2015 in West Africa, affecting Guinea, Liberia, and Sierra Leone; with nearly 30000 cases and 11,000 deaths reported. ² The Uganda outbreak of 2000 too was also severe recording 425 cases and 224 deaths. Some 31 cases and 23 deaths occurred among health care workers.

Transmission

Index cases are initiated by indirect human exposure to fruit bats and intermediate hosts including, non-human primates. Human to human direct contact during social interactions at burials and nursing care of patients have the highest risk in rural settings. Exposure to body fluids especially blood, vomit, stool, urine and nasal secretions of either dead or sick patients is highly infectious. Bush meat of infected animals can also transmit the infection. No transmission has been reported before symptoms develop or until the detection of viral antigens. Asymptomatic infection seems unlikely. In the outbreak in West Africa some 2.6% of household contacts with no symptoms tested positive. ³ Sexual transmission is rare but has been reported. Ebola (EBOV) can persist in immunologically protected sites such as breast milk among survivors. ⁴ This has a potential to restart new cascades of Viral Persistence -Derived Transmission of EBOV (VPGTe).

Organs rich in lymphoid tissue such as the liver, spleen, thymus, and lymph nodes and macrophage are primary targets for the virus. Damage to the liver leads to reduction in the synthesis of clotting factors. This impairs the coagulation system. Damage to the adrenal gland reduces production of steroids, sodium loss and hypovolaemia and subsequent impairment of blood pressure homeostasis and maintenance. These disturbances lead to convulsions, shock, and diffuse coagulopathy in late stages.

Ebola outbreaks in Uganda 2000-2022

The first outbreak of Ebola in Uganda occurred in 2000 in the district of Gulu, 400 km north of Kampala, the capital city of Uganda. This was the largest known epidemic in Uganda. Unknown index cases occurred in Rwot Obilo, a village 14 km towards the border with South Sudan. The community was not aware of the developing outbreak, until two nurses died in Lacor hospital on the 8th of October 2000 Lacor regional hospital. ⁵ This was followed shortly by the death of three more student nurses. On the 14th October the Sudan Ebola virus was confirmed among the blood samples. The casualties included 31 health care workers including a hospital

director. Security challenges existed in the region. About 2 million persons lived in camps for the internally displaced. Some 44,000 children travelled to towns and commuted freely back and forth to Gulu town for fear of abduction by Liberation Resistance Army (LRA) rebels which were operating in the region then. Two patients in Gulu escaped to Masindi and Mbarara districts, but were followed, isolated and contained. The outbreak lasted 6 months, mostly due to delays at community level.

Table 1 Ebola cases by year and district, Uganda, 2000-2022

Year	District	Cases detected	Deaths	CFR
2000	Gulu	393	203	51.7%
	Mbarara	5	4	80.0%
	Masindi	27	17	63.0%
Total		425	224	52.7%
2007	Bundibugyo	116c	39	34 %
2011	Luwero	1	1	100%
2012, Jun-Aug	Kibaale	24	17	70%
2012, Nov-Dec	Luwero	7	4	57%
2022, Sept	Mubende	35	25	71%*

In 2007, a new Ebola outbreak occurred in Bundibugyo district on the border with DR Congo. Unexplained community deaths were reported by the media of a strange disease affecting people in the district starting August 2007. Routine Investigations yielded no positive results and routine Ebola serological tests too were negative. A cluster of 20 deaths occurred on the 5th November. Health care workers were some of the casualties. Blood samples were sent to CDC Special Pathogens Branch unit, Georgia, USA for tertiary analysis. On the 27th November 2007, a new novel Ebola virus was isolated. The new virus was identified as the Bundibugyo ebolavirus. Community participation and involvement was mobilized that integrated non-governmental organizations, religious and faith-based entities and school children. An isolation ward were set up at Bundibugyo hospital and Kikyo health center. Case management started and was led by members with experience of the previous Gulu outbreak. Collaboration with WHO and the Medicin Sans France provided logistic support and additional expertise. Some 116 cases and 39 deaths (case fatality 34%) occurred. The outbreak lasted 6 months, but once the diagnosis was confirmed, community engagement and participation quickly brought down the outbreak within one month. This again demonstrates the role of support by the community

Again on the 6th May 2011 a 13 year old girl in Luwero district was admitted to Bombo hospital, 40 km north of Kampala. She had a 5 day history of fever, diarrhoea and vomiting. She developed vaginal bleeding the following day and was isolated. A blood sample taken confirmed the Ebola Sudan subtype. The girl died the following day. This was communicated instantly to the community using all media and door to door approach by word of mouth. This mobilisation created universal awareness and public education in all communities. The outbreak was instantly controlled with just one fatality, and without secondary cases. The community followed up 24 contacts. Most of Luwero is covered by tropical forests rich

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in wildlife, including primates of various kinds. The community reported bats inhabiting some classrooms and school dwellings. This quick detection and action ably prevented further transmission. Community action was spontaneous and leveraged containment efforts.

A forth ebola outbreak erupted on the 12th July 2012, in the district of Kibaale in Westen Uganda. The index case was a 16 year old female from Kikaara village 55 km west of Kagadi town. She was clearing up forest land with her husband when she got sick with fever. She was admitted to the nearest Hapuyo Health Centre III for investigation following complaints of high fever, diarrhoea and vomiting. Her condition deteriorated, then developed nasal bleeding before she died. Nine relatives died and included the mother, sister and a priest who participated at the burial rituals. One health care worker who had contact with the case also died. There was some delay in detection and report of unusual death in the community, but when mobilised, the community quickly supported contact tracing of nearly 500 contacts. This community involvement raised awareness and case search. After 6 weeks the epidemic was contained with 24 cases and 16 deaths confirmed.

In December 2012, the fifth Ebola outbreak resurfaced in Luwero district. The outbreak was confirmed within days and contained in 6 weeks; leaving 7 cases with 4 deaths. Again, from the previous experience the community fully participated in the containment.

On 20th September 2022 the Uganda Ministry of Health declared a new outbreak of Ebola in Mubende district. This was the first time in a decade that Uganda declares a case of Ebola Virus Disease (EVD). Suspicious sample from a 24-year-old patient from Mubende Hospital was confirmed to be Sudan ebolavirus. The Rapid National Response team confirmed several clusters of community deaths. Late detection and realisation by the community had enhanced the spread of the disease to other districts of Kyegegwa, Kasanda and

suspicion and the late diagnosis and confirmation.

The national response based on community engagement

The national response is implemented through an integrated health care delivery system through a decentralised strategy through districts and corresponding administrative units at lower levels at county, subcounty, parish and villages. The system is further supported by community-based organisations including faith-based organisations. Traditional healers too support health care delivery using their tools in remote rural areas. Surveillance system exists in each region and district. Reports are regularly sent to Ministry of Health by the district health officer on a monthly basis. The village health teams are the primary structures for holistic health promotion and care delivery at community level. The teams are vital in providing community-based surveillance of health events in their villages. These village structures promote integration of implementation and cohesion especially in outbreak management. All administrative, Political and Technical entities were fully integrated into the response.

Community engagement by level and function:

The Village Health Team is composed of nine members. The composition includes religious and cultural leaders, schools, and volunteers for community-based surveillance. Essential tools include a Village Health Register, Algorithms for case finding including community deaths, daily reports, Community Based Drug distribution and referrals. Regular weekly meetings are part of the functions at this critical level.

The Parish Council and Planning Committee coordinates and supervises the efforts of the village committees in outbreak management. Similar task forces exist at the subcounty, county and district. The Government immediately provided supplementary funding and mobilized all sectors to work with a national task force (NTF). Ssimilar task forces were developed at district (DTF), county (CTF), sub county (STF), parish (PTF) and village levels (VHF). At each district level a Rapid Response Team (RRT) was set up. The team at each district was composed of a district surveillance focal person, district health educator and a district laboratory focal person.

Community based surveillance

A country wide community-based surveillance strategy was launched to maximise contact tracing and public education and the timely isolation of cases and contacts. It supported referral, and scientific burials of victims. Community based teams were facilitated to identify cases and contact tracing and referred them to the hospital using special designated ambulances operated by mobile teams. Cases were recorded in the village register, shared with the mobile contact tracing teams from the district. The district surveillance and consolidated daily reports for sharing with designated screening and isolation centers. This ably facilitated early detection and case tracking. These efforts are coordinated

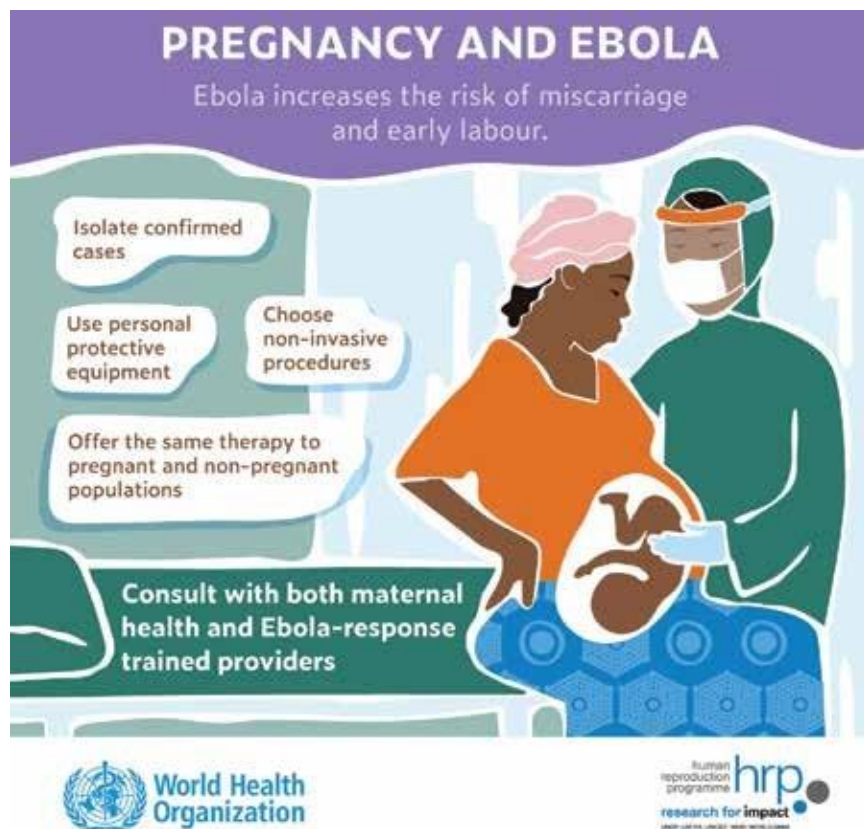
at the district task force for surveillance and communication centre

Each village had a village scout who led active case search, and public education. The scouts met daily and shared progress. A radio communication linked the village teams to a designated ambulance service and the mobile team. Cultural leaders too were mobilised.



Photo courtesy of WHO

Kagadi several miles away. So far, some 25 known deaths out of 35 confirmed cases have been recorded in nearly two weeks. The early involvement of the community was low due to minimal community



In addition, low positive predictive value of about 40% for the laboratory tests was a major weakness that delayed early diagnosis and action. The community here had the advantage of linking their suspected cases to the known epidemiological link in the community.

Community Promoting home-based care

Treating Ebola is a labour intensive and costly undertaking. In the Luwero epidemic, some USD 3 million was used to mount a national response. It cost an estimated USD 29 to treat a case in intensive care for one week. In addition, motivation and risk allowances are required. Personal protective materials if maintained improved confidence and commitment in the isolation wards. It was demonstrated that the workers if sufficiently compensated performed beyond expectations. This was not possible due to limited resources. Communities implemented home-based care for relatives for the subsequent care after admission, which model significantly reduced and shared costs and responsibility. The package for care consisted of supportive palliative remedies, fluids and personal protective supplies and public education materials. It was administered by the trained village health care workers from the community and improved quality of patients.

Photo courtesy of WHO

A cascade of training of trainers for health care workers was carried out in all districts. Non-Governmental Organizations including schools, journalists and faith-based organisations were trained and supported. They participated fully in educating the community by word of mouth. Village teams moved from house to house on foot. Radio messages, discussions, film shows and media coverage alerted the households.

Burial and safe disposal of the dead was coordinated by a district burial coordinator who liaised with the hospital coordinator and the village health teams. Trained burial teams with past experience were recruited, retrained and liaised with the village scouts to ensure safe and timely burials. On discharge, the patients were tested to ensure safety and went through a series of stringent protocols and check lists conducted by trained counsellors. Post Ebola clinics and clubs were set up for follow up of health and social outcomes. Incentives were paid to those for each Ebola case reported and revalidated. Such community mobilisation created universal awareness and case detection and tracking.

Community action in delayed detection and action

Delays in early detection prolonged the spread of infection and late action. For instance, analysis of the timelines from onset of the disease in the community to admission in health facility by district ranged from Gulu (6 weeks delay); Bundibugyo (6 months); Kibaale (6 weeks). Most (75%) of the delays were at community level. Once the diagnosis was made, it took between 5 and 17 days to contain the outbreaks in Luwero and Kibaale respectively and only 5 days in Luwero. The corresponding figure for the Gulu epidemic was longer (91 days). It also took 41 days to contain the Bundibugyo outbreak. Thus, late detection facilitated the extensive spread of the infection in both instances. Community engagement significantly reduced the delay periods.

Conclusion

The review has demonstrated that early detection and action contributed to the best outcomes in the control of the outbreaks. Early community-based surveillance contributed to early detection and was a key component of the national response. This was well demonstrated in the Luwero outbreak following robust community engagement. There were many challenges which only collaboration with the community could answer. This included the low reliability of the syndromic case definition and the low reliability of diagnostic tests available. Community based epidemiological surveillance facilitated contact tracing of most borderline cases for ultimate screening. Thus, community engagement is vital in outbreak management surveillance of emerging infections and should be strengthened by broadening village and community networks.

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General Medicine

Over-prescription of short-acting b2 agonists is associated with poor asthma outcomes in an African cohort.

Management of asthma is challenging, especially in settings with fragile health systems like Sub-Saharan Africa. Data on the extent of short-acting b2 agonist (SABA) use and outcomes are lacking. Researchers, through a cohort involving 3 African countries, sought to answer this question. Data of 1778 patients (>12 years old) were analyzed for associations between SABA prescriptions and outcomes. Overall, 46.5% of patients had been prescribed ≥ 3 canisters in the preceding 1 year (over-prescription), while 26.2% were prescribed ≥ 10 canisters. SABAs were purchased over-the-counter by 32.6% and the majority of these (79.3%) had received SABA prescriptions. Higher SABA prescriptions were associated with increased rates of severe exacerbations. Researchers concluded that SABA overuse is common and is associated with poor outcomes and recommended clinical practice be aligned with current treatment guidelines.

Adel Khattab, Ashraf Madkour, et al. Overprescription of short-acting β_2 -agonists is associated with poor asthma outcomes: results from the African cohort of the SABINA III study, *Current Medical Research and Opinion*, DOI:10.1080/03007995.2022.2100649

Acetazolamide in acute decompensated heart failure with volume overload.

It is unknown if Acetazolamide a carbonic anhydrase inhibitor could improve the efficiency of loop diuretics in acute decompensated heart failure (ADHF) with fluid overload. In this study, a total of 519 patients were randomized to either receive intravenous acetazolamide (500mg once daily) or a placebo added to standardized loop diuretics. The main outcome measure was successful decongestion and the secondary outcome was death or re-hospitalization for heart failure during 3 months of follow-up. The primary outcome occurred in 42.2% in the acetazolamide group, and 30.5% in the placebo group. Acetazolamide treatment was also associated with higher cumulative urine output. Adverse events were similar in the two groups. Researchers concluded that the addition of acetazolamide to loop diuretic therapy in ADHF resulted in better decongestion.

Mullens W, Dauw J, et al. Acetazolamide in Acute Decompensated Heart Failure with Volume Overload. *N Engl J Med*. 2022

Sep 29;387(13):1185-1195. doi: 10.1056/NEJMoa2203094. Epub 2022 Aug 27. PMID: 36027559.

Long-term outcomes among men undergoing active surveillance for prostate cancer in Sweden.

Active surveillance entails conversion to active treatment if disease progression occurs. Its long-term outcomes among men with prostate cancer are not known. In this Swedish cohort, data of over 23655 men diagnosed with prostate cancer and managed with deferred treatment was used to estimate treatment trajectories. Outcome measures included death from prostate cancer or other causes, as well as the proportion of time without active treatment as assessed until death or age 85. The proportion of men diagnosed at 55 years and died of prostate cancer before 85 years was notably higher compared to those diagnosed at 70 years across all prostate cancer risk groups, but especially in the intermediate-risk group. The researchers concluded that active surveillance may be a safe strategy among older men (>65 years) with low-risk prostate cancer.

Ventimiglia E, Bill-Axelsson A, et al. Long-term Outcomes Among Men Undergoing Active Surveillance for Prostate Cancer in Sweden. *JAMA Netw Open*. 2022 Sep 1;5(9):e2231015. doi: 10.1001/jamanetworkopen.2022.31015. PMID: 36103180; PMCID: PMC9475386.

Patterns of retention in hypertension care in primary care settings in Nigeria

Hypertension is a major global public health concern with low- and middle-income countries shouldering almost two-thirds of this burden. Retention in care is essential for hypertension control, yet rates continue to be less than 50% in most limited resource settings. In this cohort study in Nigeria, researchers sought to describe characteristics and patterns of retention in hypertension care programs. The outcome measure was a 3-month rolling average 37-day retention rate. A total of 10686 adult patients in 60 primary health care centers were included in the analysis. The retention rate was found to be 41%; higher among older patients who were female, had a higher body mass index, and had received hypertension treatment at the registration visit. The researchers noted that retention was suboptimal and identified factors that may inform strategies to improve retention.

Ye J, Orji IA, et al. Characteristics and Patterns of Retention in Hypertension Care in Primary Care Settings From the Hypertension Treatment in Nigeria Program. *JAMA Netw Open*. 2022 Sep 1;5(9):e2230025. doi: 10.1001/jamanetworkopen.2022.30025. PMID: 36066896; PMCID: PMC9449788.

Effect of digital health technology versus standard directly observed therapy on tuberculosis care.

Despite anti-tuberculous treatment being efficacious, the cost involved to achieve optimal adherence is high. Little is known about the effect of a digital medication event reminder and monitor (MERM) compared to the standard on the quality of life and costs to patients. Researchers in Ethiopia, randomized a total of 114 patients with susceptible TB to either MERM-observed therapy or standard directly observed therapy for 2 months. Standard tools were used to assess health-related quality of life (HRQoL) and catastrophic costs. The study found HRQoL to be significantly higher in the intervention arm, and costs lower compared to the standard of care. The researchers concluded that digital health technologies have the potential to overcome structural barriers to anti-TB therapy.

Manyazewal T, Woldeamanuel Y, et al. Effect of Digital Medication Event Reminder and Monitor-Observed Therapy vs Standard Directly Observed Therapy on Health-Related Quality of Life and Catastrophic Costs in Patients With Tuberculosis: A Secondary Analysis of a Randomized Clinical Trial. *JAMA Netw Open*. 2022 Sep 15;5(9):e2230509. doi: 10.1001/jamanetworkopen.2022.30509. PMID: 36107429; PMCID: PMC9478770.

The role of follow-up blood cultures among patients with gram-negative bloodstream infections.

In patients with gram-negative bloodstream infections, it is unclear if obtaining follow-up blood cultures (FUBCs) affects patient mortality. Researchers conducted a systematic review and meta-analysis of both scholarly and gray literature that included 5 observational studies and 4378 patients in the primary analysis. The primary outcome was mortality before hospital discharge or up to 30 days from index blood culture. The researchers found that obtaining FUBCs

was associated with decreased mortality. Additionally, positive FUBCs were associated with increased mortality compared to negative FUBCs. The research findings hence supported the use of FUBCs in patients with gram-negative bloodstream infections, but researchers noted the need for more studies to identify patient subgroups that do not require FUBCs.

Thaden JT, Cantrell S, et al. Association of Follow-up Blood Cultures With Mortality in Patients With Gram-Negative Bloodstream Infections: A Systematic Review and Meta-analysis. *JAMA Netw Open.* 2022 Sep 1;5(9):e2232576. doi: 10.1001/jamanetworkopen.2022.32576. PMID: 36136334.

Glycemia reduction Type 2 diabetes

A glycated hemoglobin (HBA1C) level below 7.0% is recommended in type 2 diabetes mellitus (T2DM). This is often achieved with metformin and a second medication added as needed. Studies to compare the effectiveness of these second-line therapies are lacking. Researchers in this study compared four common glucose-lowering drugs: insulin glargine, glimepiride, liraglutide, and sitagliptin in participants with T2DM, receiving metformin with an HBA1C of 6.8 to 8.5%. The outcome measure was an HBA1C of 7.0% or higher. Of 5047 participants followed for 5 years, the cumulative incidence of the outcome was similar and lower with insulin glargine and liraglutide as compared to glimepiride or sitagliptin. The researchers noted that all drugs decreased HBA1C but insulin glargine and liraglutide were better at achieving and maintaining target HBA1C levels.

GRADE Study Research Group, Nathan DM, et al. Glycemia Reduction in Type 2 Diabetes - Glycemic Outcomes. *N Engl J Med.* 2022 Sep 22;387(12):1063-1074. doi: 10.1056/NEJMoa2200433. PMID: 36129996.

Statin therapy on cardiovascular and limb outcomes in end-stage renal patients with peripheral artery disease receiving maintenance dialysis.

Whether statin use in patients with end-stage renal disease (ESRD) and peripheral artery disease (PAD) on dialysis is beneficial remains uncertain. Researchers, through a retrospective cohort study conducted in Taiwan analyzed data of 20731 patients with ESRD receiving dialysis and diagnosed with PAD. The major outcome measure was all-cause death, as well as cardiovascular and adverse limb events. A total of 10767 patients met the study criteria. The researchers found all-cause death and cardiovascular risk to be significantly lower in the statin group at 3 years of follow-up i.e 611 versus 685 patients. Adverse limb outcomes were also lower in the statin group compared to the non-statin

group. The study suggested that statins are beneficial in cardiovascular and limb protection in this patient group. Lo HY, Lin YS, et al. Association of Statin Therapy With Major Adverse Cardiovascular and Limb Outcomes in Patients With End-stage Kidney Disease and Peripheral Artery Disease Receiving Maintenance Dialysis. *JAMA Netw Open.* 2022 Sep 1;5(9):e2229706. doi: 10.1001/jamanetworkopen.2022.29706. PMID: 36048442; PMCID: PMC9437764.

Apparent insulin deficiency among adults with new-onset Type 2 Diabetes in Uganda

It is important to identify insulin deficiency among adults with new onset type 2 diabetes mellitus (T2DM) so insulin therapy is initiated early. Researchers in Uganda assessed for the prevalence of insulin deficiency among 494 adults with new onset T2DM who presented to seven tertiary hospitals. Insulin deficiency was defined by a fasting C-peptide concentration of <0.76ng/ml. Insulin deficiency was found in 21% and was more likely among patients with a lower BMI, fewer indicators of adiposity and higher HBA1C. The researchers concluded that insulin deficiency was prevalent in the studied population and recommended targeted testing and initiation of insulin replacement therapy.

Kibirige D, Sekitoleko I, et al. Apparent Insulin Deficiency in an Adult African Population With New-Onset Type 2 Diabetes. *Front. Clin. Diabetes Healthc.* 3:944483. doi: 10.3389/fcdhc.2022.944483

Lifestyle and Preventive Medicine

Ultra-processed food consumption with colorectal cancer risk among men and women.

Colorectal cancer is the second leading cause of death from cancer worldwide. Ultra-processed food consumption is associated with several chronic diseases. Its association with colorectal cancer is unclear. Researchers through three large US cohorts estimated this association. The study estimated that 3216 cases of colorectal cancer were documented during the 24-28 years of follow-up. Men in the highest fifth of ultra-processed food consumption had a 29% higher risk of developing colorectal cancer compared to their lower fifth counterparts, an association limited to distal colon cancer. Among women, ready-to-eat/heat-mixed dishes were associated with increased risk, while dairy-based products were negatively associated with colorectal cancer risk. The researchers recommended further studies to understand the attributes of ultra-processed foods that contribute to

carcinogenesis.

Wang L, Du M, Wang K, Khandpur N, Rossato S L, Drouin-Chartier J et al. Association of ultra-processed food consumption with colorectal cancer risk among men and women: results from three prospective US cohort studies *BMJ* 2022; 378 :e068921 doi:10.1136/bmj-2021-068921

Polypill strategy in secondary cardiovascular prevention.

A polypill composed of key medications (aspirin, angiotensin-converting enzyme inhibitor, and statin) known to improve outcomes has been suggested as a strategy for secondary prevention of cardiovascular events following myocardial infarction (MI). Researchers, through this study, sought to determine if this strategy was superior to usual care. A total of 2499 patients with MI within the previous 6 months were randomized to either the polypill strategy or usual care. The outcome measure was a composite of cardiovascular death, nonfatal MI, or nonfatal ischemic stroke. The outcome occurred at a significantly higher rate in the usual care arm (12.7%) compared to the polypill arm (9.5%). Additionally, medication adherence was better in the latter. The researchers concluded that the polypill strategy reduced major cardiovascular events more than usual care.

Castellano JM, Pocock SJ, et al. Polypill Strategy in Secondary Cardiovascular Prevention. *N Engl J Med.* 2022 Sep 15;387(11):967-977. doi: 10.1056/NEJMoa2208275. Epub 2022 Aug 26. PMID: 36018037.

A healthy lifestyle is positively associated with mental health and well-being and core markers in aging

The association between lifestyle and health outcomes has been well investigated; studies have however evaluated individual health behaviors (unlike multiple behaviors) and the biological mechanisms explaining the association is unclear. This study included a total of 6054 adults from the 2018 Belgian Health Interview Survey and evaluated the association between lifestyle and mental health, and its effect on core markers of aging: telomere length (TL) and mitochondrial DNA content (mtDNAC). A validated lifestyle score integrating different behaviors (diet, physical activity, smoking status, alcohol consumption and BMI) was used. The study found that a one-point increment in the lifestyle score was associated with lower odds for mental health outcomes, a 1.74% longer TL, and a 4.07% higher mtDNAC. The researchers hence indicated that living a healthy lifestyle leads to favorable biological aging.

Hautekiet P, Saenen ND, et al. A healthy lifestyle is positively associated with mental

health and well-being and core markers in ageing. BMC Med. 2022 Sep 29;20(1):328. doi: 10.1186/s12916-022-02524-9. PMID: 36171556; PMCID: PMC9520873.

Artificial sweeteners and the risk of cardiovascular diseases.

The harmful effects of added sugars to processed foods and beverages on health outcomes have been well investigated. Artificial sweeteners emerged as an alternative to these, but their association with cardiovascular outcomes isn't well understood. Researchers through this large population-based prospective study in France evaluated the association between artificial sweeteners and cardiovascular disease risk. The study found that artificial sweetener intake was associated with increased risk of cardiovascular diseases, and more especially with cerebrovascular disease risk (incidence rates of 195 and 150 per 100,000 person-years in higher- and non-consumers respectively). The researchers hence suggested a potential direct association between higher artificial sweetener consumption and increased cardiovascular risk, and recommend that artificial sweeteners should not be considered a healthy alternative to sugar.

BMJ 2022;378:e071204 <http://dx.doi.org/10.1136/bmj-2022-071204>

Childhood obesity and adult-onset chronic kidney disease

Chronic kidney disease (CKD) is rising worldwide, with an increase in the prevalence of risk factors. Childhood obesity is associated with impaired kidney function, but its impact on the subsequent development of CKD is unclear. Researchers in Denmark, through a population-based cohort, investigated if childhood body mass index (BMI) was associated with adult-onset CKD. A total of 151,506 boys and 148,590 girls born between 1930 to 1987 with weight and height information at age 6 to 15 years were included. Outcome data on CKD and End-stage renal disease (ESRD) was drawn from national health registers. The researchers found the rates of CKD and ESRD significantly increased with higher child BMI trajectories, compared with lower ones. The findings suggested that the high prevalence of childhood obesity may contribute to the future burden of CKD.

Aarestrup J, Blond K, et al. Childhood body mass index trajectories and associations with adult-onset chronic kidney disease in Denmark: A population-based cohort study. PLoS Med. 2022 Sep 21;19(9):e1004098. doi: 10.1371/journal.pmed.1004098. PMID: 36129893; PMCID: PMC9491561.

Supplemental Vitamin D and incident fractures in midlife and older adults

Vitamin D supplements are widely recommended for bone health but whether their use can prevent fractures is not known. Researchers through a controlled trial investigated whether supplemental vitamin D would result in a lower risk of fractures than placebo in midlife and older adults not selected for vitamin deficiency, low bone mass, or osteoporosis. The outcome measure was incident total non-vertebral and hip fractures. Of the 25871 participants, 1991 incident fractures were confirmed during a median follow-up period of 5.3 years. There was no significant difference in total number of fractures in the two groups. The treatment effect was also not modified by baseline characteristics. The researchers concluded that vitamin D supplementation did not significantly lower the risk of fractures in midlife and older adults.

LeBoff MS, Chou SH, et al. Supplemental Vitamin D and Incident Fractures in Midlife and Older Adults. N Engl J Med. 2022 Jul 28;387(4):299-309. doi: 10.1056/NEJMoa2202106. PMID: 35939577.

Maternal-child health

Optimal Timing of Labor Induction after Pre-labor Rupture of Membranes at Term

Although early labor induction following pre-labour rupture of membranes (PROM) is beneficial for pregnancy outcomes, it is unclear what the optimal timing of labor induction should be. Researchers conducted a secondary analysis of a large randomized trial, comparing outcomes at 1-hour time intervals for participants who had labor induced and those managed expectantly within 36 hours following PROM. The neonatal outcome was neonatal infection or admission while the maternal outcome was a maternal infection or caesarean delivery. Among the 4742 subjects included in the analysis, researchers found the rate of neonatal and maternal outcomes increased with time following PROM and were lower in those induced compared to those managed expectantly. Findings suggested immediate labor induction as an optimal strategy following PROM.

Melamed N, Berghella V, et al. Optimal timing of labor induction after prelabor rupture of membranes at term: a secondary analysis of the TERMPROM study. Am J Obstet Gynecol. 2022 Sep 15:S0002-9378(22)00742-6. doi: 10.1016/j.ajog.2022.09.018. Epub ahead of print. PMID: 36116523.

Low-dose aspirin use in pregnancy and the risk of preterm birth

Low-dose aspirin has been shown to reduce

the risk of preterm birth in women at risk of preeclampsia, but its utility in preventing preterm birth in women with a history of preterm birth is not clear. Researchers in Sweden conducted this cohort study and estimated the association between low-dose aspirin use and preterm birth in women with a history of preterm birth in a previous pregnancy. Among the studied 22,127 women, 3057 were prescribed aspirin, and 3703 gave birth prematurely. The study found that low-dose aspirin was associated with a significantly reduced risk for spontaneous preterm births but with no effect on medically indicated preterm birth. The researchers concluded that low-dose aspirin could be effective prophylaxis for recurrent preterm birth.

Kupka E, Hesselman S, et al. Low-dose aspirin use in pregnancy and the risk of preterm birth: a Swedish register-based cohort study. Am J Obstet Gynecol. 2022 Sep 9:S0002-9378(22)00728-1. doi: 10.1016/j.ajog.2022.09.006. Epub ahead of print. PMID: 36096185.

Umbilical cord milking in non-vigorous newborns: a cluster-randomized crossover trial

Delayed cord clamping and cord milking are recommended in vigorous newborns. Among the non-vigorous babies, however, the perceived need for immediate resuscitation supersedes that for delayed cord clamping. Researchers hypothesized that umbilical cord milking rather than early cord clamping may be a better alternative in non-vigorous newborns. Through this multi-centric cluster randomized trial, non-vigorous babies at birth were randomized to either umbilical cord milking or early cord clamping. The primary outcome measure was neonatal unit admission. Of 1730 newborns included in the primary analysis, the difference in frequency of neonatal unit admissions between the two groups was not significant. Babies who had their cord milked, however, had higher hemoglobin, received less cardiorespiratory support, and lower incidence of HIE. This first-of-a-kind study suggested that cord milking is feasible, safe, and better than early cord clamping in non-vigorous newborns.

Katheria AC, Clark E, et al. Umbilical cord milking in nonvigorous infants: a cluster-randomized crossover trial. Am J Obstet Gynecol. 2022 Aug 13:S0002-9378(22)00649-4. doi: 10.1016/j.ajog.2022.08.015. Epub ahead of print. PMID: 35970202.

Polycystic ovarian syndrome and risk of adverse obstetric outcomes

Polycystic ovarian syndrome (PCOS) is a common yet underdiagnosed endocrine disorder in women. Previous studies have

shown varying obstetric outcomes in this condition. Researchers in England, through a population-based study, compared a cohort of women with PCOS with an age-matched cohort of women without PCOS using data from Clinical Practice Research Datalink and Hospital Episodes Statistic. The study found maternal PCOS to be associated with preterm birth and assisted (Caesarean section and instrumental) delivery as compared to spontaneous delivery. However, there was no association with low-or high birthweight or still birth. The researchers concluded that maternal PCOS was associated with an increased risk of preterm and cesarean delivery and that low birth weight may likely be from lower gestational age at birth. Subramanian A, Lee SI, et al. Polycystic ovary syndrome and risk of adverse obstetric

outcomes: a retrospective population-based matched cohort study in England. BMC Med. 2022 Aug 30;20(1):298. doi: 10.1186/s12916-022-02473-3. PMID: 36038914; PMCID: PMC9425992.

Blackwater fever and acute kidney injury in children hospitalized with an acute febrile illness in Uganda.

Acute kidney injury (AKI) and Blackwater fever (BWF) are related yet distinct renal complications of acute febrile illness (AFI) in East Africa. Researchers, through a cohort study conducted in Eastern Uganda, sought to evaluate the association between AKI and BWF in children with AFI, as well as with mortality and host response biomarkers. A total of 999 children with AFI were evaluated. At enrollment, 8.2% of children had BWF, 49.5% had AKI and

11.1% had severe AKI. A history of BWF was independently associated with 2.18-fold increased odds of AKI. Severe AKI, not BWF was associated with an increased risk of in-hospital death. The researchers noted that BWF was associated with severe AKI hence a need for improved access to AKI diagnostics and early institution of kidney-protective measures to avert mortality.

Conroy AL, Hawkes MT, et al. Blackwater fever and acute kidney injury in children hospitalized with an acute febrile illness: pathophysiology and prognostic significance. BMC Med. 2022 Jul 1;20(1):221. doi: 10.1186/s12916-022-02410-4. PMID: 35773743; PMCID: PMC9248152.



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Please send the article by email to africahealth@achest.org. Articles should be saved as a Microsoft Word document. Illustrations and photographs should be sent as additional attachments to the Word document.

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CPD Questions



1. Please indicate what is TRUE or FALSE concerning ultra-processed food consumption.

- a). Ultra-processed food consumption is associated with several chronic diseases, including colorectal cancer.
- b). Ultra-processed food consumption is associated with a higher risk of colorectal cancer in men compared to women.
- c). Consumption of dairy-based products are negatively associated with colorectal cancer risk.
- d). Among women, ready-to-eat/heat-mixed dishes are associated with increased risk of colorectal cancer
- e). All TRUE

2. Which of the following statements are TRUE or FALSE concerning the use of low-dose aspirin in pregnancy

- a). Use of low-dose aspirin reduces the risk of preterm birth in women at risk of preeclampsia
- b). Utility of low-dose aspirin in preventing preterm birth in women with a history of preterm birth is not clear.
- c). Use of low-dose aspirin has no effect on medically indicated preterm birth.
- d). Low-dose aspirin can be an effective prophylaxis for recurrent preterm birth.
- e). All TRUE

3. Please indicate which of the following statements are TRUE or FALSE

- a). Artificial sweetener intake is associated with increased cerebrovascular disease risk.
- b). Childhood obesity is associated with impaired kidney function and development of adult-onset chronic kidney disease.
- c). Vitamin D supplementation significantly lowers the risk of fractures in midlife and older adults.

d). Adults with new onset type 2 diabetes mellitus (T2DM) may be associated with insulin deficiency, requiring early initiation of insulin therapy.

e). Statin therapy is of great benefit in patients with end-stage renal disease (ESRD) and peripheral artery disease (PAD) on dialysis.

4. Please indicate which of the following statements are TRUE or FALSE concerning glucose lowering drugs

- a). A glycated hemoglobin (HBA1C) level below 7.0% is recommended in type 2 diabetes mellitus (T2DM).
- b). Metformin combined with insulin glargine and liraglutide are better at achieving and maintaining target HBA1C levels.
- c). All four-common glucose-lowering drugs: insulin glargine, glimepiride, liraglutide, and sitagliptin are beneficial in T2DM patients receiving metformin.
- d). An HBA1C level of 6.8 to 8.5% is considered acceptable glycemic control outcome measure.
- e). All TRUE

5. Please indicate which of the following are TRUE or FALSE in the management of asthma in settings with fragile health systems like sub-Saharan Africa

- a). Over prescription of short-acting b2 agonists is common and is associated with poor asthma outcomes
- b). A prescription of ≥ 3 canisters of short-acting b2 agonist (SABA) in the preceding 1 year is considered an over-prescription.
- c). Generally, data on the extent of short-acting b2 agonist (SABA) use and outcomes are lacking.
- d). In most settings, clinical practice in the use of SABA for asthma management is not aligned with current treatment guidelines, leading to poor treatment outcomes.
- e). Higher SABA prescriptions may be associated with increased rates of severe exacerbations of asthma.

Answers

1. a, b, c, d, e
2. a, b, c, d, e
3. a, b, c, d, e
4. a, b, c, d, e
5. a, b, c, d, e