January 2023 Volume 45 Number 1

Africa HEALTH JOURNAL

Realizing the Social Mission of Universities & training institutions.

The Burden of Road Traffic Injuries (RTIs) in Africa: We need to act now to forestall a neglected epidemic

Global Initiative for Childhood Cancer: Increased implementation of Core Projects in Africa

Hepatitis B virus infection in Africa

Africa HEALTH JOURNAL

Africa Health is a journal of continuing medical education information for health professionals, health managers and political leaders in Africa and globally

ACHEST

Published four times a year by the

African Centre for Global Health and Social Transformation

Plot 13B, Acacia Avenue, Kololo
P.O. Box 9974, Kampala, Uganda
Tel: +256 414237225/414250022
Fax: +256 414237226
Email: africahealth@achest.org

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ISSN 0141-9536 (print)
ISSN 2053-4760 (online)

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Vol 45 No 1 January 2023

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Health Challenges in Africa

This issue has several articles on health challenges in Africa. It elaborates the importance of intersectoral integration if Africa is to overcome these challenges.

The Opinion by Francis Omaswa on "Realizing the Social Mission of Universities and training institutions" highlights the renewed activity in Africa and globally on the subject of health professionals' education and training. It calls on university leadership to engage proactively with politicians and the public to ensure that knowledge, research and training are aligned with efforts to improve the performance of health systems and advocate and guide investments in health. It describes the three-legged African stool as a metaphor representing service delivery, teaching and research noting that all these are equally important for a training institution to meet its obligations and be socially accountable.

The APO Group on behalf of African Leaders Malaria Alliance (ALMA) gives a report entitled: African Union Malaria Progress Report 2022: Sustained Political Will and Adequate Resources Needed to Achieve the Goal of Eliminating Malaria in Africa by 2030. The report was presented by His Excellency President Umaro Sissoco Embaló of the Republic of Guinea-Bissau, Chair of the African Leaders Malaria Alliance. It highlights the ongoing challenges in the fight against malaria in Africa and the urgent need for strong political commitment and leadership, robust partnership, and increased investments from Member States to reach the goal of eliminating malaria in Africa by 2030. He urges member states to redouble their efforts to achieve the goal of eliminating malaria in Africa by 2030

The article by Mohammed Assair discusses the pros and cons of cost sharing in health, using a case for Somalia. He defines cost sharing and gives a background to the health status of Somalia. He emphasizes that the idea of a cost sharing mechanism in service delivery can be applied in Somalia in particular health centers and general hospitals to ensure the substantiality of the health services. Noting that delivery of health services is expensive and cannot be left to international organization alone.

Talisuna et al describe Road Traffic Injuries (RTIs) as a neglected epidemic in Africa. They give the background on the global burden of RTIs. They discuss why RTIs are worrisome in Africa giving the risk factors, noting the key challenges and summing it by suggesting that African countries ought to take a comprehensive, multi-sectoral approach to address the "epidemic" of RTIs.

A comprehensive literature search of African initiatives based on Global Initiative for Childhood Cancer (GICC) core projects is presented in this issue. It highlights the challenges in the management of childhood cancers in Africa, but also showcases the attempts that have been made to mitigate the challenges in specific countries. The group calls on governments to address childhood cancer care with transparent reporting and effective use of available resources. It notes that collaboration and capacity building are key to sustainable improvement of health outcomes in Africa.

Another team of experts from several universities discuss the burden of HBV infection, factors enhancing its spread and the challenges of controlling the spread of the infection in Africa. They also recommend some strategies that will help in achieving the 2030 goal of elimination of HBV in Africa. This article also brings the viewpoint that Africa still has challenges with infectious diseases for which vaccines have been available for a considerable period of time. It makes one ponder why this is so. It is important to note that both articles, one on peadiatric oncology and another on hepatitis highlight the importance of vaccination in combating diseases.

Umar Ibrahim and Jason Prior discuss how transdisciplinary collaboration integrates health and environmental disciplines, for innovative and resilient solutions that address planetary health challenges through a systematic review. This article brings to light how Africa will continue to suffer a large share of challenges which may not necessary be a result of its making. Using a systematic review methodology, the team describes what planetary health is, what the challenges confronting planetary health are, how to maintain reliable relationship in transdisciplinary collaboration and how transdisciplinary collaborations addresses unforeseen issues.

Alliance Against Antimicrobial resistance (AMR) (Triple-A) describes the importance of creating simple, clear, and translated AMR messages for the population and gives examples of its work.

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

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Elsie Kiguli-Malwadde
(kigulimalwadde@achest.org)

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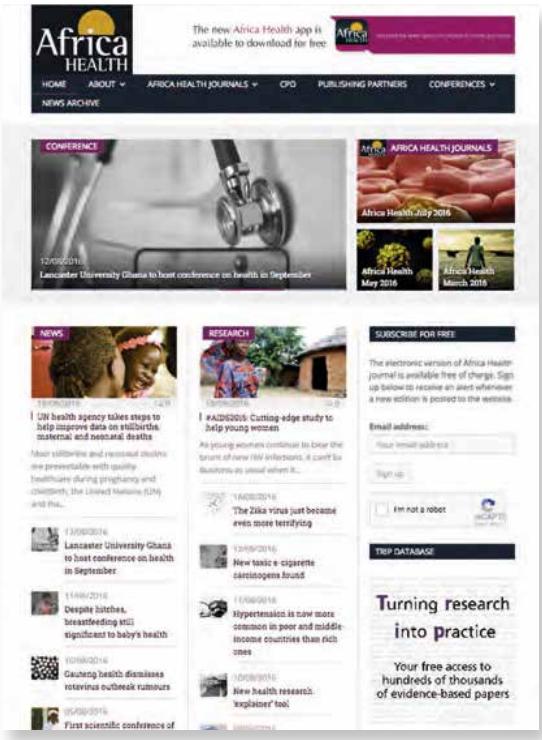

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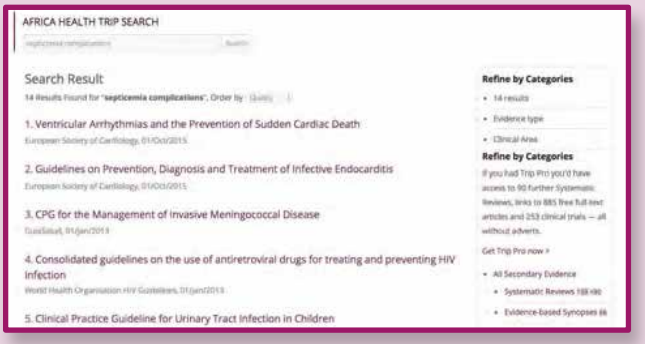

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Realizing the Social Mission of Universities & training institutions.

There is a lot of renewed activity in Africa and globally on the subject of health professionals' education and training. A meeting took place at the beginning of February, 2023, in Kigali, Rwanda, of the Governing Council of the African Forum for Research and Education in Health (AFREhealth). In November, 2022, two meetings took place; in Miami, USA and in Accra Ghana on this topic. In May 2022, there was a Forum in Canada; McGill University School of Population and Global Health on "Nurturing Leadership for Health: are Universities Stepping Up?" Another meeting will take place late February, 2023 in Pretoria, South Africa. So, what is going on? Are we making any progress? Are health professional training institutions contributing to better health globally, regionally and nationally? Are they just about themselves?

The Lancet Commission on the Education of Health Professionals for the 21st Century issued its report ten years ago recommending a new generation of reforms in health professionals' education. Universities, especially university leaders, are called upon to become the change agents among the people that they serve. These leaders should demonstrate social accountability and teach their students to be societal change agents; engaging with their ministers of health, cultural, religious and civil society leaders. This engagement is to ensure that better population health is visible in practice as a result of teaching and research. Failure to achieve this qualifies universities to be described as ivory towers that are disconnected from their communities.

University leadership, including all Faculty should engage proactively with politicians and the public to ensure that knowledge, research and training are aligned with efforts to improve the performance of health systems and advocate and guide investments in health. This requires reviewing incentives for promotion of university lecturers that are currently skewed towards research and publications with insufficient emphasis on teaching and service. When students see this as a dominant role model, they also aspire to become researchers resulting in a gap in service and teaching.

Clinical excellence through services delivery is a pre-requisite for clinical teaching followed by the need to undertake research to address identified gaps in knowledge for improved services and teaching. This was described at Makerere Medical School as the three-legged African stool. If the legs of the stool are not of equal length or one of the legs is missing, the stool is unstable and unsafe. Growing up at Makerere, it was a requirement for all heads of clinical departments to be university employees alongside many non-university employees at the Mulago national referral and teaching hospital. These university leaders were also advisors to the Ministry of Health in their respective clinical specialties.

In order for universities to have a social mission and be change agents, it is important for them to track and follow the performance of their graduates. Graduate tracking is a source of feedback that improves teaching and contributes to improved quality services delivered by the graduates. This is also needed to improve health workforce management. There are many reports from African countries where graduates remain unemployed for long periods of time and many migrate especially to the developed countries at a huge cost to the source countries of migrant health workers. Tracking graduates by universities in partnership with their governments can also be an entry point into negotiating bilateral and multi-lateral agreements with other countries on managed migration, guided by the WHO Code on the International Recruitment of Health Personnel adopted by the World Health Assembly in 2010.

The Sub Saharan African Medical Schools Survey that looked at all Medical Schools in Sub Sharan Africa, found that many private medical and nursing schools have emerged with the primary business aim to make money with questionable attention to the quality of graduates. Regulation and accreditation of these schools is challenging because many have connections to politicians who interfere with the roles of regulatory and accreditation agencies. In some cases, regional accreditation mechanisms are in place which help to protect the independence of the regulatory bodies and assure quality of the training institutions and graduates.

Another set of key players are the professional associations in the countries. These have a key role in ensuring the universities and training institutions are supported to play their rightful roles and that the standards of teaching and service, including ethics are responsive to societal health needs. The Global Health Workforce Alliance recommended a tool known as Country Coordination and Facilitation (CCF); a forum that creates partnership structures in countries comprising, Ministries of Health, Education, Public Service and Finance along with Professional Associations, to develop National Health Workforce Plans and ensure that these are implemented to scale. Effective CCF committees would guarantee the achievement of the required competencies, skill mix, numbers and budget so that all graduates get employed. This will make it possible for every person, in every village, everywhere have access to a motivated, skilled and supported health worker responding to population health needs.

This is a call to action to universities and training institutions. They should commit to pursuing social accountability by engaging with health professional associations in all disciplines and advocate with political leaders and the public for the creation of CCFs in the countries as vehicles for realizing their social mission and achieve better health of the people.

Francis Omaswa, CEO, African Centre for Global Health and Social Transformation (Kampala); Founding Executive Director of the Global Health Workforce Alliance; and publisher of Africa Health.

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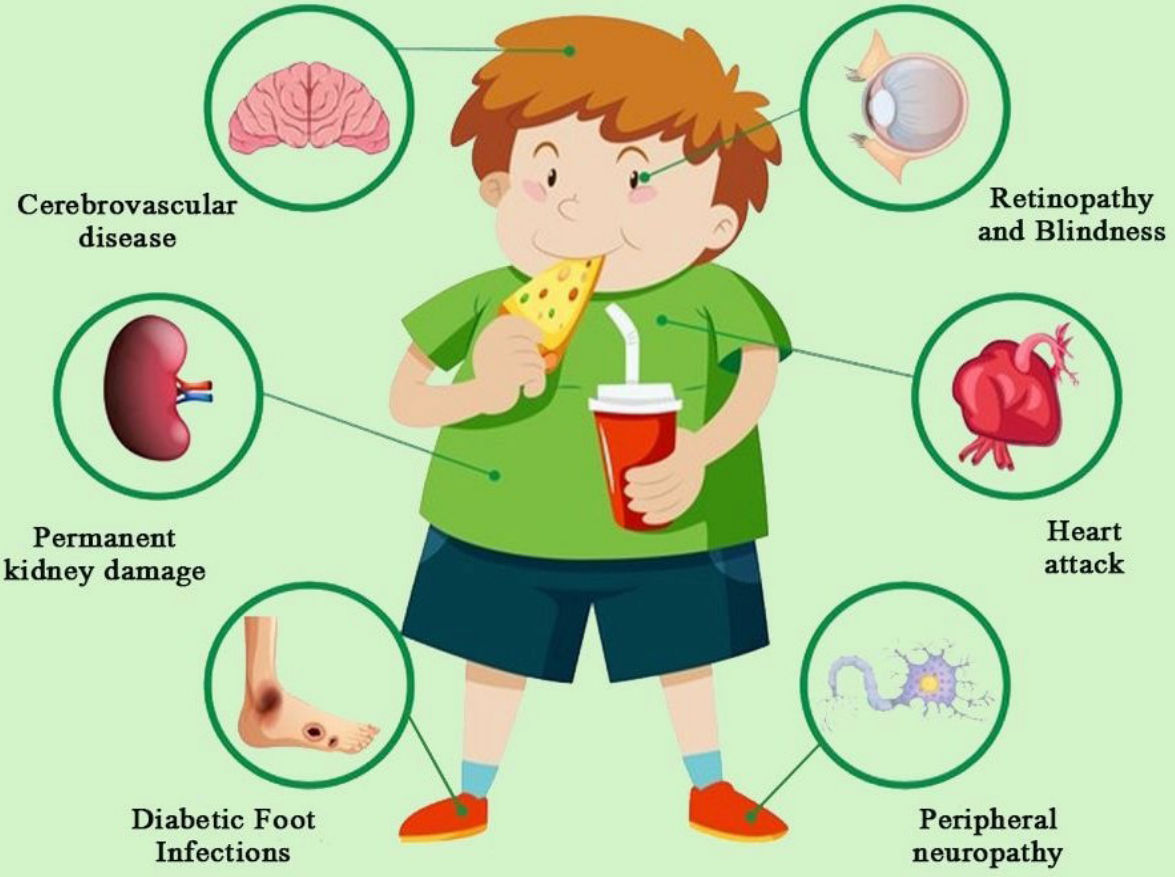


African Union Malaria Progress Report 2022: Sustained Political Will and Adequate Resources Needed to Achieve the Goal of Eliminating Malaria in Africa by 2030

The report also acknowledges the efforts of Member States to launch "Zero Malaria Starts with Me" campaigns and End Malaria Councils and Funds. ADDIS ABABA, Ethiopia, February 19, 2023/APO Group.

His Excellency President Umaro Sissoco Embaló of the Republic of Guinea-Bissau, Chair of the African Leaders Malaria Alliance (www.ALMA2030.org), presented the African Union Malaria Progress Report 2022 at the African Union Summit in Addis Ababa. The report highlights the ongoing challenges in the fight against malaria in Africa and the urgent need for strong political commitment and leadership, robust partnership, and increased investments from Member States to reach the goal of eliminating malaria in Africa by 2030.

Since 2000, malaria incidence and mortality have declined by 37% and 59%, respectively. As a result, 1.5 billion malaria cases and 10.6 million malaria deaths have been averted over the past two decades in Africa.

However, according to the report, progress against malaria remains stalled for the last few years. Most Member States are off-track to achieving the African Union's bold and ambitious targets to defeat malaria by 2030. In 2021, Africa continued to bear the highest malaria burden, with 96% of all malaria cases (238 million cases) and 98% of all malaria deaths (603,877 deaths) occurring in Africa in 2021. Nearly 77% of malaria deaths were among children under 5. This burden undermines our collective social and economic development efforts and is a barrier to achieving the objectives of Agenda 2063 for socio-economic transformation.

Malaria-Twins Dorcas and Deborah Bendak

Distributed by APO Group on behalf of African Leaders Malaria Alliance (ALMA).

"We must redouble our efforts to achieve the goal of eliminating malaria in Africa by 2030. Sustained political will, increased resources, and a shared sense of urgency are needed to make this goal a reality," said His Excellency. We must work together to ensure that every African has access to life-saving malaria interventions," he added.

Despite the impact of the COVID-19 pandemic and biological challenges, in 2021, malaria mortality declined by 3.4%. Countries demonstrated solid political commitment, innovation, and resilience, maintaining their essential campaigns so that more nets than ever before were delivered to countries, more children were reached through Seasonal Malaria Chemoprevention, and Indoor Residual Spraying Campaigns continued as planned. However, disrupted access to health facilities and supply chain disruptions have impacted malaria case management and access to essential services such as antenatal care, leading to lower coverage of Intermittent Preventive Treatment in pregnancy.

"The COVID-19 pandemic has highlighted the need for strong and resilient health systems. Investing in ending malaria saves lives and builds stronger health systems that can respond to future pandemics. The African Union Malaria Progress Report 2022 reminds us of the urgent need for increased investment and commitment from Member States to reach the goal of eliminating malaria in Africa by 2030," said H.E. Amb. Minata Samate Cessouma, Commissioner for Health, Humanitarian Affairs, and Social Development at the African Union Commission.

Despite the global community's pledge of US$15.7 billion to replenish The Global Fund, the report expresses concern that this fell short of the replenishment's US$18 billion target. Existing and pledged resources are insufficient to fully support malaria programmes, especially as Member States confront drug and insecticide resistance, low malaria intervention coverage, global inflation, supply chain disruptions, and other economic shocks. Increased domestic resources with strong partnerships are urgently required to maintain lifesaving

Malaria - The 42nd Ordinary Session of the Executive Council kicks off with the resolve to uphold Africa's resilience to challenges & achieve a successful implementation of the AfCFTA

malaria programmes and avert a resurgence in cases.

In 2022, the Republics of Burundi, Cabo Verde, Cameroon, and South Sudan launched their Zero Malaria Starts with Me campaigns bringing the total number to 27. In 2022, the Republics of Guinea, Nigeria, and Rwanda announced or launched high-level End Malaria Councils. These country-led initiatives help sustain malaria high on the high political and development agenda, mainstream malaria as a priority across all sectors and levels and mobilize millions of dollars of resources for malaria programmes.

"There are a growing number of threats to our goal of eliminating malaria, including the malaria parasite becoming increasingly resistant to antimalarials and mutating to evade detection by rapid diagnostic tests, as well as emerging resistance to insecticides among malaria-carrying mosquitoes. Ensuring that the current malaria interventions are effectively used and tailored to the local context, that new tools needed to address these threats are developed and rolled out as quickly as possible with increased malaria funding and coordinated partnership is crucial at this critical juncture to end malaria for good," said Dr. Corine Karema, RBM Partnership to End Malaria Interim CEO.

Heads of State and Government are committed to ensuring that all malaria affected countries will launch End Malaria Councils and End Malaria Funds to increase multisectoral action and domestic resource commitments for malaria. With 27 African countries launching Zero Malaria Starts with Me, the African Union looks forward to having the remaining Member States out of 47 African countries impacted by malaria. Through the launch and implementation of Zero Malaria Starts with Me and by rolling out new innovations to address resistance, countries

Can cost Sharing Mechanism in Service Delivery be an option for Somalia to Sustain Health Service Provision

Mohammed Assair discusses the pros and cons of cost sharing in health, a case for Somalia.

Somalia has been in conflict for over 30 years, since the collapse of Siyad Barre's government in 1991. All health legitimate institutions were destroyed and this created widespread vulnerability resulting in massive displacement, deaths and famine affecting thousands of Somalis. With years of conflict and low investments in the social sector, Somalia is ranked lowly globally on various human development indicators and is off-track to attainment of Social Service-related Sustainable Development Goals (SDGs). For instance, Globally, it ranks second highest for Total Fertility Rate (6.32), fourteenth lowest for life expectancy at birth (51), and second highest for Maternal Mortality Ratio (1,000 per 100,000 live births). Coverage of essential health services is very low with the contraceptive prevalence rate of 14 percent. Additionally, skilled birth-attendance is 33 percent with the lowest enrolment rate and survival rate of the primary and secondary schools.

According to Somali Health and Demographic Survey 2020, the maternal mortality rate, which has been one of the worst worldwide, has reduced from 732 in 2015 to 692.- /100,000 live births respectively. Only 3.3% of women attend Antenatal Care (ANC1) and only 2.5% attend ANC4. Facility-based deliveries are as low as 9.2%. In 2011, 70% of children did not receive any vaccination and only 1.4%, received all antigens. Acute Watery Diarrhea and pneumonia are major causes of morbidity and mortality among children under five, however, only 40% of children with diarrhea received Oral Rehydration Salts (ORS), and only 43% who sought care for pneumonia received antibiotics. Global Acute Malnutrition (GAM) rate ranges between 5-15%; only 2.6% of infants are exclusively breastfed, and just half of children 6-23 months receive the recommended minimum meal frequency[1]. The main barriers to accessing health care in Somalia is the: cost, distance and accessibility of health facilities, low reliability of health service provision including lack of drugs, poor quality services exacerbated by socio-cultural beliefs. Treatment is sought only when the illness is severe or advanced and decision making such as when to travel to the nearest clinic for treatment resides solely with male family members. These contributes to delays in seeking health care.

Somali Federal Government is fighting for its existence despite security, political and economic challenges. Thus, could not afford to provide health and education services to its people for over three decades, all health and education services are dependent on donor funding from International Development Partners (IDPs) with limited institutional capacity building process at state and federal level. The health and education services mainly provided by private institutions with out-of-pocket expenses has become expensive for the poor vulnerable and marginalized communities that cannot afford to either pay the cost or reach to its destination. The Federal Governments invest more in the security sectors as opposed to health and education. This has formed overreliance to donor funding and inability to look for possible options and sustainable policies that invest in social services. Having alternative approaches and options aids to think outside the box. In this article we are trying to look at the best options implemented by post conflict states and how this could be experimented or could be replicated in Somalia.

What is cost sharing?

Cost sharing is the financial contribution that service clients are required to make when they use health care services, amounts that are not reimbursed by their health plan. A cost-sharing charge is the amount an individual must pay for a medical item or service, that is to say health facility or hospital visit or prescription. The direct forms of cost sharing include; (i) Co-payments (a flat amount that the consumer must pay per service or item), (ii) coinsurance (a percentage of the charge that the consumer must pay), and (iii) deductibles (an amount the consumer must pay out-of-pocket before coverage begins, usually applied for a specific period, such as yearly). In addition, individuals may incur other out-of-pocket health care costs related to their health care.

According to the world bank discussion paper on cost sharing in the social sector of sub-Sahara Africa, it is highlighted that the widening of cost sharing with the expansion of user fees in the 1980s presented new threat to the poor and their ability to afford basic education and health care. User fees offered a means to recover some of

Mohammed Assair has been working for international NGOs for the last 12 years, and local NGOs in Somalia, he is a social activist against illiteracy, He is a researcher, blogger and motivator specialized in humanitarian and development management, public management & international relations as well as an advocate for free equitable & quality basic social service for communities in need

the costs of publicly financed social services. Experience shows that while protecting the poor from the cost of user fees is achievable, it is not a simple task. Careful attention must be given to design and implementation issues, including which services should be highly subsidized by the public, what role communities should play in cost sharing, how fees are reinvested, and how the gender dimensions of the policy are handled[3].

Cost recovery seems contrary to the humanitarian principle of impartiality and the allocation of assistance based on need alone. Critics argue that in already difficult and constrained environments, charging user fees or cost sharing compounds inequities in access to treatment and contributes to the destitution of the most vulnerable. Yet donors have increasingly made their funding contingent on having these mechanisms. Both donors and national governments see such policies as developmental; they believe that their introduction is inevitable and that bringing them in at an early stage will contribute to building a sustainable, locally financed health system in the longer term[4].

Cost-sharing is a recent innovation in complex emergencies, there is substantial experience with such schemes in the development sector. Cost-sharing became widely accepted as a necessary element of healthcare financing in the developing world in the mid-1980s. At that time, governments were unable to adequately fund public services including health, WASH, education and out of pocket expenditure on health and education was growing rapidly as people (including the poor) were forced to seek care in the private sector. Then, alternative sources of financing were clearly needed, and the World Bank began pushing for the inclusion of national cost-sharing mechanisms as a way of bridging what is known as the health sector resource gap, the shortfall between the funding provided by governments and donors and the level of funding required to provide a basic level of healthcare of acceptable quality[5].

The Bamako Initiative: The ministers of African Countries launched the Bamako Initiative in a conference held in Mali in 1987 sponsored by WHO and UNICEF with the objective of ensuring that the entire population should have access to primary health care at an affordable price. According to the literatures and past program implementations after Bamako Initiative in Africa, there are several challenges and arguments including that the cost-sharing mechanism excludes the poor unless there is an effective system of exemptions and waivers that is necessary to protect the vulnerable social groups. Concerns include whether the revenue cum collected from the beneficiary cost-sharing can be fairly collected and managed.

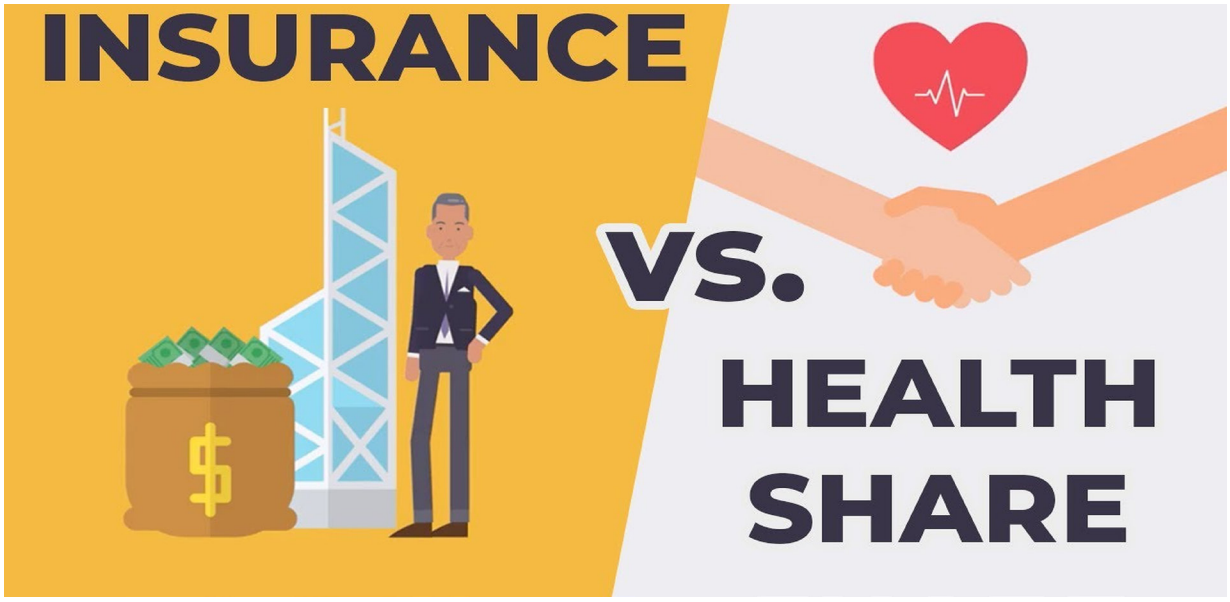
Furthermore, other emerging challenges can be the willingness and commitment from the government to initiate and extend grassroot level health service outlets since cost sharing programs are usually too complex and difficult to be understood by the community and service providers[6]. In remote areas where everybody lives on the verge of poverty, it is not easy to provide health care for the poorest of the poor. But today it is clear that the preventive care offered free and in a decentralized manner with some form of cost-sharing for service sustainability is benefiting the entire population.

What brings the issue now?

During our Save the children field visits across the country, we observed many facilities both health and education closed by either lack of running cost or when project support has ended. This shows how our outlook is vulnerable and unsustained. You never find someone thinking about the challenges befalling such institutions, you never find anyone brainstorming and proposing on the best way to ensure the sustainability of the existing public institutions to continue delivering services to the communities. For example, when such cases occur, thousands of the children lose their education, whilst thousands of children die because of preventable diseases or during their journey to accessing health care in the near places, in addition, when schools are closed due to the above-mentioned circumstances, parents send their children to keep goats hence missing out on school and a bright future.

In this point of view, if cost sharing is introduced to both health and education in Somalia, the burden would be taken away from parents or even donors who have been supporting these two sectors for the two decades, why? because it puts a lot of pressure on parents who are struggling to find their livelihood as well as donors who are now affected by Covid-19 and may be exhausted from not achieving the result intended by the SDGs. Cost sharing allows people to feel ownership, contribute a lot and hold the government accountable to deliver what is required and expected. In conclusion, it is the role of government to set the directions to attain their commitments to Universal health coverage (UHC) as well as education for all, governments are obligated to take reasonable regulatory and other measures within available resources to achieve the progressive realization of the right to health care and access to education. This is particularly important in health care markets, which are characterized by such failures as information asymmetry, lack of information on prices and quality that preclude consumer choice, adverse selection, and moral hazard[7]. The intention of this program is to expand the access of the services to the needy people across the country by not putting a burden on their shoulder.

I believe the idea of cost sharing mechanism in service delivery can be applied in Somalia in particular health centres and general hospitals to ensure the substantiality of the health services. Sustaining health service provision is quite challenging and expensive and cannot be run by international organization as its project provision based by putting measures and strategies to be managed and trained on health facility in charges.



Three basic arguments have been developed to support cost-sharing:

1. **Increased revenue**. User fees are one of the few feasible ways of raising revenue to bridge the health sector resource gap in resource-poor environments. There are other ways of raising revenue: for instance, this can be done by asking community to pay the consultation card fee which is not that expensive, that costs collected would help to run the health facilities and prevents close out once donor funding has waned. More work needs to be done in developing policies that contribute to reduction in the health service gaps in remote areas.
2. **Increased efficiency**. User fees, if well designed, should mean that resources are used more efficiently within the health system. They discourage unnecessary use and can create incentives for providers and patients alike to shift the focus towards cost-effective high-priority care for disease prevention; they can also via differential pricing, move the delivery of care away from expensive hospital-based treatment to more cost-efficient primary healthcare.
3. **Increased equity**. If the income they generate is used to improve service quality, user fees could have positive equity outcomes. Even with user fees, a public health system that delivers high-quality care close to where people live would offer poor people cheaper and better care than they would be able to get in the private sector.

This is just an idea and can be examined for further studies to know more about the pros and cons however many countries in Africa and Asia have tested and displayed globally the impact made. Somalia is one of the countries ranked lowest globally with health service provision and the biggest problem is access of health services to the poor vulnerable communities.

Disclaimer: The views written in this article don't represent the views of INGO.

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The burden of Road Traffic Injuries (RTIs) in Africa: We need to act now to forestall a neglected epidemic

A team of WHO experts give an insight into Road Traffic injuries in Africa and why it is a neglected epidemic

Classical epidemiological definitions have often described an epidemic as "an unexpected increase in the number of disease cases in a specific geographical area at a given time[1]. Corona Virus Diseases such as SARs-COV-2 (the cause of COVID-19), the Influenzas, Ebola Virus Disease, Cholera, Meningitis, Measles, Malaria, Yellow Fever, Lassa Fever, Mpox (Monkexpox), and Poliomyelitis to mention just a few are prime examples of potential infectious disease epidemics[2]. However, in contemporary epidemiology, an epidemic does not necessarily have to be an infectious disease. For example, the rapid increase in obesity, cigarette smoking, alcohol consumption, inappropriate drug use, diabetes mellitus, hypertension, antimicrobial resistance, and Road Traffic Injuries (RTIs), while not infectious diseases are also considered epidemics[3]. In other words, an epidemic should be defined for a disease or any other health-related event, condition or behavior with rates that are clearly above "normal" in a community or region at a given time. The "normal" for most diseases, events and conditions is zero incidence[4]. Indeed, in the World Health Organisation (WHO) African Region this has clearly been articulated in the guidelines for Integrated Disease Surveillance and Response (IDSR) that refer to priority diseases, as well as events, and conditions with defined alert and epidemic thresholds[4].

In this viewpoint, we contend that RTIs are a neglected epidemic in Africa. The current rates of RTI fatalities globally, but more so, in Africa require urgent collective interventions from governments, development partners and all relevant stakeholders. RTIs are a major development issue in Africa because they have major health, social and economic impacts. However, they have not been given the priority they deserve. It is our considered view that the Health Sustainable Development Goals (SGDs) will not be met unless we act now to forestall the RTIs epidemic. We need to act now to meet the 2030 targets, we are only 7 years away. We have no excuse, we have the tools, we know what works and what doesn't, and we can draw on lessons learnt from other regions that have reduced RTI. Here we articulate why it is urgent and needed now rather than later.

Ambrose O. Talisuna, MBChB, PhD[1]: talisunaa@who.int, Binta Sako, MPH[2], Godwin Ubong Akpan, PhD[3], Jean Marie Dangou, MD, MPH[4], Georges Alfred Ki-Zerbo, MD, MPH[1], Adelheid W. Onyango, Msc, PhD[2]. World Health Organisation (WHO), Regional Office for Africa, Liaison Office to the African Union (AU) and the United Nations Economic Commission for Africa (UNECA), Addis Ababa Ethiopia[1]. WHO Universal Health Coverage, Healthier Populations Cluster, Brazzaville, Republic of Congo[2]. WHO, Regional Office for Africa, Emergency Preparedness and Response Cluster Brazzaville, Republic of Congo[3]. WHO Regional Office for Africa, Universal Health Coverage, Communicable and Non-Communicable Diseases Cluster, Brazzaville, Republic of Congo[4]

Increasing global burden of RTIs

Globally, every year approximately 1.3 million lives are cut short because of a road traffic accident[5]. Up to 50 million people suffer non-fatal injuries, with many incurring a disability because of their injury[5]. Globally, in 2019, RTIs were the 9th leading cause of death in men and the 6th global cause of disability adjusted life years-DALYs [6]. Road traffic injuries cause considerable economic losses to individuals, their families, and to nations[7]. These losses arise from the cost of treatment, as well as lost productivity for those killed or disabled by their injuries, and for family members who need to take time off work or school to care for the injured[7]. Road traffic crashes cost most countries 3% of their gross domestic product (GDP)[5]. Moreover, RTIs are the leading cause of death among people between 5 and 29 years old[5]. Over ninety percent (90%) of the world's fatalities on the roads occur in low- and middle-income countries, even though these countries have approximately 60% of the world's vehicles[5]. Nearly half of those dying on the world's roads are "vulnerable road users": pedestrians, cyclists, and motorcyclists[7]. Without sustained action, it is predicted that road traffic crashes will become the seventh leading cause of death by 2030[8].

Worrisome situation in Africa

In the WHO African Region, ten percent (10%) of all deaths are caused by injuries, the highest in the world. Most injuries are caused by road crashes, falls and drowning[9]. Road injuries are the most prevalent form of injury and represents about 40% of all injuries in the region[9]. Growing vehicle ownership and rapid unplanned urbanization have increased the incidence of road crashes in Africa[7]. Despite being the least motorized, the WHO African Region has the highest road traffic fatality rates in the world with an estimated 27.2 deaths per 100,000 population[9]. This translates into 814 deaths per day, nearly half of them vulnerable road users such as pedestrians, cyclists, and motorcyclists. The socio-economic impacts of road crashes and related injuries are not only harming the continent's development, but also affecting the livelihood of families[10].

Of the estimated 297,000 people that died of RTIs in 2019, ~ 97,000 were men aged 15-49 years old-the most productive period of their lives[9]. Although the WHO African region represents 14% of the world's population and 3% of the automobile fleet, the region contributes 20% of all road crashes deaths globally[11]. Road crashes were the 11th cause of death in 2000 but presently they are the 9th cause of death[9].

Road traffic injury fatality rates have been increasing since 2015. For example, from 2015 to 2018 RTI rates increased from 26.6 to 27.2 per 100,000 population [9]. By comparison, all other WHO regions, except the North American region had reduced RTI fatalities during the same period [9, 12]. This

is worrisome because we are observing these trends yet there are concerns about poor data quality, under reporting, and lack of detail on the circumstances and consequences of injuries. The discrepancies between reported and WHO estimates are largest in the WHO African Region compared to other parts of the world. Estimates show that the burden of RTIs in Africa is probably 4-fold higher than what is currently reported [7]. The lack of research and reliable data on the burden of RTIs in Africa, the associated healthcare expenditure and household/income loss in most countries is concerning. The current burden of RTIs in Africa is certainly worse than what the published numbers tell us. Moreover, there are large disparities amongst countries in the region, with RTI fatality rates varying from 11.3 per 100,000 population in Seychelles (the lowest) to 41.2 per 100,000 in Zimbabwe (the highest)[13].

Vulnerable road users-pedestrians and cyclists represent 44% of all RTI deaths in the WHO African region[11]. This is concerning because close to 78% of people walk for transport every day[14].The economic losses due to RTIs and deaths are also immense. For example, the estimated GDP loss is 8% in Senegal, 9.1% in Kenya and 10.1% in Burkina Faso[15].

We have also reviewed the global health observatory (GHO) database for the entire African continent Africa has the highest traffic death rate per 100,000 population. It is estimated that 28 people die per 100,000 population in Africa which is higher than the average of 17 per 100,000 population globally[22]. In the GHO database, the median rate for road traffic deaths in Africa is 28 per 100,000 population (Range: 10.1-42.2).

Risk factors for RTIs in Africa

The main risk factors for RTIs in Africa include poor road infrastructure, inadequate law enforcement, and a lack of education and awareness about road safety. In addition, many African countries are low or middle-income, making them a dumping ground for cheap, used, un-roadworthy and poorly maintained vehicles in dangerous mechanical condition. Moreover, lack of access to timely and prompt emergency medical care such as ambulances with the right equipment and the appropriate paramedical staff often results in many preventable deaths enroute to emergency health care facilities which are also often ill equipped to offer emergency injury care in of terms human, financial and logistical resources. Further, there is a high rate of reckless over speeding, drink, and drive. Worryingly, not wearing helmets or seat belts exacerbates the high rate of severe RTIs, several of them fatal. Here we provide some details about the major risk factors.

Excessive alcohol consumption: Alcohol abuse as an attributable factor for RTIs in Africa and is a common cause for all injuries [16]. According to a 2018 global status report on road safety, only one country (Burkina Faso) demonstrated best practices for drink driving[7]. Most countries in the region have not established the recommended limits for blood alcohol content (BAC)[7, 16]. The BAC is a measure of alcohol in the blood as a percentage and it is calculated in grams per 100 mL or dL of blood. A blood alcohol content (BAC) of 0.08 means your blood is 0.08% alcohol by volume. The recommended standard is a BAC below 0.05g/dl for the general population and below 0.02g/dl for novice or professional drivers[17]. Despite the requirement to implement standard recommendations of the BAC as an effective intervention and proven measure to reduce RTIs, its enforcement in Africa remains dismal.

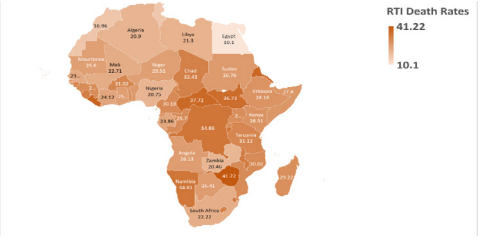

***Figure 1**. Crude death rates per 100,000 population from Road Traffic Injuries in Africa, 2019*

Weak legislation and implementation of evidence-based interventions to reduce risk factors: Weakness in legislation and enforcement to ensure no drink driving, use of seat belts, speed limitation, helmet use, and child restraints is a major risk factor for RTIs in Africa. Less than a third of the countries in the Africa region meet the required best practice criteria for any of these road user behaviors [11]. A population-based survey in 12 African countries demonstrated that weak enforcement is a leading risk factor for RTIs[18]. For example, 42% of motorcyclists reportedly exceeded speed limits; 11% of drivers were reported to drink and drive; 75% of motor vehicle passengers did not use safety belts; and almost 50% of motorcycle riders did not use helmets[18].

Unregulated vehicles: In Africa, the vehicle fleet is expected to grow 4-5-fold by 2050 and 80- 90% of these vehicles will come from imported used vehicles[19]. In addition to their increased risks of causing road crashes, these unregulated vehicles are major contributors to air pollution and climate emissions causing other health conditions, including strokes, chronic respiratory diseases, lung cancer and other non-communicable diseases[20].

Inadequate road infrastructure: This is also a major risk factor for RTIs in Africa. Roads should be planned and designed considering the needs of the most vulnerable such as pedestrians, cyclists, children, and persons with disabilities. Although there are a few published reports for some countries on the status of road infrastructure, they aren't standardized, and the indicators often vary. Consequently, comparisons within and amongst countries are challenging. The global status report on road safety for 2018 (GSRRS-18) provides information on design standards for roads as a proxy to quality. While several countries have set standards enforcement when constructing roads dismal. About half[22] of the countries in the WHO African region report conducting systematic assessment of their existing roads[7].

Inadequate Post-crash care: This is very limited in many countries where basic first response mechanisms and care are unavailable or out of reach for most of the population [11].

WHO's response to RTIs in Africa

The decade of action for road safety 2011-2020, ended with very little progress on road fatalities and injuries and the region did not meet the 2020 targets[12]. The second decade of action for road safety 2021-2030 has set a target of reducing RTIs by at least 50% by 2030[21]. To support countries, WHO has developed recommendations and guidelines for all risk factors. WHO is also leading the generation of a comprehensive data, including mortality estimations, and monitoring of policies, laws and regulations relevant to road safety.

Key challenges

Like other determinants of health, the causes of RTIs have roots outside the health sector, in this case, they lie in transport, infrastructure, legislation and law enforcement. Because of competing priorities, there is insufficient investment in road safety by African countries. Secondly, data is limited and does not fully describe the extent of the physical and mental suffering, disability, and costs to the healthcare system due to RTIs. Thirdly, there is limited awareness and inadequate training for first responders. Finally, there is inadequate capacity building and research on data collection and reporting for RTIs in Africa.

Perspectives for the future

A cursory look at the above risk factors suggests that no single sector can address the epidemic of RTIs in Africa. Hence the necessity for a multisectoral and multidisciplinary approach to the RTIs epidemic. Moving forward there is a need for ministries of health to collaborate with other sectoral ministries such as transport, law enforcement, road works, urban design, and finance, as well as the sectors that are responsible for standards to ensure that processes are transparent and corruption free.

In addition, there is an urgent need for all African countries to institutionalize a multi-sectoral approach to address RTIs, including promoting the strict use of helmets, seat belts, and child restraints; regulating the importation of used vehicles and improving road infrastructure; and increasing enforcement of traffic laws. Further, WHO, the Africa Centers for Disease Control and Prevention (Africa CDC) and all relevant partners should work with African governments and their partner organizations to raise awareness about the importance of road safety and to educate the public about safe driving practices, and advocate for strict laws to be implemented. We urge all African countries to adopt a "Safe System" approach, which aims to make the road environment as safe as possible, even if human error occurs. This includes measures such as lower speed limits, separating vulnerable road users from fast-moving traffic, and improved vehicle safety standards. Further, we call upon all African countries to conduct training, formulate and implement effective road safety programs, including regulation, enforcement, as well as, improving capacity for emergency medical services, and data management and analysis for better decision making.

Finally, we propose that all African countries conduct thorough after-action reviews following every major road traffic accident to assess what went wrong to put in place measures to prevent a repeat or to mitigate the effects of the next road traffic accident. After action reviews have been institutionalized for infectious disease epidemics. The same should be applied to RTIs in Africa.

Summing up

In closing, it is our considered view that African countries ought to take a comprehensive, multi-sectoral approach to address the "epidemic" of RTIs. This could include but is not limited to improving road infrastructure, vehicle safety, increasing enforcement of traffic laws, and raising public awareness about road safety. Importantly, investments are urgently needed to build capacity for health care in emergency trauma, including RTIs and any other forms of mass trauma, from prehospital care, referral capacity and emergency health care capacity for RTIs. RTIs are a major development issue in Africa because they have major health, social and economic impacts. However, they have not been given the priority they deserve. The health SGDs will not be met unless we act now to forestall the RTI epidemic. We need to act now to meet the 2030 targets, we are only 7 years away.

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Global Initiative for Childhood Cancer: Increased implementation of Core Projects in Africa

Jaques van Heerden et al present a literature search of African initiatives based on Global Initiative for Childhood Cancer (GICC) core projects. They call on governments to address childhood cancer care with transparent reporting and effective use of available resources. They note that collaboration and capacity building are key to sustainable improvement of health outcomes in Africa.

In 2018, the World Health Organisation (WHO) launched the Global Initiative for Childhood Cancer (GICC) to facilitate the analysis and improvement of health systems to manage childhood malignancies [1]. The GICC aims to improve the survival of childhood cancer to 60% by 2030 by focusing on six index cancers, namely nephroblastoma, retinoblastoma, acute lymphocytic leukaemia, low grade glioma, Burkitt and Hodgkin lymphoma; supporting governments to build sustainable childhood cancer programmes and increasing the capacity to manage childhood cancers on various levels [1]. This ambitious project considers resource limitations prevalent in much of Africa and aims to improve health outcomes of children with cancer, with expected benefits for other children as healthcare systems improve.

Five African countries are pilot sites for the programme. These focus countries, led by their Ministries of Health, include Morocco, Ghana, Zambia, Senegal and Zimbabwe. Mali, Cameroon, South Africa and Uganda [2] are in the early stage of implementation. Ten core projects have been proposed to reach the 60% survival target and reduce the suffering of all children with cancer [1]. The African branch of the International Society for Paediatric Oncology (SIOP), SIOP Africa, advocates focusing on seven indices that would benefit most African countries. These foci include evaluation of cancer health systems, developing cancer control plans (CCP) and cancer registries, indices for childhood cancer care, national protocols and training packages for the childhood cancer workforce. In 2019 and 2022, the SIOP Africa conferences in Egypt and Uganda respectively, enthusiastically highlighted the GICC in light of its importance [3,4].

Independent from the GICC, numerous countries have developed their capacities parallel to the index outcomes of the GICC. These include partnerships with international institutions and long-term twinning collaborations. The aim of this article is to review initiatives implemented in African countries and published results to evaluate baseline outcomes.

Methodology

A literature search of African initiatives based on GICC core projects was performed on multiple online databases including PubMed Central, Google and Google Scholar. Keywords included (but were not limited to) the six index cancers, "Africa", "Sub-Saharan Africa", "outcomes" and "survival" including individual country names. Data presented at the SIOP Africa conferences, available datasets and data from ongoing research and articles published between January 2018 to October 2022 were included. A descriptive review was formulated from the results of the literature search.

Strategic project development in African countries

Paediatric cancer control strategy development

Adequate registration to document true childhood cancer incidence is lacking in most countries5. Underdevelopment of treating facilities contributed to high mortality compared to well-resourced countries or countries with an organised paediatric oncology management system5. Up until 2022 more than 90% of countries had no individual CCP. Mauritius, an upper-middle income country without any paediatric oncologists, initiated childhood cancer goals in their 2022-2025 CCP, while Uganda, a low-income country with formal paediatric oncology services, also included childhood cancer as a priority in their 2022-2025 CCP [6,7].

Where adult CCP correctly focus on prevention, lifestyle adaptation and screening, it is currently not possible to prevent most cancers in children as many childhood

Jaques van Heerden[1,2,3], Emad Elhuni[4], Hamida van Staaden[5], Joyce Balagadde-Kambugu[1], Jennifer A Geel[6]. Department of Paediatric Oncology, Uganda Cancer Institute, Kampala, Uganda[1] ,Paediatric Haematology and Oncology, Department of Paediatrics and Child Health, Faculty of Medicine and Health Sciences, Stellenbosch University, Tygerberg Hospital, Cape Town, South Africa[2], Paediatric haematology and Oncology, Department of Paediatrics, Antwerp University Hospital, Antwerp, Belgium[3], Department of Paediatrics , Tripoli Children's Hospital,Tripoli, Libya[4], Department of Paediatrics, Frere Hospital, East London, Eastern Cape, South Africa [5], University of the Witwatersrand, Division of Paediatric Haematology-Oncology, Charlotte Maxeke Johannesburg Academic Hospital, South Africa6 Corresponding Author: Joyce Balagadde Kambugu, E-mail: joyce.balagadde@uci.or.ug

A peadiatrician attending to a child *(courtesy of Pamela Mawanda)*

cancers develop from as yet undocumented inherited or sporadic genetic mutations or other unknown causes[8]. Screening is of value in families known to have retinoblastoma: organisations such as Alliance Mondiale Contre le Cancer and the International Society of Ocular Cancer provide services and training for screening and diagnosis of retinoblastoma and have made valuable contributions in many African countries [9,10].

The incidence of HIV-associated malignancies such as Burkitt lymphoma and Kaposi sarcoma may be decreased with effective HIV prevention and control programmes which include mother-to-child prevention programmes and antiretroviral treatment clinics[11].

Vaccination of children against Hepatitis B virus to prevent the development of hepatocellular carcinoma and Human Papilloma Virus (HPV) to prevent cervical and other cancers are notable successes in Africa. Although vaccination for HPV is not yet standard in males, several HPV vaccination programmes are active in Africa[12] Rwanda has already documented a decrease in the incidence and mortality rates from 34.5 cases and 25.4 deaths to 31.9 cases and 24.1 deaths per 100 000 women[12].

The most effective strategy for childhood cancer control is to focus on prompt, correct diagnosis followed by rapid referral for effective, evidence-based therapy with appropriate supportive care[13].

Improving identification of signs of childhood cancer relies on education of both healthcare workers and the public. Reports from Tanzania and Burundi programmes demonstrated that in-person training was effective to increase awareness of healthcare workers of early warning signs of childhood cancer[4]. Active programmes educating the public and health professionals in Cameroon have increased the diagnosis of childhood cancer[14], but the greatest education responsibility is borne by non-governmental organisations[15], universities and nursing institutions[16]. Although the dissemination of the early warning signs of childhood cancer has been performed by government institutions, such as in South Africa and Morocco, these have not become part of the Integrated Management of Childhood Illness or standard practice in most African countries[17]. Although these education and awareness programmes are implemented at the level of institutions of learning and NGOs, they remain the responsibility of governments to fund and support.

The role of CCPs is to address systemic factors contributing to suboptimal paediatric cancer care and to formulate solutions. Late presentation to healthcare facilities, great travel distances, high treatment costs, and facility-level barriers to timely access to treatment have been identified as factors. Studies from Childhood Cancer 2030 Network have proven the cost-effectiveness of paediatric oncology care[18]. In 2014 , the Collaborative Wilms Tumour (WT) Africa Project implemented adapted WT treatment guidelines in six sub-Saharan African countries, using simple and low-cost interventions to reduce treatment abandonment. These social support interventions significantly reduced treatment abandonment from 23% to 12%, (p=0.009) with fewer deaths during treatment (21% vs 13%, p=0.06)[19].

Palliative care involves the alleviation of all forms of suffering associated with life-threatening or -altering diseases. This includes alleviation of pain, symptom management during treatment, assistance with emotional, spiritual and psycho-social suffering, as well as end-of-life care. With the high burden of childhood cancer in Africa, the need for expanded palliative care programmes is acute[20]. Currently Egypt, Kenya, Malawi, South Africa and Uganda have established national palliative care plans or programmes with continuous development of education and training opportunities. These programmes are being extended to other regions including Ethiopia, Niger, Togo and Lesotho[20].

Analysis of cancer health systems

The GICC focus countries evaluate their health systems with the guidance of the WHO. The WHO also assists countries lacking paediatric oncology services, such as Burundi, to initiate the development of childhood cancer teams[21]. The aim is for countries to develop paediatric cancer control programmes independent of adult CCP, as the needs and priorities of children at various stages of development differ vastly from those of adults[8].

The ongoing SIOP Global Mapping Project maps global paediatric oncology services and was initiated in Africa. The findings from 48/54 reporting African countries demonstrated vast disparities: seven countries reported no paediatric oncology services at all, only nine could provide chemotherapy, surgery and radiotherapy and only three were able to provide stem cell transplantation[22]. This information aids governments and policymakers to identify gaps in health care to align resources toward interventions.

Positive outcomes have already been documented in certain GICC focus countries: Morocco has published survival data for the six index cancers, confirming that the country already achieves the target of 60%[23]. In Ghana the evaluation secured complete national funding for the management of four index cancers[2]. Independent from the GICC, Uganda has evaluated the health systems including the needs of childhood cancer[24]. Ethiopia reported a childhood cancer incidence of 8 per 1000 children[25]; that the major reasons for abandonment of care were cost of treatment and extended travelling times to treatment facilities[26]. Part of these efforts is the development and standardisation treatment guidelines for the six index cancers. SIOP has worked to harmonise treatment protocols and guidelines in collaboration

with regional partners such as Franco-African Paediatric Oncology Group (GFAOP), CanCARE Africa, St Jude Global and Global HOPE to foster clinical capacities relevant to individual countries[27].

During the 2022 SIOP Congress in Barcelona, the WHO African Regional Office and the Franco-African Group for Paediatric Oncology announced a collaboration agreement to improve paediatric oncology services in Francophone Africa.

Childhood cancer workforce training

A core multidisciplinary team is essential to manage childhood cancer and should include, at a minimum, paediatric oncologists, surgeons, radio-oncologists and nursing staff[1]. Further members of the team include pharmacists, radiologists and psycho-social support staff.

Training and continued education should be prioritised to achieve the GICC goals[1]. Multiple standardised training programmes are increasing in Africa with African and international resources providing online, in-person and hybrid training and research courses[15]. The GFAOP training programme is tailored to the resources available in Francophone Africa while highly specialised training is provided in Egypt for modalities such as stem cell transplantation and neuro-oncology[28]. The SIOP POINTE Training Database collates available training programmes available to doctors and nurses[29].

During a recent Education Programme Assessment Tool session, hosted by St Jude Global Health, 25 training centres demonstrated well-rounded paediatric oncology training programmes in eight Anglophone countries. The African School of Paediatric Oncology was established in 2012 with support from the Sanofi Espoir Foundation to increase the number of paediatric oncologists in Francophone Africa[30]. Brazilian institutions under Aliança Amarte, support informal training of paediatric oncologists for Lusophone African countries including Angola, Mozambique and Guinea Bissau[31]. The Aslan Foundation is an international partner supporting training and services in Ethiopia.

Baseline standards for the provision of safe and effective nursing care in LMIC have been published by the SIOP Global Health Network nursing working group[32]. In-person nursing training has been established in countries such as Ghana, Morocco and South Africa, while the Global HOPE programme provides a distance-based learning platform teaching basic principles of childhood cancer nursing care in Malawi, Uganda, and Botswana[33].

Although less abundant, paediatric surgery training and radio-oncology fellowships are increasing in Africa with support from established countries such as South Africa and Egypt, international training programmes and the GFAOP.

Defining national standards and guidelines for index cancers

The development of sustainable childhood cancer programmes in Africa is only possible by involving governments who view it as a public health priority[34]. In conjunction with national stakeholders, childhood cancer societies, global health authorities and NGOs with field experience can recommend staffing levels for the paediatric haematology/oncology wards, components of speciality, psychological and psychosocial care[35]. Countries without paediatric oncology services or paediatric oncologists, for example Somalia, South Sudan and Mauritius, should receive increased focus. Both curative and palliative care are of vital importance, while late effects should be monitored and managed in the increasing cohort of children who survive cancer[36,37]. Standardisation is not only important for clinical services but should include diagnostic services such as pathology, radiology and basic laboratory services.

Standardised guidelines for the six index cancers address upwards of 60% of childhood cancers, which are highly curable even in limited resource settings. The Collaborative Wilms Tumour Africa Project implemented an adapted treatment guideline for Wilms tumour in limited resource settings. This multi-national prospective study reported an end-of-treatment survival of up to 68.5% compared to previous survival rates of less than 40%[19].

National strategies should focus not only on cure and survival, but also on retention of children in care by limiting abandonment. The GICC advocates for the alleviation of treatment costs with National Health Care initiatives and universal access to treatment. By empowering parents through intensive counselling, and providing social and financial support, more children complete treatment. The "Towards Zero Percent Abandonment" project significantly decreased death during treatment from 21% to 13% and abandonment of treatment from 23% to 12%, emphasising the critical role of a caregiver for improved survival[38]. The implemented strategies included full cover of transport costs, free medical treatment, a tracking system to remind patients of appointments and more systematic and improved counselling of parents of the need to complete treatment.

Essential Medicines and Technologies Strengthening

Lack of computerised tomography, magnetic resonance imaging, nuclear isotope imaging and pathology services impedes the accurate and timely diagnosis of malignancies[39]. Increased diagnostic capacity plays an important role in improving survival[40]. Although core chemotherapy agents are listed in the WHO essential medicines list, many agents are not available, whilst targeted therapies, considered standard of care in high-income settings, are not affordable in most African countries. Even when chemotherapy is available, restricted access to radiotherapy or paediatric surgical expertise hinder or delay treatment. Judicious Investment in diagnostic modalities could limit costs by decreasing diagnostic delay and increasing the number of children who present with early stage disease[41]. Without government involvement or creative funding solutions to procure and sustain these services, access will remain restricted.

Strengthening and linking cancer registries

In Africa there is no vital health statistics system that can accurately represent the true incidence of childhood cancers, leaving cancer registries are thus often the sole source of information[42]. International efforts driven by the International Agency for Research on Cancer , the WHO, and the African Cancer Registry Network in partnership with individual country registries efforts are increasing cancer surveillance expertise within Africa by providing training and technical assistance[42]. South Africa and Ethiopia have dedicated national childhood cancer registries, while 25 countries have general cancer registries that include paediatric data. These registries are not designed to report survival outcomes. Therefore individual research projects are still important to evaluate the baseline survival outcomes for six GICC index cancers in Africa[1].

Advocacy

Advocacy is an important tool in the enhancement of childhood cancer care. SIOP Africa, the WHO GICC, non-profit organisations and research entities create awareness, highlight limitations in resources and guide education of the public and governmental stakeholders[15]. The aim is to decrease diagnostic delays, improve outcomes and improve quality of life for patients and survivors. Advocacy pertaining to the appropriate use of resources is of vital importance. In Africa, fostering parent groups and lending a voice to survivors motivates further improvement of services and provides information to the general public[15]. Advocacy to governments should include programs for sustainable paediatric oncology healthcare, standardised care in the paediatric oncology community and childhood cancer awareness to referring health services, traditional healers and the general public to further improve childhood cancer management.

Of great relevance to Africa is advocating for the right to life-saving cancer treatment of displaced children and refugees, who have higher mortality rates [4].

Focus towards 2030

Childhood cancer advocacy should be amplified. Research capacity should be expanded to analyse and publish African data to disseminate true incidence and survival data. To achieve the goal of 60% survival by 2030, governments and funders must prioritise improvements in staffing ratios, infrastructure, patient support, research, monitoring and evaluation.

The importance of investing in childhood cancer registries and childhood cancer control programmes cannot be understated. Clinical, academic and research expertise should be shared across the continent, whilst junior staff and emerging researchers are capacitated to meet the demands of increasing numbers of children with cancer being diagnosed and referred to appropriate centres.

Conclusion

Prioritising children's health is an investment in the economy of any country. Africa has taken up the challenge to achieve the goal set out by the WHO in the GICC, s. Published baseline indicators demonstrating high survival rates in some countries give hope to others yet to achieve this goal. Governments should address childhood cancer care with transparent reporting and effective use of available resources. Collaboration and capacity building are key to sustainable improvement of outcomes in Africa.

Further reading

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Africa HEALTH JOURNAL

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Referencing should be numerical and in the Vancouver style. If you prefer, it is acceptable to simply append a list of 'For further reading' rather than adopting the more formal referencing style.

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Obstetrical Care in Uganda

A summary of obstetric care In Uganda by Dr. Kizito Omona

Obstetrics is the practice of caring for women after conception, throughout pregnancy, and during childbirth. Routine obstetric care consists of periodic evaluation and management of pregnancy, including prenatal history and physical examinations following the initial diagnosis of pregnancy; obtaining and recording of weight, blood pressures, fetal heart rates as well as routine chemical urinalysis.

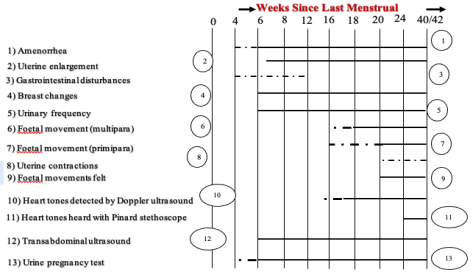

Figure 1: Signs and symptom to guide obstetric care
(Adopted from Me^,decins Sans Frontie^,res, 2019)

As shown in figure 1, the first sign of pregnancy is amenorrhea. This is combined with a progressive increase in the size of the uterus at 7-8 weeks of gestation following the last normal menstrual period. During the first trimester, the breast changes (increased size, tenderness, vascularisation and swollen areolas), urinary frequency and transitory nausea/vomiting are common. In the second trimester the mother begins to feel foetal movement and, in some cases, uterine contractions. Foetal heart tone can also be heard at this stage.

Globally, mothers face multiple risks at child birth and during pregnancy. About 15 percent of all women suffer complications during childbirth which can become life threatening if not managed quickly and appropriately by medical experts. In most of these life-threatening cases, deaths are avoidable because of early identification and management of complications during pregnancy (antenatal care visits), at labour (using partograph) and within the first few hours following child birth.

Obstetric Care in Uganda

Even though it is on a reducing trend, Uganda's Maternal Mortality Ratio (MMR) remains unacceptably high at 336 per 100,000 live births (UDHS, 2016) while the under 5 mortality rates reduced from 90 in 2011 to 64 per 1,000 live births (UDHS, 2016). Similarly, the Neonatal mortality rate (NMR) has remained high and stagnant over two the past 2 decades at 27 per 1,000 total births (UDHS, 2016). In May 2022, Ministry of Health published a revised guideline for obstetric care in Uganda. The components of the obstetric guidelines were structured along the continuum of maternal and newborn care. All protocols in the 2016 guideline were updated and new protocols introduced as summarized in table 1.

Table 1: The Obstetric Care in Uganda (Adopted from MoH, 2022)

Obstetric Care Variables	Management approaches used	Major revision for care
1) Antenatal Care	Goal-oriented ANC	• Updated the old protocol • 8 ANC visits are encouraged
	Anaemia in pregnancy	• Updated the old protocol • use of Parenteral Iron Therapy (Inferon • Management of sickle cell anaemia in pregnancy
	Management of malaria in pregnancy	• Updated the old protocol • Use of ACT in all trimester
	Hyperemesis gravidarum	• Updated the old protocol • Use of vitamin B complex prevents Wernicke's encephalopathies
	Intrauterine fetal death	• Updated old protocol • Definition (Death of a fetus prior to delivery after 26 weeks of gestation) • The use of obstetric ultrasound scan for diagnosis
	Breech presentation	• Updated the old protocol • Contraindication for External Cephalic Version including unsuppressed viral load in HIV positive mothers
	Gestational diabetes	• New protocol
	Preterm (premature) labour	• Updated the old protocol • Fetal viability reduced to 26 weeks • Use of tocolytic agents – between 26 and 34 weeks of gestation to allow for ANC steroids to work
	Pre-labor rupture of membranes (prom)	• Pre-labor rupture of membranes (prom)
	Multiple pregnancies	• Updated the old protocol
2) Intrapartum care	Management of first stage of labour	Updated the old protocol
	Management of second stage of labour	Updated the old protocol
	Management of third stage of labour	• Updated the old protocol • Use of heat-stable carbetocin (100 mcg, when Oxytocin (10 IU IV/IM) is not available or when quality is not certain
	Management of the fourth stage and first 24 hours	• Updated the protocol • Immediate management and follow-up
	Induction and augmentation of labor	• Update the old protocol • Contraindications to prostaglandins use

Dr. Kizito Omona is a Medical Doctor and Lecturer in the Faculty of Health Sciences, Uganda Martyrs University, Kampala, Uganda
E-mail: komona@umu.ac.ug

Obstetric Care Variables	Management approaches used	Major revision for care
	Augmentation of labour using oxytocin	• Update the old protocol • Augmentation of labour using oxytocin is allowed
	Breech delivery	Updated the old protocol
	Face presentation	Updated the old protocol
	Brow presentation	Updated the old protocol
	Transverse lie	Updated the old protocol
	Shoulder presentation	Updated the old protocol
	Shoulder dystocia (stuck shoulders)	Updated the old protocol
	Compound presentation	Updated the old protocol
	Prolonged labour	Updated the old protocol
	The first stage starts at 5cm	Updated the old protocol
	Prolonged active phase	Updated the old protocol
	Cord prolapses	Updated the old protocol
	Foetal distress	Updated the old protocol
3) Postpartum	Postpartum care	• Updated the old protocol • Management of missed abortion
	Breast engorgement	Updated the old protocol
	Cracked/sore nipples	Updated the old protocol
	Puerperal sepsis	Updated the old protocol
4) Hemorrhage	Management of hemorrhage due to abortion	Updated the old protocol
	Management of abortion complications	Updated the old protocol
	Management of sepsis following abortion	Updated the old protocol
	Post-abortion counseling	Updated the old protocol
	Gestational trophoblastic disease management	Updated the old protocol
	Ectopic pregnancy	Updated the old protocol
	Antepartum hemorrhage	Updated the old protocol
	Postpartum hemorrhage	• Updated the old protocol • Use of heat-stable carbetocin and tranexamic acid
	Secondary Postpartum hemorrhage	Updated the old protocol
	Ruptured uterus	Updated the old protocol
	Blood transfusion	New protocol
5) Maternal infections	Urinary tract infections in pregnancy	Updated the old protocol
	Abnormal vaginal discharges	Updated the old protocol
	Genital ulcers	Updated the old protocol
	Genital warts	Updated the old protocol
	Mastitis	Updated the old protocol
	Breast abscess	Updated the old protocol
	HIV/AIDS in pregnancy	Updated the old protocol
	Viral heamorrhagic fever (ebola marburg, lassa, yellow etc)	Updated the old protocol
	Intrapartum care for covid19 in pregnancy	New protocol
	Postpartum care in covid-19 mothers	New protocol

Conclusion

The review protocol for obstetric care in excluded the care for newborn and other cares. These can be available in the Ministry of Health guideline 2022. The term "complicated pregnancy" refers to any pregnancy in which the mother or infant is at increased risk due to a particular obstetric or medical pathology or history. Complicated pregnancies may require higher level monitoring and/or special arrangements for delivery in a medical/surgical setting.

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Hepatitis B virus infection in Africa

A team of experts discuss the burden of HBV infection, factors enhancing its spread and the challenges of controlling the spread of the infection in Africa. They also recommend some strategies that will help in achieving the 2030 goal of elimination of HBV in Africa.

Hepatitis B, previously known as serum hepatitis, is a serious public health challenge globally. It is a major etiological agent for liver diseases including hepatocellular carcinoma, liver cirrhosis and chronic hepatitis. According to the World Health Organisation (WHO), viral hepatitis is a bigger threat to Africa than the HIV/AIDS, malaria and tuberculosis due to the high rate of hepatitis related deaths that occurs annually within the continent. About 30% of the almost 300 million people with chronic hepatitis B infection are resident in Africa, next to the Western Pacific Region. The importance of innovative strategies to reduce and control the spread of hepatitis B virus infection in the Continent cannot therefore be overemphasized. In this review article, we discuss the burden of HBV infection, factors enhancing its spread and the challenges of controlling the spread of the infection in Africa. We also recommend some strategies that will help in achieving the 2030 goal of elimination of HBV in Africa.

Transmission of HBV

The major modes of HBV transmission are vertical transmission, sexual transmission, and parenteral contact with blood or blood products. In endemic areas of Africa, HBV can be transmitted from an infected mother to the foetus or to the child during pregnancy and in the perinatal periods. Mother-to-child transmission is responsible for most infants' infections at ages 6-12 months of life. Mothers who do not receive appropriate treatment have a very high risk of transmitting the infection to their babies. Infection rates as high as 70%-90% have been recorded for HBeAg-positive mothers, 25% for HBeAg-negative/HBeAb-negative mothers and 12% for HBeAg-negative/anti-HBe-positive. Immunoprophylaxis and maternal antiviral agents in the 3rd trimester have been successful in reducing HBV transmission to new-borns, suggesting that most vertical transmissions occur at or near the time of birth while Intrauterine transmission takes place in less than 15% of pregnant women[1,2].

HBV has been detected and experimentally transmitted through several body fluids of infected individuals such as saliva, urine, tears, sweat, semen, menstrual, and vaginal secretions [3]. HBV infection is therefore spread by unprotected sexual contact and contact with above body fluids contaminated with the virus.[3a-c].

Parenteral contact with blood or blood products via transfusion of unsafe blood have been reported in Africa[4,5]. Practices such as tattooing, piercing, injection drug use and other practices that may result in higher exposure to contaminated equipment and body fluids, have also been implicated in the spread of the infection in the continent. Owing to its high stability and ability to remain infectious for long periods of time outside the body[6], other transmission routes in hospital environment may include the use of inadequately disinfected equipment and or improper reuse of sharps.

Diagnosis and viral markers of HBV

Eliminating viral hepatitis as a public health threat by 2030 is one of the Sustainable Development Goals (SDG). Controlling Chronic HBV (CHB) is an important component of this goal as it contributes to about 50% of all viral hepatitis related deaths. Accurate diagnosis and management of Hepatitis B and detecting the presence and activity of HBV are vital to achieving the elimination of the diseases[8]. A number of viral markers are used in the diagnosis of HB, the disease progression and response to therapy.

Detection of HBsAg indicates HBV infection, quantification of HBsAg can also be used to define the stage of the infection, define truly inactive phase, determine response to treatment and predict the possibility of loss of the surface antigen and to determine possibility of HBV reactivation. This viral marker has been used in various studies in Africa to determine the prevalence of HBV infection[7,9,10]. Anti-HBc indicates an exposure to the virus which may or may not have been cleared and it can also be used to identify possible occult HBV infection, while detection of anti-HBc IgM is used in identifying recent acute infection[8,11]. In occult hepatitis, HBsAg is usually negative while anti-HBcore is positive. This is a challenge in the diagnosis of HBV infection in Africa because in most countries, diagnosis of HBV infection is based mainly on detection of HBsAg. The need to run two different assays to establish occult HBV makes its diagnosis more expensive. Presence of anti-HBs indicates protection to HBV which could have been acquired either from previous infection or vaccination.

HBV disease progression and response to therapy is monitored using markers such as HBeAg, anti-HBe, HBV DNA. Detection of HBeAg indicates active HBV replication and is a marker of HBV infectivity [8,12]. It is

Adedayo Faneye[1], Foluke Fasola[2], Adewale opayele[1], Oluseyi akande[3], Babatunde olusola[1], Patrick Njukeng[4], Maryiam Aminu[5] and Georgina odaibo[1]. Department of Virology, Faculty of Basic Medical Sciences, College of Medicine, University of Ibadan [1], Department of Haematology, Faculty of Basic Medical Sciences, College of Medicine, University of Ibadan[2], Department of Medicine, Faculty of Clinical Sciences, College of Medicine, University of Ibadan[3], University of Buea, Cameroon[4], Department of Microbiology, Faculty of Life Sciences, Ahmadu Bello University[5]
Corresponding Author: Georgina Odaibo, georginaodaibo@gmail.com

also associated with high HBV DNA, while anti-HBe is associated with low level of HBV DNA, hence implies a better prognosis. In a study in Nigeria, Odaibo and colleagues detected HBV DNA in over 75% of HBeAb positive but HBeAg negative samples[12]. The implication of this finding in the management and control of HBV in Africa is enormous. Particularly because HBeAg/HBeAb detection assays are used in most African countries for the prognosis of disease and initiation and monitoring of response to therapy. Detection of HBV DNA in an individual indicates HBV infection, and its quantification can be used to define stage of the infection, determine the need for treatment as well as response to therapy[13].

Some other biomarkers are being considered for monitoring disease progression, management as well as determining risk of developing liver cancer. Intrahepatic cccDNA which is maintained in the nucleus of the infected cells and its eradication is required for the permanent cure of HBV infection[14] can be measured to assess viral replication, therapeutic endpoint or cure of HBV infection[15]. Also, detection of serum HBV RNA, transcribed from cccDNA indicates transcription of activities and its level correlates with levels of HBV DNA in treatment naïve patients while it is usually higher in patients on antiviral drug[16]. Similarly, HBV core antigen (HBcAg) is being proposed as a marker for HBV cccDNA transcription. HBcAg can easily be quantified using ELISA or chemiluminescence assay which are relatively cheaper and easier to perform. It will be a good marker for differentiating disease state and to identify patients who can safely discontinue therapy.

Hepatitis B virus (HBV) and Sickle cell disease

Sickle cell disease is a common inherited haematological disorder in Sub-Sahara Africa where HBV is also endemic. The major clinical features of sickle cell disease are lifelong anaemia and recurrent vaso-occlusion, which in addition to infection represent a major cause of morbidity, disability and death. The consequences of the life-long anaemia and vaso-occlusion increases the susceptibility to infections such as HBV as a result of therapeutic interventions[17]. Blood transfusion, a significant therapeutic and prophylactic component of SCD management is a known risk factor for HBV infection. Before the widespread blood bank routine screening of blood units for HBV infection in Africa, the prevalence for HBV among SCD was as high as 22% and HBV was responsible for 50% of post transfusion hepatitis[18].

Several insults to the liver results in liver disease in SCD of which hepatitis due to HBV contributes significantly. The clinical feature of acute and chronic hepatitis due to HBV infection in SCD patients are similar to that in other patients. Chronic hepatitis B (CHB) infection may be asymptomatic, however, progressive disease and advanced liver disease or liver cancer are of concern[18,19]. Fortunately, with universal routine screening of blood units for HBV infection and inclusion of HBV vaccine in the Expanded Programme for Immunization (EPI) in most African countries, the prevalence among SCD patients has reduced to between 1%-5.7% and the prevalence is comparable to the general, population[10,20].

Recent studies have not shown significant correlation with blood transfusion[20-22]. There is no doubt that vaccine confer immunity to acquisition of the virus but there has been reports on some patient having anti-HBs titer below 10 IU/L which is a non-protective titer following HBV vaccination and therefore at the risk of acquiring HBV infection[23,24]. In view of this, it is being suggested that SCD patients should be followed up after HBV vaccine and those identified as not having adequate anti-HBs titre should receive booster dose.

High risk groups and factors enhancing spread of HBV

Although prevalence of the infection varies globally, studies have shown that low resource countries, especially those in sub-Saharan Africa are the most impacted by the infection. The overall prevalence of HBV in most sub-Saharan African countries is between 6-11%, compared to the global 3% prevalence rate[25,26]. The major mode of HBV transmission is percutaneous, although sexual transmission is also very common. Hence, high risk groups include blood donors, pregnant women, sickle cell patients, health workers, untrained community medical providers, people with body scarifications and tattoos, intravenous drug users, persons working with sharps in non- health related occupations and patients that are frequently exposed to sharps like diabetics. Sexually active persons such as teenagers, middle aged individuals, commercial sex workers, and long distance drivers, military and paramilitary officers that lived outside their homes for long periods, as well as HIV infected individuals because of their shared mode of transmission[25,27,30]. Recent studies carried out in Botswana, Ghana and Nigeria showed that the prevalence of HBV among people living with HIV, the general population and health care workers was about 56%, 8.48% and 6% respectively despite the global HBV prevalence of 3%[32-34]. Male infants and toddlers are also known to be at high risk[27]. Under diagnosis of HBV, limited availability of vaccination, screening and treatment in low resource settings are major factors affecting the spread of HBV in Africa[35]. Recently, migration and global travel have also impacted the spread of the virus into regions which hitherto had low prevalence rates[36]. Figure 1 is a word cloud depicting the interactions of HBV high risk groups and factors affecting spread of the virus.

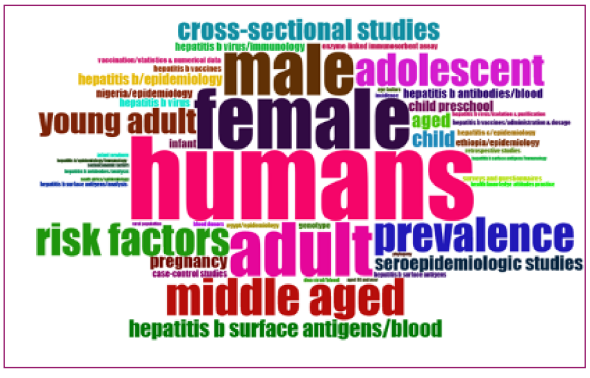

Figure 1: *Word Cloud showing interaction of HBV high risk groups and factors affecting its spread*

DISTRIBUTION OF HBV INFECTION IN AFRICA

Hepatitis B virus was discovered about 50 years ago, and the infection is still endemic in Africa despite the use of vaccines for over 20 years as a preventive measure[37,38]. Around 70% of Hepatitis B infections worldwide occur in Africa. Estimates in 19 African countries show that more than 8% of the population is infected with Hepatitis B. In 2020, the African region accounted for 26% of the global burden for Hepatitis B and C. This can be justified by the recent national estimates made available from the IHM, Schweitzer, the WHO and the CDA for 195, 161, 194 and, 120 countries in the world respectively. Analyzed data from the above 4 research groups indicated that sub-Saharan Africa accounts for the highest prevalence of HBV as presented in Figure 2.

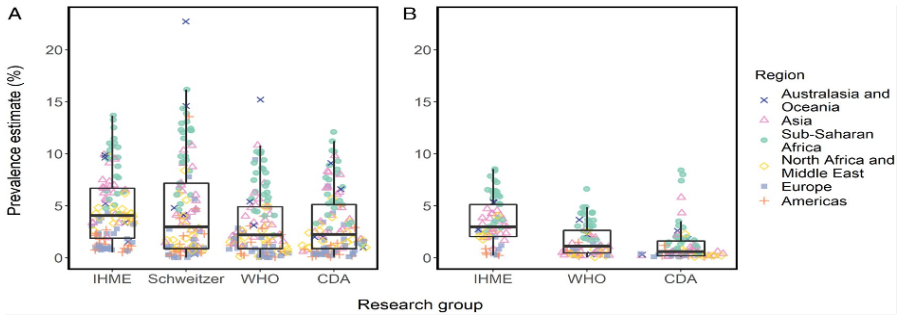

Figure 2: Distribution of country-level estimates of chronic HBV infection prevalence (A) across all ages and (B) in children under 5 years of age in countries covered by the four groups (IHME, Schweitzer, WHO, CDA).

Based on the global viral hepatitis report of 2019, Sub-Saharan Africa is highly affected by HBV with a prevalence in the general population, that ranges from <2% in Seychelles, Botswana and Kenya to ≥10% in countries such as Chad, Liberia, South Sudan, Togo, Mauritania, and Guinea[39]. Prevalence of HBV in specific African countries is shown in Table 1. The differences in prevalence within the African region can be attributed to the fact that by 2018, only 28 countries in Africa had a national strategic hepatitis plan and access to diagnosis and treatment is still limited[39]. Also, many African countries are yet to adopt the policy of vaccination against HBV at birth[40]. There is also a variation in the number of children with chronic HBV infection between countries in Africa (Table 1). WHO classifies the endemicity of HBV infection as low, low intermediate, high intermediate and high. As seen in the map below (Figure 3), most African countries belong to the high intermediate/high endemic areas.

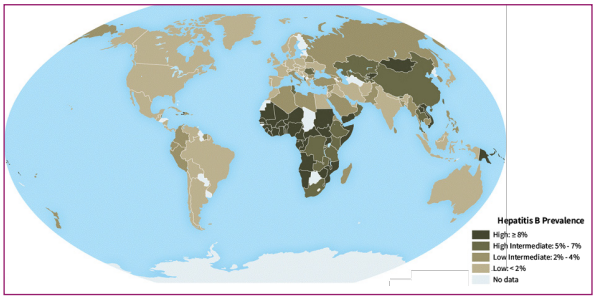

Figure 3: Global distribution of HBV infection (Source-CDC Yellow Book 2020).

Clinical presentation and management of hepatitis B in Africa

Hepatitis B virus infection could present in acute or chronic form. Symptomatic acute hepatitis infection is relatively not common in Africa compared to its prevalence since most infections occur during childhood when there is lack of immunity[41]. However, HBV infections is still a common cause of acute hepatitis in adults in Africa[41,42]. The symptoms of hepatitis B typically involve anicteric phase of fever, body pain, tiredness, etc. and the icteric phase which sometimes may not occur making acute hepatitis B infection in Africa sometimes difficult to distinguish from other common prevalent infections like malaria and enteric infections. Acute hepatitis B infection in Africa rarely progresses to fulminant hepatitis. Chronic hepatitis B infection could be asymptomatic or present with liver cirrhosis and or hepatocellular carcinoma. Chronic hepatitis B infection is the most common risk factor for liver cirrhosis and or hepatocellular carcinoma in sub-Saharan Africa[43]. Mozambique has the highest incidence of hepatocellular carcinoma in Africa and is largely due to hepatitis B infection. Many patients in Africa are not aware of their status until they develop chronic sequalae of the infection making them to present very late[43].

Majority of patents with HBV may not require drug treatment based on the level of detectable DNA[44]. Patients who do not meet criteria for treatment are to be followed up every six months but this is not feasible in many African countries because of cost of HBV DNA assay and the fact that patients pay out of pocket[45]. Available medication for

the treatment of hepatitis B in Africa include pegylated interferon, tenofovir disoproxil fumarate, tenofovir alafenamide, entecavir and lamivudine. Because of high cost, negative e antigen status and normal serum alanine transferase, many patients in Africa with hepatitis B nay not benefit from pegylated interferon[46]. Because majority of the patients with hepatitis B in Africa lack the e antigen, they have to be on oral antivirals for a long time, mostly for life[47].

Challenges with the management of hepatitis B in Africa include out of pocket payment system, non-availability or inadequate facilities for viral DNA quantification in some places and its high cost where available and low adherence to medication for various reasons including cost[48].

Molecular Epidemiology of Hepatitis B Virus in Africa Hepatitis B virus (HBV) has nucleotide sequence heterogeneity because its polymerase, the reverse transcriptase, lacks proofreading ability and the genome has been estimated to evolve at an error rate of approximately 10–3 to 10–6 nucleotide substitutions/site/year[49]. This leads to the occurrence of various genotypes, subtypes, mutants, recombinants, and even quasispecies in the background of the long-term evolution of HBV50. Ten (A to J) genotypes are so far identified which differ in more than 7.5% of their nucleotide sequences (Velkov et al., 2018). Coinfection with different HBV genotypes further leads to intergenotypic recombination of HBV strains and genotypes A and genotype C show a higher trend of recombination than other genotypes (Lin and Kao, 2015).

Globally, genotypes and sub-genotypes are related to disease prognosis and progression, chronicity of disease, response to antiviral and interferon treatment[51]. This is an important feature that must be considered by a physician, particularly for implementation of personalised medicine. The geographic distribution of HBV genotypes could also be possibly linked to route of exposure. Genotypes B and C are more commonly found in high-endemic regions of vertical exposure while other genotypes are predominantly detected in regions of horizontal exposure[51]. HBV genotype distribution may similarly be influenced by socio-demographic, ethnic, or migratory factors[52].

In Africa, the geographical distribution of HBV genotypes assumes a particular pattern in Africa (Table 3). The predominant genotypes present in south-eastern Africa, North Africa, and West Africa are genotypes A, D, and E, respectively. Although genotype E is limited to West Africa, its distribution however, expands to parts of central Africa53,54. A meta-analysis of pooled studies on HBV genotypes conducted in West Africa from 1996 to 2018 reported genotype E with prevalence of 90.6% while genotypes A and D had prevalence of 7.8% and 0.74% respectively. In addition, coinfection between genotypes E and A was reported as 0.86%[55]. In West Africa, one or more A/B, A/C, A/E, C/E, D/E, and D/E/A recombinants have been reported[56].

Conclusion and Recommendations

- There is a need to develop a fourth-generation assay with the ability of detecting HBsAg and antiHBVcore in a single run. This will help to address the challenge of running multiple assays to arrive at an appropriate diagnosis and also reduce cost to patients.
- There is need to develop simple and affordable methods for quantification of HBV DNA in resource limited settings like Africa.
- HBV in Africa needs similar attention given to the control of HIV infection. Awareness in the communities, provision of vaccine and post vaccination test for protective level of anti-HBs titre among high-risk populations such as SCD patients and health care workers, support for testing and provision of drugs for treatment of the infection by governments in the African continent.

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Planetary Health challenges a hub for transdisciplinary collaborations and sustainable development

A team of experts discuss the burden of HBV infection, factors enhancing its spread and the challenges of controlling the spread of the infection in Africa. They also recommend some strategies that will help in achieving the 2030 goal of elimination of HBV in Africa.

Planetary health as a field of scientific inquiry focused on addressing the challenges posed by environmental changes on human health [1], and the state of natural systems through transdisciplinary collaborations (TDC), for sustainable development. The process brings together diverse interest groups to mitigate climate change, protect biodiversity, enhance food security, promote sustainable land use etc., and all other processes that aims at safeguarding human health in the Anthropocene [2- 4]. Attention accorded to economic development at the expense of environmental sustainability place planetary guards at risk of poor mitigation [5]. According to World Health Organization 25% burden of global disease are caused by modifiable environmental factors related to air, water, soil, and food [6]. Indeed, planetary health require greater commitment to knowledge discourse that leverage environmental changes with impact on human health [2, 3].

Planetary health challenges could be best managed through application of transdisciplinary thinking [7, 8]. Recently, transdisciplinary approach to research and learning is gaining recognition, due to the fact that disciplinary specialization creates exclusion, division and isolation in the context of increase contemporary multi, inter, and transdisciplinary adoption to research and learning [9].

Moreover, planetary health issues are not categorised into disciplinary silos due to their complexity and multiplicity, which makes their management by individual discipline challenging [10,11]. This was partly due to lack of cooperation between disciplines and/or between society and researchers [12]. Sometimes collaboration occurs between disciplines for selfish reasons, and as such attract little attention [13, 14, 15].

Against this background, the study aims to highlight planetary health challenges and provide a synopsis on TDC as a means of addressing the highlighted challenges by answering the following questions: What is planetary health? What are the challenges confronting planetary health? What is transdisciplinary collaboration? How TDC addressed planetary health challenges? How to form and maintain reliable relationship in TDC? How does transdisciplinary collaborations address unforeseen issues?

Methodology

The conduct of the literature search started from April 11th to 30th May 2018, through PubMed, Web of Science (all databases), Science direct, ProQuest (environmental) and EMBASE databases. Additional search was performed in Google Scholar to identify literature on floods based on the cited references in the narrowed articles for inclusion.

Criteria for inclusion

The inclusion criteria utilized were as follows:

- Articles published on the 1st January 2008 to 31st December 2018 (to date), except for two articles, which were considered based on their relevance to the topic under study.
- Only articles published in English language.
- Peer reviewed articles were the initial choice for inclusion. However, other types of articles like editorials, commentaries and special publication related to the topic in contention are included.
- The considered articles were exclusively on Planetary health & Transdisciplinary collaborations

The selected literature has at least to address environment or health governance issue in the context of planetary health and sustainable development. The literature was sort based on the highlighted issues; as such, the study was not exhaustive but selective. The search stages of this study were as follows:

Search technique

A search technique targeting relevant literature that address the questions raised on planetary health and transdisciplinary collaborations was used. To arrive at the literature, combination of search keywords was utilized, thus; planetary health, challenges confronting planetary health, transdisciplinary collaborations, relationship in transdisciplinary collaborations, and issues in transdisciplinary collaborations (See table 1).

The literature review search was exclusively systematic, while the presentation of the adopted text

Umar Ibrahim[1] and Jason Prior[2] Public and Environmental Health Department, Faculty of Basic Medical Sciences, College of Medicine and allied Medical Sciences, Federal University Dutse[1], Ibrahim Aliyu Bye-Pass, Dutse, Jigawa State, Nigeria, West Africa. Institute for Sustainable Futures, University of Technology Sydney, Australia.
PO Box 123, Sydney, NSW 2007, Australia2.Corresponding Author: Umar Ibrahim, Email: umarsap@yahoo.com

was both systematic review and narrative synthesis [16]. Narrative synthesis is particularly relevant in a situation where statistical approach is not considered, and combination of findings from multiple studies, focusing on a wide range of question is adopted [17]. The process of the review begun by removal of duplicate articles, then abstracts and conclusions were checked and reviewed for inclusion. The initial search for planetary health & Transdisciplinary collaborations returned [2,192,112] articles, narrowed to 87 and 30 respectively. The selected text was analysed carefully and critically synthesised and included in the review (see table 1).

Table 1: Search technique & articles selection

Theme	Search words	Returned	Narrowed	Selected
Planetary health & Transdisciplinary collaborations	Planetary health	58	29	13
	Transdisciplinary Collaborations	2,191,540	12	10
	Trans discipline	514	51	12
	Total	**2,192,112**	**87**	**30**

Overview of Planetary Health

The term Planetary health gained prominence between the 1980s and 1990s [2], and in 2015 becomes a field of scientific inquiry [3], and policy. Planetary health highlights relationship between human health and state of natural systems [18,3,4]. In this regard, [1] defined Planetary health as a subject that explores the influence of environmental changes on public health for planning and policy within ecosystems realm. Others posit planetary health as a concept that highlights environmental changes with effect on human health [19, 2, 20].

In brief, the notion of planetary health is wide; it encompasses environment, human health, transformation, collaboration and multisector integration (4), among others for sustainable development (1). Sustainable development (SD) thrives, also, on transdisciplinary collaborations by exploring the connections between disciplinary domains, for conceptual and analytical spaces, through which obscured disciplinary inquiry are reconciled and synergized (2). Planetary health challenges and sustainable development paradigm aspire to manage the present human's interaction within the planet's natural systems, to safeguard the future (4), as such, the fields demand transdisciplinary approach to thrive.

Whitmee et al. [4] identified three major challenges to planetary health: They are; 1) imagination 2) knowledge gap and 3) governance challenges. 'The consequences of these challenges are far reaching', says [3] considering the effect of environmental changes like climate change on water pollution, fishing, land contamination, and ocean acidification among others on human health [4]. Indeed, the trend calls for collaborative actions to counter the failure of the current approach [8,]. The time to curtail this trend is now, there should be no excuse from the constituencies with stake in improving health and environmental change [4]. Therefore, the starting point toward achieving the feat is support for research on the intersection between environmental changes and population health [6,7]. TDC denotes unprecedented opportunities for mitigation through advocacy and treaties for protection of health in the present and longterm term [4].

Coutresy of Graeme Williams-Panos

Solutions are within reach, and do not totally rely on technology, but on determination and strong political will [20]. Additionally, SDGs provide opportunity of addressing planetary health challenges, by extrapolating it potentials as transdisciplinary subject at the intersection of human health and that of the planet's natural system [1].

Transdisciplinary Collaborations

Prefixes like multi, inter, trans. etc. attached to root word 'discipline' denotes an engagement of two or more disciplines in the pursuit of a shared goal. The prefix indicates specific interdependency among the engaging disciplines [9]. For example multi-disciplinary – denotes disparate disciplines working toward a common goal but act separately; inter-disciplinary – denotes a fusion of disciplines; while trans-disciplinary – denotes grouping of diverse disciplines, particularly academics in pursuit of common goals [11]. This study focusses on transdisciplinary collaborations.

Transdisciplinary collaborations (TDC) integrate different disciplines based on knowledge and experience; it explores association between factors and outcomes; and it also guide understanding and identification of joint problems for sustainable solutions [7]. TDC is formed for diverse reasons, those in the academics may form TDC to generate knowledge and publish articles;

private for-profit organizations may join with the aims of profit maximization, while discharging their corporate social responsibility (CSR), while, NGOs may join to exert pressure on private and public sector to enhance activities in question. As such, TDC guides understanding of disciplinary needs, development of methodology, mutual accountability, and strategic problems solving approach [3].

Sometimes TDC is marred by lack of clearly defined objective, improper disciplinary integration, deficient strategic planning, domination by certain discipline, poor communication between disciplines, lack of knowledge, dysfunctional funding mechanism, and contradicting hierarchy, structure and coordination [15]. Therefore, TDC requires understanding of shared roles and responsibilities of each project team [7].

Planetary Health Emergence Transdisciplinary Collaborations

Planetary health as a field of inquiry needs combined efforts and contributions from a wide range of disciplines like natural sciences, health, engineering social sciences and governance sectors [14]. In this regard, planetary health seeks transdisciplinary collaborations, for knowledge acquisition and sharing across disciplinary boundaries, through reliable relationships and cooperation. Also, the intersection between environmental changes and human health, allows TDC to explore specialities, formalities and professionalism of the disciplines in collaboration for inform policy formation and decision implementation [7].

Additionally, the deteriorating state of the ecosystem calls for transdisciplinary management, to reduce the threat confronting it[2]. TDC approaches enables knowledge and problem-solving skills sharing, through dialogue for holistic sustainable solutions[7]. However, a crucial puzzle in TDC, is how to achieve effective collaborations among disciplines and sectors.

How to form and maintain reliable relationship in TDC?

Building and maintaining TDC begins with shared interest and justification for participation by the collaborating bodies. Then quality of interpersonal relationships, communication, trust and accommodation of differences [6]. When potential collaborators agree on structure, procedures and other protocols; the following issues are significant TDC's success moderators:

Trust

Building trust among collaborating disciplines is highly significant in maintaining relationship. Trust building thrives on transparent procedures especially at a time when relationship is subject to survival test, following negative outcome or fracas. Trust development is a gradual process in need of commitment, accountability and responsibility, devoid of exploitation from all parties involved [1].

Training

Training of TDC's participants is significant in the maintenance of a successful collaborative relationship. Training nurtures theoretical and methodological understanding of project issues in contention. Training enables TDC participants to keep abreast with language and culture of disciplines involved in a project. Training provides the needed skills with which to overcome challenges, particularly those that sub-consciously draw participants back to disciplinary siloed approaches, rather than the needed cross-disciplinary input for TDC [9].

Knowledge Integration

Knowledge integration is part of TDC objectives and strategic processes. Knowledge integration allows interaction of experience, ideas, information, innovation and skills among collaborators (5).

Multiple Engagement

Multiple engagement denotes voice diversity of disciplines, target benefactors, and various methods and approach adoption for TDC [4]. Multiple engagement enhance familiarization of disciplinary levels of engagement, processes and teamwork [4].

Integrated Management

Integrated management in TDC refers to the approach employed in managing different disciplinary needs in a collaborative project. It encourages informal conversation on issues bothering the project, to learn from each other. Integrated management allows collaborators solve complex challenges, through disciplinary participation and commitment [3]. To this end, solving planetary health problems depend on coordinated TDC at all levels of governance and the ability to solve unforeseen issues, circumstance or differences among the disciplines in TDC.

How does transdisciplinary collaborations address unforeseen issues?

Every aspect of project life in TDC should be distinct, clear and free of ambiguity. The disciplines in a collaboration should understand their basic differences in concepts like methods, culture, objectives and boundaries, including system of communication, protocols, tools and epistemology. Additionally, administrative structure and resources; planning, adequate time, monitoring and evaluation frames are critical TDC outcome metrics [9]. The attainment of the aforementioned attributes helps in avoiding unforeseen circumstance in collaboration.

Qualitative judgemental skill should be employed in assessing TDC engagement process, avoiding reliance on single discipline for decision making [8]. A good sense of judgement allowed free flow of shared communication, which support collaboration and innovation. Indeed, side conversations and smaller meetings between two or three disciplines create trust [3], an important feat in conflict resolution. Informal engagements during workshops and meetings helps in identifying loopholes at earlier stages. Other important factors worthy of consideration when building TDC includes stakeholders' identification, participants and leaders' selection, roles identification and distribution, identification of common

and differential interest, and development of acceptable protocol and processes [3].

Sound understanding of how contextual factors influence the effectiveness of transdisciplinary collaboration within diverse disciplines suggest extrapolations with caution, due to disciplinary differences. Also, disciplines in collaboration should be conscious of goals changes overtime, depending on the stage of the project[11]. Additionally, inherent complexities of TDC effectiveness must be identified and address accordingly. Minimum success requirement of a project should be outline prior to TDC kick up, and additional investment on other influential requisites should be available. Importantly, fund allocation should receive high priority prior to launching of a project, especially in a project with large number of participants, diverse goals, and disciplines with diverse leadership styles [14].

Reconciliatory committee membership within TDC should cut across the paradigm of the disciplines in collaboration. Wider membership enhanced familiarity, flexibility and creativity for integrated solutions. Members with proven teamwork skills should be given preference, because of their potential to contribute [14]. TDC projects involve significant theory, methods, skills and knowledge sharing for effective participation, bind on mutual commitment addressing project objectives, reflective of opportunities for professional and personal development in participatory spirit. Therefore, selection of disciplines for TDC should be carried out in variation of each discipline, avoiding stereotype and assumptions. Each, discipline should be assessed based on its ability to contribute. Respect is another factor that needs to be maintained among disciplines through personal relationship all the time [12].

Emergence TDC provides an opportunity for understanding various impacts of environmental issues on health [13], such as, the effect of natural disasters like floods, wild-fires and drought among others and their management. For example, the effect of floods on urban settings is not the physical one alone, it includes psycho-social impact on daily life during the episode. Moreover, to make sense on flood pathways and it impact on health, a brief outlook of urbanization and urban health in the context of environmental hazard, would provide a more complete picture of how flood disasters impact the health of individuals and communities from diverse disciplinary perspectives, in urban settings [14].

Conclusion

In this paper, planetary health transdisciplinary collaboration processes and the confounding challenges to the achievement of sustainable development are highlighted. The identified challenges include isolation, separation and divergent experience of individual disciplines among others. Ideal concept of planetary health thrives on environmental sustainability and TDC, which implies that challenges confronting planetary health cannot be managed by one specialty, indicating 'disciplinary inadequacy', as such demands for contribution through collaborations from diverse disciplines. The study further reveals that transdisciplinary collaborations enhanced disciplinary interactions, guides conceptualization of methodology and objectives of a project, and understanding of the needed solutions through shared problem-solving techniques. Additionally, systematic understanding of the TDC arrangements in health and environmental research, for the conduct of successful transdisciplinary collaborations for sustainable development.

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Taking your HIV medication EVERY DAY can help you be here when I grow up. I heard there's a "Triple Pill" that can make it easier.

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The 2014 Namibian Guidelines for Antiretroviral Therapy and The World Health Organization recommend Fixed-Dose Combination Therapy
Consolidated Guidelines on the Use of Antiretroviral Drugs for Treating and Preventing HIV Infection, Geneva, World Health Organization, 2013, (http://www.who.int/hiv/pub/guidelines/arv2013/en)

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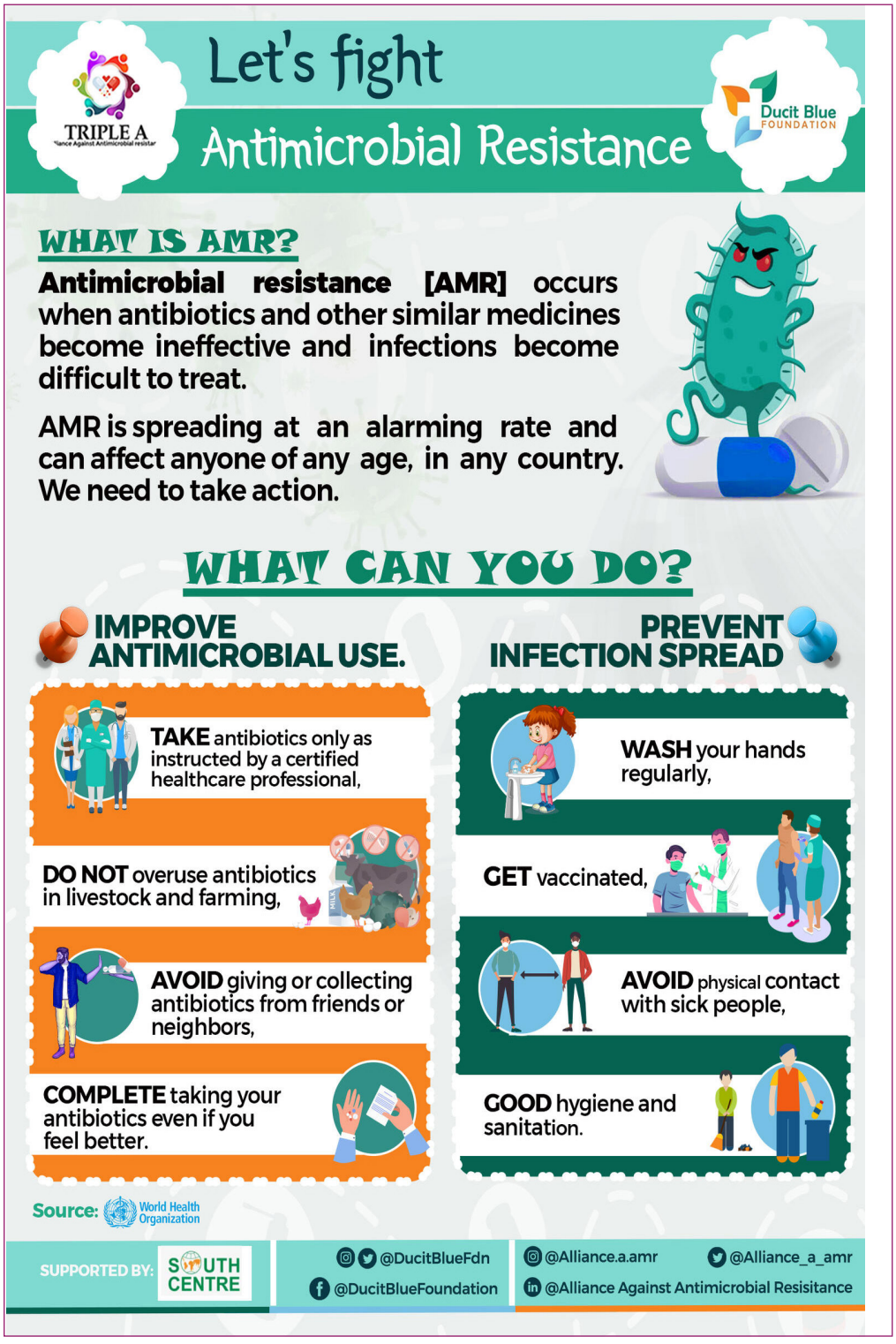
Group publishes Antimicrobial Resistance (AMR) prevention infographics in over 50 African languages

Alliance Against Antimicrobial resistance (Triple-A) describes the importance of creating simple, clear, and translated AMR messages for the population.



Antimicrobial resistance (AMR) is resistance of a microorganism such as bacteria, fungi, viruses and some parasites to an antimicrobial medicine to which it was originally sensitive. As a result, antimicrobials e.g. (antibiotics, antifungals, antivirals) become ineffective and infections become difficult to treat. AMR is primarily driven by misuse of these medicines and has the potential to cause not only 10 million deaths annually by 2050 but also push 28.3 million people to poverty. It is a One Health issue, meaning it needs collaboration between the human, animal and environmental health sectors. Research evidences have reported that most people in the communities don't understand AMR nor do they know what a threat AMR is or why we need to use our medicines more judiciously.

Coutresy of Graeme Williams-Panos

AMR terminology is quite complex and has geographic, disciplinary, and societal variations that affect understanding and interpretation. Thus, without simple, clear, and translated AMR messages, populations are misinformed, and left with popular myths and belief systems regarding the use of antibiotics. This initiative served as an opportunity to build on the energetic power of young people and future describers, dispensers and users of antimicrobials to bridge the gap that exists in AMR awareness by developing and disseminating unambiguous, clear, and translated AMR messages both online and onsite reaching hard-to-reach and underserved populations. The first objective of the global action plan on AMR aims to improve the awareness and education of antimicrobial resistance. We intended to contribute to these global efforts by ensuring people have the right information on AMR. Besides, people can only take the right action when they have the right information. By making AMR messages as clear and unambiguous as possible, people would understand the need to use antibiotics the right way and they would also know why we all need to do our parts in combatting the menace that is antimicrobial resistance (AMR).

Our team at Alliance Against Antimicrobial resistance

(Triple-A) led by Yusuf Babatunde and Naomi Chikezie collaborated with Ducit Blue Foundation led by Pharmacist Estelle Mbadiwe under their youth against antimicrobial misuse (YAAM) project to develop evidence based antimicrobial resistance (AMR) messages into a one-page infographic. The one-pager gave a short and simple description of AMR and what individuals reading the content should do in their respective homes and communities to prevent infection spread and improve antimicrobial use. We then crowdsourced ideas from young people all over Africa to translate the one-page infographic into over 50 local languages. By providing simple, clear, evidence-based, translated, and unambiguous AMR messages, we want to ensure that the global effort against antimicrobial resistance is tailored to various African communities so the right action can

alliance.a.amr@gmail.com and info@ducitblue.com

be taken.
These translated AMR messages were then disseminated onsite by going to hard-to-reach and often neglected populations in Nigeria. Our AMR champions visited local markets, farms, schools, and bus stops across 3 states in Nigeria (Kwara, Oyo, and Borno State) to share these messages and made concentrated efforts to ensure the heart of the messages is communicated clearly. This project was also replicated in Senegal, Kenya, and Uganda. In addition, a 3-day massive social media campaign on the translated infographics was also conducted on Twitter and Instagram. LinkedIn, and WhatsApp. So far, from the webpage analytics, over 800 people across 38 countries have viewed our translated infographics. A total number of 254 people have downloaded the infographics for their own individual campaigns in their respective countries. Also, we have over 74,000 engagements across our social media pages on Twitter, Instagram, Linkedin, and WhatsApp. During the state level awareness activities, we were able to reach more than 3,000 people across the various locations.
Community engagement can promote antimicrobial resistance (AMR) behavior change as it has the potential to engage communities to create locally relevant solutions, particularly in LMICs. However, in order to change behaviors, engagement with people through AMR education and awareness is necessary to fully understand the subject. We strongly believe our project is a huge step in sparking responsive dialogue in the community on AMR. This project was supported by South Centre as part of the world antimicrobial awareness week activities. This was a great opportunity to put Nigeria on the map, addressing the global health security threat of AMR.

We would like to acknowledge the support of Prof Iruka Okeke, professor of Pharmaceutical Microbiology, University of Ibadan for reviewing the infographic.

Click the link below to check out the infographics:
https://bit.ly/amrweek22

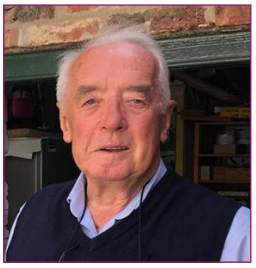
Call to Action: Let's all act now to stop Antimicrobial Resistance.

What do you need to do?

1. Get the picture for your local language.
2. Spread the word on social media and remember to tag us and our partners.
3. Use the infographics for your sensitization programs and outreach in your community.
4. Share the infographics with your families and friends.

Contact Us: alliance.a.amr@gmail.com and info@ducitblue.com

John L Craven, MD, FRCS



Dr. John L Craven, MD, FRCS, born in 1935 and who passed away on 14th December, 2022 in York, UK will be sorely missed and fondly remembered by his family in the UK, several generations of surgeons in Uganda and the surgical community in Eastern Africa.

John Craven, a husband, father, grandfather, friend, surgeon, teacher, sculptor, mentor and writer was a generous man to family, students and friends. He loved Africa and Uganda in particular. He came to work as a Senior Registrar in General Surgery at Mulago Hospital and Makerere University from 1966 to 1971 with Sir Ian McAdam. Together with other colorful members of the department such as Dennis Burkhit, Imre Loeffler, Ronald Huckstep among others, surgery became popular as a leader in services delivery, education and research. For example, the introduction of the Master of Medicine program at Makerere was led by Sir Ian McAdam and John Craven is credited with drafting the first M.Med Surgery curriculum. Prior to the launch of the M.Med program, they had conducted training and examinations for the Primary Fellowship of the Royal Collage of Surgeons in Kampala, bringing examiners from the UK and the pass rates were much higher than candidates trained and examined in the UK.

He and his wife Pauline returned to the UK mainly because of the need to give their four children the education that they needed. He worked first in Cardiff, Wales before being appointed a Consultant in York, England where he and family live up to now. While in Cardiff, he took in my classmate, Wilson Okwonga and his wife Phoebe, who were in exile having run away from Idi Amin government.

John kept in close touch with Africa and Uganda through the Association of Surgeons of East Africa (ASEA) and later the College of Surgeons of East Central and Southern Africa (COSECSA), whose meetings he attended regularly including participating in their projects. He carried out inspections of hospitals for accreditation as training sites for COSECSA and later visited anually to work for several weeks at the Lacor Hospital in Gulu, northern Uganda. He taught and mentored many young surgeons who have submitted the following reminiscences of their experience with him.

"John Craven will be fondly remembered for his unusual mentoring style (not commonly found these days) – he ensured he knew and interacted with ones' family too. He didn't shy away from telling one's spouse what he thought of you and your surgical skills and where he thought you should go or do. You joined his family when he took you on".

"He took a number of young doctors under his wings, became very fond of us and infused into us a love of surgery and with it a small dose of himself-he was capable of a little harshness if wrong was committed".

"Thanks to his tireless efforts, there now exists a small crop of highly skilled, compassionate, dedicated, but also tested surgeons who inherited their professional traits from their mentor".

"We loved him dearly and picked up a lot of his style over time. He kept tabs on his mentees and their family and did not shy away from "telling it as it were". This is something many shy away from today in a bid for popularity. His strong opinions did make him unpopular in some circles - show me a surgeon without strong opinions".

He taught clinical examination, clinically applied anatomy and how to navigate life in Uganda. He kept a keen interest in Ugandan politics. both national and hospital. He was full of rich stories working in the 1970s Uganda to date and of his home in York. Holding deep insight into the goings on, to advise after hearing one's view".

He believed passionately that medical schools must recognise the supremacy of clinical excellence as the foundation of teaching and research. He wrote "clinical teachers must be, first and foremost, clinicians with three qualities above all others; a love of teaching, accessibility to students, and a considerable clinical experience. I say this not to exclude the value of research but merely to put research, as it were, in its place subordinate to that of teaching. No amounts of Grand Rounds, lectures, internet searches or essays are substitutes for bedside teaching".

John was relaxed, socialized and made friends easily. He had a relationship with Ugandan political leaders including Idi Amin and Milton Obote. A recent newspaper, recalled how one of Obote's ministers called him at 3am one night to treat wounds inflicted on him during a fight over a woman.

At a personal level, John was a close family friend. He together with Sir Ian MacAdam, made sure that I was recruited into surgery. We kept in touch all those years and with my wife Catherine and our children visited their family home in York many times and he attended weddings of our children as well as functions in my rural community. One time he visited us at Ngora hospital and decided that we needed money. He mobilized twelve surgeons from Eastern Africa and UK to contribute monthly to top up my salary for four years.

That is the generous, loyal and loving John Craven who will remain in our hearts. He will be remembered by all of us with love, respect and admiration. His memory and legacy will last in our hearts and our work forever.

Francis Omaswa, Founding Executive Director African Centre for Global Health and Social Transformation (Kampala), Founding Executive Director of the Global Health Workforce Alliance; and Publisher of Africa Health

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- A maximum of 1000 words, Calibri font, point 12
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General

Cardiovascular outcomes in adults with hypertension with evening versus morning dosing of usual antihypertensives in the UK (TIME study)

Evening dosing with antihypertensive therapy has been thought to result in better cardiovascular outcomes than morning dosing. Researchers, through this large study compared morning and evening dosing in patients with hypertension. A total of 21104 were randomly assigned (1:1) to either take all their medications in the morning or evening and followed up for a mean duration of 5 years. The primary outcome was cardiovascular death or hospitalization for myocardial infarction or stroke. By the end of the follow-up, the researchers found no significant difference in the occurrence of primary outcome events in the evening or morning groups (3.4% versus 3.7% respectively). The researchers hence concluded that patients be advised to take their antihypertensive medications at a convenient time that minimizes undesirable effects.

Reference

Mackenzie IS, et al. Cardiovascular outcomes in adults with hypertension with evening versus morning dosing of usual antihypertensives in the UK (TIME study): a prospective, randomised, open-label, blinded-endpoint clinical trial. Lancet. 2022 Oct 22;400(10361):1417-1425. doi: 10.1016/S0140-6736(22)01786-X. Epub 2022 Oct 11. PMID: 36240838; PMCID: PMC9631239.

Rivaroxaban treatment for six weeks versus three months in patients with symptomatic isolated distal deep vein thrombosis: randomised controlled trial

Isolated distal vein thrombosis accounts for a majority of all deep vein thromboses (DVT), with a high frequency of recurrence. The optimal duration for anticoagulant treatment is controversial. Researchers compared the efficacy and safety of two treatment durations with rivaroxaban (6 weeks Vs 3 months) in 402 adult patients with symptomatic isolated distal DVT. They were equally randomized to receive either rivaroxaban or placebo for additional 6 weeks after standard 6-weeks therapy and followed up to 24 months. The efficacy outcome was a recurrence of venous thromboembolism (VTE) whereas the safety outcome was major bleeding during follow-up. Recurrence of VTE occurred less in the 3-months arm (11%) compared to 6 weeks-arm (19%). Researchers hence confirmed that 3 months of rivaroxaban treatment reduced the risk of VTE without increasing the risk of hemorrhage.

Reference

Ageno W, BertÃ L, et al. Rivaroxaban treatment for six weeks versus three months in patients with symptomatic isolated distal deep vein thrombosis: randomised controlled trial BMJ 2022; 379 :e072623 doi:10.1136/bmj-2022-072623

Intermittently Scanned Continuous Glucose Monitoring for Type 1 Diabetes

Fingerstick blood glucose testing is the most practiced way of glucose monitoring. Whether continuous glucose monitoring is more beneficial is uncertain. Researchers, through a study involving 156 participants with type 1 diabetes and high glycated hemoglobin levels, compared the efficacy of intermittent scanned continuous glucose monitoring (intervention arm) to fingerstick testing (usual care). Participants were randomised in a ratio of 1:1 and followed up to 24 weeks. The primary endpoint was glycated hemoglobin (HbA1c) level at 24 weeks. The researchers found that the HbA1c decreased more in the intervention arm than in the usual arm 8.7% to 7.9% versus 8.5% to 8.3% respectively. The researchers hence concluded that continuous glucose monitoring resulted in significantly lower HbA1c levels than fingerstick testing.

Reference

Leelarathna L, et al. Intermittently Scanned Continuous Glucose Monitoring for Type 1 Diabetes. N Engl J Med. 2022 Oct 20;387(16):1477-1487. doi: 10.1056/NEJMoa2205650. Epub 2022 Oct 5. PMID: 36198143.

Allopurinol versus usual care in UK patients with ischaemic heart disease (ALL-HEART)

Small observational studies have reported the cardiovascular benefits of allopurinol, a drug licensed for the treatment of gout. This finding had not been confirmed in a large, prospective controlled study. Researchers through this large, multi-centric randomized trial compared cardiovascular outcomes in patients aged 60 years or older with ischemic heart disease (IHD) but no history of gout treated with allopurinol versus usual care. A total of 5721 participants were included in the study and followed up for a mean duration of 4.8 years. The primary outcome was a composite of myocardial infarction, stroke, or cardiovascular death. The researchers found no difference between allopurinol or usual-care groups in terms of primary end-point (11.0% versus 11.3% respectively). The findings hence don't support allopurinol use in patients with IHD, without gout.

Reference

Mackenzie IS, et al; Allopurinol versus usual care in UK patients with ischaemic heart disease (ALL-HEART): a multicentre, prospective, randomised, open-label, blinded-endpoint trial. Lancet. 2022 Oct 8;400(10359):1195-1205. doi: 10.1016/S0140-6736(22)01657-9. PMID: 36216006.

Efficacy of awake prone positioning in patients with covid-19 related hypoxemic respiratory failure: systematic review and meta-analysis of randomized trials

Prone positioning is known to be life-saving in patients receiving invasive ventilation for non-COVID-19 respiratory distress syndrome. Its utility in spontaneously breathing patients with COVID-19- related respiratory failure is uncertain. Researchers conducted a systematic review involving 17 randomized trials comparing prone-positioning to usual care in adults with COVID-19-related hypoxemic respiratory failure. The primary outcome measure was endotracheal intubation, with secondary ones including mortality, ventilator-free days, and hospital stay days, among others. Awake-prone positioning reduced the risk of endotracheal intubation (24.2%) compared with usual care (29.8%) but didn't

significantly affect secondary outcomes. Researchers hence concluded that awake-prone positioning as compared to usual care reduces the risk of endotracheal intubation in COVID-19-related hypoxemic respiratory failure with little or no effect on mortality.

Reference

Weatherald J, Parhar K K S, et al. Efficacy of awake prone positioning in patients with covid-19 related hypoxemic respiratory failure: systematic review and meta-analysis of randomized trials BMJ 2022; 379 :e071966 doi:10.1136/bmj-2022-071966

Safety and Efficacy of a Monoclonal Antibody against Malaria in Mali

In the absence of an efficacious vaccine to control malaria infection, new methods are needed to augment existing countermeasures. Researchers tested in a malaria-endemic region a monoclonal antibody CIS43LS that had shown promise in a phase-1 clinical trial. A total of 330 participants were randomly assigned to 3 groups to receive a single intravenous infusion of 10mg/kg, 40mg/kg body weight of CIS43LS, or placebo and followed-up for 24 weeks. The primary end-point was the first plasmodium falciparum (P.falciparum) infection detected on blood-smear. The outcome occurred most in the placebo group (78.2%), 10mg/kg of CIS43LS group (35.5%), and least in the 40mg/kg of CIS43LS group (18.2%). The researchers hence found CIS43LS protective against P.falciparum infections over a 6-month malaria season without safety concerns.

Reference

Kayentao K, Ongoiba A, et al; Safety and Efficacy of a Monoclonal Antibody against Malaria in Mali. N Engl J Med. 2022 Nov 17;387(20):1833-1842. doi: 10.1056/NEJMoa2206966. Epub 2022 Oct 31. PMID: 36317783.

A 24-Week, All-Oral Regimen for Rifampin-Resistant Tuberculosis

In rifampin-resistant tuberculosis, the standard-care treatment is long, inconvenient, and with serious safety concerns. Shorter, safer, and more efficacious alternatives are needed. Researchers compared a 24-week all-oral regimen of bedaquiline, pretomanid, linezolid, and moxifloxacin (BPaLM) to 9-20-months standard-care regimen in 15 years and older patients with rifampin-resistant pulmonary tuberculosis. A total of 301 participants were randomly assigned to either group. The primary outcome was an unfavorable status, including death, treatment failure et cetera at 72 weeks. The study found that 11% of patients in the BPaLM group and 48% in the standard-care arm had primary outcome events, with significantly fewer adverse events (19% versus 59%). The researchers concluded that a 24-week all-oral regimen was non-inferior to the standard with a better safety profile.

Reference

B.-T. Nyang'wa, et al; A 24-Week, All-Oral Regimen for Rifampin-Resistant Tuberculosis. New England Journal of Medicine 2022 Vol. 387 Issue 25 Pages 2331-2343 DOI: 10.1056/NEJMoa2117166

Association of Direct-Acting Antiviral Therapy with liver and non-liver complications and long-term mortality in patients with chronic Hepatitis C

Chronic hepatitis C (CHC) infection and its complications are associated with high rates of morbidity and mortality globally. It's uncertain if directly-acting antiviral (DAA) therapy improves outcomes in these patients. Researchers, through this large retrospective study involving 245,596 adult patients with CHC, compared the incidence of hepatocellular carcinoma, liver decompensation, non-liver events, and mortality; between patients treated and not treated with DAA medications. The study found all liver events, relevant non-liver events, and mortality to be significantly lower in patients treated with DAA medications. The researchers hence concluded that antiviral therapy improves both liver and non-liver outcomes as well as mortality.

Reference

Ogawa E, Chien N, et al. Association of Direct-Acting Antiviral Therapy With Liver and Nonliver Complications and Long-term Mortality in Patients With Chronic Hepatitis C. JAMA Intern Med. Published online December 12, 2022. doi:10.1001/jamainternmed.2022.5699

Pneumococcal Conjugate Vaccine use reduces hospitalization with Pneumonia in Medicare beneficiaries 65 years or older

Globally, there is an increasing burden of vaccine-preventable pneumococcal pneumonia contributing to mortality and morbidity among adults. This has resulted in recommendations for pneumococcal vaccination in adult patients. It's unclear if a 13-valent pneumococcal conjugate vaccine (PCV13) is effective. Researchers in this US cohort study involving over 24 million Medicare beneficiaries evaluated the association of PCV13 with pneumonia hospitalisations in adults 65 years or older. After 3 years of follow-up, the researchers found that vaccinated individuals had a 6.7% lower risk of pneumonia hospitalization compared to those who didn't receive any pneumococcal vaccines. The researchers hence concluded that increased higher-valent pneumococcal vaccine coverage and use could avert more pneumonia hospitalisations in adults.

Reference

Kobayashi M, et al. Association of Pneumococcal Conjugate Vaccine Use With Hospitalized Pneumonia in Medicare Beneficiaries 65 Years or Older With and Without Medical Conditions, 2014 to 2017. JAMA Intern Med. Published online December 05, 2022. doi:10.1001/jamainternmed.2022.5472

Comparative effectiveness of prophylactic strategies for preeclampsia: a network meta-analysis of randomized controlled trials

Various prophylactic strategies exist for preeclampsia, a common disorder of pregnancy. Their comparative effectiveness has, however, not been well evaluated. Researchers, through this meta-analysis involving 130 clinical trials, compared 13 prophylactic strategies with each other or with negative controls. The study found that low-molecular-weight heparin, vitamin D supplementation, and exercise were as efficacious as

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calcium supplementation and aspirin in preventing preeclampsia. In a head-to-head comparison, exercise was superior to aspirin and calcium supplementation in preventing pregnancy-induced hypertension. The researchers found that low-molecular-weight heparin, vitamin D supplementation, exercise, calcium supplementation, and aspirin all reduce the risk of preeclampsia but found no significant differences in effectiveness between them. They further noted that these needed to be reevaluated in more robust studies.

Reference

Liu YH, Zhang YS, et al. Comparative effectiveness of prophylactic strategies for preeclampsia: a network meta-analysis of randomized controlled trials. Am J Obstet Gynecol. 2022 Oct 23:S0002-9378(22)00819-5. doi: 10.1016/j.ajog.2022.10.014. Epub ahead of print. PMID: 36283479.

Association of checklist usage with adherence to recommended prophylactic low-dose aspirin for prevention of preeclampsia

Despite the recommendation of low-dose aspirin in patients at risk of preeclampsia, its utilization remains low according to recent findings. It's unclear if the use of a risk-factor checklist could increase low-dose aspirin use. In this cohort study, researchers compared rates of self-reported use of low-dose aspirin in patients referred by a specific provider group that routinely administers a checklist versus that among patients referred by other providers. Higher rates of low-dose aspirin use were reported in the checklist group than in the other provider group; 78% versus 52% and 68% versus 22% in high and moderate risk-factors groups respectively. The researchers hence recommended the use of these checklists to identify candidates for low-dose aspirin, and other checklists to improve patient outcomes.

Reference

Zhou MK, Combs CA, et al. Association of checklist usage with adherence to recommended prophylactic low-dose aspirin for prevention of preeclampsia. Am J Obstet Gynecol. 2022 Dec 1:S0002-9378(22)02208-6. doi: 10.1016/j.ajog.2022.11.1302. Epub ahead of print. PMID: 36462540.

Vaginal cleansing before unscheduled cesarean delivery to reduce infection: A Randomized Clinical Trial

Infections following Cesarean delivery after labour are a common cause of maternal postnatal morbidity. It's unclear if vaginal cleansing with antiseptic could help avert these. Researchers in this study evaluated if vaginal cleansing with povidone-iodine before Cesarean delivery after labour reduces post-operative infections. A total of 608 participants were equally randomized to either vaginal cleansing or not and followed up for infectious morbidity including surgical site infection, fever, endometritis, or wound complications over 30 days. The study found no significant differences in outcome in the two groups (11.8% versus 11.5%). They further concluded that their findings don't support the routine use of vaginal cleansing for women undergoing Cesarean delivery after labour.

Reference

Temming LA, Frolova AI, Raghuraman N, Tuuli MG, Cahill AG. Vaginal Cleansing Before Unscheduled Cesarean Delivery to Reduce Infection: A Randomized Clinical Trial. Am J Obstet Gynecol. 2022 Nov 30:S0002-9378(22)02206-2. doi: 10.1016/j.ajog.2022.11.1300. Epub ahead of print. PMID: 36462539.

Effect of Pessary vs Surgery on Patient-Reported Improvement in Patients With Symptomatic Pelvic Organ Prolapse

With increasing life expectancy, pelvic organ prolapse in women is likely to increase hence a need for cost-effective treatment approaches. It's unclear if the pessary approach is as good as surgery in the management of symptomatic pelvic organ prolapse. Researchers compared these two modalities through a randomized clinical trial involving 440 female patients with symptomatic pelvic organ prolapse in the Netherlands. The outcome was patient-reported improvement at 24 months measured with a Patient Global Impression of Improvement scale. Improvement was reported in 76.3% of the pessary group and 81.5% of the surgery group, failing to meet the criteria for non-inferiority. The researchers also noted a high cross-over rate (54.1%) from the pessary to surgery group further complicating the interpretation of results.

Reference

Van der Vaart LR, Vollebregt A, Milani AL, et al. Effect of Pessary vs Surgery on Patient-Reported Improvement in Patients With Symptomatic Pelvic Organ Prolapse: A Randomized Clinical Trial. JAMA. 2022;328(23):2312–2323. doi:10.1001/jama.2022.22385

Risk Factors for Suffocation and Unexplained Causes of Infant Deaths

Sudden infant death syndrome (SIDS) and its risk factors are a growing research area of interest. Previous studies have not examined sleep-related suffocation and unexplained infant deaths separately. Researchers through this case-control study using CDC data included 112 sleep-related suffocation cases, and 300 unexplained infant death cases with their age-matched controls respectively. The study found that risk factors for unexplained infant deaths including non-supine position, soft bedding, not room sharing with a caregiver, and surface sharing were also risk factors for suffocation but with a larger magnitude of risk for suffocation. The researchers hence recommended the addition of suffocation risk into infant safe sleep education, as it may be much easier for caregivers to understand than death from unknown causes.

Reference

Parks SE, et al; Risk Factors for Suffocation and Unexplained Causes of Infant Deaths. Pediatrics. 2022 Dec 5:e2022057771. DOI: 10.1542/peds.2022-057771. Epub ahead of print. PMID: 36464994.

Serious Bacterial Infections in Young Febrile Infants with Positive Urinalysis Results

Whether febrile infants with positive urinalysis (UA) require routine lumbar punctures to rule out bacterial meningitis is not known. Researchers in this observational study set out to determine the prevalence of bacteremia and /or bacterial meningitis in febrile infants ≤60 days with positive UA results. Of the 7180 infants enrolled, 15.2% had positive UA results. The risk of bacteremia was higher in those with positive UA results (5.8%) compared to those with negative UA results (1.1%). There was however no difference in the prevalence of bacterial meningitis in positive or negative UA results in the first 2 months of life. The researchers concluded that in noncritical febrile infants with positive UA results, the

prevalence of bacterial meningitis wasn't increased.

Reference

Mahajan P, et al; Pediatric Emergency Care Applied Research Network (PECARN). Serious Bacterial Infections in Young Febrile Infants With Positive Urinalysis Results. Pediatrics. 2022 Oct 1;150(4):e2021055633. doi: 10.1542/peds.2021-055633. PMID: 36097858; PMCID: PMC9648158.

Surgery

Routine sterile glove and instrument change at the time of abdominal wound closure to prevent surgical site infection

Globally, surgical site infections (SSIs) are the most common complication of surgery. Routine change of gloves and instruments before wound closure has been suggested as an approach that could be beneficial in reducing SSIs. Researchers through this large multi-centric cluster randomized trial tested if this approach reduces SSIs. Clusters were randomized to either current practice (42) or intervention (39), where the intervention was a routine change of gloves and instruments before wound closure. The primary outcome was SSI within 30 days of surgery. The researchers found that the intervention reduced SSI by 13% (1 in 8 SSIs) at 30 days after surgery compared to the control. They recommended that evidence of this easily deliverable intervention be put into practice globally to avert SSIs.

Reference

NIHR Global Research Health Unit on Global Surgery. Routine sterile glove and instrument change at the time of abdominal wound closure to prevent surgical site infection (ChEETAh): a pragmatic, cluster-randomised trial in seven low-income and middle-income countries. Lancet. 2022 Nov 19;400(10365):1767-1776. doi: 10.1016/S0140-6736(22)01884-0. Epub 2022 Oct 31. PMID: 36328045.

Aqueous skin antisepsis before surgical fixation of open fractures: cluster-randomized, crossover trial

Povidone-iodine is usually the preferred agent of antisepsis before surgery on traumatic contaminated wounds. Whether chlorhexidine is suitable in similar surgical settings is not known. Researchers through this study conducted in Canada, Spain, and the USA compared aqueous 10% povidone-iodine with aqueous 4% chlorhexidine gluconate in adult patients with open extremity fractures requiring surgical fixation. The primary outcome was surgical site infection (SSI) within 30 or 90 days for superficial or deep infections respectively. Of the 1571 participants in whom the outcome was known, there was no difference in rates of SSI (7% in both groups). The researchers concluded that either povidone-iodine or chlorhexidine can be used in traumatic wound antisepsis with the choice based on availability, patient contraindications, or cost.

Reference

PREP-IT Investigators. Aqueous skin antisepsis before surgical fixation of open fractures (Aqueous-PREP): a multiple-period, cluster-randomised, crossover trial. Lancet. 2022 Oct 15;400(10360):1334-1344. doi: 10.1016/S0140-6736(22)01652-X. Erratum in: Lancet. 2023 Dec 17;400(10369):2198. PMID: 36244384.

Effect of Colonoscopy screening on risks of Colorectal Cancer and related death

Whether colonoscopy as a screening tool for colorectal cancer affects the risk of colorectal cancer and related death isn't known. Researchers conducted a randomised trial involving healthy men and women between 55 and 64 years of age from some population registries in Europe and randomized them to receive a single colonoscopy (invited group) or usual-care group (no invitation). The outcome measure was colorectal cancer and related death. At the 10-year follow-up, the risk of colorectal cancer was lower in the invited group (0.98%) compared to usual care (1.20%). There was however no difference in the risk of death from any cause across the two groups. The findings were supportive of colonoscopy as a screening tool for colorectal cancer.

Reference

Bretthauer M et al; Effect of Colonoscopy Screening on Risks of Colorectal Cancer and Related Death. N Engl J Med. 2022 Oct 27;387(17):1547-1556. doi: 10.1056/NEJMoa2208375. Epub 2022 Oct 9. PMID: 36214590.

Association between preoperative hemodialysis timing and postoperative mortality in patients with End-stage Kidney Disease

The optimal timing of hemodialysis before surgery among patients with end-stage kidney disease (ESRD) isn't known. Researchers, through this large cohort study assessed if the time interval between hemodialysis and subsequent surgery was associated with outcomes in ESRD patients. Intervals of 1-, 2-, or 3 days from the most recent hemodialysis to surgical procedure were evaluated on their impact on 90-day postoperative mortality. The study involving 346,828 patients found that longer intervals were significantly associated with a higher risk of 90-day mortality in a dose-dependent fashion that is 5.2%, 4.7%, and 4.2% for 3-, 2-, and 1-day intervals respectively. The researchers concluded that longer intervals are associated with higher mortality rates, especially in those not receiving hemodialysis on the same day as surgery.

Reference

Fielding-Singh V, Vanneman MW, Grogan T, et al. Association Between Preoperative Hemodialysis Timing and Postoperative Mortality in Patients With End-stage Kidney Disease. JAMA. 2022;328(18):1837–1848. doi:10.1001/jama.2022.19626

Safety and Efficacy of Robotic vs Open Liver Resection for Hepatocellular Carcinoma

With the rapidly evolving innovations in surgery, the utility of robotic surgery in surgical oncology remains underevidenced. Researchers in this study compared outcomes of robotic liver resection (RLR) to open liver resection (OLR) for hepatocellular carcinoma (HCC). The study included 398 patients; 106 RLR patients were compared with 106 OLR patients after propensity score matching. The study found that RLR patients had a significantly longer operative time; 295 versus 200 minutes, but with a shorter hospital stay, fewer admissions to the intensive care unit, and lower rates of post-hepatectomy liver failure compared to OLR patients. The 90-day survival rate was however comparable. The researchers concluded that RLR was a safer approach for HHC patients than OLR, and in patients with compromised liver function.

CPD Challenge

Questions

Q1 Please indicate TRUE or FALSE statements regarding Cardiovascular outcomes in adults with hypertension

a. Evening dosing with antihypertensive therapy has better cardiovascular outcomes than morning dosing
b. There is no significant difference in the occurrence of primary outcome events in taking antihypertensive therapy in the evening or morning.
c. Patients on antihypertensive therapy should be advised to take their antihypertensive medications at a convenient time that minimizes undesirable side effects.
d. To minimize cardiovascular death or hospitalization from myocardial infarction or stroke, patients on antihypertensive therapy should be advised to take their medications in the morning only.
e. To minimize cardiovascular death or hospitalization from myocardial infarction or stroke, patients on antihypertensive therapy should be advised to take their medications in the evening only.

Q2 Which of the following statements are TRUE or FALSE concerning glucose monitoring for Type 1 Diabetes?

a. Fingerstick blood glucose testing is the most practical way of glucose monitoring and offers better glucose control measures.
b. Continuous glucose monitoring is not any superior to fingerstick blood glucose testing for glucose monitoring in Type 1 Diabetes.
c. Intermittent scanned continuous glucose monitoring offers better glycated hemoglobin (HbA1c) level compared to fingerstick testing.
d. Continuous glucose monitoring results in significantly lower HbA1c levels than fingerstick testing.
e. Both intermittent continuous glucose monitoring and fingerstick blood glucose testing offer similar results when used to monitor HbA1c levels.

Q3 Infections following Cesarean delivery after labour are a common cause of maternal postnatal morbidity. To reduce post-operative infections, please indicate which of the following interventions are TRUE or FALSE.

a. Vaginal cleansing with povidone-iodine before Cesarean delivery after labour reduces post-operative infections.
b. There no is no empirical evidence to support routine use of of vaginal cleansing for women undergoing Caesarean delivery after labour.
c. Women who do not undergo vaginal cleansing before Caesarean deliver after labour have the worst post-operative infection outcomes.
d. There is no need for routine vaginal cleansing for women undergoing Caesarean delivery after labour.
e. All FALSE

Q4 Please indicate what is TRUE or FALSE concerning the risk Factors for Suffocation and Unexplained Causes of Infant Deaths

a. The risk factors include sleep-related suffocation.
b. Non-supine position, soft bedding and not room sharing with a caregiver are some of the risk factors for unexplained infant deaths,
c. Death may often be from unknown causes.
d. Surface sharing is a risk factor for suffocation.
e. All TRUE

Q5 Which of the following routine surgical maneuvers are TRUE or FALSE?

a. Routine change of gloves and instruments before wound closure has been suggested as an approach that could be beneficial in reducing surgical site infections (SSIs).
b. Aqueous 10% povidone-iodine is usually the preferred agent of antisepsis before surgery on traumatic contaminated wounds.
c. Aqueous 4% chlorhexidine gluconate chlorhexidine is more superior for prevention of SSIs.
d. Either povidone-iodine or chlorhexidine can be used in traumatic wound antisepsis with the choice based on availability, patient contraindications, or cost.
e. All TRUE

Answers

1. a). F; b). T; c). T; d). F; e). F.
2. a). F; b). F; c). T; d). T; e). F.
3. a). T; b). T; c). F; d). T; e). F.
4. a). T; b). T; c). T; d). T; e). T.
5. a). T; b). T; c). F; d). T; e). F.

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