



**REACT AFRICA AND SOUTH CENTRE VIRTUAL
CONFERENCE HELD ON 1ST- 4TH DECEMBER 2020**

Theme: What is the status of the Antimicrobial Resistance National
Action Plans in the African Region?

RAPPORTEUR'S REPORT

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List of Abbreviations

Africa CDC	Africa Centre for Disease Control and Prevention
AMs	Antimicrobials
AMS	Antimicrobial Stewardship.
AMR	Antimicrobial Resistance
AMS	Antimicrobial stewardship
AU	African Union
CSOs	Civil Society Organizations
FAO	Food and Agriculture Organization
FAO-RAF	Food and Agriculture Organisation – Regional Office for Africa
GAP	Global Action Plan
IACG	Interagency Coordination Group
ICARS	International Centre for Antimicrobial Resistance Solutions
IPC	Infection Prevention and Control
NAP	National Action Plan
ODA	Official Development Assistance
OIE	Office International des Epizooties/ World Organization for Animal Health.
SDGs	Sustainable Development Goals.
UN	United Nations
UNEP	United Nations Environment Programme
WAAW	World Antimicrobial Awareness Week
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization
WHO-AFRO	World Health Organization Regional Office for Africa

Antimicrobial Resistance (AMR) National Action Plans in the African Region



1.0 Background

The Silent Pandemic - AMR

According to the WHO, Antimicrobial Resistance (AMR) occurs when bacteria, viruses, fungi and parasites change over time and no longer respond to medicines making infections harder to treat and increasing the risk of disease spread, severe illness and death. As a result of drug resistance, antibiotics and other antimicrobial medicines become ineffective and infections become increasingly difficult or impossible to treat.

Antimicrobials are medicines used to prevent and treat infections in humans, animals and plants. They include antibiotics, antivirals, antifungals and antiparasitics. The misuse and overuse of antimicrobials are the main contributors in the development of drug-resistant pathogens. Lack of clean water and sanitation and inadequate infection prevention and control especially in Africa promotes the spread of microbes, some of which can be resistant to antimicrobial treatment. Other factors that contribute to AMR include poor access to quality, affordable medicines, vaccines and diagnostics; lack of awareness and knowledge; and lack of enforcement of legislation.

WHO has declared that AMR is one of the top 10 global public health threats facing humanity. The cost of AMR to national economies and their health systems is significant as it affects productivity of patients, contributes highly to child mortality and affects families financially due to the high cost of medical bills when the patients are admitted in hospital for a prolonged duration.

WHO further emphasizes on the need for new antibacterials and behavior change among people in how to use antimicrobials as people continue to abuse them as they please.

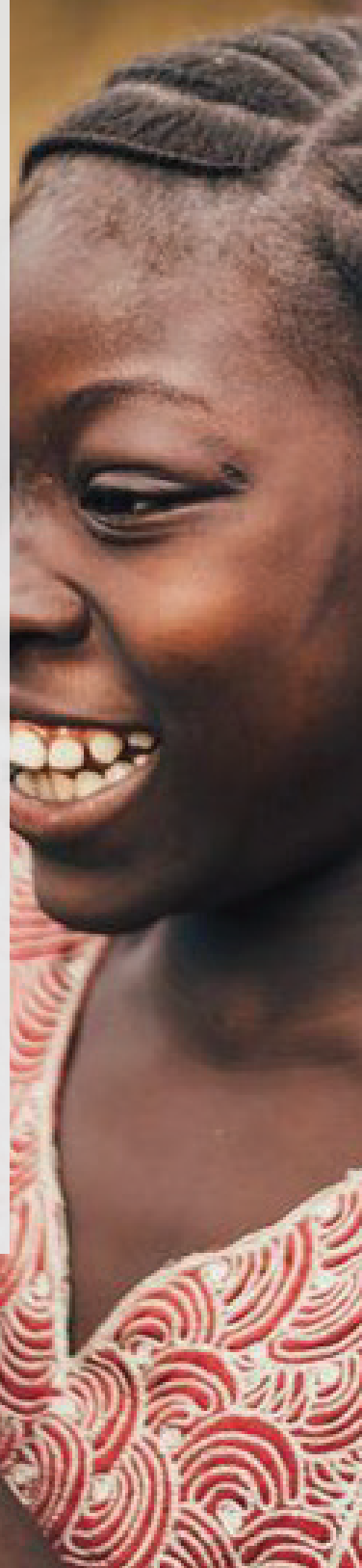
It is with this context, that the AMR fight needs to be prioritized in countries as it will last way after COVID-19 is defeated. This conference organized by ReAct Africa and The South Centre sought to find out the status of the Antimicrobial Resistance National Action Plans in the African Region.

2.0 Executive Summary

This is the executive summary of the four day ReAct Africa and South Centre Virtual conference 2020 whose theme was, 'What is the status of the Antimicrobial Resistance National Action Plans in the African Region?' This is the third yearly conference on AMR organized and hosted by React Africa and the South Centre. It took place between 1st and 4th December 2020. It is important to note that the two previous ones were physical and this was the first virtual conference due to the travel and meeting constraints brought about by the global COVID-19 pandemic.

The conference provided an opportunity for governments, regional bodies, academics and activists to jointly discuss and learn about the current state of AMR National Action Plan (NAP) implementation in Africa. Participants shared results of current progress, examined the challenges and promoted best practices and collaboration among countries, agencies and funders to accelerate action against AMR in the African region. The tripartite organizations (WHO, FAO, OIE) were also invited to showcase their current work and plans to support the African region in continuing with the implementation of AMR NAPs. The conference followed a One Health approach, convening high-level policymakers from human health, animal health and environment AMR experts, civil society representatives from many African countries and intergovernmental agencies. The panel discussions were fruitful in questioning the countries on their progress as well as providing an avenue for other countries to learn from each other on best practices in the implementation of the AMR NAPs.

In total 7 countries presented to the plenary on day 2 and 3 regarding the status of their AMR NAPs. These countries were Ethiopia, Nigeria, Zambia, Cameroon, Senegal, Kenya and Zimbabwe.



Day 1 - Tuesday, 2nd December 2020



**Dr Mirfin Mpundu,
Director, ReAct Africa.**

The first day of the conference commenced by introductory remarks by Dr Mirfin Mpundu, Director, ReAct Africa. He was also the moderator of the first session. He commenced by expressing his delight that the conference could still take place virtually despite the impossibility of having an in-person conference. He welcomed participants to the conference to discuss one of the greatest threats that faces this century - The Antimicrobial Resistance.

He mentioned that the Antimicrobial Resistance has affected every aspect of human life including the environment and added that some challenges still exist in the implementation of the National Action Plans (NAPS) at the country level. In 2015, the Global Action Plan was passed at the World Health Assembly that gave countries 2 years to develop these plans. In Africa, there are 33 NAPS already developed of which 6 or 7 have active funding and some are in the process of being approved.

Almost two and half years after the passing of the Global Action Plan, the question at hand is where these countries have reached in terms of implementing these plans and the challenges facing them.

Some of these challenges faced by health workers include treatment failures and rising cost of treatment in the Healthcare systems. This is mostly the reality in Sub-Saharan Africa where HIV/Aids crisis and poverty has been a prevalent issue as most people work in the informal setup.

He emphasized that the COVID- 19 pandemic greatly affected the health care system, the food systems and the supply chain. With this hindsight the intervention of the conference is to deliberate on some of these challenges.

Dr Mirfin Mpundu proceeded to highlight the four main conference objectives which included to establish progress made in AMR National Action Plan implementation as well as to bring together AMR experts, CSOs, academia, government ministries, research institutions and intergovernmental institutions to discuss regional challenges and approaches to addressing AMR. The third key objective is to provide a forum on networking north to south exchange, south to north exchange and south to south exchanges while the fourth objective is to provide global governance updates around AMR. He noted with concern that AMR is a global issue and it affects directly and indirectly the Sustainable Development Goals. (SDG's).



**Professor Otto Carrs,
Founder of ReAct Africa**

Professor Otto Carrs, founder of ReAct Africa proceeded to give a presentation entitled 'Addressing the silent pandemic of Antibiotic resistance.' He reiterated the fact that this pandemic will persist even after the Covid 19 pandemic is over for as long as there is use of antibiotics for the treatment of bacterial infection. He noted that there is a public health crisis with the antibiotic resistance going up while drug development was going down. In its political declaration on antimicrobial resistance in 2016, the UN general assembly identified resistance to antibiotics as the greatest and most urgent global threat. He officially opened the conference in this keynote address and stated that the conference provided a great avenue for countries to learn about AMR. He concluded by wishing participants fruitful deliberations.

Dr Mirfin Mpundu, Director, ReAct Africa then presented the ReAct Report. The Report highlighted the vision and mission of ReAct Africa as well as its lifelong mandate in its fight against AMR globally



**Dr. Viviana M. Tellez Coordinator,
Development, Innovation and Intellectual
Property Programme (DIIP), South Centre.**

The second session was moderated by Dr. Viviana M. Tellez Coordinator, Development, Innovation and Intellectual Property Programme (DIIP), South Centre. The South Centre offers diverse services to its member States and other developing countries of the Group of 77 and China, aimed at improving access to medicines in the context of intellectual property policies.

She then proceeded to present the South Centre Report in which she reiterated that The South Centre together with ReAct and other members of the broader Antibiotics resistance coalition, is a very strong advocate for policy change and action in preventing the post antibiotic era from becoming a bleak reality in the world. She urged participants to participate actively in the deliberations in the conference as this will contribute greatly in the global fight of AMR.

The presentations that followed in this session included the funders and partners who mainly highlighted the work they do and how they support these African countries in the fight against AMR and implementation of the NAPs. They included the tripartite organizations (WHO, FAO, OIE), Africa CDC, Fleming Fund, ICARS and the World Bank.

Some of the similarities of the agencies views was that AMR remains a salient pandemic and falls below the COVID-19 pandemic which is quite disruptive but of significance is that it will remain even after COVID-19 pandemic is controlled. In as much as it is an urgent global threat at policy levels, political will, at national levels, ownership and multi sectoral engagement needs to be strengthened. There was also need to give funders data from a local context and build capacity of the local researchers. The World Bank noted that there is a lack of interest in the country demand and ownership as well as lag in country prioritization due to competing development agendas in the countries. AMR is also a complex multidisciplinary issue that needs proper monitoring and evaluation of indicators so that countries can better inform, advocate and lobby to their governments.

The panel discussion question centered on active community engagements in AMR activities.

Day 2 - Wednesday, 2nd December 2020



Dr. Tracie Muraya,
Policy Officer- ReAct Africa

On the second day of the conference, Dr. Tracie Muraya, Policy Officer- ReAct Africa was the moderator of the day. She commenced with a brief recap of the first day deliberations and then ushered in the Country National Action Plans Assessments session which focused on the NAPs implementation in terms of progress, challenges, best practices and multi-sector collaborations with partners, funders, governments, ministries etc.

The countries that presented were Ethiopia, Nigeria and Zambia. The session that followed was the break-out sessions, in which four groups were formed. Each group was allocated a discussion question centered on a specific NAP objective in Human Health, Animal Health (Terrestrial and aqua cultural) and Plant health (food and feed). In each intervention, they were to indicate the indicators used to measure the achieved milestones. The four groups had participants from different countries.

Group 1 focused on the NAP objective on antimicrobial stewardship (AMS) while Group 2 focused on Infection Prevention & Control (IPC). Group 3 dealt with the Surveillance and finally group 4 tackled Awareness creation and improved knowledge and understanding. They then presented to the plenary their findings.

The panel discussion session highlighted the challenges encountered in the implementation of the NAPs which included weak multi sectoral engagement in each strategic objective, weak infection prevention practices, weak regulatory system and feeble engagement of political leaders and a lack of budget from the national government. Some of the key lessons that came forth include the need to engage the government on having the NAP budget catered for in the National budget.

Day 3 - Thursday, 3rd December 2020

On the third day of the conference, Dr. Tracie Muraya moderated the first plenary session which was a continuation of the Country National Action Plans Assessments that commenced on day 2. The countries that presented were Cameroon, Senegal, Kenya and Zimbabwe. The second session was the break-out sessions in which four groups comprising of participants from different countries retreated to the break out rooms to discuss their questions. For ease of access to interpretation services, the francophone participants were grouped together in group 4. The prevalent theme was COVID-19 and how it affects the implementation of the NAPS as well as the opportunities it presented in the countries and continent level.



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Group 1 focused on the opportunities realized by the represented countries in the wake of COVID-19 and how they could be harnessed to address and catalyze AMR action at country and entire continent level in line with the NAP objectives.

Group 2 focused on the challenges presented by the COVID-19 pandemic in the different countries in addressing AMR and the solutions that can be put in place to mitigate or alleviate the challenges.

Group 3 focused on identification of the different stakeholders that have collaborated and played an impactful role in the COVID-19 response in the different represented countries and how the same stakeholders can play a significant role in the implementation of the NAPs.

To conclude group 4 focused on WASH (especially hand hygiene aspect) and IPC in controlling the spread of the SARS-CoV-2 virus and how these can be leveraged upon to catalyze action on AMR through country NAPs.

It also deliberated on the other areas that can be 'piggybacked' on to effectively address AMR in view of the stretched resources. Each group subsequently gave their feedback on.

The Panel discussion questions dwelt on behavior change in countries after awareness campaigns are done, for instance the WAAW week (World Antimicrobial Awareness Week), AMR surveillance and IPC capacity building. In Cameroon, the main bottleneck to behavior change is that awareness are done mostly at the national levels and thus do not trickle down to the grassroots levels.

Day 4 - Friday, 4th December 2020



Julian Nyamupachitu,
Program Officer for ReAct Africa

On Day 4, the first plenary session was moderated by Julian Nyamupachitu, the Program Officer for ReAct Africa. Julian Nyamupachitu commenced the first session by stating that Youth and Students are a key stakeholder in the implementation of Countries' AMR National Action Plans and thus they should be targeted as they are the future AMR stewards, health professionals, prescribers in animal and human health, future environmentalists and policy makers in their professional practice.

She then ushered the Students' involvement/interventions in AMR session which featured student presentations from Kenya, Uganda and Tanzania. The students showcased how they were creatively fighting AMR in their countries. For instance, David Mpaju from Uganda developed a comic book known as 'The unseen and rise of mutants' which seeks to combine medicine, arts and entertainment to make the concept of AMR simple and comprehensible to the average secondary student.

After the student's sessions, a ReAct AMR Video was presented that showed the looming silent pandemic AMR to children. It showcased the AMR effects on children in Kenya and Vietnam. It further explained that every third minute a child dies from sepsis due to antibiotic resistant infections and noted that there is a need for working and effective drugs as part of the continued push to drive down child mortality rate in the world.

The second session was moderated by Mirza Alas, Programme Officer at South Centre and comprised of four presentations. Mr. Mpanga Kasonde, Projects Consultant, ReAct Africa kicked it off by presenting on the Summary of funding & technical assistance opportunities as highlighted by partners and funders on the first day of the conference. These partners included the Africa CDC, OIE, WHO, ICARS, The Fleming Fund, The World Bank and FAO.

Julian Nyamupachitu, then gave a presentation on ReAct Africa Community of Practice (COP). She highlighted the work that ReAct Africa has been doing in the AMR fight with the engagement of the civil society as key stakeholders. ReAct Africa has collaborated with the Africa CDC in this program. This presentation was culminated by the virtual launch of the Community of Practice platform by Dr. Mirfin Mpundu. This platform brings together CSOs working in various sectors in Africa in the fight against AMR.

Dr. Viviana Munoz Tellez, the coordinator of the Health, Intellectual property and Biodiversity programme at South Centre then delivered a presentation on South Centre which highlighted its main activities in the fight against AMR globally. To conclude, Dr. Tracie Muraya, then wrapped up with the highlights of RAN 2021 activities. She emphasized that these activities will be both virtual and physical. The physical activities are key in solidifying relationships even in the wake of COVID- 19. The African countries supported by RAN in developing and implementing the NAPs include Ghana, Nigeria, Uganda, Kenya, Tanzania, Zambia, Malawi and Zimbabwe.

In conclusion, the four day conference was key to bringing out the challenges faced by the African countries in the implementation of the AMR NAPs. These challenges include lack of budget allocation in the main budget by the national governments due to competing priorities against the limited resources, prioritization of funds to curb the COVID-19 pandemic in countries instead of AMR and lack of multi sectoral engagement in the fight against AMR. The conference also highlighted that the AMR was a silent pandemic that will still last even after COVID-19 fades away and that countries need to treat its fight with the seriousness it deserves. It also emerged that there was need to educate the public on AMR as many people are guilty of abusing antibiotics in children and adult by buying the drugs over the counter haphazardly instead of seeking medical attention like in the case of Kenya.

These challenges set the stage for a need for priority in allocation of funds at the national levels in these countries, involvement of media in disseminating AMR messages to the public and especially to the grassroots levels, multi sectoral engagements and maximizing on the opportunities provided by the COVID-19 pandemic in the fight against AMR such as increase in WASH activities like hand washing.

3.0 Opening Session

At the beginning of the conference, Dr Mirfin Mpundu, Director, ReAct Africa welcomed participants to the conference to deliberate on the progress of the AMR NAPs in the African countries, discuss their challenges as well as to learn the best practices from each other.

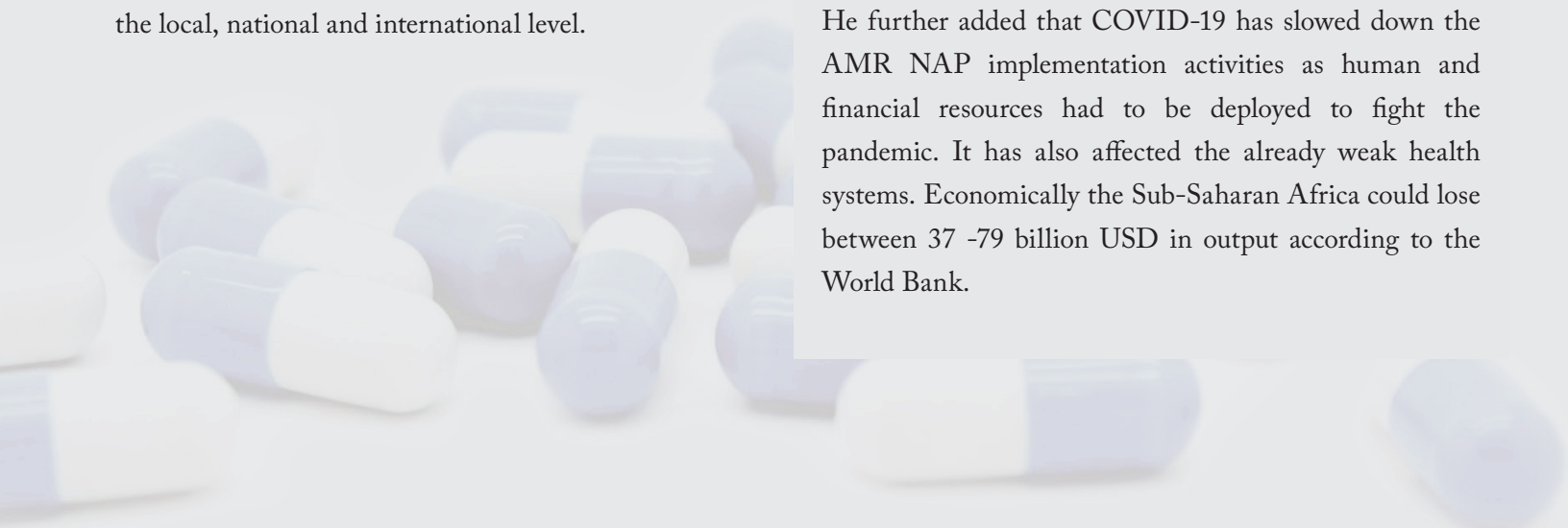
The official opening of the conference was done by Professor Otto Carrs, the founder of ReAct who above other things expressed his concern that AMR is now affecting children more than ever. He added that in a recent global survey conducted by ReAct to more than 400 doctors treating new born children, 79% of physicians treating newborns report an increasing trend of multidrug resistant infections over the last 5 years while 54% believed that antibiotic resistance was the top reason for treatment failure in neonatal sepsis.

He further added that the Interagency Coordination Group on antimicrobial resistance (IACG) presented their recommendations to the United Nations Secretary General in April 2019 in a paper that highlighted some of the barriers countries face in the implementation of the National Action plans which revolved around four main areas: finance, improper coordination, data and technical capacity and awareness and political will. These challenges can be resolved by having a collaborative action across multiple disciplines and sectors such as the civil society, individuals, governments, professionals and academics at the local, national and international level.

The React Report

Dr Mirfin Mpundu, Director, ReAct Africa, took the baton to present the ReAct report. He highlighted the vision and mission of ReAct which was founded 15 years ago. The vision is to have a world free of untreatable infections while the mission is to enable collective action that ensures sustainable and equitable access to effective antibiotics for all. ReAct Africa catalyzes action on antibiotic resistance in Africa. ReAct Africa operates on four strategic areas namely National Action Plans on AMR, movement building across the public, private and the faith based sectors. The third strategic area is Global Coordinated governance where ReAct Africa makes recommendations to the WHO, the UN and other regional organizations in Africa including Africa CDC and the African Union. The final strategic arm is the Public Health driven innovation that can mitigate the Antimicrobial resistance. Some of the countries supported by ReAct Africa in developing and implementing AMR NAPS in collaboration with OIE, FAO, WHO AFRO and Regional African communities include Ghana, Nigeria, Uganda, Kenya, Tanzania, Zambia, Malawi and Zimbabwe. He mentioned that some of the challenges affecting the implementation of NAPS include the lack of political will and support from countries to invest in the NAPS which require heavy financial support to take off.

He further added that COVID-19 has slowed down the AMR NAP implementation activities as human and financial resources had to be deployed to fight the pandemic. It has also affected the already weak health systems. Economically the Sub-Saharan Africa could lose between 37 -79 billion USD in output according to the World Bank.



Despite the heavy COVID- 19 pandemic effects on the countries, ReAct Africa has found ways to mitigate AMR including hosting workshops, community practice in partnership with Africa CDC, hosting webinars for CSOs on various topics, working with students in tertiary institutions and primary schools in Tanzania, Zambia and Kenya.

Before the show case of the ReAct video, Dr Mirfin Mpundu expressed his delight in ReAct working with the South Centre. He informed participants that ReAct had written a policy brief in 2020 that focused on COVID-19 and AMR. He thanked the WHO AFRO for their collaboration and especially in participating in all the ReAct conferences since they debuted 7 years ago. He also thanked OIE and FAO for their partnership and support.

The icing of the presentation was when Dr Mirfin Mpundu, officially announced and launched the new partnership between ReAct Africa and the International Centre for Microbial Resistance Solutions (ICARS). ICARS will fund the implementation research for NAPS. Mr. Robert Skov of ICARS expressed his pleasure that this MOU will support the activities already being undertaken by ReAct. Dr Anna Zorzet, the director of ReAct Europe added that the collaboration will strengthen ReAct's respective organizations. She was particularly pleased that this partnership will focus on the Africa region and revolve around the ReAct toolbox.

4.0 Conference Presentations

4.1 Day 1 Tuesday, 1st December 2020

After the ReAct report presentation, Dr. Viviana M. Tellez Coordinator, Development, Innovation and Intellectual Property Programme (DIIP), South Centre gave the South Centre Report. She expressed pleasure in South Centre collaborating in the Regional AMR conference for the 3rd time and recognized the efforts of Professor Otto Cars and ReAct Africa in raising global awareness of the Antimicrobial and Antibiotic resistance.

She expressed the need for awareness amongst stakeholders, political will, cross sector discussions and collaborations amongst stakeholders and ministries in implementing National Action Plans, more focus on the environment as part of the One Health approach to AMR, new antibiotics and alternatives both for addressing needs in the animal sector, food sector and for human health. She concluded by mentioning that another critical issue in fighting AMR is the need for better practices in the use of antimicrobials in human health, to avoid overuse and misuse and in the use of antibiotics in food and animal production. These efforts also need a committed political will and support at the national and international levels.

The React Video

She then presented the Antimicrobial Resistance Video - Africa Region which explained AMR in a comic but simple way and how it affects human, animal, plant and the general environment health. It explained how indiscriminate use of antimicrobials on animal and plants and poor hygiene and sanitation contribute further to the rise of AMR in the society. Other factors that contribute to the AMR pandemic include poorly managed hospitals, disposal of antimicrobials in the sewage systems and use of antimicrobials in rearing of animals to make them grow faster. It concluded by urging people to be responsible when using antimicrobials. This video was co-produced by the AU, FAO, OIE, WHO and UNEP.

OIE Presentation

Dr. Ólafur Valsson, Programme Officer OIE commenced by giving a brief overview on what OIE does. He mentioned that OIE was established in 1924 and has over 300 collaborative centers around the world. Its head office is in Paris. He mentioned that the first discussion on AMR took place at the OIE General Session in 1952 based on an issue raised by members. In the COVID-19 era, he stated that OIE and World Veterinary Association made a declaration in ensuring that there are functioning veterinary services in the pandemic. Veterinary services were designated as essential. OIE as a standard setting organization has global activities which include Intergovernmental Standards on animal health and welfare and an AMR strategy aligned to the WHO list and a global database on AMU (antimicrobial use) in animals in collaboration with FAO and WHO. OIE works closely with WHO, FAO and AU in regional and national activities. These activities include seminars, workshops, and meetings. He concluded by stating that AMR activities cannot be halted in the wave of the COVID-19 pandemic and that the OIE has found new ways and new tools to continue fighting the AMR in this season.



FAO Presentation



Dr. Irene Ouoba, the regional AMR Co-ordinator-Sub-Saharan Africa gave a presentation entitled 'Combatting Antimicrobial Resistance in the food and agricultural sector situation in the COVID -19 pandemic FAO-RAF'

She mentioned that the major consequence of AMR is failed treatments which can result to death and since it's an issue that can spread across different sectors there is need for a one Health approach. The Tripartite (WHO, FAO and OIE) works closely with the UNEP and the African Union to mitigate AMR. The FAO action plan on AMR 2016-2020 has four focus areas: Improve awareness on AMR, Develop capacity for surveillance and monitoring of AMR and AMU, strengthen governance and promote good practices in Food and Agricultural systems.

In regards to the COVID- 19 pandemic, she expressed concerns that excessive or unwarranted usage of AMs in households and hospitals could lead to increased resistance in the human health sector. She concluded by stating that FAO has produced different guidelines and tools to support countries to mitigate AMR in the COVID- 19 pandemic.

WHO / AFRO Presentation



Dr. Ali Ahmed Yahaya, the AMR Team lead ARD/AFRO gave a presentation on 'Global Action Plan on Antimicrobial Resistance'. He stated that the devastating effect on COVID-19 in Africa is greatly affecting the health workers who are in the frontline in its fight and also the countries' activities in achieving

AMR goals. The infection of health workers remains a huge problem. Some of the IPC Measures that could reduce AMR include dissemination of IPC (Infection Prevention and Control) guidance and training materials and training of trainers in IPC at District level.

ACDC Presentation



Ms Yewande Alimi, the AMR Programme Coordinator at ACDC gave a presentation on 'African Union Framework for Antimicrobial Resistance control from 2020-2025'.

She stated that AMR presents an urgent threat to health, security and economic growth in Africa and that challenges faced in Africa are unique and complex to measure and monitor.

Some of the primary goals of this framework include to improve surveillance of AMR organisms and mitigate harm among patients infected with AMR organisms.

Fleming Fund Presentation



Ms Lucy Andrews, Head of the Fleming Fund gave a presentation on 'Fleming Fund: Achievements and Future Direction- African region. Fleming Fund was founded in 2015 and is the largest single ODA investment in global antimicrobial resistance (AMR) surveillance. Among its key mandates is to improve laboratory

capacity and diagnosis and support LMICs to implement their AMR National Action Plans through technical assistance and grants. Some of its notable achievements include supporting 65 countries globally to develop and implement National AMR Action plans. Some of the grant beneficiary countries in West Africa include Sierra Leone, Ghana, Nigeria and Senegal.

Panel Discussion Questions

These are some of the questions asked in the panel.

How can communities be engaged actively in AMR activities?

African CDC mentioned that it has been actively working with the civil society organizations to advocate for behavioral change.

In regards to prevention of AMR, What information or data is critical to collect? Should the focus be on antimicrobial use or what other information can be important especially in the National Action Plans?

The OIE mentioned that the antimicrobial use in animals is an important factor to consider. Some of the challenges encountered is lack of regulations in the use of antimicrobial products in general. It is also important to use accurate data.

ICARS Presentation



International
Centre for Antimicrobial
Resistance Solutions

Mr. Robert Skov, the Scientific Director for International Centre for Antimicrobial Resistance Solutions (ICARS)

He emphasized that AMR mitigating interventions often encounter several bottlenecks in their implementation include lack of political commitment, lack of local ownership or behavior change from stakeholders due to lack of capacity in

implementation research and lack of human, infrastructural and operational resources. He added that scalable successful interventions are based on research that has both an intervention and an implementation component

World Bank Presentation



Ms Patricia Geli, The Senior Economist and Task Team Leader gave a presentation on 'Perspectives from the Africa Centers for Disease Control and Prevention Project.'

World Bank involvement in AMR encompasses Financing country preparedness and response, Analytical work which includes Financing Advisory Services and analytics and convening and contributing to global health security initiatives. Some of the common obstacles the World Bank encounters in the inclusion of AMR in African countries include lack of interest and commitment in the countries, prioritization challenges as it competes with other development agendas and complex multi-disciplinary issues that can overwhelm the countries which can be sorted by sequencing.

The session was concluded by Dr. Viviana M. Tellez who asked participants to switch on their cameras for an online photo session.

Day 2 Wednesday, 2nd December 2020

Dr. Tracie Muraya, Policy Officer at ReAct Africa and the moderator of the day ushered in the Country National Action Plans Assessments. The countries that presented were Ethiopia, Nigeria and Zambia.

Ethiopia



Hayatt Seid kicked off the country NAP assessments presentations with a presentation entitled 'AMR Prevention and Control Strategy Implementation Status'

Hayatt began by giving the geographical demographics of Ethiopia. Ethiopia is located in the Horn of Africa and its capital is Addis Ababa with a population of 100 million. Ethiopia started its prevention and containment activities in 2009 by conducting a Baseline Survey both in human and animal health sectors. The survey touched on several areas including clients and the community, health care providers, training and research institutions and policy makers and regulatory bodies.

Ethiopia operates under the Strategy for Prevention and Containment of Antimicrobial Resistance for Ethiopia 2015-2020 which has 5 Strategic Objectives which include but not limited to raising awareness on AMR, training of healthcare workers in human and animal health and optimizing the use of antimicrobials in human and animal health through effective stewardship practices. The fifth strategy focuses on Strengthening National and International Networks and collaborations for the prevention and containment of AMR at all levels. In its NAP implementation process, Ethiopia has managed to train both human and animal health professionals on RDU (Rational Drug Use) and AMR (Antimicrobial Resistance). It has also trained journalists on AMR and RDU. Community events have also been organized to raise awareness on illegal medicine use and AMR for the general public. It also held commemoration for WAAW in 2019 in collaboration with the ministry of Health and EFC.

The challenges they have encountered are centered on weak surveillance/evidence, competing priorities, resources and budgets. The opportunities include government engagements and plan alignment in different stakeholders. Some of the lessons learnt include the need for strengthening the already weak integrated surveillance systems to show the country status of AMR. Finally it is in the process of revising its 2021-2025 Strategy.

Nigeria



Dr. Abiodun Egwuene gave a presentation on 'Implementation Progress: National Action Plan' She commenced by stating that Nigeria is the most populous countries in Africa and the 7th most populous country in the world. It has about 206 million inhabitants with 40% of them living in poverty. The health insurance coverage touches on 1-2% (NHIS). The Budgetary allocation for Health is still below 15% as agreed by other AU countries in the 2001 Abuja declaration. The National Action Plan implementation for AMR kicked off 2017 and is expected to be completed by 2022. The situational analysis conducted in 2017 revealed some of the following bottlenecks: nonexistence of a national AMR laboratory surveillance system, lack of dedicated funding for AMR control activities, limited collaboration across health and environmental sectors of AMR.

The 5 key areas of Nigeria's NAP is to increase awareness and knowledge on AMR, Intensify protection, prevention and control practices, Build One Health AMR surveillance system, Increase access to antibiotic alternatives and promote rational antibiotic use.

The key indicators of progress in implementation so far include an updated National Drug Policy, conduction of several PPS in the country and collection of antibiotic consumption data from local pharmacies. Some of the challenges encountered include low health insurance coverage, few AMR related incentives for agriculture and pharmaceuticals. There is also need to disseminate information to the rural areas where the populace cannot access social media. AMR concept being a faceless pandemic needs to be made as simple as possible and translated to multiple ethnic languages as possible.

Nigeria has also taken advantage of the COVID-19 response in implementing the AMR NAP by leveraging on IPC outputs on hand hygiene campaign, WASH implementation and PPC production, access to key stakeholders in sub-national levels such as governors and increased budget for state response.

Dr Tracie quipped that African countries can learn from Nigeria in the importance of government support. For example, there is coordination between Nigeria CDC, Ministry of Health which has played a great role in its successful implementation. The Ministries of Finance should be actively engaged so that they are made to understand why this NAPS need resources to catalyze action on AMR. African countries should also find a way of breaking down the complex AMR terminologies to people. The media can be involved and become a great partner in this communication.

Zambia



The Zambia NAP progress was presented by Otridah Kapona, The AMR National Focal Point and coordinator at the Zambia National Public Health Institute in the Ministry of Health.

Zambia is a landlocked country with a population of over 18 million people. Resource mobilization in the NAP is through Government Line Ministries, co-operating partners. Some of the challenges/opportunities encountered in the Zambia NAP implementation include absence of AMS guidelines, inadequate microbiological capacity and inadequate trained human resource capacity. A key opportunity is that Covid-19 highlighted the need in investing in good AMS/IPC programs to manage emerging and re-emerging infectious diseases. Some of the important lessons learnt include the need for awareness creation and having a multi sectoral collaboration.

Panel Discussion Questions

Here are some of the panel discussion questions after the country presentations:

Given that the current NAP ends in 2020, have you started working on the next strategic plan and what are some of the components of the current strategic plan that will move into the next one?

In response to this, Ethiopia informed the panel that there is a national assessment to evaluate the implementation process of the national action plan and based on the findings (weak multi sectorial collaboration, advocacy and feeble engagement of political leaders, lack of budget, management commitment, etc.) they will identify strategic objectives which need attention for the revision process. The current strategy doesn't have the cost and M&E plan, thus the experts can advise whether it should be included in the revision process.

What are the problems encountered and lessons learnt in the current NAP?

Ethiopia mentioned that some of the problems include weak multi sectoral engagement in each strategic objective, weak infection prevention practices and weak regulatory system. Some of the lessons learnt include the need to have a proper and strong surveillance system. There is also a need to engage the government on having the NAP budget catered for in the National budget.

Panel Discussion Questions

What is Nigeria doing differently that other countries can learn in the implementation of NAPs that other countries can learn from?

Nigeria mentioned that it has leveraged on the academia world from the onset as there was a lot of research and study done on AMR. Some of these academicians even had access to grants

What can be done to ensure the issue of access to antimicrobials is incorporated in the NAPs?

Nigeria informed the panel that its current NAP has a component that addresses improving diagnostics through increasing coverage of health insurance. Stopping access to multi molecules antibiotics in animal health is also another component that tackles this issue.

The key take away lesson from the presentations was that there are a lot of behind the scene actions in response to the global Covid-19 Pandemic which can be applied in fighting AMR. For instance, there is a strong multi sectoral collaboration, financial support is strong and everyone wants to be seen to be in the frontline of fighting covid-19.

2nd Session: Breakout sessions

Dr. Tracie Muraya, moderated this session. The group discussions were headed by a chair and had a designated rapporteur for note taking. After the discussions, all groups resumed to the plenary for group presentation.

The four groups were each allocated a discussion question centered on a specific NAP objective in Human Health, Animal Health (Terrestrial and aqua cultural) and Plant health (food and feed). In each intervention, they were to indicate the indicators used to measure the achieved milestones. The four groups had participants from different countries.

Group 1 focused on the NAP objective on antimicrobial stewardship (AMS) while Group 2 focused on Infection Prevention & Control (IPC). Group 3 dealt with the Surveillance and finally group 4 tackled Awareness creation and improved knowledge and understanding. They then presented to the plenary their findings.

Group 1 Presentation – Antimicrobial Stewardship NAP objective.

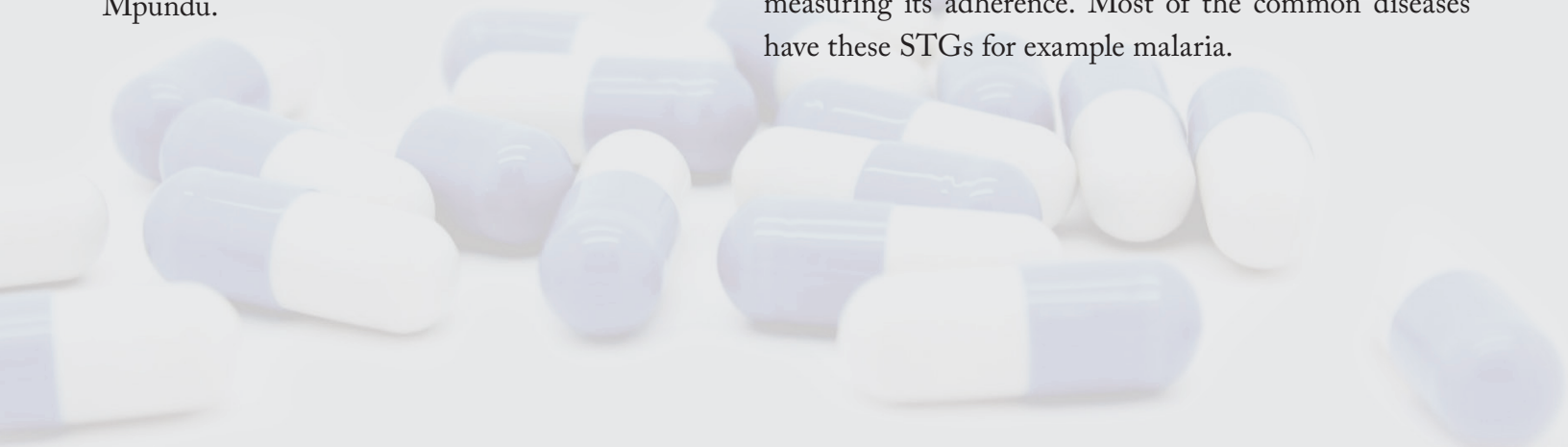
The team was led by the Chair, Tapiwanashe Kujinga; the Rapporteur Jaya Ranjalkar and the ReAct Internal team member was Mirfin Mpundu.

Collins Jaguga from Kenya mentioned that the current focus is on AMR, Stewardship and IPC to combat AMR. AMS is mentioned in NAP and there are ongoing efforts to ensure AMS programs in the health sector. Recently, AMS guidelines were released in July 2020 (milestone). AMS program implemented in 16 health care sectors (started last year); besides these 16 centers, adhoc AMS is being implemented in few facilities such as few faith based hospitals.

Challenges encountered include limited resources, absence of adequate laboratory capacity, less human resources, absence of adequate governance structures etc. In spite of these challenges, few centers have tried to come up with policies, guidelines and to do audits and give feedback, formulary management and to incorporate AWaRe classification. Kenya NAP started in 2017 and there was adequate coverage in all the sectors.

A crucial question posed was on how the NAPs can sustain AMS in places where Laboratory capacity is a main challenge. The response was the need for reliance on syndromic management, adherence to first line regimens, audits and checks of adherence. There is also a need to involve pharmacy staff in AMS programs who could help with monitoring dose, duration in conjunction with clinicians.

Audits based on WHO indicators for prescribing could serve as a marker for antibiotic use practices and is useful for picking up areas of misuse or overuse. Another method is using STG (standard treatment guidelines) and measuring its adherence. Most of the common diseases have these STGs for example malaria.



It was noted that AMS even in high resource countries such as Sweden needs continued work and is thus a challenge, therefore there is a powerful benefit of peer reviewing, physician building own systems and monitoring AMS (clinical rounds, audits between peers at regular intervals. Zimbabwe noted that concerning AMS in Animal health/Plant health; there are guidelines which should be followed and that monitoring is less scrutinized.

The Zimbabwean farmers rely on antibiotics prescribed by veterinary professionals which are easily available for sale. Plant infections do not generally need lab diagnosis. Diagnosis is usually based on visual inspection of the plant and then either antibiotic or antifungal is used. Overall monitoring on this side is less.

In Nigeria, the NAP was aimed at different strategic objectives in alignment with GAP (awareness, surveillance, IPC, AMS, invest in research) There is good progress being made considering Nigeria's previous background of corruption.

The main challenge is that the impact of programs such as awareness (be it for farmers/ doctors or any other group) is short term and is not sustainable (though the initial response and feedback from these groups is positive). There is a constant need for push especially now that the focus is only on COVID. In Nigeria, the NAP incorporates other sectors but then there are no realistic monitoring mechanisms. The Possible solution would be to actively involve and empower different stakeholders (communities, farmers, students) and make it as practical as possible.

In Zimbabwe, The program was launched in 2015 which was then followed by a situational analysis and even at that time point there was not much representation from the animal sector (struggling to find stakeholders in aquaculture), plant health was also missing in a big way.

Currently with technical support, the NAP is being revised in detail and the draft is ready. This version has added much more details on animal and plant sectors and is based on the latest evidence, best practices learnt from their partners and focuses on the One Health approach.

In Zambia, the group noted that the NAP does not adequately cover across different sectors. There was AMS provision though it is not in detail.

The Key takeaways from this group was that all the countries have optimized antibiotic use and placed AMS as one of the important strategic objectives in their NAPs.

In Spite of the above mentioned challenges, countries are trying to adopt policies, develop guidelines and have some systems in place to begin with in relation to AMS. Though, the data on the animal and plant sector is very limited and monitoring is very low. In conclusion, Countries are also revisiting their NAPs to better reflect and address one health issue as well as based on these deliberations.



Countries are also revisiting their NAPs to better reflect and address one health issue

Group 2 Presentation

- Infection Prevention & Control (IPC) NAP objective

The team was led by the Chair, Zipporah Ali and the Rapporteur and ReAct Internal team member was Dr. Tracie Muraya

In South Africa, the country had developed new national IPC policy document which was launched during World Antimicrobial Awareness Week (WAAW) before the COVID-19 pandemic. The document had been disbursed to all provinces and training on IPC for health care facility workers has been intensive, especially due to COVID-19 response. On a slightly different note, there is an ongoing study in commercial animal producing farms. They have also collected over 200 isolates and preliminary results are showing more virulent resistance in porcine-based *E. Coli* compared to the human one.

Similar to South Africa, in Ethiopia new IPC guidelines in place. They were developed with significant involvement of hospital IPC committee members. It was mentioned that a lot of in-house advocacy to the administration has been done to ensure buy-in. This is to ensure that capacity is effectively built amongst all IPC health care workers nationally. The guideline's 2nd module is on AMR so as to link the two aspects together. The aim of including the AMR module in the IPC guidelines is also to emphasize on IPC's contribution to antimicrobial use and hence AMR. Its main bottleneck however is adequate human resource.

In the animal sector, Ethiopia rolled out a project targeting 100 farmers. The project aims to build farmers' capacity to improve biosecurity measures and hence prevent infections, in this case, specifically prevent occurrence of mastitis in cows. Preliminary results have recorded significantly decreased rates of mastitis amongst the cows in the project farms.

In Cameroon, many publications around AMR are available in the country (e.g. 60% of parents' self-prescribe antibiotics to their children), however, not much, in terms of AMR interventions, is done by the government. Regulatory systems are still weak and enable easy access to antimicrobials thus promote irrational use. Capacity building in hospitals is almost non-existent and policies to guide rational use are not widely available. Awareness creation is largely needed for the public population as well as capacity building. Furthermore, regarding IPC, a lot of work is ongoing especially at hospital level. Policies are generally well implemented to prevent and control infections. Public awareness and education on infectious diseases, how to prevent them and control them is also taking place.

In Uganda, information on antimicrobial use and AMR is not adequately dispensed to the populace and health care facilities. Ongoing national interventions such as surveillance on AMR and antimicrobial use are not accessible/known. Generally, human resource in health care facilities is over stretched and hence incapable of teaching the patients on infection prevention and control and how to prevent hospital acquired infections which consequently leads to increase antibiotic use.

The group then concluded by discussing India. It was noted that IPC has generally been strengthened in the advent of COVID-19. India's government recently established minimum standards/requirements for IPC guidelines. While this is good progress, the guidelines are heavily tertiary facility-centric, yet majority of the population (80% to 90%) seek healthcare services in primary and secondary facilities. However, the guidelines are easily digestible as they are in easy-to read sections and can therefore be easily assimilated and adapted to the latter facility levels.

The irony is that India remains a large producer and exporter of IPC commodities. However, many of their health facilities remain ill-equipped mainly due to lack of finances.

The main concern is that once COVID-19 is put under control, there is a likelihood that the intensive IPC activities will take a back seat and the situation will retreat to the deplorable conditions witnessed before.

Group 3 Presentation

- Surveillance NAP Objective

The team was led by the Chair, John Majimbo; the Rapporteur Tafara Dandadzi and the ReAct Internal team member was Mirza Alas.

In Nigeria they have been able to engage with a wide range of audience; notably the communities, line ministers, Healthcare Facilities which has assisted in providing surveillance and data. It was noted that they are leveraging on already existing surveillance systems, which have been transporting samples in Nigeria. (Though they aim to expand this to animal health and environmental health)

They have also undergone policy reviews as their documents are outdated and need to be updated. Zambia mentioned that it has received funding and has four Animal health laboratories which are conducting animal health surveillance.

Healthcare Acquired Infection data is also being conducted in Nigeria courtesy of the linkages with relevant authorities. The use of social media in urban set ups in urban and in the rural areas in Nigeria for community engagement has been successful. In Nigeria they have a drug use list that can be used to help avoid last line of antibiotics being used.

The challenges encountered include low awareness and how to translate AMR surveillance into local languages. Use of laboratories is low, due to many not affording laboratory use and also the people do not trust laboratory results in Nigeria, due to poor infrastructure.



Weak enforcement of drug sales as people prefer to buy drugs than go for tests, which affects data collection for surveillance.

Weak enforcement of drug sales as people prefer to buy drugs than go for tests, which affects data collection for surveillance. Misinformation is another challenge which affects communities trust in the use of vaccines. The Private Hospitals have no laboratories and the focus on surveillance has mainly been on Public Hospitals.

In Zimbabwe, one of the challenges is the lack of farmers taking their livestock for laboratory tests as most farmers tend to buy over the counter antibiotics in the veterinary agro shops. The agro shops attendants do not question them at all regarding the usage of these antibiotics and thus it is a big challenge with regards to surveillance. Some of the lessons learnt include the importance of collaboration between all stakeholders involved in AMR action and having a good working relationships with funders. Resource mobilization is possible as has been displayed through the Covid19 pandemic.

Group 4 Presentaion

- Awareness creation and improved knowledge and understanding NAP Objective.

The team was led by the Chair, Dr. Fidelis Nyaah; the Rapporteur, Naomi Susa and the ReAct Internal team member was Julian Nyamupachitu.

The countries present in this group were Rwanda, Cote d'Ivoire, Cameroon and Sweden (University Student)

Some of the challenges encountered in awareness creation of AMR include some NAPs were not actively developed for example in Rwanda however the National Agency for Control has done a great work in creating awareness on Antimicrobial Resistance.

In Côte d'Ivoire and Cameroon, the main challenge is the awareness not reaching the grassroots level as it was mostly done in the national level and targeting the healthcare professionals.

There is also a lack of coordination in the national level of implementation of NAP. The private sectors seem to be left out in the NAP implementation as great focus is on the public health sector.

Some of the solutions to improve awareness include the need to target medical reps on information on AMR, so that they can be better informed on misuse of prescriptions in Rwanda. Messages should target people in the grassroots and not just urban dwellers. Social media is a great communication tool however there is need to consider use of print messages such as flyers and brochures in local languages for rural dwellers.

The messages used in awareness campaign shouldn't be scary but should be simplified in order to achieve the goal which is to create awareness of AMR.

4.3 Day 3 Thursday, 3rd December 2020

The morning plenary session was moderated by Dr. Tracie Muraya, Policy Officer at ReAct Africa. The Presentations on Country National Action Plans Assessments continued.

Cameroon

Fidelis Nyaah, Chief pharmacist at Presbyterian Church of Cameroon Health Services, kicked off the country AMR NAP presentations. He gave a brief background of Cameroon, a country with a population of about 25.22 million people and whose average life expectancy is 58.51 years. The fertility rate is 4.64 births per woman. The official languages spoken are English and French.



He spoke of the progress of implementation of National Action Plans, including its development, conduction of awareness on AMR to the public e.g. through commemorating the WAAW week (World Antimicrobial Awareness Week), development of AMR training modules used in schools to train up and coming health professionals such as doctors and nurses who would then begin their professional practice armed with information on AMR. The country has also developed IPC guidelines which are disseminated to health centers.

Financing of activities in the NAP is done both by donor organizations and individual ministerial budget. But the advent of Covid-19 led to the reallocation of funding towards fighting the pandemic, which led to less funding of elements in the NAP.

Some of the challenges encountered in the country include: Lack of a coordination platform for NAP activities; Lack of integration of the private sector as most activities are centered only on public facilities and lack of specific budget heads for AMR activities in the budgets of relevant line ministries.

The Covid-19 pandemic provided an opportunity to create awareness on IPC and strengthen IPC activities in most health facilities. Training of IPC in most hospitals increased for example use of hand sanitizers and handwashing practices. Some of the lessons learnt include the need to involve the private sector in both animal and human health activities as well as civil society organizations in the fight against AMR.

Regarding the next steps in implementation in Cameroon, there will be a setup of a central coordinating platform whose composition shall reflect the One Health approach to fight AMR. There will also be intensification of the fight against counterfeit medicines especially antimicrobials.

Senegal

Senegal's presentation was done by Dr. Ndeye Khote Fall

Senegal is located in West Africa with an estimated population of 16 million inhabitants. About 80% of antibiotics are used in community settings. Some obtain them either by prescription, exerting pressure on health workers or through self-medication. The WHO says that many patients do not adhere to treatment and rarely complete the prescribed treatment.



The progress made on NAP implementation include growth of multi-sectoral collaboration between concerned sectors particularly those of human and animal health, agriculture and within the FAO, OIE and WHO tripartite arrangement. The Covid-19 pandemic made the government to become more aware of surveillance, the fight against antibiotic resistance and strengthening the capacity of testing laboratories. Resource mobilization is done in different sectors ranging from the National Government, the United Nations, The European Union, religious organizations and the private sector.

The challenges/opportunities encountered include emergence of new diseases. Currently there is an unknown disease prevalent among fisher folk. There is need for increased political will to adopt new policies especially against the misuse of antimicrobial drugs in human health and food production. Antimicrobial agents are commonly used in agriculture, fish farming and sea food farming. The potential impact of these antimicrobials is of great concern to many. Antibiotics are also easily available in the markets. FAO is also currently organizing meetings with breeders to educate them on misuse of antibiotics.

Some of the lessons learnt in the wake of Covid-19 include working with people at the community level which is vital for surveillance and detection of diseases. Community involvement also makes it possible to reduce the misuse of antibiotics which could considerably reduce AMR to antibiotics.

The next steps in implementation include emphasized integrated surveillance for antimicrobial control (One Health), capacity building of national laboratories for disease detection and surveillance and maintaining community involvement.

Kenya

Dr. Emmanuel Tanui from the Ministry of Health in Kenya, gave a presentation entitled ‘Status of AMR National Action Plan Implementation in Kenya.’

Kenya is a country in Eastern Africa with a population of close to 50 million people. It developed its NAP in 2017, which mirrors the Global Action Plan on AMR. The NAP has 5 Strategic objectives namely: Public awareness and education, Surveillance and monitoring, Infection prevention and control, appropriate use of antimicrobials and Research and development.



The progress of the NAP implementation include Laboratory Capacity assessment completed in 20 laboratories (HH&AH), development of a national AMR surveillance strategy (Human and Animal Health) and completion of mapping of Antimicrobial use in the veterinary sector. Several institutions such as KEMRI and ILRI are assisting in conducting research in diverse areas. There is also incorporation of AMR modules into pre-service training of health professionals and establishment of One Health Research, Education and Outreach Centre in Africa (OHRECA)

Challenges encountered include inconsistent supply of laboratory commodities, underutilization of hospital microbiology laboratory, lack of reliable internet resulting in delays sending AMR data and disruption of health systems by Covid-19 pandemic hampers AMR activities.

Some of the lessons learnt include: importance of Involvement and commitment of political leadership in AMR NAP implementation; the need for coordinated partnerships e.g. the partners such as USAID, ReAct and taking time and commitment to properly develop and implement a NAP as the process should not be rushed.

The next steps in implementation include developing an integrated information management system for AMR. There will also be expansion and strengthening of the national and county laboratory infrastructure for public health surveillance. The other step would be to strengthen the HR capacity for surveillance and establish a functional AMR coordination structures at the sub-national level (CASICs).

Zimbabwe

Tapiwanashe Kujinga, The director of Pan African Treatment and Access Movement made the presentation for Zimbabwe. The presentation was titled, 'Zimbabwe's One Health, Antimicrobial Resistance, National Action Plan and overview of implementation progress.'



The Zimbabwe national AMR program started in 2015 with the selection of the National Core group. This was followed by a situational analysis and then the drafting of the National Action Plans. These two processes paved way for the achievement of the One Health approach as most of the stakeholders had not worked together previously. The NAP was launched in 2017. As regards funding, Zimbabwe received a 3 year grant of 4 million pounds from the Fleming Fund mainly for strengthening its laboratory capacity and governance structures. This grant will also fund a number of NAP activities in the country.

The implementation of this grant was unfortunately adversely affected by the Covid-19 pandemic but some few activities have commenced. Other funders of this NAP include WHO, Fleming Fund, FAO, ReAct and CSE.

The Antimicrobial Use team has been collecting data on antibiotic use in humans and animals from border authorities, pharmacies, health centers and veterinary shops. It has also been noted that the informal medical sector is growing and there lacks data to quantify this. The Education and Awareness technical group has worked with a number of partners to raise awareness on AMR, for example, through training of journalists. A collaboration with medical students has also seen medical events being held jointly including quizzes and commemoration of the World Veterinary Week.

Some of the challenges that this NAP has encountered include the following: Lack of full commitment of the members of the core group as they have other jobs; Lack of funding for other key activities within the National Action Plan; Human resource shortage in all ministries and the Need for active collection of animal and environment samples.

Some of the lessons learnt include recognizing the importance of partners and UN agencies, for instance WHO which is currently supporting the review of the AMR legislation.

The next steps in implementation include implementing the country grant on integrated surveillance, ensuring incorporation of NAP activities into all Ministry activities and to continue writing more proposals for increased funding.

Panel Discussion Questions

The first plenary session ended with a panel discussion. The Questions and Answers session of the discussion centred on issues of behaviour change, the effectiveness of conducting online IPC capacity building of health workers in response to covid-19 and on pan African initiatives to link up efforts on AMR surveillance.

On behaviour change, Cameroon was asked how it plans to guarantee behavior change after conducting awareness campaigns. It was seen that the main impediment to behaviour change is that awareness campaigns are done mostly at the national levels and especially during the World Antimicrobial Awareness Week (WAAW) week and thus they do not trickle down to the grassroots levels. To help resolve this, Civil Society Organizations will be involved to reach out to people in the suburbs through posters and banners with messages written in local languages. Using community radios is also key as they can penetrate the suburbs easily more than social media or mainstream media.

It has been frequently noted that actual clinical prescribers are not closely involved with all these activities going on which is the reason for a lack of change in prescription practices. Surveillance has to be done in real life scenario when doctors are investigating patients and using reports to manage their patients.

Regarding the effectiveness of conducting online IPC capacity building of health workers in response to covid-19, it was seen that the best way to manage the pandemic is through prevention rather than cure and therefore this method was seen to be effective. However, the main focus now for partners has shifted more to managing COVID 19 and less focus on AMR.

Concerning pan African initiatives to link up efforts on AMR surveillance, the response given was that this is a political issue likely to be discussed more at the AU, African CDC and WHO levels. There is a lot of talks on capacity building on surveillance which requires resources. Surveillance for AMR requires a good laboratory surveillance system in each country which is something the WHO has been working on for a long time. AMR is an extremely complex phenomenon and is a process that can be built up. There are regional activities currently done by the Fleming fund to establish regional centres.

2nd Session: Breakout sessions

The team was led by the Chair, Viviana Munoz; the Rapporteur Judith Nwatu and the ReAct Internal team member was Mirfin Mpundu.

Group 1

The countries represented in this group included Ivory Coast, Nigeria, Zimbabwe, Cameroon, Kenya and Zambia

They focused their discussion on the opportunities realized by the different represented countries with the advent of covid-19 and how they can be harnessed to address and catalyze AMR action at country and entire continent level, to achieve NAP objectives in the short, medium and long term

Some of the opportunities identified include greater awareness on animal and human interface and monitoring of infections. There is a need to push for monitoring in animal and human health considering the linkages that exist between the two. The pandemic also highlighted the linkages that exist between bacterial and viral infections. There is need to increase the usefulness of diagnostics and make them accessible and affordable. There is also increased international collaboration in AMR capacity building. AMR experts are expected to leverage on the current political commitments and use it as a driving force to promote political involvement towards AMR.

In leadership and governance, there has been serious political commitment following the covid-19 pandemic which serves as a good opportunity to highlight the problem of AMR as well as the work that has been put in to combat it. Covid-19 did not only create opportunities for collaboration amongst professionals but also showed the gaps that exist in the fight against AMR ensuring that better decisions and strategies are put in place.

There has been creation of new IPC and training of health workers in IPC as part of current curriculum. Finally there is greater awareness raising on the problem of resistance following treatment failures witnessed during the pandemic; the misuse of antibiotics with covid-19 revealed the extent of the problem. In conclusion, there should be continued awareness on IPC beyond health workers and AMR experts to spread to civil society, students and of course experts at both national and international levels.

Group 2

The team was led by the Chair, Collins Jaguga; the Rapporteur Daniel Waruingi and the ReAct Internal team member was Tracie Muraya.

They discussed on the challenges experienced by the different represented countries in the wake of COVID-19, lessons learnt and solutions to put in place to alleviate challenges to address AMR at national and continental level in line with the NAP objectives.

The group discussed the challenges encountered which include:

- Initial closure of outpatient services in hospitals which led to increased irrational use of antibiotics in community pharmacies.
- Increased empirical prescribing of antibiotics resulting from reduced access to laboratory services.
- A high demand for antibiotics resulting from public fear led to depleted supplies in pharmaceutical distribution chains.

- Surveillance activities were hampered e.g. training and adoption of online training with limited capacities.
- There was a reduction of prioritization on funding of AMR programs.
- Disruption of pre-planned AMR campaigns and conferences
- Mistrust of health professionals as a result of corruption cases, doctor's strikes during COVID-19. This may hamper future communication and awareness of AMR to the masses.
- There was increased preemptive antibiotic prescribing as prophylaxis for secondary bacterial infections resulting from COVID-19.
- Covid-19 became politicized and resulted in reduced funding of organizations like the USA did for the WHO. Moreover, prioritization of funds to covid-19 and economic recovery projects could result in reduced resources for implementation of National Action Plans.

Another challenge seen was in transformation of microbiological ecology in water sources and soil due to increased alcohol consumption and chlorine usage. This could possibly lead to mutations of microbials introducing new infections. The poor disposal of masks coupled by weak enforcement of disposal guidelines may lead to emergence of new infectious diseases. Improper usage of masks may also introduce new respiratory infections. In matters gender, there has been an increase in gender-based violence translating to increased sexually transmitted diseases and HIV.

Some of the opportunities available include increased Infection prevention and control practices and revamped antimicrobial stewardship activities in hospitals. The universal wearing of masks has also reduced transmission of communicable diseases e.g. Tuberculosis. There is also a reduction of environmental pollution due to restricted movement.

Some of the lessons learnt include the importance of having resilient health systems. There is also a need for improved allocation of resources to AMR programs from national governments to ensure sustainability.

Some possible solutions include subsidization of hospital AMR surveillance and integration of AMR risk into investment practices. There is need to prioritize antimicrobial stewardship programs and develop rapid diagnostics. The One Health approach needs to be embraced. Consumer and supplier/private sector awareness and action on food choice needs to be promoted as well as passing of legislation in favour of the same (e.g., DISARM and PASTEUR Acts)

Group 3

The team was chaired by Olga Perovic and had Mirza Alas as the Rapporteur.

They highlighted the different stakeholders that have collaborated and played an impactful role in the COVID-19 response in the different represented countries and how these stakeholders could be effectively engaged to impactfully address AMR at country and continent level, in line with the NAP objectives.

The key stakeholders that were identified include government, NGOs, Education Institutions and retailers. South Africa was probably the country that was worst hit in Africa due to its imposed lockdown. Rapid test kits were developed in record time. This deployment can also be adopted in the AMR agenda. Media can be used to shape public awareness of AMR like it did for Covid-19. There were treatment delays due to fear of going to hospitals. In Rwanda, there were prevention practices that already existed with the onset of Covid-19 in the community and hospitals that were strengthened by the pandemic. These included free healthcare and testing. Radio was used to inform people on how to prevent transmission outdoors and when public transport resumed people observed social distance and hygiene measures. The country's efforts were recognized internationally. This was because the country built a strong health system.

In Zambia, there was increased use of antibiotics as patients were initially thought to have pneumonia and not Covid-19 which may have resulted to increase in AMR. Some of the lessons learnt are that there is need to continue with awareness and communication of AMR to educate the masses. Multi-sectoral collaboration witnessed with covid-19 should also continue.

Group 4

The team was led by the Chair, Philip Mathew; the Rapporteur was Andreas Sandgren and the ReAct Internal team member was Julian Nyamupachitu

The group discussed how in the advent of COVID-19, the strengthening and enforcement of Water, Sanitation and Hygiene (WASH) activities, especially hand hygiene and IPC in controlling the spread of the SARS-CoV2 virus and its associated consequences can be used in AMR fight.

The group noted that there is access to water supply and sanitation in households and clean water is available 24/7 availability in HCFs and treatment of HCF wastewater. Agricultural waste management and hygiene in farms is also observed. The surveillance of resistance in the environment (Sewage sampling and surveillance has been used for Covid-19) can be adopted for AMR surveillance activities.

There has been a renewed interest to invest in WASH, but at the same time funds are directed towards covid-19 management and this may reduce funding for AMR programs and related activities that include IPC and WASH activities.

In Cameroon, there have been positive actions in terms of water supply this year. There have been increased discussions on access to clean water and washing hands over the few past years, but it is not until this year that investments and efforts were made to get constant supply of water and increased possibilities to hand washing in HCF. Unfortunately, water supply at household level has not changed much.

Irene Ouoba (FAO) noted that there is no major change on broader action for WASH yet (from FAOs perspective and continent overall). There has however been some funding actors bringing up WASH more prominently in country projects. On matters surveillance: The environmental sector is the least addressed and there is need for more education and awareness on this.

Senegal mentioned that it has a big population and this makes it a big challenge to provide clean water to the whole population thus there is very high demand for clean water, and thus the pressure is on the government to invest in water in the wake of COVID-19. Regarding surveillance, Senegal has started setting up a surveillance system, collaborating across sectors and promoting increased research. A challenge that still prevails is the high number of infections in the population.

What is the way forward?

These are the key questions that were posed to guide the way forward.

How can we mobilize investment for WASH at country level? Leveraging the COVID-19 epidemic for sustained interest in WASH? What are the strategies to introduce AMR in WASH programs?

Irene Ouoba (FAO) stated that FAO, OIE and WHO recently published a policy technical document on WASH and would share it with countries on how to integrate this in AMR plans and activities.

Education is also key for WASH activities. There is need to create linkages with AMR and educate the population on improving water and hygiene practices and how important this is for reducing transmission of microbes, including resistant microbes. Nyaah Fidelis from Cameroon noted that when the pandemic started, there was panic and reallocation of funds to combat it through many different activities, including hand washing. So there is need to take advantage of this opportunity with big investments in health care and supply systems in the AMR fight.

There are several organizations engaged in WASH, such as Water aid, UNICEF that are now trying to increase WASH awareness in countries.

It is also important to share lessons and experiences from WASH activities, to better map out the financial needs which can not only assist to advocate for global funding opportunities, but also including it in national financial commitments to fund the implementation of AMR NAPs, where WASH and IPC activities could be incorporated.

4.4 Day 4: Friday 4th December 2020

The 1st session of the day was moderated by Julian Nyamupachitu, Program Officer for ReAct Africa. Mirza Alas, Programme Officer at South Centre, welcomed participants to the final day of the conference and invited Julian Nyamupachitu, Program Officer at ReAct Africa, to moderate the first session of the meeting.

Students' involvement / intervention in AMR

Julian Nyamupachitu commenced the first session by stating that students are crucial partners in the implementation of countries' AMR National Action Plans. She expressed her delight in the fact that 2 students participating in the conference were finalists in the Innovate 4 Health challenge. This is an online challenge for innovation which seeks to get innovative and creative solutions to address emerging infections such as Covid-19 and AMR. The challenge takes a system approach which emphasizes on having social innovations that mostly target the needs of contexts with limited resources. Students identify a problem and then team up to come up with an innovative solution. A select group of students will then have the opportunity to work with global health leaders to design innovations within one of three innovation pillars: reducing zoonotic disease transmission in food systems; ensuring effective prevention and treatment of emerging infectious diseases in hospital settings and making community health systems more resilient to emerging infections.

She urged participants to visit the website <https://www.innovation4health.com/> for more information on the challenge.

Wanjiru Mwangi, a 2nd Year medical student at Mount Kenya University made the presentation for Kenya. Her presentation was guided by the innovation pillar of making community health systems more resilient to emerging infections. She was a finalist in a competition in the recently concluded Kenya's World Antimicrobial Awareness Week where ReAct was a key partner. The theme of the competition was "Real life experiences on how covid-19 has affected communities or individuals and the impact on AMR."

She presented her case study titled 'Case Study of the Antimicrobial Resistance Situation in Urban Informal Settlements in Kenya' She undertook this study in Kibera, an informal settlement that doubles up as the biggest slum in Kenya. The objectives of this study were to: Evaluate how much knowledge the residents have about AMR, Understand what precautions they were taking to protect themselves from Covid-19 and AMR and to Sensitize the residents on AMR.

The case studied Ann Maloba, a casual labourer who earned her daily wages by doing laundry in people's homes. However with the advent of Covid 19, she immediately lost her job and thus struggled to fend for herself and her daughter.

Over the last 3years, Ann has had a consistent Salmonella typhi infection which she keeps treating using over the counter antibiotics from a local drug vendor. This is due to lacking funds to seek proper treatment in hospital. Ann told Wanjiru that some of the reasons behind her deteriorating health included poor sanitation, poor access to health care services and lack of sufficient funds to buy standard drugs at a verified outlet. The uncovered drainage systems also exposed her daughter and other residents to more infections. Ann and her neighbors also bought drinking water from local vendors whose source of water is unknown. This same water keeps exposing them to microbes and new infections as they lack resources to keep treating the water.

This case study was a clear indicator that the fight against AMR needs to move down to reach the unserved and underserved population at the grassroots.

Frank Edward Arabi, a recent graduate from Muhimbili University of Health and Allied Sciences in Tanzania made the second presentation. He is also a finalist in the Innovate for AMR 2019. The case study centered on her aunt Hawa Dagaa. After completing high school, Arabi went to help his aunt to run her pharmacy. The irony is that she is a nurse by profession and not a pharmacist.

In Tanzania, the supply of Pharmaceutical products for public health facilities is under the Medical store Department. In contrast, the private sector encounters different problems in the procurement and supply of pharmaceutical products. Accredited drug dispensing outlets (ADDOS) and other private drug sellers face several problems; these include lack of access to quality medicines at competitive affordable prices from Suppliers, poor communication and coordination from ADDOS with public sector stakeholders and access to finance.

To curb this problem, Pharmlinks was birthed. Pharmlinks is a centralized web and android application that links wholesale suppliers to retail pharmacies, drug outlets, private labs and private health facilities. It offers convenience in ordering medical products, inventory management and tracking authenticity of medicines. Data generated from Pharmlinks system provide a clear understanding on patterns of antibiotics flow in the region and help policy makers in the fight against AMR.

David Mpaju, a student at Makerere University College of Health Sciences gave the third presentation entitled, *'Assessing knowledge and awareness about antimicrobial resistance among secondary school students in Kampala, Uganda'* This was a cross-sectional study carried out among secondary school students in Kampala and the sample size of the students was 384.

This study exposed the fact that the public in Kampala did not understand the term, 'AMR'. One of the objectives of GAP (Global Action Plan) on AMR is to improve awareness and understanding of AMR. In Uganda however, this awareness seems to be centered on health professionals only and the public, which is the biggest consumer, is in the dark on information relating to AMR. In Uganda, antibiotics can be easily obtained over the counter without a prescription which shows the need to educate the public on AMR.

Regarding knowledge on antibiotics 112 participants (50.7% of the sample size) correctly identified Amoxyl as an antibiotic however 105 participants (47.5% of the sample size) identified Panadol and Aspirin as antibiotics. With this knowledge, he developed a comic book known as 'The unseen rise of mutants' which seeks to combine medicine, arts and entertainment to make AMR simple and comprehensible to the average secondary student. The comic won 1st Place award in a competition by Nottingham and Makerere University for its effort in fighting AMR.

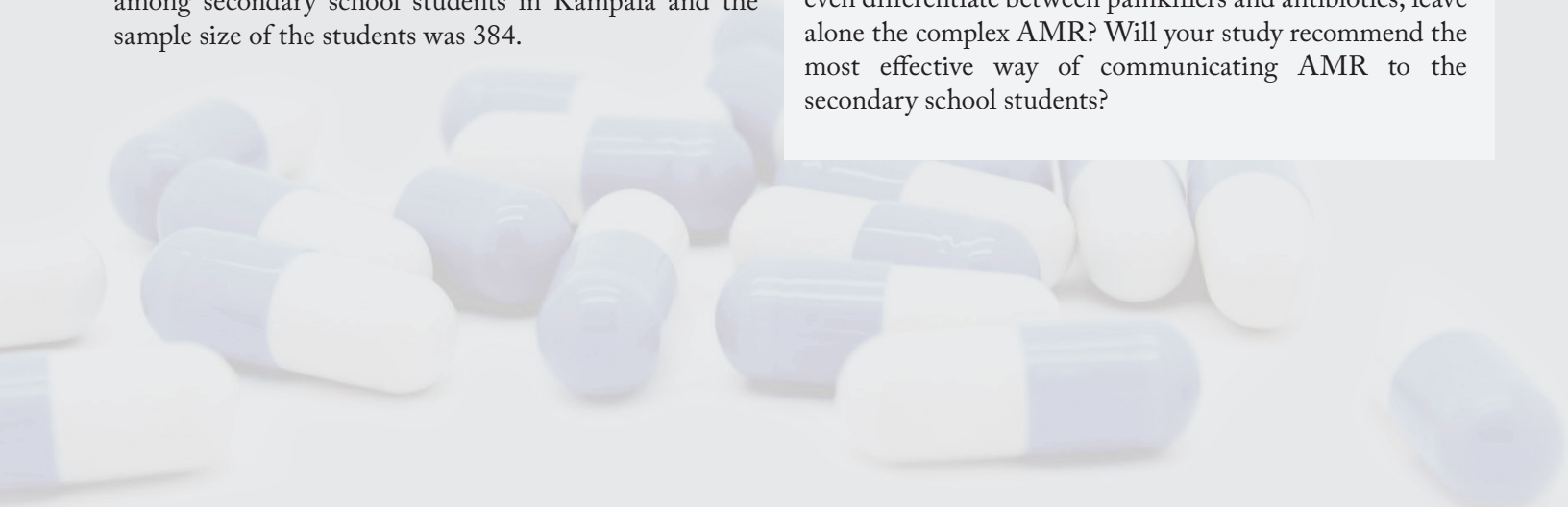
Panel Discussion Questions

The student presentations were followed by a panel discussion for the students. These questions included:

Where was this culture done to label this patient as having Salmonella Typhi since this is a specific culture diagnosis that can be done in very few labs in Kenya?

Have you considered sharing this information with fellow students on the international platforms so that it can be upscaled as it is a very innovative and practical idea to improve supply chain in Africa?

What is the most effective way of communicating the AMR message given that in Uganda, the public cannot even differentiate between painkillers and antibiotics, leave alone the complex AMR? Will your study recommend the most effective way of communicating AMR to the secondary school students?



The students responded to the questions accordingly. Wanjiru indicated that the testing for *Salmonella typhi* for Ann Maloba, was done at Kibera County Hospital. On matters of sharing his information on an international platform for scale up, Frank spoke of the openness to collaborate with other students and stakeholders to implement his tool to other contexts and surroundings. He cited that at the moment, they do not have any partners.

Concerning the ability to effectively communicate the AMR message in Uganda, David said that his study found out that if AMR information is included in the national school curriculum, it can be the most efficient way of making learners aware of AMR. Articles in newspapers were also another way to enlighten learners. The comic strip that was developed makes the information presented appealing to the learners and the public while maintaining its scientific concepts.

ReAct AMR Video: Children at risk- The threat of Antibiotic Resistance

This video was presented in the meeting after the student presentations and it showed the silent AMR pandemic and how it poses a huge threat to children. It explained how rapidly increasing antibiotic resistance threatens future care in the community and in hospitals especially in low and middle income countries who are at a greater risk. Many children in these countries lack even the most basic healthcare, further worsening the situation. It further explained that every three minutes a child dies from sepsis due to antibiotic resistant infections and noted that there is a need to have working and effective drugs as part of the continued push to drive down global infant mortality rates.

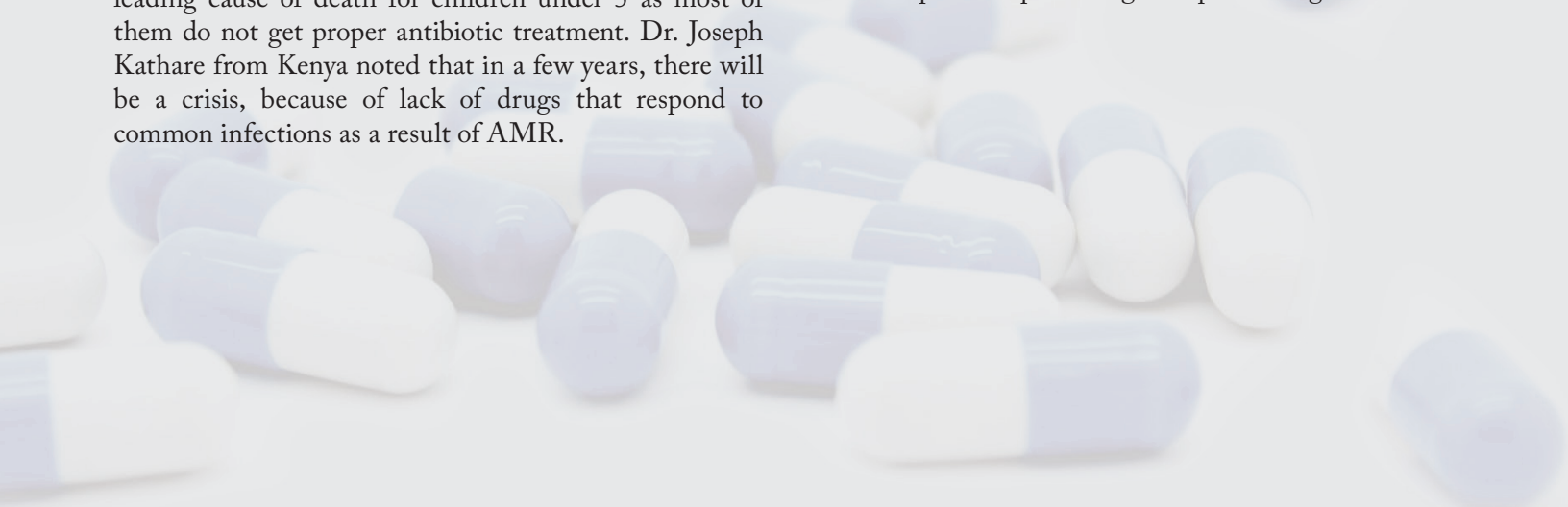
A study in Kenya showed that pneumonia is still the leading cause of death for children under 5 as most of them do not get proper antibiotic treatment. Dr. Joseph Kathare from Kenya noted that in a few years, there will be a crisis, because of lack of drugs that respond to common infections as a result of AMR.



Antibiotic resistance threatens future care in the community

A respondent in the case study, Elizabeth Waburi, a mother of two children, 7 and 1 year old explained that when the baby is sick, she simply goes to the local pharmacy and asks for some specific drugs which she thinks may treat the illness. In South East Asia, antibiotics are widely used for children as well as for the entire population. Studies done in Hanoi, Vietnam show that a majority of children use antibiotics every month. The staff at Vietnam Children Hospital are frustrated over the rising numbers of resistant infections that hamper their efforts to save the lives of newborns.

Professor Stefan Peterson, concludes by urging the world to come together and fight the silent and faceless pandemic that is AMR just like it is doing to fight Covid-19 by developing new drugs, maintaining the existing ones and fix good access to quality health care for everyone. He further added that antibiotic resistance must be pushed up on the global political agenda.



2nd Session: Closing Session

– Final Presentations

This session was moderated by Mirza Alas, Programme Officer at South Centre.

Otridah Kapon, from Zambia National Public Health Institute who is a Consultant at ReAct Africa, gave a presentation titled “Lessons learnt, best practices and challenges identified.

This segment sought to highlight the lessons, best practices and challenges identified in the AMR NAP implementation from the different countries in the first three days of the conference.

Some of the lessons included:

- Need for strengthening integrated surveillance systems (highlighted by Ethiopia),
- Leveraging on IPC campaign and WASH implementation,
- Importance of multi sectoral collaboration, the possibility of resource mobilization
- Leveraging on the academia world (Nigeria)

Some of the best practices shared include prioritization of NAP in countries based on impact, availability of resources and capacities. Other best practices are country collaboration with corporate partners, community sensitization and engagement of medical practitioners and the media.

The challenges that were noted include weak regulatory mechanisms in most African countries, inadequate laboratory capacity, inadequate resources (Human resources and funds), little or no private sector engagement and low coverage in AMR sensitization. She concluded by urging participants to consider these elements to ensure effective implementation of the AMR NAPs.

Summary of funding & technical assistance opportunities

Mr. Mpanga Kasonde, Projects Consultant, ReAct Africa, took participants through this session. These funding and technical assistance opportunities were highlighted by funders and partners on the first day of the conference. These partners include the Africa CDC, OIE, WHO, ICARS, Fleming Fund, World Bank and FAO.

The key areas for improvement highlighted were the need for country demand, ownership and commitment in the fight against AMR. This should be done through advocacy and awareness and political commitment and interest at the national level. Countries should also prioritize the AMR agenda at the national level vis-à-vis other development challenges within the AMR agenda. The complexity of AMR should be simplified by the use of toolkits and M&E indicators to measure progress.

Some of the opportunities include increasing stakeholder awareness and engagement to foster change. This was highlighted by the Africa CDC. OIE mentioned that they would support good practices to prevent infections and control the spread of resistant microbes. Other opportunities areas for funding include strengthening of governance and allocating resources to accelerate and sustain progress.

ReAct Africa Community of Practice (COP)

Julian Nyamupachitu, the Program Officer at ReAct Africa, took participants through this session. She highlighted the work that ReAct Africa has been doing in the AMR fight by engaging civil society. ReAct Africa has collaborated with the Africa CDC in this program.

She explained that ReAct took this route because AMR requires a multi-pronged approach which appreciates the need to engage different stakeholders, including the civil society. In addition, CSOs play a critical role in raising awareness, catalyzing action in communities and supporting government policies and program to control AMR.

In a workshop organized by Africa CDC in December 2018, to see how CSOs can be engaged in advancing AMR control, two gaps were identified. CSOs require training in advocacy, communication and understanding basic AMR science. The second gap was the need for Communities of Practice (COPs) where they can share information and mentor each other.

Communities of practice are groups of people who share a passion for something they know how to do and who interact regularly to learn how to do it better. The goal of this AMR COP is to have an interactive AMR discussion platform that provides a shared learning environment, allowing for a multi stakeholder engagement with a one health approach to share information, best practices and to learn from each other.

A community of practice platform piloted on an IQVIA platform in 2020 held discussions, shared relevant AMR information, including links to important events and tools. The WAAW 2020 video featuring some CSOs working in AMR prevention and control in Africa was showcased to the participants. In the video, Dr. Mirfin Mpundu, Director ReAct Africa and Partnership and Stakeholder Lead for Africa, ICARS, commenced by showcasing a poultry farm where chicken are reared without the use of antibiotics. He emphasized the need for CSOs to work together to drastically reduce the use of antimicrobials in humans, animals and the environment for a sustainable future.

The call of action at the tail end of the video was for CSOs working in various sectors in Africa to join ReAct in the Community of Practice platform.

South Centre Presentation

Dr. Viviana Munoz Tellez, the coordinator of the Health, Intellectual property and Biodiversity programme at South Centre made this presentation.

The South Centre is an Intergovernmental Organization established in 1995. It is a multilateral think tank of developing countries mandated to provide policy advice, undertake research and analysis, support coordinated actions by developing countries in negotiating processes and promote South-South co-operation. It has 54 member countries.

The South Centre work on AMR touches on participation in global processes, policy oriented research, awareness raising and capacity building, promoting civil society and engagement and supporting government representatives and policy makers.

Some of the key activities of the South Centre include, briefing meetings for Geneva based delegates in preparation for WHO negotiations, organizing regional workshops in Asia and Africa for policy makers in human, animal health and the environment.

Conclusion

Dr Tellez invited participants to give feedback through the anonymous feedback form sent to them, so as to let organizers of the 2020 conference get firsthand information about their experience in the conference.

Dr. Viviana thanked all participants, ReAct Africa, South Centre, Funders and Partners and the technical team for making the 2020 ReAct Africa and South Centre Virtual conference 2020 a success.

Highlight of RAN 2021 activities

Dr. Tracie Muraya, the Policy Officer at ReAct Africa gave a presentation on the highlights of RAN 2021 activities.

She commenced by stating that ReAct still reaffirms its commitment in supporting countries to create and implement their AMR NAPs. To date WHO AFRO reports that 36 countries have their AMR NAPs in place. However 5 are still awaiting government approval and the rest are yet to develop their plans. She insisted that policy action in the implementation of these NAPs remains the greatest challenge due to lack of technical expertise, finance, political will, surveillance data, weak coordination among relevant ministries and limited awareness and comprehension of AMR

She continued by highlighting the effects of covid-19 in the AMR implementation activities including the impact on the already weakened health systems and slowing down of implementation as funds were reallocated to fight the covid-19 pandemic. She reiterated on the need for countries to have mitigation measures as the World Bank projected that Africa stands to lose about 79 billion shillings in output. She mentioned that since the pandemic is already here, countries need to be innovative so as not to be pushed to recession. It is therefore important to incorporate activities instead of slowing them down as well as engage and incorporate new partners.

In 2021, ReAct Africa hopes to see African countries use the participatory based approach with country and regional one Health stakeholders. It hopes to see countries having access to quality microbials and will also conduct a baseline study to identify the areas of need and the output has to be country priority need areas so that there is ownership and institutionalization of the evidence based practices.

The planned 2021 activities will be both virtual and physical. The physical activities are key in solidifying relationships even in the wake of Covid-19. African countries supported by RAN in developing and implementing the NAPs include Ghana, Nigeria, Uganda, Kenya, Tanzania, Zambia, Malawi and Zimbabwe.

In 2021, ReAct will continue with its participatory based approach and collaborate more closely with OIE, FAO, Africa CDC, WHO AFRO and the RECs. ReAct has other direct projects apart from NAPs and these include the Community of Practice platform (COP), smart farms, student clubs, partner engagement and Alforja. In Alforja, ReAct engages students in elementary schools as agents of change to communicate AMR to their peers and family. In 202, they shall be engaged in WASH and matters IPC.

Other activities will be centered on Regional and global governance, food systems campaign, WAAW activities. The communication aspect will include review of the IEC materials of the last 6 years, developing new materials from the gap analysis and publications of articles on RANs work in Africa.

Official close of the conference

Dr. Tracie Muraya noted that as the main actors of the conference (ReAct), the discussions exposed the challenges and opportunities that cut across the board in the implementation of NAPs. There has also emerged the danger of the bucket load of chlorine going down water systems which could potentially disrupt our ecosystems and lead to serious diseases which may potentially lead to AMR because of high antimicrobial use. Therefore stakeholders need to have more engagements within and without AMR.

On behalf of Dr. Mirfin Mpundu, Director ReAct Africa, Dr Tracie Muraya the Policy Officer at ReAct Africa called the conference to a close by thanking all the partners, ReAct, South Centre, technical teams and participants for making the 2020 conference a possibility and a success.

