

**Championing African Action
on Antibiotic Resistance:
*strategies and innovative solutions***



Workshop Report

April 9 - 11 2014



Action on Antibiotic Resistance

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ACRONYMNS AND ABBREVIATIONS

ABR	Antibacterial resistance
AIDS	Acquired immuno deficiency syndrome
AMR	Antimicrobial resistance
BCC	Behavior Change Communication
CDDEP	Centre for Disease Dynamics Economics and Policy
CHW	Community Health Worker
CS / CSO	Civil society / civil society organization
EPN	Ecumenical Pharmaceutical Network
GARP	Global Antibiotic Resistance Partnership
HFFG	Hope for Future Generations
HIV	Human immuno deficiency virus
IC	Infection Control
ICAN	Infection Control African Network
ICCM	Integrated community case management
INDEPTH	International Network for the Demographic Evaluation of Populations and Their Health in Developing Countries
IPC	Infection prevention and control
IPNET	Infection Prevention Network
MDR	Multi Drug Resistant
MOH	Ministry of Health
PTC	Pharmacy and Therapeutics Committee
RUD	Rational Use of Drugs
TB	Tuberculosis
VPH	Veterinary Public Health
WHO	World Health Organization
XDR	Extremely drug resistant

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OVERVIEW

27 individuals from ten countries met in Nairobi in April 2014 to champion action on antibiotic resistance. The individuals were from diverse institutional backgrounds including government, civil society, academia, non government organizations and from a number of professions; veterinarians, physicians, pharmacists and public health specialists among others. The gathering was made possible by ReAct which is a catalyst for policy action on Antibiotic Resistance (ABR). ReAct offered the opportunity for organizations and individuals in Africa to discuss how they could work together collectively on the issue and create a greater voice in Africa.

The three day workshop, which was facilitated by Dr. Eva Ombaka of St. John's University Tanzania, addressed issues such as dimensions of ABR and the ABR situation in Africa; civil society initiatives on ABR, ABR policy developments and available tools for action on ABR. The participants affirmed their commitment as champions for action on ABR in Africa and to mobilise other potential champions. They also made commitments for action within their own individual spheres of influence and for collective action recognising that there was power in harnessing each other's skills and expertise to achieve a common goal. By the end of the workshop a common understanding of ABR situation globally and in Africa had been created, a number of possible areas for action articulated and strategies developed to tackle three priority issues. The priority issues that participants agreed to take collective action on were, (i) the development and documentation of a holistic approach to ABR containment in Africa, (ii) raising awareness on the need for good quality data and advocating for systems to collect, as a start ,data on antibiotic use in the veterinary sector, (iii) increasing awareness on ABR by adapting and promoting the use of available information, education and communication (IEC) materials.

The workshop participants resolved to form a ReAct Africa Node and use this as the vehicle for collaborative forward action. Mirfin Mpundu of the Ecumenical Pharmaceutical Network (EPN) was appointed as the contact person for the node and together with a committee of four others representing the diversity of professions, institutional backgrounds and geographical spread of the participants, tasked with ensuring that the linkage with ReAct was properly established, that the energy and enthusiasm generated in Nairobi was sustained and that commitments made were honored. The participants ranked the workshop very highly in terms of relevance of content, quality of presentations, organization and facilitation.

SETTING THE SCENE

Introduction and process

EVA OMBAKA

The workshop facilitator Eva Ombaka led the participants through an entertaining process of getting to know each other using animal metaphors. She also described the participatory nature of the workshop in which the participants themselves were going to be the primary resource for each other in discussing the strategies and solutions that could be used to champion action on resistance in Africa. She explained the various avenues for sharing ideas and experiences including through the use of buzz groups and more structured group sessions. She urged participants to interact freely in order to make the most of the opportunity.



Presentation of ReAct

MARY MURRAY



Mary Murray welcomed participants and introduced ReAct. She said that ReAct is a catalyst for policy action on Antibiotic Resistance (ABR) and in spite of its small size has managed to influence policy at country level and at international level e.g. with the World Health Organization (WHO). ReAct has both geographical and thematic nodes. The geographical nodes are in Latin America and South East Asia while the thematic nodes (Generation and Translation of Evidence, and Strategic Policy) are based in universities (Uppsala and Duke in Sweden and USA respectively). ReAct collaborates with other global players like Centre of Disease Dynamics and Economic Policy (CDDEP) and Management Sciences for Health to achieve policy change. Using the workshop, ReAct was offering an opportunity for organizations and individuals in Africa to discuss how they could work together pushing available resources as far as possible and making the use of the continent's diversity. She emphasized the need for evidence, new methods of communication to make ABR better understood and the importance of creating and sustaining collective action.

Aim and context of the meeting

DONNA KUSEMERERWA



Donna Kusemererwa presented the workshop objectives and desired outcomes as listed below. Participants also shared their expectations which were largely within the overall frame of objectives for the workshop.

Workshop objectives

1. To update on the current situation of Antimicrobial Resistance (AMR) [in particular ABR] –globally and in Africa.
2. To share experiences in using different strategies, highlighting successes and failures

3. To learn the use of some tools available to address AMR and how they can be applied to ABR
4. To develop new strategies and identify possible areas for possible joint action
5. To start a process of networking and learning from each other on how to minimize the dangers of AMR in Africa.

Desired Outcomes

- A common understanding of ABR situation globally – the extent of ongoing or planned activities
- A common understanding of ABR in Africa- some of what we know, what are the main gaps we know of now
- A common understanding of the significance of ABR in relation to AMR – globally and within Africa
- Opportunities within existing initiatives/ activities on the continent where action to contain ABR can be introduced or extended
- Prioritized strategies (three or four) to address ABR in Africa
- Consensus on a simple plan to move the ABR agenda in Africa forward together
- A nucleus/core of a network addressing ABR in Africa -committed people, organizations moving forward together

<i>Participant's expectations of the workshop</i>
<i>Learning: about the situation in Africa, new ways of working and what others are doing</i>
<i>Networking</i>
<i>Find out more about antibiotic use in animals</i>
<i>To identify sources of funding for research</i>
<i>Develop strategies and initiatives for local action</i>

Antibiotic Resistance – the global picture and relationship to AMR

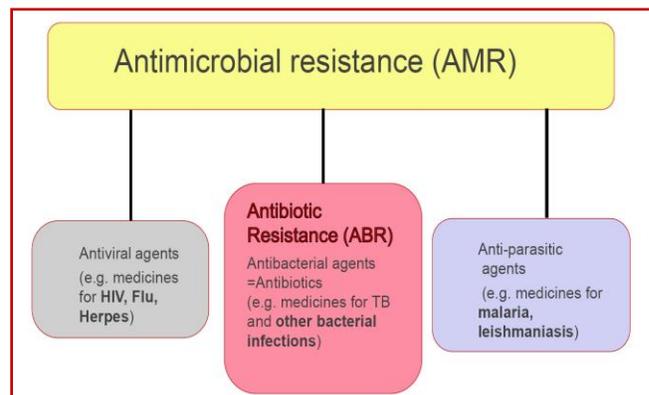
MARIA THERESA BEJARANO



Maria Theresa Bejarano introduced the basics about bacteria and antibiotics, explaining the concepts of antimicrobial and antibiotic resistance, describing the global situation with respect to ABR and the present challenges and opportunities. She highlighted the usefulness of bacteria to human body functions such as neutralisation of toxins from food and production of vitamins. Discussing action at the global level. She also called participants’ attention to a

draft resolution on combating antimicrobial resistance (AMR) that will be presented to the sixty seventh World Health Assembly which called on member states to:

- (1) increase political awareness to secure access to effective antimicrobials
- (2) strengthen infection prevention and control using basic hygiene measures
- (3) develop /strengthen national plans /strategies



and international collaboration for AMR containment

(4) mobilize human and financial resources for implementation of plans and strategies for AMR containment

(5) strengthen pharmaceutical management systems and where appropriate laboratory infrastructure

(6) monitor the extent of antimicrobial resistance and monitor regularly the use of antibiotics in all relevant sectors, and to share such information

(7) improve among all relevant care providers, the public and other stakeholders awareness of (i) the threat posed by antimicrobial resistance, (ii) the need for responsible use of antibiotics and (iii) the importance of infection prevention and control measures

(8) encourage and support research and development on AMR and antimicrobial use

(9) collaborate with the Secretariat in developing and implementing a draft global action plan to combat AMR

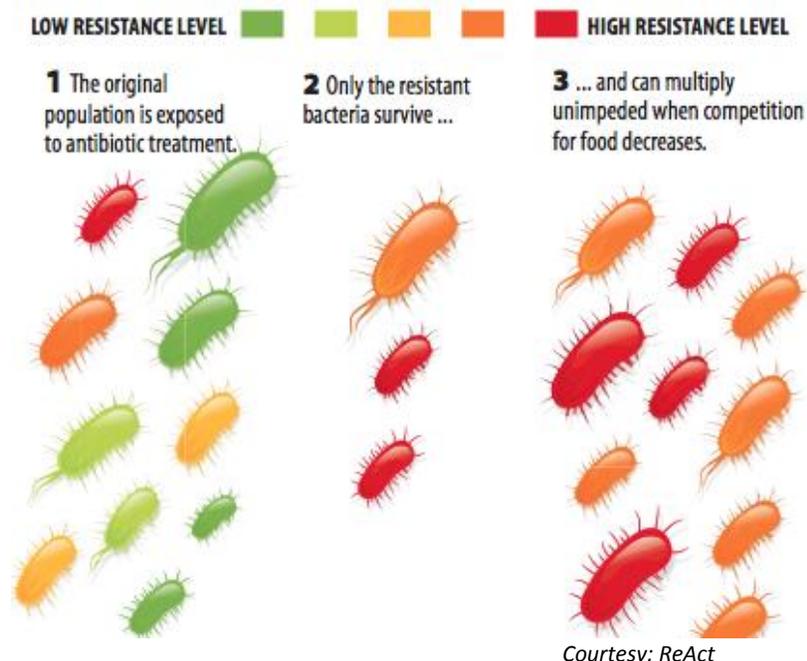
(10) develop Antimicrobial Resistance Surveillance Systems (i) for inpatients in hospitals (ii) for outpatients in all other health care settings and the community (iii) for animals and non-human usage of antimicrobials

A closer look at the science of antimicrobial resistance in Africa

JAPHETH OPINTAN



Introducing his topic, Japheth Opintan presented the grim situation with respect to infectious diseases in Africa where diseases such as pneumonia, tuberculosis (TB), malaria and diarrheal diseases were still causing millions of deaths every year. This high burden of disease was one of the factors that was driving indiscriminate use of antibiotics. He explained how the use of antibiotics created an environment which allowed resistant organisms, which occur spontaneously, in nature to thrive and multiply through positive selection. Development of high levels of resistance had a number of negative implications for human society including the increase in cost of treating infections and making it more difficult to control and contain epidemics.



Group Buzz

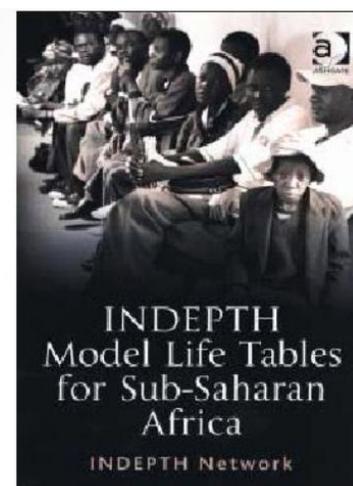
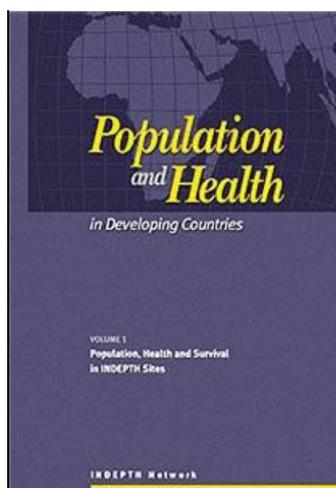
- *Smart data is required*
- *Solutions to the ABR problem should be broad*
- *The image of a peddler carrying a suitcase of medicines around villages with a solution to every problem is one we can all relate to. We should consider a suitcase approach to tackle ABR*
- *Francophone countries need to be included in the Africa Action*
- *Communities need to be targeted if changes in the way antibiotics are used is to be realized*

UNDERSTANDING THE DIMENSIONS OF ABR AND THE SITUATION IN AFRICA

The INDEPTH experience with AMR and ABR

BETUEL SIGAUQUE

Joining the workshop over a Skype link from Maputo Mozambique, Betuel Sigauque described the International Network for the Demographic Evaluation of Populations and Their Health in Developing Countries (INDEPTH) Network. He indicated that INDEPTH works with demographic and geographic platforms providing a linkage between health and demographic surveys. The focus of INDEPTH was to accurately measure disease burden, to monitor diseases and to study the impact of interventions in health. With relation to specific action on ABR he said that INDEPTH had a working group which had developed a proposal to carry out research on the impact of antibiotic resistance in Africa and Asia, the factors that influence antibiotic resistance in Africa and Asia and the flow of resistance genes of bacteria between community and hospital. However INDEPTH was, up to the time of the workshop, unable to secure funding for it. This notwithstanding, he affirmed that INDEPTH had the expertise, systems and structures that could be harnessed for surveillance on ABR / AMR.



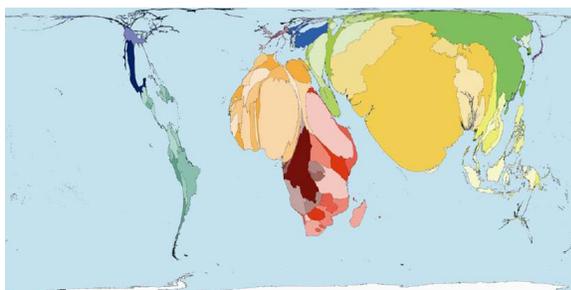
Group Buzz

- The INDEPTH working group on ABR is yet to link up with other working groups such as that on maternal and newborn health to create synergies
- Standardized lab procedures are very important in order to have comparable data. Ghana AMR group is already doing some work on standardization of lab procedures and there shouldn't be duplication.
- Research centers tend to apply different protocols however a standard tool has been developed to collect data on antibiotic use so that all the data is similar

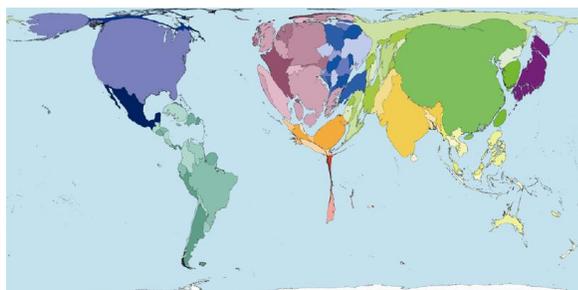
Burden of Infectious maternal and childhood diseases in Africa: How might ABR impact?

PETER WAISWA

Starting his presentation with the sobering statistic that 10 million deaths were occurring ever year among mothers, new born babies and infants, Peter Waiswa discussed how crucial antimicrobial agents were to saving lives during and immediately after birth. Over 70% of deaths in children under five in Africa are due to infectious diseases which are treatable with the right medicines. In order to address this challenge there was a big global push to increase access to antibiotics at all levels in the health care systems in high burden countries. The challenge with this was Africa relies largely on middle and lower cadre health workers to provide health care and the implication of this on the use of antibiotics and resistance was not known. In addition a number of countries are providing antibiotics to community health workers and village health teams under the integrated community case management (ICCM) strategy, which is critical to ensure life saving medicines are available in time to mothers and children who need them. However there appears to be no consideration about systems for surveillance of antibiotic effectiveness and adherence monitoring. He underscored the need for practitioners, medicines regulatory agencies and other stakeholders to be alert and ensure that these initiatives did not jeopardize future treatments by driving resistance.



Global child and neonatal burden



Global physician density

Africa has a very high child and neonatal mortality burden coupled with a dismal physician density

Burden of HIV/AIDS in Africa: the impact on ABR

ABIMBOLA OLANIRAN



Abimbola Olaniran told participants that 71% of the 35.3 million people around the world living with the human immuno deficiency virus (HIV) in 2012 were in Sub Saharan Africa. Furthermore bacterial infections were an important cause of morbidity and mortality in HIV sero positive individuals through both opportunistic and non opportunistic infections. In addition HIV sero positive individuals were more likely to be infected with resistant organisms probably as a result of their propensity for low T-helper (CD4) cell counts, previous exposure to antibiotics and multiple hospitalizations. He advocated for preventing infections to reduce the need for antibiotics using strategies such as immunization, good hygiene and proper food preparation. He also called for better medicine use in both the informal and the formal sector. He concluded by saying that the battle against resistance was one that could be won.

Burden of TB in Africa: the impact on ABR

JOEL BAZIRA



One third of the 54 million deaths globally are due to an infectious disease, with Sub Saharan Africa and India worst hit. Tuberculosis is an important infectious disease with 8.6 million new cases of TB, 450,000 new cases of Multi Drug Resistant (MDR) TB and 170,000 deaths from MDR TB reported in 2012. Humans make all the decisions about antibiotic use in animals and for human health and contribute a lot to resistance development and to transference of resistance. Discussing resistance to TB in Uganda, Joel Bazira reported that one of the challenges was the fact that conventional drug susceptibility testing was a slow process requiring three - four weeks for solid media and 4-23 days for liquid media. The other key challenge was the longer treatment time for drug resistant TB (18- 24 months) compared with susceptible TB (six - nine months). He concluded by challenging participants to start by each changing his or her behavior in order to have chance against bacteria which he described as being strategic.

In Uganda MDR-TB rates are 1.4% in new cases and 12.1% in re-treatment cases. No cases of XDR TB have been reported

April 2014

A challenge for ABR Containment

ABR is invisible, if we want people to take action we must give it a face

Animal Sector and Food Production - The Ghanaian Situation

BASHIRU KIKIMOTO



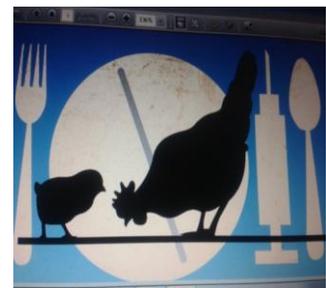
Bashiru Boi Kikimoto in his presentation informed the delegates that Veterinary Services in Ghana were part of the health sector until 1920 when they were moved to Ministry of Agriculture. Kikimoto described the current organization of the veterinary sector in Ghana and the situation with respect to antibiotic use. Analyzing the situation he indicated that the veterinary practitioners in Ghana do not consider ABR as a priority issue and except for canine treatment, culture and sensitivity testing was rarely done to determine the most appropriate antibiotic for a particular condition. He hinted at how difficult the situation was with the information that veterinary practitioners were known as antibiotic / multivitamin doctors because of their tendency to treat any animal condition with an antibiotic and a multivitamin. The veterinary public health (VPH) unit which he was in charge of however had decided to make ABR a priority following ReAct's catalytic action. The unit was now committed to tracking the importation of antibiotics for veterinary use and following their movement to points of use. The unit also intended to undertake surveillance work and conclude the antibiotic policy development process. In conclusion he said human behavior had to be tackled because even he as a professional had some questionable medicine use practices but knowing the dangers and risks had enabled him to change his ways.

Animal Sector and Food Production: The Case of Kenya

MOSES GICHIA



Antibiotics are used in veterinary practice therapeutically, for prophylaxis, as growth promoters and for preservation. The drivers of antibiotic use in veterinary practice are lack of knowledge, the high cost of professionals and veterinary inputs. As such Moses Gichia recommended that veterinary services should be delivered to farmers as a public good as a way to address all the drivers. ABR surveillance systems are required to monitor both human and animal use of antibiotics. Measures to control antibiotic use in veterinary practice should be proportional to the human health risk. e.g. the use of antibiotic as growth promoters. He described ABR as a tragedy of the commons and recommended that antibiotics critical for human health should not be used in food producing animals or be used with caution e.g. the fluoroquinolones. Gichia further called for the use of consumer rights to advocate for protecting citizens through preserving antibiotics. Kenya has managed to prohibit the use of certain antibiotics in food producing animals and also as growth promoters. The role of growth promoters in enhancing production was recognized but they also increase the risk of mastitis and therefore would drive antibiotic use and subsequently resistance.

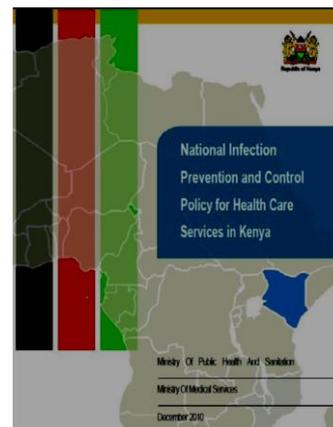


The landscape and developments for ABR: infection Control

LINUS NDEGWA



Linus Ndegwa described infection control as a global problem with local solutions. Kenya has a situation analysis report on ABR which is being used to inform and shape policy. Health care associated infection control is an AMR containment measure which encompasses some simple and basic interventions such as good hand hygiene practice. Ndegwa informed participants of some of the specific infection control structures in Kenya including an Infection prevention and control (IPC) unit at the Ministry of Health (MOH) and the Infection Prevention Network (IPNET) Kenya which brings together health professionals and other people interested in addressing infection control. Kenya has also enacted and disseminated a national infection prevention and control policy.



Kenya milestones in relation to AMR containment in the veterinary sector

2010: Kenya prohibited use of Nitrofurans and Chloramphenicol in food producing animals

2012: An inter-Agency Task Force on Antimicrobial Resistance was formed to advise, recommend and advocate on the prudent use of antimicrobials with a view to contain antimicrobial resistance

An ecosystem view of antimicrobial resistance

DENIS BYARUGABA

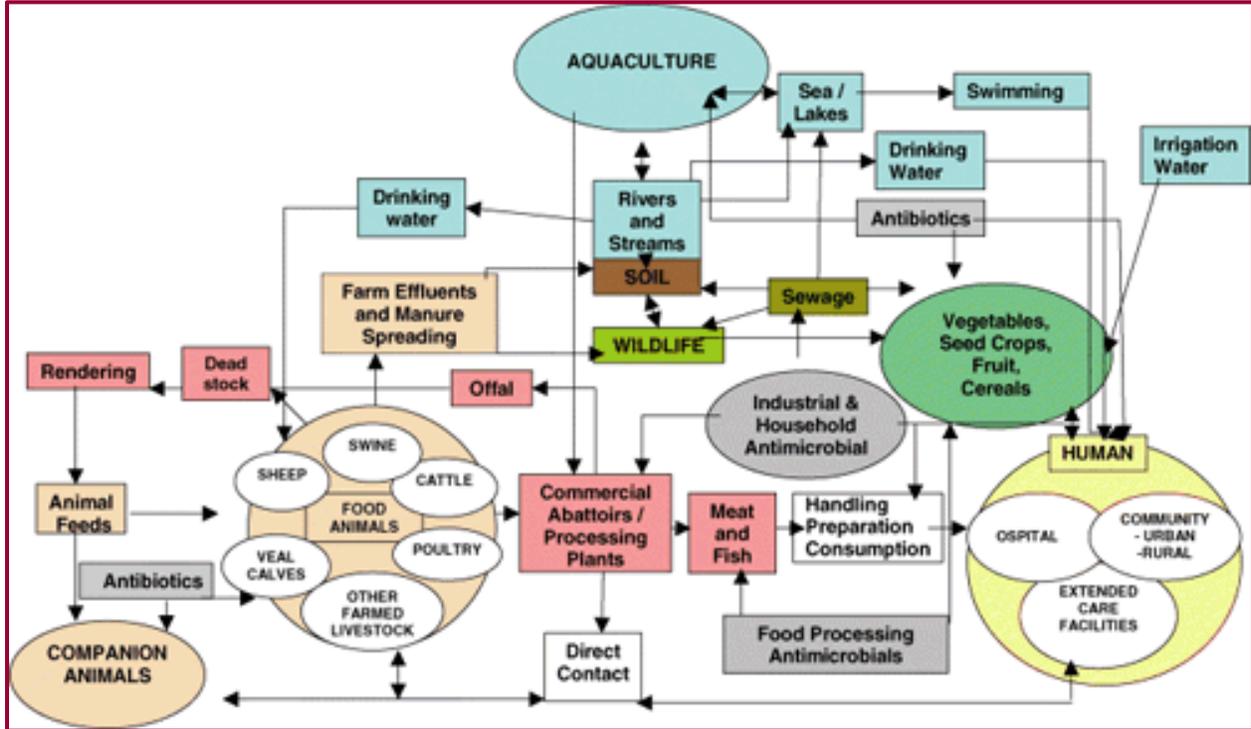


According to Denis Byarugaba, there is limited information about the role that the environment plays in the maintenance and potential spread of antibiotic resistance. Antibiotic use is a major driver of resistance but it is not the only one. It is important that the others are recognized and addressed. Further insights can be obtained by looking at the entire ecosystem in which bacteria live and move. He presented the ecosystem and the inter relatedness within it and called for the following:

- A global one health approach to containment of AMR: Engagement of a wide range of stakeholders including farmers, veterinarians, food safety professionals, medical practitioners, environment and wildlife experts as well as law enforcement in monitoring and control activities
- Improved preventive animal health, public health and environmental and production practices: Improved vaccination, husbandry practice, sanitation, and bio-security.
- Extensive research into livestock probiotics and vaccines: Antimicrobial resistance surveillance efforts coupled with early and decisive intervention policies and actions.

His conclusion was that micro organisms are here to stay and we need to learn how to co-exist with them. The ABR fight up to now has focused on pathogens and humans. Human beings are selfish in that

they don't care about these organisms – but like a cornered dog, microbes will defend themselves. We must not be selfish as human beings in looking at ABR. We must see the bigger picture.



Ecosystems communities and antibiotic stewardship

HEZRON EMMANUEL NONGA



Hezron Nonga described an ecosystem as a basic functional unit of nature comprising of organisms and their nonliving environment, intimately linked by a variety of biological, chemical and physical processes. He explained that antimicrobial stewardship is required wherever antimicrobial agents are used including hospitals, long term care facilities, community medicine, agriculture and veterinary use and in the community. He warned that antimicrobials are among the emerging micro-contaminants in water because of their potential adverse effects on the ecosystem and human health. Delving into the use of antibiotics for veterinary practice, he told participants that worldwide about 100 – 200 000 tonnes of antibiotics manufactured annually goes to the agricultural, horticultural, and veterinary sectors, almost four times as much as is used in humans, the outputs of which which humans consume. He described four main applications of antibiotics in animals production; therapeutic, metaphylactic (timely mass medication), prophylactic and for growth promotion. Nonga reported that antibiotics account for 85-90% of the veterinary medicines used in Tanzania. He had the following explanations for the widespread use of anti microbial agents by farmers; wide spread livestock diseases, ready availability of antimicrobials without restrictions, lack of awareness about possible effects of antimicrobial residues, lack of awareness about production costs and the lack of alternatives.

CIVIL SOCIETY INITIATIVES

Ghana and the Six Country Project to build the capacity of CSOs to educate their Networks on AMR

MARY AKORLI



Mary Akorli presented Hope for Future Generations (HFFG) explaining their interest in AMR / ABR and their role in the Ghana Civil Society Organization (CSO) project. HFFG is a community development, women and children centred organization established in 2001. The Ghana CSO project is part of a six country project aimed at engaging and strengthening civil society organizations to address aspects of antibiotic resistance impacting child

and maternal health through social mobilization and community development. The CSO project involves the development of tailored Information education and communication (IEC) materials to meet the needs of the communities in Ghana in response to ABR. A Knowledge Attitudes, Beliefs and Perceptions study is being undertaken nationwide to inform a behavior change campaign. The study identified knowledge gaps and mis-information on legal sources of antibiotics and need for prescriptions. A draft training manual is being developed to address the main findings of the baseline KABP survey. HFFG has taken up the challenge to sustain the intervention beyond the CSO project and to document its impact on the communities. HFFG has a strong expertise to draw on for social mobilization on this issue: developing story boards, using videos to follow up in homes as part of roll out strategies.

A challenge for HFFG
What indicators are available to evaluate your impact in the communities at the end of the CSO project?

Equinet Kenya Experience of Regional networking on health & AMR

CONSTANCE WALYARO

Constance Walyaro presented Equinet Kenya highlighting its focus on health and trade in the following key areas of work:

- Preparing and publishing position papers on health and trade, preparing and disseminating simplified fact sheets on health, trade and the right to health to increase awareness and engage the public
- Creating linkages between civil society networks, coalitions and alliances on trade and health to strengthen/enhance mechanisms for civil society participation
- Lobbying government's trade officials, media, parliamentarians, policy makers, civil society and other key stakeholders as a means to achieve agreed outcomes on Trade Related Intellectual Property Rights and Economic Partnership Agreements on health.



Equinet deals with equity in health and has been working in Kenya on addressing trade issues that have an adverse effect on health outcomes. Equinet also provides a unified voice for CSO's and has good experience working jointly with other groups

and networks on issues of mutual interest. They have a rich experience in advocacy obtaining policy change and mobilizing citizens and use a four pronged approach that combines capacity building and technical assistance, networking and sharing experience, policy formulation and creation of platforms for change. Equinet is interested in how the right to health can be used to further the AMR agenda.

Experiences from SARPAM's *Tendai* project

WASHINGTON MATIKA



Washington Matika shared his experience working on *Tendai* a project funded by the British Department for International Development under the Southern African Regional Programme on Access to Medicines. The project aimed at addressing affordability, accessibility and availability of 15 medicines in six countries involves use of medicines monitors to collect data from health facilities



on an ongoing basis using smart phones. The data is used to inform decision makers about the medicines situation in their countries. In addition consumer action forums have been set up in the countries as platforms for engagement of policy makers and advocacy on medicines issues. The forums bring together Non government Organizations (NGO) and CSOs working on health. The use of smart phone technology to collect data could be applied to other projects and the available systems set up under *Tendai* could be tapped into for monitoring antibiotic use at health facilities and collection of relevant ABR related data.



TOOLS TO ADDRESS AMR /ABR

Using community health workers to improve child health - implications for ABR

PETER WAISWA



Peter Waiswa began by noting the many hidden costs faced by people seeking free health care which causes many people in Uganda to seek care in the private sector as a first option when faced with a sick child. Using findings from two cluster randomized studies to test the role of Community Health Workers (CHWs) in maternal-newborn care and to assess the effect of integrated community case management of malaria and pneumonia in children under five, Peter Waiswa discussed the potential impact of CHWs on ABR. In studies the CHW had performed reasonably well in prescribing for 'pneumonia'. They also improved community knowledge, care seeking and adherence to treatment. This work influenced both local and global policy. For example the WHO revised its guidelines in the 'Born too soon' program based on its findings. Waiswa attributed the success of the approach to the following: (i) it addressed felt need, (ii) they worked

closely with an influential NGO (Save the Children), (iii) they involved the MOH and other key stakeholders (local and international), (iv) they linked academics and program/policy makers; and achieved doctoral and masters training for some smart young people. Thus this work is a good example of the power of collective action. He concluded by saying CHW had a role to play in AMR containment by contributing to appropriate use of antibiotics. However it was important for CHWs to be properly trained and their programs coupled with health facility strengthening.

Interest in AMR – A cornerstone of EPN's approach in promoting Rational Use of Medicines

MIRFIN MPUNDU



Mirfin Mpundu explained that EPN's interest in action on AMR arose because it is a key element in promoting access to and rational use of medicines which is one of EPN's four focus areas. He described EPN's action on AMR which started in 2008 and included a campaign that was launched in 2009 to raise awareness about the problem and call for action by a variety of

stakeholders. He also indicated that EPN had been involved in training of health professionals on AMR and developing IEC materials. One of the innovative materials that EPN had developed to inform the public about AMR and antibiotic use was a set of short stories presented as six to twelve pictures in a comic strip. The comic strips which are available on various websites including WHO's have been translated into languages as diverse as Pidgin, Bemba and Kiswahili.

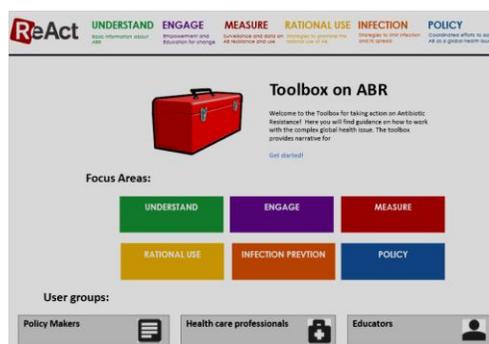


REACT Resource Center and Toolbox

BRON HOLLOWAY



Bronwen Holloway presented ReAct's tool box, news letter and resource centre and invited participants to make use of them to support their activities. She elaborated on the tool box which is intended to provide policy makers, health practitioners and others with guidance on ABR action. The tool box has six focus areas including policy, infection prevention and rational use. She invited



participants to contribute to the further development of the tool box in particular – to make it more useful and relevant for African users.

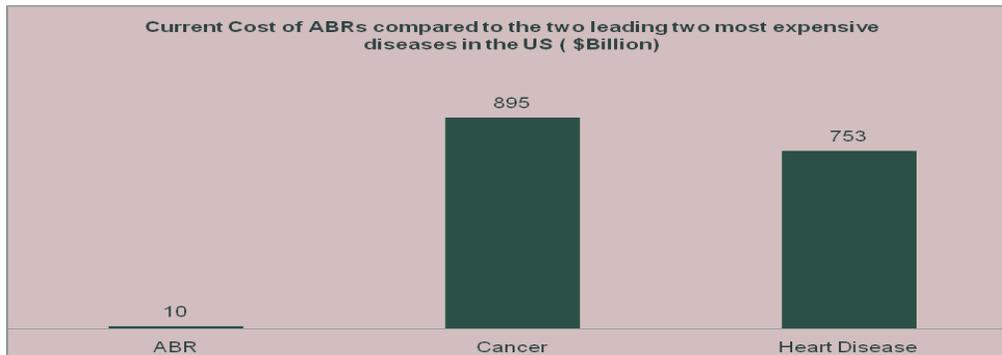
AMR / ABR POLICY DEVELOPMENTS

The Economic Burden of Antibiotic Resistance; translating the problem into policy action

SAMUEL DARE



Samuel Dare described the current cost models available to measure the economic impact of ABR as being ineffective because of focusing on current costs and ignoring negative externalities and therefore failing to capture the full impact of the problem. He also shared a philosophy he called '*help the teacher to pass you*' that intrigued participants. To do this in relation to ABR – we have to change our thinking about crafting the message, which means thinking more carefully about the frames for gathering and analyzing data. He also stressed the opportunity to use existing influential platforms for advocacy for policy including using their methodology for preparing the advocacy strategy: Global Health South Alliance and One Voice Alliance.



GARP Tanzania

KHADIJA MSAMI



Khadija Msami described the GARP Tanzania working group experience, its activities, deliverables and challenges. The working group has a diversity of professionals including microbiologists, veterinarians, health economists, physicians, pharmacists and laboratory scientists. The group is working on a situation analysis on the ABR situation in Tanzania and facilitating the establishment of a hospital committee group for antibiotic resistance data exchange and sharing of ideas on infection control policies. There are many data gaps that need to be addressed. Her reflections to date are that it is important to

balance expertise and passion in the working group; set 'doable' milestones; and maintain independence.

GARP-Kenya

EVELYNE WESANGULA



Evelyn Wesangula described GARP Kenya as a collaborative project of the Center for Microbiology Research (CMR), Kenya Medical Research Institute (KEMRI) and CDDEP. GARP Kenya had undertaken its activities through a multi disciplinary voluntary working group. The group had identified five focus areas (Surveillance and monitoring; Training and education; Vaccines; Quality control and supply chain, and veterinary use) and four thematic areas (Hospital, livestock; regulatory - development and implementation of legislation appropriate in Kenya; and community- rational use of antibiotics by the public, prescribers and dispensers) The achievements of the working group since its inception in 2010 include:

- Completed and disseminated a situation analysis on antibiotic use and resistance in Kenya
- Undertook a study of knowledge, attitudes and practice regarding antibiotic use in public, private and mission hospitals in Nairobi and Nyanza provinces
- Undertook a study of antibiotic resistance in isolates from commercial meat and antibiotic use practices among farmers
- Spearheaded integration of AMR in the national IPC Unit work plan in the MOH; co-hosting a regional workshop on AMR with Infection Control Africa Network (ICAN) and IPNET
- Held an AMR awareness week in November 2013
- A surgical site infection study is in planning
- A five day training course on antibiotic use and AMR for a multidisciplinary audience is in planning



Antimicrobial Policy Process in Ghana

EDITH GAVOR



Edith Gavor speaking on behalf of Martha Gyansa-Lutterodt, Chief Pharmacist MOH - Ghana presented the evidence of ABR in Ghana, the conceptualisation of a platform to address the problem and the achievements and the challenges faced by the platform. The Antimicrobial Resistance working group platform that has been established in Ghana is a multi stakeholder policy working group with strong civil society representation and engagement to obtain changes in community beliefs and practises. Ghana is also in the process of developing a policy framework which includes documenting the problem and a coordinated program of action on rational use of antibiotics. The achievements realized so far include local and international collaborations and generation and use

of evidence for decision-making. Building the 'Antibiotic Drug Use Monitoring and Evaluation of Resistance model, programme and culture' is also a unique and successful intervention for containment. Among the challenges described were the difficulty of translating policy into action and the weakly regulated private sector in Ghana where irrational prescribing and dispensing are rampant.

Antimicrobial Policy Process: Thoughts from Kenya

CHRIS FORSHAW



Chris Forshaw, a Senior Pharmaceutical Advisor MOH Kenya, attended the policy session of the meeting and shared his thoughts on the process in Kenya. He indicated that there was political goodwill in support of AMR. Kenya has developed a new health sector strategic and investment plan and the new Kenya national health policy mentions AMR. The recent amalgamation of the Ministries of Medical Services and Public Health had slowed down implementation of activities but once the exercise was completed he expected that there would be starting work on the issue.

Group Buzz

- *Inter country and inter institutional collaboration is key for tackling the problem'*
- *Microbes travel more than humans and are affecting so many sectors. All stakeholders need to be involved*
- *AMR is a time bomb*
- *ABR has been on the agenda of many high level global events including the world economic forum and global climate change summits*

The other champions



Stella Kiambi



Casco Mubanga



Fidelis Nyaah



Muthoni Kaminjuki

DISCOVERING POSSIBILITIES

In groups participants were asked to write down the two possibilities of action that they would be passionate about if they were being implemented. The proposed actions were discussed in the groups and synthesized as a group outputs presented below:

Focus Area	Possible actions
Awareness Communication and Training	Prepare messages tailored to different stakeholders; package and disseminate; adapt existing materials; generate innovative messages and methods aimed to mobilize communities; empower consumers with antibiotic product information; Tailor training to stakeholders; change curricula in training institutions; include ABR in continuing medical education and professional development courses Identify and engage champions at all levels; create informal mechanisms to support interaction; coordinate key messages to the world on ABR - regular intervals, use and expand ReAct newsletter, diversify editorial board to include representatives from different regions; organize an Africa AMR week
Data	Generate data from sentinel sites, improve infrastructure, study economic impacts and use data to influence policy; Generate data on importation, manufacture and use of antibiotics; Collect data on cost of ABR within a comprehensive economic model use centers of excellence to collect quality data on morbidity and mortality, trade, cost of treatment, cost of developing new antibiotics, amount of antibiotic ingested in food, amount of resistant organisms in the environment; visualize data on consequences of AMR and consequences of action short and long term showing complexities and for different audiences
Holistic approach	Model representing all the issues and entry points, Invisibility of the problem, involve all the stakeholders focus on moving policy into action prioritize interventions and put a fund in place
IPC	Hand washing in all health facilities
Lab Capacity	Investing in personnel and equipment in both quality control and clinical labs
Mobile technology	Harness it for use in containing ABR
Networking	Develop a forum for continuous networking on antibiotic bringing in relevant stakeholders
Research	Lobby for more research for new antibiotic and alternatives to antibiotics
Stakeholder	Identify and map stakeholders, analyze their interests and involve and understand them all include the policy sector in policy formulation for better policy implementation example MOH, other policy makers, communications experts, environmental sector and farmers
System strengthening	Have accountable people in each institution for AMR and IC; Institute functional MTCs Conduct inspections for compliance with IC best practices and publicize results
Tools	Put in place an African AMR inventory - a tool to share and compile data on AMR policies, regulations, plans projects, institutions stories and best practices Develop tools to meet unique unmet needs
Veterinary food sector	Transparency on ABR residues in food; Advocacy work with farmers and other stakeholders; create regional groups and share lessons learned e.g. from Kenya to other countries of Africa

Group Buzz on discovering possibilities

- 80% of medical doctors in Tanzania are in Dar es Salaam which has only six of the 44 million people in the country
- Identify what drives each group that misuses antibiotics and craft your message according to what matters to them
- How do you achieve policy implementation in a 'suitcase' world ?
- Policy development in an environment where there is no implementation or enforcement is futile
- Involving stakeholders especially the quacks is key. Terminology should be inclusive so that they do not feel alienated. Some may not have the information on the laws or policies that would empower them to do right.
- Brucellosis is a poorly diagnosed disease because of limited lab capacity it can only be eliminated by killing all the animals which are infected. Medicines that are used in the treatment of Brucella such as Rifampicin, streptomycin and fluoroquinolones are often used for the treatment of TB and this may be driving TB resistance. Doctors do not have time to culture brucella and it is not encouraged due to the threat of terrorism brucella mimics a lot of other illnesses and therefore is difficult to diagnose. Diagnostics need to be addressed.
- We need to involve consumers in developing ABR messaging. Link ABR to HIV related death for example. In Kenya the first lady is campaigning to save mothers and children and therefore the ABR agenda could be linked to this to raise its profile.
- Use of antibiotics in veterinary practice needs to be addressed
- Is it possible to have a rapid test for bacterial infections. Culture and sensitivity require 48 - 72 hours whereas blood cultures require up to one week it's difficult to wait this long before they treat a patient.
- Technological innovations ReAct and others have worked on determining the barriers to the development of new diagnostics for bacterial infections.
- Infection control requires a physician champion to be effective and sustainable. Hospitals provide a good starting point for AMR action by addressing infection? A multi-stakeholder group is required.
- Misuse of antibiotics: Africa students migrants to the US are obligated to take a full course of TB medicine when they test positive probably as a result of the BCG vaccine they received as a child.
- Can we make ABR a reality for the well to do and not just link it to infectious disease which is a preserve of the poorer sections of our society? Explore such links as obesity and antibiotic use. Participants can draw lessons on successful messaging for different audiences from the antibiotic smart use project?
- EPN has a quality control project involving a number of countries in Africa aimed at reducing the circulation of sub standard medicines. Medicines including antibiotics are tested for compliance with pharmacopeia standards this project could link in with ReAct to improve the quality of antibiotics

MOBILISING FOR CHANGE

The group as a source of action and transformation.

The process involved two-steps. Firstly, on the prompting of Joel Bazira, all participants acknowledged that they were champions individually. Hence each person was asked to work quietly for 10 minutes to develop a personal action plan under the theme *I as a champion* – that they could commit to implementing within the next 12 months. This was shared with the members of the group each person was working with. The individual action plans (Annex 2) were personal commitments – but progress would be shared in 12 months should the group meet again.

The process then moved to development of group action plans based on the theme - *the power of collective action*. Three groups were formed around the three priority areas that were selected from focus areas identified during the process of discovering possibilities: (1) a holistic approach, (2) data, (3) awareness communication and dissemination. The groups were required to develop an action plan for one activity that was achievable within one year. Group outputs follow.

HOLISTIC APPROACH

Our vision: all stakeholders understand the big picture on ABR and know their place and role in contributing (causing, increasing) to and containing (addressing, reducing) ABR

Action	Result	Resources	Dissemination	Pre requisites
Document the holistic approach to ABR in Africa	A manuscript that describes the holistic approach including definitions, elements, illustrations, literature	Illustrator Clear definition of team roles	Publish an article Share report	Commitment by group members

Time Frame: April 2014 - March 2015

Specific actions

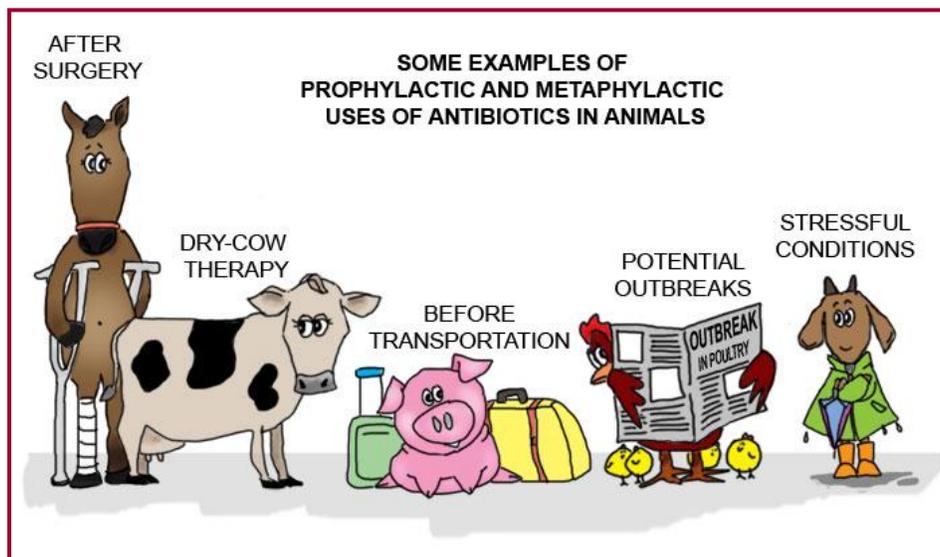
1. Create a mailing list
2. Prepare an outline / framework for the manuscript and share
3. Identify all stakeholders and determine their roles and relationships what can they do to increase or reduce antibiotic resistance
4. Develop a generic framework that can be adapted for use in different settings
5. Research - to identify what information exists on the eco system approach and what illustrations have already been developed.
6. Agree on the terminology that is appropriate for the audience
7. Develop a series of imagery
 - bacteria
 - problem
 - actions
 - including relationships with viral resistance and parasitic resistance as pull outs
8. Write a manuscript
9. Identify possible reviewers

Brainstorm issues and ideas on the holistic approach

- *Follow the antibiotic everywhere it goes and with everyone who interacts with it*
- *We have been working in silos involving everybody is important, everyone needs to take part*
- *Create an understanding of the complex dynamic system, bacteria, health of the eco system the bacteria*
- *Ecosystems and relation to ABR. Ecosystems are influenced by human action industry, health practitioners, environmentalists, politicians, policy makers animal and environment*
- *Agree to focus on bacteria, Bacteria is central to life*
- *Holistic approach needs to pull in all the other interventions - awareness and data*

AWARENESS COMMUNICATION AND DISSEMINATION

	ACTION	RESULTS	RESOURCES	DISSEMINATION	SETBACKS
1	Adoption of available EPN generated IEC materials	Increased awareness of AMR. A cost effective method will be to use the number of identified and trained deputies as an indicator.	Experts from target population within their fields	Feedback in the form of prepared reports to ourselves and the entire group. Minimum frequency: biannual	Insufficient quantities of materials for use to meet the needs of targeted population. Soln: use an electronic dissemination whenever possible.
2	Identify co champions to facilitate the process	Number of individuals reached with ABR message and IEC materials as reported by the co champions	Co champions		
3	Orient/coach and train co champions on how to use the materials i.e. How to engage the target population				
4	Fieldwork: champions and co champions.				



DATA

- **Why we joined the group:** We all recognize the fact that there is a large deficit in data for ABR. If strong* arguments are to be made, they must be supported by strong irrefutable evidence. Good data should drive the process.
- **Assumptions made:** This discussion was held on the premise that there is an availability of both financial and human resources needed to conduct and implement these recommendations.
- **Where should we start?** We appreciate that the domain of enquiry is vast, with each actionable area having its unique set of information demands. There is also need to approach the data collection in a methodical, systematic way. It was decided that we should adopt the World Organization for Animal Health, (Organisation mondiale de la santé animale) recommendations on “critical antibiotics” since this is a recognized document by WHO.
- **Type of data to be collected:** Given how expansive our domain of enquiry is, we should collect both qualitative and quantitative data. Data to be collected will include but not limited to,
 - Types of antibiotics
 - Quantities or volumes entering various markets
 - Patterns of use
 - Lab patterns and results
- **Methodology:** After critical antibiotics have been identified, we should also identify different collaborators. The group pointed out the particular usefulness of revenue collectors in providing information on inventory as they have to track everything coming into the country. The log books of health centers can also be invaluable repositories of information.
- **Mitigating factors:** We anticipate encountering resistance due to the following: security, apathy, poor record keeping, time and finances. We plan on limiting some of these factors by engaging in strong diplomacy leverage existing political influences to incite top down instructions. Once instructions are given at the top, it will be easier to work with them.
- **Structure:** As highlighted, we need to approach the issue of data identification, collection and analysis in a systematic way. A formal structure is required to give coordinate the complex activities. We believe this reinforces the idea of the collective and grants legitimacy. This will be particularly useful when tackling the “big boys” who have to be addressed in both getting this information, and enabling results.
- **Landscape analysis:** Find out the existing state of affairs with regards to policy , Stakeholders & Manufacturers. This reinforces the holistic approach to our methodology as we fully assess the current state of things. This will guide what needs filling/improving.
- We need to relate all action to relevant animal acts
- We need to understand factors influencing the supply chain

CHAMPIONING ACTION ON ABR IN AFRICA

Eva Ombaka informed the participants that in order for anything to be sustained beyond the workshop some kind of mechanism for collaboration had to be put in place. She presented two ideas. The first was to form a coalition that had a specific goal and once that was realized the coalition could cease to exist. She gave the example of the Kenya coalition on HIV which was a group of civil society and non government organizations that came together in the early 2000's to campaign for better access to ARVs. The second option was to create a network but this was often a time consuming process and unlikely to be realized at the meeting. The third option for a sustainability mechanism was being put forward by ReAct. Mary Murray presented the opportunity for the group to become the ReAct Africa node. ReAct already has two other geographical nodes in Latin America and South East Asia. A number of reactions followed the presentations

- Ghana was already collaborating with ReAct and was already a de -facto node
- An organizational structure is critical for sustainability and therefore the idea to have some kind of structure to sustain the groups initiatives was welcomed
- Can't the coordination of Africa be done from one point or are several hubs needed across the continent
- Detail required on how the node would be operationalised and how it would link up with existing institutions and groups such as IPNET and ICAN
- How would such a node do things differently and bring different parties together to speak with one voice e.g. Francophone Africa needs to be included
- EPN is a bilingual institution and could host the node

Resolutions

Following discussion and clarifications on the issues raised, the participants made the following resolutions:

1. To accept the offer to form a **ReAct Africa Node** and use this as the vehicle for collaborative forward action
2. To have **Mirfin Mpundu** of EPN as the contact person for the ReAct Africa Node
3. To allow representatives from Ghana nominate someone from among themselves to **deputize Mirfin Mpundu**
4. That **Constance Walyaro, Denis Byarugaba and Washington Matika** form a committee to support Mirfin Mpundu and the Ghana nominee in coordinating the node
5. To have the following initial **terms of reference** for the committee:
 - To nominate a representative to ReAct's senior leadership team
 - To make a contribution to ReAct's 2015 proposal
 - To determine how the ReAct Africa node will function

Closing Remarks

Japheth Opintan (academia): expressed gratitude for the opportunity to be part of the meeting. He had never thought how the information generated from his work as an ABR academic could be broken down into a format that was useful by others and appreciated that the workshop had linked academia with civil society and policy makers.

Moses Gichia (policy): affirmed that policy makers are ready to listen to academics and civil society in order to effectively tackle ABR.

Joel Bazira (service delivery): was gratified to have met so many people who are passionate about ABR and was motivated to increase his own commitment to addressing the problem.

Mary Akorli (civil society): committed to doing more to sensitize the communities her organization is working with on antibiotic use.

Khadija Msami (service delivery): urged participants to apply the knowledge acquired in all the small day to day things e.g. promoting hand hygiene. There was a lot to be done and a role for everyone.

Mirfin Mpundu in an interview with Eva Ombaka explained EPN's institutional structure and described what he intended to do as the contact person for the Africa Node. He said he was honored to be in that role and made a commitment to communicate with everyone. He requested node members for their cooperation and urged them to work together for a better world for our children and grandchildren.

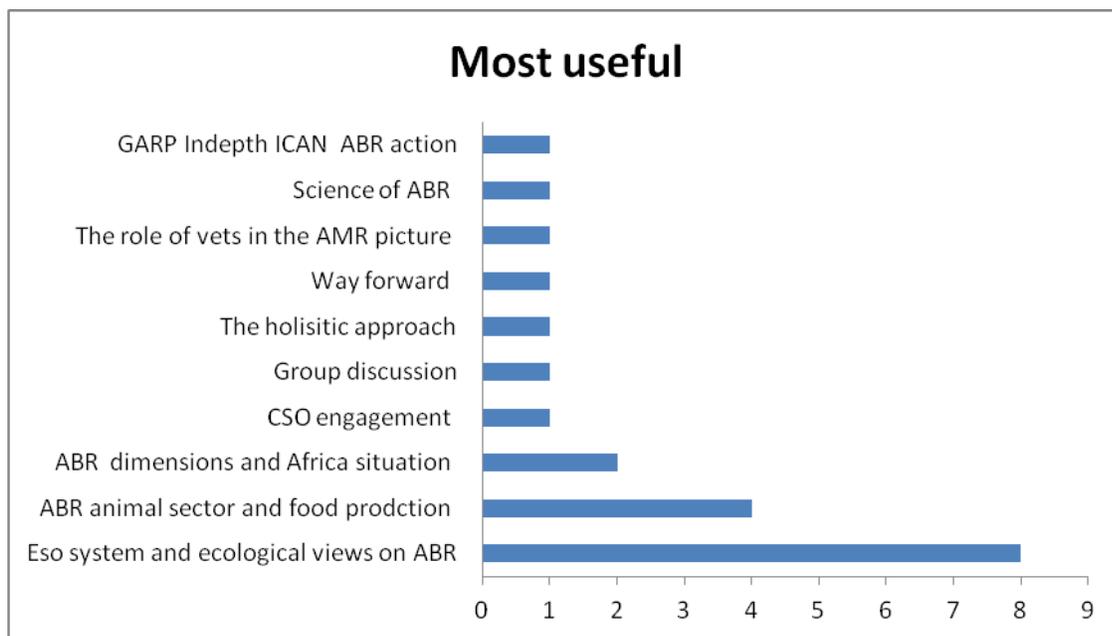
Mary Murray (ReAct): Speaking on behalf of ReAct thanked the bacteria for bringing participants together; thanked resistance genes for keeping everyone connected even more closely; thanked the participants for their generosity in sharing energy and calming wisdom. It was unusual that such a range of stakeholders come together and develop such synergy. She indicated that ReAct was excited that a voice of Africa will be heard and that ReAct was pleased to be the catalyst that had facilitated the process. Mary Murray indicated that she had been transformed from interacting with the participants and thanked them all. Although she was stepping out of ReAct from September 1 2014 she would continue to be active on ABR working with others particularly on reimagining resistance and with her newly formed group on the holistic approach to ABR.

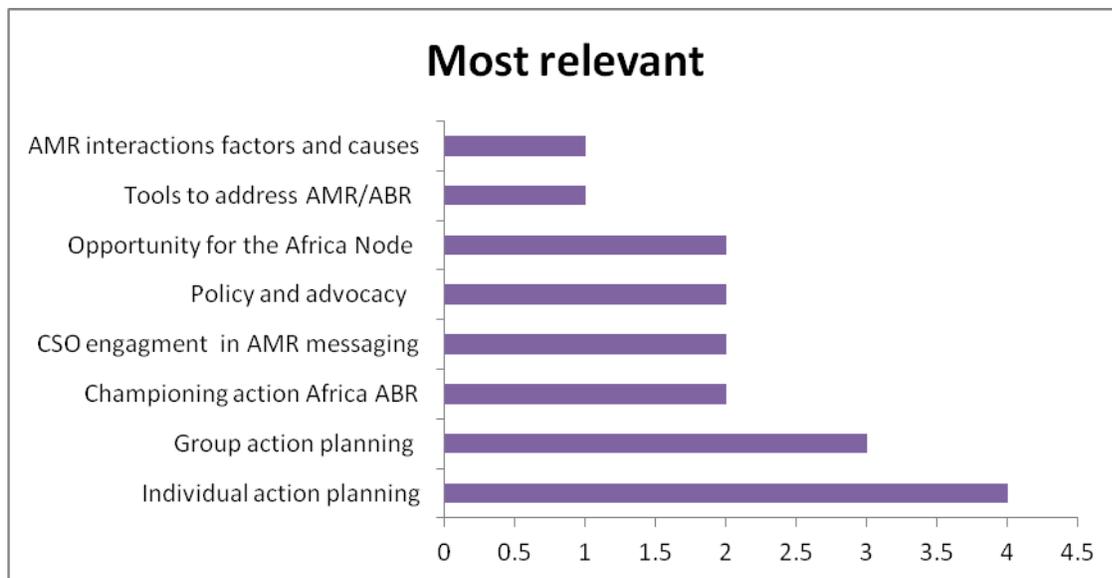
WORKSHOP EVALUATION

Using a ranking of 1-5, where (5) Excellent, (4) very good; (3) fair, (2) poor; (1) very poor, the participants ranked several criteria about the workshop. Relevance of content quality of presentations, facilitation and organization were all ranked above 4.5. Group activities and action planning were ranked between 4 and 4.4.

Criteria	Score
Relevance of content	4.8
Facilitation of the workshop	4.6
Quality of presentations	4.7
Organization of the workshop	4.6
Group activities	4.3
Individual action planning: I am a champion	4.4
Group action planning: the power of collective action	4.1
Networking possibilities	4.5

The participants indicated that ecosystem and issues of ABR in the animal sector were most useful and the action planning most relevant to their work situation (see figures below).





Key take home messages for the participants

The power of collective action | Be a champion | Need for greater collaboration | Need data | Need coalitions | Need governments | Need East African Community | There are many possibilities capacity and engagement on the continent | We really need to include the animal sector | Increase awareness among communities | People need to be alert and informed about the silent epidemic that is developing | ABR is a serious issue and we all have a role in its containment | To be the champion on antibiotic resistance and move the agenda forward | Stakeholder engagement from various sectors | Awareness and repackaging AMR science in a message that the policy makers can understand and use | AMR is a global issue but the solution is regional | The problem is global the solution local | Networking advocacy and data collection | AMR is everybody's concern all must be involved | Everybody counts regardless of organization age and experience | Role of veterinary and ecosystem | Action (change) starts with me | The magnitude of ABR/AMR is so big and need championing to combat it | There is power in collective action | This is the time to take action in our countries | Concerted efforts: small actions, great impact | We are all important to the fight of ABR: Holistic Approach |

ANNEXES

Annex 1: Participants list

Name		Country
Akorli	Mary	Ghana
Bazira	Joel	Uganda
Bejarano	Maria Theresa	Sweden
Byarugaba	Dennis	Uganda
Dare	Samuel	United Kingdom
Forshaw	Chris	Kenya
Gavor	Edith	Ghana
Gichia	Moses	Kenya
Holloway	Bronwen	Sweden
Kaminjuki	Muthoni	Kenya
Kiambi	Stella	Kenya
Kikimoto	Bashiru	Ghana
Kusemererwa	Donna	Uganda
Matika	Washington	Zimbabwe
Mpundu	Mirfin	Kenya
Msami	Khadija	Tanzania
Mubanga	Casco	Zambia
Murray	Mary	Australia
Ndegwa	Linus	Kenya
Nonga	Hezron	Tanzania
Nyah	Fidelis	Cameroon
Olaniran	Abimbola	Nigeria
Ombaka	Eva	Tanzania
Opintan	Japheth	Ghana
Sigauque	Betuel	Mozambique
Waiswa	Peter	Uganda
Walyaro	Constance	Kenya
Wesangula	Evelyn	Kenya

Annex 2: Individual action plans

Action	Results	Resources	Dissemination	Setbacks
<i>What action will I take</i>	<i>What results will you achieve and when</i>	<i>Who do I need to involve</i>	<i>Who do I want to share my work with and how</i>	<i>What setbacks might we encounter and how can these be countered</i>
Make an inventory of people from the meeting what they are working on then I contact them sending sharing tools resources	A gathering material/content for the tool box based on the African context by the end of May	Meeting Participants	Materials will be included in the tool box can email people when it is launches Possibly contact the meeting group to specifically mention what we have shared	Missing some people that have good material Getting untimely feedback from participants <i>Make agreements with participants face to face prior to leaving</i>
Find people from the meeting willing to review various sections of the tool box	Feedback on TB material by end of September	Meeting participants	Add a section on the tool box that acknowledges contributors	People might not respond <i>Make agreements with participants face to face prior to leaving</i>
Develop stakeholder specific materials and hold AMR awareness raising sessions	At least 2 different audiences (High school students, professional associations) Before the end of the year	Authorities within the target institutions	GARP Uganda, ReAct workshop participants, By email, EPN face book page	Time - schedule the appointment immediately on return home
Publish AMR Kenya KAP article	Increase knowledge of KAP of Health professionals in SSA on AMR by the end of the year	My co authors	CDDEP, EPN, MOH Kenya	Time <i>Make a plan and commit in writing</i>
Take existing information on AMR/ABR for dissemination	Generate national interest on AMR/ABR in SADC by end of 2015	National CSOs through the consumer action forums	Local meetings by community monitors, media, website	Lack of information - use existing information and supplement with information from other stakeholders
Gather information from all the vet drug stores on vet drugs sold distributed and used	Data available on veterinary antibiotics sales, distribution and usage	Vehicles, fuel, lodging, vet TOs, computers	GVMA, GMA, media, ReAct Ghana platform	Budget for activity
Capacity building on AMR with University of Ghana, KNUST and KHRC	VPU staff skills on AMR and residue testing enhanced	Vehicles, fuel, lodging, finances, consumables	GVMA, GMA, media, vet services	Finances are required from external partners FAO, WHO
Hold a workshop to sensitize vets and livestock owners on prudent use of antibiotics in an animal production and	Knowledge on ABR enhanced and a greater appreciation of the issue	Vehicles, fuel, lodging, finances, consumables	RVO, DVO, livestock owners	Budget
Incorporate mandatory measures like short sleeved coats and hand sanitizers in direct patient care (ward rounds).	I expect a reduction in HAIs	Use national IPC guidelines to cement our own tool, Hospital administration to enforce new policy guidelines.	Circulation of document to staff then discussion of its relevance and their concern at our morning CMEs.	HCW opposed to having their rights infringed! Gentle persuasion via presentation of facts.

Action	Results	Resources	Dissemination	Setbacks
Policy formulation/put policy into action	<p>policies created that better address AMR/ABR</p> <p>- 'dormant' policies put into action</p> <p>12 months</p>			<p>- policies created but not implemented</p> <p><i>mobilize stakeholders and provide them with tools and platforms to hold the relevant authorities accountable/ to pressurize relevant people/institutions to put policies into action</i></p>
<p>Create IEC Material - repackaging the science into a format that's easy to understand for policy makers and consumers / the public</p> <p>Give AMR/AMR a face and Identify Champions</p>	<p>Increased understanding of AMR/ABR among target group</p> <p>- increased engagement of target group in activities that reduce AMR/ABR</p> <p>Positive behavior change that minimizes AMR/ABR</p>	<p>-Equinet members,-Policy makers & government, ABR/AMR, Experts, -REACT, GARP, -CSO's, NGOs and other stakeholders interested in ABR/AMR</p>	<p>3 Quarterly and 1 Final Report and resource Materials shared with all partners- via email, on website, radio, at meetings, w/shops etc.</p>	<p>Little behavior change</p> <p><i>offer incentives</i></p>
Take the next steps in the 'Reimagining Resistance' Process	<p>End April 2014: booklet on Reimagining Resistance Stage 1.</p> <p>April 2015: A children's story about bacteria with my grandson.</p> <p>By September 2015: A proposal for a global project on RR with ReAct.</p> <p>By end 2015: A book with Satya Sivaraman</p>	<p>Satya Sivaraman</p> <p>Eva Ombaka</p> <p>Arturo Quizhpe</p> <p>Klever Calle</p> <p>Niyada Kiatying-Angsulee</p> <p>Janet DeBoos</p> <p>2 new African collaborators</p>	<p>E-publications</p> <p>A few hard copies – beautifully illustrated to inspire</p> <p>Emails to share with ReAct network and ask each to share with their own networks;</p> <p>International meeting – Imagination and Medicine</p> <p>Create 2 new venues (where I don't know anyone) to share the ideas and products – women, young people and grandmothers</p>	<p>I am over-ambitious by nature: I am retiring from my job with ReAct on Sept 1, 2014 so I will have more time for this.</p> <p>Finance: Assess these carefully – the main costs will be design of the publications and publication of the hard copies.</p>
Support development of innovative IEC & Advocacy materials to promote awareness creation among communities and CSOs, Package information to meet different categories of audience, Integrate ABR education and awareness creation in existing programs, train in use of materials	<p>Improved knowledge on ABR issues among the general public.</p> <p>- increased understanding on ABR issues</p> <p>- Behavior change in access and use of antibiotics</p> <p>1 to 2 years</p>	<p>Members of the Coalition of NGOs in Health, GHS/ MOH, Pharmacists, Veterinary experts,- CSOs,- Other experts in ABR,- Food and Drugs Authority (FDA)</p>	<p>- Through stakeholder meetings;</p> <p>- Health facility interactions;</p> <p>- Media Involvement</p> <p>- Press releases</p> <p>- Community engagement through established groups</p>	<p>- Getting the buy- in of communities and professionals <i>Engage community leaders and established groups-</i></p> <p><i>Activities of illegal drug sellers Intensify advocacy for enforcement of the laws against illegal drug sales, - Funding</i></p>
Information Sharing	Repository of AMR information	<p>Internet</p> <p>Financial structure</p>	Internet, workshops, journals	Financial resources to do research and dissemination of articles and standards of care/practice
Advocacy and lobbying	Garner support to have a united front with other teams/ organizations involved in	Internet, Finances, Collaborating partners	Publications, Internet, Letters, Newsletters	Challenge to find other groups/ contact information - involved in

Action	Results	Resources	Dissemination	Setbacks
	AMR			AMR.
Promote and support community initiatives e.g. churches	Public awareness in a local community	Myself, time, information, brochures on AMR	Through church meetings, church newsletter	Generating interest, low attendance at meetings
Integrate ABR research in my work	Evidence generation	Existing research platform in Uganda and INDEPTH Network	Publications Policy briefs	Funding Capacity
Interest young scientists in ABR	Scientist recruited			If no interest
Circulate news letter in Makerere University	More awareness		School website	No response
Organizing an ABR symposium	Raise awareness of the magnitude of ABR among stake holders	Clinicians, Students Nurses' Lab Personnel, Vet practitioners, The media	Send a report to all colleagues here at the ReAct workshop	Time constraints
Conduct a KABP study on antibiotic use in animal & Humans in South Western Uganda	Data on Knowledge, Practices, regarding Antibiotic use in S.W. Uganda by end of 2015	Funders Researchers	Manuscripts for publication, Conferences, Reports to stake holders	Funds
Conduct training on Antibiotic use	Better understanding on how to use antibiotics	GARP Kenya	To participants here in this workshop	Time constraints
Conduct a study on transmission dynamics of Drug resistant organisms	Knowledge on how drug resistant organisms spread in the hospitals , communities, between humans and animals	Funders Researchers	Manuscripts for publication, conferences, Reports to stake holders	funds
Collaborate with health care facilities (regional, teaching hospitals and others) to generate a baseline data on AMR.	*Harmonize SOPs for susceptibility testing * Train lab technicians on AMR * Current data on AMR * Outcome by Nov 2014	* Human capital *Support from MoH *CSO	* Report to MoH and key stakeholders * Publication in journal to share with global community	? Sustainability Enormous work
Information Sharing	Repository of AMR information	Internet Financial structure	Internet, workshops, journals	Financial resources to do research and dissemination of articles and standards of care/practice
Advocacy and lobbying	Garner support to have a united front with other teams/ organizations involved in AMR	Internet Finances Collaborating partners	Publications Internet Letters Newsletters	Challenge to find other groups/ contact information - involved in AMR.
Promote and support community initiatives e.g. churches	Public awareness in a local community	Myself, time, information, brochures on AMR	Through church meetings, church newsletter	Generating interest, low attendance at meetings

Annex 3: Proposals for action inspired by the sessions

Areas	Proposed Actions
Stakeholder engagement	Stakeholders are numerous involve them all, educate them discuss with them and involve them all as far as possible in policy development and regulation professionals, non professionals, consumers, food producers media, HTIs Consumer and community involvement is critical
CSO	Share manual, indicators and results from the Ghana CSO KAPB studies Can we measure impact of CSO action on ABR involve them in advocacy
Antibiotic use and stewardship	Indiscriminate use e.g. for brucellosis needs to be curbed, reduce antibiotic use through policy development and other measures, use HAART strategy for antibiotic use i.e. treatment buddy, address supply chain issues to ensure availability and quality of medicines issues, empower communities and farmers on antibiotic use and linkages with ABR, Regulate antibiotic sale on streets Determine how Equinet can address issues of access to antibiotics, ensure that all medical reps are pharmacists, use CHW to improve antibiotic use, include access to effective antibiotic as one of the indicators of universal health coverage in CHESTRAD programs, More information and experience sharing is required for people to make informed decisions on antibiotic use, Address affordability of ABs e.g. through health insurance to ensure good antibiotic stewardships up an international body to advise on sources of good quality antibiotics
QC	Set up rapid QC lab or mini labs in procurement and supply centers to ensure that all antibiotics distributed meet quality standards Conduct a study on quality of antibiotics at health facilities Conduct regular quality checks on the antibiotic in the market
Lab capacity and Diagnostics	Create a group or discuss possibility of a group to deal with standardization of AMR diagnostics Tackle lab capacity since its absence leads to indiscriminate use of antibiotic
Infection control	Focus on disease prevention and infection control rather than treatment, focus on IC in hospitals
One health	Work as a team animal and human the issues concerns both sectors Use lessons from the global one health approach?
Advocacy and awareness	Use CS networks for awareness creation, advocacy and lobbying Empower youth to take the lead on tackling resistance Build advocacy platforms that are inclusive of other languages from inception More awareness is needed simple ways of increasing understanding on ABR challenges build concerted action More voices are needed - the bacteria are becoming smarter we need to be wiser Conduct advocacy at HTIs to promote prudent use of ABs Emphasize that we are all influencing and taking charge of our own destiny if we tackle resistance Empower the consumer to demand what is right and use quality medicines outlets Publish all the work being done in Africa Target technocrats on MOH and ensure the issues funded in the MOH budget
Research and surveillance	Create a repository for surveillance data smart data is required on ABR can Equinet address access to antibiotics, joint the dots in relation to ABR in countries and aggregate the data at national level

Areas	Proposed Actions
	<p>studies are required on the quality of antibiotics</p> <p>Share SERACH proposal method to cost and treatment of resistant infections in hospitals in South East Asia with the African Network</p> <p>Develop a model for costing ABR in parallel with development of data collection systems</p> <p>Develop coordinated and harmonized ABR surveillance systems across Africa</p>
Education - messages and materials	<p>Tailor messages for youth and children using their language and their solutions</p> <p>Increase access to information for youth and children. Engage them in determining how they would safe guard present and future generations</p> <p>Prepare IEC materials in a way policy makers can appreciate the need to be educated so that they can draft policies and laws that better address AMR</p> <p>Teach children how to recognize signs of pneumonia</p> <p>Use graphics to articulate ABR</p> <p>Use the media to share the messages about quality of medicines and the differences between medicines outlets</p> <p>Empower households and communities to know how and when to use antibiotics</p>
Networking	<p>It is a big problem global collective action now build coalitions</p> <p>Encourage country level networking</p> <p>INDEPTH should collaborate with ADMER</p> <p>ReAct & GARP experiences and resources can serve ABR champions - they have the structures to facilitate working together and interaction</p> <p>Link AQ of ReAct Latin America to PW of UNEST</p> <p>Link SD of CHESTRAD to the ReAct network that is trying to model ABR costs and new PPP models for technology, Should be multi sectoral including community consumers CSO media, use a human rights lens public health and trade as entry points, involve the francophone and Lusophone countries</p> <p>Combine good strategies in youth empowerment and leadership, use peer empowerment, Use a value chain approach, Use a suitcase approach (multiple strategies developed and applied according to the context)</p>
Tools, resources and strategies	<p>Develop ABR score cards</p> <p>Determine which tools are best to combat ABR in the African context</p> <p>Mobilize a fund for Africa directed initiatives</p> <p>A participatory approach is the best tool to address ABR</p> <p>ReAct tool box can be used to strengthen advocacy in many ways</p> <p>Uses ReAct website and resource centre for ideas to support work in Africa</p>
Veterinary Use	<p>Optimize antibiotic use in vet practice</p> <p>Plug the gap in estimating animal use of antibiotics</p> <p>Sensitize the Vet sector on antibiotic use and their role in the development of ABR since they account for more than 50% of global antibiotic use</p>
Environment	<p>Antibiotic residues need to be tackled. Obtain information about residues effects and destination</p>

Annex 4: Individual learning

Area	Issues
Antibiotic use in animals	50% antibiotic use is in animals
Antibiotic development	No new antibiotics are in the pipeline
	CSO project Ghana has some good examples that could be shared in the ReAct tool box
Infection Control	IPNET Kenya has some good resources
	It's better to focus on infection prevention
	The approach to tackling ABR should be local even though it is a global problem
	Greater need for community awareness and antibiotic access and use
	The situation in Africa is very similar with respect to combating ABR
	There is an opportunity to use technology to curb AMR
	Networking and joint action is important as well as involving as many people as possible
Science of ABR	Gene transference, use of sulphas has implications on AMR, global effects on treatment of disease
Surveillance	INDEPTH is doing some work mobile devices can be used for capturing surveillance data
Cost	AMR has a high cost to humans and the environments and this cost must be properly calculated. The economic burden has to be clearly articulated if we are to influence policy makers
	Tools are already available to guide any intervention that we may seek to explore in particular fields of ABR e.g. IPC
	Knowledge experience and behavior change are critical to addressing the challenges posed by ABR
	The importance of the ecosystems approach to solving AMR problems
	Collective action involving all stakeholders is the key to success
	Veterinarians have a key role in ABR
	The ABR problem is big and unless we fund key rate limiting steps our efforts will be a waste
	There is too much focus on the pathogens; only 10% of micro organisms can be cultured have to note there are other organisms that also matter
	Comic strips are a good educational tool to use
	The methodology for preparing advocacy used by one voice is excellent
Others	GAVI might be willing to fund GARP activities
	Challenges (across Africa) in tackling ABR are similar
	A lot of people are working on ABR issues already
	The work of ReAct. ReAct resources tool box, news letter and resource centre
	It's important to have a repository of information on /ABR
	Concerted efforts are required to tackle the problem
	Relationship between AMR in bacteria and parasites
	GARP needs to expand their work at all levels of stakeholders
	8% of effluent is untreated in Africa and has a high load of antibiotic residue
	EPN has a done a lot of AMR advocacy