

**EPN**

Ecumenical Pharmaceutical Network  
Réseau Pharmaceutique Œcuménique



**THE FIGHT AGAINST NON-COMMUNICABLE  
DISEASES & ANTIMICROBIAL RESISTANCE:  
THE PHARMACEUTICAL ASPECT AND BEYOND**

**NON-COMMUNICABLE  
DISEASES**

**ANTIMICROBIAL  
RESISTANCE**

## CONTENTS

<b>EDITORIAL .....</b>	<b>2</b>
<b>NCD'S – LOOKING BEYOND PHARMACEUTICALS.....</b>	<b>4</b>
RECOMMENDATIONS .....	6
<b>AN OPPORTUNITY FOR FAITH-BASED PROVIDERS: NON-COMMUNICABLE DISEASES AND UNIVERSAL HEALTH COVERAGE.....</b>	<b>8</b>
WHO NCD TARGETS (SOURCE WHO 2015) .....	8
UHC AS PROPOSED SDG 3.8 (SOURCE WHO-WB 2015) .....	8
UHC AND NCD AS PRIORITIES FOR FAITH-BASED HEALTH PROVIDERS IN AFRICA .....	9
<b>NON-COMMUNICABLE DISEASES –EPN'S CONTRIBUTION?.....</b>	<b>12</b>
THE RIGHT NUTRITION CAN HELP IN PREVENTING NCDS .....	13
PHARMACEUTICAL SERVICES TO TREAT NCDS .....	13
<b>IMPROVING COMPREHENSIVE DIABETES CARE AND ACCESS TO INSULIN IN KENYA.....</b>	<b>16</b>
ABOUT MISSION FOR ESSENTIAL DRUGS & SUPPLIES (MEDS).....	16
EFFICIENCY, RELIABILITY & COST-EFFECTIVENESS.....	16
MEDS ENHANCED CAPACITY: .....	16
ABOUT REACHING THE BASE OF THE PYRAMID (BOP) .....	17
THE BURDEN OF DIABETES IN KENYA .....	17
CHANGING DIABETES IN KENYA- THE BASE OF THE PYRAMID (BOP) PROJECT .....	18
THE ROLE OF MEDS .....	19
BREAKING THE 'RULE OF HALVES' .....	19
<b>HEALTH STATUS AND NCDS BURDEN IN RWANDA.....</b>	<b>22</b>
<b>AN OPPORTUNITY FOR FAITH BASED ORGANIZATIONS (FBOS): ENGAGEMENT IN ADDRESSING AMR.....</b>	<b>24</b>
<b>NEW MATERIALS ON AMR.....</b>	<b>26</b>
<b>REFERENCES .....</b>	<b>29</b>

## EDITORIAL

*Nice Fidélité Nshimiyimana, Communications Officer, Ecumenical Pharmaceutical Network*

This special issue of Pharmalink brings a very comprehensive perspective on discussions around Non-Communicable Diseases (NCDs) and Anti-Microbial Resistance (AMR). It doesn't bring a solution to all problems that occur as a repercussion of NCDs and AMR neither does it offer a one-cure for all but it brings different and important perspectives. It mixes interviews, scholarly point of views, case studies, the pharmaceutical angle, and reflections from those in the field as well as suggestions from experts. All of us are definitely (or at least should be) concerned about the annual toll of 16 million people dying prematurely – before the age of 70 – from heart and lung diseases, stroke, cancer and diabetes yet most premature NCD deaths are preventable. The other worry is AMR! In my mind, I see it as being faced with a situation where something that used to work just ceases to work anymore. I imagine a driver getting in the car that s/he has always driven then the engine refuses to work, completely. Or taking some painkillers that have worked well before and they have been helping all along, then one day they just stop working and pain remains there. Imagine us drinking water and our thirst can't get quenched. One would just get stranded and wonder what to do next. No, that doesn't sound good! We are now faced with a threat of seeing treatment failures from antibiotics that have worked before.

There are so many things that are not working out right in this world and there are diseases that do not have a cure yet like HIV/ AID, some types of cancer and so on. So really, we don't want to get to a point where even whatever used to work well just stops working or starts working against us. It is estimated that the appropriate use of medicines alone can reduce up to 80% of the burden of NCDs in many countries. Truth is that the critical importance of medicines in addressing the burden of NCDs cannot be ignored but they largely remain inaccessible to many who need them mostly in the low- and middle-income countries. Basically, EPN is faced with a double-edged assignment: on one hand we strive to avail medicines to those who need them most but then we have to make sure they use them rationally otherwise we end up with an aggravation of AMR issues.

That's why we will continue driving our agenda, we will remain involved in advocacy work probably more than ever before, we will strengthen capacity of pharmaceutical staff, we will share pharmaceutical information and we pray that funding to do all this work remains available to EPN.

Contributors of articles for this publication are from different countries including Germany, South Africa, Kenya, Netherlands and Rwanda.

“As progress has been insufficient and highly uneven, continued efforts are essential for achieving a world free of the avoidable burden of non-communicable diseases.” UN Secretary General.

Dr Margaret Chan, the WHO Director-General, described the new Comprehensive Mental Health Action Plan 2013–2020 as a landmark achievement: it focuses international attention on a long-neglected problem and is firmly rooted in the principles of human rights. The action plan calls for changes. It calls for a change in the attitudes that perpetuate stigma and discrimination that have isolated people since ancient times, and it calls for an expansion of services in order to promote greater efficiency in the use of resources.

## NCD'S – LOOKING BEYOND PHARMACEUTICALS

*Albert Petersen, Head of Pharmaceutical Services at Difäm, Board Chairman of EPN*



Non Communicable Diseases (NCDs) seem to be a new area for health care systems – but they are anything but new. Chronic diseases exist since long – I would say as long as the existence of human beings. However, until a few years ago NCDs were mainly in the focus in the so called developed world. Today chronic diseases are becoming a challenge everywhere in the world and are one of the main topics on the agenda of WHO and for others active in the health sector. How can this be taken to the communities on grassroots level? Shall we look to the symptoms of NCDs only or

shall we also look at their causes when we want to reduce those diseases in future? I would like to reflect first about lessons learnt in fighting against infections, give a few thoughts about some of the causes for NCDs and will try to compare the lessons learnt in treating infection diseases with the treatment of NCDs.

Some 100 years ago the population of the Northern hemisphere mainly died by diseases like Cholera, Typhus, TB and diarrhea – that means by infectious diseases. This has changed in modern times. Some are saying that the availability of new and better medicine especially the development of antibiotics has decreased such infections. But for example TB had already decreased in Europe BEFORE for example Penicillin had been discovered and introduced in 1938 and Streptomycin in 1944. The outbreak of Cholera in Hamburg/Germany 1892 could only be stopped because an additional water supply system was improved by using water tanks and disinfection methods especially in households and hospitals.

The so called developed world won the battle against such infections only because of KNOWLEDGE and behavior change. Knowledge about those diseases had been combined with knowledge about prevention which then has been turned into action. Hygiene came into focus in households, schools, health facilities and in society in general. And THIS has led to a decline in infectious diseases. Of course also the knowledge about correct diagnoses and treatment combined with a good range of effective antibiotics is part of this success story.

Infectious diseases are still present in the developed world. But they can be dealt with. The present challenge the world is facing is that bacteria have become multi-medicine resistant (MMR). MMR is as well closely linked to knowledge and behavior change. MMR could be avoided or reduced if only the world would stop the irrational use of Antibiotics. Therefore the focus of EPN on this topic is on time and should expand further. It is time to start the discussion about taking specific antibiotics from

the common supply chain and restrict them to specialists only. But MMR is also linked to hygiene. For example MMR seldom occurs in hospitals in the Netherlands compared with hospitals in Germany and other countries. WHY? Because years ago hospitals in the Netherlands took it very seriously to properly train their staff in daily hygiene especially in the care of patients with severe infections. SOPs were implemented, applied and controlled. Therefore the fight against infections in less developed countries can only be won if prevention is mainstreamed. The Ebola outbreak has dramatically shown what happens if the knowledge about hygiene has not moved into mainstreamed action.

Therefore EPN needs to focus on improving knowledge about access and availability of essential disinfection methods – they must be part of all essential medicine concepts.

But now back to NCDs which are becoming a big challenge worldwide. Looking at the bigger picture we realize that these types of diseases exist everywhere in the world. They are not new e.g. in Africa but had not been in the focal point up to now. In Europe they are actually covering the major part of the entire health system. But interestingly – and that is the difference to what was described above – despite existing knowledge the situation in Europe is not changing. Information and knowledge about chronic diseases, diagnostic and treatment has already been available for long. A good range of effective medicines can be found and bought in pharmacies – most of them as generics in good quality and cheap prices. I am aware of the need of further research and development, especially focusing on more effective treatments and less harmful medicines (e.g. better products against cancer). But in Europe we are still fighting this battle against NCDs without great success. Why?

This is partly because the eradication of such diseases is actually unwanted by the economic system:

1. Health means business and guarantees (still) good profits for the pharmaceutical industry, for the companies selling medical equipment and high tech diagnostic and treatment machines – even lots of hospitals in our countries are run by private companies these days. Their focus is on profit and not on public health. The decision by the pharmaceutical industry on what kind of medicine for which disease should be researched and developed is not based on a public needs assessment. Only marketing parameters are analyzed in order to get maximum profit. Governments are largely influenced by lobbyists who guarantee economic stability via this system. I am aware of recent developments to color this black picture painted above. But up to today I myself can't see a real change from “Health as Business” to “Public Health”;

The knowledge exists about the causes of these widespread NCDs. Common in the Northern world (incl. USA) and extremely increasing in the Southern part of the world.

2. One reason is because we are heavily influenced by fast food companies and have changed our food pattern. We assume that the already prepared food products are part of a “modern world” and of course we wanted to be part of it. And fast food offers to save time in our already hectic

daily life. And they are so tasty!!! But that taste is mainly based on high content of unhealthy fat and sugar in almost ALL products. Often important minerals and vitamins are removed from the grain. We could add quite some more examples about unhealthy industry products. The knowledge does exist, but there are no consequences drawn from it. Lobbyism by the food companies is effective and unfortunately not focused on public health.

3. Each one needs to reflect for him/herself: What are the implications of my life style on my health? Do I really think about what I'm eating and drinking? Do I really consider the need of moving my body instead of sitting the whole day in front of a computer? This list can be more and more extended. So I am the one who has to change that situation first. The knowledge exists – but it has to be followed by action. We should stop giving the responsibility for our health to the general health system and for our nutrition to the food industry.

ONLY THEN will there be a chance of winning the battle against high blood pressure, heart diseases, diabetes and so many other of the “self-induced NCDs”. I know this does not necessarily apply to all NCDs, for example some cancer-types cannot be avoided by changing the life-style only. But some type of cancer can be avoided, for example preventing lung cancer by not smoking; others by avoiding contact with strong chemicals like pesticides etc.

Therefore here as well: **Knowledge has to turn into action.**

- We all know that it makes no sense to dilute antibiotic powder in dirty water. This is harmful and of course ineffective treatment;
- We all know that it makes no sense to take ACT tabs against Malaria and refuse to use a mosquito net. This as well can be seen as ineffective treatment because soon the person will be infected again;
- Thinking in the same direction: It makes no sense to take tablets against Diabetes or to take Insulin if the sugar consumption will not be reduced (soft drinks, sweets etc.) - only to mention some of many examples.

## RECOMMENDATIONS

EPN should first translate the knowledge about essential NCD medicines into tools for different target groups like physicians, nurses, dispensers and patients... so that all different levels do understand why and how these products should be taken. Secondly EPN could support the DSOs so that they can have access to these selected essential products and diagnostics and that they are available for them. That is what EPN stands for.

But I think as EPN and as FBOs we should even go further. It is also our responsibility to share information about the causes of NCDs. It is our responsibility to give examples for moving from knowledge to action.

[A major study by Cambridge University](#) has found that cutting out just one sugary soft drink a day, such as orange squash or a can of fizz, could reduce the risk of developing diabetes by 25 per cent!

We do need to take the first step. Therefore: Why not ban soft drinks out of our own facilities and inform the people why? New Zealand gives an example. Remove soft drinks and introduce drinking water. Or if not fully removing at least make sure that drinking water is available and offered at a cheaper price than soft drinks.

Or we should support governments and campaigns for taxing sugar products. Mexico, Norway and South Africa are providing positive examples.



## AN OPPORTUNITY FOR FAITH-BASED PROVIDERS: NON-COMMUNICABLE DISEASES AND UNIVERSAL HEALTH COVERAGE

*Dr. Jill Olivier (University of Cape Town, School of Public Health and Family Medicine, Health Policy and Systems Division)*



The global health and development communities are currently at a watershed moment. With the ending of the Millennium Development Goal (MDG) period this year in 2015, we are currently embroiled in high-level meetings that seek to answer the question: which priorities should come next? For those working in the health sector, the answer is becoming clear. The ‘next big thing’ is Universal Health Coverage (UHC). Of course, UHC is not new, and its underlying values can be traced back to before the Alma Ata Declaration. However, UHC is being put forward as the main encompassing ‘indicator’ (made up, of course, of lots of other complex indicators) that will enable us to trace the ‘just’ development of health systems and global health goals in the future.

### WHO NCD TARGETS (SOURCE WHO 2015)

- Target 1: Reduce mortality from NCDs
- Target 2: Reduce harmful use of alcohol
- Target 3: Reduce prevalence of physical inactivity
- Target 4: Reduce salt intake
- Target 5: Reduce tobacco use
- Target 6: Reduce prevalence of raised blood pressure
- Target 7: Halt the rise in diabetes and obesity
- Target 8: Provide drug therapy to prevent heart diseases
- Target 9: Provide essential medicines

### UHC AS PROPOSED SDG 3.8 (SOURCE WHO-WB 2015)

Achieve UHC, including financial risk protection, access to quality essential health care services and access to safe, effective, quality and affordable essential medicines and vaccines for all

How this will be done is another matter entirely. UHC is an amazingly complex concept, and carries with it strong values (the provision of quality healthcare to *everyone*), which many governments and leaders find difficult to implement.

NCDs are being tightly woven into the UHC agenda. Take for example a new report from the WHO and World Bank: *“Tracking Universal Health Coverage: the First Global Monitoring Report”*. A quick skim shows three main focal areas. First, the importance of *tracing NCDs* as an integral part of UHC monitoring process, noting: *“One of the most important gaps in the MDG-related indicators is anything offering insights into progress on NCDs. Looking at deaths and handicaps NCDs cause every year, it is impossible to talk meaningfully about population health without talking about NCDs, and impossible to discuss UHC without addressing NCD-related interventions”* (WHO-WB 2015). They continue by presenting candidates for ‘core indicators for UHC’ such as hypertension and diabetes treatment coverage.

The second focus in this report is tracing *UHC to the poor* (at this time, usually measured through household surveys rather than at a facility level). Finally, the third focus is the need for *health systems strengthening* to address the prevention and control of NCDs. *“Because health system strengthening is the main means by which countries can progress towards UHC, UHC monitoring needs to be integrated into broader health systems performance assessment...”* (WHO WB 2015).

### UHC AND NCD AS PRIORITIES FOR FAITH-BASED HEALTH PROVIDERS IN AFRICA

In the last five decades, many faith-based health providers (FBHPs) have expressed concern that they are being pushed and pulled at the whim of global health agendas without careful consideration of the unintended consequences of these efforts (see Dimmock et al 2012). The MDGs created their own emphasis, and the continued drive towards PPP has come with their own opportunities and costs. For example, the experimental attempts at intervention by instituting staff secondment strategies, or performance-based financing have often come with unexpected side effects. The prioritization of funding towards HIV/AIDS has strong impacted on FBHP services (with some facilities in Southern Africa reporting in the 1990s that up to 80% of their operational budget was allocated towards HIV/AIDS activities, with strong often negative effects on the rest of their systems (see Olivier and Wodon 2012).

So what then does the new (re)focusing on UHC (with its emphasis on NCD tracers, service to the poor and health systems strengthening) suggest for FBHPs?

We would suggest that there are some substantial opportunities for FBHPs in this emerging policy context.

#### NCDs in LMICs (source WHO 2015)

Almost three quarters of NCD deaths - 28 million - occur in low- and middle-income countries. Cardiovascular diseases account for most NCD deaths, or 17.5 million people annually, followed by cancers (8.2 million), respiratory diseases (4 million), and diabetes (1.5 million). These 4 groups of diseases account for 82% of all NCD deaths. Tobacco use, physical inactivity, the harmful use of alcohol and unhealthy diets all increase the risk of dying from an NCD.

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The focus on UHC and in particular provision to the poor is what we academics/policy-workers would call an open door opportunity for FBHPs – to prove that they are specialists in UHC, and specialists in the provision of healthcare to the poor. FBHPs have long argued that they hold a preferential option for the poor, and that this value (of quality health service to the rural poor) underpins their identity and operations. This means that (for once) these global priorities match well with the priorities of FBHPs. However, FBHPs have not evidenced this specialization adequately at all (see Olivier et al 2015), and there is a desperately urgent need to do so.

FBHPs have already stated a focus on NCDs – for example, at the ACHAP 6TH Biennial Conference held in Lusaka 2013, was titled “*Scaling up FBO’s Response in the Face of Increasing Non-Communicable Diseases in Africa*”, and several presentations were made on NCD engagement. However, there is barely any published evidence of FBHP specific provision for NCDs.

There is some suggestion that perhaps NCDs have been prioritized fairly low compared with other diseases such as HIV or malaria. This might be because NCD drivers such as smoking, obesity and lack of physical exercise that are highlighted in the NCD literature do not receive high attention in the regions in which FBHPs are most prominent.

It has also been suggested that FBHPs have gradually been forced ‘downstream’, with funding allocations curtailing upstream public health engagement, and increasing focus on downstream care (see Olivier et al 2014). This would suggest that FBHPs may have in recent years been more focused on NCD treatment rather than engagement in the massive NCD control or prevention efforts.

**In brief, we suggest some areas for attention that would build the ‘case’ that FBHPs are UHC (and NCD) specialists:**

- A refocusing on the NCDs that are most prevalent in the areas in which FBHPs operate (e.g. cardiovascular diseases, cancers, diabetes or chronic lung diseases).
- FBHPs, with their stated focus on holistic care are likely suited to the systems perspective necessary for engagement in UHC and NCDs – so becoming stronger advocates for a systems strengthening approach.
- FBHPs have stated that they have longevity and are embedded in communities – and this might be particularly important for NCDs, which are usually of long duration and progress slowly. FBHPs should consider spending more effort on tracing patient journeys over longer periods.

- FBHP and partners to consider ways of engaging better with NCD issues ‘upstream’ – for example in public and environmental health and behavioural modification. Ties to faith-based education services for example could be better exploited for such efforts.
- Improved measurement of provision of and access to NCD medicines through FBHP systems (e.g. antihypertensive medicines and insulin) would enable a case to be made for FBHP-NCD indicators.
- The FBHPs in Africa have made considerable strides in working on HRH. It might be useful to consider the effects of NCDs within the FBHP workforce (e.g. on systems effects such as absenteeism and presenteeism), and considering the burden of NCDs on the system.
- Stronger consideration (and articulation to the global health community) of how FBHPs engage in *NCD service to the poor*.
- UHC, health systems and NCDs... the current global health priority context is (for once) almost perfectly aligned with the underlying values of FBHPs. If they could evidence any of these issues better, they could become leaders in these efforts. The door is open – some early effort might yield significant results.

## NON-COMMUNICABLE DISEASES –EPN’S CONTRIBUTION?

*By Dr. Andreas Wiegand*

*General Secretary APOTHEKER HELFEN e. V. / German Pharmacists’ Aid*

NCDs are not infective; they are not caused by a lack of hygiene or a parasite transmitting the sickness-causing organism and we don’t have vaccines against them. But NCDs are preventable diseases, at least to a huge extent. Why are cardiovascular, chronic respiratory diseases and diabetes increasing more and more? People are prone towards laziness. We have developed different modes of transport: modern buildings have elevators; escalators are assisting to move us up and down in warehouses, airports, and train stations. Physical activity is reduced in households using machines to assist with cleaning floors and preparing food. In other words, most of the work is supported with assisting systems. A guy living in the



top floor of a five story apartment building was asked why he did not buy his box of bear in the supermarket around the corner but ordered it from a delivery service; he said “Why should I carry it up to my apartment if I can let it be delivered right at my door?”

Lifestyle changes are causing NCDs to increase everywhere in the world. Travelling, moving with more comfort and less physical activity is attractive but not really healthy. Additionally human kind combines reduced physical activity with a change in diet. We often eat more calories than we utilize. We tend to love unhealthy (fast) food. This lifestyle change is reflected by changes in metabolism and a number of laboratory and physical parameters will give us early indicators that we are on the wrong track. This lifestyle road is leading towards an increase in obesity, hypertension, diabetes, heart attacks, and strokes. At the beginning, diseases of this kind do not hurt at all: no symptom, no awareness, and thus no action.

2 Timothy 1:7 For God gave us a spirit not of fear but of power and love and self-control.



This is a 2004 American documentary film directed by and starring Morgan Spurlock, an American independent filmmaker. Spurlock's film followed a 30-day period of eating only McDonald's food. The film documents this lifestyle's drastic effect on Spurlock's physical and psychological well-being and explores the fast food industry's corporate influence, including how it encourages poor nutrition for its own profit.

### **THE RIGHT NUTRITION CAN HELP IN PREVENTING NCDs**

There is enough evidence to show the correlation between poor nutrition, lack of physical activity, tobacco smoking etc. and the incidence of NCDs. Prevention should start with each of us. Do you want to live like Morgan Spurlock in his documentary? How much physical activity is part of your life? Do you know your blood pressure, blood glucose level?

### **PHARMACEUTICAL SERVICES TO TREAT NCDs**

Those of us who work in a health facility, a medicine supply organization, a hospital pharmacy or an organization representing health services have to look at our own facilities. From a pharmaceutical perspective the access to essential medicines to treat NCDs is the key to being able to treat patients. The first step is to analyze the availability of these essential medicines. EPN has investigated the availability of children's medicines in the past.

What is defined in the treatment guidelines of your country, region and hospital on how to treat NCDs (e.g. by the medical therapeutic committee)? It is possible to create a checklist derived from this information which lists medicines and their required dosage forms.

For sure the result will show that in many cases the availability of medicines is not satisfactory at all. Stock outs occur frequently especially for expensive medicines or dosage forms e.g. inhalers for asthma, cytotoxic medicines for cancer or narcotics to adequately treat severe pain. What causes the stock outs at facility level? Before we start complaining about others we should make sure that we are able to manage our pharmacy and our pharmacy store. Management Sciences for Health (MSH)

provides an excellent tool known as IMAT (Inventory Management Assessment Tool). It allows one to measure the quality of stock management and the level of accuracy of your records including the level of stock keeping errors. This has a direct impact on the level of medicines in stock or out-of-stock and the duration of the latter.

***“You must be the change you want to see in the world.” (Mahatma Gandhi)***

If the people responsible for the pharmacy and the store are not capable of managing the store they need to be trained or assisted. EPN has developed the Essentials of Pharmacy Practice course (EPP). Sarah Andersson and Beverly Snell have written “Where there are no pharmacists” which is also available in French. Several EPN members and other organisations offer trainings and e-learning in stock management and drug supply chain management. The skills of people are at least as important as your capital assets. The best medical equipment, diagnostic machinery and best computers in the store will not change the quality of health services if people don’t know how to operate them.

Health facilities and especially hospitals are complex organizations and there is a need to organize them properly. Like our own bodies, each organ has its own essential function and tasks but it won’t work efficiently if it does not cooperate with the others in a coordinated manner. If prescribers do not follow treatment guidelines then medicines are not used rationally. An over-prescription might exceed the budget and the available stock.

- Which diagnostic measures are taken to identify NCDs?
- How are chronically ill patients monitored, followed and treated in the institutions?
- How does the patient flow look like in the institution?
- Does the financial management enable the pharmacy to order in time the required medicines to ensure enough stock?

All departments of a health facility need to regularly assess their processes which contribute to their services for the patients. The better the complex body of the health facility works the better the quality of the health facility and the better the outcome for the patient.

The list of non-communicable diseases is very long. The most prominent are:

- Cardiovascular diseases
- Cancer
- Mental disorders
- Diabetes
- Chronic renal diseases

In past decades we have experienced several programs to address major infectious diseases through huge health programs. The situation for HIV/AIDS has improved significantly thanks to ARVs provided by funding organizations and programmes which include comprehensive services for the target group including a supply chain for medicines. We have also seen programmes on malaria and tuberculosis with similar approaches. How many extra programmes would we need to address the complexity of all NCDs? That seems impossible! In order to improve health services and thus the health systems they are part of there is need to develop and strengthen them in an inclusive way. If the health facilities remain static, nothing will improve.

There are a number of medicines to treat hypertension, heart failure, type II diabetes, depression, epilepsy etc. which are available as generics of good quality and for an affordable price. The access to these medicines is a matter of the general strength of our health system. Treatment of cancer often requires more specialists, special cytotoxic medicines which are more difficult to provide and handle properly. Some medicines are more costly and limited resources might exclude patients from receiving these medicines.

The conference of Alma Ata defined the concept of essential medicines on September 12 1978. Now, 37 years later the access to essential medicines to treat the most common NCDs is not guaranteed, the burden of NCDs is increasing. Many nations still do not invest enough financial resources into their health services.

For each of us, it is time to be responsible by and for ourselves, our life style. For our organizations and health facilities we need to define our strategy for the next years to strengthen our pharmaceutical services at the different levels of health services and levels of medicines supply chain. A number of tools, technology and course material has been developed for different health issues. Let's make use of them!



## IMPROVING COMPREHENSIVE DIABETES CARE AND ACCESS TO INSULIN IN KENYA

### ABOUT MISSION FOR ESSENTIAL DRUGS & SUPPLIES (MEDS)



MEDS is a faith based, not-for-profit organization established in 1986 as a trust of the Christian Health Association of Kenya (CHAK) and the Kenya Conference of Catholic Bishops (KCCB). MEDS operates on a pull system, that is, health facilities quantify and place orders for what they need. MEDS has a vision of being *‘A world class faith based medical supply chain and capacity building organization with a mission ‘to provide reliable, quality, affordable essential medicines, medical supplies, capacity building, quality assurance and other pharmaceutical services.’* In pursuit of its mission, the organization operations are guided by 3 main functions:

1. Supply chain which includes distribution activities of essential medicines and supplies that are reliable, of assured quality and affordable.
2. Capacity Building and client support services which include training, support to health workers, technical and professional assistance.
3. Pharmaceutical quality control laboratory services which include assuring quality of medicines through analysis and other quality assurance mechanisms

### EFFICIENCY, RELIABILITY & COST-EFFECTIVENESS

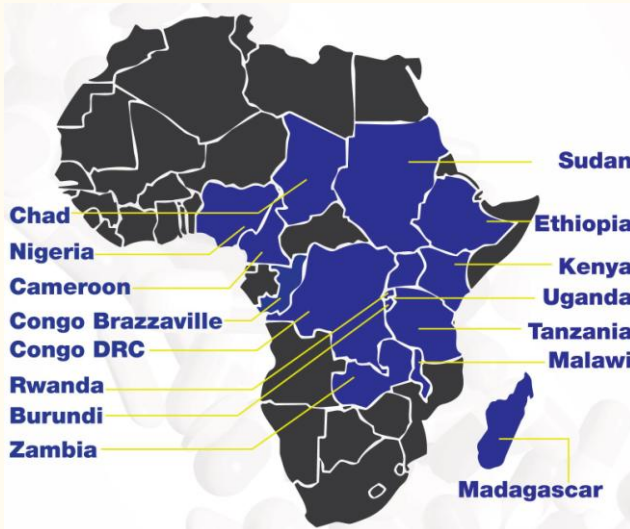
Over the last 29 years, MEDS has ensured the following:

- 100% of computerized stock holding
- Over 98% fill rates to health facilities orders
- Catalogue has more than 1,000 stocked items reviewed annually by a formulary committee
- One-line ordering through an interactive Customer Relationship Management (CRM)
- Less than 3 days turn-around time of clients’ orders
- Doorstep distribution networks across the country at no extra cost to client
- Real-time information to clients on their account, status of orders in supply chain, stock levels, feedback

### MEDS ENHANCED CAPACITY:

- ISO 9001:2008 Certification as a confirmation of high standard Quality Management System assuring safe, reliable and quality commodities and services
- Spacious and professionally-run state-of-the-art warehouse (measuring 10,000 square meters)

- Good storage and efficiency in processing orders
- Expertise and wide experience in various supply chain functions namely; selection, quantification, procurement, warehousing and inventory management, distribution and logistics management.
- Partnerships for reliable and efficient healthcare commodities supply chain in devolved healthcare system.



African Countries which have approached MEDS for Quality Control/Assurance services due to WHO pre-qualification status

### ABOUT REACHING THE BASE OF THE PYRAMID (BOP)

Diabetes Mellitus is a chronic condition in which an individual's pancreas is unable to produce effective/enough insulin or does not produce any insulin. Insulin is hormone that facilitates the conversion of blood glucose to energy in specific body cells.

Diabetes Mellitus has for a long time been a hidden pandemic. An astounding 382 million people are estimated to have diabetes globally; a further 316 million with impaired glucose tolerance are at high risk from the disease –with dramatic increases seen in countries all over the world. The overwhelming burden of the disease continues to be shouldered by low- and middle-income countries, where four out of five people with diabetes are living. Socially and economically disadvantaged people in every country carry the greatest burden of diabetes and are often the most affected financially. Without global action, there could be more than 592 million people living with diabetes by the year 2035, in Africa which currently ranks last in terms of those affected; there are 19.8 million people with diabetes. However, a 109% increase has been projected, projecting the diabetes burden to stand at 41.4 million by 2035.

### THE BURDEN OF DIABETES IN KENYA

In Kenya, the burden of diabetes has been on the rise over the years. The World Health Organization (WHO) estimates that the prevalence of diabetes in Kenya is at 3.3%<sup>2,3</sup> and predicts an increase of 4.5% by 2025<sup>4</sup> yet, two thirds of diabetics are undiagnosed.<sup>5,3</sup> Studies done locally indicate that the prevalence of diabetes ranges between 2.7% in rural areas to 14% in urban areas.<sup>6</sup> This rural urban disparity is a common trend all over the world. It is occasioned by demographic and social

transformations in our society. More people are migrating from the rural to urban settings; there is more consumption of unhealthy foods and reduced physical activity due to over reliance on motorized transport. Others have adopted unhealthy lifestyles such as tobacco use and harmful consumption of alcohol.

Ominously, most of those affected are at their prime productive age, therefore undermining Kenya's effort to attain the Millennium Development Goals (MDGs) and the 'Vision 2030'.<sup>7</sup>Juxtaposed to these findings, is the challenging healthcare landscape in Kenya. For one, the country is still grappling with communicable diseases that have consistently received front-page attention while non-communicable diseases take toll on many Kenyans. The country does not have adequate funds for diabetes prevention and management<sup>8</sup>. In 2006 Kenya's total health expenditure was 4.6% of gross domestic product with 29US\$ per capita being spent on health, below the WHO recommended 34US\$.<sup>9</sup> Ironically, in East Africa, the average total annual cost for care of a type 1 diabetic is 229US\$ with 60-70% of this being used to purchase insulin.<sup>4</sup>This leaves 50% of Kenyans who live on less than 1US\$ daily <sup>10</sup>at risk of death from diabetes.

### **CHANGING DIABETES IN KENYA- THE BASE OF THE PYRAMID (BoP) PROJECT**

In line with its Mission, MEDS with other partners signed a collaborative agreement to improve comprehensive diabetes care and access to insulin in Kenya in 2011. Novo Nordisk A/S established the BoP project to identify solutions that would lead to an integrated approach to diagnosis, treatment and diabetes control for the working poor at the base of the pyramid (BoP). Around a third of the world's population is lacking regular access to health care including essential medicines like insulin<sup>11</sup>. They are not guaranteed access to essential medicines like insulin and their health might suffer as a consequence. The Base of the pyramid project aims to improve access to insulin and quality diabetes care for some of these people.

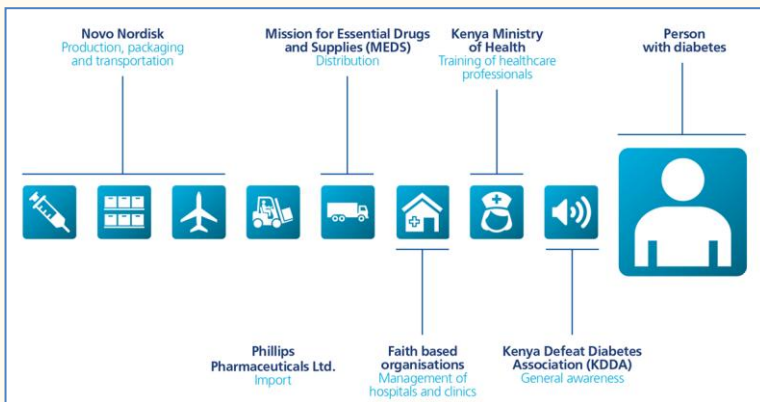
The ultimate aim is to develop a sustainable and scalable solution that will create new value for both the community and MEDS. The project is a public private partnership that provides reach and engages key stakeholders which include:

Ministry of Health (MoH)  
Royal Danish Embassy (RDE)  
Novo Nordisk A/S (NN)  
Kenya Defeat Diabetes Association (KDDA)  
Kenya Conference of Catholic Bishops (KCCB)  
Christian Health Association Kenya (CHAK)  
Mission for Essential Drugs and Supplies (MEDS)  
Phillips Healthcare Services Ltd (PHSL)

## THE ROLE OF MEDS

MEDS is responsible for the reliable, sufficient and timely procurement, warehousing and distribution of insulin to faith based health facilities within the project areas that meet project specific requirements for storing, handling, and dispensing insulin.

The BoP solution framework was developed in order to optimize the supply chain and make insulin affordable, accessible and available and improve comprehensive diabetes care through capacity building at the faith based facilities



Novo Nordisk manufactures insulin and supplies MEDS through its local distributor PHSL. MEDS distributes insulin to approximately 1000 facilities. At the faith based organization the patients buy the insulin at Kshs 500 and they have access to trained Healthcare Providers (diagnosis & treatment) and patient support groups (awareness & adherence).

The Base of the Pyramid project strives to achieve five benefits for people with diabetes:



- Increased awareness of diabetes
- Screening and early diagnosis to prevent complications of diabetes
- Access to quality care by healthcare professionals trained in diabetes management
- Stable and affordable supply of insulin
- Improved self-management through patient education.

### BREAKING THE 'RULE OF HALVES'

As mentioned earlier, diabetes affects 382 million people worldwide with 175 million of cases currently undiagnosed and a vast amount of people with diabetes are progressing towards complications unawares.<sup>1</sup>The 'Rule of Halves' is a rule of thumb often used to express the relation between the number of people living with diabetes and the number of those actually achieving their desired outcomes. According to the "Rule of Halves", only half of the people living with diabetes have been diagnosed and only about half of those diagnosed receive professional care. Of the people receiving care, only about half achieve their treatment targets and of those, only about half live a life free from diabetes-related complications.<sup>12</sup>The BoP project endeavours to break this rule by increasing diabetes

awareness and improving access to care and treatment options. The project would like to see a Kenya where everyone who has diabetes is diagnosed, everyone who is diagnosed gets treated and everyone who is treated can live their life to the full.

## Project Milestones

Prior to the initiation of the Base of the Pyramid project in Kenya, prices were as high as 1800 Kenyan Shillings to the patient for a vial of insulin. This has now been reduced to 500 Kenyan Shillings. The fact that insulin is consistently available, and at an affordable price, is a novelty in Kenya, but the BoP project's efforts in Kenya goes far beyond this. In collaboration with faith-based organizations (FBOs), CHAK; KCCB and KDDA has helped establish 46 new diabetes patient support groups at FBOs since 2012. The diabetes support groups serve as psycho-social support for patients, just as they help generate awareness around diabetes and treatment options in the community. Over 600 healthcare professionals have been educated on basic diabetes care and another 500+ healthcare professionals have been trained through professional coaching & mentorship using a curriculum that seeks to change the strategic approach for improved glycaemic control in Type 2 diabetes. Finally there has been an increase of the FBOs stocking insulin from 53 in 2012 to 184 in 2015. Since the inception of the project, no stock outs have been recorded so far with consistent generation of monthly consumption data to partners for evidence based decision making. Diabetes patients are assured of a reliable and consistent supply of insulin as and when they require.

We have not recorded any expiries for insulin; this is a clear indicator that MEDS inventory management system is at its best in ensuring that stock is well monitored. *(See Annex A1-001 for details on number of insulin's distributed under this project)*

Three Major challenges experienced in the project and measures put in place to address them		
No	Challenges	Measures in place to address them
1	Inadequate data collection on diabetes at facility level	Project specific data collection tools have been introduced i.e. the summary tool and daily diabetes register.
2	High turnover of trained healthcare providers at facility level	In addition to continuous medical education for existing health care providers, project specific initiatives like the mentor-mentee concept have been implemented "buddy doctors"
3	Newly diagnosed patients availing themselves for care and treatment	Awareness campaigns' are currently ongoing

## **Conclusion**

Let us all unite to change diabetes by living a healthy lifestyle by eating healthy and engaging in physical activity; cessation of alcohol consumption and tobacco use. As a society, giving those affected by the disease the support required and for those affected, to work in partnership with their healthcare providers and their support groups to live a life of quality. MEDS wishes to call for further partnerships with like-minded organizations to fight against diabetes in Kenya and the sub-Saharan Africa.

## HEALTH STATUS AND NCDs BURDEN IN RWANDA

According to Rwanda's third integrated household living conditions survey in 2010/2011, the population of Rwanda has grown from 9.5 million people in 2005/06 to an estimated 10.8 million in 2010/11. About 85% of Rwandan population lives in rural areas. 54% of the population is aged 19 years or younger, with people aged 65 years and above making up 3% of the population(9). Over the last decade,



Rwanda has seen significant improvements in its health status indicators. Infant mortality ratio dropped from 86 per 1000 live births in the year 2005 to 50 per 1000 live births in 2010(10). Deaths among children of less than 5 years of age have also seen a decrease in the same period from 152 deaths per 1,000 live births in 2005 to 76 per 1,000 live births in 2010 (11).

The success of the fight against infectious diseases highlighted the need to tackle the NCDs. The STEPS study survey conducted in Rwanda in 2012/13 revealed that the prevalence of main risk factors were tobacco use (12.9%), unhealthy diet (only 0.3% of fruit consumption per day, 0.9% they eat vegetables, and 99.1% were less than 5 servings of fruits and/or vegetables), physical inactivity (21.4% were engaged in low level of activity), harmful use of alcohol consumption (23.5% were engaged in heavy episodic drinking, 41.3% were currently drinking), injury (89.8% of drivers and passengers were not using seat belt, 74.0% of motorcycles or motorscooter were not always using a helmet, 5.3% have been involved in a road crash in the 12 past months, and 34.4% have been seriously injured), obesity (mean body mass index 22.3%, overweight 16.1%, and 2.7% were obese. Based on Rwanda's Health Management Information Systems (HMIS) data, over the period of January – December 2013 concerning top eight causes of morbidity in district hospitals, 2013, NCDs accounted for at least 51.86% of all District Hospital outpatients' consultation and 22.3% of District Hospital hospitalization (HMIS, 2013). Determining the population prevalence of individual NCDs is challenging because in many cases, the prevalence of the individual entities is small.

The prevalence of moderate-to-severe musculoskeletal impairment was 2.7%, and severe visual impairment was 4%. The Rwanda Health Sector has registered significant achievements in the previous years. However, there are challenges that need to be addressed in order to improve the quality of services delivery for NCDs prevention and control. Human resources: there are medical doctors, nurses and other health personnel that are throughout the whole health system and there is a long-term plan for human resources for health which will increase the number and capacity of health care providers. The challenge remains that few trained health care providers only exist in referral and university teaching hospitals and a big number of general medical doctors and nurses at District

hospital and health centers in are not yet trained for NCDs management and control. Health services delivery: referral and university teaching hospitals and few District Hospitals are providing services for NCDs prevention and control and the package of NCDs services at all level of health care system are defined.

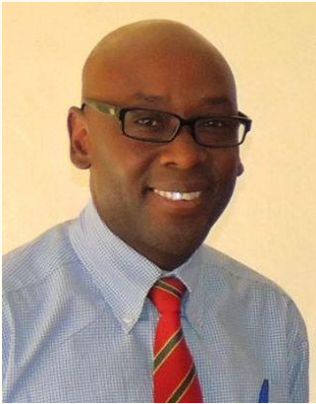
However, there is lack of integration and accessibility of NCDs services at all levels of the health care system and specialized NCDs services and centers of excellence are not yet established. Health financing: the Government budget allocated to health sector is distributed to all diseases specific programmes including NCDs, and a functional health insurance schemes are in place. However, this budget is not sufficient to cover all the needs for NCDs prevention and control, and the majority of the population which is ensured by community-based health insurance “Mutuelle de Santé” do not yet have access to private and some high level NCDs services. In addition, there is lack of funds mobilization frameworks at global, regional and national levels.

Leadership and governance: the health sector has put in place clear leadership and governance for NCDs prevention and control. However, there is lack of multi-sectoral coordination mechanisms. Infrastructure and supply: health facilities are equitably distributed across the country. However, there is lack of basic equipment and specialized infrastructure for NCDs. Most of NCDs essential drugs are available and accessible. However, medicines for advanced NCDs treatment are not yet affordable to all patients. Health information systems: Rwanda Health Sector has a health information system that manages all specific disease programmes and serve as evidence-based for decision-making and monitoring and evaluation. However, all NCDs data are not captured in this system.



## AN OPPORTUNITY FOR FAITH BASED ORGANIZATIONS (FBOS): ENGAGEMENT IN ADDRESSING AMR

*Mirfin Mpundu (Executive Director, Ecumenical Pharmaceutical Network,  
Coordinator ReAct Africa Node)*



With the passing of the AMR Global Action plan (GAP) in May 2015, one of health's greatest challenges and threats is gaining traction with countries being called upon by WHO to develop national action plans (NAPs) to contain antimicrobial resistance. Countries have 2- years to develop these plans that take into account the key objectives of the GAP and the country context. Countries are looking at number of factors such as epidemiological patterns, surveillance programs, human resource capacity, information systems, regulatory systems and frameworks in place and drawing a map of where they would like to be, defining benchmarks along the way.

The GAP has the following key objectives:

- To improve awareness and understanding antimicrobial resistance;
- To strengthen knowledge through surveillance and research;
- To reduce the incidence of infection;
- To optimize the use of antimicrobial agents; and
- To develop the economic case for sustainable investment that takes into account the needs of all countries, and increase investment in new medicines, diagnostic tools, vaccines and other interventions. (WHO, Global action Plan on AMR, 2015)

It is good to see that one of the keystones in coming up with a national action plan involves understanding the ecological nature of AMR and the need to have a multi-stakeholder approach. Antimicrobials are used in human and animal health and in the environment. The three sectors hence have much to contribute to containing AMR and preserving the active antimicrobials we have remaining.

FBOs have great opportunities to contribute to AMR containment and towards the national and global AMR goals. We know that the faith-based sector contributes a lot to health care in most African countries, complimenting their governments and being valuable partners. When one looks at the 5 GAP strategic objectives, it is not difficult to see the opportunity presented to church health institutions (CHIs) through the daily practice and interactions with patients and their families.

CHIs need to look and address the internal structures and systems in place. They also need to develop AMR Stewardship programs in their facilities and have a coordinated approach on addressing AMR at the facility and local context. Such programs are key in addressing the knowledge gaps about AMR, raising awareness of both the health care workers and patients and managing of facility resources better. Coordinating or working with infection control and prevention (IPC) efforts one of whose aims is to control spread of infections especially the hospital-acquired infections is key. Promoting low cost practices such as hand washing is known to prevent and reduce most hospital-acquired infections but most facilities struggle with this.

Optimization of the use of antimicrobial agents might involve working with Drug & Therapeutic Committees on managing and good governance of medicines at facility level, the use of standard treatment guidelines, developing and use of algorithms for common infections, regulations around who has prescriptive rights of the newer and expensive antibiotics. In combination of such efforts can contribute greatly to AMR national and global efforts.

The success of NAPs will be a combination and success of individual hospital facilities. If the efforts and systems at facility level are strong, then one would expect to see a strong NAP. One way of providing quality pharmaceutical care is through rational prescribing, rational dispensing and rational use of antimicrobials.

There are a number of resources that I would like to recommend. These include the free online course on Antimicrobial Stewardship developed and offered by the University of Dundee in Scotland which can be accessed at <https://www.futurelearn.com/courses/antimicrobial-stewardship/2> and the ReAct Toolbox that can be accessed from the ReAct website on <http://www.reactgroup.org/toolbox/>.

## NEW MATERIALS ON AMR

THE EPN SECRETARIAT, IN COLLABORATION WITH ACTION ON ANTIBIOTIC RESISTANCE HAS DEVELOPED A NUMBER OF AMR MATERIALS



EPN Secretariat has been involved in spreading information on AMR

A major priority in stopping the spread of AMR is increased understanding of the ecological / eco system dimensions of AMR. Only a holistic approach for containment in which a diversity of stakeholders from the animal, human, environment sector as well as law enforcement are engaged and involved can solve the problem.

EPN has been working with ReAct to develop several materials that inform the general public in Africa about the existing problem and give them clear action they can undertake to stop the spread. We would like to introduce you to our materials. All our materials for AMR can be freely downloaded from our website here <http://www.epnetwork.org/en/programmes/antimicrobial-resistance-and-infectious-diseases>

The poster simply captures do's and don'ts of AMR. Even someone who doesn't have much time to read through documents will be able to learn how to prevent AMR in just a single glance.

## Take Action on Antimicrobial Resistance!

Save Medicines for our Children



## AMR Fact Sheet

Health Professionals

### What you need to know about Antimicrobial Resistance

Antimicrobial Resistance (AMR) occurs when organisms that cause disease are no longer susceptible/responsive to antimicrobial agents that previously were effective in combating them. AMR is a global problem with particularly dire consequences for Africa which is already grappling with high levels of infection in the face of limited resources.

Antimicrobial treatment is the major lifesaving intervention for infectious diseases but AMR is rapidly reducing the effectiveness of antimicrobials. As a result, many first line treatments for diseases such as malaria, Tuberculosis and opportunistic infections of AIDS are no longer effective and the cost of care with second line or newer agents is inevitably increased.

WHO's 2014 report on global surveillance of antimicrobial resistance reveals that antibiotic resistance is no longer a prediction for the future; it is happening right now across the world and it is putting at risk the ability to treat common infections in the community and hospitals. Without urgent, coordinated action, the world is heading towards a post-antibiotic era in which common infections and minor injuries, which have been treatable for decades, can once again kill.

### Major factors contributing to AMR

Factors that contribute to the development of AMR are numerous but the majority revolve around prescribing, dispensing and other medicine use practices.

#### Prescribing

- Making the wrong diagnosis
- Prescribing medicines which are not needed
- Over/under dosing

#### Dispensing

- Giving the wrong medicines
- Supplying poor quality medicines
- Poor storage and/or packaging of medicines

#### Medicine use

- Taking medicines which are not needed and self medication
- Failing to complete courses of treatment
- Taking irrational combinations of medicines
- Widespread inappropriate use of antimicrobial agents in agriculture, aquaculture and animal husbandry

All these choices are influenced by things which may or may not be within the control of the health worker or patient. They include among others; inadequate information, lack of funds to buy required medicines, unavailability of medicines, poor training and inappropriate norms and beliefs.



EPN has developed a Fact sheet for health professionals. This document informs health professionals on AMR and shows them actions they can take to curb its rise.

To inform the wider public about AMR, EPN has developed 4 booklets for different target groups. The first booklet is written for the community. This AMR booklet is written in an easy to understand language. It covers topics such as: definition of antimicrobial resistance, its causes, implications and how to mitigate it.

Three others booklets have been developed for students of primary school, high school and university.

## What is antibiotic resistance?

Antibiotic resistance is something that we hear now more often than previously. But what is it and why is it an issue now. Antibiotic resistance is derived from two words: antibiotic and resistance.

An antibiotic is a chemical compound called a drug that is used to treat infections. Infections are diseases mainly caused by small organisms that are so small that they cannot be seen by the eyes called bacteria. When these bacteria that cause such infections invade the body, they damage the tissues and cause it to change for example resulting in pus or a sore throat. These infections are different from other infections caused by other even smaller organisms called viruses which are not treatable by antibiotics.

Resistance therefore results when those antibiotics can no longer heal or stop those bacteria from causing infections. Because antibiotics have been used for long time, many bacteria are now resistant. This is why it has reached alarming levels and something needs to be done to reduce or contain this problem. Almost every type of bacteria has become less responsive to antibiotic treatment. These antibiotic-resistant bacteria can quickly spread to family members, schoolmates, and co-workers - threatening the community with a new strain that is resistant.

## The Invasion of the 'Superbugs' And the rise of the Champions

Antibiotics worked so well against infections that they soon became the miracle drug. For over 70 years, they have continued to help us survive many life-threatening infections and operations. They have increased our lifespan by an average of 20 years.

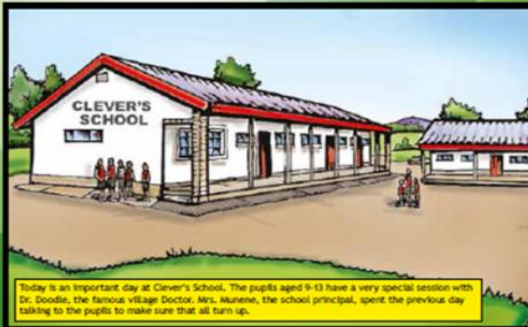
But now, we have started losing that battle against infectious diseases. Not only are bacteria fighting back and becoming stronger. The process of creating or discovering new antibiotics continues to be long and tedious.

In every region of the world, bacteria and other microbes are becoming more resistant to modern medicine. Causing people to be sicker for longer, and increasing the challenges and costs of health care.

The emergence of these drug-resistant "super-bugs" has even been described as "worse than AIDS". Only our joint actions to promote correct use of antibiotics can minimize the threat of antimicrobial resistance and help us prolong the useful lifespan of these drugs.

## Dr. Doodle and the microbes

Can you help Dr. Doodle?



## How Antimicrobial Resistance will impact your future and your community

**AMR**

- Antimicrobial resistance (AMR) occurs when an antibacterial agent loses its ability to control or kill bacteria.
- It is important to distinguish between antibiotic resistance and antimicrobial resistance.
- While antibiotic resistance refers specifically to the resistance from bacteria to antibiotics, antimicrobial resistance covers resistance from other microbes to drugs used to treat them.

**Problem**

- Antibiotics are an invaluable tool, and their introduction revolutionized the treatment of infectious diseases.
- However, their abuse, misuse, over use and inappropriate use has resulted in resistant strains of both harmful and harmless bacteria which are replacing antibiotic susceptible bacteria.
- With the development of superbugs we are faced with the danger of returning to the pre-antibiotic era when bacterial infections killed with no cure.

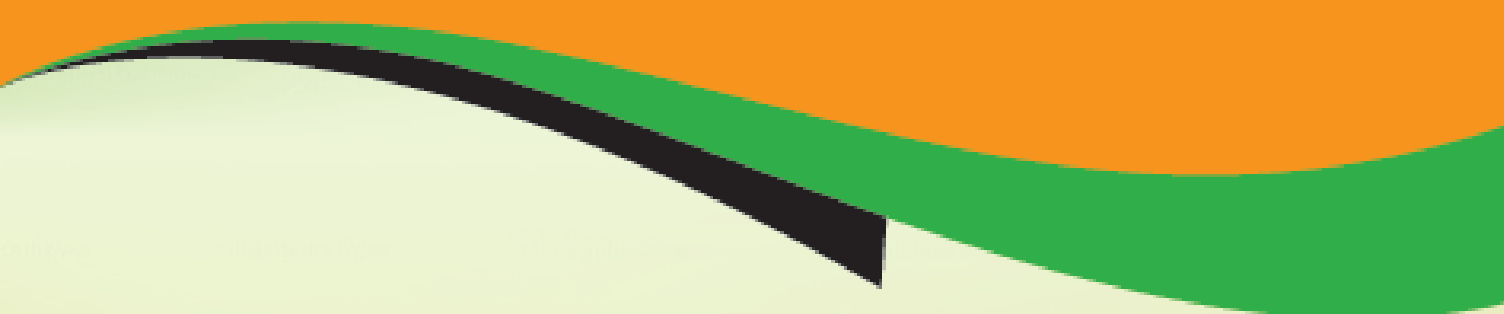
**Action**

- The AMR phenomenon is occurring in an ecosystem, and all players in that ecosystem have to be involved.
- AMR is a multi-faceted challenge that demands the efforts of multiple stakeholders and a whole-of-society engagement including a one-health approach to tackle it.
- You can take action on AMR!

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Ecumenical Pharmaceutical Network  
Réseau Pharmaceutique- Œcuménique  
P.O.Box 749-00606

Bayswater Court 7, Ngong Road | Nairobi | Kenya |  
Tel: +254 724 301755 | +254 572 522702  
[info@epnetwork.org](mailto:info@epnetwork.org) | [www.epnetwork.org](http://www.epnetwork.org)

