

**Antimicrobial Resistance Stakeholders' "Call for Action" Meeting,
Lusaka, November 12, 2004**

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Abstract

U.S. Agency for International Development is supporting the development and implementation of a country-level approach towards building local advocacy, coalition, and packages of activities to combat the growing problem of antimicrobial resistance (AMR). This approach is undergoing pilot test in Zambia. The local AMR Advocacy Working Group (AWG) formed to support the process organized a large stakeholders meeting on November 12, 2004 in Lusaka. Inaugurated by the honorable Minister for Health of the Government of Republic of Zambia, the meeting was attended by 70 stakeholders representing the government, academia, service providers (medical and veterinary doctors, pharmacists, nurses), professional associations, consumers, journalists, industry, the private sector, and cooperating partners. This report describes the findings, activities and recommendations of a team of partners who went to Zambia to assist the AWG in staging the stakeholder meeting and planning the next steps in the process.



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Key Words and Terms

Antimicrobial Resistance, Drug Resistance, AMR containment

Contents

Contents.....	1
Acronyms.....	2
Background.....	3
Purpose of Trip.....	5
Scope of Work.....	5
Activities.....	6
Collaborators and Partners.....	12
Next Steps.....	13
Immediate Follow-up Activities.....	13
Recommendations.....	13
ANNEX 1: Summary of the Advocacy Working Group Strategic Focus Workshop, October 29 th – 30 th 2004, Protea Hotel, Lusaka, Zambia.....	15
ANNEX 2: AMR Stakeholders' "Call For Action" Meeting.....	21
ANNEX 3: List of Participants at the AMR Stakeholders' "Call for Action" Meeting, Holiday Inn, Lusaka, November 12, 2004.....	22
ANNEX 4: Pictures taken during the AMR Stakeholder' "Call for Action" Meeting, November 12, Lusaka, Zambia.....	24
ANNEX 5: PRESENTATION 1 – AMR We Act Now or We Lose.....	29
ANNEX 6: PRESENTATION 2 – The Impact of AMR on the Management of Malaria.....	35
ANNEX 7: PRESENTATION 3 – TB Drug Resistance: Recent Laboratory Trends.....	39
ANNEX 8: PRESENTATION 4 – Resistant Testing for Better ART Patient Management.....	43
ANNEX 9: PRESENTATION 5 – Changing In Vitro Antibiotic Resistance in Epidemic Prone Diseases in Zambia.....	48
ANNEX 10: PRESENTATION 6 – Antimicrobial Resistance in Veterinary Medicine.....	52
ANNEX 11: PRESENTATION 7 – AMR Situation Analysis.....	57
ANNEX 12: PRESENTATION 8 – What Are the Options Available to Preserve the Effectiveness of Antimicrobial Agents?.....	62
ANNEX 13: AMR Stakeholders' "Call For Action" Meeting, Lusaka, November 12, 2004: Report of the Groupwork.....	68
ANNEX 14: "Call For Action" Presentation Slides.....	73
ANNEX 15: "Call For Action" Document (Latest Version).....	78
ANNEX 16: The National Launch of the STG: Speech of Dr. Ben U. Chirwa, Director General, CBoH	82
ANNEX 17: Minutes of the AMR Advocacy Working Group Meeting	85
ANNEX 18: Coverage on Drug Resistance and the AMR Stakeholders' Call For Action" Meeting by Newspapers.....	88
ANNEX 19: Request for Country Clearance.....	99

Acronyms

AED	Academy for Educational Development
AIDS	acquired immunodeficiency syndrome
AMR	antimicrobial resistance
APUA	Alliance for the Prudent Use of Antibiotics
ARI	acute respiratory infections
ART	antiretroviral therapy
ARV	antiretroviral
AWG	Advocacy Working Group
CA	Collaborating Agency
CBoH	Central Board of Health
CDL	Chest Diseases Laboratory
CHANGE	The Change Project [AED]
GH	Bureau for Global Health
HIV	human immunodeficiency virus
IPT	Intermittent Presumptive Treatment
MOH	Ministry of Health
MSH	Management Sciences for Health
NMCC	National Malaria Coordination Committee
RPM Plus	Rational Pharmaceutical Management Plus [MSH]
STG	Standard Treatment Guideline
STI	sexually transmitted infections
SWOT	strengths, weaknesses, opportunities and threats
TB	tuberculosis
TV	Television
USAID	United States Agency for International Development
UTH	University Teaching Hospital
VOA	Voice of America
WHO	World Health Organization

Background

Health gains achieved by priority health programs - including tuberculosis (TB), malaria, acute respiratory infections (ARI), diarrheal diseases, sexually transmitted infections (STIs) and HIV/AIDS - are increasingly threatened by the growing worldwide problem of antimicrobial resistance (AMR). As part of a multi-faceted response, the U.S. Agency for International Development (USAID) Bureau for Global Health (GH) is supporting the application by local stakeholders of an approach to initiate country-level advocacy, coalition-building, and implementation of locally feasible packages of strategies to prevent and control AMR.

The primary thrust of this activity is to catalyze an initial response by local stakeholders to build and scale up coalition, commonalities, and advocacy. Pilot testing of the approach is underway in Zambia. An exploratory visit to Zambia in 2003 revealed significant interest and concern over the issue of AMR and many stakeholders were willing to contribute to advocacy and AMR containment efforts.¹ Two subsequent visits were made in 2004 to initiate the process.^{2,3}

Important achievements so far include

- initial stakeholders' meeting March 5th 2004, attended by 24 stakeholders.²
- formation of an AMR advocacy working group (AWG), endorsed by the Central Board of Health (CBoH).²
- completion of a rapid appraisal to understand the existing issues that impact AMR.³
- completion of rapid assessment on media presence and communication channels in Zambia to guide the development of media-based advocacy and communication strategies.³
- preparation of a "Call for Action" document by the AWG as background material for calling meetings and scaling up the advocacy process.³

Another recent achievement was an AWG Strategy Focus Workshop on October 29th – 30th 2004. During the Workshop the AWG members discussed their Mission Statement; analyzed the existing strengths, weaknesses, opportunities and threats (SWOT); and developed preliminary AMR advocacy strategies (Annex 1). Peter Kelly, a consultant hired by Change/AED, supported the AWG in facilitating the Workshop. It was discussed that, with the Secretariat responsible for logistics, efforts would be made to plan the following activities:

- Patrick Mwanza to coordinate interviews with Dr. Chisanga and Mr. Caesar Mudondo by the press.

¹ Joshi M., Pollock N., and Sommer M. 2003. *Exploratory Visit for the Antimicrobial Resistance Country-Level Implementation Pilot in Zambia, July 6–18, 2003: Trip Report*. Submitted to the U.S. Agency for International Development by the Rational Pharmaceutical Management Plus Program. Arlington, VA: Management Sciences for Health.

² Joshi M., Zimicki S., Sommer M. 2004. *Initiation of Antimicrobial Resistance Country-Level Implementation Pilot in Zambia, March 2–13, 2004: Trip Report*. Submitted to the U.S. Agency for International Development by the Rational Pharmaceutical Management Plus Program. Arlington, VA: Management Sciences for Health.

³ Joshi M., Pollock N., Miralles M. 2004. *Antimicrobial Resistance Country-Level Implementation Pilot in Zambia: Trip Report of a Follow-up Visit in August 2004*. Submitted to the U.S. Agency for International Development by the Rational Pharmaceutical Management Plus Program. Arlington, VA: Management Sciences for Health.

- AWG members to meet with health directors, health professionals associations, and donors for AMR support. Liaising will be done through individual meetings and attending consultative meetings.
- The AWG Secretariat to develop general information packet for wide distribution.
- The AWG to add two additional members who would work actively with the Secretariat to help carry out different activities.

In addition to the above locally driven activities and strategies, the partnership of CAs has prepared a generic draft "Workbook for Building Local Support for Containing Drug Resistance" to help the local stakeholders move the advocacy process forward. The workbook is undergoing periodic revisions based on the on-going lessons that are being learned through the Zambian pilot.

An important event planned by the AWG was a large stakeholder meeting for November 2004 to increase AMR awareness amongst various local players. The current visit was made with an aim to assist the AWG in making the final preparations for the Meeting, participate in the Meeting, and discuss with AWG about the potential post-Meeting strategies.

Purpose of Trip

Kama Garrison, Pharmaceutical Management Advisor, USAID/GH, Nancy Pollock, Senior Project Officer, Change Project/ Academy for Educational Development (AED), and Mohan P. Joshi, Program Manager for AMR at RPM Plus/Management Sciences for Health (MSH), traveled to Lusaka, Zambia to provide technical assistance to further the implementation of the approach to build support for containing AMR. Ms. Pollock and Dr. Joshi were in Lusaka from November 9 to 18, 2004 and Ms. Garrison from November 10 to 17.

Scope of Work

The scope of work for the team was:

- Work with Oliver Hazemba, Patrick Mwanza, Peter Kelly and the Advocacy Working Group to prepare for the stakeholder meeting.
- Work with facilitators to help them finalize presentations and facilitation strategies at the stakeholder meeting.
- Work with Oliver Hazemba, Patrick Mwanza, Peter Kelly and the Advocacy Working Group after the meeting to ensure next steps are in place.
- Debrief the USAID Mission, if requested.

Activities

1. Preparation for the AMR Stakeholder Meeting

The AMR Advocacy Working Group (AWG) held a meeting at the MSH Office on November 9th to review the preparation status for the Stakeholder Meeting scheduled for November 12th. The Working Group Chair Professor Chifumbe Chintu and the members Dr. James Mwansa, Dr. Jennifer Chisanga, Ms. Ann Zulu, and Mr. Oliver Hazemba were present in the meeting along with the CHANGE consultant Mr. Patrick Mwanza. Ms. Pollock and Dr. Joshi attended the meeting as observers. Mr. Hazemba informed that the topic for presentation and the presenters for the Meeting were identified and that the presenters were already working on their topics. He also presented the revised version of the draft program agenda to the members and asked for any comments/suggestions. Mr. Mwanza briefed that the invitation had already been sent to everyone, the Meeting venue had been finalized, the participants coming from outside Lusaka would be staying at Hotel Chrisma, and the banners for the Meeting were ready.

On the 10th morning, Ms. Pollock and Dr. Joshi worked with Mr. Peter Kelly to revise and shorten the PowerPoint slides for the "Call for Action" to be presented by the AWG Chair Prof. Chintu during the Stakeholder Meeting. The afternoon was spent on reviewing Dr. Joshi's introductory AMR presentation and also discussing the content of the "Options Analysis" to be presented by Mr. Hazemba.

On November 11th, Ms. Garrison joined Mr. Hazemba, Ms. Pollock, and Dr. Joshi to discuss and finalize the "Program" for the Stakeholder Meeting and to decide on the topic, instructions and group division for the "Group Work." The U.S. Team, Mr. Hazemba, Mr. Kelly, and Mr. Mwanza then finally reviewed all the logistical issues to ensure that everything was in order.

2. AMR Stakeholders' "Call for Action" Meeting

The AMR Stakeholders' "Call for Action" Meeting was held at Hotel Holiday Inn in Lusaka from 8.30am to 2.00pm on Friday, the 12th of November 2004. The overall objectives of the meeting were to:

- make people aware of the problem of drug resistance
- advocate for their participation in addressing the problem – "buy into the Call for Action spirit"
- facilitate opportunities for ongoing discussions and activities after the Meeting.

The detail "Program" of the Meeting is included in Annex 2. A total of 70 participants attended the Meeting, representing different sectors such as the government, service providers (medical and veterinary doctors, pharmacists, nurses, laboratory professionals and other allied health professionals), university, professional society, pharmaceutical company, consumers, journalists, media, private sector, non-government organization

(NGO), and Cooperating Agency. The list of participants appears as Annex 3. Copies of all the presentations made at the Meeting, and several other AMR-related materials, including CD-ROM version of the "WHO Global Strategy to Contain Antimicrobial Resistance," were distributed to the participants.

Inauguration

The Chairperson of the Advocacy Working Group and also the Chairperson of the Meeting Professor Chifumbe Chintu welcomed the participants and invited the Honorable Minister for Health Dr. Brian Chituwo to officially inaugurate the Meeting. In his inaugural speech, Dr. Chituwo expressed that the meeting was well-timed. Salient remarks made by the Honorable Minister were:

- AMR requires attention and commitment from all sectors – Government, NGOs, private sector, cooperating partners, health professionals, and consumers.
- Government changed the malaria treatment policy in 2002 because of chloroquine resistance. The new recommendation – Coartem - is 40 times more expensive than chloroquine. If timely care and actions had been taken in the past, chloroquine could possibly have remained effective even today.
- The government has put up a legal framework on control and sale of all antimicrobials through The Pharmaceutical Act 2004. This needs to be followed with rules, regulations, and guidelines. The guidelines/lists (Standard Treatment Guideline, Essential Medicines List, Essential Laboratory List) developed by the Central Board of Health require wide dissemination and adherence.
- The efficacy of antimicrobials needs to be monitored and the findings need to be shared. The Zambian Government in collaboration with the World Health Organization (WHO) established the Tropical Disease Research Center. The Government also established the National Malaria Coordination Committee (NMCC) doing surveillance in malaria, the Chest Diseases Laboratory (CDL) working on tuberculosis (TB), and Virology Laboratory at the University Teaching Hospital (UTH) working on HIV/AIDS. Sharing of information between these laboratories and also with other sectors is necessary to make sound decisions and policies.
- Rational prescribing, dispensing, and use of medicines need to be promoted.

In the end the Honorable Minister said that the Call for Action to preserve medicines is for all Zambians and that we all need to join hands for success. He asked the AMR Advocacy Working Group to keep the torch burning. Picture of the inauguration by the Honorable Minister and other pictures of the Meeting are presented as Annex 4.

Presentations

The inauguration was followed by a series of eight presentations, each lasting 15 minutes or less. The first was an introductory presentation on AMR by Dr. Joshi. The PowerPoint slides of this presentation entitled "AMR: We Act Now or We Lose" is attached as Annex 5. This was followed by a malaria presentation by Mr. Caesar Mudondo. Entitled "The Impact of AMR on the Management of Malaria," the presentation appears as Annex 6. The third presentation was on TB ("Recent Laboratory Trends") by Ms. Ruth Tembwe. It is included as Annex 7. The next one was Dr. Ray Handema's HIV/AIDS-related

presentation, "Resistant Testing for Better ART Patient Management." It is included as Annex 8. The fifth presentation by Dr. James Mwansa – Changing *In Vitro* Antibiotic Resistance in Epidemic Prone Diseases in Zambia – focused on resistance patterns of three pathogens, *Vibrio cholerae*, methicillin-resistant *Staphylococcus aureus*, and *Shigella dysenteriae*. It appears as Annex 9. The sixth presentation was on "Antimicrobial Resistance in Veterinary Medicine" by Dr. Martin Simunnza (Annex 10). After this presentation the Chairperson invited the audience for question/comments related to the preceding five presentations. This question-answer and discussion session lasted for 20 minutes and was followed by a short tea/coffee break. Some of the issues discussed were: antimalarial prophylaxis; use of halofantrine in malaria; multi-drug resistance; collaboration between veterinary medicine and the Pharmacy & Poisons Board; antiretroviral (ARV) drugs.

After the tea break, the Mr. Caesar Mudondo presented the findings of AMR Situation Analysis (Annex 11). The summary findings of this rapid and preliminary assessment based on stakeholder interviews and limited number of document reviews was included in a previous trip report.³ The last presentation was on "Options Available to Preserve the Effectiveness of Antimicrobial Agents" by Mr. Oliver Hazemba (Annex 12).

Group Work, Reporting Back, and Plenary Discussion

For Group Work, the participants were divided into five groups. The division was made on the basis of professional background. Where the number of participants from a particular sector was limited, two or three sectors were combined to form a group. The groups were:

- Group A: Journalists
- Group B: Private Sector and Consumer Representatives
- Group C: Laboratory plus Training Institutions and Cooperating Partner
- Group D: Pharmacists
- Group E: Medical and Veterinary Doctors

Each group was asked to discuss the following three issues and prepare a short presentation:

- How is AMR affecting your profession/organization?
- What can your profession/organization do in the immediate future to address AMR?
- What do you need to get started?

Mr. Peter Kelly provided the necessary framework for the group work – each group to choose a facilitator and a recorder/presenter; the total time available for discussion 45 minutes; and the presentation of each group work to be limited to a maximum of 5 minutes.

After working in individual groups, the participants assembled in the plenary. Representatives of all the five groups presented their reports in about 25 minutes. The report and the list of members of each group are included as Annex 13.

After the group report presentations were over, the Chairperson Prof. Chintu opened the floor for general discussion and invited all the participants to ask questions or provide comments. Topics discussed during this plenary session included malaria vaccine, HIV vaccine, Intermittent Presumptive Treatment (IPT) for malaria in pregnancy, use of "Coartem" (artemether + lumefantrine) in children below 10 kg weight, role of traditional healers, ARV resistance, and multidrug resistant TB.

Call for Action

Towards the end of the program, the Chairman of the AMR Advocacy Working Group (AWG) Prof. Chintu made a presentation (Annex 14) based on the "Call for Action" document. It is a 4-page document prepared by the AWG and includes a Zambia-specific introduction to the problem of AMR and draws attention to actions that should be taken to preserve the effectiveness of the existing drugs. It "calls" all those concerned with the health and well-being of Zambians to come together and address the problem of failing effectiveness of drugs. The AWG considers this as a dynamic document and plans to revisit and revise it as necessary. The current version is included in the report as Annex 15.

Official Launching of the Standard Treatment Guideline

At the end of the Meeting, the Standard Treatment Guideline (STG) 2004 for Zambia was officially launched. Dr. D.V.C. Mtonga, Director of Clinical Care and Diagnostic Services, Central Board of Health (CBoH) launched the STG on behalf of Dr. Ben U. Chirwa, Director General, CBoH. Full text of Dr. Chirwa's Speech read out during the STG Launch is reproduced as Annex 16. Photo taken on the occasion of the STG launching appears as Picture # 8 in Annex 4. Developed recently, the STG document is comprehensive in scope covering all diseases common in Zambia. It also includes the Essential Medicines List and Essential Laboratory Supplies List for Zambia.

Dr. Mtonga closed the Stakeholder Meeting after the launch of the STG.

3. Post-Stakeholder Meeting Activities

Meeting with VOA reporter

On November 16th, Mr. Hazemba, Ms. Garrison, Ms. Pollock, and Dr. Joshi met with Mr. Kellys Kaunda, Voice of America (VOA) English-to-Africa Reporter, to learn more about VOA activities in Africa in general, and in Zambia, specifically. VOA sponsors radio and television (TV) shows. Straight Talk Africa and Africa Journal are radio shows. Healthy Living is a popular TV show broadcast on Sundays. Issues previously discussed include reproductive health, malaria and clean drinking water. VOA segments are broadcast on over 400 local stations in Zambia. The US team inquired with Mr. Kaunda about media training opportunities through VOA and was told there was no institutional mechanism for training.

Recently Mr. Kaunda has been covering UNICEF immunization campaigns. However, he is planning to cover drug resistance issues and would be interested in covering the recent AMR initiatives in Zambia. Conducting interviews with AWG members and other stakeholders, including the public, was discussed.

Mr. Kaunda is also a member of the Media Institute of Southern Africa, representing Zambia. They will be holding their annual meeting in January 2005, which was considered a potential advocacy opportunity for the AWG.

Meeting of AWG members

The AWG members met in the evening of November 16th to discuss next steps and support needed to carry out the next steps. Professor Chintu, Ann Zulu, Bernice Mwale, Marjorie Kabinga, Oliver Hazemba, Patrick Mwanza, Peter Kelly, Kama Garrison, Nancy Pollock, and Mohan Joshi attended the meeting. Everyone thought that the "Call for Action" Stakeholder Meeting of November 12th was a success. Some members attending the meeting discussed the feedback received on the Stakeholder Meeting. Several people had commented that, although they had heard about drug resistance before, this was the first time it had been discussed in an "official" manner. Everyone at the Stakeholder Meeting acknowledged that drug resistance was important and that something needed to be done.

The role of AWG is evolving into a board-like role. The AWG members are figureheads who make the decisions that the Secretariat will implement. The need for adding new members was discussed. The members did not identify names at the meeting, but agreed new members should be willing to actively work with the Secretariat to carry out AWG decisions.

One potential activity that was discussed at some length during the meeting was "pre-service training." It was agreed that review of one or more of the existing health professionals' curricula (medical, pharmacy, nursing) to identify the topics currently covered and the existing "gaps" in the areas of rational antimicrobial use and AMR, followed by development and introduction of suitable "modules" to provide adequate coverage in these areas would be a good immediate activity to pursue. "Use of media to increase awareness" was another potential activity identified. Members suggested that strong coalition with the media be achieved by providing user-friendly materials and press releases to the media, participating on health discussions on radios, and contributing AMR articles for the existing health columns in newspapers. The third potential activity identified was enhanced information dissemination by the Government's Pharmacy and Poisons Board (drug regulatory authority) as to which drugs are prescription-only and which could be bought over-the-counter. It was brought up that "communications support for the regulatory authority" would facilitate this process. The members also discussed about the need for adding two members to the AWG. The minutes of the meeting are included as Annex 17.

4. Media Coverage on AMR issues before and after the November 12th Stakeholder Meeting

Some radio/newspaper interviews were given by AWG members on topics related to drug resistance just before the November 12th Stakeholder Meeting (Mr. Oliver Hazemba interviewed by Zambia Daily Mail on November 9, 2004; Dr. James Mwansa interviewed by Radio Yatsani on November 10, 2004; and Dr. Jennifer Chisanga interviewed by Times of Zambia on November 11, 2004). Also, several Zambian newspapers covered news on the Meeting and the issue of drug resistance. The details are included in the table below.

Date	Newspaper that featured the story	Type of coverage (news item, feature, etc.)
November 12, 2004	Times of Zambia	Feature Article
November 12, 2004	National Mirror	Feature Article
November 13, 2004	Times of Zambia	News Item
November 14, 2004	Sunday Times of Zambia	News Item
November 19, 2004	Zambia Daily Mail	Feature Article
November 19-22, 2004	Monitor & Digest	News Item
November 19, 2004	The Post Newspaper	Feature Article
November 20, 2004	Times of Zambia	Feature Article
November 20-26, 2004	National Mirror	Feature Article
November 21, 2004	Zambia Daily Mail	News Item
November 21, 2004	Zambia Daily Mail	Feature Article
December 05, 2004	Sunday Mail	Feature Article

Included in Annex 18 are some of the news items/feature articles that appeared in the national/local newspapers.

Collaborators and Partners

- The Honorable Minister for Health Dr. Brian Chituwo provided a major show of commitment and support for the AMR initiative in Zambia by inaugurating the November 12th Stakeholder Meeting. Similarly, the Central Board of Health's Director General Dr. Ben Chirwa and Director of Clinical Care and Diagnostic Services Dr. D.V.C. Mtonga are highly supportive of the initiative. Such support is critical to the success of the program.
- Since the inception of the current initiative, the MSH Regional Technical Advisor Mr. Oliver Hazemba has been a key local counterpart and advisor for the partnership. He provided critical support to ensure that everything went well during the November 12th Stakeholder Meeting. Mr. Hazemba's continued oversight and advice will remain a major contributor for the continued success of the program in future.
- The members of the AWG, including the chairperson Professor Chifumbe Chintu, constitute the core group in the Zambia AMR activity. It's important that their interest and motivation are retained.
- Mr. Peter Kelly and Mr. Patrick Mwanza, the consultants hired by CHANGE/AED to support AWG activities. Both of these consultants have a potential to provide useful support to the process in future.
- The local Zambian VOA reporter Mr. Kellys Kaunda appears very interested in the issue of drug resistance and is planning to create a broadcast package on this issue. He is a potentially important collaborator for the Secretariat and the AWG for national and regional AMR advocacy and dissemination of the recent AWG initiatives.
- Ms. Marjorie Kabinga is a nurse pursuing her Masters course and is very interested in the issue of drug resistance. She was a voluntary rapporteur for the November 12th Stakeholder Meeting and has expressed interest in getting actively involved in the AWG activities. Not only does she bring a nursing perspective to the AWG (which is currently lacking), she appears to bring a commitment for action. So it is worth exploring how this potential collaborator, and others like her, can become more actively involved in the process.

Next Steps

IMMEDIATE FOLLOW-UP ACTIVITIES

- Work with the AWG Secretariat to further develop and strategically plan how and with whom the AWG will implement activities supporting the three areas identified by the AWG (curriculum review and preservice training; communication support; and the media strategy).
- Assist the AWG in seeking/leveraging funding for identified activities. This includes, but is not limited to USAID/W support.
- Support the AWG's decision to add more active members who could bring additional dimension/perspective to the group's composition. This includes considering adding representation from the media.
- Further investigate with the AWG, the possibility of their involvement in the VOA production focusing on drug resistance in Africa, by the Zambia-based, English-to-Africa reporter, Mr. Kellys Kaunda.

RECOMMENDATIONS

- The November 12 Stakeholder Meeting was a success. The AWG now needs to identify and implement follow up activities to maintain the momentum. The partnership should provide support to scale up the local advocacy and coalition-building process.
- The partnership should support the AWG decision to expand AWG Secretariat membership to include active members. In addition, they should continue to support consultants to provide the expertise and time necessary to move the planning and implementation process forward.
- The partnership should work with AWG Secretariat to help provide technical and funding assistance to support the planning, coordination, implementation and resource mobilization for the three identified activities (pre-service training, use of media to increase awareness, and communication support to the Drug Regulatory Authority).
- The partnership should continue to support media activities and work with the AWG to ensure they support and enhance AWG goals.
- The partnership should facilitate increased attendance in Advocacy Working Group meetings by providing transportation expense support to members for attending the meetings.

- The partnership should continue revising the Workbook based on the recent lessons learned in Zambia, including the experience obtained in organizing and staging the November 12 Stakeholder Meeting.
- The Zambia Country Chapter of the Alliance for the Prudent Use of Antibiotics (APUA) is keen on being involved in the current AMR initiative. The partnership should collaborate with APUA Headquarters in Boston to help identify the Local Chapter's possible role and provide them technical assistance in the process.

ANNEX 1: Summary of the Advocacy Working Group Strategic Focus Workshop, October 29th – 30th 2004, Protea Hotel, Lusaka, Zambia

Members Present

Dr. J. Mwansa
Mrs. A. Zulu
Mr. O. Hazemba
Dr. Chisanga
Mr. P. Mwanza
Mr. Peter Kelly
Mrs. B. Mwale

Group 1.

Mission Statement

- To mainstream AMR as an integral part of all health information in Zambia.

Group 2.

Mission

- To create awareness about the microbial resistance and reduce inappropriate use of antimicrobial.

After discussion on the mission statement, the first mission was adopted.

What are we going to do?

Group 1.

- Data collection on AMR
- Establish a data bank on AMR
- Training of trainers
- Educate stakeholders
- Continue with advocacy
- Disseminate data on AMR through various channels.

Group 2.

- Raise media awareness of AMR problem
- Enhance GRZ awareness of AMR problem
- Facilitate incorporation of AMR as integral part of the training of the health professionals.
- Update Health Professionals on the scope of the AMR problem in Zambia
- Update Donors on the scope of the AMR problem in Zambia

The first four bullets in group 1 (Data collection on AMR, establish a data bank on AMR, training of trainers, update stakeholders) were eliminated after discussion.

Members of the AWG

To assign each member accordingly.

Pro. Chintu
Dr. J. Mwansa
Dr. J. Chisanga
Mrs. A. Zulu
Mr. O. Hazemba
Mr. C. Mudondo
Mr. P. Mwanza
Mrs. Bernice Mwale
Ms. Pascalina Chanda

1. Who do we want to influence? And who are our decision makers?

Decision Makers

Who are they?

Ministers, Permanent Secretaries and Directors in

Health
Education
Information and Communication
Finance

Donors – Directors of Health in donor organisations
Pharmaceutical Companies –Directors
Professional Associations (Medical)
Pharmacy Regulatory Board
Media Heads and Editors
Health Officers in large companies (Konkola Copper Mines and others)
NGOs concerned with health matters
Heads of health related training institutions

2. How do we know that the message is getting through?

Measures of Success

- GRZ changes policy in relation to AMR
- Wider availability of appropriate microbial drugs.
- Wider dissemination of STGs
- Incorporation of AMR into health promotion programs.
- Increased publicizing of AMR in the media?
- Increased prominence of AMR in training institute curricula.

- Establishment of a data bank on AMR
- Incorporation of AMR into KAP and Rational use studies.
- Pharmacy board to 'LIST' ineffective treatment. (thus making them avail only on prescription).
- Pharmaceutical companies comply with new regulations and policies.
- Each health institution to have an **effective** therapeutic committee.

What material already exists?

Lots of materials are available.

WHO Guidelines etc

The material made available by Nancy Pollock and her colleagues was reviewed together with other material gathered from the internet.

Material generated internally (within Zambia) was also considered:

CALL FOR ACTION

Call for action (power point)

- The Brochure written by P Mwansa
- Power Point presentation
- MPL Fact Card
- Cholera Paper
- Malaria Policy Statement.

Who are our target audience? (Short, medium and long term)

Short

Media /consumer associations Donors

Medium

Private
companies

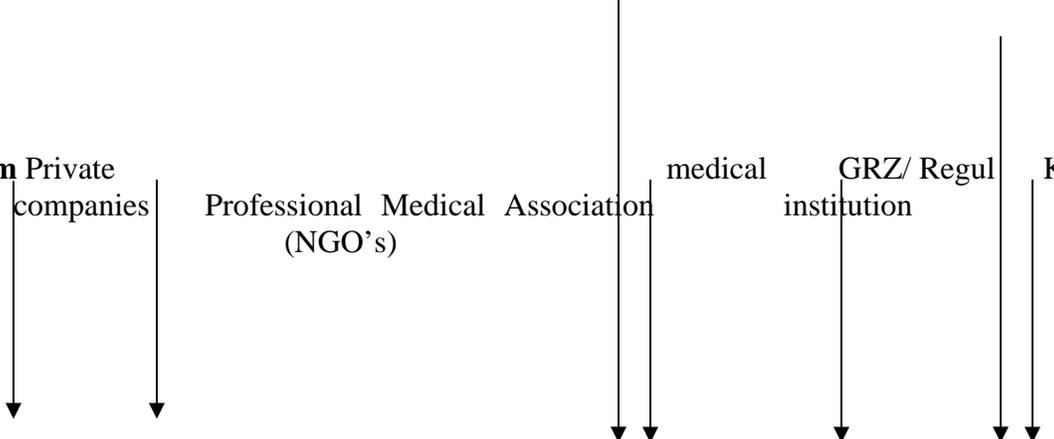
Professional Medical Association
(NGO's)

medical

GRZ/ Regul
institution

KAP
atory

Long

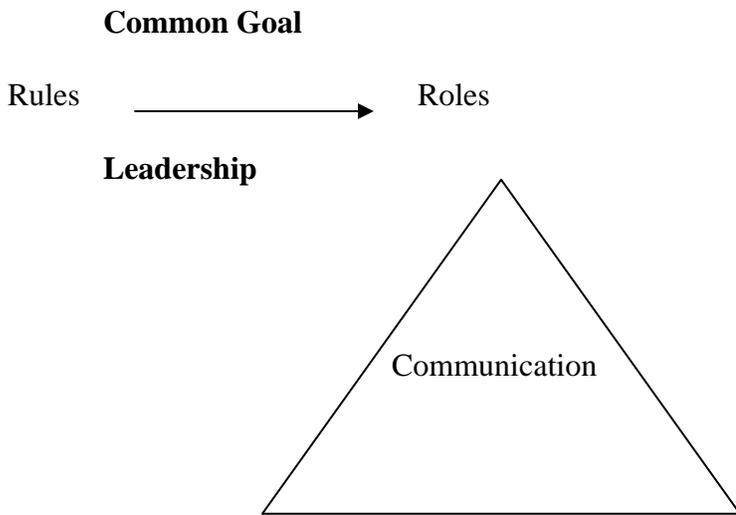


What are we going to say? (Our strategic approach)

How are we going to tell them?

Large companies	-	factual / social responsibility/benefit
Donors	-	Encouragement
Prof Associations	-	Factual
Media	-	Factual /solvable / warning
TRG Institutes	-	Factual
Pharmaceutical Companies	-	factual/social responsibility/longer product life
GRZ	-	Consequences (of not acting)
NGO's	-	Consequences “
Regulatory boards	-	Consequences “

ADVOCACY AND TEAM BUILDING



STRENGTHS

- Diversity – understanding
- Credibility
- Team members from TGT, GPS
- Professional expertise
- Group members are concerned (committed)
- Professional training (of Group Members)
- Team members are Volunteers (thus committed)
- Support team (Oliver, Patrick, Peter)

How do we maximize our strengths?
We need to utilize the support group.

WEAKNESSES

- The group has not got enough time
- The group all have Day jobs
- Inconsistency of group members (not attending meetings etc)
- Volunteers (no one gets paid)
- Lack of commitment from some team members
- Limited resources

How do we minimize our weaknesses?
By sharing the load (presentations etc) among all members of the group
By recruiting additional group members who are enthusiastic and committed (at least 2)

OPPORTUNITIES

- Possibility of success
- Reduction of AMR problem
- External support (the environment is conducive)
- Access to information
- Facilitate the implementation of WHO guidelines

THREATS

- Other special interested groups
- Pharmaceutical companies
- No control over stakeholders
- limited government money
- lack of government support on AMR at the moment
- cultural barriers (resistance to change/ family influence)
- lack of knowledge by the external bodies (media) to make sure the message is loud and clear)

Who do we want to speak for us?

AWG

We have already identified the media

We need to give the information because we are trying to catch the eye of the public, so how do we convey the message and through who?

Media (columnists as well as factual articles)

First Zambian President Dr. Kenneth Kaunda

Former Ruling Party (UNIP) Secretary General (Grey Zulu)

Big Brother Winner 2003, Ms. Cherise Makubale

Voice of America representative, Mr. Kellys Kaunda

Professional Associations - Secretariat

Dr. Velepi Mtonga

USAID Communications Unit

Cartoonist (as part of information campaign)

AWG

**ANNEX 2: AMR Stakeholders' "Call For Action" Meeting
Holiday Inn, Lusaka, Zambia
12 November 2004
AGENDA**

Time	Activity	Presenter
8:00-8:30	Registration	Secretariat
8:30-8:45	Welcome	Prof. Chifumbe Chintu- Chairman
8:45-9:15	Official Opening	Dr. Brian Chituwo S- Hon. Minister of Health, GRZ
9:15-9:30	AMR: We Act Now or We Lose	Dr. Mohan Joshi
Why do we care about AMR?		
9:30-9:45	Malaria	Caesar Mudondo
9:45-10:00	TB	Ms. Ruth Tembwe
10:00-10:15	HIV and AIDS	Dr. Ray Handema
10:15-10:30	Dysentery and Cholera	Dr. James Mwansa
10:30-10:45	Antibiotic use in vet food: additives as potential for AMR	Dr. Mwanza
10:45-11:00	Questions	
11:00-11:20	TEA BREAK	
11:20-11:35	Situation Analysis: How is Zambia addressing the AMR issue?	Mr. Caesar Mudondo
11:35-11:50	What are the options available for preserving the effectiveness of antimicrobial agents?	Mr. Oliver Hazemba
11:50-12:45	Small Group Work	Secretariat
12:40-1.05	Group Work: report out	
1:05-1:30	Plenary	Facilitated by Prof. C. Chintu- Chairman
1:30-1:45	Call For Action	Prof. C. Chintu- Chairman
1:45-2:00	Launching of the STGs and Closing	Dr. Ben Chirwa, Director General CBOH
	LUNCH	

**ANNEX 3: List of Participants at the AMR Stakeholders' "Call For Action"
Meeting, Holiday Inn, Lusaka, November 12, 2004**

No	Name	Organisation	Phone No	Fax No	E-mail Address
1	Joseph Mthetwa	Tropical Disease Research Centre Ndola	097-432936	02-621112	josephmthetwa@yahoo.co.uk
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12	Beatrice Saili	Ministry of Finance	097-822151		
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64	Dr. Mohan Joshi	MSH / RPM Plus			mjoshi@msh.org
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ANNEX 4: Pictures taken during the AMR Stakeholders' "Call for Action" Meeting, November 12, Lusaka, Zambia



Picture 1: Inauguration of the Meeting by Honorable Minister for Health of GRZ, Dr. Brian Chituwo



Picture 2: Participants at the Meeting



Picture 3: Participants at the Meeting



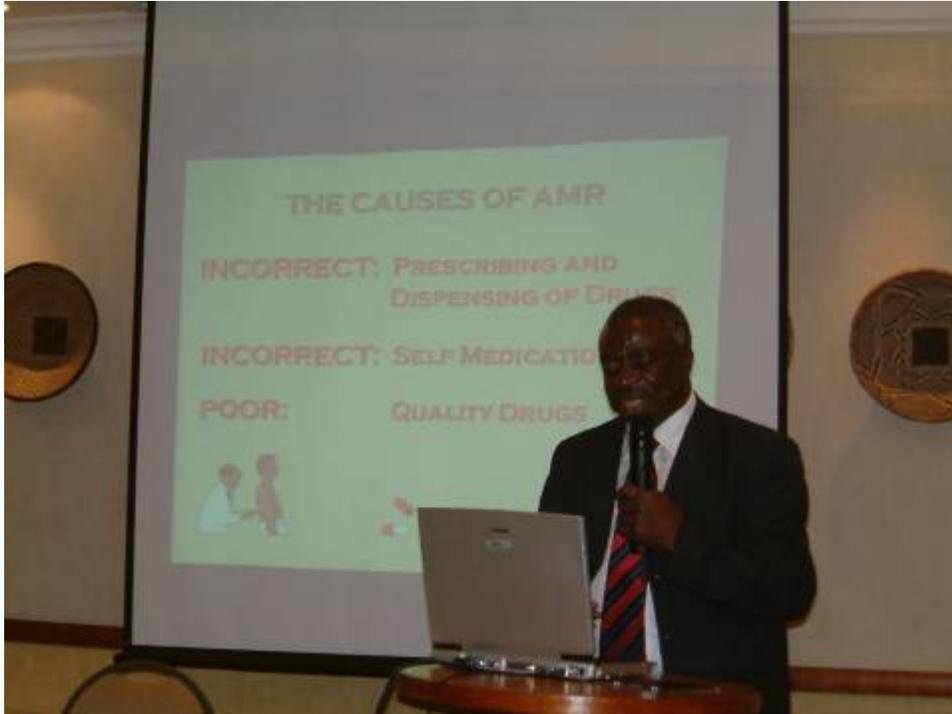
Picture 4: Participants at the Meeting



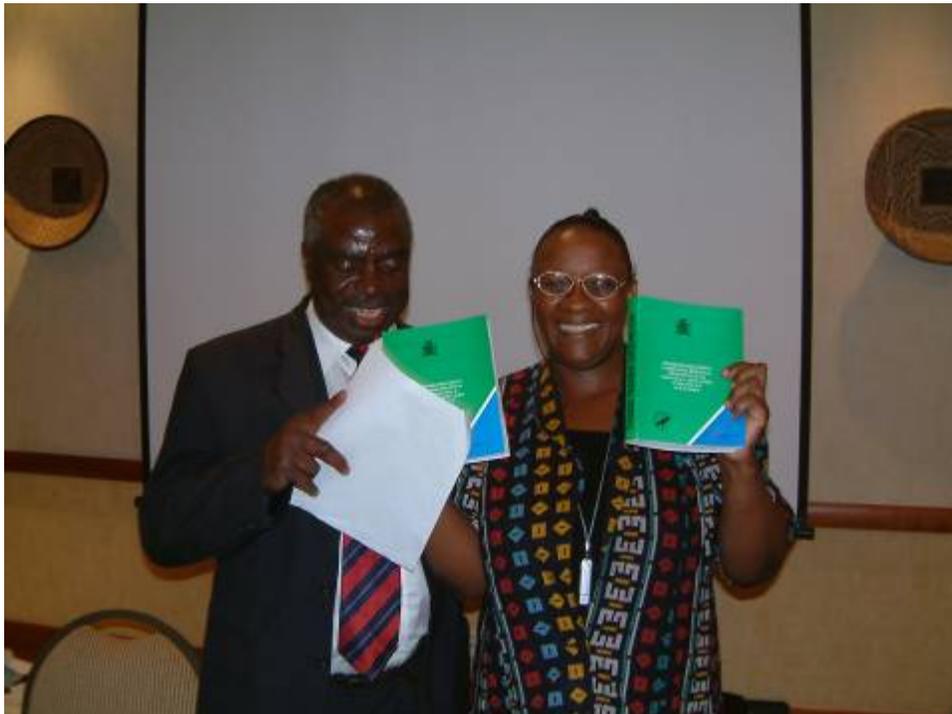
Picture 5: Participants at the Meeting



Picture 6: Ms. Anne Zulu reporting the group work of the "Pharmacists" Group



Picture 7: "Call for Action" presentation by Professor Chifumbe Chintu, Chairperson of the AWG as well as Chair of the Meeting



Picture 8: Official launching of the Standard Treatment Guidelines 2004 for Zambia by Dr. D.V.C. Mtonga (Director of Clinical Care and Diagnostic Services, Central Board of Health) on behalf of Dr. Ben U. Chirwa, Director General of the Central Board of Health (CBoH).



Picture 9: Dr. D.V.C. Mtonga, Director of Clinical Care and Diagnostic Services, Central Board of Health, addressing the audience during the official launching of the Standard Treatment Guidelines 2004 for Zambia.



Picture 10: Banner used during the AMR Stakeholders' "Call for Action" Meeting, November 12, 2004, Hotel Holiday Inn, Lusaka, Zambia

ANNEX 5: PRESENTATION 1 – AMR: We Act Now or We Lose



MANAGEMENT SCIENCES for HEALTH
RPM Plus | Rational Pharmaceutical Management Plus



AMR: We Act Now or We Lose
Mohan Joshi, Program Manager for AMR,
RPM Plus
AMR Stakeholders' "Call for Action" Meeting, Lusaka, Zambia,
November 12, 2004



Supported by U.S. Agency for International Development

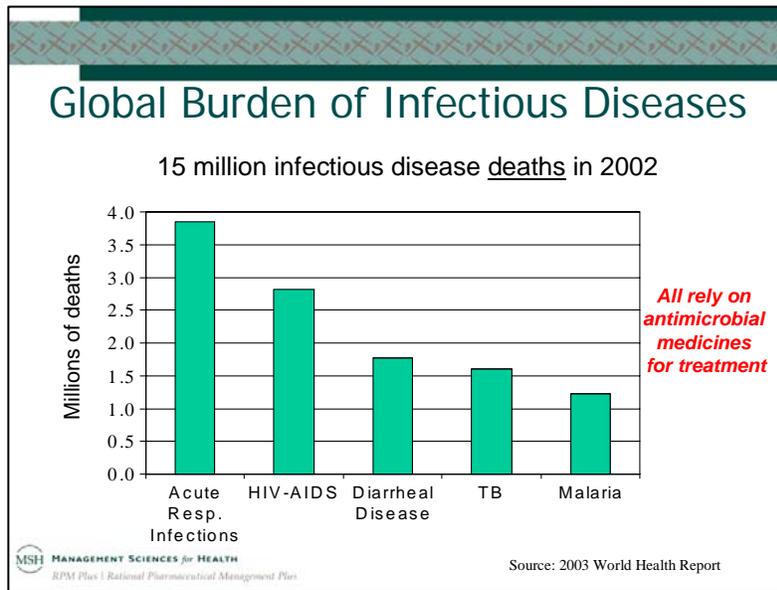
Introduction

- High mortality in pre-antimicrobial era
- Many antimicrobials in 20th Century
- Saved great many lives
- But **AntiMicrobial Resistance (AMR)** rapidly increasing in recent decades

What is Antimicrobial Resistance?

“Ability of a parasite strain to survive and/or multiply despite the administration and absorption of a drug given in doses equal to or higher than those usually recommended but within tolerance of the subject.”
(WHO, 1973)

Translation: the recommended antimicrobial medicine is no longer effective in disabling or killing a microbe

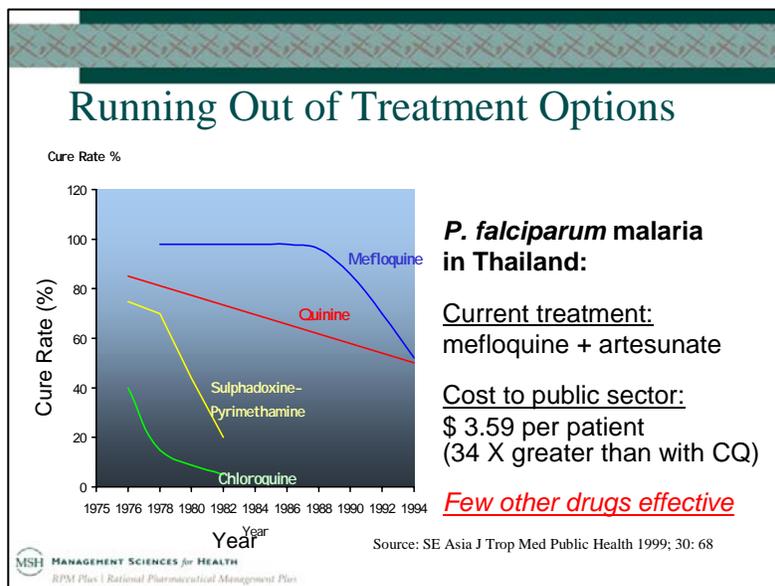


Current Efficacy of Antimicrobial Drugs

Infectious Disease	Primary Causative Agent	Illustrative Drug and Resistance Levels	Resistant to other drugs
ARI	<i>S. pneumoniae</i>	Penicillin: Up to 55%	Yes
HIV/AIDS	HIV	Antiretrovirals: ??%	Yes
Diarrheal Disease	<i>S. dysenteriae</i>	Cotrimoxazole: Up to 95%	Yes
TB	<i>M. tuberculosis</i>	Isoniazid: Up to 39%	Yes
Malaria	<i>P. falciparum</i>	Chloroquine: Up to 50%	Yes

MSH MANAGEMENT SCIENCES for HEALTH
RPM Plus | Rational Pharmaceutical Management Plus

Sources: Modified from 2003 World Health Report and WHO reports



Impact of AMR

- Huge **Individual** as well as **Public Health** Consequences in terms of
 - Prolonged illness
 - Prolonged periods of infectiousness
 - Increased mortality
 - Increased direct cost (longer hospital stay, use of more expensive 2nd or 3rd line drugs)
 - Indirect costs (prolonged absence from work, etc)

Impact of AMR: An Example of multiple drug resistant TB

- **Treatment 100 times more expensive**
- **Treatment duration up to 4 times longer**
- **Cure rate only 50% even in the best centers**

Causes of AMR

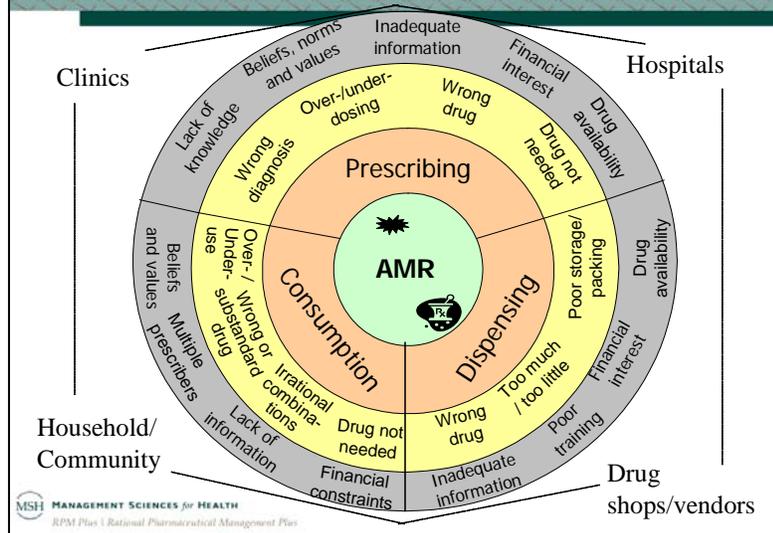
- **Multiple factors contribute to the development of AMR**

Inappropriate Use is a major Contributor to AMR

- Antimicrobials are one of the **most widely used and misused** agents
- **20–50%** of human use UNNECESSARY
- **40–80%** of animal use HIGHLY QUESTIONABLE

Source:
Wise R et al. BMJ 1998; 317: 609-10.

Real World Complexity in Use



Other relevant Factors contributing to AMR are

- ~ Limited access to antimicrobials
- ~ Over-the-counter (OTC) availability
- ~ Poor quality (substandard and counterfeit)

The Global Initiatives and the Risk of AMR Escalation

- Greatly increased flow of ARV, TB & malaria drugs through the Global Fund, US Presidential Initiatives, etc
- Resistance likely to escalate if this big drug inflow is not matched by **strengthening of drug management** and **AMR prevention activities**

We Act Urgently or We Lose Soon

- We were in **PRE-antimicrobial** era 60 years back
- We are in impending danger of going into **POST-antimicrobial** era
- So we need to act, and **act NOW**

A Complex Problem Requiring Multiple Solutions (1)

- AMR is an **OVERARCHING** issue involving public health, clinical medicine and microbiology
- This complex multifactorial problem requires **MULTIFACETED APPROACH** for its prevention and control

A Complex Problem Requiring Multiple Solutions (2)

- Requires MULTIPLE INTERVENTIONS directed towards Education, Regulation, Surveillance, and Research
- Requires involvement of ALL STAKEHOLDERS (Government, Academia, NGOs, Consumers and communities, Providers, Professional Bodies, Private Sector, Cooperating Agencies, International Bodies)

Advocacy and Coalition-building are Critical to Success

- Advocacy, coalition, commonalities, synergy, and networking are critical to success
- Need to integrate AMR as a "value added" component across all the existing infectious disease programs and activities

ANNEX 6: PRESENTATION 2 – The Impact of AMR on the Management of Malaria

THE IMPACT OF AMR ON THE MANAGEMENT OF MALARIA

AMR STAKEHOLDERS MEETING

HOLIDAY INN.LUSAKA

12TH NOVEMBER 2004

MALARIA IN ZAMBIA

- ❑ Malaria is highest disease burden in Zambia (HMIS 2003 4.2m cases)
- ❑ Endemic in all of Zambia
- ❑ Responsible for most hospital visits and admissions
- ❑ More than 50000 deaths due to malaria
- ❑ Particularly dangerous in children<5 years and pregnant women. Also HIV/AIDS patients

MANAGEMENT OF MALARIA

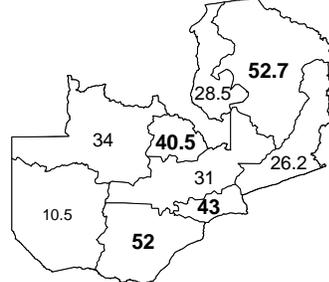
- ❑ Early recognition and prompt effective treatment- key to successful management of malaria
- ❑ Untreated uncomplicated malaria can rapidly progress to severe disease
- ❑ Effective treatment therefore cardinal intervention to minimise consequences of disease

Chloroquine

- ❑ CQ drug of choice for uncomplicated malaria for >40 years
- ❑ Used at all levels of health care system
- ❑ Recent studies in Zambia show unacceptable levels of treatment failure due to parasite resistance

Chloroquine resistance

Chloroquine Clinical Treatment Failure: 1995-2000, standardized protocol



SP and quinine efficacy

- ❑ Recent studies also demonstrate growing problem of treatment failure with SP (18-34%)
- ❑ Quinine efficacy still in excess of 95%. In some parts of the world quinine efficacy now a problem
- ❑ Key drugs for management of malaria in Zambia

Artemisinin

- Group of drugs used in Far East for centuries
- Highly efficacious.
- Studies in Zambia show high efficacy (100% with Coartem- an ACT)
- Far East- indication of reducing efficacy when used as monotherapy or with failing partner drug

Options for malaria treatment

- Few available options
- Very few drugs in development for treating malaria, unlike HIV/AIDS and other conditions
- Need to preserve available options
- Key- protection from parasite resistance.

New approach

- Combination therapy coupled with RUD
- New malaria treatment policy recommends ACT (Coartem) as first line drug for uncomplicated malaria
- Purpose- prolonging useful life of drugs
- Quinine for severe malaria and 2nd line in case of treatment failure with 1st line



Thank you

ANNEX 7: PRESENTATION 3 – TB Drug Resistance: Recent Laboratory Trends

TB DRUG RESISTANCE/ RECENT LABORATORY TRENDS

Tembwe B.R

Introduction

- Zambia like most low-income country in sub Sahara Africa has recorded an increasing incidence of Tuberculosis (TB).
- Since the late 1980s, the increase has been five fold.
- The introduction of health reforms in 1992, resulted in the discontinuation of vertical programs leading to inadequate monitoring of TB control activities and for a period of at least three years (1997-2000) national TB data was not available.

Introduction Cont...

- This breakdown in TB control activities, necessitated the determining of the incidence of drug resistance in new and previously treated cases.

Surveillance

- A nationally representative sample was selected using 30 the cluster sampling approach as recommended by WHO/IUATLD.
- Sputum specimens were collected from consecutive smear positive patients in 30 clusters who were attending twenty-five (25) diagnostic centres throughout the country.

Surveillance

- Patients samples were transferred to the National Reference laboratory for culture on Lowenstein Jensen media, within two weeks of collection.
- Using the indirect proportion method, drug susceptibility tests were performed on all culture positive samples.
- Each isolate was tested against four of Zambia's first line of drugs in the treatment of TB, Rifampicin, Isoniazid, Ethambutol and streptomycin.

Results

- A total of 489 patients had their isolates tested.
Among new cases resistance to
Isoniazid 6.3 % (28)
Rifampicin 1.8 % (8)
Ethambutol was 0.7 % (3).
- Amongst the previously treated patients' resistance to
Isoniazid 6.8 % (3)
Rifampicin 2.3 % (1)
Ethambutol 2.3 % (1) respectively.
- Resistance to Streptomycin was not determined due to discrepancies in quality control data.

Resistance

- Multi- drug resistant (MDR) that is resistance to Isoniazid and Rifampicin was 1.8% (8) for new cases and 2.3% (1) for previously treated cases.
- Important that the emergence of MDR Tuberculosis, despite the low levels, should be monitored since the country continued to have stock outs of drugs during the survey period.
- In 2003 susceptibility tests were to be done on all positive cultures with growth of 5 isolates or more.

Laboratory trends

- What have we observed in the laboratory in the past two years.
- Total number of isolates tested against TB drugs
- 2002 90
- 2003 136

Isolates Resistant to Single drug

Resistance to	2002	2003
	Number of isolates	Number of isolates
Streptomycin	09	07
Isoniazid	12	38
Ethambutol	05	11
Rifampicin	04	16
Total	30	72

Isolates Resistant to a combination of drugs

Resistance to	Number of isolates	
	2002	2003
Streptomycin&Isoniazid	01	14
Streptomycin&Rifampicin	00	09
Streptomycin &Ethambutol	02	04
Isoniazid&Ethambutol	03	03
Isoniazid,Rifampicin	04	04
Strept'cin,Eth'tol&Rifampicin	00	03
Strept'cin,Isoniazid&Rifampicin	01	03
Streptomycin,Isoniazid,Ethambutol&Rifampicin	02	14
Total	13	54

Thank you for listening

ANNEX 8: PRESENTATION 4 – Resistant Testing for Better ART Patient Management

RESISTANT TESTING FOR BETTER ART PATIENT MANAGEMENT

- HIV/AIDS & TB Control Project (UTH-JICA)
- Ray Handema, Dip. Sc., B.Sc., M.Med.Sc., Ph.D

12.11.2004

Case 1

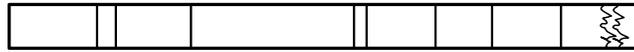
- 45 year old male
- April 2004: Viral load was 128,000 c/ml ($\log_{10} 5.10$)
- CD4 count: not done
- June 2004: Viral load was 317,000 c/ml ($\log_{10} 5.50$)
- Log change: 0.40
- CD4%: 1, Absolute CD4 count: 15 c/ μ l
- Genotyping for resistance testing done on this sample

Drug treatment history

- Sept.2000: Lamivudine, Zidovudine and Indinavir
- Sept.2001 - Oct 2002: Lamivudine and Zidovudine alone
- Oct. 2002 - Dec.2002: Lamivudine, Stavudine and Nevirapine
- Dec.2002 - June 2003: Lamivudine, Zidovudine, Nevirapine and Indinavir
- June 2003 - Dec.2003: Saquinavir, Didanosine and Lamivudine
- Dec.2003 - : Lamivudine, Zidovudine and Efavirenz

Results

- RTI resistance mutations (RT gene)



Discussion

- Within 4 years, patient has developed resistance mutations to both NRTIs and nNRTIs
- Need for phenotypic assays to determine the level of resistance to these drugs
- Protease gene still being analyzed, hopefully might have fewer or no resistance mutations for PIs

Case 2

- 38 years old Female

Drug treatment history

- Lamivudine, Stavudine and, Nevirapine

Results

- RTI resistance mutations (RT gene)



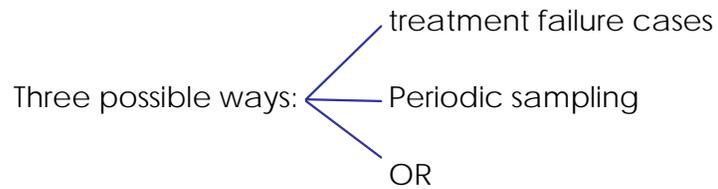
Discussion

- This patient still has a choice amongst RTIs and PIs
- However, there is no choice on nNRTIs because of the 103 mutation

Way forward

- More people on ARVs
- Adherence
- CD4 and Viral Load
- Therapy regimens
- Constant supply of drugs
- *in vitro* and *in vivo* check on local ARVs

Plan for Resistance surveillance



Information required

- Pt. ID
- CD4 count and Viral load
- Stored plasma
- Drug treatment history
- Role of Central Laboratory

Needs

- Manpower
- Freezers
- Transport
- Reagents
- etc

- Thank you

ANNEX 9: PRESENTATION 5 – Changing In Vitro Antibiotic Resistance in Epidemic Prone Diseases in Zambia

CHANGING IN VITRO ANTIBIOTIC RESISTANCE IN EPIDEMIC PRONE DISEASES IN ZAMBIA. 1990-2003

Dr. James Mwansa

INTRODUCTION

- Fluid replacement therapy, symptomatic care, hygienic precautions are mainstay of diarrhoea due to vibrio cholerae.
- Prompt antibiotic treatment may be indicated in very severe life threatening cases to reduce volume and duration of diarrhoea, period of vibrio excretion, and requirement of fluid replacement especially in very young, very old, and malnourished.
- Hence reduce disease transmission and mortality in epidemics.

INTRODUCTION

- Tetracycline has been the drug of choice for last 30 years.
- Other drugs recommended include chloramphenicol, furazolidone, erythromycin, cotrimoxazole, ciprofloxacin, norfloxacin.
- However emergence of multi-drug resistance during epidemics occur.

GLOBAL TRENDS

- ❑ Guinea-bissau 1996-1997. strain resistant to ampicillin, erythromycin, tetracycline, furazolidone, cotrimoxazole, and aminoglycosides.
- ❑ Changing trends 1992-1997 observed in india
- ❑ Tanzania 1977
- ❑ ukraine 1996

ZAMBIA

- ❑ Tetracycline was the antibiotic of choice prior to and during the 1990-1991 epidemics.
- ❑ Low resistance (2%-3%) in the first two outbreaks 1990-1991.
- ❑ 1992 resistance recorded up to 95%
- ❑ Extensive use prophylaxis.

CONT...

- ❑ Subsequently Ministry of Health changed national policy replaced tetracycline with erythromycin.
- ❑ Significant drop in resistance to 24% between 1998-2002 and 0% in Nov/Dec 2003.

Percentage antibiotic resistance of *V.cholerae* strains 1990-2003

Antibiotic/ period of outbreak	Feb 1990 May1990	Dec 1990- Mar1991	Oct 1991- May1992	Nov-92 Apr-93	1994-1997	1998-2002	2003
Tetracycline	2 (163)	3 (121)	95 (263)	93 (26)	77 (39)	24 (50)	0 (125)
Doxycycline	NT	NT	70 (263)	NT	NT	NT	NT
Chloramphenicol	13 (163)	39 (121)	78 (263)	NT	64 (11)	NT	**
Cotrimoxazole	NT	NT	97 (263)	NT	92 (26)	100 (51)	100 (125)
Erythromycin	NT	NT	0 (263)	NT	0 (26)	2 (84)	**
Norfloxacin	NT	NT	NT	NT	NT	NT	0 (125)
Cefotaxime	NT	NT	NT	NT	NT	NT	0 (125)
Ampicillin	NT	NT	NT	NT	NT	NT	100 (125)

1998 SURVEY OF PRESCRIBING HABITS AT UTH

73% of all in-patients were prescribed antibiotics

61% had more than one antibiotic prescribed

Only 30% had microbiological investigations requested for

Methicillin-resistant *Staphylococcus aureus* (MRSA)

- ❑ 23% of *S. aureus* isolated from wounds in surgical units at U.T.H were MRSA -2002
- ❑ Implication: the strains were resistant to other penicillins, cephalosporins, carbapenems, and beta-lactam inhibitor combinations

Shigella dysenteriae 1

- ❑ *S.dysenteriae 1* strains were isolated during epidemics — 1990-1996, and sporadic cases up to 2000-no isolates since then
- ❑ Resistance to Ampicillin,tetracycline,cotrimoxazole,chloramphenicol was high(Almost 100% to all.)
- ❑ Nalidixic acid was introduced in 1991
- ❑ no resistance to the drug of choice Nalidixic acid in the earlier epidemics
- ❑ low resistance was detected between 1994 & 1996

Shigella dysenteriae 1 Antibiotic resistance pattern

YEAR	ANTIBIOTIC									
		Amp	TE	SXT	C	AMX	CN	NOF	CTX	NA
1991	% (N ^o)	100 (20)	100 (21)	100 (18)	55.0 (20)	0/1	0.0 (20)	0/2	6.7 (15)	0.0 (23)
1992	% (N ^o)	100 (24)	100 (25)	100 (19)	100 (26)	NT	0.0 (22)	5.3 (19)	NT	0.0 (23)
1993	% (N ^o)	100 (26)	100 (23)	96.3 (27)	96.9 (26)	66.7 (15)	0.0 (25)	NT	0.0 (27)	0.0 (28)
1994	% (N ^o)	100 (40)	100 (23)	96.9 (32)	74.2 (31)	63.6 (11)	0.0 (36)	1/1	0.0 (41)	2.7 (37)
1995	% (N ^o)	93.3 (30)	98.0 (51)	95.9 (49)	72.0 (50)	6/6	2.8 (35)	0/1	2.2 (46)	0.0 (49)
1996	% (N ^o)	100 (14)	100 (16)	100 (14)	100 (11)	5/5	14.3 (21)	0/1	NT	4.5 (22)

CONCLUSION

- ❑ There is evidence of lack of prudent use of antibiotics in Zambia
- ❑ Changes in resistance to antibiotics occur during epidemics and treatment.
- ❑ Control of overuse, misuse, and abuse of antibiotics can reduce resistance.

ANNEX 10: PRESENTATION 6 – ANTIMICROBIAL RESISTANCE IN VETERINARY MEDICINE



**ANTIMICROBIAL
RESISTANCE IN
VETERINARY MEDICINE**

Dr. Martin C. Simuunza
Department of Disease Control
School of Veterinary Medicine
University of Zambia

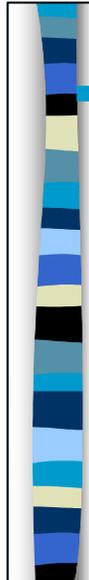


1. INTRODUCTION

Use of anti-microbials is fundamental to animal health and well-being.

They are needed for relief of pain and suffering.

They have also proved to be important for sustainable livestock production and for the control of animal infections that could be passed on to humans.



Introduction cont...

Anti-microbials have played an important role in helping to meet the ever increasing demand for animal proteins.

Anti- microbials are used for therapy, prophylaxis and growth promotion.

It is a well known fact that livestock can not be farmed without anti-microbials.

Despite heavy reliance on medication, animal health is deteriorating.



2. EFFECTS OF ANT-MICROBIAL MISUSE IN ANIMALS.

Development of resistant microorganisms
Drug residues in meat and food of animal origin
Toxicity
Increased cost of disease control



3. REPORTS OF ANTI-MICROBIAL RESISTANCE IN VETERINARY MEDICINE

Data on current anti-microbial use in the country is lacking - most vet drugs are sold over the counter.
Data on drug resistance in veterinary medicine is inadequate.
No information to indicate the magnitude of the problem.



However, it is known that the problem exists though levels maybe lower than those in humans.

Companion animals

They share common flora with humans and are treated with similar compounds.
Anti-microbial therapy usually needed for skin and wound infections, otitis, respiratory and urinary tract infections.
Staphylococcus accounts for majority of these conditions.

Studies in USA and Canada indicated that 60 - 80% of isolates show multi-resistance to a number of antibiotics.

Food Animals

Treatments often administered to collectives. In pigs and poultry, there are indications that enteric pathogens show a higher degree of resistance.

In Zambia there are a few clinical reports of drug resistance in cattle:

Anaplasmosis to oxytetracycline
 Mastitis causing bacteria to a number of antibiotics
 Calf collibacillosis to a number of antibiotics

Poultry

Slightly more information is available

Pandey *et al.* (1999) reported resistance to a number of drugs used to treat avian collibacillosis.

Simuunza *et al.* (2004) reported multi-drug resistance *E. coli* and *Salmonella*

Table 1: Bacteria isolated from poultry cases presented for diagnosis and sensitivity

Bacteria	Frequency of isolation	Resistance
<i>E. coli</i>	65	Penicillin, Amoxycilline, furazolidone, trimethprim sulphate, tetracycline, kanamycin, chloramphenicol, erythromycin, streptomycin, gentamycin, ampicilline ,
<i>Staphylococcus</i>	3	None
<i>Salmonella</i>	17	Penicillin, erythromycin, gentamycin, tetracycline, streptomycin, ampicilline, chloramphenicol, kanamycin
<i>Streptococcus</i>	1	None
No bacteria isolated	5	
No request made	197	

4. CONSEQUENCES OF ANTI-MICROBIAL RESISTANCE IN VETERINARY MEDICINE

- Appearance of multi-resistant food pathogens in human medicine e.g. some *Salmonella* strains.
- Major economic losses in the livestock industry.
- Animal welfare problems.
- Transfer of drug resistant genes to human pathogens
- Restriction of use of some drugs in veterinary medicine e.g. Fluoroquinolones in the USA.

Avoparcin, which is thought to be responsible for the development of vancomycin-resistant enterococci.

5. MEANS OF DECREASING / PREVENTING USE OF ANTIMICROBIALS

- a. Vaccinations
- b. Litter management
- c. probiotics
- d. Use of non-conventional feed additives such as enzymes, organic acids, non-digestible oligosaccharides.
- e. Homeotherapy and use of essential oil therapy.
- f. Better regulations
- g. Implementation of HACCP during both production and processing.
- h. Appropriate husbandry
- e. Judicious use of anti-microbials

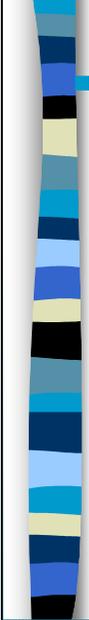


6. CONCLUSION

Generally accepted that anti-microbial resistance in veterinary medicine could form a potential public health hazard.

Therefore, concerns about use of antimicrobial products in animals should focus on human food safety.

The problem should be viewed in its whole perspective and addressed as such by medical, veterinary and agricultural communities.



All should adopt the concept of Positive Health. I.e. Shift away from pathogen-targeted fire fighting towards proactive, health-targeted policies and practices.

ANNEX 11: PRESENTATION 7 – AMR Situation Analysis

AMR SITUATION ANALYSIS

HOW IS ZAMBIA ADDRESSING THE
PROBLEM?

PRESENTATION TO AMR STAKEHOLDERS MEETING
HOLIDAY INN, LUSAKA
12TH NOVEMBER 2004

DATA

- Data gathering process between Feb and July 2004
- Sources- stakeholder interviews and literature review
- Data presented to AWG for review

STAKEHOLDER INTERVIEWS

- Laboratories (including reference labs)
- General practitioners
- Programme managers (TB, malaria, HIV/AIDS, childhood illnesses etc)

STAKEHOLDER INTERVIEWS

- Regulatory authorities (GNC, MCZ, PPB)
- Health insurance providers
- Communications media
- Cooperating partners (multilateral and bilateral)
- Academic institutions
- Pharmaceutical industry

LITERATURE REVIEW

- Medicines legislation (PPA, TSA, MAPA, draft Pharmacy Bill)
- Curricula (pharmacy, biomedical sciences, nursing)
- Various treatment guidelines (STG, ITG, HIV/AIDS, malaria)
- Essential Medicines List
- Publications

FINDINGS

- Perceptions around AMR and interest in containing it
- Responsibility for AMR containment
- AMR activities currently in place
- Aspects requiring attention

Perceptions around AMR

- Most health personnel and cooperating partners interviewed viewed AMR as either serious or potentially serious problem although not all thought it required urgent attention.
- Terms "AMR" or "drug resistance understood differently by non-medical people. Either only as "antibiotic resistance or antimalarials, in view of current publicity on CQ resistance
- Many did not link AMR with work they were doing even if they were carrying out work which significantly impacted on AMR

Perceptions

- Many stakeholders expressed interest in being involved in AMR containment activities
- Misuse of drugs, bad prescribing and dispensing habits, poor patient compliance, shortages of drugs were some of the reasons given for drug resistance
- Lack of information among health workers and public on AMR was considered a problem by interviewees of all backgrounds

Responsibility for AMR containment

- There is no body at any level in the country charged with overall responsibility for AMR containment.
- Bodies like NMCC, NAC etc are addressing AMR issues within their programmes
- Most interviewees were of the view that CBoH should take the leading role
- Most were keen to play a role in AMR containment

Responsibility

- ❑ No resources are allocated by MOH for this purpose
- ❑ AWG, since mid-2004 took on the responsibility of moving process of addressing AMR forward
- ❑ AWG has no statutory or official administrative authority although working closely with CBoH

AMR activities

- ❑ National Drug Policy has been adopted
- ❑ Guidelines for major diseases exist and training effected
- ❑ Medicines legislation exists and is being reviewed to address deficiencies
- ❑ Procurement practices (public sector) are generally sound
- ❑ Product licensing is in place and drug vending outlets are regulated
- ❑ Some CPE and in service training is done

AMR activities

- ❑ Drugs and Therapeutic Committees and Infection Prevention Committees
- ❑ Activities to raise public awareness on the use of drugs have been carried out
- ❑ Laboratories with surveillance capacity exist
- ❑ Drug efficacy monitoring activities and results used in decision-making (malaria, cholera, STI's, TB etc)
- ❑ Disease management policies have been changed in response to AMR (TB, HIV/AIDS, cholera and malaria)

Aspects requiring attention

- Improving prescribing and dispensing practices among health workers (RDU)
- Better use of guidelines, EDL, formulary etc by health workers
- Regulation of antimicrobials and enforcement
- More public awareness activities
- Improved surveillance capacity

Aspects for attention

- Greater involvement of communications media
- Curricula of all institutions training health workers to address AMR
- Drug Quality Control Laboratory
- Greater private sector participation
- Dedicated resources for AMR containment

Thank you for your attention

ANNEX 12: PRESENTATION 8 – What Are the Options Available to Preserve the Effectiveness of Antimicrobial Agents?

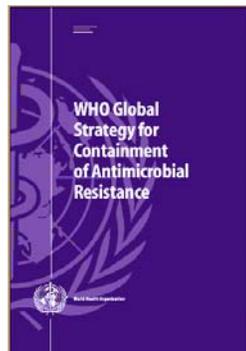
What are the Options Available to Preserve the Effectiveness of Antimicrobial Agents?

AMR Stakeholders' Call for Action Meeting
Lusaka Holiday Inn, November 12, 2004

Evidence Base

- WHO Global Strategy for the Containment of antimicrobial resistance
- Second International Conference for Improving the Use of Medicines (ICIUM 2004)

Global Strategy



- A **framework of interventions** to slow the emergence and reduce the spread of antimicrobial resistance
- **Essential information** on factors responsible for increasing resistance
- **Assessment of issues** around appropriate antimicrobial use and specific interventions needed to contain resistance
- **Practical guide** to implementation in line with national realities

Key Strategies

- Reduce the need for drugs through infection prevention
- Increase treatment effectiveness by improving drug quality
- Increase treatment effectiveness by improving drug use behaviors
- Collect and manage information for coordinated action

Reduce the Need for Drugs through Infection Prevention

Community

- Prevent infection through immunization, and use of bednets, condoms, etc.
- Reduce transmission of infection in the household and the community with improved hand washing and hygiene

Reduce the Need for Drugs through Infection Prevention

Hospital

Improve hospital infection control practices

- Improve hand hygiene
- Reduce unnecessary use of invasive devices
- Monitor antimicrobial usage and feedback results to prescribers
- Use evidence-based protocols for peri-operative surgical prophylaxis

Increase Treatment Effectiveness by Improving Drug Quality

- Only grant marketing authorization to antimicrobials meeting international standards of quality, safety and efficacy
- Ensure the accessibility and quality of essential drugs
- Educate the public about the consequences of poor drug quality

Increase Treatment Effectiveness by Improving Drug Use Behaviors

- Prescriber recommends the correct treatment
- Consumer obtains the full course of the recommended treatment
- Consumer follows the treatment regimen correctly

Prescriber Recommends the Correct Treatment

- | Obstacles | Interventions |
|---|---|
| <ul style="list-style-type: none">□ Drug not available□ Patient can't afford the treatment□ Treatment guidelines not developed/updated□ Treatment guidelines not disseminated□ Patient demanding a different drug□ Prescriber not qualified□ Financial incentives | <ul style="list-style-type: none">□ Improved pharmaceutical management□ Mechanism to develop/evaluate treatment guidelines |
| <ul style="list-style-type: none">□ Difficulty diagnosing condition | <ul style="list-style-type: none">□ Information campaign. Pre-packaging of treatment□ Regulate and enforce□ Professional incentives, regulate pharmaceutical industry□ Training, diagnostic tools, review treatment guidelines |

Consumer Obtains the Full Course of the Recommended Treatment

Obstacles

- Financial incentives to dispense alternate drug
- Insufficient funds to purchase full course
- Uses leftover drugs
- No perceived need to obtain full course

Interventions

- Provide professional incentives
- Regulate the sale of drugs
- Drug management/drug financing
- Education campaign
- Prepackaged treatment

Consumer Follows the Treatment Regimen Correctly

Obstacles

- No instructions given
- Instructions not understood
- Stops treatment early (adverse effects)
- Stops treatment early (patient gets better)
- Self-medication

Interventions

- Prescriber training and supervision
- Prepackaging of drugs
- Patient education
- Provide follow up
- Education
- Education, regulation

Collect and Manage Information for Coordinated Action

- Improve AMR laboratory and surveillance capacity in the public and private sectors
- Monitor drug quality supply and use
- Use information to adjust policies and strategies to increase impact
- Share information and strategies within and between countries

Guiding Principles

- Build on existing structures, activities and interest to increase sustainability
- Tailor interventions to the local needs to increase impact
- Keep strategies feasible and relevant to generate support

Make it Count: Implement Multifaceted Interventions

- Multifaceted coordinated interventions (media campaigns, treatment guidelines and individual and group feedback), rather than single interventions, are more effective in changing prescribing by both public and private sector providers. (ICIUM 2004)
- In a review of studies to improve drug use, the most common approach of the 12/59 studies classified as having low or no impact was dissemination of printed materials recommending appropriate use (Ross-Degnan)

Make it Count: Work with Partners to Achieve Impact

Treatment guidelines are correct	Recommended treatment is available	Prescriber follows treatment guidelines	Consumer follows treatment regimen recommended by prescriber
Yes	Yes	Yes	No
Yes	Yes	No	Yes (but recommendation is not correct)
Yes	No	Yes	No (can't—medicine not available)
No	Yes	Yes	Yes (but recommendation is not correct)



Preserving Drugs: Everyone has a Role

- Collect and manage information for action
- Develop policies and strategies
- Develop, support and implement interventions
- Improve drug supply and quality
- Promote correct prescribing and dispensing
- Demand correct prescribing and dispensing and quality drugs
- Prevent infection and disease transmission

ANNEX 13: AMR Stakeholders' "Call For Action" Meeting, Lusaka, November 12, 2004 Report of the Group Work

Group A: Journalists

Members present:

1. Mwale B.C
2. Vincert Zulu
3. Aubrey Musuumba
4. Deborah Kaluba
5. Boyd Phiri
6. Mathews Mudenda
7. John N. Chola
8. Chris Mfula
9. George Chomba
10. Emmanuel Mulenga
11. Maybin Katugwa
12. Kaunda Mwape
13. Pauline Banda

Questions and group responses:

1. How is AMR affecting your profession / organisation?
 - Loss of manpower due to prolonged illness
 - Leads to low productivity
 - Investment in training is not yielding desired results
 - Increased healthcare budget
2. What can your profession / organisation do in the immediate future to address AMR?
 - Dissemination of quality information (features, radio programs etc).
 - Work closely with the working group of AMR – to facilitate continuous flow of information.
3. What do you need to get started?
 - Need training
 - Sustained interaction with experts

Group B: Government, Private Sector, Consumer Association

Members present:

- | | |
|-------------------------|------------------------------|
| 1. Mrs. Opha Mulila | Madison Health Insurance |
| 2. Mr. Maxwell Chibanga | Interchem LTD |
| 3. Mr. Muyunda Ililonga | Zambia Consumers Association |
| 4. Mr. German Lungu | National Assembly |
| 5. Mrs. Bernice Mwale | Pharmacy and Poisons Board |
| 6. Mrs. Doreen Sendwa | Ministry of Finance |
| 7. Ms. Beatrice Saili | Ministry of Finance |

Questions and group responses:

1. How is AMR affecting your profession / organisation?

Private	Government	Consumers
Loss of business – manufactured drugs will no longer be effective	Financial strain	Not cured
Challenge for research	Prolonged hospitalization	Money spent on drugs / hospital visits
Need for MHI	Loss of man hours; reduced productivity	Loss of income
		Poor health

2. What can your profession / organisation do in the immediate future to address AMR?

Private	Government	Consumers
Embark on research	Source funds	Sensitization
	Education campaign	Demand quality drugs
	Strengthen drug regulations	Advocate for adequate drugs
	Change treatment policies	

3. What do you need to get started?

Private	Government	Consumers
Finances	Finances / donors	Financial resources
Skilled manpower etc	Skilled manpower	Training – drug usage
	Quality control laboratories	Form lobby groups

Group C: Laboratory and Training Institutions and Cooperating Partner

Members present:

- | | |
|----------------------|------------------------------|
| 1. Ruth Tembwe | APUA/ CDL |
| 2. R. Hughes | JHPIEGO |
| 3. C. Chisala | Luanshya Hospital (path lab) |
| 4. Rose Ngandu | Chinaima College |
| 5. Dr. J.C.L. Mwansa | APUA/ UTH |

Questions and group responses:

1. How is AMR affecting your profession / organisation?
 - More work
 - More challenging
 - More expensive – difficult to get adequate resources (reagents)
 - Poses greater risks for staff handling specimen = possible infection
 - Inadequate lab capacity
 - Manpower
 - Equipment
 - Infrastructure
 - Accessibility (few referral centres)

2. What can your profession / organisation do in the immediate future to address AMR?
 - Build capacity
 - Build infrastructure
 - In-service training for qualified staff
 - Improve on sensitivity testing
 - Improve on pre-service training
 - Expand capacity for routine AMR testing

3. What do you need to get started?
 - AMR testing
 - Adequate reagents
 - Dedicated staff at referral lab
 - Referral system to improve
 - Integrate broader AMR into ongoing testing activity (TB, HIV)
 - In-services refresher courses for staff / students

Group D: Pharmacists

Members Present:

- | | |
|---------------------|---|
| 1. Bjorn v. Hofsten | Ngansa Phamarmaceuticals |
| 2. Joseph Mthetwa | Tropical Diseases Research Centre Ndola |
| 3. Chipupu Kandeke | Churches Health Association of Zambia |
| 4. Musenga Ngambi | Pharmaceutical Society of Zambia |
| 5. Marjorie Kabinga | UNZA |
| 6. Anne Zulu | Link Pharmacy |
| 7. Ruth Mudondo | Unicare Pharmaceuticals Ltd |
| 8. Sondashi Davies | Arthur Davison Hospital |
| 9. Violet Kabwe | HSSP |
| 10. Mwale Enock | Mansa General Hospital |

11. James Chiwasha	Intechem Ltd
12. Elliot Ngoma	KCM Mine Hospitals
13. Ceaser Mudondo	Pharmaceutical Society of Zambia
14. Dr. L.T. Muungo	UNZA
15. Chipulu Damiano	Solwezi General Hospital
16. Carolyn Yeta	Central Board of Health

Questions and group responses:

- How is AMR affecting your profession / organisation?
- Treatment failure
- Limitation on availability of drugs
- Prolonged illness and unnecessary deaths
- Reduced patients confidence
- More costly treatment
- Use more antimicrobial drugs
- Increased workload and loss of productivity
- Increased transmission of diseases
- Demands on r&d for new drugs-resources
- Impact of human resources
- Loss of business

What can your profession / organisation do in the immediate future to address AMR?

- Public awareness
- Provide adequate patient counselling
- Improved dispensing practices
- Improve professional competence through Continuing Professional Education (CPE)
- Activate Drug & Therapeutics Committees (DTCs)
- Drug supply management
- Promote rational use of drugs
- Quality assurance of drugs
- Pharmacovigilance

What do you need to get started?

- Professional/political will
- Organisation
- Financial resource
- Acknowledge amr is a problem
- Access to data
- Need partners
- Draw up programme of activities

Group E: Medical & Veterinary Doctors

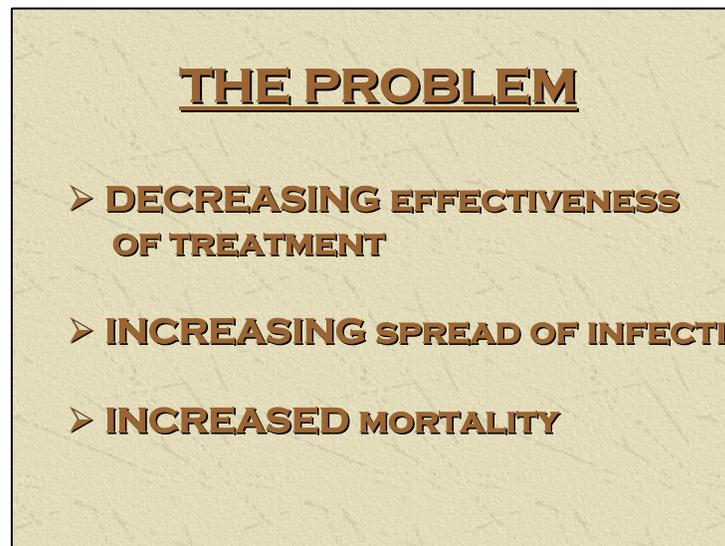
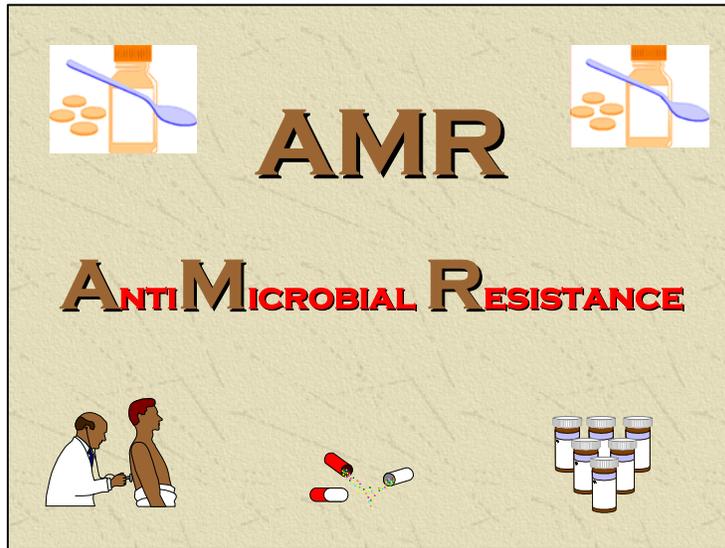
Members present:

- | | |
|------------------------|-----------------------------|
| 1. Dr. Joseph Nikisi | Up / UTH |
| 2. Dr. Martin Simuunza | Vet school UNZA |
| 3. Pro. C. Chintu | UNZA school of Medicine |
| 4. Prof. K.S Babou | UNZA school of Medicine |
| 5. Dr. M. Maboshe | WHO |
| 6. Dr. Chishinge | Kabwe General Hospital |
| 7. Dr. Musonda | Kasama General Hospital |
| 8. Dr. Suta | Kabwe DMHT |
| 9. Dr. J. Mwewa | Kitwe General Hospital |
| 10. Dr. C.C Masase | Ndola Central Hospital |
| 11. Dr. G.M Shakankale | Premium Medical Services |
| 12. Dr. J.C.K Chisanga | Corpmed Services |
| 13. Dr. J. Chinyonga | Livingstone DHMT |
| 14. Dr. D. Makani | Livingstoe General Hospital |

Questions and group responses:

1. How is AMR affecting your profession / organisation?
 - Increased burden of disease
 - Increase morbidity and mortality
 - Reduced productivity
 - Frustrates doctors, patients and relatives.
 - Undermines doctor–patient relationships and confidence of doctors
2. What can your profession / organisation do in the immediate future to address AMR?
 - Improve drug prescription habits, i.e. rational use of drugs (through evidence-based practices)
 - Training of prescribers
 - Community sensitization
 - Advocate for proper implementation of pharmacy rules and regulations
3. What do you need to get started?
 - ZMA / VAZ dissemination of information on AMR and development of standard updated guidelines
 - Organise public and private links for sharing information – resource mobilisation
 - Encouraging continuing professional education point system (MCZ)
 - Disseminate STG to the private sector as well
 - Advocate for adequate and consistent supply of drugs
 - DTCs (revamping)
 - Encourage lab testing and researching on resistance pattern

ANNEX 14: "Call For Action" Presentation Slides



THE SITUATION IN ZAMBIA

MALARIA

**EFFECTIVENESS OF
CHLOROQUINE REDUCED BY :
50%**

**COST OF TREATMENT INCREASED BY:
400%**

THE SITUATION IN ZAMBIA

CHOLERA

TREATMENT INEFFECTIVE

TB

PNEUMONIA

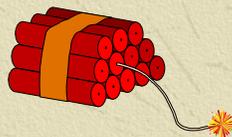
TYPHOID

DYSENTERY

TREATMENT FAILING

THE NEXT CRISIS

HIV/AIDS



THE CAUSES OF AMR

**INCORRECT: PRESCRIBING AND
DISPENSING OF DRUGS**

INCORRECT: SELF MEDICATION

POOR: QUALITY DRUGS



WHO ARE THE STAKEHOLDERS?

GRZ

QUALIFIED HEALTH PROFESSIONALS

COOPERATING PARTNERS

PHARMACEUTICAL COMPANIES

THE MEDIA

CONSUMERS

THINGS ARE BEING DONE

**ALTERNATE MALARIA TREATMENT
INTRODUCED**

STGs DEVELOPED

CALL FOR ACTION

IMPROVE PRESCRIBING PRACTICES



CALL FOR ACTION

IMPROVE CONSUMER USE OF DRUGS



CALL FOR ACTION

IMPROVE (ENSURE) DRUG QUALITY



CALL FOR ACTION

**COLLECT AND MANAGE
INFORMATION FOR HEALTH**



CALL FOR ACTION

NEXT STEPS

ANNEX 15: "Call for Action" Document (Latest Version)

Preserving the Effectiveness of Drugs: A Call for Action

The Advocacy Working Group for antimicrobial drug resistance, working in close collaboration with the Central Board of Health, **calls** all those concerned with health and the well being of the Zambian to come together and address the problem of failing effectiveness of drugs.

More than 4 million Zambians were reported by the Central Board of Health (CBoH) to have suffered from malaria in 2003. Over 2 million of these cases would not have recovered if they were treated with chloroquine, the drug of choice for treating malaria over the last four decades. TB, which affects more than 50,000 Zambians, can no longer be treated with only one drug. Effective TB treatment now requires a combination of antibiotics. In this era of the HIV/AIDS pandemic there are new concerns. If nothing is done, treatment failure with antiretroviral drugs (ARVs) due to drug resistance is imminent.

Resistance to antimicrobial drugs, a global threat that has since the 20th century, presents a growing peril for Zambia and requires urgent action by every Zambian.

It is gratifying to note that some significant developments to combat drug resistance have been initiated. In 2003, when chloroquine no longer worked, the Ministry of Health (MOH) introduced Coartem, an Artemesinin-based Combination Therapy (ACT), Treatment for sexually transmitted infections (STIs) and cholera has also changed because drug resistance to the common drugs including penicillin and tetracycline has developed.

Replacing ineffective drugs is an important and necessary strategy for improving drug effectiveness. However, because of limited treatment options it is critical that we act to preserve the effectiveness of existing drugs. While the action being taken is commendable and indeed desirable, evidence available indicates that the problem of drug resistance in Zambia is growing. Parasite resistance to the malaria drug, Sulphadoxine-pyrimethamine (commonly known as Fansidar) has now reached unacceptable levels in some parts of Zambia. A similar trend has been observed in TB where multi-drug resistance (MDR) is reported to be developing. There is also evidence that drugs used for treating pneumonia, typhoid and dysentery are losing their effectiveness.

When drugs are no longer effective people remain sick for longer periods of time, treatment costs increase and more people die from otherwise curable diseases. Preserving the effectiveness of antimicrobial drugs should therefore be an **immediate** concern for all.

This Call for Action is based on findings of a rapid appraisal conducted for the Advocacy Working Group (AWG). Detailed findings may be obtained through the AWG Secretariat.

The use of antimicrobials is widespread in Zambia. Resistance to these drugs often develops as a result of bad prescribing and dispensing practices, self-medication, and poor drug quality. Evidence shows irrational prescribing and dispensing of antibiotics in Zambia for treatment of viral infections, diarrhea and malaria. Irrational prescribing means recommending the wrong drug, the wrong amount or the wrong length of treatment. Many Zambians treat themselves and obtain their medicines from unauthorized sources. This promotes development of resistance to drugs. Poor drug quality may also promote the development of drug resistance. Although drug quality is not tested regularly in Zambia, it is known that some of the drugs used in Zambia do not meet the minimum standards stipulated by the Pharmacy and Poisons Board.

Preserving drug effectiveness requires different actions from different stakeholders. Stakeholders include the Government of the Republic of Zambia, the media, Cooperating Partners, health professionals and consumers.

- **This “Call for Action” draws attention to actions that should be taken to preserve the effectiveness of existing drugs.**

Incorrect prescribing and dispensing of antimicrobials is often due to diagnostic limitations and unavailability of recommended drugs. Drug availability has increased in many areas and tools for promoting rational prescribing such as Standard Treatment Guidelines, Formulary Management and Drugs and Therapeutics Committees (DTCs) have also been introduced in Zambia. Further action is needed to ensure drug availability and improve the usefulness of tools for promoting rational prescribing. In this regard, there is need to:

- Evaluate the performance of existing DTCs and reduce barriers to their effective performance. (Action: MoH/CBoH)
- Develop and implement a dissemination plan for standard treatment guidelines (STGs) and Essential Drugs Lists in the public and the private sectors. (Action: MoH/CBoH)
- Ensure that health workers at all levels are trained (pre-service and in-service) on the use of STGs, Essential Medicines List and antimicrobial resistance (AMR). (Action: University of Zambia, Chainama College of Health Sciences, General Nursing Council, Medical Council of Zambia, Evelyn Hone College and other training institutions for health workers)
- Strengthen the drug supply systems to ensure regular supply of good quality essential drugs, including development of a long-term financial sustainability plan. (Action: MoH/CBoH, CHAZ and other healthcare providers)

Self-medication is a common problem that contributes to drug resistance. Some of the reasons people treat themselves without professional advice are lack of knowledge, inconvenience and high cost of drugs and health services. When people treat themselves they often take the wrong drug or unnecessary drugs. When they obtain the correct drug, they often take the wrong amount or stop taking the medicine too soon. To preserve the effectiveness of drugs it is necessary to:

- Educate the public about the risk of developing drug resistance due to inappropriate drug. Use media campaigns, school activities and other community based organizations (CBOs) activities. (Action: MoH/CBoH, Ministry of Education, media communications, Consumer Association of Zambia, health professional bodies, and all health workers)
- Encourage patients to adhere to prescribed and dispensed medicines. (Action: Consumer Association of Zambia, media communications, caregivers and all health workers)
- Encourage drug vendors to adhere to regulations. (Action: MoH/CBoH, Pharmacy and Poisons Board and health professional bodies)

Poor quality drugs impact on treatment effectiveness and development of resistance. The drug quality control systems in Zambia currently require improvement, thereby providing opportunities for poor quality drugs to be used. To prevent development of antimicrobial resistance due to poor quality drugs the following needs to be done:

- Establish a National Drug Quality Control Laboratory without delay. (Action: MoH and Pharmacy and Poisons Board and Cooperating Partners)
- Establish a pharmacovigilance system that will monitor drug quality. (Action: MoH, Pharmacy and Poisons Board and all health institutions)
- Educate the public about the risks associated with poor quality drugs. (Action: Pharmacy and Poisons Board, media communications, Pharmaceutical Society of Zambia and other health regulatory and professional bodies)

Preserving drug effectiveness requires effective surveillance strategies and mechanisms to facilitate the collection and management of information for appropriate action. The following needs to be done:

- Collect information on drug resistance and make it available to the body designated to spearhead the implementation of drug resistance containment strategies. (Action: All institutions providing health care services)
- Be vigilant and report cases where patients do not respond to treatment as expected, especially for such diseases as TB, Malaria and HIV/AIDS. (Action: All health workers and patients)
- Develop good network and feedback systems in order to enhance the use of information on drug resistance. (Action: Institutions such as TDRC, CDL, Virology and Microbiology Laboratories and NMCC and all health institutions)
- Strengthen existing laboratory capacities to support diagnosis and conduct surveillance and improve intra and external supervisory capacity of reference laboratories. (Action: MoH/CBoH)
- Include the private sector in the dissemination of information and materials. For example, Standard Operating Procedures and capacity building activities for laboratories (including quality control) should be availed to the private sector. (Action: MoH/CBoH and private sector)

For more information, contact the AWG secretariat at:

Rational Pharmaceutical Management Plus
Plot No. 8749 Buluwe Road, Woodlands
Lusaka, Zambia
Tel: 260 -1- 261614

ANNEX 16: The National Launch of the Standard Treatment Guidelines 2004 at the Holiday Inn, November 12, 2004

Speech of Dr. Ben U. Chirwa, Director General of the Central Board of Health (CBoH), read out by Dr. D.V.C. Mtonga, Director of Clinical Care and Diagnostic Services, Central Board of Health.

- The Chairman of the Zambia National Formulary: Professor Chifumbe Chintu
- The Zambia National Formulary Committee members
- Invited distinguished ladies and gentlemen

I am delighted to be accorded this singular honor to officially launch the Standard Treatment Guidelines for Zambia. Ladies and Gentlemen, this is the first time in the history of the Health Reforms that we have been able to produce an integrated and comprehensive treatment guidelines. This is a key milestone.

Standard Treatment Guidelines are the foundation for essential drugs lists and formularies at the national, local and facilities.

Ladies and Gentlemen, the benefits are enormous if they are well utilized. For prescribers, they provide expert consensus. I would like to thank the leadership of the Chairman of the Zambia National Formulary Committee for having attained that consensus. Now the providers can concentrate on the diagnosis. These are very helpful where expertise is limited, particularly for newly qualified health workers and those that were trained out of our local environment.

To our patients, they have an opportunity to obtain consistent treatment from among many and diverse prescribers. This provides less confusion in the service. Above all, it means the patients will receive most effective treatment and also provides advocacy for improved supply of medicines.

To our suppliers and procurement officers, we have a deal. The treatment guidelines provide the potential for improved procurement, quality control, storage and easier distribution which is efficient too.

To health policy makers, we have an opportunity to know where the money is going to. Funds will be used more efficiently, assure a quality of care and therapeutic integration of special programs

Ladies and Gentlemen, Standard Treatment Guidelines on their own do not work. You need to do a few things to enhance their use and effectiveness.

Immediately after this launch I urge the Zambia National Committee and all Provincial Directors of Health to go out there and disseminate the Guidelines to all public and private health institutions. Ensure that the copies are in the screening rooms, not just in the matron or director's office. Combine the use of the Guidelines with supportive interventions such as educational training and supervision

I challenge the training institutions to develop continuing education modules to guide correct use of the standard treatment guidelines and extend their reach. The Consumers Association of Zambia please increase the consumer expectations regarding use of standard treatment guidelines. Sensitize the public about the need to ask for and follow treatment instructions.

Health professionals, please negotiate with patients to ensure that they take the medication according to the treatment guidelines. Emphasize the importance of completing the treatment even after patient feels better.

Mr. Chairman, my Minister of Health this morning officially opened the national call for action on AMR. This one role of the Central Board of Health to provide guidance to prescribers, dispensers and users of medicines and contributes to the containment of antimicrobial resistance.

To the National Formulary Committee members please keep vigil on the treatment outcomes that you recommended. If they do not work, change to the more effective alternate treatment.

In conclusion, I urge you all to go out there and share the good news. Standard Treatment Guidelines improves the quality of health care.

Standard Guidelines save life.

With these few words I have launched the use of standard guidelines to be used in all health facilities.

May God Bless You All

ANNEX 17: Minutes of the AMR Advocacy Working Group Meeting, November 16, 2004, Lusaka

MINUTES OF THE ANTICROBIAL RESISTANCE ADVOCACY WORKING GROUP MEETING HELD AT MANAGEMENT SCIENCES FOR HEALTH OFFICE ON NOVEMBER 16TH 2004 AT 17:30 HOURS

Present:

Professor C. Chintu	-	Chairperson
Mr. Oliver Hazemba	-	Member
Ms. Bernice Mwale	-	Member
Ms. Anne Zulu	-	Member
Ms. Marjorie Kabinga	-	Member
Mr. Peter Kelly	-	Management Consultant
Mr. Patrick Mwanza	-	Independent Consultant
Dr. Mohan Joshi	-	Partner (Washington DC)
Ms. Nancy Pollock	-	Partner (Washington DC)

Apologies:

Dr. V. Mtonga	Member
Dr. James C.L Mwanza	Vice Chairperson
Dr. M. Macw'ani	Member
Dr. N. Sipilanyambe	Member
Mr. C. M. Mudondo	Member

Agenda:

To discuss the way forward after the stakeholders' meeting

1 Opening remarks

The chairperson welcomed the members to the meeting.

2. Review health curriculum

There is need to review the existing antimicrobial resistance (AMR) curriculum for institutions that train medical students. To facilitate this activity, the meeting resolved that a consultant (s) with necessary expertise be engaged to undertake the review exercise in such training institutions.

The Washington DC cooperating partners said funding to that effect (reviewing of curriculum) was available. After the review, local experts would then decide what AMR materials to be included into the curriculum.

3. Community sensitization

The meeting pledged to build a strong coalition with the media by doing the following:

- Providing 'user friendly' materials on AMR to the media.
- Issue press releases to the media on AMR
- Participate in health discussions on ZNBC Radio Two
- When necessary facilitate transportation of journalists
- Write AMR human interest articles in existing health columns in the media
- Motivate journalists to write on AMR by orienting them on AMR and facilitating their transportation

4. Media interviews

Ms. Anne Zulu volunteered to liaise with Radio Phoenix proprietor for 'air time' slot to talk about AMR while Mr. Patrick Mwanza was to find out the possibilities of AWG members featuring on the existing Radio Two health programme on Zambia National Broadcasting Cooperation (ZNBC).

The AWG secretariat will coordinate the media interviews. It was pointed out that Voice of America wanted to do a programme on AMR. The chairperson said he would be involved in the interviews later but gave the secretariat a go ahead to arrange the media interviews.

The Washington DC cooperating partners said there was a budget to help with the translation of AMR messages.

5. Pharmacy and Poisons Board

The meeting called on the pharmacy and poisons board to be pro-active by informing the people about its activities through the media. The meeting said the board should educate the public categories of drugs that can be prescribed by medical doctors, pharmacists and those which can be bought over the counter.

By publicizing its work, the general public will be in a position to know which common drugs can be bought without the medical doctors' prescription for example and in the process reduce the AMR problem. The AWG pledged to facilitate the 'publicity' aspects of the board's activities.

6. Incorporation of additional members

The meetings reiterated the need for additional two members to be incorporated into the AWG. However, such members should be committed and prepared to find time to attend AWG meetings. Additional members should be people who could bring in a new dimension in the advocacy of AMR.

Dr. Martin Simuunza, from the Veterinary School at the University of Zambia was mentioned for incorporation. He would be able to articulate issues of AMR in animals and subsequently to human beings. Hence, there was need to approach and find out about his availability.

The Washington DC based cooperating partners requested the AWG members to discuss and let them know what can be done to enhance attendance to AWG meetings and activities.

7. Comments on the stakeholders' meeting

The AWG members described the just ended stakeholders' meeting as a success and were particularly encouraged by the fact that the minister of health came in personal to officiate despite his Parliamentary duties at the time. This showed how committed the Zambian Government was in addressing the problem of AMR in the country.

The AWG said although nine provincial health directors could not come due to other engagements, attendance to the meeting was equally good. The pharmacists who did not have a good record of attending meetings came 'in numbers' to the call for action meeting.

The rest of the participants at the stakeholders' 'call for action' meeting showed a lot of enthusiasm and interest in AMR deliberations throughout the meeting. To retain the participants' interest, it was important to keep such meetings short – half day.

The Washington DC based cooperating partners said everything went very well and were happy to be associated with Zambia as the first country in the world to adopt the AMR approach. They thanked the AWG chairperson for his commitment in directing the work of the AWG.

8. Any other business

As there was no any other business, the meeting came to an end at about 18:40 hours.

Chairperson

Professor C. Chintu

Secretary

Patrick Mwanza

ANNEX 18: Coverage on the AMR Stakeholders' "Call For Action" Meeting and Drug Resistance By Zambian Newspapers

Times of Zambia, November 13 2004

Malaria would have killed two million Zambians in 2002 —Chituwo

By Times Reporter

TWO million Zambians would have lost their lives in 2002 due to strong resistance by the malaria parasite to chloroquine treatment, Health Minister Brian Chituwo has said.

Dr Chituwo said this during the Anti-microbial Resistance Stakeholders' Call for Action meeting in Lusaka yesterday.

"If we did not change the malaria treatment policy in 2002, two million of the Zambians would have been mistreated with the failing chloroquine and we all know that malaria is a fatal disease and kills many women and children," he said.

Dr Chituwo said that more than 4 million people suffer from malaria annually and that after 50 years of service the parasites had become resistant to chloroquine hence the introduction of the new drug "Coartem" which is now 40 times more expensive.

He said the change in the drug prescription was as a result of failing to preserve the effectiveness of medicines.

Dr Chituwo said that Government had a crucial role to play, particularly on policy and legal framework and the enforcement of regulations in the dispensing of the drugs.

He said his ministry had been able to put up a legal framework on control and sale of all anti-microbials through the Pharmaceutical Act of 2004 and that these

need to be followed with regulations, rules and guidelines.

He said the Central Board of Health (CBoH) currently in the process of abolishment, had been developing guidelines on the use of medicines and patient care.

He said Government in collaboration with the World Health Organisation established the Tropical Disease Research Center and other institutions such as the National Malaria Control Center to conduct surveillance in malaria and the Chest Disease Laboratory on Tuberculosis (TB) and Virology and TB Laboratory were established at the University Teaching Hospital.

He implored the various establishments conducting surveillances on diseases to share their findings and the need to monitor the efficacy of medicines.

"Sharing of information and networking among these institutions and ourselves is necessary as it assists us to make sound decisions and policies," he said.

On the need for action to preserve medicines, Dr Chituwo added to calls for the promotion of rational prescribing, dispensation and consumption of medicines.

The minister said preservation of the effectiveness of medicines remained vital and urged various stakeholders to work together for the common goal and aim to save lives.

Sunday Times of Zambia, November 14 2004

**Drug
inflow
can
cause
resistance
— expert**

By Sunday Times
Reporter

THE inflow of anti-retroviral, tuberculosis (TB) and malaria drugs into Zambia through sources like the Global Fund may escalate resistance to treatment if the huge supply is not matched by strengthening of drug management, a medical expert has warned.

Speaking in Lusaka before the launch of standard treatment guidelines (SDGs), Moham Joshi said drug resistance would increase if the huge drug inflow from donors came without drug resistance prevention activities.

Drug resistance is a complex problem driven by numerous interconnected factors, many of them linked to misuse of the drugs used to treat HIV/AIDS, STIs, TB, malaria, diarrhoeal diseases and respiratory infections.

Also referred to as Antimicrobial Resistance (AMR), the problem arises when a parasite strain survives and at times even multiplies despite being attacked with the antimicrobial drug the illness is treated with within the dosage.

Dr Joshi said recent studies revealed increasing resistance to treatment among malaria patients while some TB patients were not responding to the combination of drugs that they had always used to cure the disease.

Because of drug resistance, he said, the effectiveness of treating malaria with chloroquine had been reduced by 50 per cent and cost pushed up by over 400 per cent after introducing coartem as the first line of treatment.

"We need to act urgently or we lose soon. So we need to act, and act now," the medical doctor told delegates to the stakeholders' meeting calling for action against AMR at Lusaka's Holiday Inn.

Government, with the support of the Global Fund and other donors like the United States Presidential Initiative intends to increase the number of patients taking AIDS drugs from 10,000 to 100,000 by the end of next year.

Donors have also pledged to assist Zambia with drugs to fight TB and malaria.

Dr Joshi said acute respiratory infections, HIV/AIDS, diarrhoeal diseases, TB and malaria all used antimicrobial therapy which was increasingly proving ineffective in killing or disabling the microbes that caused the illnesses.

Dr Ray Handema from the University Teaching Hospital (UTH) said some patients enrolling for AIDS treatment already had strains that were resistant to some of the drugs in the triple combination currently being offered.

Jennifer Chisanga said there was need for increased public awareness about the drug resistance as evidence showed that the problem was fast growing.

Dr Chisanga warned of more deaths, prolonged illnesses, increased loss of man-hours, increased costs of treating patients and worsened poverty if drug resistance was not addressed.

AMR Advocacy Working Group chairperson, Chifumbe Chintu said if the current medicines used to treat HIV/AIDS, malaria and TB were not preserved, hospitals would soon be filled with drug resistant patients.

Professor Chintu called for concerted efforts among all stakeholders including health professionals, cooperating partners, pharmaceutical companies, the media and consumers to improve consumer use of the antimicrobial drugs.

Times of Zambia, November 20, 2004

Drug resistance jolts

By A CORRESPONDENT

"I DO not know what is wrong with me. Malaria is refusing to go away although I have been taking chloroquine," a Chawama resident, Ms Mary Zulu, complained to a health worker at Chawama Health Centre in Lusaka where she went to seek health medical attention recently.

What Ms Zulu did not know was that chloroquine, the drug that has been used as the first treatment for uncomplicated malaria for the past four decades, is no longer effective in treating malaria as a result of parasite resistance.

Studies conducted in different parts of Zambia have shown levels of chloroquine resistance that range from 24 per cent to 52 per cent.

To significantly reduce the malaria disease burden, the Government through the ministry of Health adopted the use of anti-malaria combination therapy strategy as a replacement to the monotherapy options in the management of uncomplicated malaria in Zambia.

Available evidence shows that the problem of drug resistance (antimicrobial resistance or AMR) is increasing in Zambia.

At global level, the USAID has been supporting efforts to raise awareness of the problem of AMR and to develop interventions to improve drug use practices and drug quality.

The initial key step was to support the development of global strategy by the World Health Organisation (WHO) for the containment of AMR, which represents global consensus on interventions, research gaps and appropriate approaches for containing drug resistance.

To try and address the problem of AMR, a team of concerned health professionals formed an AMR advocacy-working group (AWG). It should be mentioned that Zambia is the first country in the world to apply the approach.

Professor Chifumbe Chintu, of the University of Zambia (UNZA), is the chairperson of the AWG whose members work on a

voluntary basis as they are in full-time employment elsewhere. The group receives support from the cooperating partners, mainly USAID and Central Board of Health (CBoH).

On November 12, 2004, AWG organised an AMR "Call for action" meeting, which was held at Holiday Inn in Lusaka. The forum was the first of its kind in the history of AMR in Zambia. Minister of Health Brian Chituwo officially opened the meeting. The aim of the meeting was to help people become aware about the potential problem of drug resistance in Zambia, to advocate for their participation in addressing the problem and to facilitate the follow-up discussions.

Health experts from diverse medical fields including the microbiology and virology laboratories at the University Teaching Hospital (UTH) and School of Veterinary at UNZA presented papers on AMR during the meeting.

Malaria, TB, pneumonia, dysentery, cholera, HIV/AIDS were among the top public health diseases that

were discussed. The impact of antibiotics that are used to treat animals on human beings was also highlighted.

From the presentations, it was clear that if nothing is done to address the problem of AMR, Zambia could be heading for a situation where the hospitals will be full of patients with resistant infections.

What causes this drug resistance? A number of factors contribute to the development of AMR. However, wrong use of drugs is by far the single major contributor.

According to the paper titled 'Preserving the Effectiveness of Drugs: Call for Action' which was distributed to the participants, bad prescription and dispensing, poor quality or substandard drugs and inappropriate treatment-seeking behaviour are some of the factors that cause AMR.

However, each one of these causes happen because of other reasons. For example, poor quality drugs could be caused by lack of a national drug quality control laboratory and pharmacovigilance system

Times of Zambia, November 20, 2004 (continued)

experts into action

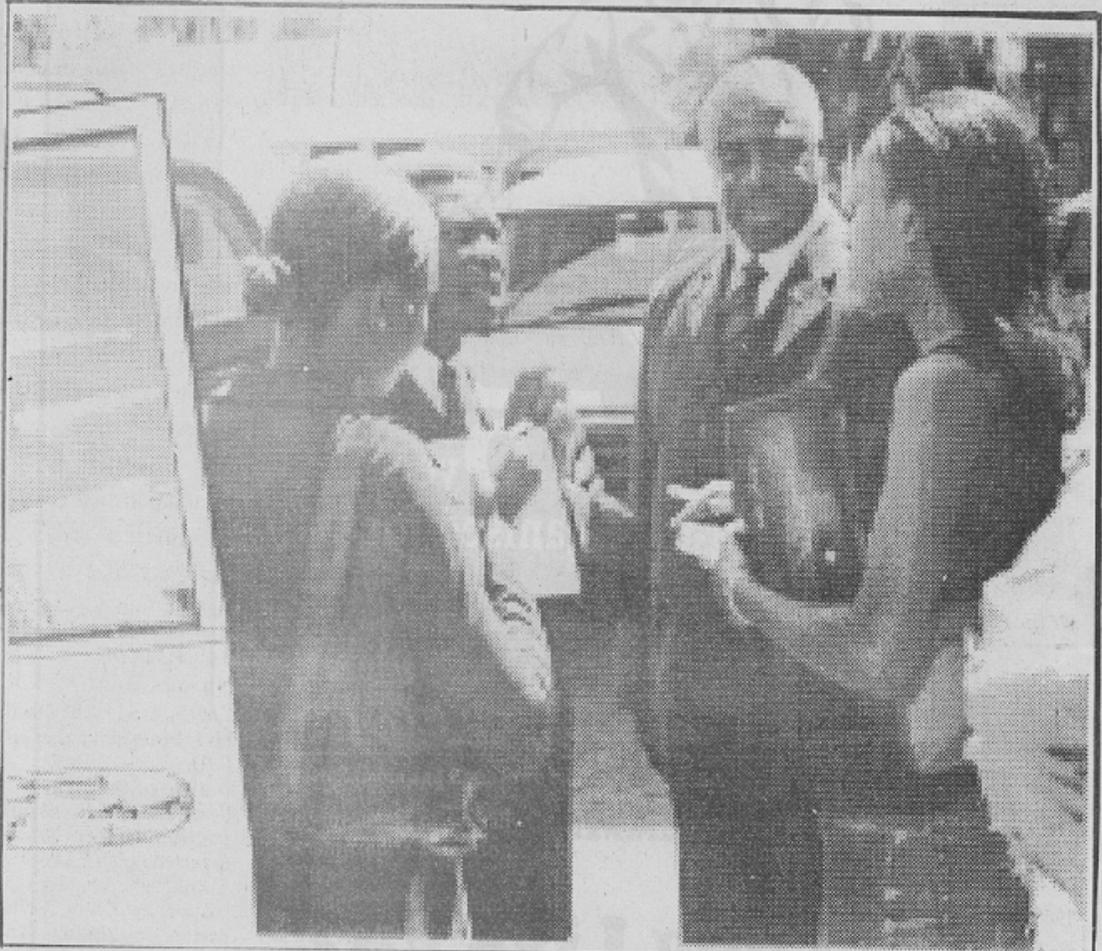
and inadequate surveillance and supervision.

The consequences of AMR are equally many. The obvious one is that people start dying from otherwise curable diseases, prolonged illness, the danger of AMR spreading to the population, high cost of treatment to the family as well as high cost of drug replacement to the country.

What then should be done in order to preserve the effectiveness of drugs? Taking the correct quantities of drugs, finishing the prescribed course of drugs, going to a health worker for antibiotics, avoiding self-medication and desisting from buying drugs from illegal drug stores.

The participants who attended the AMR "Call for Action" meeting included journalists, consumers,

pharmacists, academicians, policy-makers, cooperating partners and medical professionals from all over Zambia. The general atmosphere and quality of contributions at the meeting were encouraging. "Apart from sharing



•MINISTER of Health Brian Chituwo chats with Professor Chifumbe Chintu at the AMR meeting in Lusaka.

knowledge and experiences in AMR, the meeting provided me with an opportunity to meet some of my professional colleagues some of whom I last met 10 years ago at medical school," one participant said.

Dr Chituwo was able to chat with Prof Chintu, who was his lecturer at UNZA some years back.

The AMR meeting was punctuated by the "call for action". The ministry of Health, through CB_oH

director general Ben Chirwa, seized the opportunity to officially launch the standard treatment guidelines to promote rational prescribing in health institutions.

Source: malaria policy statement

National Mirror, November 20-26, 2004

Drug resistance: The challenge

By Boyd Phiri

GAUNT looking and weak, a patient is lying in agony with an assortment of drugs beside her bed. Since Tombi (not her real name) was diagnosed with malaria six months ago, she has been taking various types of drugs besides Chloroquine, the medicine she had earlier been prescribed for.

Her mother believes that because Tombi has not shown any sign of healing even after taking Chloroquine, there is no harm in her changing medicines.

The above case study bears testimony to the growing problem of drug resistance. Research by the World Health Organisation (WHO) shows that antimicrobial resistance (AMR) is increasingly becoming a problem worldwide, impacting infection control efforts and costs of antimicrobial treatment.

A number of factors are contributing to the problem of drug resistance, including unnecessary antimicrobial prescribing by both trained and untrained health workers, uncontrolled dispensing by drug vendors, poor antibiotic prophylaxis in surgery, and poor infection control practices. According to WHO, self-medication with antimicrobial is another major factor contributing to drug resistance.

Self-medicated antimicrobials may be unnecessary, are often inadequately dosed, or may not contain adequate amounts of active drug, especially if they are counterfeit drugs.

In countries where resources are limited, WHO says, the dispensing of antimicrobials by unauthorized persons is common. This tends to result in excessive use of newer antimicrobial agents, often with a broader spectrum of action.

However, in many regions, the prevalence of resistance among common pathogens to readily available cheap antimicrobials is so high that these agents are now of limited clinical effectiveness.

For instance, in

Zambia, according to Mr Caesar Mudondo from National Malaria Control Programme (NMCP), the effectiveness of Chloroquine on malaria reduced by 50 percent and the cost of treatment increased by 400 percent.

This meant that between 1995 and 2000 there was a 52.7 percent Chloroquine clinical failure in Northern Province, followed by Southern Province with 52 percent failure in the drug.

The effectiveness of Chloroquine on malaria on the Copperbelt reduced by 40.5 percent, while Lusaka recorded a reduction of 43 percent. Central Province re-



• Chitwuo

corded 31 percent and North-Western Province had 34 percent reduction.

In Luapula Province there was a reduction of 28.5 percent in Chloro-

quine effectiveness, while Eastern Province had a reduction of 26.2 percent. Western Province recorded 10.5 percent.

Chloroquine has been

a drug of choice for uncomplicated malaria in Zambia for 40 years. Mr Mudondo noted at an AMR Stakeholders Meeting at Holiday Inn on November 12 that recent studies in Zambia showed unacceptable levels of treatment failure due to parasite resistance.

Malaria is the highest disease burden in Zambia. According to Mudondo, there have been 4.2 million cases of malaria in 2003 bringing the death rate per year to 50,000.

Mudondo further revealed that recent studies also demonstrate growing problem of treatment failure with SP and Quinine for severe malaria at 34 percent.

In his presentation Mudondo indicated that there were now very few options in the treatment of malaria as a result of drug resistance.

There are very few

drugs in development for treating malaria, unlike HIV/AIDS and other conditions.

Drug resistance has also been recorded in Tuberculosis (TB). According to Ms Ruth Tembwe from UTH, who presented a paper on the TB situation in Zambia, recent laboratory trends have shown that Zambia, like most low-income countries in Sub-Saharan Africa has recorded an increasing incident of TB. Ms Tembwe said since the late 1980s the problem of TB has increased five-fold.

This was compounded by the fact that the introduction of health reforms in 1992 resulted in the discontinuation of vertical programmes leading to inadequate monitoring of TB control activities, and for a period of three years (1997 - 2000) national TB data was not available.

Breakdown in TB control activities

However, this breakdown in control activities, Tembwe said, necessitated the determining of the incidence of drug resistance in new and previously treated cases.

Patients' samples were transferred to the national reference laboratory for culture on Lowenstein Jansen media, within two weeks of collection. Using the indirect proportion method, Tembwe said, drug susceptibility tests were performed on all culture positive samples. Each isolate was tested against four of Zambia's first line drugs in the treatment of TB, Rifampicin, Isoniazid, Ethambutol and Streptomycin. This resulted in isolate tests of 489 patients. According to Tembwe, among new cases there was a resistance of 6.8 percent to Isoniazid.

Rifampicin recorded a resistance of 2.3 percent while Ethambutol also recorded a 2.3 percent. Resistance to Streptomycin was not determined due to discrepancies in quality control data.

However, there was also multi-drug resis-



• Dr Chitwuo and Prof. Chintu talking to journalists outside the conference hall at Holiday Inn

tance (MDR), that is resistance to Isoniazid and Rifampicin was at 1.8 percent for new cases and 2.3 percent for previously treated cases.

Tembwe further noted that despite the low levels, it was important that the emergence of MDR Tuberculosis be monitored since the country continued to have stocks of drugs during the period of the survey.

According to Tembwe, in 2002 laboratory trends showed that a total of 90 isolates were tested against TB, while in 2003 a total of 136 isolates were tested against the disease. Findings on isolates

resistant to single drugs in 2002 showed that nine isolates were resistant to Streptomycin, 12 isolates were resistant to Isoniazid, five isolates were resistant to Ethambutol and four isolates were resistant to Rifampicin, resulting in 30 isolates resistant to the drugs. In 2003 it was found that seven isolates were resistant to Streptomycin, 38 isolates were resistant to Isoniazid, eleven isolates were resistant to Ethambutol and Rifampicin had a resistance from sixteen isolates, bringing a total of 72 isolates resistant to the drugs.

Drug Resistance in HIV/AIDS: The next crisis

"There is need for phenotypic assays to determine the level of resistance to these HIV/AIDS therapies"

There have also been resistance mutations in HIV/AIDS treatment. According to Dr Ray Handema from the HIV/AIDS and TB Control Project (UTH-JICA), an example of this situation was shown in one case, where a 45-year-old male had a viral load of 128,000 c/ml in April 2004. His CD4 count was not done.

In June, the same year, his viral load was 317,000 c/ml and the log change stood at 0.40. He had CD4%: 1, Absolute CD4 count: 15 c/ul. Genotyping for resistance testing was done on this sample. According to Dr Handema, within 4 years the patient developed resistance mutations to both NRTIs and nNRTIs.

However, Dr Handema said there was need for phenotypic assays to determine the level of resistance to these HIV/AIDS therapies. The drug treatment history on

HIV/AIDS show that Lamivudine and Zidovudine have commonly been used since September 2000 to 2003. Others are Indinavir and Stavudine, Nevirapine, Saquinavir, Didanosine and Efavirenz.

However, in both malaria and TB, the impact of AMR has huge individual as well as Public Health consequences in terms of:

- Prolonged illness
- Prolonged periods of infectiousness
- Increased mortality
- Increased direct cost (longer hospital stay, use of more expensive 2nd or 3rd line drugs)
- Indirect costs (prolonged absence from work, etc).
- In TB, prolonged treatment will become 100 times more expensive with treatment duration up to four times longer. There is a cure rate of only 50 percent even in the best centres.

National Mirror, November 20-26, 2004 (continued)

of modern living

There has been antimicrobial resistance in veterinary medicine as well. According to Dr Martin Simuunza from the Department of Disease Control School of Veterinary Medicine at the University of Zambia (UNZA) antimicrobials have played an important role in helping to meet the ever increasing demand for animal proteins. But despite this heavy reliance on medication, animal health is deteriorating.

Dr Simuunza said there was lack of data on current antimicrobial use in the country; most vet drugs are sold over the counter. There is also no information to indicate the magnitude of the problem.

The problem of resistance exists in animals though levels may be lower than those in humans.

In pigs and poultry, there are indications that enteric pathogens show a higher degree of resistance. In Zambia, Dr Simuunza said, there are few clinical reports of drug resistance in cattle.

However, Dr Simuunza said there are consequences of antimicrobial resistance in veterinary medicine, which include animal welfare problems, transfer of drug resistance genes to human pathogens, and major economic losses in the livestock industry.

Other consequences include appearance of multi-resistant food pathogens in human medicine e.g. some Salmonella strains and Restriction of use of some drugs in veterinary medicine e.g. Fluoroquinolones in the USA. It is generally accepted, Dr Simuunza said, that antimicrobial resistance in veterinary medicine could form a potential public health hazard.

However, realizing the complexity of the problem of drug resistance, the WHO has developed the first Global Strategy for Containment of Antimicrobial Resistance. Addressed to policy-makers and managers in a range of sectors and agents, the strategy aims to both persuade governments to take urgent action and then



• Dr Josh Mohan presenting a paper on Antimicrobial Resistance

guide this action with expert technical and practical advice. But few countries have started to implement it.

Officially opening an AMR Stakeholders meeting at Holiday Inn, Health minister Dr Brian Chituwo said there was need to change the Drug Policy as drug resistance grows big among many people in the country.

"The drug issue re-

quires renewed commitment. The call for action is now," Chituwo said.

Dr Chituwo acknowledged that drug resistance was becoming a problem in Zambia and as such his ministry has introduced a Pharmaceutical Bill in Parliament with the hope that once enacted into law, it would ensure the establishment of a pharmaceutical regulatory au-

thority to ensure proper storage and sourcing of drugs.

"Once this is done it will go a long way in helping advocacy groups to safeguard the lives of people and use of these medicines.

At the same occasion a Standard Treatment Guidelines 2004 was launched by the Central Board of Health (CBoH).

Call for action for AMR

In Zambia the Management Sciences for Health (MSH) is spearheading the campaign against antimicrobial resistance. An Advocacy Working Group has been put in place for antimicrobial drug resistance, working in close collaboration with the Central Board of Health, with a Call for Action to preserve the effectiveness of drugs through the following:

- Educate the public about the risk of developing drug resistance due to inappropriate drug use. Use media campaigns, school activities and other community-based organizations (CBOs) activities.

- Encourage patients to adhere to prescribed and dispensed medicines.

- Encourage drug vendors to adhere to regulations.

And to prevent the development of antimicrobial resistance due to poor quality drugs the Working Group says the following needs to be done:

- Establish a National Drug Quality Control Laboratory without delay.

- Establish a pharmacovigilance system that will monitor drug quality.

- Educate the public about the risks associated with poor quality drugs.

According to Mohan Joshi, Programme Manager for AMR and Rational Pharmaceutical Management Plus, there is need to preserve drug effectiveness through effective surveillance strategies and mechanism to facilitate the collection and management of information for appropriate action.

All in all Dr Chifembe Chinu, who chaired the AMR Stakeholders Meet-

ing at Holiday Inn in Lusaka summarized it by indicating that all stakeholders, who include the government, qualified health professionals, cooperating partners, pharmaceutical companies, the media and consumers need to take action against antimicrobial resistance.

He said the task ahead is to improve consumer use of drugs, improve prescribing practices, improve drug quality and collect and manage information for health.



• Many patients are resistant to some drugs

Zambia Daily Mail, November 21, 2004

Scribes pledge to work with health personnel

By PATRICK MWANZA

A TEAM of journalists who participated in a stakeholders' call for action meeting on antimicrobial resistance (AMR), pledged to work in close collaboration with the AMR advocacy working group (AWG) to make people aware of the potential problem of AMR throughout the country and beyond.

The journalists were drawn from the Zambia Daily Mail, Times of Zambia, The Post, National Mirror, Zambia National Broadcasting Corporation, Zambia Information Services, Zambia News Agency, Zambia Farmer Magazine, Yatsani Radio and Choice FM.

According to the outcome of their group discussions on "what they could do" to address the problem of AMR, the journalists said it was important that there was a sustained interaction between the health workers and the media as such interaction would facilitate continuous flow of quality information on AMR to the general public.

They noted that low productivity, loss of manpower and training investment were some of the ways through which the problem of AMR was impacting on the journalism profession and media organisations because workers who were 'victims' of AMR tended to experience prolonged illnesses.

However, the journalists called on the health workers to cooperate with the journalists by attending to the media queries in good time. They (journalists) said it was sometimes difficult for them to write health stories because health workers were not willing to provide expert information.

The pharmacists, who also

participated in the deliberations at the stakeholders' call for action meeting, said apart from promoting public awareness on AMR, it was important that health authorities took up measures to improve the dispensing practices and the professional competence of health workers.

The Ministry of Health, through the director general of Central Board of Health, Ben Chirwa, took advantage of the stakeholders' call for acting meeting to officially launch the Standards Treatment Guidelines to enhance rational use of drugs in both public and private health institutions.

The AWG was formed by a team of concerned health professionals to make people aware of the problem of AMR in the country.

Sunday Mail, December 5, 2004

Getting to the bot

On November 12, a team of health professionals concerned with the problem of drug resistance hosted a stakeholders' meeting in Lusaka. The meeting was to make Zambians and other people aware of the problem of drug resistance, advocate for their active participation in addressing the problem as well as to facilitate follow-up actions from various stakeholders. PATRICK MWANZA looks at frequently asked questions about drug resistance.

STAKEHOLDERS to a meeting in Lusaka on the problem of drug resistance were drawn from a wide spectrum of the Zambian community, including the media, nongovernmental organisations and health experts from health and pharmaceutical institutions, as well as the Ministry of Health.

"Super bugs can be prevented", "Drug resistance jolts experts into action", "The problem of drug resistant", and "Drug resistance: The challenge of modern living", were some of the headlines which appeared in the Zambian press soon after this meeting.

The Daily Mail, for example, depicted a typical scenario of how drugs are abused. It narrated how Belita Monde of Lusaka, used to discontinue taking a malarial drug - chloroquine - when she felt better and how she used to keep the remaining tablets for her future malaria attacks.

The story goes on to

say that Belita was so "generous" as to share the remaining tablets of chloroquine with some of her family members who experienced similar symptoms as hers. The result: resistance to chloroquin.

The publication of drug resistance stories in the newspapers has raised questions that need answers.

However, due to various reasons, including living far from medical institutions where they can get advice.

The World Health Organisation (WHO), however, answers some frequently asked questions about drug resistance.

QUESTION: What is AMR?

ANSWER: Microbes (bacteria, fungi, parasites and viruses) cause infectious diseases and antimicrobial agents (such as penicillin, streptomycin, and over 150 others) have been developed to combat the severity and spread of many of these diseases.

The resistance to such drugs is a natural biological phenomenon. The use of antimicrobial for any infection, in any dose and over any time period, causes a "selective pressure" on microbial populations.

Under optimal conditions, the majority of the infecting microbes will be killed and the body's immune system can deal with the rest. However, if a few resistant mutants exist in the population under selective pressure and the treatment is insufficient or the patient is immunocompromised, the mutants can flourish. Thus treatment may fail.

Q: Why is AMR a problem?

A: Infections caused by resistant microbes often fail to respond to treatment, resulting in

Sunday Mail, December 5, 2004 (continued)

prolonged illness and greater risk of death. When treatment fails or response to treatment is slow, the patient remains ineffective for a longer time.

This provides greater opportunities for the resistant strain to spread to other people.

Q: How serious is the problem?

A: The discovery of antimicrobials in the previous century was followed by spectacular gains in human health and life expectancy. The emergence of resistance to these "wonder drugs" is now so widespread that it threatens to undermine - or even reverse - these gains.

Q: Is the problem worse than in the past?

A: Yes. In the past, medicine and science were able to stay ahead of the natural phenomenon of resistance through the discovery of potent new antimicrobials.

This discovery process flourished from 1930-1970, particularly for

antibacterial drugs, but has since slowed, partly because of misplaced confidence that infectious diseases had been conquered, at least in the industrialised world.

Q: Is there special cause for alarm?

A: Yes. Today, when a resistant strain emerges, there is not necessarily a new "wonder drug" ready on the shelf. Most alarming of all are microbes that have "accumulated" resistance genes to virtually or currently available drugs and have the potential to cause untreatable infections, thus raising the spectre of a post-antibiotic era.

Even if the pharmaceutical industry were to step up efforts to develop new drugs immediately, current trends suggest that some diseases will have no effective therapies within the next 10 years.

Q: Why has this happened now?

A: In just the past few decades, the development and spread of resistant microbes have been greatly accelerated by several concurrent trends. These have worked to increase both the number of infections and the spread of infections from person to person, thus creating an increased need for AMR.

Q: What are some of these trends?

A: Important trends includes urbanisation with its associated overcrowding and poor sanitation; pollution, environmental degradation and changing weather patterns, which can affect the incidence and distribution of infectious diseases; and a growing proportion of elderly people needing hospital-based treatment and thus at risk of exposure to highly resistant pathogens found in hospitals.

Inappropriate use occurs when antimicrobials are taken for too short a time, at too low a dose, at inadequate potency, or for the wrong disease. Both overuse, such as through the over-prescribing of microbials, which tends to occur in wealthier nations, and under-use through lack of access, inadequate dosing, poor adherence, and poor quality drugs, play a role.

Sunday Mail, December 5, 2004 (continued)

Additional trends include the AIDS epidemic, which has greatly enlarged the population of immunocompromised patients at risk of opportunistic infections, and resurgence of old foes such as malaria and tuberculosis, causing millions of infections each year.

The enormous growth of global trade and travel means that a resistant microbe can spread from its place of origin to almost anywhere else in the world within 24 hours.

Q: What is the most important cause of resistance?

A: Although the natural phenomenon by which resistance emerges can be accelerated and amplified by a variety of factors, the most important cause is the inappropriate use of antimicrobials.

Q: What constitutes "inappropriate" use of antimicrobials?

A: Inappropriate use occurs when

antimicrobials are taken for too short a time, at too low a dose, at inadequate potency, or for the wrong disease. Both overuse, such as through the over-prescribing of microbials, which tends to occur in wealthier nations, and under-use through lack of access, inadequate dosing, poor adherence, and poor quality drugs, play a role.

For example, in some developing countries, antimicrobials can be purchased in single doses without a prescription.

Economic hardship means that many patients will stop taking an antimicrobial as soon as they feel better, which may occur before the microbe has been eliminated.

Q: Are other economic factors involved?

A: Yes. When infections become resistant to first-choice, or "first-line" drugs, treatment has to be switched to second- or third-line drugs, which are often more expensive and may not be available in some settings.

For example, the drugs needed to treat multidrug-resistant forms of tuberculosis are over 100 times more expensive than the first-line drugs used to treat non-resistant forms.

In many countries, the high cost of such replacement drugs is prohibitive, with the result that some diseases can no longer be treated in areas where resistance to first-line drugs is widespread.

In addition to the cost of drugs, patients infected with resistant microbials often remain sick longer, which increases the cost of health care and is an added financial burden to the family and to society.

Q: Does this mean that only those populations living in

developing countries are threatened by resistance?

A: No. AMR is a global problem requiring a global solution. No single nation, however effective it is at containing resistance within its borders, can protect itself from the importation of resistant pathogens through travel and trade.

Poor prescribing practices in any country now threaten to undermine the effectiveness of vital antimicrobials everywhere.

Q: Which specific diseases are most affected?

A: The bacterial infections which contribute most to human disease are also those in which emerging resistance is of most concern: diarrhoeal diseases such as dysentery, respiratory tract infections, including multi-resistant tuberculosis, sexually transmitted infections such as gonorrhoea, and hospital-acquired infections.

Among the other major infectious diseases, the development of resistance to drugs commonly used to treat malaria is of particular concern, as is the emerging resistance to anti-HIV drugs.

Q: Why are hospital-acquired infections so dangerous?

A: Hospitals are a critical component of the AMR problem worldwide. The combinations of highly susceptible patients, intensive and prolonged antimicrobial use, and cross-infection has

Sunday Mail, December 5, 2004 (continued)

tom of drug resistance



FLASHBACK: Medical Stores workers on an awareness campaign to educate people on the proper use of drugs.

resulted in the so-called "nosocomial infections" with highly resistant bacteria.

These infections are expensive to control and extremely difficult to eradicate. Hospitals are also the eventual sites of treatment for many patients with severe infections due to resistant pathogens acquired in the community. In the wake of the AIDS epidemic, the prevalence of such infections can be expected to increase.

Q: Does the use of growth promoters and other drugs in food-producing animals contribute to the problem?

A: Yes. The enhanced

food requirements of an expanding world population have led to the widespread routine use of antimicrobials as growth promoters or preventive agents in food-producing animals and poultry flocks.

In North America and Europe, an estimated 50 per cent in tonnage of all antimicrobial production is used in food-producing animals and poultry flocks.

Such practices have contributed to the raise in resistant microbes, which can be transmitted from animals to humans; for example salmonellosis.

Q: What can be done?

A: A global problem of this magnitude and potentially devastating consequences requires a global solution, with urgent action across all nations and all sectors concerned.

WHO has taken a leadership role in alerting the international community to the severity of the problem and defining the specific actions that need to be taken.

In September 2001, WHO launched the first global strategy aimed at containing the emergence and spread of resistance known as the WHO global strategy of containment of AMR, the strategy recommends a

large number of interventions that can be used to slow the emergence and reduce the spread of resistance in a diverse range of setting.

Q: Who needs to take action?

A: Those called upon to be alert to the problem and take appropriate action include the consumers, pharmacists, veterinarians, and hospital staff as well as national governments and other international agencies.

In advocating widespread adoption of this strategy, WHO aims to encourage the urgent actions needed to reverse or at least to curtail trends, which have major

economic as well as health implications.

Moreover, in view of the global nature of AMR problem, the efforts of any nation to implement the WHO global strategy are likely to be felt worldwide.

It is against this background that a team of concerned health professionals known as the AMR advocacy-working group (AWG) was formed in Zambia. In fact, Zambia is the first country in the world to apply this approach.

If you have further questions on the subject, you may contact the AWG secretariat at plot 8749 on Buluwe Road, Woodlands, Lusaka.

ANNEX 19: Request for Country Clearance (RFCC)

SUBJECT: GH/HIDN/HS: REQUESTS TRAVEL CONCURRENCE TO ZAMBIA UNDER THE AED/CHANGE PROJECT (HRN-A-00-98-00044-00), MSH/RPM PLUS PROGRAM (HRN-A-00-00-00016-00).

TEXT:

1. ACADEMY FOR EDUCATIONAL DEVELOPMENT (AED) REQUESTS CONCURRENCE FOR TRAVEL BY:

- NANCY POLLOCK, SENIOR PROJECT OFFICER, TO ZAMBIA, ARRIVING ON/ABOUT NOVEMBER 9, 2004, AND DEPARTING ON/ABOUT NOVEMBER 18, 2004.
- MOHAN JOSHI, PROJECT MANAGER FOR ANTIMICROBIAL RESISTANCE, RPM PLUS PROGRAM, ARRIVING ON/ABOUT NOVEMBER 9, 2004, AND DEPARTING ON/ABOUT NOVEMBER 18, 2004.

2. NANCY POLLOCK AND MOHAN JOSHI DO NOT HAVE USAID SECURITY CLEARANCE.

3. PURPOSE OF TRAVEL IS TO PROVIDE TECHNICAL ASSISTANCE TO FURTHER THE IMPLEMENTATION OF THE APPROACH TO BUILD SUPPORT FOR CONTAINING ANTIMICROBIAL RESISTANCE (AMR). MS POLLOCK AND DR JOSHI WILL HELP OLIVER HAZEMBA, REGIONAL TECHNICAL ADVISOR, MSH, PETER KELLY AND PATRICK MWANZA (CONSULTANTS), AND THE ADVOCACY WORKING GROUP PREPARE FOR THE STAKEHOLDER MEETING SCHEDULED FOR NOVEMBER 12, 2004. MS. KAMA GARRISON, THE NEWLY HIRED PHARMACEUTICAL MANAGEMENT ADVISOR, USAID, WILL ACCOMPANY THE TEAM.

MS POLLOCK AND DR JOSHI WILL:

- WORK WITH OLIVER HAZEMBA, PATRICK MWANZA, PETER KELLY AND THE ADVOCACY WORKING GROUP TO PREPARE FOR THE STAKEHOLDER MEETING.
- WORK WITH FACILITATORS TO HELP THEM FINALIZE PRESENTATIONS AND FACILITATION STRATEGIES AT THE STAKEHOLDER MEETING.
- WORK WITH OLIVER HAZEMBA, PATRICK MWANZA, PETER KELLY AND THE ADVOCACY WORKING GROUP AFTER THE MEETING TO ENSURE NEXT STEPS ARE IN PLACE.

4. ANTICIPATED CONTACTS IN COUNTRY INCLUDE USAID/ZAMBIA, OLIVER HAZEMBA (MSH/RPM PLUS), PETER KELLY AND PATRICK MWANZA (CHANGE CONSULTANTS), MEMBERS OF THE ADVOCACY WORKING GROUP AND DRUG RESISTANCE STAKEHOLDERS. MR HAZEMBA AND CHANGE CONSULTANTS ARE AWARE OF THIS PROPOSED TRAVEL AND HAVE AGREED TO BE AVAILABLE.

5. TRAVEL IS BEING FUNDED BY GH.

6. NO MISSION SUPPORT IS REQUESTED.

7. NANCY POLLOCK AND MOHAN JOSHI WILL CONTACT MISSION ON ARRIVAL TO ARRANGE BRIEFING AND/OR DEBRIEFING, DEPENDING ON AVAILABILITY OF MISSION STAFF.

8. WE APPRECIATE MISSION ASSISTANCE IN THIS MATTER. PLEASE ADVISE MISSION COMMENTS, CONCURRENCE TO NANCY POLLOCK, (202) 884-8587, CHANGE, NPOLLOCK@AED.ORG AND MOHAN JOSHI, (703) 248-1635, RPM PLUS/MSH, MJOSHI@MSH.ORG THANK YOU FOR YOUR ATTENTION TO THIS REQUEST.