Antimicrobial Stewardship:
The South African Perspective

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South Africa
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Why do we need an AMR strategy and implementation plan?

South Africa’s triple burden of AMR Multidrug resistant organisms

Multidrug resistant TB (MDR TB)

Drug resistant HIV

Drug resistant HIV (DRHIV)

Multi drug resistant organisms (MDR)

Bacteria and Fungi

The AMR strategy and implementation plan focuses on multi drug resistant organisms.
How serious is AMR in SA?

SAMJ situation analysis 2011
The situation analysis identified numerous concerns and resource constraints limiting implementation of good infection control practices and antimicrobial stewardship programs
More recent studies are showing similar high rates of HAI’s
The Journey towards South Africa’s AMS Strategy

2009 - 2011

- GARP places an AMR co-ordinator in SA
- GARP - SA Situational analysis on AMR – Published Feb 2011 in SAMJ
- SA Antibiotic Stewardship Partnership (SAASP) clinicians group launched
- Strategy and policy outlining begins

2012

- January 2012
- SAAMR strategy launched Feb & Nov 2014

2013

- October 2013
  - Antimicrobial Resistance working group established and meetings held (Feb 2014)
- April 2014
  - Antimicrobial Resistance Stakeholder Consultative meeting.
- October 2013
  - AMR summit launch’s AMR strategic framework and background document

2014

- February 2014
  - AMR strategy launched
- March 2014
  - Implementation plan and stakeholder commitments defined
- June 2014
  - AMR conference The Hague
- June 2014
  - WHO resolution “Combating AMR including Antibiotic resistance”
- February 2015
  - Norms & standards draft published alongside for AMR quality standards
- June 2015
  - WHO endorses Global action plan to tackle AMR

2015

- May 2015
  - WHO Africa region hosts experts consultative conference on AMR in Brazzaville, DRC
- May 2015
  - SAAMR implementation plan and MAC approved
- June 2015
  - WHO endorses Global action plan to tackle AMR

Background

Situational analysis

Implementation plan and stakeholder commitments defined

Strategy and policy outlining begins
The South African AMR initiative started at the summit in October 2014.

Brought together key stakeholders from government, laboratory services, clinician societies, civil societies and regulatory bodies.
The summit culminated in all stakeholders signing a commitment to …...

### Antimicrobial Resistance National Strategy Framework Commitments

The purpose of the Antimicrobial Resistance National Strategy framework is to provide a framework for managing Antimicrobial Resistance (AMR), to limit further increases in resistant microbial infections, and improve patient outcomes.

#### Governance Structures

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<th>Strategic objectives</th>
<th>Strategic enablers</th>
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<td><strong>Surveillance</strong></td>
<td>Legislative and policy reform for health systems strengthening to support the quality of antimicrobials in the country and to enable control over prescribing of antimicrobials in the animal health sector.</td>
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<td>Education of all levels of health providers in human health and agriculture in the critical concepts of antimicrobial stewardship, infection control, infectious diseases, microbiology and pharmacology.</td>
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<td>Communication to educate the public, create awareness of the dangers of inappropriate antimicrobial use and enhance patient advocacy to combat antimicrobial resistances.</td>
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<td>Research into novel diagnostics, such as point of care testing, new antimicrobials and implementation of treatment guidelines (treatment duration, antimicrobial consumption).</td>
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#### Infection Prevention & Control

- Enhance infection prevention and control of the spread of resistant microbes to patients in healthcare settings, focusing on improvement in hand hygiene and the identification and isolation of patients with resistant organisms.
- Community measures include preventing infection through wide-reaching vaccination programmes and improvements in water and sanitation.

#### Antimicrobial Stewardship

- Promote appropriate use of antimicrobials in human and animal health through antimicrobial stewardship including:
  - Effective policies and protocols
  - Stewardship at point-of-care
  - National prescribing guidelines
  - Appropriate antibiotic choice

#### Commitments

<table>
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<tr>
<th>Number</th>
<th>Commitment</th>
<th>Time Frames &amp; Actions</th>
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<tr>
<td>1</td>
<td>To collaborate across intersectoral, interdisciplinary organisations and departments to strengthen, co-ordinate and institutionalise efforts to address Antimicrobial Resistance.</td>
<td>Short term — March 2015: Establishment and initial meeting of National Ministerial Advisory Committee.</td>
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<td>To establish a national surveillance system to track and report resistant organisms and Antimicrobial use in agriculture and human health.</td>
<td>Short term 2015 - Develop an Antimicrobial Resistance map for South Africa through data sharing between the private and public sector laboratory services.</td>
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<td>3</td>
<td>To enhance the processes, structures, resources and supplies needed for effective infection Prevention &amp; Control.</td>
<td>Short term 2015 - Ensure the equipment and Infection Prevention &amp; Control resources required to practice effective hand hygiene are available at all times in all Health Establishments.</td>
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<td>4</td>
<td>To promote the appropriate use of Antimicrobials in human and animal health through antimicrobial stewardship in facilities and suitable enabling legislation and regulations.</td>
<td>Short term 2015 - Ensure availability of Antimicrobials according to Essential Medicines List in all Health Establishments.</td>
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<td>5</td>
<td>To build the expertise and strengthen the competency of health and veterinary professionals and improve the staffing levels of the workforce in Antimicrobial Resistance and Infection Prevention &amp; Control.</td>
<td>Medium term 2016 - 2019 - Development of strategy and operational plan for the integration and implementation of Antimicrobial Resistance and Infection Prevention &amp; Control training into the undergraduate and post graduate medical curriculums of health care professionals in South Africa.</td>
</tr>
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<td>7</td>
<td>To promote research into novel diagnostics and clinical trials in Infection Prevention &amp; Control and Antimicrobial Resistance.</td>
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### National Department of Health of the Republic of South Africa

and

Participating Stakeholders from Various Sectors. Each Company represented herein as follows:

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<tr>
<th>GOVERNMENT</th>
<th>LABORATORY SERVICES</th>
<th>CLINICIAN SOCIETIES</th>
<th>CIVIL SOCIETY</th>
<th>REGULATORY SOCIETIES</th>
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Signed on this 16th day of October 2014 in Johannesburg as The Antimicrobial Resistance National Strategy Framework Commitments.
Pillars of the South African AMR Strategy Framework

Impact: Rational Antimicrobial use and improved patient outcomes

Antimicrobial resistance Governance

Diagnostic stewardship | Enhance Surveillance | Antimicrobial Stewardship | Prevention including IPC and vaccination

Health systems strengthening, research, education and communication
Objectives of the South African AMR Strategy Framework

Strategic objective

1: Strengthen, coordinate and institutionalize interdisciplinary efforts through national and health establishment level governance structures

2: Improve the appropriate use of diagnostics to identify pathogens and guide treatment

3. Optimise surveillance and early detection of antimicrobial resistances to enable reporting

4: Enhance infection prevention and control of the spread of resistant microbes to patients in healthcare settings, wide-reaching vaccination programmes and improvements in water and sanitation; and

5: Promote appropriate use of antimicrobials in human and animal health through antimicrobial stewardship.

Strategic Enablers

- Legislative and policy reform for health systems strengthening to support the quality of antimicrobials and to enable control over prescribing of antimicrobials in the animal health sector

- Education of all levels of health providers in human health and agriculture in the critical concepts of antimicrobial stewardship, infection control, infectious diseases, microbiology and pharmacology

- Communication to educate the public, create awareness and enhance patient advocacy of the dangers of inappropriate antimicrobial use

- Research into novel diagnostics such as point of care testing and clinical trials of treatment duration, antimicrobial consumption plus new antimicrobials.

The AMR implementation plan describes the activities needed to effect the strategy
Implementation plan has been approved

Each province must report quarterly on progress
Indicators for monitoring impact:

• Reduction in key resistant organisms:
  – *Escherichia coli*—bacterial bladder infections (UTI’s) and common infections in the community
  – *Staphylococcus aureus*—common cause of skin and soft tissue infections as well as bacteraemia in people of all ages
  – *Klebsiella pneumoniae*—common cause of severe infections of patients in hospitals that require treatment with carbapenem).

• Reduction in national consumption of antibiotics linked to key resistant organisms

• Reduction in maternal mortality from infectious diseases

• Reduction in neonatal mortality from infectious diseases
Ministerial Advisory Committee on AMR being appointed

NHC has approved the MAC and the call for nominations is imminent
Partnerships

- Partnership between the following parties which:
  - Center for Disease Dynamics Economics and Policy (CDDEP)
  - South African Society of Clinical Microbiologists (SASCM)
  - National Institute for Communicable Disease (NICD)
  - South African Antibiotic Stewardship Programme (SAASP)
  - Best Care Always!
### AMR MAC: Proposed membership

**Core members (25)**

- Department of Agriculture, Forestry and Fisheries
- Department of Science and Technology
- Department of Health:
  - Sector Wide Procurement;
  - Communicable Diseases;
- National Health Laboratory Services
- National Institute for Communicable Disease
- Microbiologists/Pathologists
- Infectious Disease Specialist
- Infection Control Specialist
- Veterinarian
- Paediatrician specialised in Infectious Diseases
- Hospital (clinical) Pharmacist Community
- Pharmacists
- District Pharmacist
- Information systems or data warehouse specialist (communicable diseases)
- Family Physicians
- Epidemiologist
- Health Economist

**Co-opted members**

- Nominated representatives from:
  - Basic Education
  - Trade and Industry
  - Correctional Services
  - Military Services
- Department of Health:
  - Hospital Services and Health Workforce
  - Primary Health Care
  - HIV drug resistance committee
  - TB drug resistance committee
  - Malaria committee
- Regulatory bodies:
  - Medical Control Council
  - South African Nurses Council
  - Health Professional Council of South Africa
  - South African Pharmacy Council
  - South African Veterinary Council
- Others:
  - Civil Societies
SA’s Antibiotic Resistance picture

• Antibiotic-resistant bacteria are increasing in prevalence worldwide, resulting in infections that are difficult and expensive to treat.

• Laboratory surveillance data in South Africa show that from 2012 to 2014 (Drug-Bug combinations for tracking):
  – *Escherichia coli (E coli)* resistant to fluoroquinolone is at 27% over this period;
  – *Staphylococcus aureus* – MRSA rate is 30%, though slight decline has been noted (from 35% in 2012 to 28% in 2014).
  – *Klebsiella pneumoniae* carbapenems resistant is at 3.2% rate and showed increase from 2.9% to 4.2% over this period.

• All three organisms-antibiotic combinations show no statistically significant change in proportion of resistance from 2012 to 2014
SA’s consumption alone increased by 175% when trimethoprim is included.

Antibiotic Use in South Africa

Source: IMS Health

- Total consumption – 175% incr
  Trimethoprim – 2164% incr
  (Pub 360%, priv 21%)

- Consumption excl trimethoprim – 58% incr
  (Pub - 104% excl trimethoprim, Priv 18%)
Next steps and activities

- Line item AMR surveillance data to be collected by all the labs by province and by facility
- Animal health consumption and surveillance data to be sourced through partnerships with the Dpt of Agriculture (DAFF) and the Veterinary Societies
- Province departments being tasked to set out their implementation plans against the national AMR strategy
Thank you

National Department of Health
South Africa