



QUESTIONS AND ANSWERS ON ANTIMICROBIAL RESISTANCE

1. What is World Antibiotic Awareness Week (WAAW) about and why is South Africa commemorating it?

Antimicrobial (antibiotic) resistance (AMR) is a global health issue and the Department is raising awareness of the need to preserve the power of antibiotics through appropriate use during this week. It is not too late to reduce the impact of antibiotic resistance and we want to highlight that all citizens have a part to play in preserving the effectiveness of antibiotics. By reducing the spread of infections and changing how we produce, prescribe and use these medicines, we can reduce the impact and limit the spread of antibiotic resistance. That is why we are celebrating World Antibiotic Awareness Week.

2. What will happen when we run out of effective antibiotics?

Without effective antibiotics, a growing list of infections becomes harder to treat. These include pneumonia, tuberculosis, blood poisoning and gonorrhoea. Without urgent action, the world is headed for a 'post-antibiotic era' in which common infections and minor injuries which have been

treatable for decades can once again kill, and the benefit of advanced medical treatment such as chemotherapy and major surgery will be lost.

Antibiotics are a precious resource that cannot be taken for granted. They have allowed many serious infections to become very treatable and save millions of lives. There needs to be a worldwide change in behaviour if their effectiveness is to be preserved.

3. How do bacteria/organisms develop resistance?

Antibiotic resistance occurs when bacteria change in response to the use of antibiotics. While this happens naturally, this is accelerated by the over-use and misuse of antibiotics; leading to record high levels of antibiotic resistance.

The current global antibiotic resistance crisis is the result of six factors:

- over-prescribing and dispensing of antibiotics by health workers
- patients not finishing their full treatment course of antibiotics
- the over-use of antibiotics in livestock and fish farming
- poor infection control in hospitals and clinics

- lack of hygiene and poor sanitation in the community
- lack of new antibiotics being developed

4. What is South Africa's status in terms of antibiotic usage and organism resistance?

South Africa is no exception to wide spreads antibiotic resistance. Our country is faced with a triple burden of antimicrobial resistance:

- drug resistant tuberculosis
- drug resistant HIV and
- antibiotic resistance

In the recent reports by the Centre for Disease Dynamics, Economics and Policy, called *the State of the World's Antibiotics* report shows that consumption of antibiotics in South Africa is growing dramatically, driven by prophylaxis for HIV patients using cotrimoxazole but also by the use of broad spectrum penicillins. This consumption represents the public and private sector as well as hospital-based and community/retail based use.

This increased consumption of antibiotics is resulting in an increase in antibiotic resistance – in more than a quarter of cases, we're seeing resistance to some of the most dangerous infectious organisms to commonly used antibiotics. Organisms that cause urinary, track infections in the community setting and skin infections are showing a 30%

resistance to the common antibiotics used to treat them.

According to *The State of The World's Antibiotics, 2015*, in some countries where antibiotic stewardship is starting to take hold and infection prevention is improving, antibiotic resistance levels have stabilised or declined. Importantly, for at least one organism, Methicillin-resistant *Staphylococcus aureus* (MRSA), resistance levels are stabilising on average across South Africa although in some hospitals the rates are significantly high still.

Significantly South African data is represented amongst the rest of the world for the first time in this report. We now have the ability to benchmark ourselves against the rest of the developed world as well as against the developing BRICS countries such as India, China and Brazil's, whose data is also represented in the report.

5. Lancet has today released their series on "Effective Antimicrobials". How significant is this report for South Africa?

The Lancet series again emphasises the importance of securing access to antibiotics, in a sustainable and equitable manner crucial to achieve health outcomes. Low to Middle Income Countries (LMIC) often experience challenges in providing access to life saving antibiotics in the most rural under-service areas.

The Series notes the significant improvements in child survival due to

access to antibiotics and vaccines in LMICs. However, this increasing access comes with the paradoxical threat of increasing organism resistance due to inappropriate use. So we have a unique global health dilemma – how do we increase access where it is needed and preserve the effectiveness of these antibiotics by restricting their use to appropriate illnesses and health care settings.

In South Africa, we have shown the impact of prevention of infection through childhood vaccines in particular the pneumococcal conjugate and rotavirus vaccines. Overall child mortality rates have declined substantially in the past five years from diseases related to these two vaccines specifically diarrhoea with dehydration and pneumonia as well as hospitalisation and deaths from these two illnesses.¹

South Africa has dealt with the issue of restricting use of antibiotics through the Essential Medicines List which limit the use of expensive, newer antibiotics to tertiary level hospital which have Antimicrobial Stewardship (AMS) programme in place to ensure their appropriate use. This in some way is going to assist the country in curbing resistance however; we still have a long way to go.

¹ (Ref: SAMJ, March 2014, Vol 104, no. 3 supply "Effectiveness of pneumococcal conjugate vaccine and rotavirus vaccine introduction into the South African public immunisation program)

6. What policies is South Africa implementing to improve the use of antibiotic in the country?

In May 2014, the World Health Assembly called on all nations to implement activities aligned with the Global Action Plan to address the greater policy issues on Antimicrobial Resistance.

In South Africa we have already met this requirement – The Antimicrobial Resistance National Strategic Framework was developed in consultation with clinicians involved in the field, academics and public health policy makers from both animal and human health. It was launched in October 2014 at an event where all stakeholders were asked to commit to actions to address the strategic elements of the framework.

The goals of the strategy are to improve the appropriate use of antibiotics in human and animal health and to preserve their effectiveness into the future through the implementation of antimicrobial stewardship programmes.

In the strategy, priority is given to resistance of antibiotics in bacterial infections other than tuberculosis, as structures to address resistance in tuberculosis as well as resistance in HIV, already exist in the national Department of Health. However, many of the interventions included in the strategy apply equally to all antimicrobials. Resistance to one antibiotic leads to resistance to the whole class of antibiotics that reduces patients' treatment options.

The AMR strategic framework consists of five strategic objectives that are underpinned by four key enablers. The strategic objectives are:

- i. **Strategic objective 1:** interdisciplinary governance structures
- ii. **Strategic objective 2:** diagnostic stewardship – improving our use of diagnostic tools to identify infections better
- iii. **Strategic objective 3:** optimise surveillance and early detection of antimicrobial resistances
- iv. **Strategic objective 4:** enhance infection prevention and control of the spread of resistant microbes to patients in healthcare settings
- v. **Strategic objective 5:** promote appropriate use of antimicrobials in human and animal health through antimicrobial stewardship

The key enablers are:

1. **Legislative and policy reform** for health systems strengthening
2. **Education** of all levels of health providers in human health and agriculture
3. **Communication** to educate the public, create awareness and enhance patient advocacy of the dangers of inappropriate antimicrobial use
4. **Research** into novel diagnostics.

To take these commitments forward we have set out detailed activities and tasks in an Implementation Plan that the heads of the different branches within the national Department of Health have agreed to. The major tasks

are also listed in our Annual Performance Plan that is what the NDoH reports to parliament on an annual basis as part of our governance processes.

The implementation plan is due to be published now in November whilst we celebrate World Antibiotic Awareness Week.

7. What can the public do to support improvements in antibiotic usage?

The WHO conducted a recent survey of the public from a number of different countries, including South Africa. South African public reported that they receive advice on how to take antibiotics from doctors and nurse and the vast majority (95%) purchased antibiotics from a pharmacy or medical store. Concerns raised are that two thirds thought antibiotics are useful for common cold/flu which are viral infections and cannot be treated by antibiotics. 87% felt that they should only stop taking antibiotics once the course was completed.

So the public in South Africa needs to understand the following:

- only use antibiotics when prescribed by a certified health professional
- antibiotics are only used to treat bacterial infections and not cold/flu
- always take the full prescription, even if you feel better
- never use leftover antibiotics
- never share antibiotics with others

- prevent infections by regularly washing your hands, avoiding close contact with sick people and keeping your vaccinations up to date

8. Important note

- Antibiotic overuse can speed up the development of antibiotic resistance, with the growing chance that the few antibiotics we

have left will no longer be effective and patients will die from simple infections that cannot be treated.

- Therefore it is vital that every citizen and health care professional carefully think about using or prescribing antibiotics. Nationally we will need to coordinate our actions across government departments to safeguard our antibiotics for future use. To this we are committed as the NDoH to driving these actions.
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