Microbe of the month

Breaking The Chain of Infection

Cutimed®

JANUARY 2020

Newsletter

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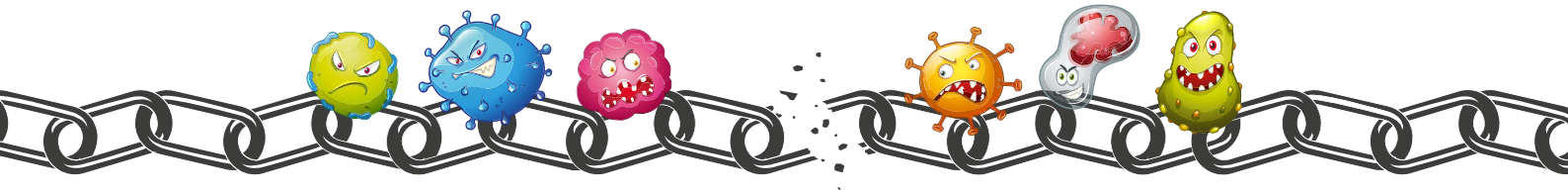


Featured this month:

ANTIMICROBIAL RESISTANCE

The latest on Global Action against AMR

Hello readers!

A New Year and a new decade! Wishing you a successful and professionally rewarding year ahead, in which it is hoped that you will continue to fly the banner of good infection prevention practice high.

Microbe of the Month is now in its 3rd year, and the aim is to help create awareness about existing and emerging pathogens of clinical importance in healthcare facilities today. Each issue explores the aetiology (origin and epidemiology) of pathogenic microorganisms, the infections they cause and mode of transmission, while highlighting the clinical measures that should be taken to limit their spread.

Please use this newsletter as a teaching tool in your workplace, share it with colleagues and start an infectious dialogue about topical issues in infection control!

Previous MOM topics appear on the last page for your information – if you would like to obtain a back issue or be added to the mailing list, please contact your local ESSITY trade representative.

Preventing harm to patients, healthcare workers and visitors from cross infection in healthcare facilities is fundamental to achieving quality care, patient safety, and the reduction of healthcare -associated infections (HAIs) and antimicrobial resistance (AMR).

In **2013,** the Centers for Disease Control and Prevention (CDC) published the first **'Antibiotic Resistance Threats Report'**, which sounded the alarm to the danger of antibiotic resistance.

The newly released **2019 CDC 'Threat Report'** estimates that more than **2.8 million** antibiotic-resistant infections occur each year in the U.S. alone, and more than **35,000 people die** as a result.[1]

In addition, **223,900 cases of *Clostridioides* difficile*** were reported in the US during 2017, killing at least **12,800** people.[1]
*(Clostridium difficile was reclassified in 2016 to Clostridioides difficile)

This means that someone in the United States acquires an antibiotic-resistant infection every 11 seconds, and every 15 minutes someone dies as a consequence.[1]

The CDC is also concerned about **the increasing number of resistant infections in the community,** which puts more of the population at risk, makes spread more difficult to identify and contain, and threatens the progress already made to protect patients in healthcare.

The CDC 'Threat Report' lists **18 antibiotic-resistant bacteria and fungi** in 3 categories based on the level of concern to human health.[1]

Urgent Threats

- Carbapenem-resistant Acinetobacter spp.
- Candida *auris* (fungal pathogen)
- Clostridioides *difficile* (C. *difficile*)
- Carbapenem-resistant Enterobacteriaceae
- Drug-resistant Neisseria *gonorrhoeae*

Concerning Threats

- Erythromycin-resistant Group A Streptococcus
- Clindamycin-resistant Group B Streptococcus

'Watch List'

- Azole-resistant Aspergillus *fumigatus*
- Drug-resistant Mycoplasma *genitalium*
- Drug-resistant *Bordatella pertussis* (whooping cough)

Serious Threats

- Drug-resistant Campylobacter spp.
- Drug-resistant Candida spp. (fungal pathogen)
- Extended spectrum beta-lactamase (ESBL) producing Enterobacteriaceae
- Vancomycin-resistant Enterococci
- Multidrug-resistant Pseudomonas *aeruginosa*
- Drug-resistant non-typhoidal Salmonella spp. and serotype S. *typhi*
- Drug-resistant Shigella
- Methicillin-resistant Staphylococcus *aureus* (MRSA)
- Drug-resistant Streptococcus *pneumoniae*
- Multi-drug resistant Tuberculosis

The US National AMR Action Plan - goals for review in 2020[1]

1. Promote antibiotic stewardship programmes by improving prescribing practices across all healthcare settings.
2. Prevent the spread of drug-resistant pathogens in healthcare facilities and communities through the promotion of evidence-based infection prevention precautions, tracking of antimicrobial resistant pathogens and reliable surveillance data on HAIs.[4,5,6]
3. Progressively eliminate the use of medically-important antibiotics for growth promotion in animals.

This **"One-Health" approach** to disease surveillance for human and animal pathogens is critical to combatting antibiotic-resistance and recognises that resistance can arise in humans and animals, as well as the environment.

Prevention first. Every infection prevented is one that needs no treatment. Prevention of infection is cost-effective and can be implemented in all sectors, even where resources are limited. Good sanitation, hygiene and other infection prevention measures slow the development and restrict the spread of difficult-to-treat antibiotic-resistant infections.

CLEAN, SAFE CARE IS A PATIENT'S RIGHT and should also be the duty and pride of all those working in the healthcare sector.

In 2017, **the World Health Organization (WHO)** also published its first ever list of antibiotic-resistant "priority pathogens" – a catalogue of 12 families of bacteria that pose the greatest threat to human health.[2]

In particular, the list highlights the threat posed by **Gram-negative bacteria** that are resistant to multiple antibiotics. The WHO 'Priority Pathogens' list is divided into 3 categories according to the urgency of need for new antibiotics:

Priority 1: CRITICAL

The most critical group describes the multidrug-resistant bacteria that pose a particular threat in hospitals, nursing homes, and amongst patients whose care requires invasive devices such as ventilators and vascular catheters.

Acinetobacter *baumannii*	**Carbapenem-resistant**
Pseudomonas *aeruginosa*	**Carbapenem-resistant**
The Enterobacteriaceae (e.g., Klebsiella species, Proteus, Serratia, Enterobacter *spp.*, E. coli, Providencia and Morganella *spp.*)	**Carbapenem-resistant, and producers of extended spectrum beta-lactamases (ESBL)**

Priority 1: HIGH

Enterococcus *faecium*	**Vancomycin-resistant**
Staphylococcus *aureus*	**Methicillin-resistant (MRSA), vancomycin-intermediate and-resistant**
Helicobacter *pylori*	**Clarithromycin-resistant**
Campylobacter	**Fluoroquinolone-resistant**
Salmonella *species (spp.)*	**Fluoroquinolone-resistant**
Neisseria *gonorrhoeae*	**Cephalosporin-resistant, fluoroquinolone-resistant**

Priority 1: MEDIUM

Streptococcus *pneumoniae*	**Penicillin-non-susceptible**
Haemophilus *influenzae*	**Ampicillin-resistant**
Shigella *spp.*	**Fluoroquinolone-resistant**

***Note**: Mycobacteria (including Mycobacterium tuberculosis – the cause of human tuberculosis) were not included in this exercise as it is already a WHO globally-established priority, for which innovative new therapies are urgently needed.*

The WHO selection criteria[2] for the listed pathogens were as follows:

- how deadly the infections they cause are – whether their treatment requires long hospital stays
- how frequently they are resistant to existing antibiotics when people in communities catch them
- how easily they spread between animals, from animals to humans, and from person to person
- whether they can be prevented (e.g., through good hygiene and vaccination)
- how many treatment options remain
- whether new antibiotics to treat them are already in the R&D pipeline

BE ANTIBIOTICS AWARE
SMART USE, BEST CARE

Antibiotic resistance is a global health problem that requires international attention and collaboration, because bacteria do not recognise borders!

While more research and development is vital, this cannot solve the problem alone. To address resistance, there is an urgent need for **improved infection prevention and control measures** and the **appropriate use of antibiotics in humans and animals,** as well as any new antibiotics that are developed in the future.

health
Department:
Health
REPUBLIC OF SOUTH AFRICA

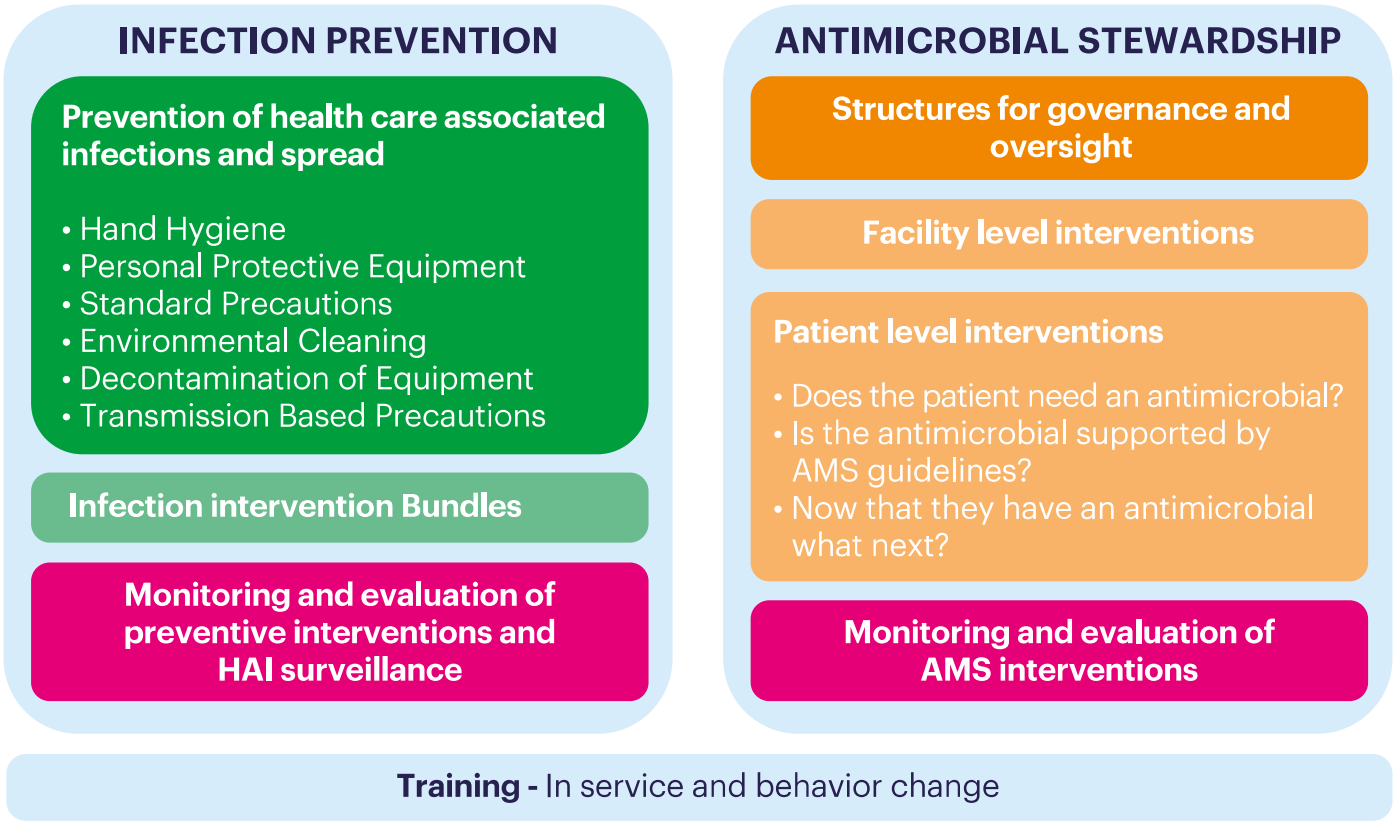
WHAT IS SOUTH AFRICA DOING ABOUT ANTIMICROBIAL RESISTANCE?

Currently there are 3 important national AMR guideline documents which all healthcare workers need to be aware of:

1. In May 2014, South Africa pledged its commitment to the World Health Assembly resolution EB134/37 "Combating antimicrobial resistance including antibiotic resistance".

   By October 2014, the AMR National Strategic Framework 2014-2024 was developed by the Department of Health, and was launched with the commitment of key stakeholders within human and animal health, agriculture, science and technology sectors to support interventions to combat AMR in the country. The purpose of the Antimicrobial Resistance National Strategy framework is to provide a structure for managing AMR, to limit further increases in resistant microbial infections, and to improve patient outcomes.

   Framework for the prevention and containment of AMR in South African hospitals[7]



2. **SA National Department of Health 2019 Guidelines for the Prevention and Containment of Antimicrobial Resistance in South African Hospitals –**A key component of the National Strategic Framework is the implementation of AMR activities as a minimum 'norm and standard' within all health facilities in South Africa.

   The 2019 Guidelines partner the 2014 Strategic Framework document and are based on the holistic view that IPC and antimicrobial stewardship (AMS) are interrelated activities and require a multidisciplinary and multimodal approach.

   Hence, these recently published guidelines serve as a practical 'step-by-step' resource for all healthcare facilities (including community health centres) to enable the implementation of AMS and fundamental infection prevention and control measures to contain the spread of multidrug-resistant organisms (MDROs).

3. **Lastly, the 2015 SA Antibiotic Stewardship Programme (SAASP) – 'A Pocket Guide to Antibiotic Prescribing for Adults in South Africa'** provides practical information on how to implement antibiotic stewardship, with pathogen-specific prescribing algorithms for a full spectrum of infections. Useful day-to-day content includes:

- The principles of rational antibiotic prescribing
- Correct techniques for microbiological sampling
- How to interpret infection-related laboratory results
- Infection prevention and control practices
- Templates for an antimicrobial stewardship prescription chart

SAASP
SOUTH AFRICAN ANTIBIOTIC STEWARDSHIP PROGRAMME

4 CORE ACTIONS TO PREVENT ANTIBIOTIC RESISTANCE [3]

Prevent infections and prevent the spread of antimicrobial-resistant infections

Improve prescribing practices / implement antimicrobial stewardship

Track resistant infections, keep accurate surveillance data and submit reports at both regional and national levels

Develop new antimicrobial drugs and more rapid diagnostic tests

https://antibioticguardian.com/

Stop believing that antibiotic resistance is a problem "elsewhere"
and not in our own backyard!
Antibiotic resistance has been found in every country and city across the world. There is no safe place from antibiotic resistance, but everyone can take action, from hand-washing to improving antibiotic use.

Did you know that WEBBER TRAINING offers 'Teleclass Education' – an international lecture series on infection prevention and control-related topics
https://webbertraining.com/teleclassesc1.php

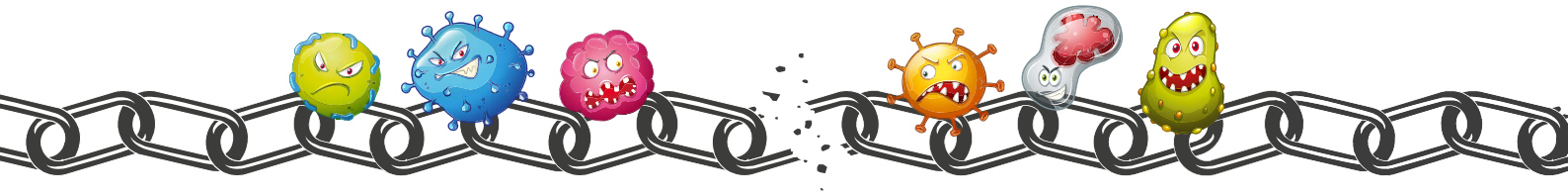
Expert contributors voluntarily share their knowledge and **members in developing nations are entitled to free and full access.**

What is a teleclass?
A teleclass is a live seminar in which people can listen and participate over the telephone, or access at a later date through an online recording. Each teleclass is approximately 60 minutes long and the online recording can be accessed after the scheduled date at your convenience.
Register to become a member – it's easy and it's free!
https://webbertraining.com/membersc13.php?command=signup

Recent and forthcoming Webber teleclass topics

Date	Topic	Format
7 January 2020	The Impact of Social Media on Infection Control	Online recording and hand-out
23 January 2020	A One-Health Perspective on Food Security	Online recording and hand-out
30 January 2020	Positive Deviance and Hand Hygiene: What can we learn from the best?	Online recording and hand-out

NB! There are hundreds of teleclass lecture recordings and hand-outs in the free-access Recordings Library!
https://webbertraining.com/recordingslibraryc4.php?command=viewAudio&ID=882



Microbe of the Month factsheets – previous topics 2018

March	Staphylococcus *aureus*
April	Candida *albicans*
May	Pseudomonas *aeruginosa*
June	Acinetobacter *species*
July	Enterococcus species
August	Streptococcus pyogenes (Group A Streptococcus)
September	Escherichia *coli* (E. *coli*)
October	Staphylococcus *epidermidis*
November	Antimicrobial Stewardship (AMS)
December	Infection in chronic wounds – best practice principles for the use of topical antimicrobial agents

2019 topics

January	Methicillin-resistant Staphylococcus *aureus* (MRSA)
February	The Human Microbiome and the Immune System
March	All about Bacteria [Part 1] - Structure
April	All about Bacteria [Part 2] – Survival mechanisms
May	All about bacteria [Part 3] – Resistance tricks and traits
June	All about bacteria [Part 4] – Understanding laboratory processes
July	Understanding 'CRE' – carbapenem-resistant enterobacteriaceae
August	All about Fungi
September	All about Spores (bacterial and fungal)
October	Candida *auris*
November	AMR: World Antibiotic Awareness Week 18 - 24 November 2019
December	Mycobacterium *chelonae*

Contact your local Essity representative for back copies and to sign up for the 'Microbe of the Month' mailing list

REFERENCES

1. The Centers for Disease Control and Prevention (CDC) 2019. Antibiotic Resistance Threats in the United States, 2019. Atlanta, GA: U.S. Department of Health and Human Services, CDC; 2019. Available from www.cdc.gov/DrugResistance/Biggest-Threats.html. [Accessed 15.1.2020] **2.** WHO Antibiotic Resistant Priority Pathogens (2017). https://microbeonline.com/list-antibiotic-resistant-priority-pathogens-according/ [Accessed 15.1.2020] **3.** CDC Antibiotic Resistance Threats in the United States 2013. **4.** CDC/ Healthcare Infection Control Practices Advisory Committee (HICPAC) 2017. Updated Management of Multidrug Resistant Organisms in Healthcare Settings. **5.** CDC/ HICPAC 2019. Updated Guidelines for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings **6.** World Health Organisation (WHO) 2019. Minimum requirements for infection prevention and control. Geneva: World Health Organization; 2019. **7.** South African National Department of Health (2019). Guidelines for the prevention and containment of Antimicrobial Resistance in South African Hospitals. **8.** South African National Department of Health (2014). ANTIMICROBIAL RESISTANCE: National Strategy Framework 2014 – 2024 **9.** Wasserman, S., Boyles, T., Mendelson, M. (2015). A Pocket Guide to Antibiotic Prescribing for Adults in South Africa – on behalf of the SA Antibiotic Stewardship Programme (SAASP).