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This first edition of the Journal for 2019 contains three interesting articles, the first being a reprint of the South African Guideline for the Management of CAP in adults, the second being an article on pertussis and the third being an article on NHI. In addition, there is an updated malaria risk map for South Africa.

The first article is a reprint (with permission) of the executive summary and algorithm of the latest South African CAP Guideline for Adults. This was recently updated and published in the Journal of Thoracic Diseases (2017). This is the fourth edition of the South African CAP guideline and was updated as a joint activity of the South African Thoracic Society (SATS) and the Federation of Infectious Diseases Societies of Southern Africa (FIDSSA).

The second article is by Dr K Strydom, Department of Molecular Biology, Ampath National Reference Laboratory and Department of Medical Microbiology, University of Pretoria. It is a comprehensive review of whooping cough, a very topical subject.

The third article is by Ulundi Behrtel, a Health Law and Ethics Consultant, and discusses major amendments to the Medical Schemes Amendment Bill in preparation for NHI.

The last feature, submitted by Prof. Lucille Blumberg, from the Centre for Emerging, Zoonotic and Parasitic Diseases, National Institute for Communicable Diseases, is an updated malaria risk map of South Africa.

As always, the Journal would welcome any correspondence on any of the topics covered, as well as suggestions for topics to be carried in future editions of the Journal.
Executive Summary:
South African guideline for the management of community-acquired pneumonia in adults

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Executive summary

Improving the care of patients with community-acquired pneumonia (CAP) in South Africa is particularly important because of the high burden of disease and the need to improve standards of antibiotic prescribing in the face of rising antimicrobial resistance (AMR). The purpose of this document is to provide clinicians guidance as to the recommended management of patients with CAP. This is an update for clinicians, which takes into account important advances and controversies in the management of patients with CAP.

Diagnosing CAP

Primary care

The definitive clinical diagnosis of pneumonia requires the presence of compatible symptoms and signs for <2 weeks plus a new or worsening consolidation on chest X-ray (CXR). CXR may not be available in primary care settings in which case the diagnosis can be made on clinical grounds alone.

• CAP should be diagnosed in patients in primary care who present with a combination of well-established clinical features of CAP, including vital sign and examination abnormalities (A II).

Hospital level care

In contrast to primary care, CXRs are widely available and all patients presenting to hospital with suspected CAP require a CXR to confirm the diagnosis and exclude other potential causes for their illness. Otherwise the principles of CAP diagnosis are the same as in primary care.

• A CXR should be performed in all patients presenting to hospital with suspected CAP (A II).

• In the vast majority of cases a normal CXR excludes the diagnosis of CAP; however, empiric antibiotic therapy can be considered for severely ill hospitalised patients with suspected CAP and a negative CXR study. CAP is excluded if a repeat CXR at 24–48 hours is negative (A III).

Severity of illness scores

Assessment of the severity of CAP is important since it will determine the appropriate site of care, the extent of the microbiological work-up and the choice of initial empiric antibiotic treatment.

• The CURB-65 score (CRB-65 for outpatients) is the recommended disease severity score for patients with CAP (A II).

• Severity scoring systems should not be the sole basis for making decisions regarding site of care. Disease severity
score should always be interpreted in conjunction with a thorough clinical assessment of the patient (A II).

Site of care decisions

Site of care decisions, such as outpatient vs. inpatient care or general ward vs. intensive care unit, are important areas for improvement of CAP care. Decisions should be based on the clinical condition of the patients, on the disease severity scoring, on the social circumstances of the patients and on available resources.

- Patients with a CRB-65 score of 0 or a CURB-65 score of 0 or 1 are at low risk of death and may be considered for treatment at home (A II).
- Patients with a CRB-65 score of 1 or 2 or a CURB-65 score of 2 are at increased risk of death, and should be referred to hospital (A II).
- Patients with a CRB-65 score or CURB-65 score of 3 or more are at high risk of death and require urgent hospital admission and even consideration for possible admission to a high-care or intensive care unit (A II).

Additional tests

Blood-based biomarkers

Blood-based biomarkers may be used to aid the diagnosis of CAP and to assist in severity assessment.
- Routine measurement of CRP or PCT when the diagnosis is not in doubt is discouraged but may be used to measure response to therapy in the critically ill (A III).
- Measurement of CRP, particularly in primary care settings and when CXR is unavailable, may aid the diagnosis of CAP (A II).
- Measurement of CRP or PCT in emergency departments may be considered in patients with acute respiratory illness when the diagnosis of CAP is in doubt (B II).
- Urea should be measured in all hospitalised patients with CAP to assist in severity scoring (A I).

Microbiological tests

- Blood cultures (BCs) should be taken prior to antibiotic therapy in all patients with CAP with a CURB-65 score of ≥2 (A II).
- BCs should be considered in patients with lower CURB-65 scores, but who require hospitalisation for other reasons (B II).
- BCs should not be performed on patients with CAP who are being treated as outpatients (A II).
- A sputum sample or tracheal aspirate (collected at intubation) should be submitted for Gram stain and culture for all patients with CAP with a CURB-65 score of ≥2 (A II).
- Sputum samples can be considered in patients with CURB-65 scores of <2 who require hospitalisation for reasons such as comorbidities (B II).
- Sputum samples should not be submitted on patients with CAP who are being treated as outpatients (A II).
- The use of the pneumococcal UAT is not routinely recommended for patients with CAP (B II).
- The Legionella UAT should be considered, where available, for patients with severe CAP (B III).
- The use of rapid antigen tests for influenza is not recommended (B II).
- In patients with severe CAP during the influenza season (typically June to September) nasopharyngeal samples may be considered for detection of influenza (B II).
- The routine use of molecular tests to detect additional pathogens is not recommended (B II).
- Serology for ‘atypical’ pathogens should not be routinely performed (A II).

Investigating for tuberculosis

TB is a cause of CAP and clinical features are not reliable in distinguishing TB from other aetiologies. However, TB should be suspected in patients presenting with CAP who are co-infected with HIV, have a subacute history and in those who initially do not respond to antibiotics. Specific investigations for TB should be performed as indicated.

- In the following high risk patient groups presenting with CAP there should be a low threshold for investigation for pulmonary TB: HIV-infected, diabetics, admission to ICU, subacute illness or those not responding to empiric antimicrobial therapy (A II).
- A GeneXpert MTB/RIF™ (Cepheid, Sunnyvale, USA) assay performed on a single expectorated or induced sputum specimen is the preferred first line diagnostic test for pulmonary TB. Alternatively, WHO endorsed rapid molecular tests, such as line probe assays, are recommended when they are more readily available (A II).
- TB culture should be performed in the following patients with a negative GeneXpert MTB/RIF: non-resolving pneumonia or an ongoing suspicion of TB (A III).
- When sputum is unavailable Determine™ TB-LAM Ag (Alere, Waltham, MA, USA) testing should be performed in HIV-infected patients with CD4 counts <100 cells/μl or stage 3 or 4 disease who present with CAP (A II).

Investigating for pneumocystis pneumonia

PCP typically presents in immunocompromised patients as a subacute illness with constitutional symptoms and dry cough, and is characterised by bilateral infiltrates on CXR.
- The WHO clinical case definition should be used to clinically diagnose PCP (B III).
- Diagnostic testing of HIV-infected patients who fit the WHO case definition or in whom PCP is suspected on clinical grounds depends on local availability of tests and may include an immunofluorescent assay (IFA), direct fluorescent antibody test (DFAT) or PCR (B III).
- The preferred specimen for diagnostic tests for PCP is bronchoalveolar lavage fluid (BAL) although induced or expectorated sputum may be used when bronchoscopy is unavailable (B II).
- There is limited evidence to support the use of beta-galactan to diagnose PCP in a South African setting. Its use is only recommended as part of a clinical registry or trial (A III).
Initial empiric therapy

Initial empiric therapy for CAP should be guided by the setting in which the patient is being treated, their age, use of antibiotics within the previous 90 days, the presence of comorbidities (cardiovascular disease, chronic respiratory disease, chronic renal failure, diabetes mellitus and HIV infection) and drug intolerance. Empiric therapy for PCP and influenza may be necessary when clinical and epidemiological criteria are met. It is rarely necessary to give empiric treatment for TB unless there is a miliary pattern on CXR.

Initial antibiotic therapy

• Patients treated at home who are <65 years old, without antibiotic exposure in the past 90 days or comorbidities should receive oral high dose amoxicillin (A II).
• Patients treated at home who are <65 years old, without antibiotic exposure in the past 90 days, or comorbidities, in the setting of low macrolide resistance, could receive an oral macrolide/azalide in the presence of severe beta-lactam allergy (A II).
• Patients treated at home who are ≥65 years old, have received antibiotics within the previous 90 days, or who have comorbidities, should receive oral amoxicillin-clavulanate or an oral second generation cephalosporin (A II).
• Patients whose admission to hospital is precipitated by advanced age, personal or family preference, inadequate home care or adverse social circumstances who have non-severe pneumonia, can be treated with oral antibiotics as described above (A II).
• Patients requiring admission to hospital who are <65 years old, without antibiotic exposure in the past 90 days, or comorbidities, should receive intravenous ampicillin or penicillin (if IVI ampicillin not available) (A II).
• Patients requiring admission to hospital who are ≥65 years old, have received antibiotics within the previous 90 days, or who have comorbidities, should receive intravenous amoxicillin-clavulanate, or cefuroxime or a third-generation cephalosporin (ceftriaxone or cefotaxime) (A II).
• Patients with severe pneumonia should receive amoxicillin-clavulanate or cefuroxime or a third generation cephalosporin (ceftriaxone or cefotaxime) plus a macrolide antibiotic (A II).
• Respiratory fluoroquinolones (moxifloxacin or levofloxacin) are an alternative therapy but because of their activity against tuberculosis these agents should not be used as first line in CAP. They may be used in patients with severe beta-lactam allergy or as an alternative to beta-lactam/macrolide therapy but should be reserved for use in patients who have no alternative treatment options (A II).
• Antibiotics should be administered early, preferably within the emergency unit, to patients with confirmed CAP (A II).

Definitive therapy

When microbiological testing detects a causative organism, it may be possible to change from empiric to definitive therapy based on the drug susceptibility testing.

• When a causative organism is identified by microbiological testing, antibiotics should be changed to the narrowest spectrum agent that effectively treats the organism (A II).
• Ceftaroline is recommended as directed therapy based on the results of microbiological testing in cases of high level penicillin resistant (penicillin MIC ≥8 mg/L) S. pneumoniae or MRSA (A I).
• Ertapenem is recommended as directed therapy based on the results of microbiological testing in cases of resistant Enterobacteriaceae such as ESBL-producing pathogens (A I).

When to add therapy for PCP and TB

• Empiric therapy for PCP should be added when patients fulfill the WHO case definition and it should not be withheld based on negative immunohistochemical staining on sputum specimens (A II).
• Empiric therapy for TB prior to initial testing is rarely required unless there is a miliary pattern on CXR or the patient is severely ill and TB is suspected (A III).

When to add empiric therapy for influenza

• During the influenza season oseltamivir should be provided for any patient with severe pneumonia and can be stopped if PCR testing of nasopharyngeal aspirate is negative (A II).
• During the influenza season oseltamivir should be provided for any patient with moderate CAP who is suspected of having influenza if they have a specific risk factor for severe disease and can be stopped if PCR testing of nasopharyngeal aspirate is negative (B II).

Adjunctive therapies

Given the significant burden of disease caused by CAP there have been many attempts to find adjunctive therapies to improve outcomes.

• There is not enough evidence to recommend the routine use of statins for either prevention or treatment of CAP (A II).
• The addition of a macrolide to standard beta-lactam therapy is associated with a better outcome in patients with severe CAP requiring ICU admission and while this may relate to the antimicrobial activity of macrolides, it may also be due to their anti-inflammatory, immunomodulatory effects (A II).
• Use of systemic corticosteroids (e.g., methylprednisone 0.5 mg/kg/12 h or equivalent) should be considered in patients with severe CAP requiring ICU admission unless influenza or tuberculosis is likely, or there is a history of gastro-intestinal bleeding within the previous 3 months (A I).

Intravenous to oral switching (IVPOS) and duration of antibiotics

Prompt switching from intravenous to oral therapy is a cornerstone of antibiotic stewardship, as is the use of the minimum effective duration of therapy.

• Patients can switch from intravenous to oral antibiotics when they are haemodynamically stable, have a respiratory
**Figure 1:** Algorithm for the management of community-acquired pneumonia in adults in South Africa. This figure should be read in conjunction with the text. Adapted with permission from the South African Medical Journal (S Afr Med J 2007; 97:1295-306).

Acute complications

A number of possible complications of CAP may occur and are recognised in patients who fail to respond to the first few days of empiric therapy or who deteriorate after an initial improvement.

Complicated para-pneumonic effusion and empyema

- Repeat CXR should be performed for any patient failing to respond to the first few days of empiric therapy or who deteriorates after an initial improvement (A II).
Bordetella pertussis: Still a formidable foe!

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Pertussis, also known as whooping cough is a highly infectious disease of the respiratory tract. *Bordetella pertussis* is classically regarded as the sole agent of pertussis. However, infection with other *Bordetella* species such as *B. parapertussis* and *B. holmesii* can cause a similar, though typically milder, clinical picture. *Bordetella bronchiseptica* may also cause respiratory tract infections, typically in the immunocompromised host with a history of animal exposure.1,2 *Bordetella pertussis* is a sole human pathogen and as such, disease elimination by means of vaccination should be possible, yet today it is the only infectious disease whose incidence is increasing despite the widespread use of efficacious vaccines.2

Transmission

*Bordetella pertussis* is effectively transmitted from person to person via respiratory droplets. The pathogen is highly contagious with a secondary attack rate of up to 90% in susceptible contacts.3,4 The incubation period ranges from 5-21 days but typically averages between 7-10 days. The infected patient is most infectious during the early (cattarhal) phase of the illness but may transmit *B. pertussis* up to 3 weeks following infection if untreated. Infection in exposed contacts may range from classical pertussis, mild atypical respiratory symptoms to asymptomatic infection which has implications for transmission of the disease in exposed, susceptible hosts.3,4

Epidemiology

Pre-vaccine era

*Bordetella pertussis* is considered endemic worldwide. Before the introduction of pertussis vaccines it was one of the most common childhood diseases with the vast majority of cases occurring in children below 5 years of age. The highest morbidity and mortality rates occur in infants <6 months of age.4

Vaccine era

Following the introduction of effective killed whole-cell pertussis vaccines in the 1940’s, a dramatic decrease in the incidence of pertussis was observed. Reactogenicity with the whole cell vaccine lead to a decline in vaccination rates. Subsequently, acellular vaccines became available during the 1990’s and gradually replaced whole cell vaccines.4

Despite the availability of effective pertussis vaccines and high vaccine coverage rates pertussis still occurs in epidemic cycles every 2-5 years.4 Superimposed on the cyclical pattern a general increase in pertussis rates are being reported from developed and developing countries.4 The reasons for the observed increase in pertussis cases are multifactorial and includes increased awareness of pertussis, the availability of sensitive PCR tests, waning vaccine induced immunity and a possible mismatch between antigens used in current acellular pertussis vaccines and the circulating *B. pertussis* strains.5

In addition to the increase in number of cases, the age distribution of pertussis has also changed.3,6 Increasing numbers of cases are diagnosed amongst adolescents and adults as well as neonates and infants <6 months of age. Adults and adolescents may act as reservoirs for pertussis as the diagnosis is often missed or delayed in this age group due to atypical presentation.6,7 This in combination with low levels or absent transfer of maternal pertussis antibodies to the foetus, predisposes neonates and infants who are not yet fully immunised to potential infection with pertussis.6

Figure 1 illustrates the percentage of *B. pertussis* cases diagnosed by means of molecular testing at the Ampath National Reference Laboratory (NRL), Centurion, South-Africa during the period from the 1st of August 2017 – 30 August 2018. The majority of cases occur in young infants not yet fully immunised and amongst adolescents and adults.

![Figure 1: The percentage of total positive B. pertussis cases by age from 1 August 2017 – 30 August 2018 diagnosed by means of molecular testing at the Ampath NRL.](image-url)
Clinical presentation
The classical presentation of pertussis is characterised by three stages: The catarrhal, paroxysmal and convalescent stages. This classical presentation is seen most commonly as a primary infection in unvaccinated children.\textsuperscript{1,3}

1. **Catarrhal stage**: Characterised by non-specific symptoms and signs similar to an upper respiratory tract viral infection, with cough and coryza but fever is typically absent or low grade. The patient is most infectious at this stage, which lasts between 1-2 weeks

2. **Paroxysmal stage**: Characterised by the classical paroxysmal coughing spells followed by inspiratory whoops. Post-tussive vomiting may occur. It is during this stage where complications most frequently occur. Symptoms are typically worse at night. Lasts between 2-8 weeks

3. **Convalescent stage**: The cough gradually improves and the patient recovers. Lasts between 1-2 weeks.

Atypical presentations of pertussis may occur in patients with underlying immunity, neonates and infants. Neonates and young infants may present with apnoea alone or with complications such as encephalopathy, seizures and pneumonia.\textsuperscript{1} Patients with underlying immunity may present with milder disease or merely a history of prolonged cough. These atypical presentations need to be considered as diagnosis may be delayed in these patient groups increasing morbidity and mortality as well as facilitating transmission of pertussis.\textsuperscript{1,2,7}

Diagnosis
The diagnosis of pertussis should be suspected clinically in any patient presenting with typical or atypical symptoms and signs of pertussis as described above. Table 1 summarises the diagnostic modalities available for the laboratory diagnosis of pertussis.

Molecular based methods are the current mainstay of pertussis diagnosis due to the relatively high sensitivity and short time to result.\textsuperscript{8-10} In a patient in whom the index of suspicion for pertussis remains high, in spite of a negative \textit{Bordetella pertussis} PCR result, this needs to be discussed with the local microbiologist at the testing laboratory. Various factors influence the sensitivity of \textit{Bordetella pertussis} PCR testing including the genetic target detected. Patients presenting late in the course of disease and the possibility of other \textit{Bordetella} species such as \textit{B. parapertussis} may cause the clinical presentation.\textsuperscript{5-10}

The clinical impact of serological testing for pertussis is limited but it may be helpful in patients presenting late in the course of disease where both culture and PCR testing is negative.\textsuperscript{5-10} In addition, other non-specific laboratory findings include a leucocytosis secondary to lymphocytosis which may be marked in severe disease.

Treatment
The management of pertussis is mainly supportive in terms of oxygenation, fluid and electrolyte replacement, nutrition, minimising coughing paroxysms and diagnosing and treating complications.\textsuperscript{3} Antibiotic therapy plays a secondary role in terms of eradicating carriage of \textit{B. pertussis} and limiting transmission. Macrolides such as erythromycin, azithromycin and clarithromycin form the mainstay of antibiotic therapy and are most effective at modulating the clinical course of disease if administered early in the disease process (within first 2 weeks).\textsuperscript{3} Trimethoprim-sulfamethoxazole is an alternative if macrolides are contra-indicated.\textsuperscript{3}

Prevention
Whole cell pertussis vaccines were introduced into South Africa in 1950 and were replaced by acellular pertussis (aP) vaccines in 2009.\textsuperscript{3} According to the South African EPI infant vaccination against pertussis commences at 6 weeks of age, followed by subsequent doses at 10 weeks, 14 weeks and 18 months of age. The private sector vaccination schedules include an additional dose of pertussis vaccine between 4-6 years of age and a booster dose at 11-12 years of age. Immunity following vaccination with aP vaccines begins to wane after approximately 5 years. A booster dose of an aP containing vaccine is thus indicated every 4-6 years.\textsuperscript{3}

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**Table 1. Laboratory diagnosis of \textit{B. pertussis}**

<table>
<thead>
<tr>
<th>Test</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Sample type</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culture</td>
<td>12-60%</td>
<td>100%</td>
<td>NP swab, NPA or sputum placed in Regan-Lowe or Amies charcoal containing media</td>
<td>• Optimal sensitivity in early cattarhal stage prior to antibiotic therapy&lt;br&gt;• Need specialised transport media to retain viability of \textit{B. pertussis}</td>
</tr>
<tr>
<td>Molecular testing: \textit{B. pertussis} PCR</td>
<td>70-99%</td>
<td>86-100%</td>
<td>NP swab, NPA or sputum</td>
<td>Optimal sensitivity in cattarhal and early paroxysmal stage prior to antibiotic therapy</td>
</tr>
<tr>
<td>Serology: Anti-pertussis toxin IgG</td>
<td>50-99%</td>
<td>&gt;90%</td>
<td>Blood</td>
<td>• Ideally need paired serum samples: Acute phase and convalescent&lt;br&gt;• Influenced by previous vaccination (within one year) and presence of maternal antibodies in neonates and infants</td>
</tr>
</tbody>
</table>

Key: NP: nasopharyngeal, NPA: nasopharyngeal aspirate
Healthcare workers, especially those working directly with paediatric and pregnant patients should receive a booster dose of an aP containing vaccine.\textsuperscript{11} Pregnant women should receive a booster dose of an aP containing vaccine during 27-36 weeks gestation during every pregnancy, regardless of time elapsed since previous vaccination.\textsuperscript{11} Maternal antibodies transferred to the foetus will provide protection during early life until the infant is protected by vaccination. Ideally, all household contacts of newborns and infants, in particular siblings and parents, should receive a booster dose of aP – this is known as the cocooning strategy.\textsuperscript{11}

In the event of exposure to a confirmed or suspected pertussis case, post-exposure prophylaxis (PEP) should be provided to close and vulnerable contacts as well as potential transmitters of pertussis regardless of immunisation status.\textsuperscript{1} This is summarised in Figure 2. Chemoprophylaxis consists of either a macrolide (erythromycin, clarithromycin or azithromycin) or alternatively trimethoprim-sulfamethoxazole with the dosage and duration as for treatment. Details on the dosage and duration of treatment are available in the National Institute for Communicable Diseases (NICD) recommendations for the diagnosis, management and prevention of pertussis.\textsuperscript{2} Contacts need to be monitored for symptoms and signs of pertussis for 21 days.

Patients are considered infective from the onset of the catarrhal stage through to the 3rd week following onset of paroxysms if antibiotics are not given or until 5 days of effective antibiotic therapy has been completed. Hospitalised patients should be isolated and droplet precautions maintained.\textsuperscript{3} For outpatients, contact with others should be restricted in particular with young infants during the infectious period.

Key messages

- Increasing numbers of pertussis cases are being reported worldwide – this includes South Africa
- Very young infants, adolescents and adults form a large percentage of pertussis cases with the highest morbidity and mortality observed in the <6 month age group
- Atypical presentations of pertussis may occur and a high index of suspicion for pertussis need to be maintained
- Molecular methods form the current mainstay of diagnosis due to its high sensitivity and short time to result
- Management of pertussis is mainly supportive. Antibiotics (macrolides or alternatively trimethoprim-sulfamethoxazole) play a secondary role
- Prevention of pertussis include vaccination, chemoprophylaxis and infection control strategies

References

4. Pertussis vaccines. WHO position paper 2010;85:385-400
n 21 June 2018, Health Minister Aaron Motsoaledi published two Bills that aim to shape the future of health care service delivery in South Africa: The National Health Insurance Bill and the Medical Schemes Amendment Bill. Both Bills will pave the way for increased access to health care services through National Health Insurance (NHI) and propose major changes to both the public and private health care systems. It is important that both the Bills be read in conjunction as the provisions are interlinked. However, in this article, only the most important changes proposed by the Medical Schemes Amendment Bill will be discussed.

The preamble to the Bill sets out the aims of the amendments and includes a few new sections and chapters in the Medical Schemes Act. In his briefing to the media when the Bill was published, the Minister indicated that the new provisions intend bringing relief to medical scheme members and their dependants experiencing financial distress due to the cost of health care services.

There are 10 significant amendments in the Bill that should be noted. They are:

1. Introduction of comprehensive service benefits instead of prescribed minimum benefits
   In terms of the Medical Schemes Act, medical schemes must include the prescribed minimum benefits (PMBs) in all benefit options that are offered. This means that, subject to certain exceptions, the medical scheme must pay for the treatment of a PMB condition in full. There are currently 270 medical conditions and 25 chronic conditions for which every scheme must cover the diagnosis, treatment and care, whether someone is on a low-cost hospital plan, or a comprehensive high-cost medical scheme option. The funding for any non-PMB medical or chronic condition, is dependent on the benefits available to the member or dependant, according to the rules of the medical scheme for that option or plan.
   The Bill aims to do away with PMBs and replace them with comprehensive service benefits to be determined by the Council for Medical Schemes (CMS) in consultation with the Minister and the NHI Fund. The Minister indicated that comprehensive service benefits would include family planning, vaccinations and health screening services that are not currently paid for by medical schemes.

2. Abolishment of co-payments
   One of the most important changes proposed by the Bill is the removal of the requirement for co-payments or deductibles by medical scheme members for the costs related to the proposed comprehensive service benefits. This means that a medical scheme must pay in full for the treatment of any condition or health service provided under the comprehensive benefits.

3. Restriction on the role of medical scheme brokers
   The Bill aims to empower the CMS to determine the fees that a broker may charge a member of a medical scheme for broker services. The circumstances in which a medical scheme may receive payment of broker fees due by its members to a broker, will also be restricted. In terms of the proposed new definition of “broker services”, any service regarded as a normal or ordinary administrative service provided by the medical scheme or administrator of a medical scheme, will be excluded.

4. Introduction of a cross-subsidisation model based on income to determine medical scheme contributions
   The Bill includes a new chapter pertaining to the various requirements applicable in determining the contributions payable by members to medical schemes, including the permissible and impermissible differentiation of contributions. In terms of the proposed amendments, medical schemes must determine contributions for mandatory benefits based on income. The principle behind this amendment is that, as with the NHI, the rich must subsidise the poor, the young must subsidise the old, and the healthy must subsidise the ill. The Minister indicated that the present contribution table charges members the same amount for the same amount of benefits, irrespective of the members’ income.

5. Establishment of a Central Beneficiary Registry and a Health Care Providers Register
   The Bill introduces a new chapter that provides for the establishment of a Central Beneficiary Registry as well as a Health Care Providers Register by the CMS.

   The Central Beneficiary Registry must contain information of beneficiaries provided that the identity, including
names, date of birth, address and identity number, medical scheme membership number and health status of the beneficiary, must be excluded. The purpose of the Registry is to establish a data base to identify and assess risks within medical schemes. It is envisaged that the Registry will ensure that the rights and obligations of medical scheme beneficiaries are better managed through an appropriate risk measurement methodology.

The Health Care Providers Register must contain the stipulated information in respect of every health care provider and health establishment. Any health care provider or health establishment must apply for inclusion in the Register. The Registrar of the CMS will issue the provider or establishment with a unique registration number and certificate of registration. The Bill states that a medical scheme may elect not to pay a health care provider directly for any services rendered unless that health care provider is registered on the Register. In these instances, the medical scheme is obliged to pay the member directly, who is then responsible for paying the health care provider.

6. Introduction of obligation that costs saved by medical schemes must benefit members
The Minister emphasised that medical schemes should not be for profit. Therefore, any measures utilised by medical schemes that result in cost savings should be for the benefit of the members of the medical scheme. Accordingly, the Bill stipulates that a medical scheme may make provision in its rules for a uniform percentage of discount on the contribution payable by the member for obtaining health care services from a designated service provider. The discount must be indicated in the contribution table of the medical scheme and will apply when the member elects a particular benefit option.

7. Abolishment of waiting periods for children and restriction on the circumstances when membership may be cancelled or terminated
The Bill aims to re-determine the provisions regarding the admission of beneficiaries to a medical scheme as well as the cancellation of membership. The Minister stated that after joining a medical scheme, members are required to contribute for a period before they can access benefits. Accordingly, the Bill stipulates that medical schemes may not impose a waiting period in respect of any child and must enrol, admit or recognise any child as a dependent upon receipt of an application by the member. In addition, the medical scheme may not require a medical history report in respect of any beneficiary other than a report for purposes of determining a condition-specific waiting period.

In respect of cancellation or termination of membership, the Minister explained that some members were forced to continue to contribute to the medical scheme even after cancelling their membership. The Bill therefore introduces stricter provisions for medical schemes in terms of which members’ membership may be cancelled or suspended.

8. Introduction of a ban on the implementation of unapproved benefit options by medical schemes
The Minister stated that the Bill will prevent any medical scheme from implementing any benefit option unless the option has been approved by the Registrar of the CMS. In considering any benefit option, the Registrar will have to ensure that the benefits are in the best interest of the member and not any other party. Factors to be considered by the Registrar include the quality and cost-effectiveness of the benefits provided for in the specific option, as well as the financial soundness of the medical scheme.

9. Introduction of provisions that ban and criminalise the operation of unregistered medical schemes
The Bill introduces provisions that make it a separate criminal offence for persons or businesses in labelling themselves as a medical scheme when they do not meet the prescribed requirements of the Medical Schemes Act. According to the Minister, this amendment is aimed at the various health and cash plans that are advertised as products similar to medical schemes but are not registered with the CMS. In addition, the Bill specifies the sanction(s) that may be imposed on conviction of this offence. The sanctions are: A fine not exceeding 10 million rand or imprisonment of five years or both a fine and imprisonment.

10. Introduction of measures to improve governance of medical schemes
A new chapter in the Bill aims to improve the governance of medical schemes. In particular, the Bill sets out the minimum requirements for persons to serve on a board of trustees, including minimum education requirements. Similarly, stricter provisions regarding corporate governance, conflict of interest and disclosure of financial interests are included.

Conclusion
The Medical Schemes Amendment Bill will, when implemented, significantly impact the current medical scheme environment. The changes will ensure that private medical schemes are aligned with the objectives of the NHI. The Bill proposes 10 major changes to ensure alignment with the NHI Bill, some of which will directly affect health care practitioners. It is therefore imperative that health care practitioners familiarise themselves with the amendments proposed by both the Medical Schemes Amendment Bill as well as the National Health Bill.

Infectious Diseases update
South African Malaria Risk Map - Nov. 2018

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Distribution of malaria risk areas in South Africa
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• Indicated in therapy of methicillin resistant (β-lactam resistant) staphylococcal infections serious staphylococcal infections in penicillin allergic patients or in patients who have failed to respond to the penicillins or cephalosporins.³

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References: 1. Vancocin® CP Package Insert. 2. Data on file. 3. SANDOZ CO-AMOXICLAV 5 g/500 mg. Each of the reconstituted suspension contains amoxicillin trihydrate equivalent to 500 mg amoxicillin and potassium clavulanate equivalent to 250 mg clavulanic acid. 4. SANDOZ CO-AMOXICLAV 3.5 g/200 mg. Each of the reconstituted suspension contains amoxicillin trihydrate equivalent to 250 mg amoxicillin and potassium clavulanate equivalent to 125 mg clavulanic acid. 5. SANDOZ CO-AMOXICLAV 5 g/500 mg. Each of the reconstituted suspension contains amoxicillin trihydrate equivalent to 250 mg amoxicillin and potassium clavulanate equivalent to 125 mg clavulanic acid. 6. SANDOZ CO-AMOXICLAV 3.5 g/200 mg. Each of the reconstituted suspension contains amoxicillin trihydrate equivalent to 200 mg amoxicillin and potassium clavulanate equivalent to 125 mg clavulanic acid.

For all prescribing information refer to the package insert approved by the medicines regulatory authority, approved date: 18 April 2008. 1. CURITAZ™ 6.5 Powder for solution for injection. Reg. No: 42/2001/1/0008. 2. For full prescribing information refer to the package insert approved by the medicines regulatory authority, approved date: 30 November 2004. 3. VANCOCIN® CP package insert. Reg. No: EECJ/1993/003. 4. For full prescribing information refer to the package insert approved by the medicines regulatory authority, approved date: 9 October 2003.
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- Indicated for the treatment of systemic and/or local bacterial infections in which susceptible organisms have been detected or are suspected.

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References: 1. Curitaz Package insert. 2. Data on file. SANDOZ® CO-AMOXYCLAV. Each 500 mg oral tablet contains amoxicillin and potassium clavulanate equivalent to 333.3 mg amoxicillin and 50 mg potassium clavulanate. SANDOZ® CO-AMOXYCLAV 1.25 g Powder for injection contains amoxicillin and potassium clavulanate equivalent to 500 mg amoxicillin and 87.5 mg potassium clavulanate. SANDOZ® CO-AMOXYCLAV 2.5 g Powder for injection contains amoxicillin and potassium clavulanate equivalent to 1000 mg amoxicillin and 175 mg potassium clavulanate. SANDOZ® CO-AMOXYCLAV 500 mg Powder for injection contains amoxicillin and potassium clavulanate equivalent to 250 mg amoxicillin and 43.75 mg potassium clavulanate. SANDOZ® CO-AMOXYCLAV 1.25 g Powder for injection contains amoxicillin and potassium clavulanate equivalent to 500 mg amoxicillin and 87.5 mg potassium clavulanate. SANDOZ® CO-AMOXYCLAV 2.5 g Powder for injection contains amoxicillin and potassium clavulanate equivalent to 1000 mg amoxicillin and 175 mg potassium clavulanate. SANDOZ® CO-AMOXYCLAV 500 mg Powder for injection contains amoxicillin and potassium clavulanate equivalent to 250 mg amoxicillin and 43.75 mg potassium clavulanate.

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