The Mine Medical Professionals Association (MMPA) was founded in 1921. Its membership comprises doctors and other healthcare workers who work or have interest in the mining industry. The principal objective of the MMPA is to provide professional medical education to healthcare workers, by creating awareness and assisting members to keep abreast of new developments related to both occupational and non-occupational diseases. The MMPA hosts information-sharing events like seminars and congresses.

The COVID-19 pandemic caused a loss of focus on the challenges of HIV/AIDS and tuberculosis (TB) in South Africa. Consequently, we failed to achieve the World Health Organization (WHO) target to reduce the incidence of TB by 20% from 2015 to 2020, globally, only achieving an 11% reduction (Figure 1).2 Throughout the four waves of the Pandemic, medical resources were channelled towards the screening, diagnosis, and contact tracing of cases with COVID-19. The diagnosis and contact tracing of people with TB took a back seat, resulting in increased loss to follow-up of TB cases. During this period, and for the first time since 2005, an increase in TB deaths was recorded. There was also a failure to achieve the WHO target to reduce TB mortality by 35% from 2015 to 2020; only a 9.2% reduction was achieved.2

TB SEMINAR PROCEEDINGS

With the challenges of meeting the TB targets in mind, the MMPA hosted a TB seminar in collaboration with the Minerals Council South Africa’s (MCSA)s Masoyise Health Programme. The seminar, with the theme The future of TB: What is the latest? was a hybrid event that was held on 9 July 2022 at Emperors Palace in Johannesburg. The President of the MMPA, Dr Dipalesa Mokoboto, welcomed the delegates. She highlighted that TB has always been an issue of concern in the mining industry, due to mine workers being exposed to silica dust, especially in the gold-mining sector. She reiterated the aim of the seminar: to provide information on the future and latest developments of TB, and anticipated that, through information sharing at the workshop, health professionals would be empowered and equipped with sufficient knowledge to manage TB adequately, post the COVID-19 pandemic.

Dr Tumi Legobye, the MMPA Vice-president, chaired the proceedings of the day. Several presenters, both onsite and virtually, kept the audience captivated. They included university professors, doctors, representatives from the WHO, the National Department of Health, and the Department of Mineral Resources and Energy (DMRE), and health practitioners from the mining industry.

The first speaker, Dr Nazir Ismail, from Team Lead Diagnostics, represented the WHO. His presentation was titled ‘WHO guidelines on TB diagnostics’. He highlighted the WHO recommendation for initial TB diagnosis using Xpert MTB/RIF and Xpert MTB/RIF ULTRA assays for adults and children, based on sputum testing. He emphasised that additional testing should be done for extra-pulmonary TB (EPTB), using cerebrospinal fluid (CSF), lymph node aspirates, lymph node biopsies, and testing of pleural, pericardial, and peritoneal fluids, synovial joint fluids, and/or urine and blood. Dr Ismail advocated symptom screening, using the standardised TB cough questionnaire and chest X-ray.

The new nucleic acid amplification test (NAAT) for the detection of TB and rifampicin and isoniazid resistance (INH), have a pooled sensitivity of 93.0% and a specificity of 97.7%. The pooled sensitivities and specificities for rifampicin and INH resistance detection are 96.7% and 98.9%, and 86.4% and 99.8%, respectively. There is a marked difference from similar measures for culture and phenotypic drug-sensitivity testing (DST).3

The low-complexity automated NAAT for the detection of resistance to INH and second-line anti-TB agents such as the fluoroquinolones, ethionamide, and amikacin. The NAAT has provided us with a new and innovative method to detect the sensitivity of TB drugs before six weeks, unlike TB culture and sensitivity results that are issued after six weeks. This has reduced the time to make decisions about the appropriate drug regimen to treat drug-sensitive (DS) or drug-resistant (DR) TB patients.

Dr Lindiwe Ndelu, Chief Director of Occupational Health at the DMRE, spoke about TB and HIV performance in the South African mining industry (SAMI). She reported that, in 2021, the SAMI screened 91.1% of miners for TB; a reduction from 97.0% in 2020. Of those co-infected with HIV, 51.5% were screened in 2021; an increase from 40.5% in 2020. While 60.5% of the SAMI companies have integrated HIV and TB programmes, only 46.1% have budgets for HIV and TB programmes. She reported a 19% drop in the percentage of TB contacts traced and...
Dr Medea Gegia of the TB treatment team (Global TB Programme, WHO) pointed out that several new treatment guidelines and handbooks have been made available in 2022 (Figure 2). These include new, shorter-duration TB treatment regimens. The treatment for patients with cardio-respiratory TB can be reduced from six to four months. However, there are exceptions that need to be taken into consideration (Table 1).

### Table 1. A new treatment regimen for drug-susceptible pulmonary TB

<table>
<thead>
<tr>
<th>Drug regimen</th>
<th>Treatment and dose</th>
<th>Exclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age ≥ 12 years, Weight ≥ 40 kg</td>
<td>2HPMZ/2HPM regimen</td>
<td>Weight &lt; 40 kg</td>
</tr>
<tr>
<td>4-month regimen: INH, RifAP, MOX, PZA</td>
<td>Duration: 8 weeks, daily INH, RifAP, MOX, PZA, followed by 9 weeks, daily INH, RifAP, MOX</td>
<td>Severe extrapulmonary TB: TB meningitis, disseminated TB, osteoarticular TB, and abdominal TB</td>
</tr>
<tr>
<td>Dose: RifAP 1200 mg, MOX 400 mg</td>
<td>PLHIV with CD4 count &lt; 100 cells/mm³³</td>
<td></td>
</tr>
<tr>
<td>DOTS: Presence of DOTS supporter</td>
<td>Age &lt; 12 yrs</td>
<td></td>
</tr>
<tr>
<td>Not recommended: replacement of MOX with another fluoroquinolone</td>
<td>Pregnant, breast-feeding and postpartum women</td>
<td></td>
</tr>
</tbody>
</table>

**DO NOT PROLONG TREATMENT BEYOND 4 MONTHS**

- New pulmonary TB: 2HRZE/4HR
- TB meningitis: Use adjuvant corticosteroids; dexamethasone or prednisone tapered 6–8 weeks (strong recommendation)
- TB pericarditis – use dexamethasone initially

INH: isoniazid, RifAP: rifapentine, MOX: moxifloxacin, PZA: pyrazinamide, PLHIV: people living with HIV, DOTS: directly-observed therapy shortcourse
With regard to DS-TB treatment, the WHO has made the following recommendations:

- National TB control programmes should provide supervision and support for all TB patients to ensure completion of the full course of therapy.
- Drug-resistance surveillance should be implemented to monitor the impact of TB treatment programmes, as well as for designing standard regimens.
- TB patients who are living with HIV should receive at least the same duration of daily TB treatment as HIV-negative TB patients.
- For people living with HIV (PLHIV), anti-retroviral treatment (ART) should be started as soon as possible within two weeks of initiating TB treatment, regardless of CD4 cell count.
- Steroids must be prescribed for patients diagnosed with TB meningitis.

Prof. Norbet Ndjeka (Chief Director: TB Control and Management, National Department of Health) delivered an insightful presentation and made recommendations on innovative ways of enhancing TB recovery plans. His recommendations, together with those made by other presenters, were emphasised at the end of the seminar. These recommendations will be carried forward to aid our quest to END TB.

The recommendations were:
1. To improve governance and management of TB
2. To improve TB surveillance, i.e. TB case finding and reduction of diagnosed TB cases that are lost to follow-up
3. To strengthen systems for retention in care
4. To develop guidelines in line with the WHO recommendations for TB diagnostics, detection, and reduction of TB resistance
5. To adopt quality improvement approaches to improve TB outcomes
6. To develop innovative ways to monitor and manage TB case finding, diagnosis, treatment, and follow-up using IT systems to link surveillance systems in the private and public health sectors

Dr Thuthula Balfour, Head of Health for MCSA, re-iterated the importance of keeping our focus on TB management. Having succeeded in reducing TB incidence in the SAMI, it is important that we consider the recommendations made by different presenters if we are to stay on top of our game. She then thanked all those who had contributed to making the seminar a success.

REFERENCES