

Safety in Mines Research Advisory Committee

Project Summary: HEALT611

Project Title:	Clinico-Pathological Study to reduce the rate of missed and misdiagnosis Pulmonary Tuberculosis in the South African Mining Industry		
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Summary

Tuberculosis, declared a global emergency by the World Health Organisation in 1991, is a major infectious disease in the South African mining industry. It is also a potentially curable disease and misdiagnosis has important implications for the individual, spread of TB in the community and compensation in terms of the Occupational Diseases in Mines and Works Act (ODMWA).

The National Centre for Occupational Health (NCOH) examines the lungs of deceased mineworkers in terms of ODMWA and was thus in a unique position to assist with strategies for improving the accurate and timeous diagnosis of pulmonary TB (PTB). The study correlated ante- and postmortem diagnoses of PTB, reviewed medical data from a representative group of mine medical services to assess current clinical practice, and identified possible reasons for discordant diagnoses and strategies for improving clinical practice.

76% of patients were known to be HIV infected and of those, 90% had advanced AIDS. Autopsies showed lungs with extensive TB even though surveillance chest radiographs taken only months prior to death were normal. In patients in whom the clinical diagnosis of PTB was not made, important factors influencing the missed diagnosis of TB were the presence of miliary TB, the simultaneous presence of a second lung disease such as bacterial pneumonia and omission of accurate laboratory diagnostic tests such as sputum smears and culture for TB bacilli.

Where TB had been correctly diagnosed, half of the cases presented with advanced disease and had had a rapidly terminal course. Missed "windows of opportunity" for clinicians to have made an earlier diagnosis have been identified as many patients had attended the mine clinics and/or hospitals in the preceding three months. Patients at risk of being drug resistant (those on prolonged treatment for TB and especially those who also had previous TB) were identified and drug susceptibility testing had not been performed for the majority of them.

Important recommendations includes:

- More frequent medical surveillance for groups of employees at high risk for TB
- Improving skills of nurses both with regard to case finding and monitoring of patients while on treatment for TB
- Actively excluding TB in all patients admitted to hospital with respiratory signs and symptoms, including use of sputum culture for TB
- A training course on the interpretation of chest radiographs
- Empirical treatment for suspected miliary TB while awaiting culture results
- Deterioration in a condition should not be ascribed to progressive HIV infection without considering the possibility of TB
- Testing for drug susceptibility in all previously treated patients and those who fail to respond to treatment
- The NCOH will continue to provide autopsy reports if requested by the clinician to enable them to undertake reviews of their performance

Autopsies continue to provide important information for the management of patients despite advances in medical knowledge and technology