



# MinOSH ICOH International Scientific Conference and Workshop on Occupational Health and Safety in Formal and Informal Mining: 22-25 August 2017



## INTRODUCTION

The International Conference and Workshop on Occupational Health and Safety in Formal and Informal Mining was hosted at Dalum Agricultural College (part of the University of Southern Denmark) in Odense, Denmark, from 22 to 25 August 2017. It was organised by the International Commission on Occupational Health (ICOH) Scientific Committee on Occupational Safety and Health in Mining (MinOSH). South Africa was well represented by researchers from Wits University, Dr Casper Badenhorst (Anglo American and ICOH Scientific Committee member), Dr Deodat Kritzinger (Rand Mutual Assurance), and Dr Khanyile Baloyi (Chamber of Mines). On 21 August 2017 a welcome reception was held at the Dalum Agricultural College.

## CONFERENCE REPORT

The Chamber of Mines responded to the call for abstracts and we had the opportunity to deliver a poster presentation on the Masoyise project on screening for tuberculosis (TB) and offering HIV counselling and testing (HCT) to mine workers employed by Chamber of Mines member companies.

*Day 1* was characterised by a warm welcome and four keynote addresses from powerful speakers:

1. 'The human cost of working in dusty occupations in India', by Dr TK Joshi, The Supreme Court Commissioner for Silicosis, Government of India for the Mining Sector. The study revealed that the Pneumoconiosis Boards set up in all districts regularly screened workers but physicians had no training in occupational health. They had no idea of the exposure situation in the operating mines. The presenter shared some recommendations made to the highest court in the country to protect the health of mine workers and facilitate compensation for those eligible.
2. 'Prevalence and prevention of silicosis and coal workers' pneumoconiosis', by Dr Bengt Jarvholm from Umea University, Sweden. The researchers questioned whether the use of silicosis and coal workers' pneumoconiosis prevalence, as a measure of health impact from exposures, is the appropriate indicator. The conclusion was that prevalence is too late an indicator to save the health of those exposed. A much better indicator is exposure measurements.
3. 'The role of worker representation on occupational safety and health in coal mining in different countries', by Dr David Walters from Cardiff University, Wales. The study examines the evidence for effectiveness of the arrangements for representing the health and safety interests of mine workers and identifies the factors that contribute support to the role of representation in different settings. The findings offer reflections on significance of effective tripartism in the workplace.
4. 'Fibrous material naturally occurring in mines', by Dr Maria Albin from Karolinska Institute, Sweden. The study demonstrates that associated health risks might occur during production as well as in later use, and from tailings. It was recommended that, in order to keep the life-time cancer at an acceptable level (one per million per exposure year), the time-weighted eight-hour average exposure over a working life should not exceed 0.01 f/ml.

On *Day 2* presentations were given on mercury pollution from mining, mercury poisoning, and examples of mercury-free gold mining. The presenters

recommended the use of borax as a replacement for mercury in the processing of ore to produce gold. The economic and health benefits of borax use were outlined in different presentations. The discussions became heated when the safety of borax was questioned and it was suggested that there was a need to study its safety in gold production. The concern was that the economic benefits seemed well-researched above the safety ones. Scientists in the conference agreed that there was a need for such a study.

## WORKSHOP REPORT

### Day 1

#### 1. *Training on criteria for pneumoconiosis diagnosis*

The training emphasised the International Labour Organization (ILO) criteria and the need for a B-reader course for occupational medicine practitioners. It provided a framework but overemphasised the need for a B-reader course.

#### 2. *International Social Security Association (ISSA) training: Vision Zero*

Intense training on Vision Zero and the importance of following the seven golden rules; namely, take action, identify hazards (Hazard Identification and Risk Assessment) (HIRA), set targets, develop a system, implement technology, develop competences, and prioritise people. The compliance checkpoints are accessible on the ISSA web tool: [www.issa.int/prevention-mining](http://www.issa.int/prevention-mining).

### Day 2

#### 1. *Practical training in use of National Institute for Occupational Safety and Health (NIOSH) web-based tools to improve occupational health and safety (OHS) in mining*

The workshop recommended the use of the following tools and test:

- Safety pays in mining – web-based tool
- How can I test my hearing protection?
- Ladder safety – iOS/Androids
- Evade software – laptop-based
- Ergomine – Androids

#### 2. *Practical training on mercury-free gold production*

A practical demonstration of using borax in a mercury-free gold production method on a small scale was given. The economic benefits were clear in terms of reduced input costs and the yield, but the debate on the health effects remains to be researched.

## RECOMMENDATIONS

The ICOH MinOSH Scientific Committee plans to host a parallel session at the ICOH 2018 Congress in Dublin, Ireland. This will present opportunities for the sector to present interesting papers and learn from peers. As for the mercury-free mining process, the Department of Mineral Resources (DMR) can be made aware of this and can take the opportunity to explore options for rolling it out to small-scale gold mining operations, especially the artisanal gold miners. The NIOSH and ISSA tools are available freely on their websites for colleagues to use.

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