



MHSC

Mine Health and Safety Council

SAMI NOISE MILESTONES AND ACTION PLAN INITIATIVES

Ms. MATHAPELO FLO MAGAMPA

NOISE ENGINEERING CONTROLS CONVENTION, 13 JUNE 2025

Every mine worker returning from work unharmed every day. Striving for zero harm in our lifetime.

PRESENTATION OUTLINE

- ABOUT THE MHSC
- WHY NOISE MANAGEMENT?
- SAMI'S NOISE AND NOISE INDUCED HEARING LOSS PERFORMANCE
- NOISE MILESTONES IN THE SAMI
- 2024 NOISE SUMMIT ACTION INITIATIVES
- NOISE RELATED RESEARCH AT MHSC

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ABOUT THE MHSC

- **Tripartite Institution** established under Section 41.1 of the **MHSA in 1997.**

Mandate:


- **Advise the Minister** on all occupational **health and safety** at mines, including:
 - **Research**
 - **Legislation**
- **Promote health and safety culture** in the mining industry.
- **Liaise with other bodies** concerned with health and safety issues.
- Coordinate activities of **advisory committees** incl. : MOHAC, MITHAC, CTAC, WIMAC, MRAC, MOSAC, SIMRAC
- Arrange and co-ordinate health and safety at bi-annual tripartite **summit.**

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WHY NOISE MANAGEMENT





Noise: environmental hazard with negative outcomes to: communication, health, safety, productivity and quality of life




Occupational Noise and Prevention is legislated to protect employees



In SAMI, mechanical vibration is the primary generator of sound.



After prevention, engineering controls - most effective way to reduce noise over-exposure.



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NOISE EFFECTS

01

Discomfort

- Irritability
- Nervousness
- Tension
- Sleep disturbance
- Communication disturbances



02

Psychological

- Stress
- Depression
- Anxiety



03

Disease

- Insomnia
- Stroke
- Cardiovascular diseases
- Diabetes
- Hearing loss
- **Death**



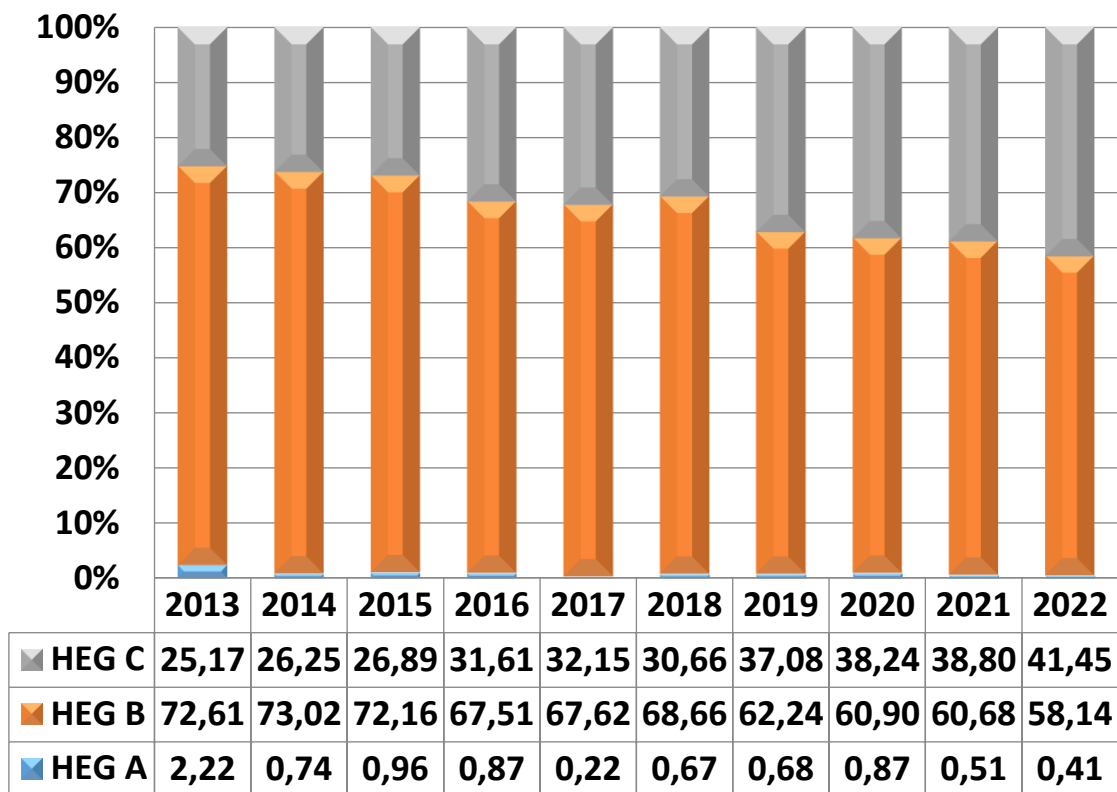
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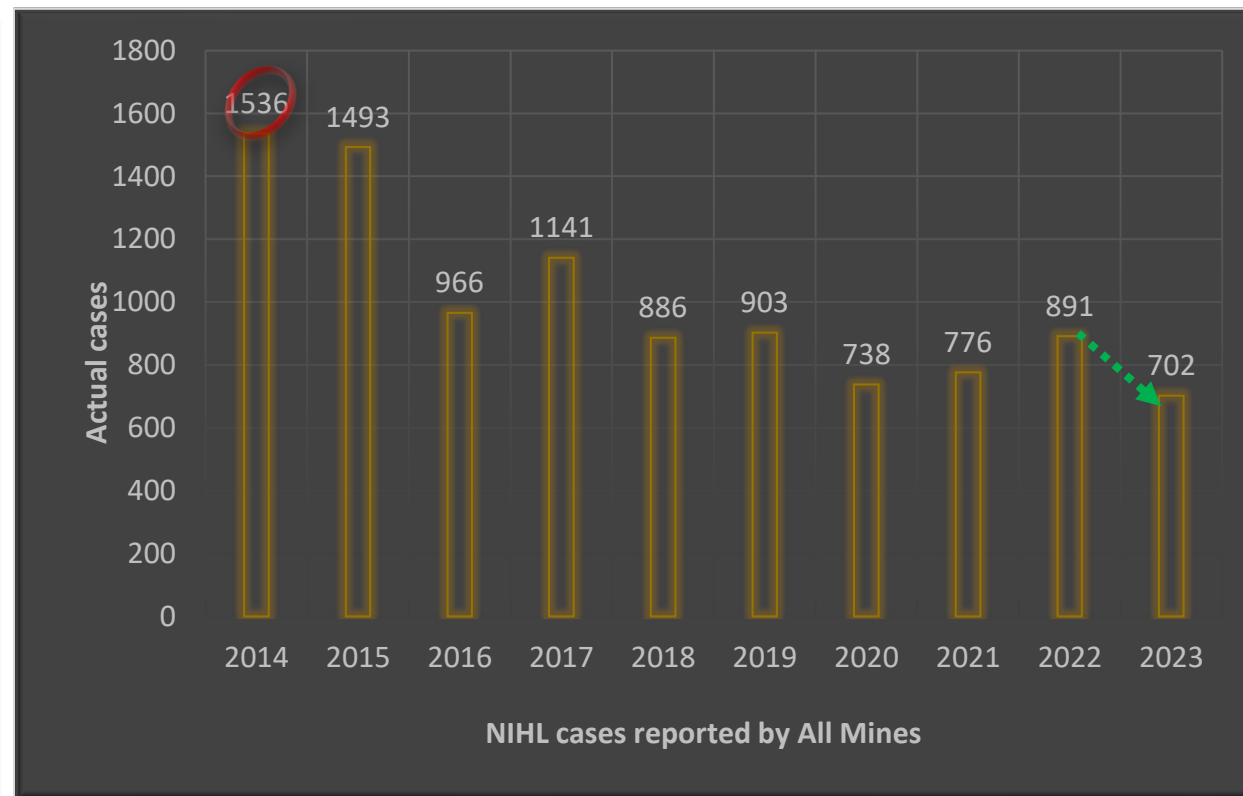
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SAMI'S NOISE AND NIHL TRENDS

Personal noise exposure per HEG



Noise Induced Hearing Loss cases

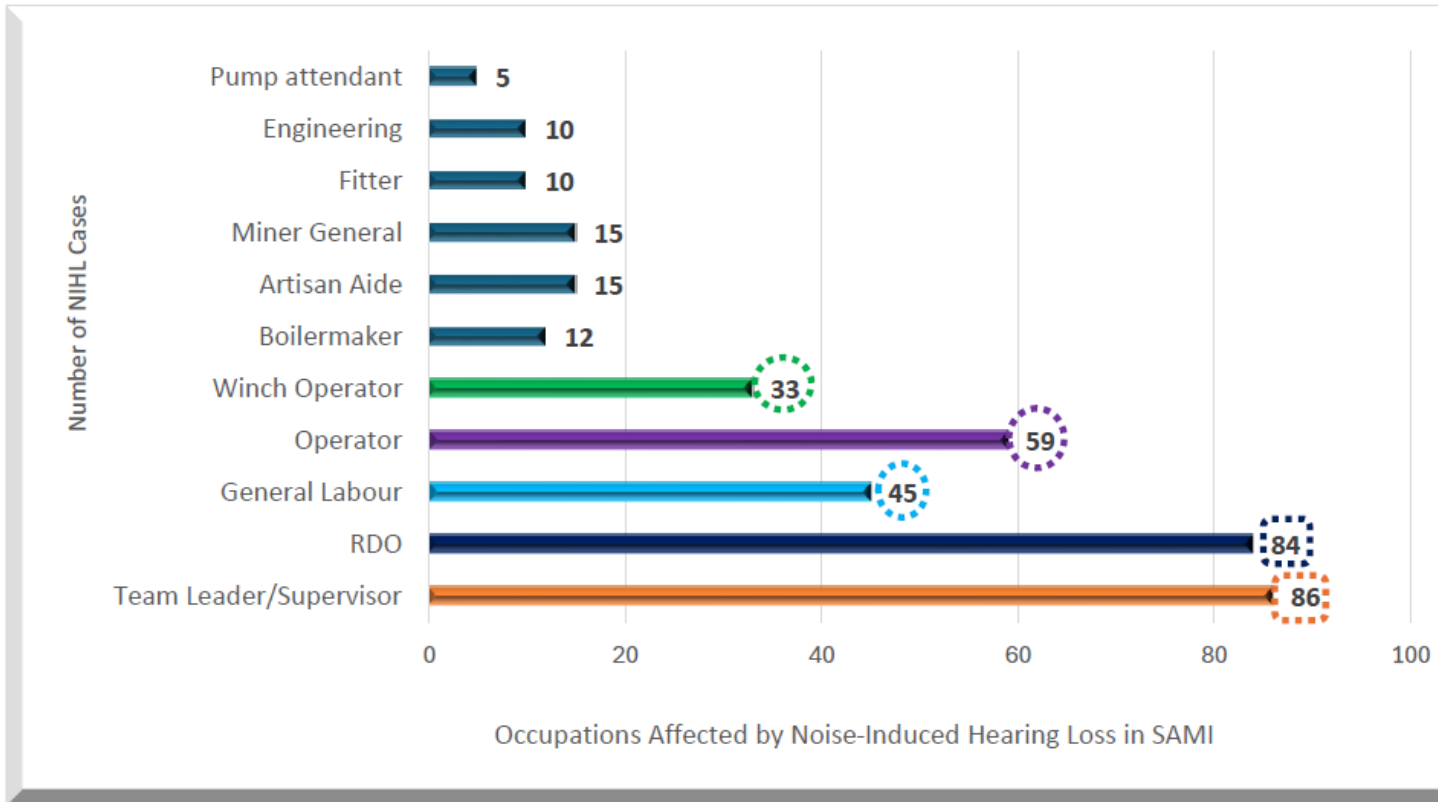


General reduction in NIHL cases over the years.
HIR: 461 cases in 2023/2024 and 407 in 2024/2025

Source: DMPR

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NIHL HIGH RISK POPULATIONS IN SAMI



Reports of other occupational diseases from the same population group.
Incl: Occupational Lung Diseases & Musculoskeletal Diseases and heat related illnesses.

HIR Q4 2024/2025: 407 NIHL Cases

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ELIMINATION NIHL MILESTONES: 2003-2024

• Quietening of Equipment:

By December 2013: the total noise emitted by all equipment installed in any workplace < of **110dB(A) SPL** at any location in that workplace

• Preventing NIHL

After December 2008: deterioration in hearing < 10% amongst occupationally exposed individuals.

2003

2014

• Quietening of Equipment:

By December 2024, the total operational or process noise emitted by any equipment < **107 dB(A) SPL**.

• Preventing NIHL

By December 2016, no employee's STS will exceed 25 dB from the baseline when averaged at 2000, 3000 and 4000 Hz in one or both ears

• Quietening of Equipment:

• By December 2034, the noise emitted by individual pieces of equipment operated by employees and individual process equipment < **104 dB(A) SPL**.

• Preventing NIHL

• Using current diagnostic methods, by December 2034, there should be **no novice** cases of **NIHL** amongst previously unexposed individuals.

2024

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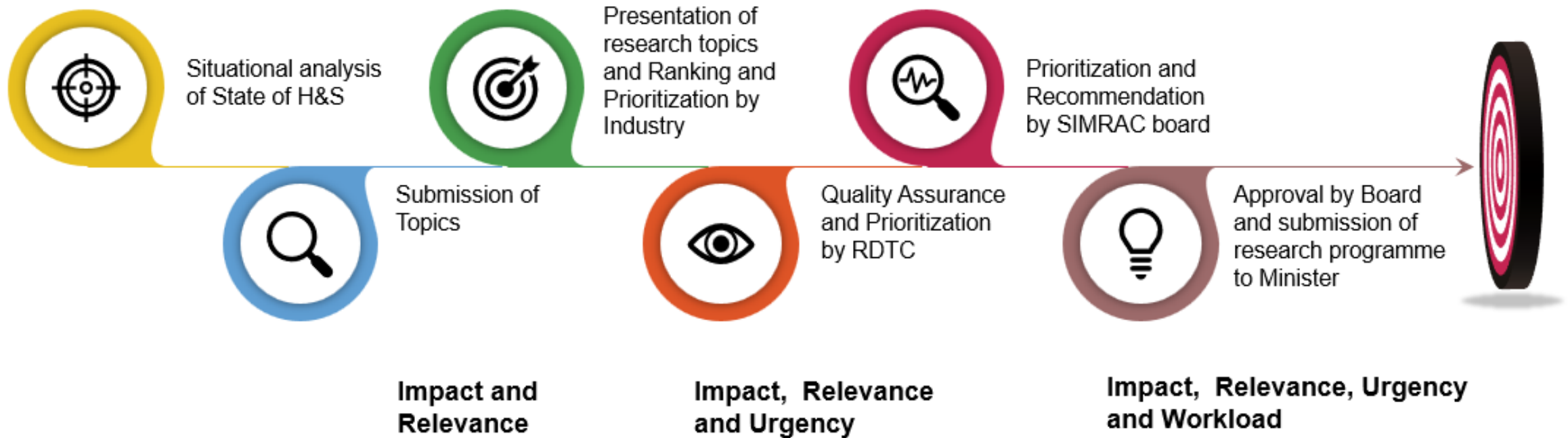
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2024 PROPOSED SAP INITIATIVES FOR NIHL

Elimination of NIHL Initiatives	Responsibility
Review and disseminate previous research outcomes related to noise to assist in achieving new milestones. (Past 15 years research)	Lead: MHSC Support: Tripartite
<i>Develop a system to evaluate the effectiveness of current noise engineering controls to achieve the milestones and improve them</i>	Lead: Employers Support: DMPR and OL
<i>Prioritisation of adoption of the leading practices developed by the MOSH Learning Hub</i>	Lead: Employers Support: DMPR and OL
Develop/Review and disseminate educational material on the dangers of noise the importance of control measures available	Lead: MHSC Support: Tripartite Stakeholders
Develop and monitor a national database of industry pieces of equipment	Lead: MHSC and Employers Support: DMPR and OL
Increase OEM participation in health initiatives	Lead: MHSC and Tripartite Stakeholders
<i>Explore innovative technologies to strengthen screening and enable early detection of NIHL</i>	Lead: Employers Support: OL
Targeted interventions to reduce further exposure among other employees and to reduce further diseases regression	Lead: Employers Support: OL
Identify a better early lagging indicator for NIHL/ Improve STS guidance note	Lead: MHSC MOHAC Support: Industry Experts

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DETERMINATION AND PRIORITIZATION PROCESS OF MHSC RESEARCH TOPICS



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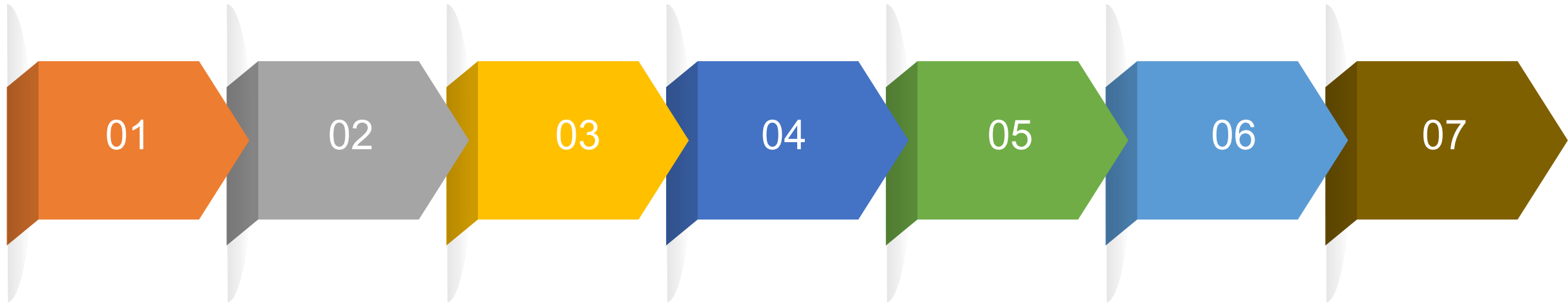
NEW NOISE RESEARCH AT MHSC TO SUPPORT REDUCTION ON NOISE EXPOSURE AND ELIMINATION OF NIHL

CoE 190701 “Refinement of the underground equipment noise prediction model, developed as part of SIM 120501”

CoE 230701 “The application of noise equipment frequency analysis in noise risk management for early detection of noise induced hearing loss”

CoE 230803 “What impact does the use of in-ear headphones connected to technology devices have on the development of Noise Induced Hearing loss”

“Investigate the effectiveness of current hearing conservation programs in SAMI in preventing Noise Induced Hearing Loss”



CoE 190701 “Refinement of the underground equipment noise prediction model, developed as part of SIM 120501”

CoE 230801 “What will be the appropriate medical surveillance for the truck drivers or roaming employees working at different mines but for one employer?”

“The revision and upgrade of the Hearing Protection Device (HPD) Training and Selection (TAS) Tool.”

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OTHER NOISE RELATED KEY INTERVENTIONS UNDER REVIEW



Investigating **real-time monitoring technologies** and their principles of operation, for developing guidance on the selection and application of appropriate continuous real-time monitoring systems in the SAMI



Developing a **Virtual Reality Training** Module to Educate South African Mining Workers on the Impact of Noise Exposure.



Investigate **preventive strategies** from hearing loss caused by **ototoxicity** in SAMI.



Investigate the use of **technology such as AI in enhancing medical surveillance** of NIHL and OLDs in SAMI / Investigate the use of AI and other technology in screening and detection of NIHL and OLDs in SAMI.



Analyze and improve the current system used for **investigation of health incidence and health threatening occurrences**.



Investigate and assess the **relationship between exposure to environmental stressors in South African mines and Non-communicable diseases**.



Investigating the challenges of poor management and maintenance of controls to derive **improved control maintenance strategies**

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2027/2028 RESEARCH PROGRAMME. CALL FOR TOPICS SUBMISSION

[Stakeholder Input to the
MHSC 2027/2028 Annual
Mining Occupational
Health & Safety](#)

MHSC 2027/2028 ANNUAL MHS RESEARCH PROGRAMME: EVIDENCE-BASED RESEARCH MOTIVATION
1. Research question to be addressed Health and/Safety problem to be researched
2. Background/motivation for the research question
3. Expected outcomes of the research
4. Proposed Study Mines/Sites
5. Name and contact details of the originator of the project
Name:
Phone:
Email address:

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THANK YOU

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