OCCUPATIONAL HEALTH

1. INTRODUCTION

In terms of section 11(5B) of the Mine Health and Safety Act (MHSA), Act No. 29 of 1996, as amended; the employer must notify the Principal Inspector of mines (PIoMs) of any occurrence at the mine that results in serious illness or death of any person. The employers must submit to the PIoMs the Health Incident Reports (HIRs); DMRE 231 Forms completed by the Occupational Medical Practitioners (OMPs) on monthly basis to report occupational diseases diagnosed amongst mine employees during medical surveillance.

2. PREAMBLE

The International Labour Organization (ILO) defines occupational diseases as:

- diseases acquired during work; and
- according to medical science having been triggered by exposure at work significantly higher than that of the average population; and
- classified by legislation as such.

In collating and interpreting statistics, it must be borne in mind that many occupational diseases, such as those due to noise at work, crystalline silica, respirable coal dust, platinum mine respirable dust or asbestos dust, are lagging indicators of occupational health and only show their onset years or decades after exposure have ended. Diagnosed/confirmed or compensated cases therefore often reflect the workplace situation of many years ago and do not necessarily reflect the current state of health protection at work (ILO).

3. OVERVIEW OF OCCUPATIONAL MEDICINE PERFORMANCE

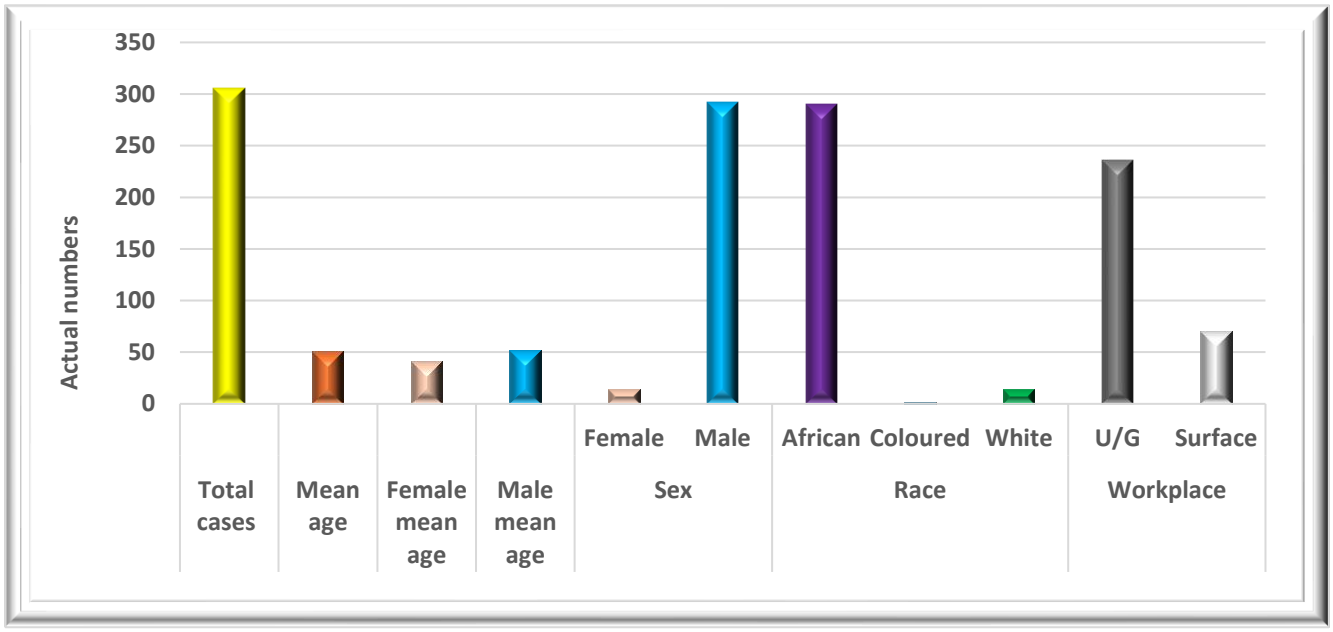
The 306 occupational diseases reported during April-June 2024/24 shows a decrease of 13.56%, compared to 354 cases reported during the same period in the previous year. The analysis showed that the reported cases have a mean age of 51.2 years**,** as illustrated in the figure below.

Formula for mean (average) age.
Total age of all employees ÷ total number of cases reported = years mean age

4. ANALYSIS OF DEMOGRAPHIC DATA OF REPORTED CASES

More males than female employees were reported, as more African than White and Coloured employees. The analysis showed that 77.12% of employees work underground, as outlined in the figure below.

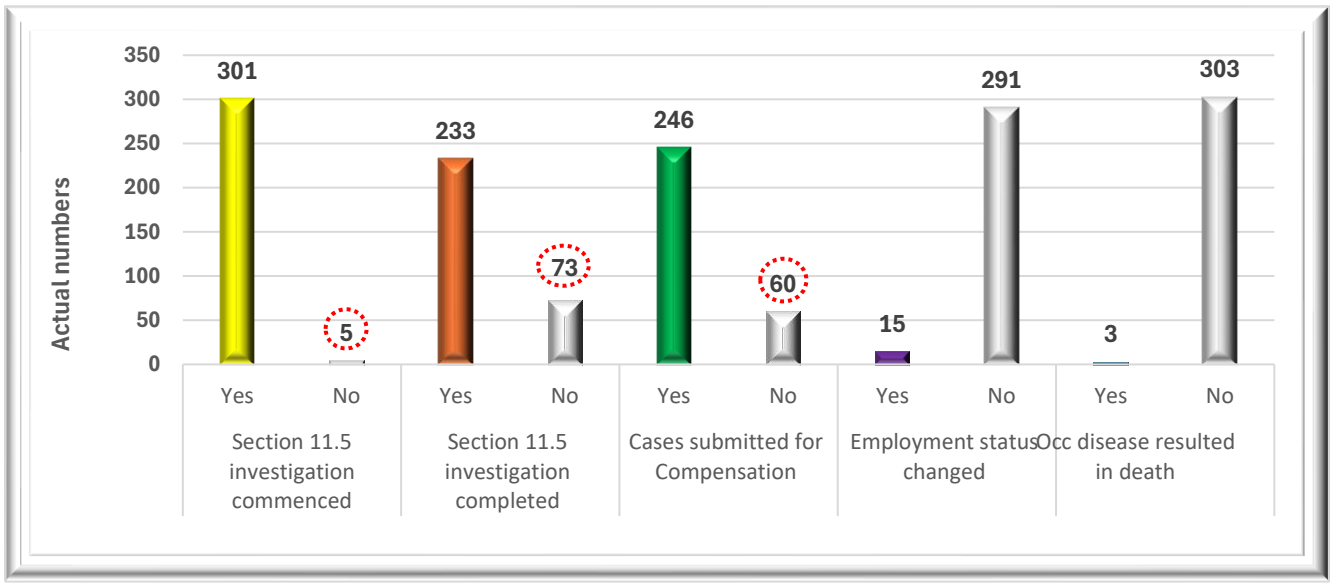
Figure 4.1: Demographic data on reported cases



5. INVESTIGATION AND SUBMISSION STATUS ON OCCUPATIONAL DISEASES

Section 11.5 of the MHSA requires the employer to conduct an investigation into every serious illness on a mine. Investigations were commenced on 301 cases, as outlined in the figure below. Five cases were not investigated due to the following reasons: two cases of pulmonary tuberculosis (PTB) from gold mines as employees were hospitalized, one noise induced healing loss (NIHL) case from a platinum mine as the employer discharged the employee prior the investigation, one PTB and one multidrug-resistant TB (MDR-TB) cases as both employees were on sick leave. Statistics showed that 76.14% of investigations were completed, 80.39% of cases were submitted for compensation and employment status changed on 4.90% of cases. Three respiratory-related cases resulted in the death of employees.

Figure 5.1: Section 11.5 Investigations, compensation submission status and employment status change



6. OCCUPATIONAL DISEASES REPORTED

6.1 ANALYSIS OF OCCUPATIONAL DISEASES PER REGION

A notable increase on the cases reported is a follows: KwaZulu-Natal, Mpumalanga, and Northern Cape regions. A decrease was noted on cases from the Eastern Cape, Free State, Gauteng, Limpopo, North-West: Klerksdorp and North-West: Rustenburg regions, as shown in the table below. The cases from Western cape region remained unchanged at one case for both reporting periods.

Calculation of the percentage change:
(Current total–previous total/previous total* 100 = % change

((306-354)/354)*100= -13.56%

TABLE 6.1: Analysis of occupational diseases reported per region: April-June 2024/25 vs April-June 2023/24

	EC		FS		GR		KZN		LP		Mpu		NC		NWK		NW R		WC		TOTAL	
	Q1 2023/24	Q1 2024/25	Q1 2023/24	Q1 2024/25	Q1 2023/24	Q1 2024/25	Q1 2023/24	Q1 2024/25	Q1 2023/24	Q1 2024/25	Q1 2023/24	Q1 2024/25	Q1 2023/24	Q1 2024/25	Q1 2023/24	Q1 2024/25	Q1 2023/24	Q1 2024/25	Q1 2023/24	Q1 2024/25	Q1 2023/24	Q1 2024/25
PTB	2	0	10	16	34	29	0	6	5	3	10	17	7	9	43	14	35	44	0	0	146	138
Sil+TB	0	0	2	0	0	0	0	0	0	0	0	0	0	0	3	2	0	1	0	0	5	3
MDR-TB	0	0	1	0	1	3	0	1	0	1	0	0	0	0	0	0	1	2	0	0	3	7
XDR-TB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Silicosis	0	0	23	10	11	14	0	0	0	0	0	0	0	0	7	3	1	0	0	0	42	27
Asbestosis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CWP	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	1	3
COAD	0	0	11	0	0	1	0	0	0	0	1	1	0	0	2	0	8	0	0	0	22	2
Occ asthma	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	1
Occ lung cancer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
NIHL	3	0	10	5	40	35	1	1	9	5	1	11	1	2	6	7	50	45	1	1	122	112
Occ skin diseases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Platinum salt sensitivity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Musculoskeletal disorders	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	6
Progressive massive fibrosis	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
Other occ diseases*	0	0	0	0	2	1	0	0	0	0	0	0	0	2	0	0	4	3	0	0	6	6
Total	**5**	**0**	**57**	**31**	**93**	**84**	**1**	**8**	**14**	**9**	**14**	**32**	**8**	**16**	**61**	**27**	**100**	**98**	**1**	**1**	**354**	**306**

**Other occupational diseases include (e.g., extra pulmonary tuberculosis, miliary tuberculosis, sarcoidosis, bronchiectasis, anthracosis).*

6.2 ANALYSIS OF OCCUPATIONAL DISEASES BY COMMODITY

The cases reported from the gold, platinum and diamond mines have shown a decrease. Despite an overall decrease noted, the cases from coal, chrome, manganese, iron ore and other mines have increased compared to the same period in 2023/24, as outlined in the table below.

TABLE 6. 2: Analysis of occupational diseases reported by commodity: April-June 2024/25 vs April-June 2023/24

	Gold		Platinum		Coal		Diamond		Copper		Chrome		Manganese		Iron Ore		Other mines*		TOTAL		Percentage change
	Q1 2023/24	Q1 2024/25	Q1 2023/24	Q1 2024/25	Q1 2023/24	Q1 2024/25	Q1 2023/24	Q1 2024/25	Q1 2023/24	Q1 2024/25	Q1 2023/24	Q1 2024/25	Q1 2023/24	Q1 2024/25	Q1 2023/24	Q1 2024/25	Q1 2023/24	Q1 2024/25	Q1 2023/24	Q1 2024/25	
PTB	87	61	39	41	9	18	3	1	0	0	2	7	2	3	2	3	2	4	146	138	-5.48
Sil+TB	5	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3	-40.00
MDR-TB	2	3	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	7	133.33
XDR-TB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
Silicosis	41	27	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	27	-35.71
Asbestosis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
CWP	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	1	3	200.00
COAD	13	1	8	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	22	2	-90.91
Occ asthma	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	-50.00
Occ lung cancer	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	#DIV/0!
NIHL	55	46	57	46	2	11	2	1	0	0	2	4	0	0	0	1	4	3	122	112	-8.20
Occ skin diseases	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	-100.00
Platinum salt sensitivity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
Musculoskeletal disorders	0	0	0	3	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	6	#DIV/0!
Progressive massive fibrosis	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	-100.00
Other occ diseases**	2	1	4	2	0	0	0	0	0	0	0	1	0	0	0	1	0	1	6	6	0.00
Total	210	142	111	96	14	33	5	2	0	0	4	12	2	4	2	7	6	10	354	306	-13.56
Percentage change	-32.38		-13.51		135.71		-60.00		#DIV/0!		200.00		100.00		250.00		66.67		-13.56		

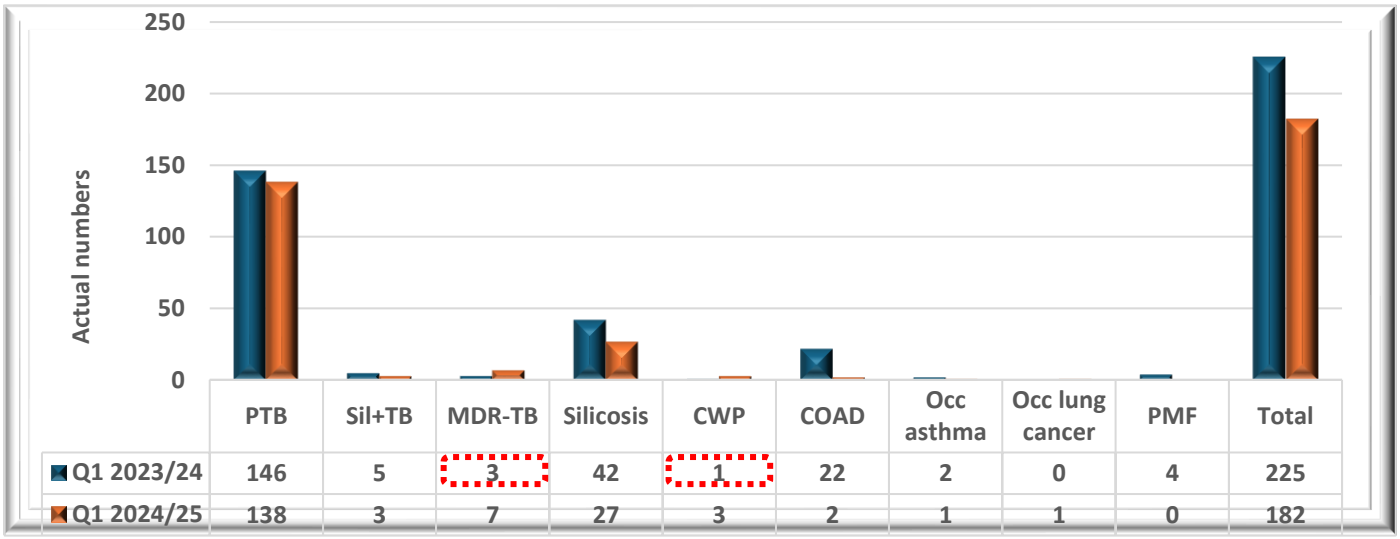
*Other mines include hard rock (e.g., cobalt, dolerite, granite, limestone, magnesite, mica) and soft rock (e.g., clay, dolomite, salt, sand, shale, titanium, vanadium)
**Other occupational diseases include (e.g., extra pulmonary tuberculosis, miliary tuberculosis, sarcoidosis, bronchiectasis, anthracosis)

7. ANALYSIS OF MOST PREVALENT OCCUPATIONAL DISEASES IN SAMI

7.1 OCCUPATIONAL LUNG DISEASES (OLD)

There is a notable decrease of 19.11% on number of occupational lung diseases (OLD) reported as illustrated in the figure below. A slight increase was noted on the MDR-TB and CWP cases reported. The OLD include Pulmonary tuberculosis (PTB), Silico-tuberculosis (Sil+TB), Multidrug-resistant TB (MDR-TB), Silicosis, Coal workers' pneumoconiosis (CWP), Chronic Obstructive Airways Disease (COAD), Occupational asthma, Occupational lung cancer, and Progressive massive fibrosis (PMF).

FIGURE 7.1: OCCUPATIONAL LUNG DISEASES (OLD)



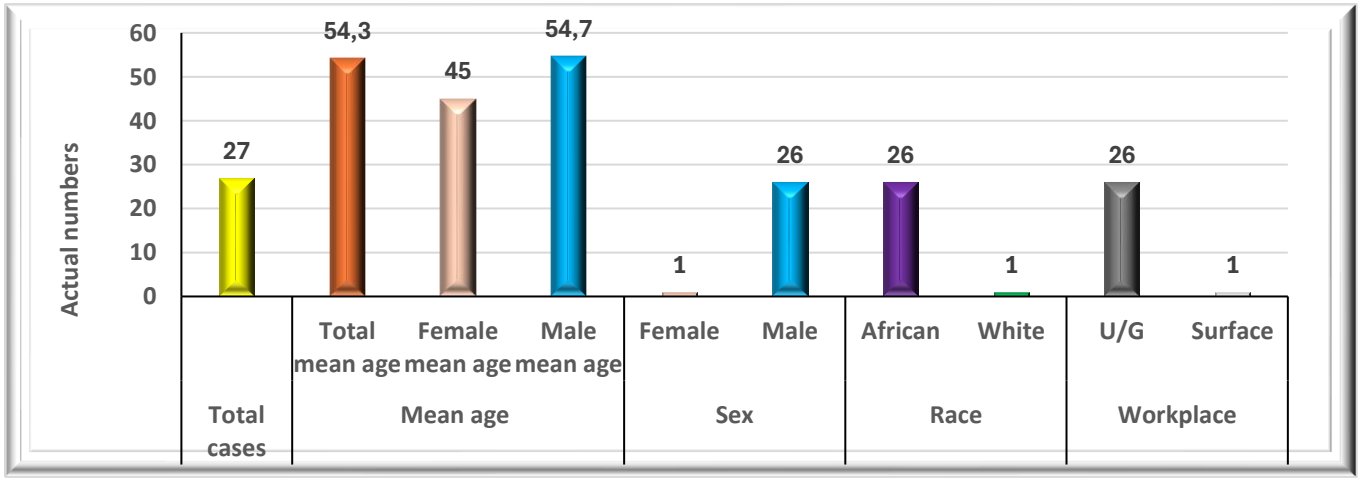
	PTB	Sil+TB	MDR-TB	Silicosis	CWP	COAD	Occ asthma	Occ lung cancer	PMF	Total
Q1 2023/24	146	5	3	42	1	22	2	0	4	225
Q1 2024/25	138	3	7	27	3	2	1	1	0	182

7.2 PRIMARY PNEUMOCONIOSIS

7.2.1 Silicosis

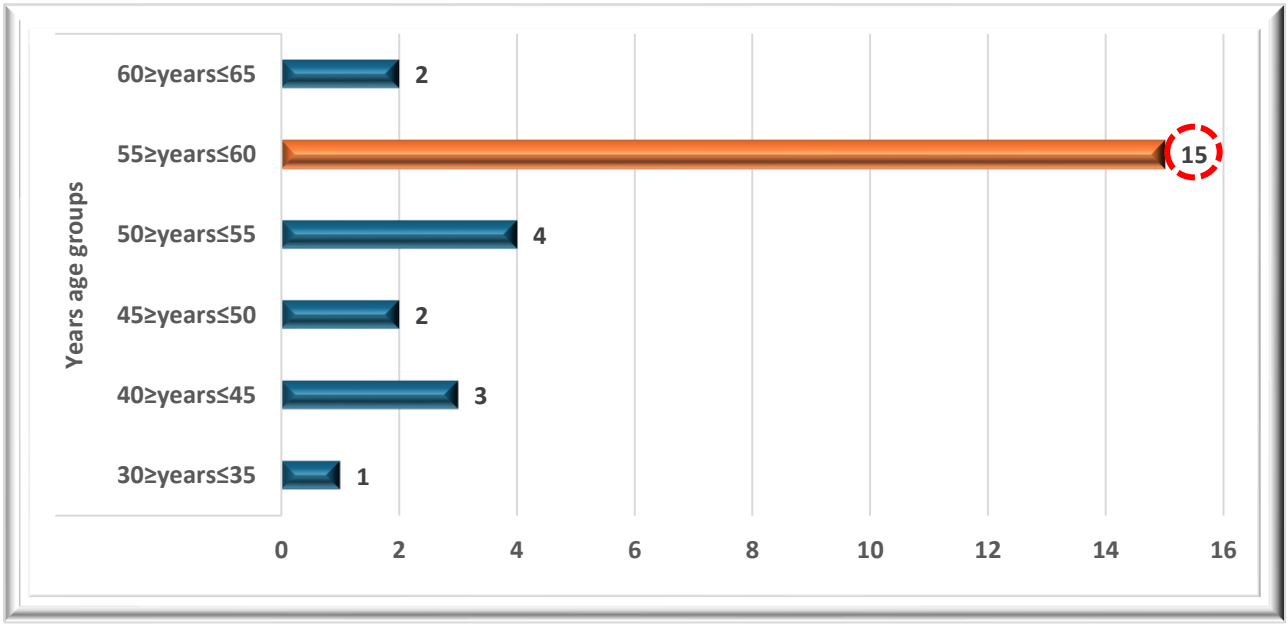
The gold sector reported 27 silicosis cases, as outlined in the figure below.

FIGURE 7.2.1(a) Demographic data on silicosis cases reported



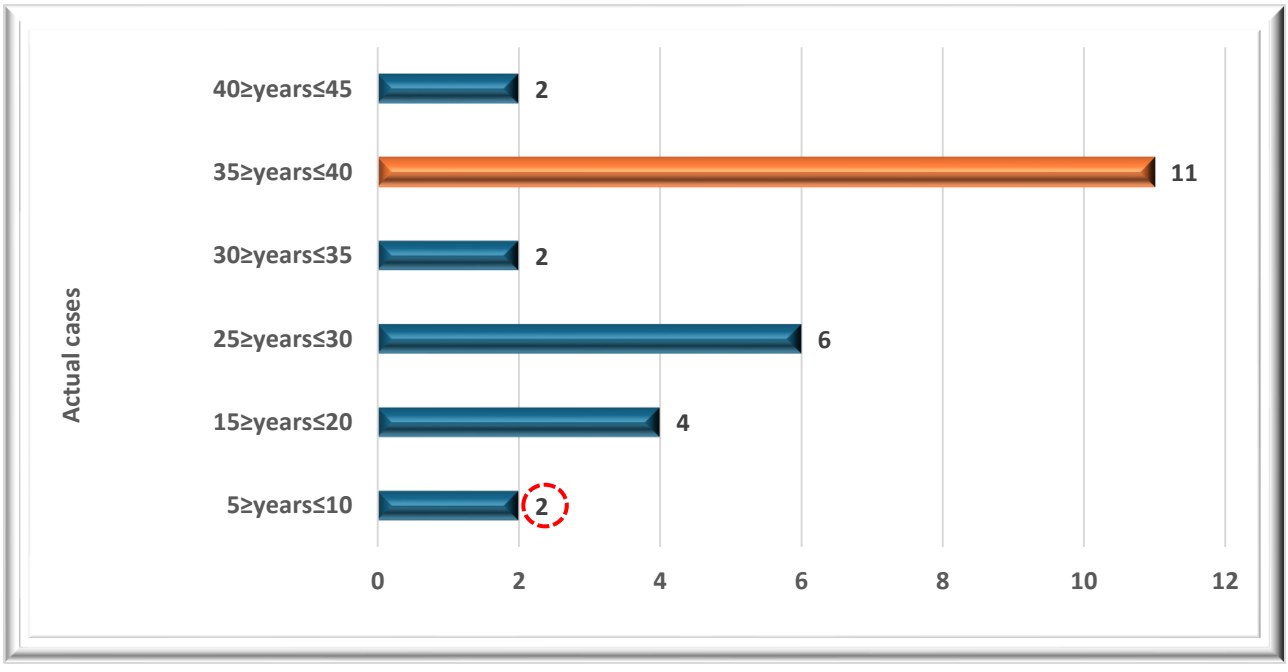
Most silicosis cases reported were within 55-60 years age group, as outlined in the figure below.

FIGURE 7.2.1(b) Silicosis cases by years age groups



The analysis showed that two silicosis cases reported have 5 and 9 years of active service in the mining industry, respectively as illustrated in the figure below. The respective regions have been engaged for planned focused inspections to determine the possible novice silicosis status of cases

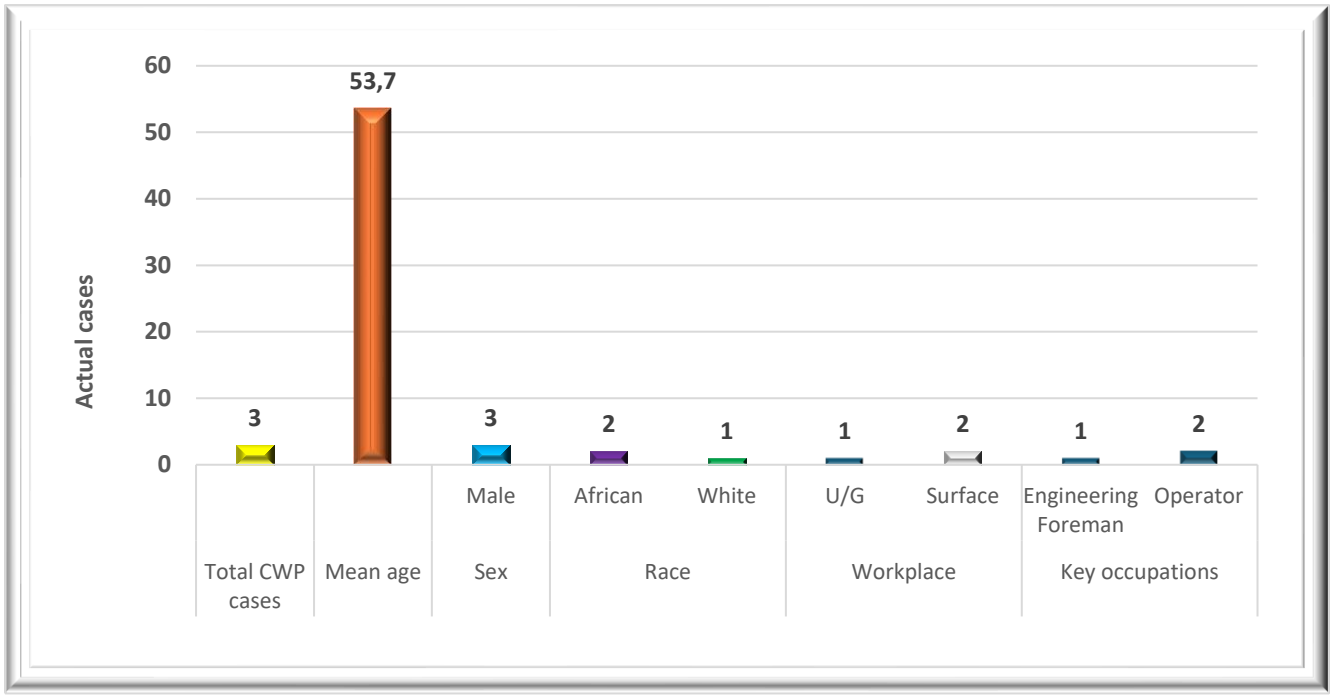
FIGURE 7.2.1(c) Silicosis cases by years of active service in the mining industry



7.2.2 Coal worker' pneumoconiosis (CWP) cases

A total of three coal worker' pneumoconiosis (CWP) cases were reported. The CWP cases have a mean age of 53.7 years, as outlined in the figure below.

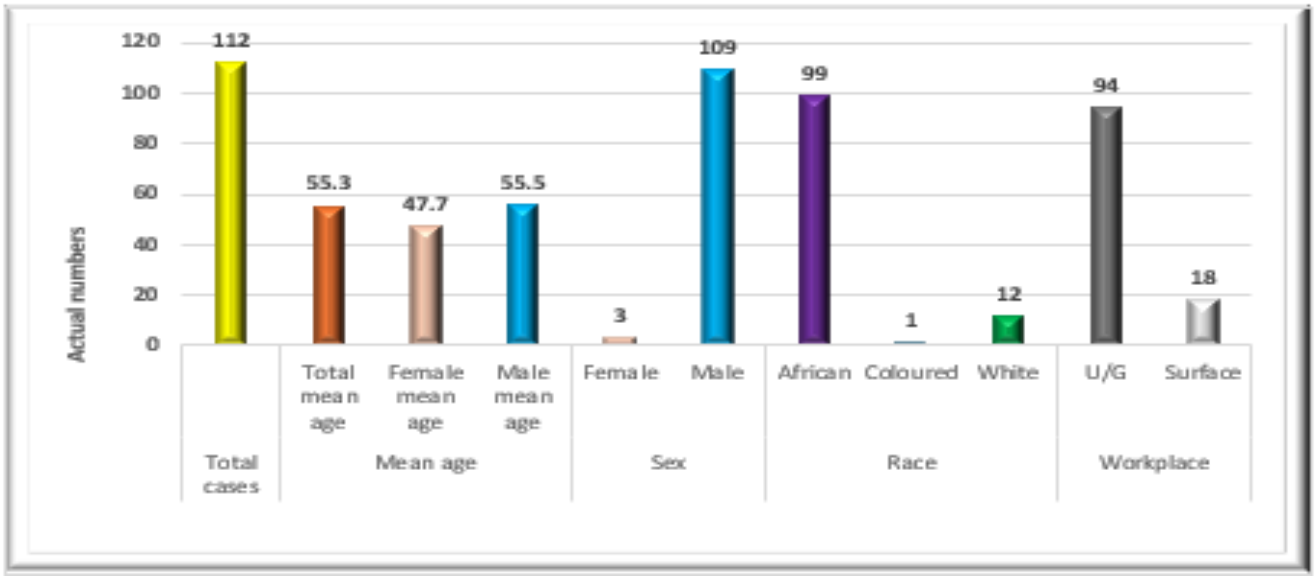
FIGURE 7.2.2: Demographic data on coal worker' pneumoconiosis (CWP) cases



7.3 NOISE-INDUCED HEARING LOSS (NIHL)

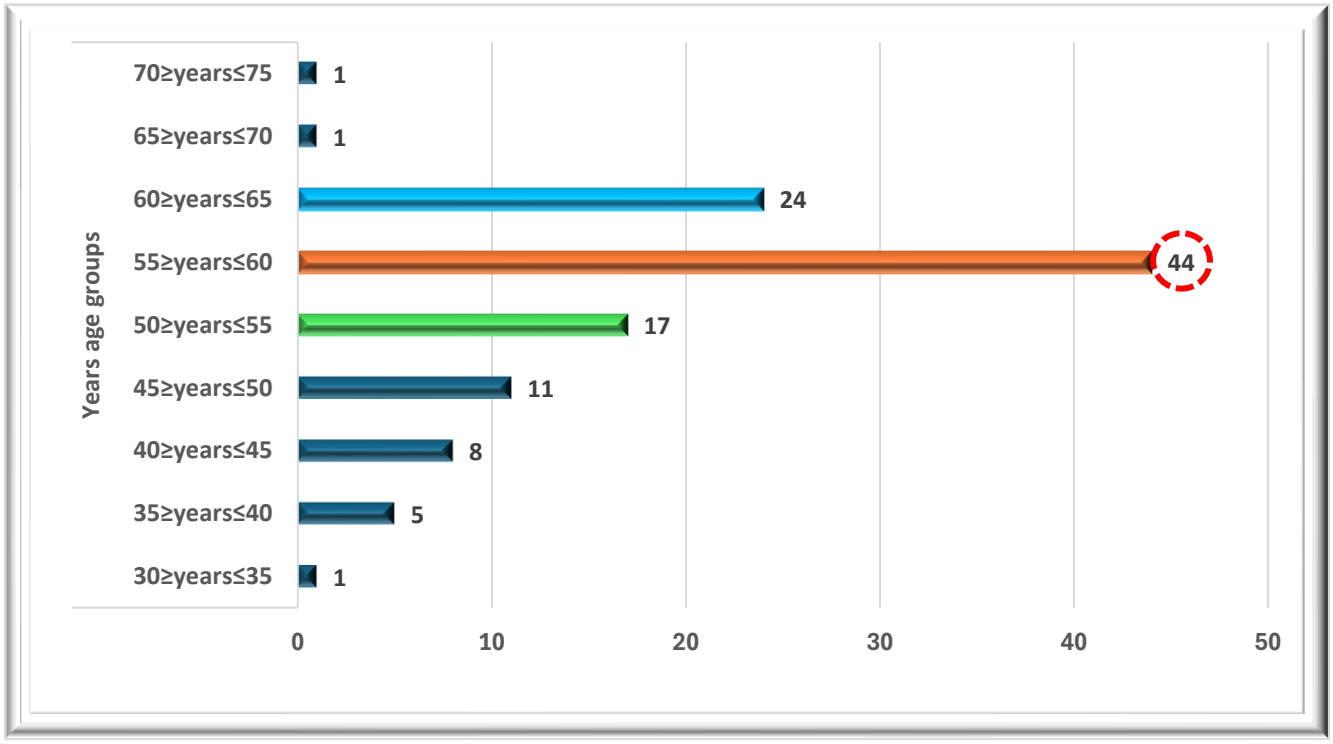
The mines reported 112 noise induced hearing loss (NIHL) cases, and the mean age for cases is 55.3 years. The females constituted 2.68% of the reported cases, as illustrated in the figure below.

FIGURE 7.3(a): Demographic data on noise induced hearing loss (NIHL) cases



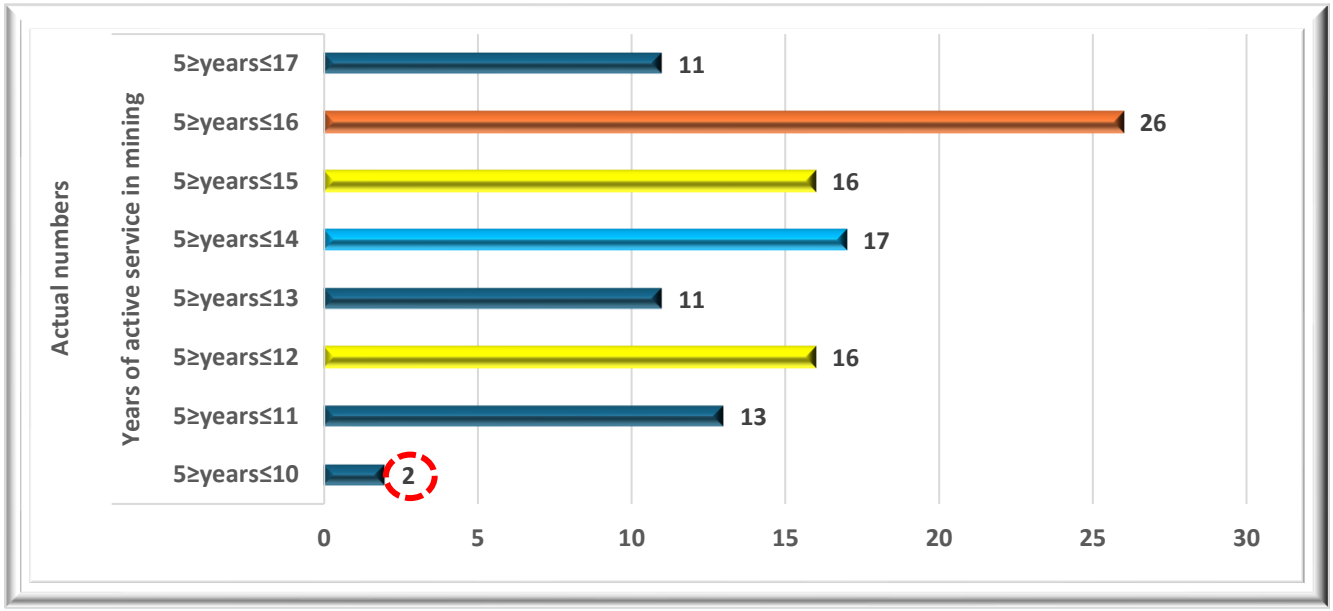
Statistics showed that most NIHL cases were between 55-60 years, which constituted 39.29% of the total cases reported, as outlined in the figure below.

FIGURE 7.3(b): Analysis of NIHL by years age groups



The analysis of NIHL showed two cases with 5 and 9 years of active service in mining, as shown in the figure below. This is a concern considering that mines should establish and implement effective hearing conservation programmes.

FIGURE 7.3(c): Analysis of NIHL by years of active service in mining



7.3.1 Noise induced hearing loss (NIHL) cases from gold mines

The gold mines reported 46 noise induced hearing loss (NIHL) cases as outlined in the table below. The employee is a 65-year-old male, underground Plant Operator with 6 years of service in mining based on the date of engagement from 06/11/2018. The employee was diagnosed on 13/05/2024 with 46.80% percentage loss of hearing (PLH), which denotes a deterioration of 45.7% PLH shift from 1.10% baseline audiogram. The section 11.5 investigation commenced on the diagnosis date but had not completed at the time of reporting. The case was not submitted for compensation and the employment status did not change. The region has been engaged on the case.

TABLE 7.3.1: Analysis of NIHL cases from gold mines

Gold	Years of service	Percentage loss of hearing (PLH)									
		10-15%	16-20%	21-25%	26-30%	31-35%	36-40%	41-45%	46-50%	>50%	Total
	1 - 5	0	0	0	0	0	0	0	0	0	0
	6 - 10	0	0	0	0	0	0	0	1	0	1
	11-15	3	0	0	1	0	1	0	0	0	5
	16 - 20	1	0	0	1	0	0	0	0	0	2
	21-25	2	1	0	0	0	0	0	0	0	3
	26-30	5	3	2	0	0	0	0	0	0	10
	31-35	4	1	0	3	1	0	0	0	0	9
	36-40	6	3	2	0	0	1	2	0	0	14
	41+	1	0	1	0	0	0	0	0	0	2
	Total	22	8	5	5	1	2	2	1	0	46

7.3.2 Noise induced hearing loss (NIHL) cases from platinum mines

A total of 46 NIHL cases were reported from the platinum mines, illustrated in table below. The employee is a 61-year-old male, underground Winch Operator with 9 years of service in mining based on his date of engagement from March 2015. The employee was diagnosed on 26/04/2024 with 20.50% percentage loss of hearing (PLH), indicating a deterioration of 19.4% PLH shift from 1.10% baseline audiogram. The section 11.5 investigation commended on 03/05/2024 and was completed, the case was submitted for compensation and the employment status did not change. The region has been engaged on the case.

TABLE 7.3.2: NIHL cases from platinum mines

		Percentage loss of hearing (PLH)									
		10-15%	16-20%	21-25%	26-30%	31-35%	36-40%	41-45%	46-50%	>50%	Total
Platinum	1 - 5	0	0	0	0	0	0	0	0	0	**0**
	6 - 10	0	1	0	0	0	0	0	0	0	**1**
	11-15	1	0	1	1	0	0	0	0	0	**3**
	16 - 20	4	3	2	1	0	0	0	0	0	**10**
	21-25	2	0	0	2	0	0	0	0	0	**4**
	26-30	3	0	2	0	0	1	0	0	0	**6**
	31-35	3	0	1	0	0	0	0	0	0	**4**
	36-40	5	3	0	0	1	0	1	0	1	**11**
	41+	2	3	2	0	0	0	0	0	0	**7**
Years of service	Total	20	10	8	4	1	1	1	0	1	**46**

7.3.3 Noise induced hearing loss (NIHL) cases from coal mines

The coal mines reported a total of 11 NIHL cases, as illustrated in the table below.

TABLE 7.3.3: NIHL cases from coal mines

		Percentage loss of hearing (PLH)									
		10-15%	16-20%	21-25%	26-30%	31-35%	36-40%	41-45%	46-50%	>50%	Total
Coal	1 - 5	0	0	0	0	0	0	0	0	0	**0**
	6 - 10	0	0	0	0	0	0	0	0	0	**0**
	11-15	0	0	0	1	0	0	0	0	0	**1**
	16 - 20	3	0	0	0	0	0	0	0	0	**3**
	21-25	0	0	0	0	0	2	0	0	0	**2**
	26-30	2	0	0	0	0	0	0	0	0	**2**
	31-35	0	0	0	0	1	0	0	0	0	**1**
	36-40	1	0	0	0	0	0	0	0	0	**1**
	41+	1	0	0	0	0	0	0	0	0	**1**
Years of service	Total	7	0	0	1	1	2	0	0	0	**11**

7.3.4 Noise induced hearing loss (NIHL) cases from chrome mines

A total of four NIHL cases were reported from the chrome mines, as illustrated in the table below.

TABLE 7.3.4: NIHL cases from chrome mines

		Percentage loss of hearing (PLH)									
		10-15%	16-20%	21-25%	26-30%	31-35%	36-40%	41-45%	46-50%	>50%	Total
Chrome	1 - 5	0	0	0	0	0	0	0	0	0	**0**
	6 - 10	0	0	0	0	0	0	0	0	0	**0**
	11-15	**1**	0	0	0	0	0	0	0	0	**1**
	16 - 20	0	0	0	0	0	0	0	0	0	**0**
	21-25	0	**1**	0	0	0	0	0	0	0	**1**
	26-30	0	0	0	0	0	0	0	0	0	**0**
	31-35	0	**1**	**1**	0	0	0	0	0	0	**2**
	36-40	0	0	0	0	0	0	0	0	0	**0**
	41+	0	0	0	0	0	0	0	0	0	**0**
	Total	**1**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**4**

7.4 MUSCULOSKELETAL DISORDERS (MSDs)

The mines reported six cases of musculoskeletal disorders (MSDs), as outlined in the table below.

TABLE 7.4(a): Demographic data on musculoskeletal disorders (MSDs)

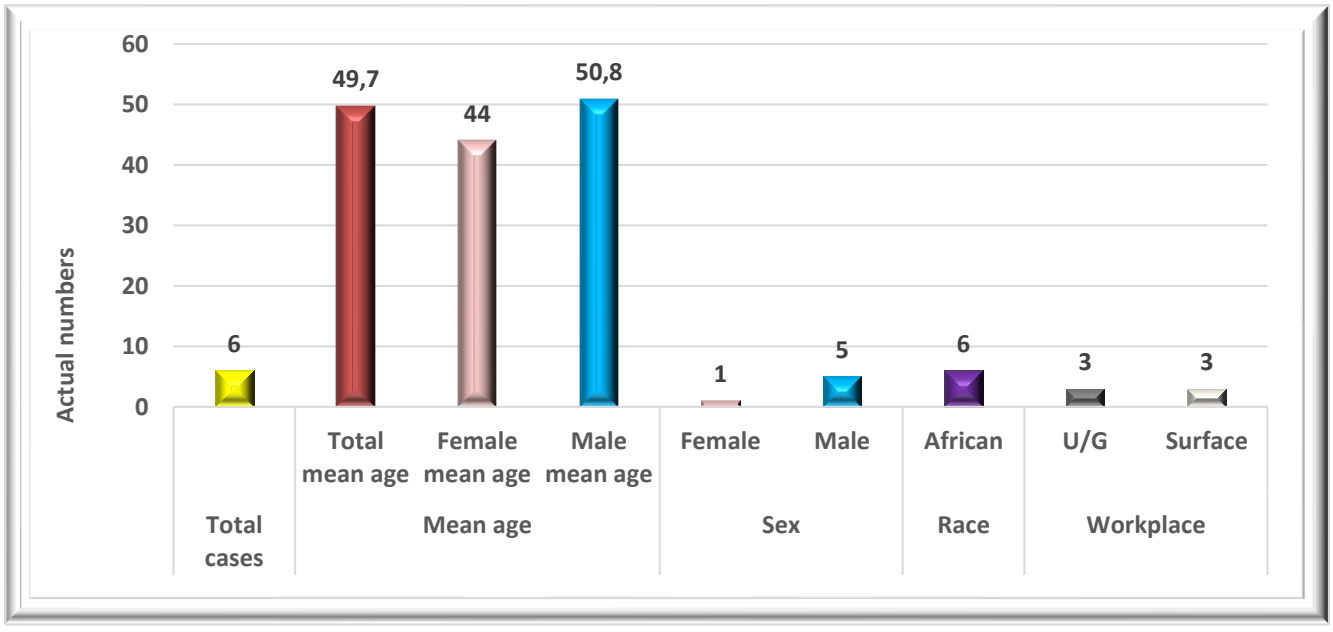
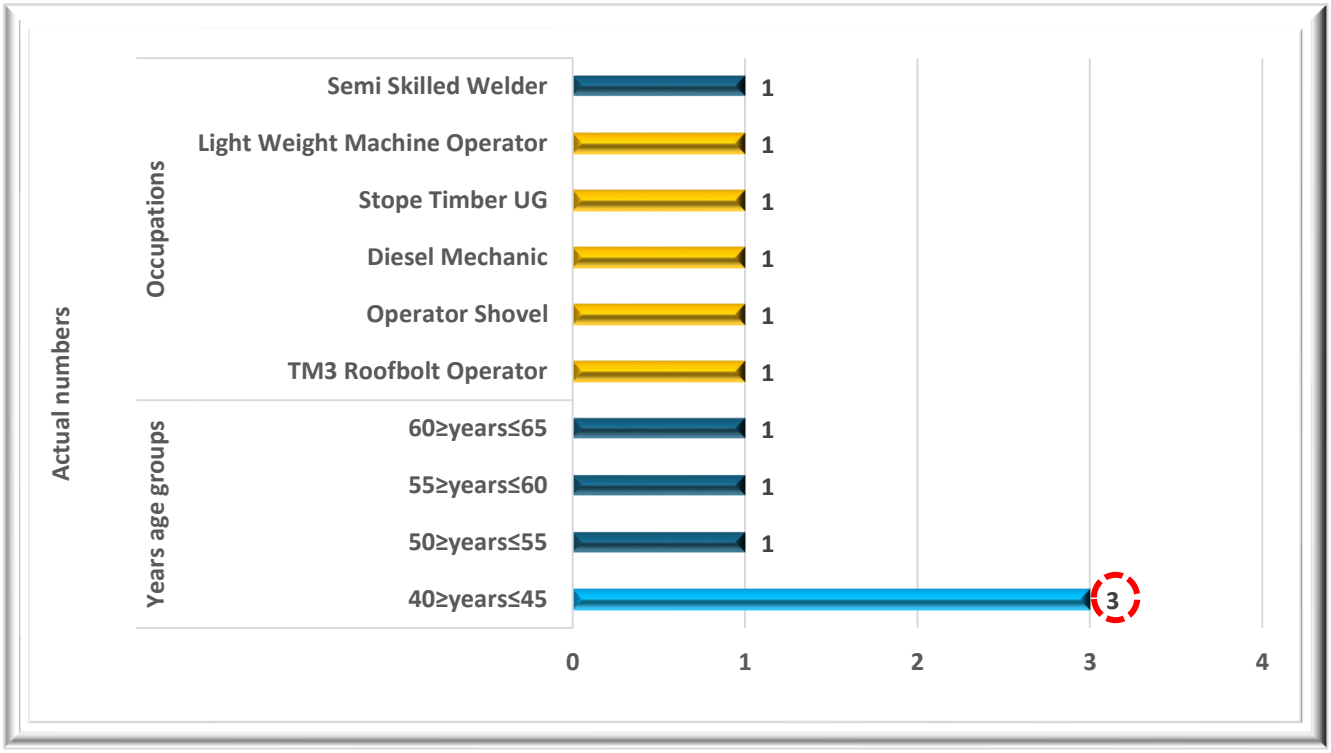


TABLE 7.4(b): Analysis of MSDs by years age groups and occupations



8. DEATH CASES DUE TO WORK-RELATED DISEASES

Three respiratory-related occupational diseases resulted in death of employees.

9. CONCLUSION

A notable decrease is noted on the total occupational diseases reported during April-June 2024/25 compared to cases reported in the same period of 2023/24. The respective regions will be engaged for updates on incomplete section 11.5 investigations and compensation non-submission status.

ANNEXURE A
Definitions and acronyms

COAD	Chronic obstructive airway disease
CWP	Coal Workers' pneumoconiosis
HIRs	Health Incident Reports
MDR-TB	Multidrug-resistant tuberculosis
MHSA	Mine Health and Safety Act
MHSI	Mine Health and Safety Inspectorate
MSDs	Musculoskeletal disorders
NIHL	Noise-induced hearing loss
Occ asthma	Occupational asthma
Occ lung cancer	Occupational lung cancer
OLD	Occupational lung diseases
Other occ diseases	Other occupational diseases
Occ skin diseases	Occupational skin diseases
OMPs	Occupational Medical Practitioners
PIoMs	Principal Inspector of mines
PLH	Percentage loss of hearing
PMF	Progressive massive fibrosis
PSS	Platinum salt sensitivity
PTB	Pulmonary tuberculosis
Sil+TB	Silico-tuberculosis
U/G	Underground
XDR-TB	Extensively drug-resistant tuberculosis
≥	Greater than or equal to
≥-≤	Greater than or equal to and lesser than or equal to

OCCUPATIONAL SAFETY

1. NUMBER OF FATALITIES PER FY QUARTER 1 (April-June 2024)

During the period of April-June 2024, **fourteen (14)** fatalities were reported whilst during the same period in April-June 2023 **eleven (11)** fatalities were reported. This translates to a regression of 27% year on year.

2. STATISTICS OF FATALITIES BY REGION

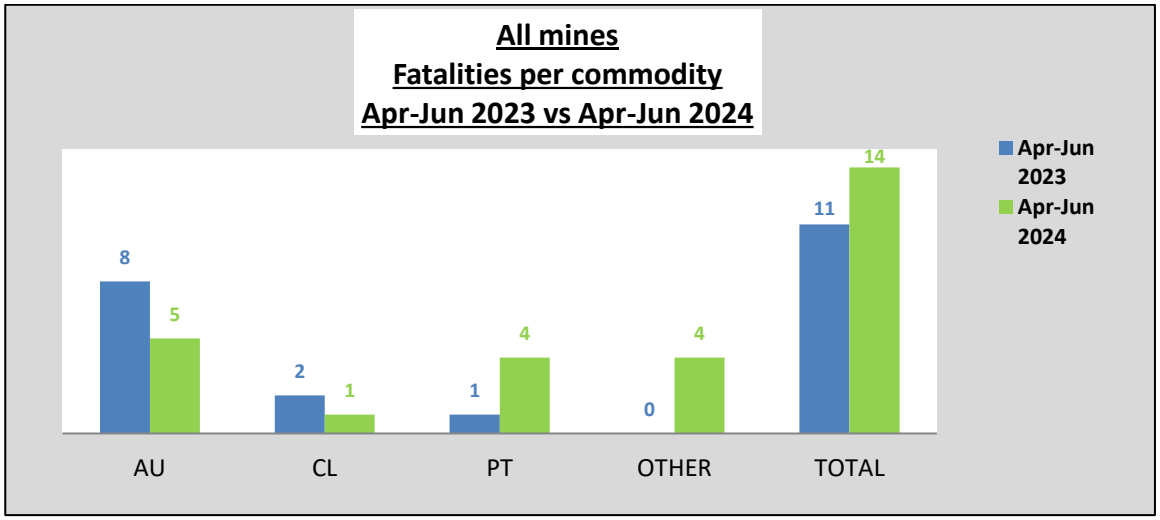
The table below illustrates the progressive performance of each region with regard to fatalities. During the period of April to June 2024, **three (3)** of the **ten (10)** regions had not reported any fatalities.

FATALITIES PER REGION – APRIL 2024 TO JUNE 2024											
	WC	NC	FS	EC	KZN	MP	LP	GP	NW-KLD	NW-RST	TOTAL
FOG		1					1	2			4
MACHINERY		1								1	2
TRANSPORTATION AND MINING											0
GENERAL			1			1		2		2	6
CONVEYANCE											0
EXPLOSIVES AND ACCESSORIES			1								1
HEAT EXAUSTION											0
MISCELLANEOUS	1										1
TOTAL	1	2	2	0	0	1	1	4	0	3	14

3. ANALYSIS OF FATALITIES BY COMMODITY

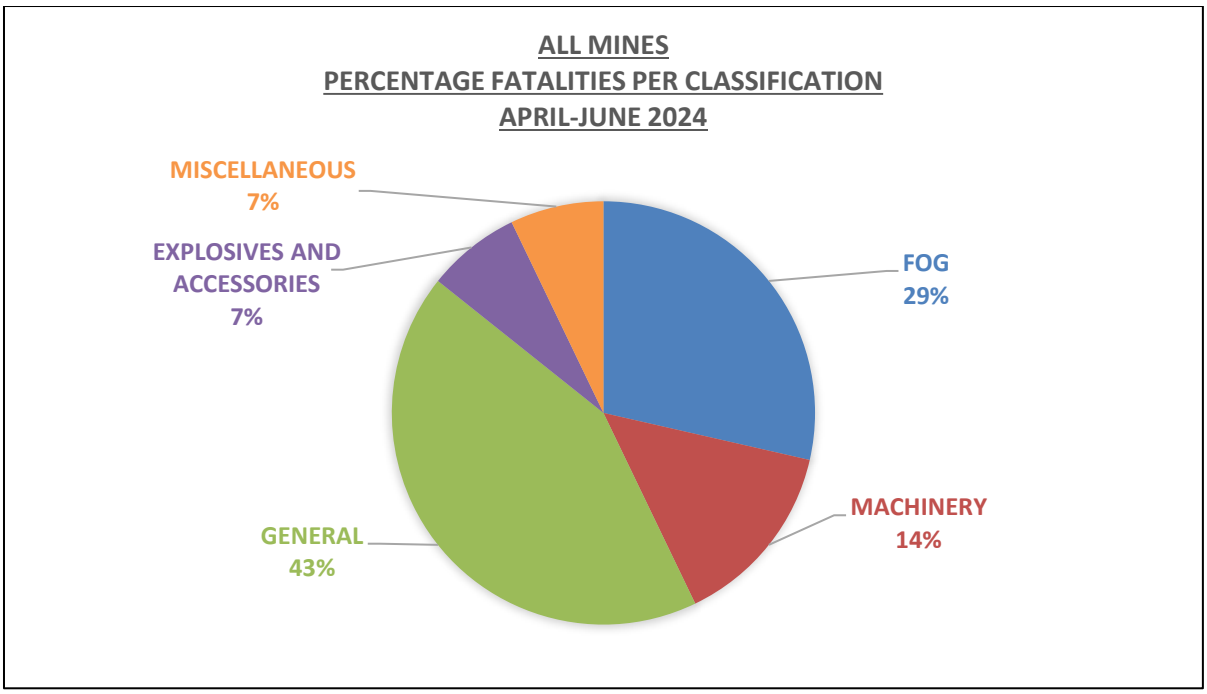
For the purpose of the analysis, commodities are grouped into gold (AU), platinum (PT), coal (CL) and other mines (i.e. zinc, sand, diamond, and mineral sands).

3.1 The comparison of fatalities for the period April to June 2024 and April to June 2023 is reflected on the graph below and shows a decrease of 38% and 50% in the gold and coal sectors respectively, while platinum and other mines sectors show increases of 300% and 400% in the platinum and other mines sectors respectively.



4. ANALYSIS OF FATALITIES BY CLASSIFICATION – ALL MINES

The graph below shows the provisional causes of fatalities per classification for the period under review, April to June 2024:



The provisional classification of fatalities reported in the period under review were as follows, in descending order.

4.1 General (43%)

There were **six (6)** fatalities reported in this category during this period. **Four (4)** were reported in the gold sector, **one (1)** in the platinum sector and **one (1)** in the coal sector.

4.1.1 Sub-classification of general fatalities

Sub-classification	Number	Commodity
Caught between	1	Coal
Engulfed by	1	Sand
Struck by	1	Gold
Fell in	2	Platinum
Pressed against sidewall	1	Gold
TOTAL	**6**	

4.2 Fall of ground (FOG) (29%)

There were **four (4)** fatalities reported in this category during this period. **Two (2)** were reported in the gold sector, **one (1)** at a zinc mine and **one (1)** at a platinum mine. **All four (4)** were gravity induced.

4.3 Machinery (Conveyors) (14%)

There were **two (2)** fatalities reported in this category during this period. **One (1)** was reported at a diamond mine and **one (1)** at a platinum mine.

4.4 Explosives and accessories (7%)

There was **one (1)** fatality reported in this category during this period at a gold mine.

4.5 Miscellaneous (7%)

Miscellaneous classification refers to a fatality the cause of which is yet to be determined, pending investigations, inquiries or post-mortems. There was **one (1)** fatality reported in this category during this period at a mineral sands mine. The now deceased Service Truck Operator was found seemingly asleep on the driver's seat by another Service Truck Operator during shift change over at the designated service truck parking area. After trying to wake up the now deceased, there was no response and paramedics were contacted immediately. The now deceased was declared deceased at the scene

5. CONCLUSION

For the period under review, general fatalities were the highest. Always conducting risk assessments before carrying out any task, getting employees to undergo behavioural safety training and active supervision among others, can eliminate these general fatalities.