



Workplace Safety and Health Report 2022

— National Statistics —



MINISTRY OF
MANPOWER

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NOTATIONS

- : Nil or negligible
- n.a. : Not applicable/Not available
- [N] : See (II) below, applicable to workplace major and minor injury figures from 2021.

Note:

- (I) Data presented in this report reflect revised methodology and improved classification of entities by industries, including the revision due to Singapore Standard Industrial Classification 2015 (version 2018). Data prior to 2013 is strictly not comparable.
 - (II) Prior to January 2021, workplace major and minor injury numbers pertain to injuries sustained by employees that resulted in four or more days of medical leave, or at least 24 hours of hospitalisation. Following the amendments to the Work Injury Compensation Act (WICA) which took effect from September 2020, employers need to report all work injuries with any instance of medical leave or light duties. From January 2021, major and minor injury numbers shared in this report include injuries with at least one day of light duty or medical leave issued. Numbers presented under this new series will be marked with [N].
 - (III) Occupational Disease cases contributed by workplace COVID-19 infections that were previously reported in 2020 and 2021 were removed due to low number of iReports submitted by employers.
 - (IV) Since 2022, a new sub-classification for the Incident Type (Cause) of workplace injuries have been introduced to reprioritise the key areas of concern for better interventions. Incident Type (Cause) of workplace injuries will be further classified based on their fatality risk. Details of this classification can be found in **Annex C4**.
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KEY FACTS

HIGHER RATE OF WORKPLACE FATALITIES IN THE FIRST HALF OF 2022 ABATED BY THE PROGRESSIVE ROLL OUT OF HEIGHTENED SAFETY PERIOD (HSP) MEASURES. STILL, WORKPLACE FATAL INJURIES IN 2022 WAS HIGHER COMPARED TO 2021, WHILE TOTAL WORKPLACE INJURIES DECLINED.

There were 46 workplace fatal injuries in 2022, of which seven were due to work-related traffic accidents (WRTA), compared to 37 fatalities in 2021, of which six were WRTA cases. This translated to a fatal injury rate of 1.3 per 100,000 workers in 2022, higher than that of 1.1 in 2021 (which was the same rate as pre-COVID year 2019). Major injury rate fell from 18.5 per 100,000 workers (610 major injuries) in 2021 to 17.3 per 100,000 workers (614 major injuries) in 2022. HSP measures which were introduced from 1 Sep 2022, helped to abate the spate of fatalities in the earlier months of 2022. A Special Report on the effects of HSP on injuries is in this publication.

To better target interventions and enforcement efforts, the fatal and major injuries were analysed by incident type: (i) Type A: higher risk of fatality (e.g. Falls from Height and Vehicular incidents), and (ii) Type B: lower risk of fatality (e.g. Slips, Trips and Falls, and Machinery incidents). Majority (80%) of incidents resulting in fatality in 2022 were Type A incidents. Majority (65%) of incidents resulting in major injuries were Type B incidents, with Slips, Trips and Falls dominating the major injuries trend. More details in **Annex C4**.

In 2022, 80% (525 injuries) of all fatal and major injuries came from the traditionally higher-risk industries – Construction, Manufacturing, Transportation & Storage, as well as selected services industries (Administrative & Support Services, Accommodation & Food Services and Wholesale & Retail Trade). Construction was the top contributor, followed by Manufacturing. The main root causes for Construction were inadequate control measures or safety procedures (e.g. lack of fall prevention/ traffic management/ lifting plans, and WSH management system), poor implementation of these measures and unsafe behaviour by workers. For Manufacturing, they were inadequate control measures or safety procedures (e.g. no machine guarding, poor/unsafe means of access to materials stored at heights), non-compliance to safety measures and unsafe behaviour by workers. Details of the root causes by key industries can be found in **Annex A1 and A2**.

Focusing on the major injuries in 2022, Small and Medium Enterprises (SMEs) (i.e. 200 or less employees) from Construction, Manufacturing and Transportation & Storage industries, had poorer WSH performance compared to larger firms. In other sectors, SMEs had comparable or better WSH performance compared to large firms. Across all the sectors, majority of the injured workers had less than three years of experience in the company.

For overall number of reported workplace injuries, there were a total of 21,766 injuries (including minor injuries with any instance of medical leave or light duties) in 2022, a 1.9% decline compared to 22,186 in 2021. The overall injury rate consequently decreased from 673 injuries per 100,000 workers in 2021 to 614 in 2022.

There were 1,052 Occupational Diseases (OD) confirmed in 2022, higher than 659 ODs in 2021. This was due to the rise in reported Noise-induced Deafness (NID) cases from the ongoing Enhanced Workplace Health Surveillance (WHS+) efforts and increased awareness in reporting amongst doctors and employers. Similarly, 2022 saw 27 Dangerous Occurrences (DO), higher compared to 13 DOs in 2021. The increase in number of DOs was due to the increase in crane-related incidents from the Construction sector.

Table (i): Number of workplace injuries, dangerous occurrences and occupational diseases, 2021-2022

	2021			2022		
	Type A	Type B	Overall	Type A	Type B	Overall
Total Workplace Injuries	4,054	8,712	12,766	3,931	8,644	12,575
(Workplace Injuries [N]¹)	(6,744)	(15,442)	(22,186)	(6,471)	(15,295)	(21,766)
Fatal Injuries	34	3	37	37	9	46
(from WRTA)	(6)	(n.a.)	(6)	(7)	(n.a.)	(7)
Major Injuries	220	390	610	217	397	614
Minor Injuries ²	3,800	8,319	12,119	3,677	8,238	11,915
(Minor Injuries [N] ¹)	(6,490)	(15,049)	(21,539)	(6,217)	(14,889)	(21,106)
Dangerous Occurrences			13			27
Occupational Diseases			659			1,052

Table (ii): Key safety and health indicators, 2021-2022

	2021			2022		
	Type A	Type B	Overall	Type A	Type B	Overall
Total Workplace Injury Rate	123	264	387	111	244	355
(Workplace Injury Rate [N]¹)	(205)	(468)	(673)	(183)	(432)	(614)
Fatal Injuries	1.0	0.1	1.1	1.0	0.3	1.3
Major Injuries	6.7	11.8	18.5	6.1	11.2	17.3
Minor Injuries ²	115	252	368	104	232	336
(Minor Injuries [N] ¹)	(197)	(456)	(653)	(175)	(420)	(596)
Occupational Diseases Incidence Rate			20.0			29.7
Man-days Loss²	300,707	211,310	512,017	310,137	232,908	543,045
(Man-days Loss [N]¹)	(305,947)	(224,911)	(530,858)	(315,366)	(246,694)	(562,060)

Note: All rates are per 100,000 workers. Rates for Type A and Type B are rounded figures and might not add up to figures in overall rates.

¹ Following the amendments to the Work Injury Compensation Act (WICA) which took effect from September 2020, employers need to report all work injuries with any instance of medical leave or light duties. From January 2021, major and minor injury numbers will include injuries with any instance of medical leave or light duties.

² Prior to January 2021, workplace major and minor injury numbers only include injuries sustained by employees that resulted in four or more days of medical leave, or at least 24 hours of hospitalisation.

This report also included indicators from prevention activities. These proactive activities included workplace Medical and Hygiene surveillance, which monitors health risks from exposures to physical and toxic or harmful substances at work, and Business under Surveillance (BUS), which guides poor performing companies to improve their WSH management system.

The main findings on the workplace safety and health performance for 2022 were:

WORKPLACE INJURIES

- 46 workers were fatally injured, which translated to 1.3 fatalities per 100,000 workers.
- 614 workers sustained workplace major injuries, which translated to 17.3 injuries per 100,000 workers.
- [New Series] 21,106 workers sustained workplace minor injuries with at least one day of medical leave or light duty, which was 596 injuries per 100,000 workers.
- 11,915 workers sustained workplace minor injuries with at least four days of medical leave or 24 hours of hospitalisation, which was 336 injuries per 100,000 workers.

DANGEROUS OCCURRENCES (DO)

- 27 dangerous occurrences were reported to MOM in 2022.

OCCUPATIONAL DISEASES (OD)

- 1,052 OD cases were confirmed in 2022, with an incidence rate of 29.7 per 100,000 workers.
- The leading OD was Noise-induced Deafness (NID) with 624 cases, followed by Work-related Musculoskeletal Disorders (WRMSD) with 340 cases (including back injury cases due to ergonomic risks).

BUSINESS UNDER SURVEILLANCE (BUS)

- 12 companies entered the Business under Surveillance (BUS) programme in 2022.

MEDICAL AND HYGIENE SURVEILLANCE

- 104,692 workers from 2,227 workplaces were monitored under the Medical Surveillance Programme.
 - Under the Hygiene Surveillance Programme, 80% of the workplaces had static noise levels greater than 85dBA.
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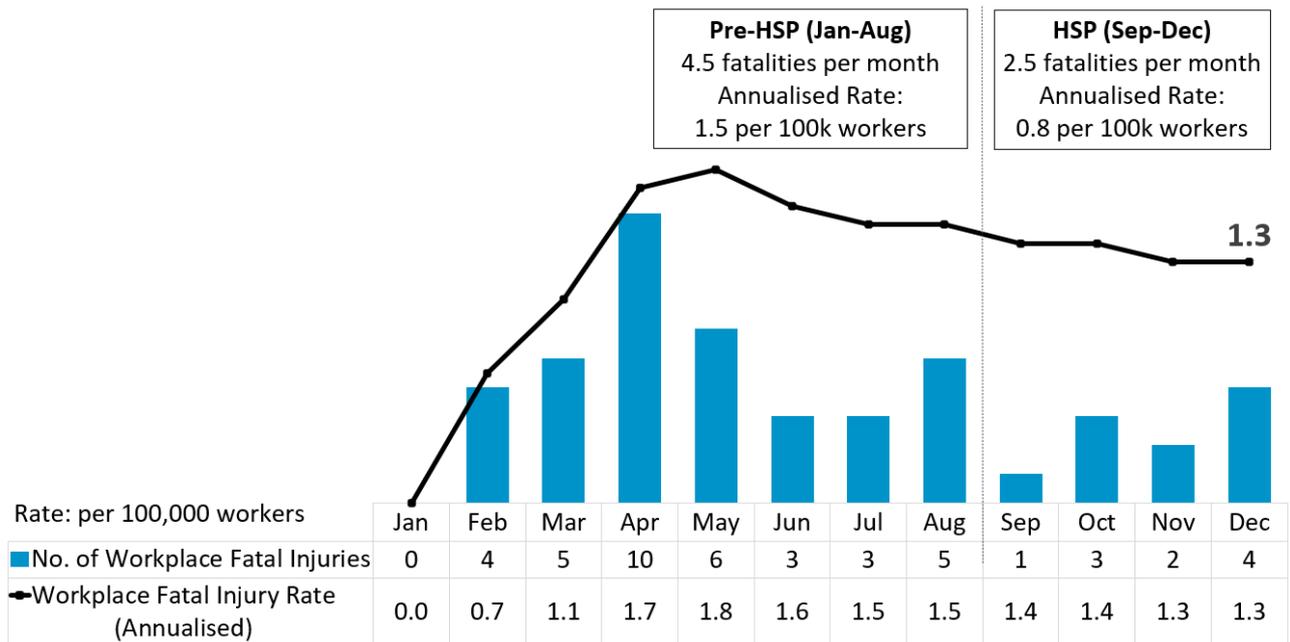
SPECIAL REPORT ON HEIGHTENED SAFETY PERIOD (HSP)

MEASURES ROLLED OUT DURING THE HEIGHTENED SAFETY PERIOD (2022) ARRESTED THE RISE IN FATALITIES.

Fatalities in 2022 has been a major concern and we did not meet our WSH target of 1.1 per 100,000 workers. The spate of workplace fatal injuries were largely due to basic safety lapses, such as inadequate safety planning and control measures, and non-compliance with safety measures. By August 2022, there were a total of 36 workplace fatal injuries, close to the 37 fatalities in the full year of 2021. The Heightened Safety Period (HSP) was then first introduced on 1 September 2022 for six months, with stronger measures to address the concerning rise in workplace fatal injuries.

Workplace fatal injuries fell from 4.5 per month between January – August 2022 to 2.5 per month between September – December 2022. Consequently, the annualised workplace fatal injury rates improved from 1.5 per 100,000 workers to 0.8 per 100,000 workers. The full year workplace fatal injury rate for 2022 was 1.3 per 100,000 workers.

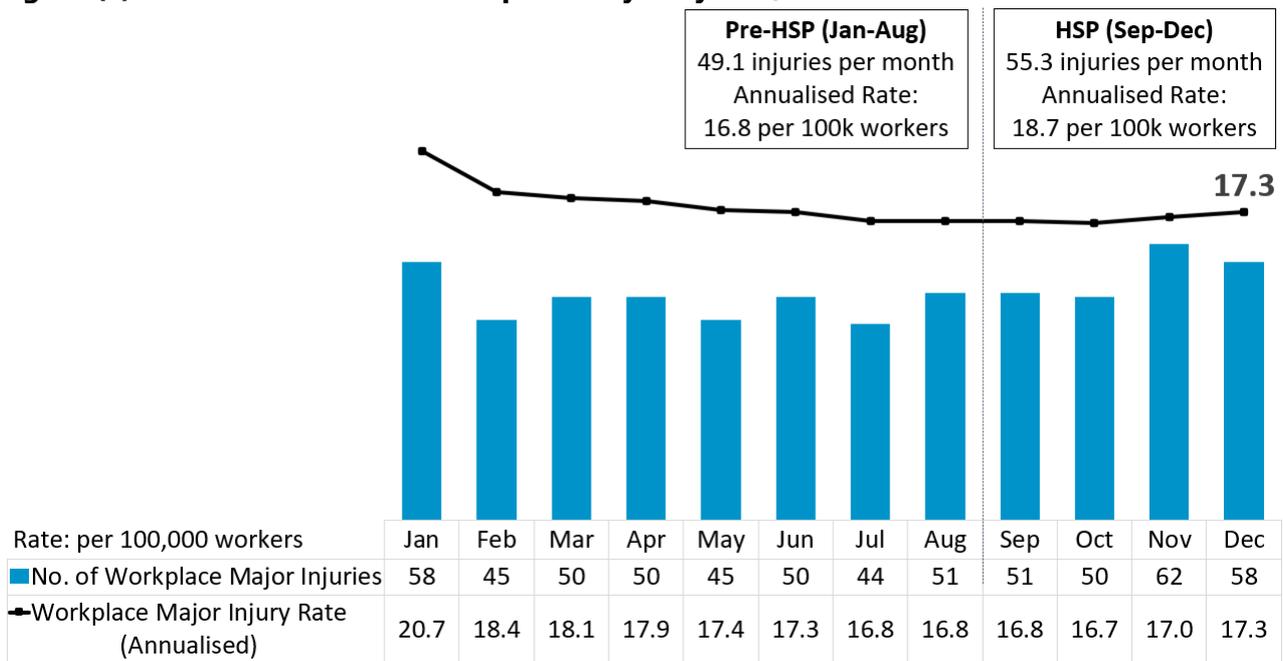
Figure (i): Number and rate of workplace fatal injuries, Jan-Dec 2022



Though there were fewer workplace fatal injuries during the HSP, there were more workplace major injuries. This was a concern, as major injuries reflect persistent safety lapses at workplaces and some of these major injuries could lead to life altering incapacity.

Workplace major injuries increased from an average of 49.1 per month between January – August 2022 to 55.3 per month between September – December 2022. Consequently, the annualised major injury rates rose from 16.8 per 100,000 workers to 18.7 per 100,000 workers over the same period. The full year workplace major injury rate for 2022 was 17.3 per 100,000 workers.

Figure (ii): Number and rate of workplace major injuries, Jan-Dec 2022



The impact of HSP also differed across the higher-risk sectors. Construction saw the most improvement, where the monthly average number of fatal and major injuries decreased during HSP. For Manufacturing, the monthly average number of fatal and Type B major injuries worsened during HSP. Upward pressure on major injuries remained, especially for the higher-risk services industries.

Table (iii): Workplace fatal and major injuries for selected sectors, 2022

Industry	Number of Fatal and Major Injuries, 2022	Change in Monthly Average (Pre-HSP versus HSP)		
		Fatal	Major - Type A <i>(higher fatality risk)</i>	Major - Type B <i>(lower fatality risk)</i>
Overall	660	-2.0	+1.8	+4.4
Construction	171	-1.4	-1.0	-1.0
Manufacturing	129	+0.3	0.0	+0.9
Transportation & Storage	70	0.0	-0.3	+2.0
Administrative & Support Services	57	+0.5	+1.8	+1.9
Accommodation & Food Services	57	-0.3	+0.3	-1.5
Wholesale & Retail Trade	41	0.0	+0.3	+1.4

Legend: (improved during HSP) -  + (worsened during HSP)

The improvements seen in the workplace fatality rate during HSP and especially within the Construction sector, showed that a positive turnaround in WSH performance was possible with sufficient resolve from all stakeholders. However, to sustain these improvements the HSP had to be extended with additional measures. With vigilance, greater ownership and continual training, WSH performances could be steered back on track to achieving our WSH 2028 goals and keeping our fatality rate at below 1.0 per 100,000 workers, with our major injury rates at below 12.0 per 100,000 workers.

OVERVIEW OF TRENDS

TOTAL WORKPLACE INJURIES³

The overall number of reported⁴ workplace injuries in 2022 was 21,766, a 1.9% decline compared to 22,186 in 2021. The workplace injury rate consequently decreased from 673 injuries per 100,000 workers in 2021 to 614 in 2022.

Similarly, the overall number of reported workplace injuries with at least four days of medical leave or 24 hours of hospitalisation, was 12,575 in 2022, a 1.5% decline compared to 12,766 injuries in 2021. The workplace injury rate consequently decreased from 387 injuries per 100,000 workers in 2021 to 355 in 2022.

Figure 1: Number and rate of total workplace injuries, 2015-2022



[N] New Series. Injuries with any instance of medical leave or light duties.

³ Refer to Note (II) on Page 1 for changes to coverage for non-fatal injuries from 2021.

⁴ Employer or Occupier has to report work incidents to the Ministry of Manpower under the WSH (Incident Reporting) Regulations.

WORKPLACE FATAL INJURIES

There were 46 workplace fatal injuries in 2022, nine fatal injuries more compared to 37 in 2021. The workplace fatal injury rate rose to 1.3 fatal injuries per 100,000 workers.

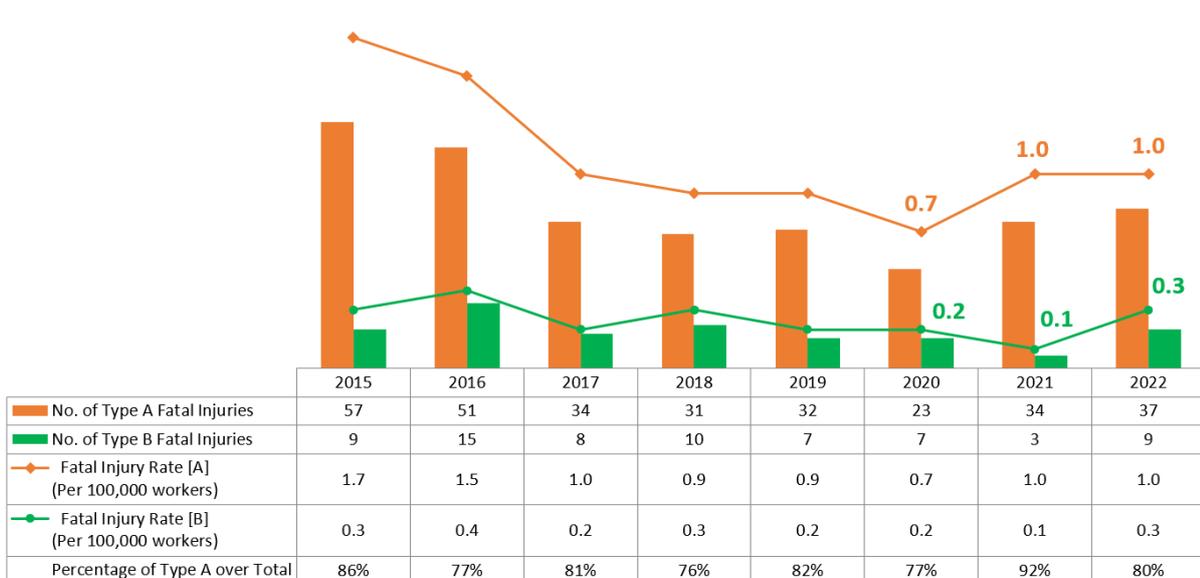
Figure 2a: Number and rate of workplace fatal injuries, 2015-2022



CAUSES OF WORKPLACE FATAL INJURIES

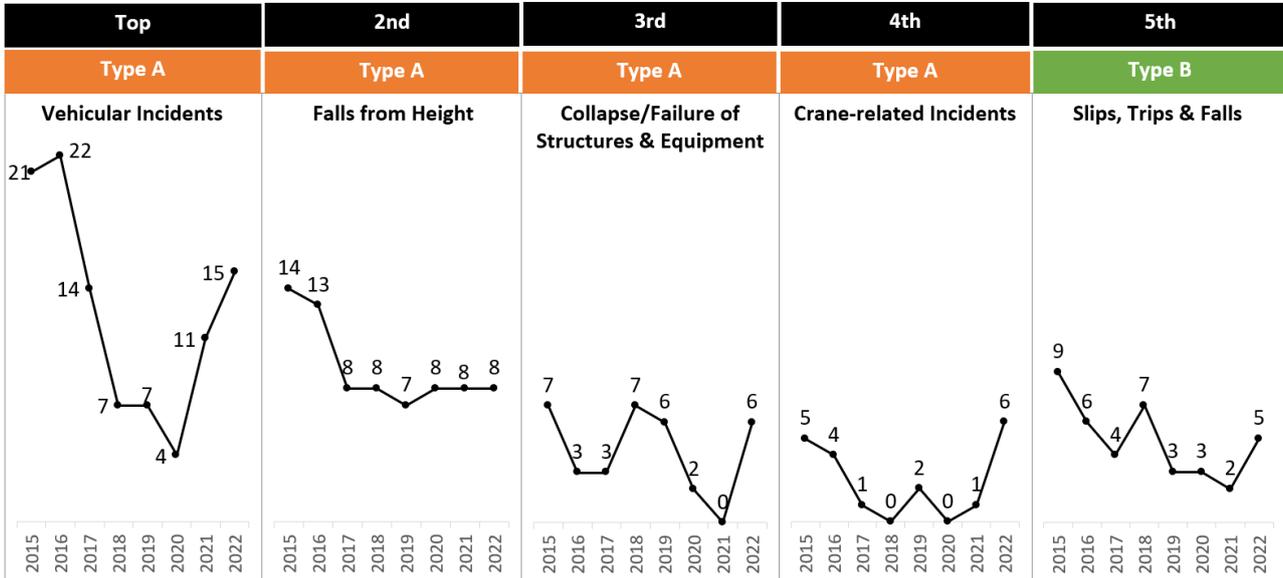
Incidents with higher fatality risk (Type A) formed 80% of all fatalities in 2022. Injury rate for Type A remained stable since 2017, hovering between 0.9 to 1.0 fatalities per 100,000 workers.

Figure 2b: Number and rate of workplace fatal injuries by fatal risk classification, 2015-2022



The top two causes of workplace fatalities in 2022 were (i) Vehicular Incidents and (ii) Falls from Height. These collectively accounted for 50% (23 fatal injuries) of the total number of workplace fatal injuries in 2022.

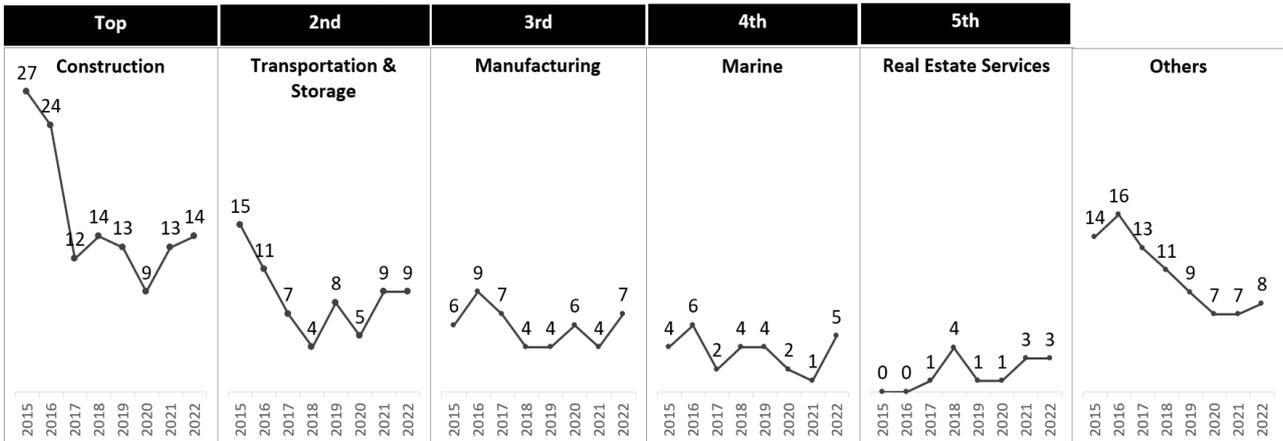
Figure 2c: Number of workplace fatal injuries by cause of injury, 2015-2022



INDUSTRIES CONTRIBUTING TO WORKPLACE FATAL INJURIES

The Construction sector remained the top contributor in 2022 with 14 fatal injuries. This was followed by Transportation & Storage industry (nine fatal injuries), Manufacturing sector (seven fatal injuries) and Marine industry (five fatal injuries). These traditionally higher risk industries accounted for 76% of all fatal injuries in 2022.

Figure 2d: Number of workplace fatal Injuries by industry, 2015-2022



Others refer to the summation of various fatal injury causes with lower incidence of workplace fatalities in recent years. For more information, please refer to the statistical tables in Annex B.

WORKPLACE FATAL INJURIES BY INDUSTRY

CONSTRUCTION

There were 14 workplace fatal injuries in the Construction sector in 2022, one fatality more than 2021 (13). However, the workplace fatal injury rate decreased from 3.3 fatal injuries per 100,000 workers in 2021 to 2.9 in 2022, due to larger workforce size. More than 9 in 10 of fatal injuries from the sector were contributed by Type A.

Figure 3a: Number and rate of workplace fatal injuries for Construction sector, 2015-2022

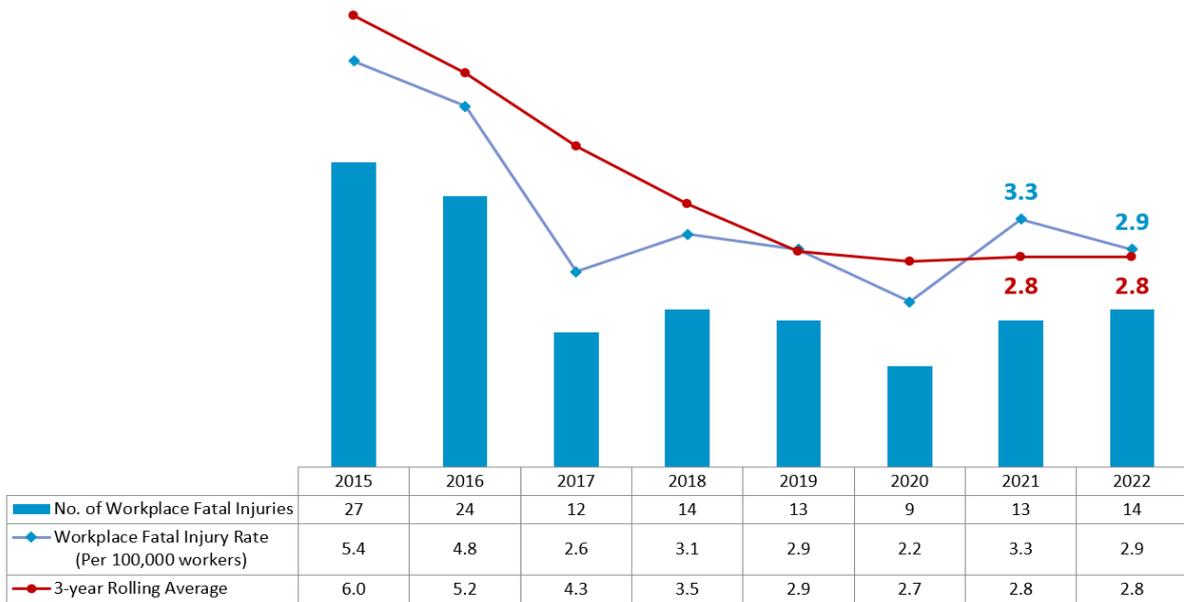


Figure 3b: Number and rate of workplace fatal injuries for Construction sector by fatality risk, 2015-2022



MARINE

There were five workplace fatal injuries in the Marine industry⁵ in 2022, four fatal injuries more than 2021. The workplace fatal injury rate consequently rose sharply from 1.8 fatal injuries per 100,000 workers in 2021 to 8.2 in 2022. In previous years, majority of fatal injuries from the industry were contributed by Type A incidents, except for 2022 where there were one more Type B (three fatal injuries) than Type A (two fatal injuries).

Figure 3c: Number and rate of workplace fatal injuries for Marine industry, 2015-2022

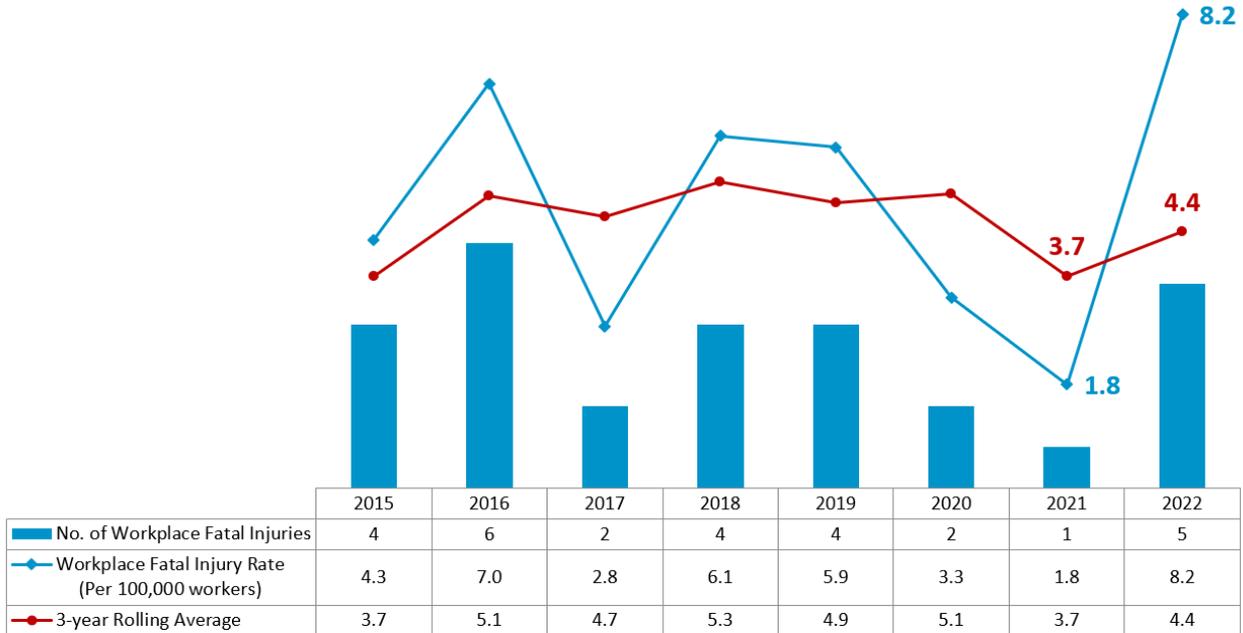


Figure 3d: Number and rate of workplace fatal injuries for Marine industry by fatality risk, 2015-2022



⁵ The marine industry includes the following activities:

- Shipbuilding and Ship Repair
- Marine Surveying Services (other than classification societies)
- Salvaging of distressed vessels and cargo

Works carried out in the anchorage are also included.

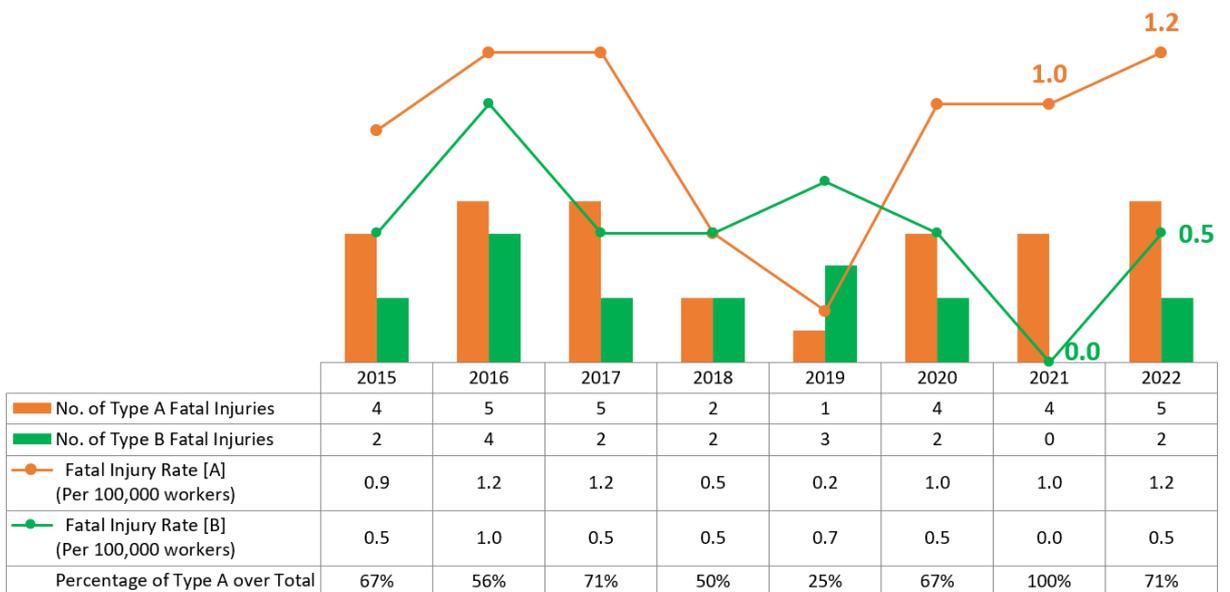
MANUFACTURING

There were seven workplace fatal injuries in the Manufacturing sector in 2022, three fatal injuries more than 2021. The workplace fatal injury rate consequently rose from 1.0 fatal injuries per 100,000 workers in 2021 to 1.7 in 2022. More than 7 in 10 fatal injuries in the last two years were from Type A incidents.

Figure 3e: Number and rate of workplace fatal injuries for Manufacturing sector, 2015-2022



Figure 3f: Number and rate of workplace fatal injuries for Manufacturing sector by fatality risk, 2015-2022



TRANSPORTATION & STORAGE

There were nine workplace fatal injuries in the Transportation & Storage industry in 2022, similar to 2021. The workplace fatal injury rate for the industry declined slightly from 3.6 fatal injuries per 100,000 workers in 2021 to 3.4 in 2022. Majority of fatal injuries from the sector were contributed by Type A incidents.

Figure 3g: Number and rate of workplace fatal injuries for Transportation & Storage industry, 2015-2022

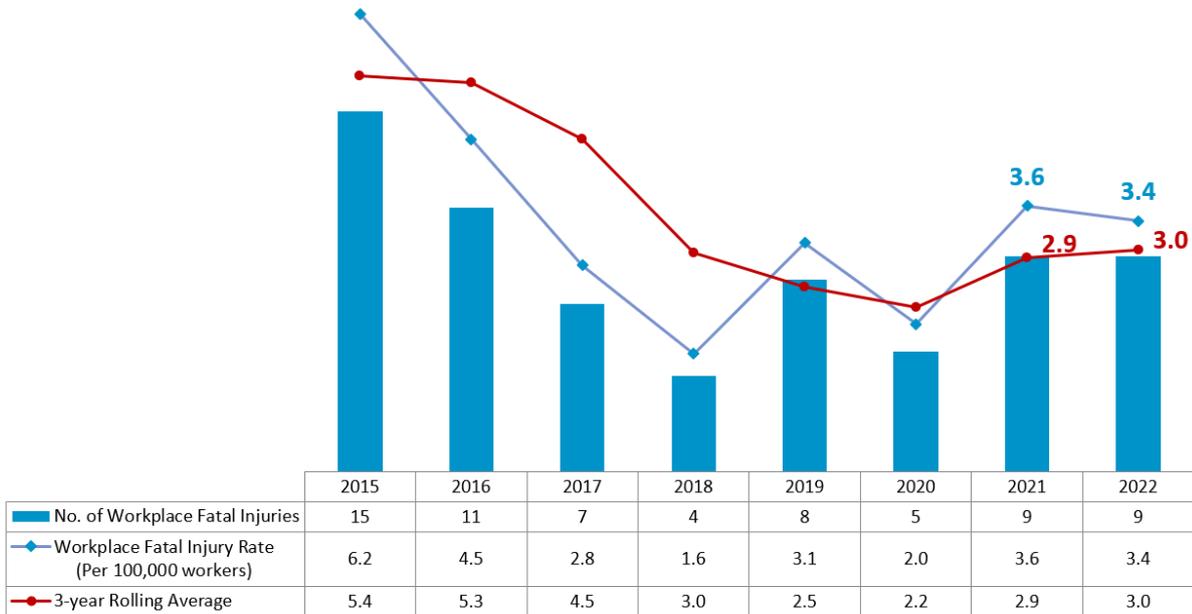


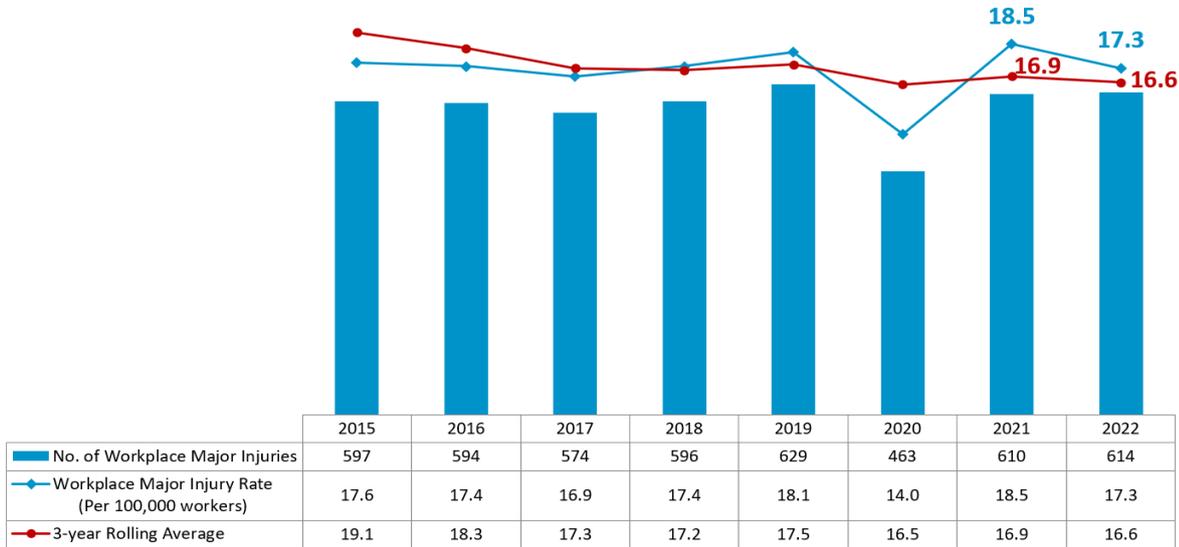
Figure 3h: Number and rate of workplace fatal injuries for Transportation & Storage industry by fatality risk, 2015-2022



WORKPLACE MAJOR INJURIES

There were 614 workplace major injuries in 2022, comparable to 610 injuries in 2021. However, the major injury rate decreased from 18.5 major injuries per 100,000 workers in 2021 to 17.3 in 2022, due to the increase in workforce size in 2022.

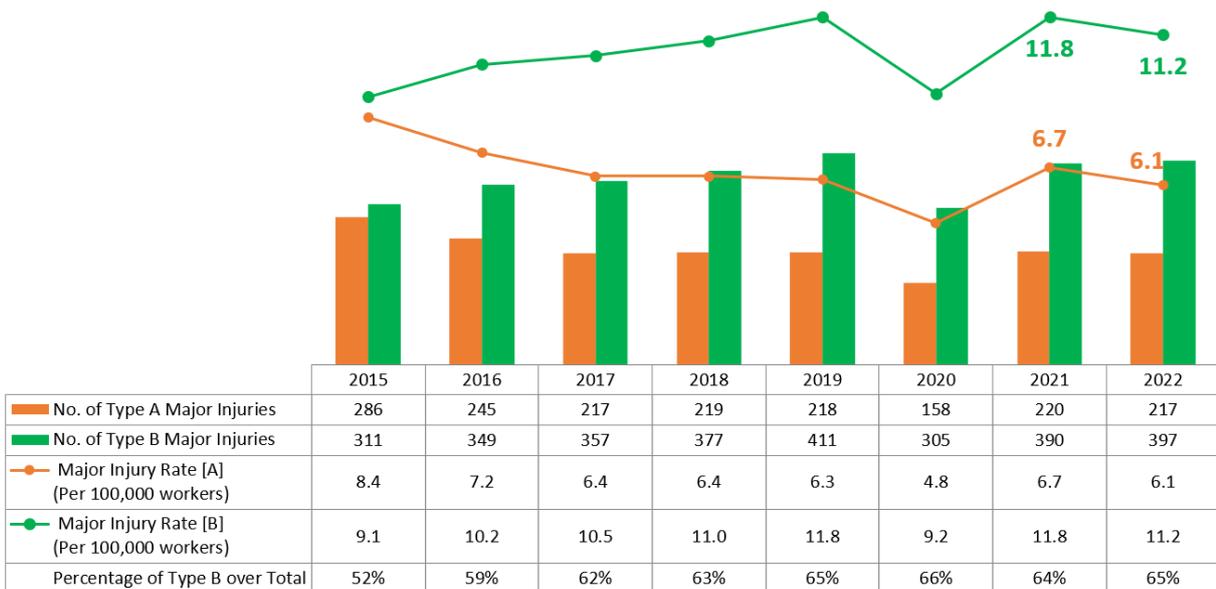
Figure 4a: Number and rate of workplace major injuries, 2015-2022



CAUSES OF WORKPLACE MAJOR INJURIES

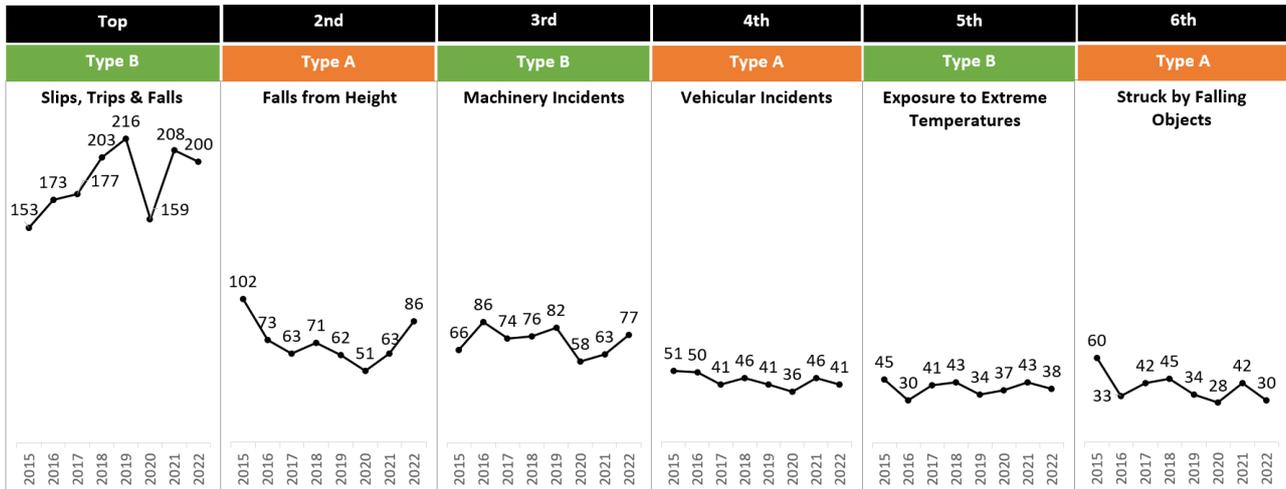
Incidents with lower fatality risk (Type B) formed 65% of all major injuries in 2022. Injury rate for Type B incidents has hovered above 11.0 major injuries per 100,000 workers since 2019, with the exception in 2020 as business activities scaled down due to Covid-19.

Figure 4b: Number and rate of workplace major injuries by fatality risk, 2015-2022



The top three causes of workplace major injuries were (i) Slips, Trips & Falls; (ii) Falls from Height; & (iii) Machinery Incidents. These collectively accounted for 59% (363 injuries) of the total number of workplace major injuries in 2022.

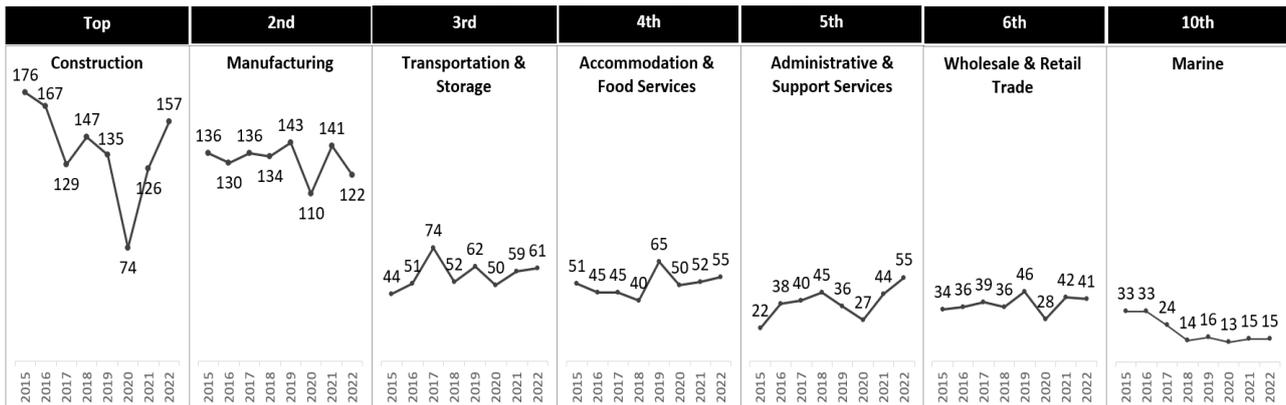
Figure 4c: Number of workplace major injuries by cause of injury, 2015-2022



INDUSTRIES CONTRIBUTING TO WORKPLACE MAJOR INJURIES

In 2022, the top contributing sector for major injuries was the Construction sector with 157 major injuries, followed by the Manufacturing sector with 122 major injuries. These top two contributing sectors collectively accounted for 45% (279 injuries) of the total major injuries in 2022.

Figure 4d: Number of workplace major injuries by industry, 2015-2022



WORKPLACE MAJOR INJURIES BY INDUSTRY

CONSTRUCTION

There were 157 workplace major injuries in the Construction sector in 2022, 31 (25%) more major injuries compared to 2021. The workplace major injury rate for the sector remained stable from 32.1 per 100,000 workers in 2021 to 32.0 in 2022. Being a high risk sector, major injuries were dominated by Type A incidents.

Figure 5a: Number and rate of workplace major injuries for Construction sector, 2015-2022



Figure 5b: Number and rate of workplace major injuries for Construction sector by fatality risk, 2015-2022



MARINE

There were 15 workplace major injuries in the Marine industry in 2022, same number as 2021. The workplace major injury rate was lower at 24.6 per 100,000 workers in 2022 compared with 27.0 in 2021, due to the expanded workforce size for the industry in 2022. Similar to Construction, majority of the major injuries were contributed by Type A incidents.

Figure 5c: Number and rate of workplace major injuries for Marine industry, 2015-2022

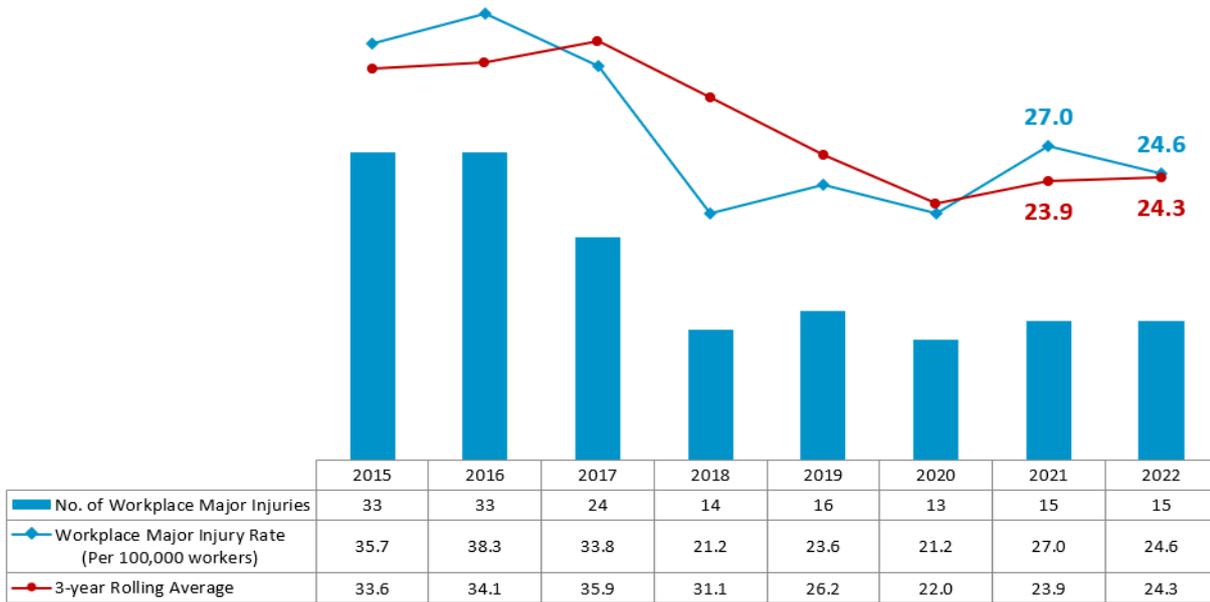
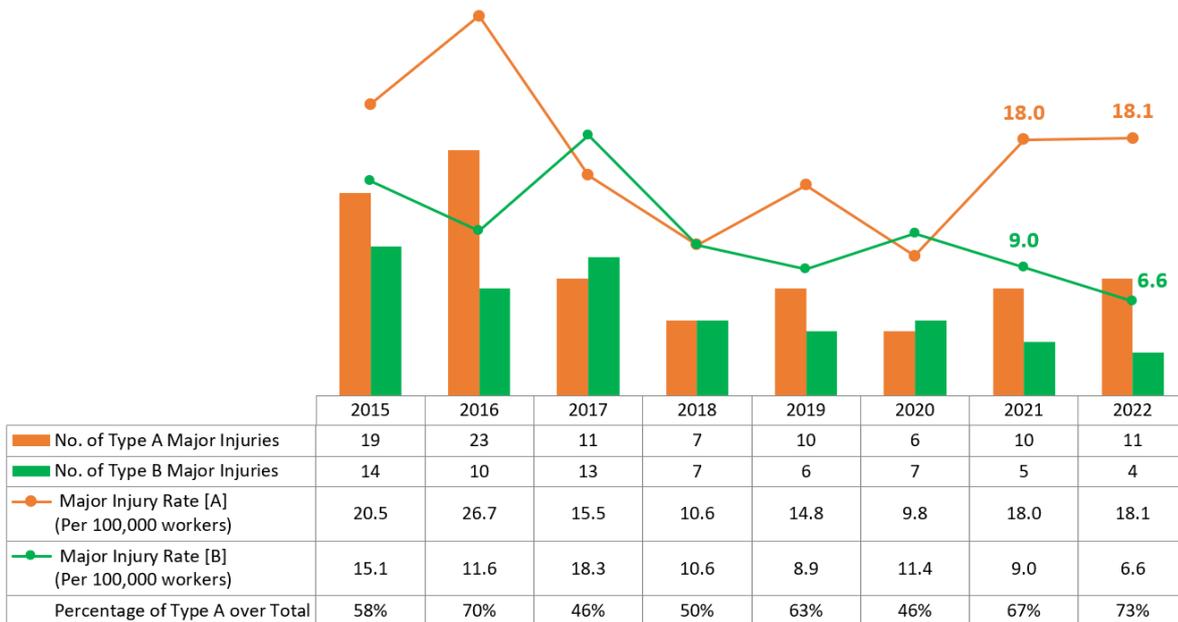


Figure 5d: Number and rate of workplace major injuries for Marine industry by fatality risk, 2015-2022



MANUFACTURING

There were 122 workplace major injuries in the Manufacturing sector in 2022, 19 (13%) fewer major injuries than 2021. The workplace major injury rate decreased from 36.4 per 100,000 workers in 2021 to 28.8 in 2022. Majority of the major injuries from the sector were contributed by Type B incidents with lower fatality risk.

Figure 5e: Number and rate of workplace major injuries for Manufacturing sector, 2015-2022



Figure 5f: Number and rate of workplace major injuries for Manufacturing sector by fatality risk, 2015-2022



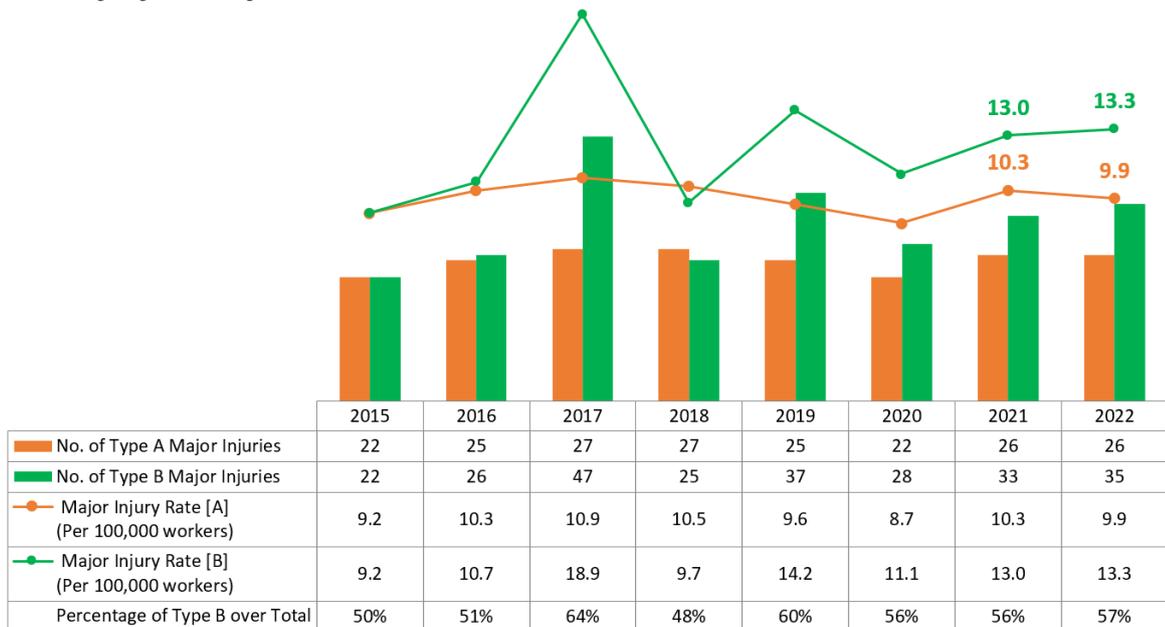
TRANSPORTATION & STORAGE

There were 61 workplace major injuries in the Transportation & Storage industry in 2022, two more major injuries than 2021. The workplace major injury rate decreased slightly from 23.3 per 100,000 workers in 2021 to 23.2 in 2022, due to the slightly higher workforce size in 2022. Slightly more than half of the major injuries came from Type B incidents with lower fatality risk.

Figure 5g: Number and rate of workplace major injuries for Transportation & Storage industry, 2015-2022



Figure 5h: Number and rate of workplace major injuries for Transportation & Storage industry by fatality risk, 2015-2022

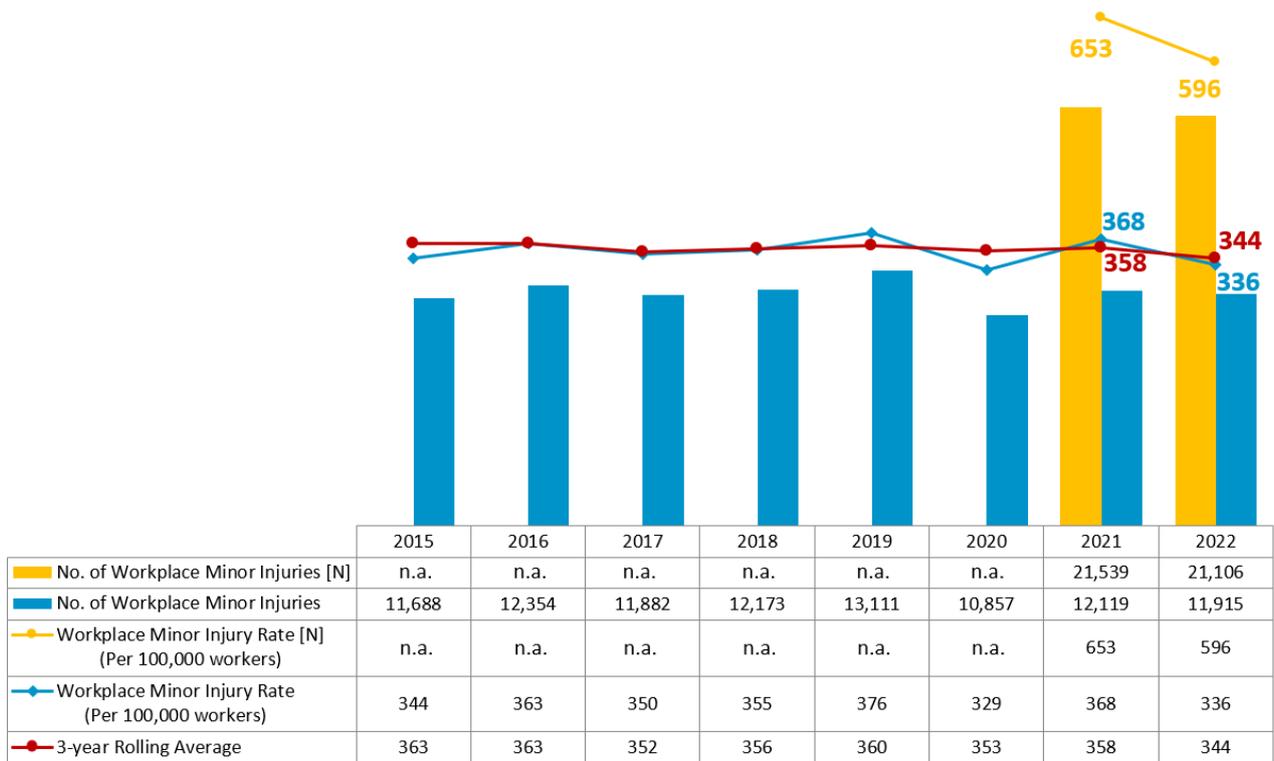


WORKPLACE MINOR INJURIES

Under the new series [N] (any instance of medical leave or light duties), the overall number of reported minor injuries in 2022 was 21,106, 2.0% lower compared to 21,539 in 2021. The corresponding minor injury rate for 2022 was at 596 per 100,000 workers, lower than 653 in 2021.

Based on the former series (four or more days of medical leave, or at least 24 hours of hospitalisation only), there were 11,915 minor injuries in 2022, 1.7% lower than 12,119 in 2021. The corresponding minor injury rate in the former series was similarly lower in 2022 compared to 2021.

Figure 6a: Number and rate of workplace minor injuries, 2015-2022

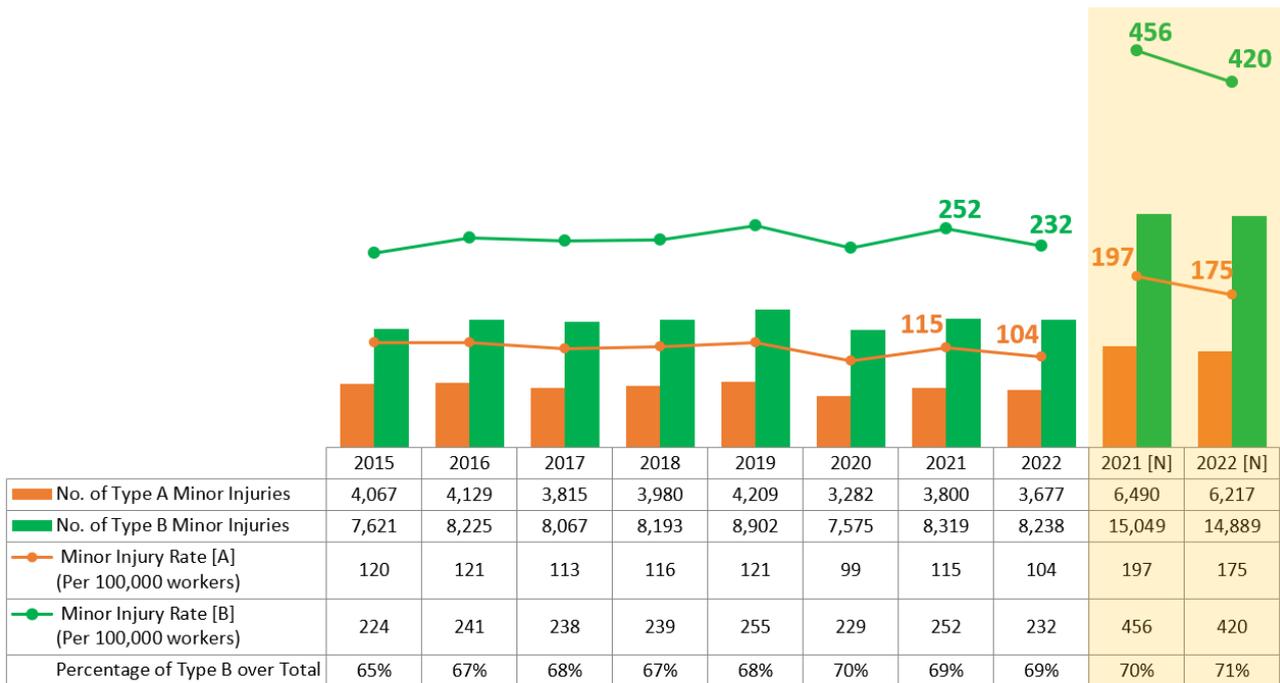


[N] New Series. Injuries with any instance of medical leave or light duties.

CAUSES OF WORKPLACE MINOR INJURIES

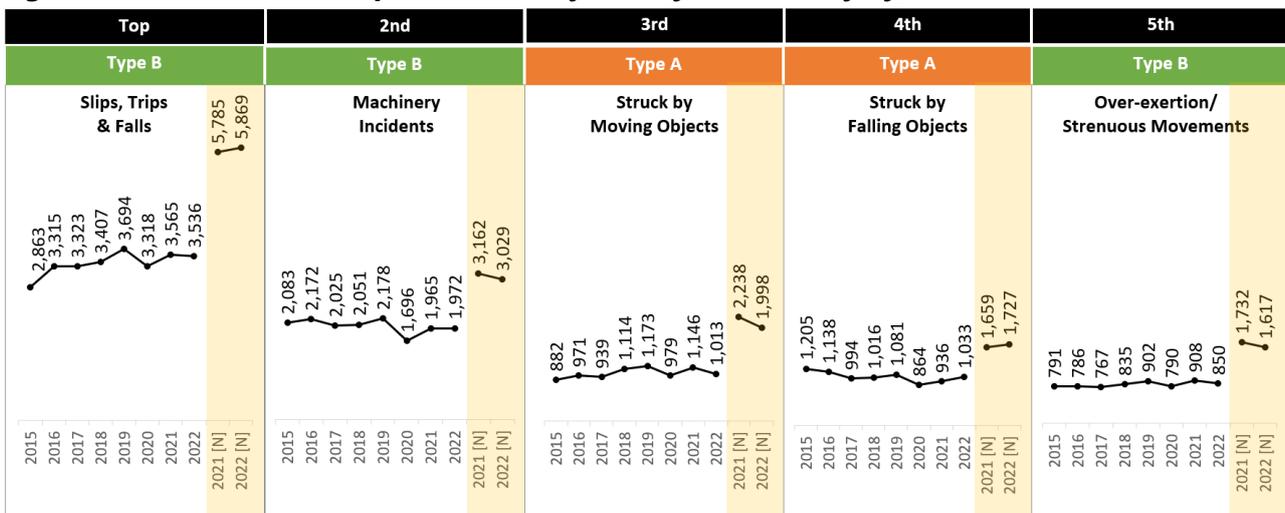
Minor injuries numbers and rates from both Type A and Type B incidents have declined in 2022 compared to 2021. Type B incidents formed about 71% of all minor injuries in 2022. Slips, Trips & Falls, Machinery Incidents, and Struck by Moving Objects remained the top three leading causes of minor injuries, accounting for 52% (10,896 injuries) of 21,106 minor injuries in 2022.

Figure 6b: Number and rate of workplace minor injuries by fatality risk, 2015-2022



[N] New Series. Injuries with any instance of medical leave or light duties.

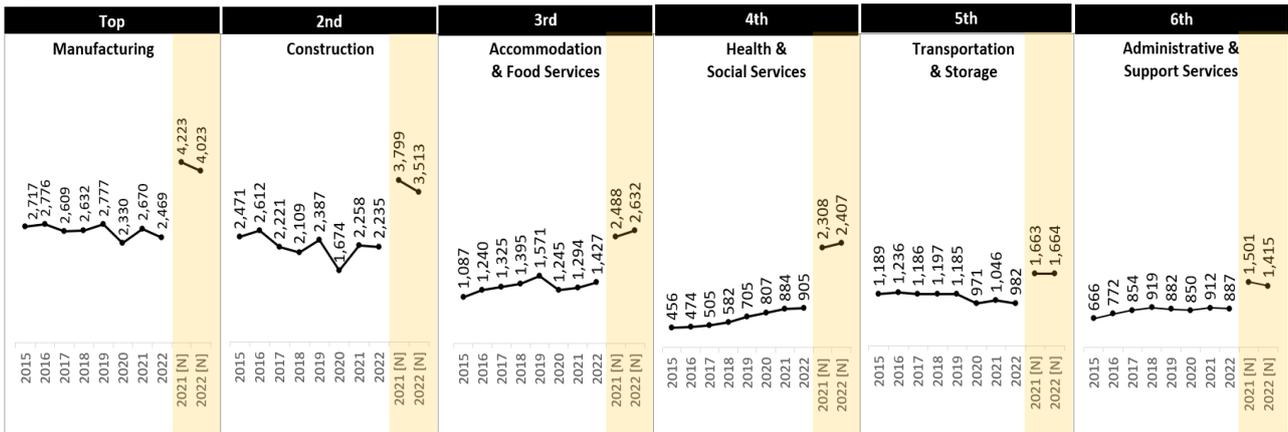
Figure 6c: Number of workplace minor injuries by cause of injury, 2015-2022



INDUSTRIES CONTRIBUTING TO WORKPLACE MINOR INJURIES

With the new series, the relative rankings for the top three leading industries were Manufacturing (4,023), Construction (3,513) and Accommodation & Food Services (2,632). These three industries accounted for 48% (10,168 injuries) of the 21,106 minor injuries in 2022.

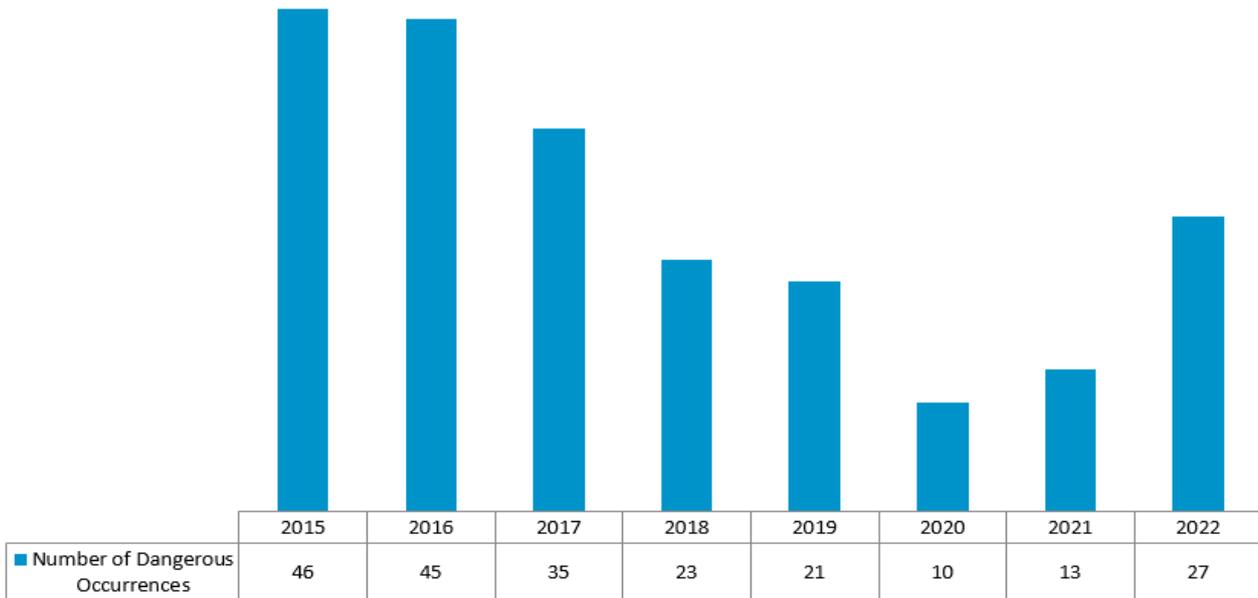
Figure 6d: Number of workplace minor injuries by industry, 2015-2022



DANGEROUS OCCURRENCES (DO)

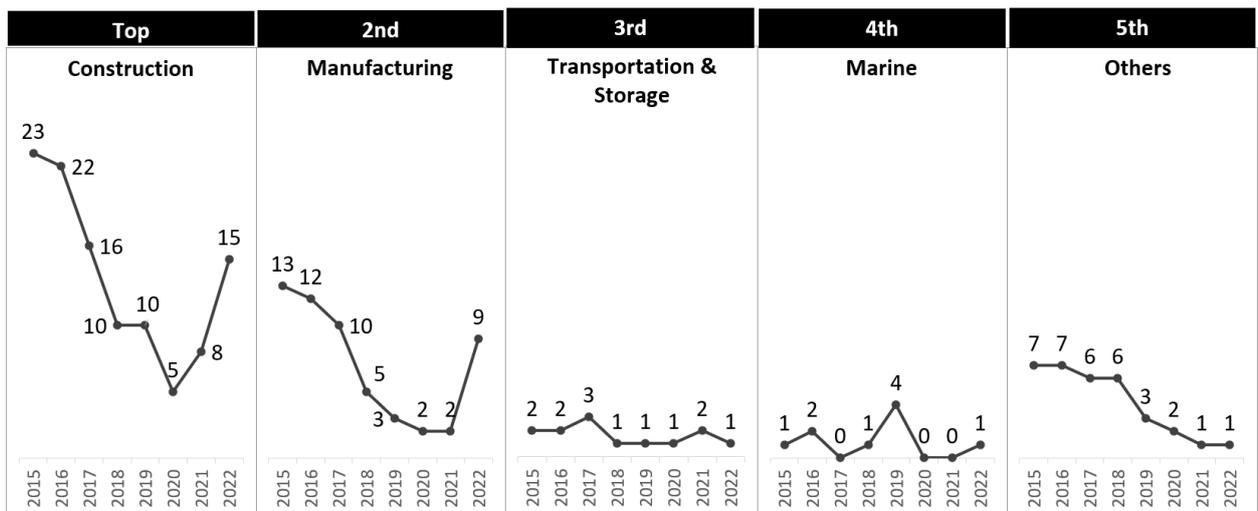
There were 27 cases of DOs reported to MOM in 2022, more than double the number of cases compared to 2021. Amongst the DO cases, 20 cases involved Collapse/Failure of Structures & Equipment and seven cases that involved Fires & Explosion. The increase in number of DOs was due to the increase in crane-related incidents in the Construction sector.

Figure 7a: Number of dangerous occurrences, 2015-2022



In 2022, Construction was the top contributor accounting for 56% (15 cases) of the total number of DO cases. The second top contributing industry was Manufacturing at 33% (nine cases).

Figure 7b: Number of dangerous occurrences by industry, 2015-2022

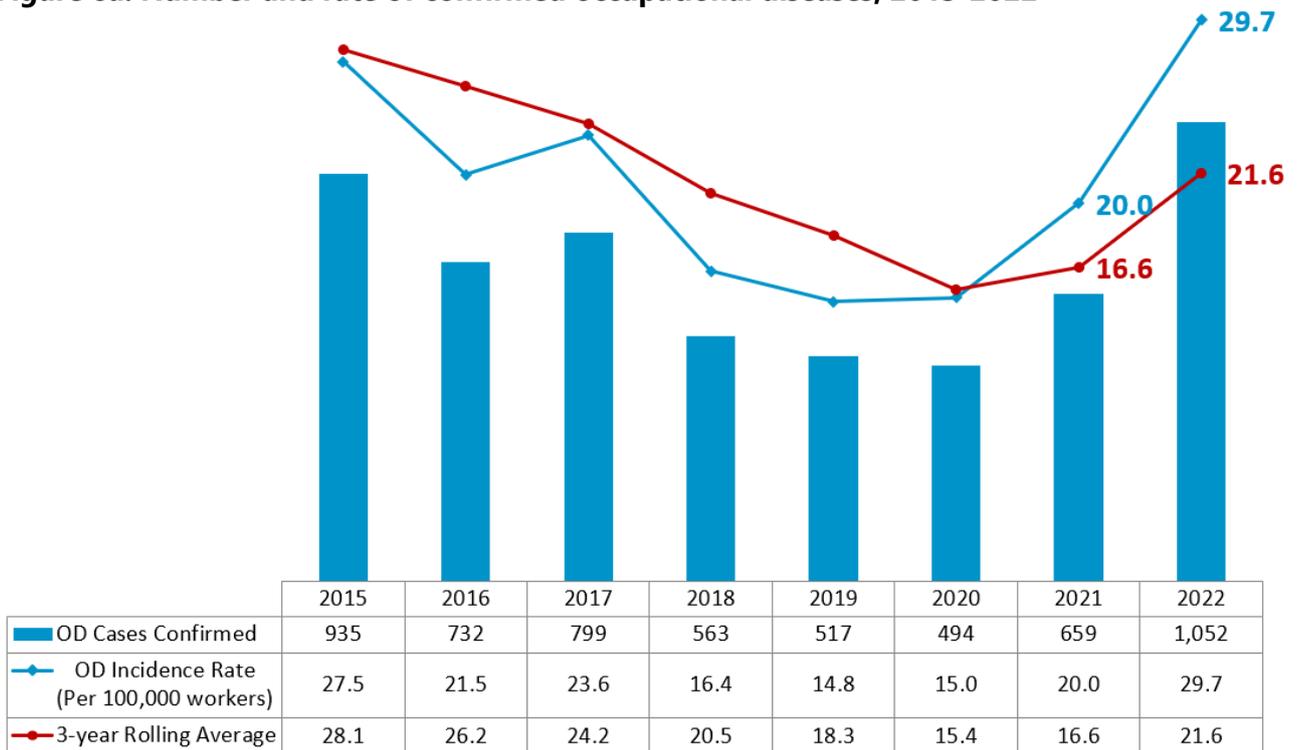


Others refer to the summation of various industries with lower incidence of DOs in recent years. For more information, please refer to the statistical tables in Annex B.

OCCUPATIONAL DISEASES (OD)

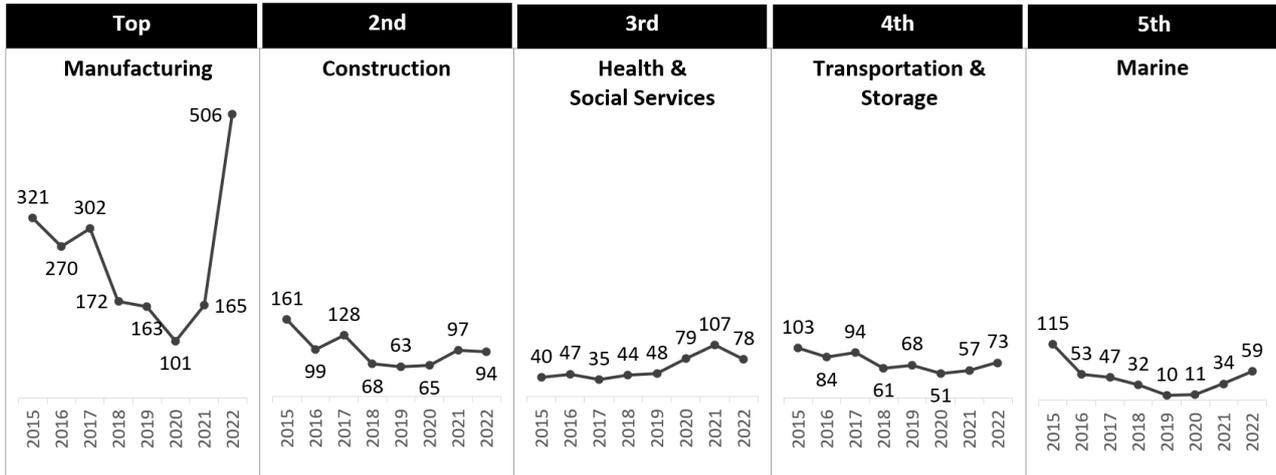
There were 1,052 cases of ODs confirmed in 2022, an increase of 60% compared to the 659 OD cases confirmed in 2021. The OD incidence rate consequently increased from 20.0 confirmed cases per 100,000 workers in 2021 to 29.7 in 2022. This increase was largely driven by the rise in reported Noise-induced Deafness (NID) cases due to the ongoing Enhanced Workplace Health Surveillance (WHS+) efforts and increased awareness in reporting amongst doctors and employers.

Figure 8a: Number and rate of confirmed occupational diseases, 2015-2022



Manufacturing was the top contributor in 2022 with 506 confirmed OD cases, followed by Construction and Health & Social Services with 94 and 78 confirmed cases, respectively. These industries collectively accounted for 64% (678 cases) of all confirmed OD cases in 2022.

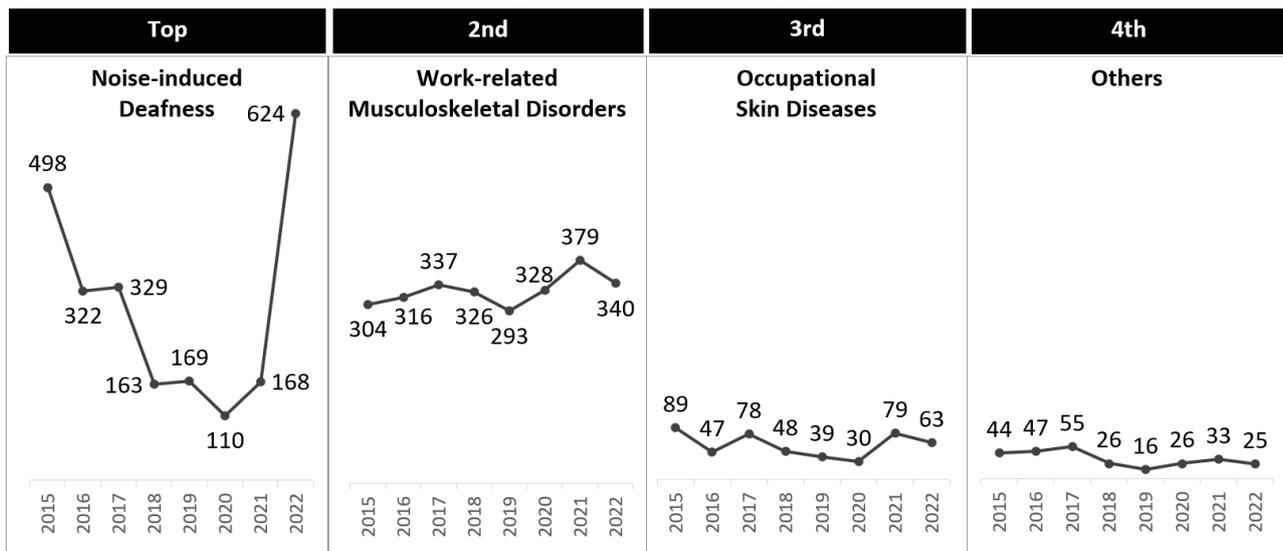
Figure 8b: Number of confirmed occupational diseases by industry, 2015-2022



TYPES OF OCCUPATIONAL DISEASES

The top two types of OD cases confirmed were (i) Noise-induced Deafness and (ii) Work-related Musculoskeletal Disorders⁶, collectively accounting for 92% (964 cases) of all OD cases confirmed in 2022.

Figure 8c: Number of confirmed occupational diseases by type, 2015-2022



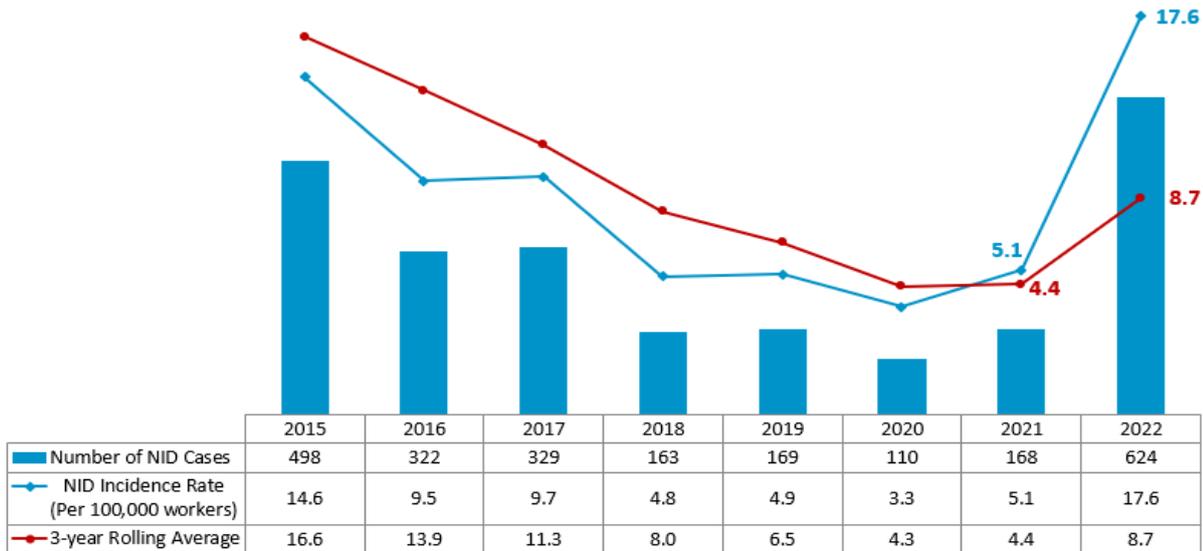
Others refer to the summation of various OD types with lower incidence in recent years. For more information, please refer to the statistical tables in Annex B

⁶ Back injuries due to ergonomic risks were considered as Work-related Musculoskeletal Disorders and included as an occupational disease since 2013.

NOISE-INDUCED DEAFNESS (NID)

There were 624 NID cases in 2022, significantly more than 2021 due to the ongoing Enhanced Workplace Health Surveillance (WHS+) efforts and increased awareness in reporting amongst doctors and employers. Manufacturing continued to be the top contributor to NID cases, accounting for 69% (430 cases) of all NID cases. This was followed by Marine with 8% (50 cases).

Figure 8d: Number and rate of noise-induced deafness, 2015-2022



WORK-RELATED MUSCULOSKELETAL DISORDERS (WRMSD)

WRMSD cases decreased from 379 cases in 2021 to 340 cases in 2022. The top contributing industry was Manufacturing, accounting for 18% (61 cases) of all WRMSD cases, followed by Health & Social Services and Accommodation & Food Services with 50 (15%) and 46 (14%) cases respectively.

Figure 8e: Number and rate of work-related musculoskeletal disorders, 2015-2022



WORK INJURY COMPENSATION

The Work Injury Compensation Act (WICA) lets employees make claims for work-related injuries or diseases without having to file a civil suit under common law. It is a low-cost and quicker alternative to common law for settling compensation claims.

NUMBER OF WORK INJURY CLAIMS AND PAYOUT AMOUNT AWARDED

The total number of work injury claims⁷ awarded increased by 10% from 23,207 cases in 2021 to 25,566 cases in 2022. This was contributed by the increase in number of both Temporary & Permanent Incapacity in 2022. Due to the increase in number of cases, the total compensation payout⁸ awarded consequently rose by 12% from \$108.97 million in 2021 to \$122.26 million in 2022.

Table 1a: Number of TI and PI workplace injuries compensation claims and amount awarded, 2020-2022

Year	Temporary Incapacity (TI) ⁹		Permanent Incapacity (PI) ¹⁰		
	No. of cases	MC Wages (\$million)	No. of cases	MC Wages (\$million)	PI Compensation (\$million)
2020	12,599	\$10.20	3,664	\$14.39	\$60.01
2021	19,347	\$15.37	3,730	\$14.66	\$61.30
2022	21,470	\$17.78	3,992	\$18.74	\$71.29

Table 1b: Number of fatal and total workplace injuries compensation claims and amount awarded, 2020-2022

Year	Fatal		Total ⁹			Total Payout (\$million)
	No. of cases	Death Compensation (\$million)	No. of cases	MC Wages (\$million)	PI/Death Compensation (\$million)	
2020	108	\$14.64	16,371	\$24.59	\$74.65	\$99.24
2021	130	\$17.64	23,207	\$30.03	\$78.94	\$108.97
2022	104	\$14.42	25,566	\$36.52	\$85.74	\$122.26

⁷ Work injury compensation data excludes cases that were withdrawn, cases with No-Further-Action required and cases that were not admitted under WICA. MC wages indicated in the table above were computed based on the number of days of medical/hospitalisation leave & light duty captured by MOM

⁸ Total compensation payout is the sum of Total MC Wages and Total PI/Death Compensation.

⁹ Temporary incapacity claims arise from non-permanent work injuries where an injured employee is temporarily unable to perform work and earn his usual wages after being placed on medical leave.

¹⁰ Permanent incapacity claims arise from injuries which cause permanent injuries or loss of bodily functions to an injured employee.

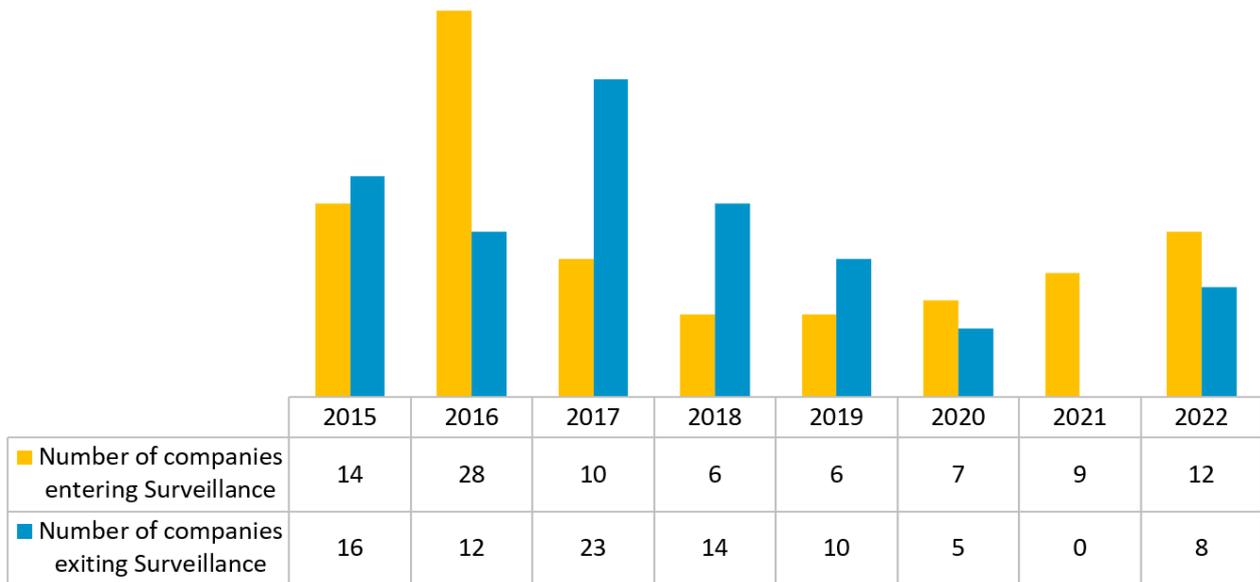
BUSINESS UNDER SURVEILLANCE

Proactive surveillance of high-risk workplaces enables preventive measures to be taken early. The Business Under Surveillance (BUS) programme focuses on improvement of WSH management systems.

BUSINESS UNDER SURVEILLANCE

More than 300 companies had been placed under the programme since its inception in 2007. Companies with poor WSH performance which includes having (i) fatalities, (ii) multiple workplace injuries or Dangerous Occurrences, (iii) issued with Stop Work Orders (SWO), (iv) accumulated a substantial number of demerit points, or (v) poor enforcement records, will be assessed on their risk management and WSH management system. If the company demonstrates inability to manage WSH properly or shows signs of systemic lapses, it will formally enter the BUS programme. Companies will exit the programme only when they have shown significant improvement in its WSH performance. In 2022, 12 companies entered the BUS programme. They were from the Construction, Manufacturing, Services and Transportation & Storage industries. Eight companies exited the programme in 2022.

Figure 9: Number of companies entering and exiting surveillance, 2015-2022



MEDICAL AND HYGIENE SURVEILLANCE

Medical and Hygiene surveillance programmes monitor workers’ exposure and health effects from exposure to the list of hazards under the Workplace Safety and Health (General Provisions) Regulations, Workplace Safety and Health (Noise) Regulations and the Workplace Safety and Health (Medical Examinations) Regulations.

MEDICAL SURVEILLANCE

Workplaces with hazards listed in the Schedule of the WSH (Medical Examinations) Regulations are required to send their exposed workers for pre-placement and periodic medical examinations. The number of workers under surveillance decreased from 107,479 in 2021 to 104,692 in 2022. Similarly, the number of workplaces under medical surveillance had also decreased from 2,262 in 2021 to 2,227 in 2022.

Figure 10a: Number of workers under medical surveillance, 2015-2022

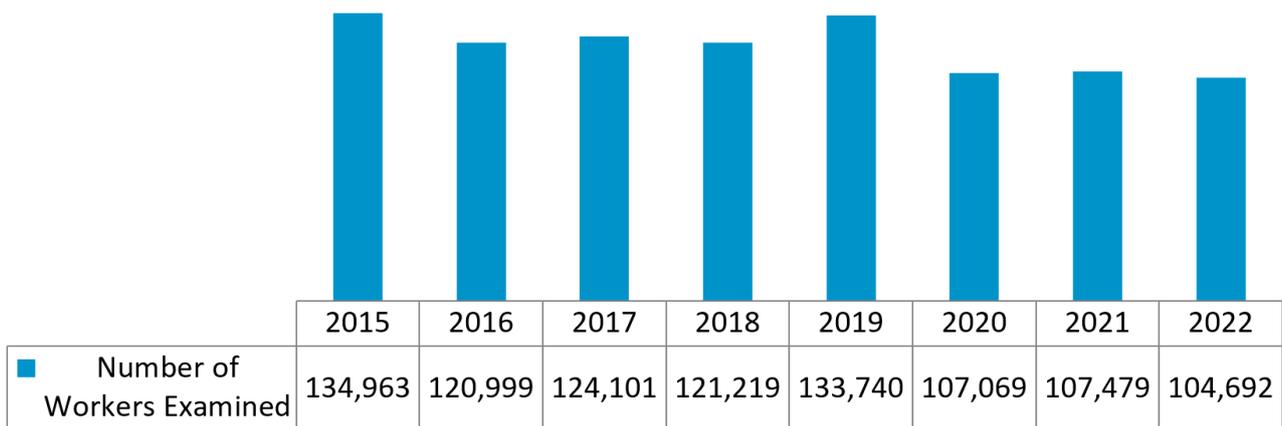


Figure 10b: Number of workplaces under medical surveillance, 2015-2022

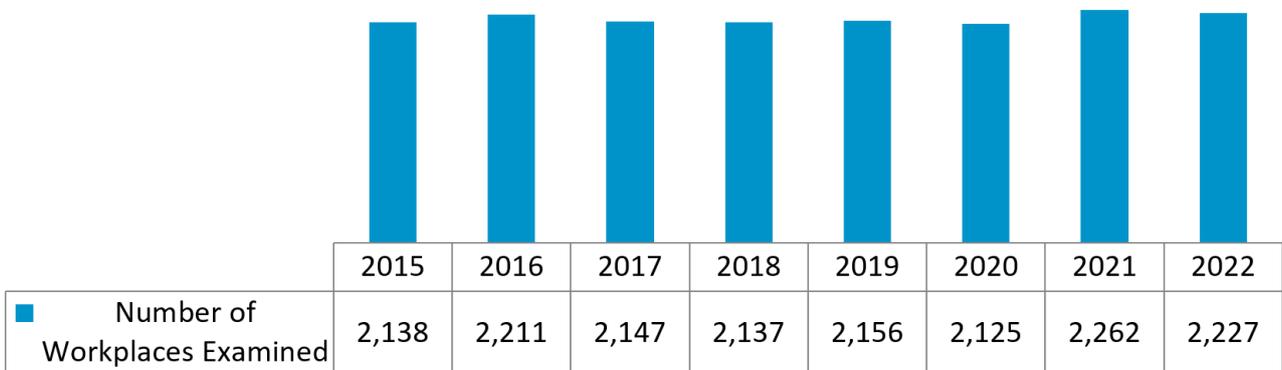


Figure 10c: Medical monitoring for noise exposure by Top five industries, 2022

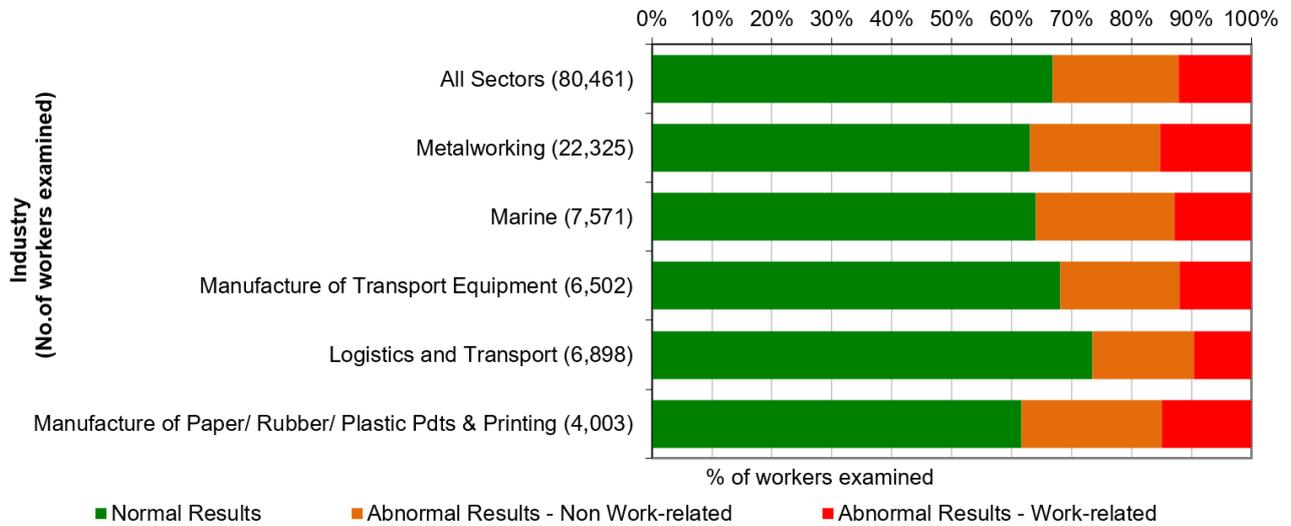
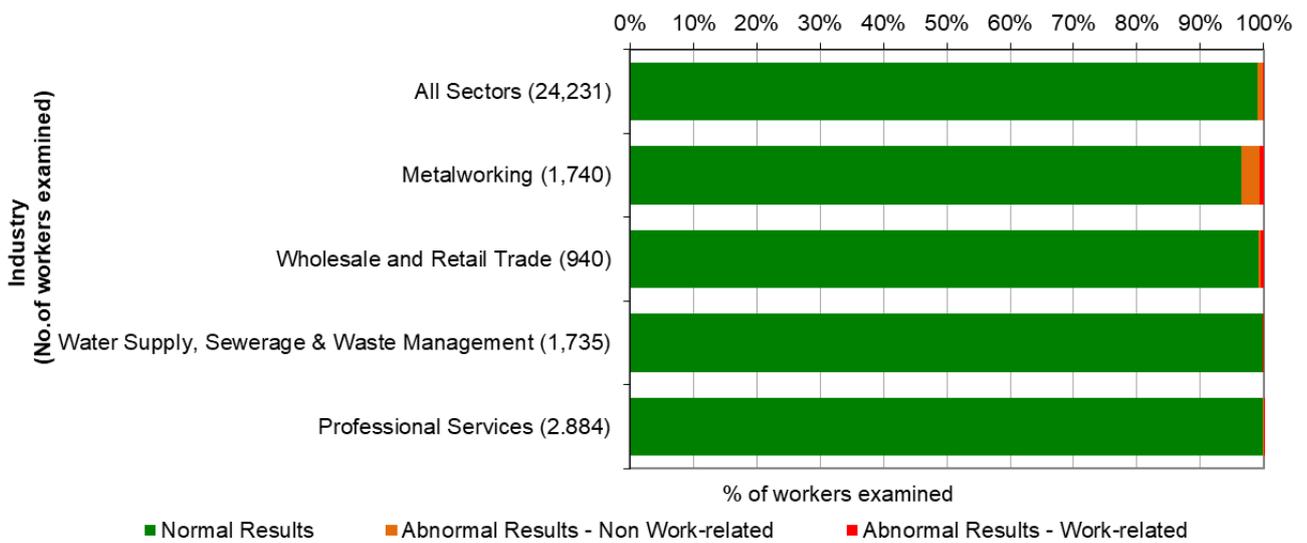


Figure 10d: Medical monitoring for chemical exposure by Top four industries, 2022



HYGIENE SURVEILLANCE

Workplaces where persons are likely to be exposed to excessive noise or toxic substances are required to conduct regular hygiene monitoring to measure their workers' exposure to noise and chemicals under the WSH (Noise) Regulations and the WSH (General Provisions) Regulations respectively.

NOISE EXPOSURE LEVELS

Based on the noise monitoring results submitted over the past three years, 80% of the workplaces had noisy processes exceeding 85dBA. 71% of the workplaces that conducted personal exposure monitoring had workers who were exposed to excessive noise (above an equivalent sound pressure level of 85dBA over an eight-hour workday). These workplaces will need to implement additional control measures to reduce or control the noise generated from machinery or equipment in order to reduce workers' exposure to below the permissible limits as stipulated in the Schedule of the WSH (Noise) Regulations.

Figure 11a: Static noise monitoring results by industry, 2020-2022

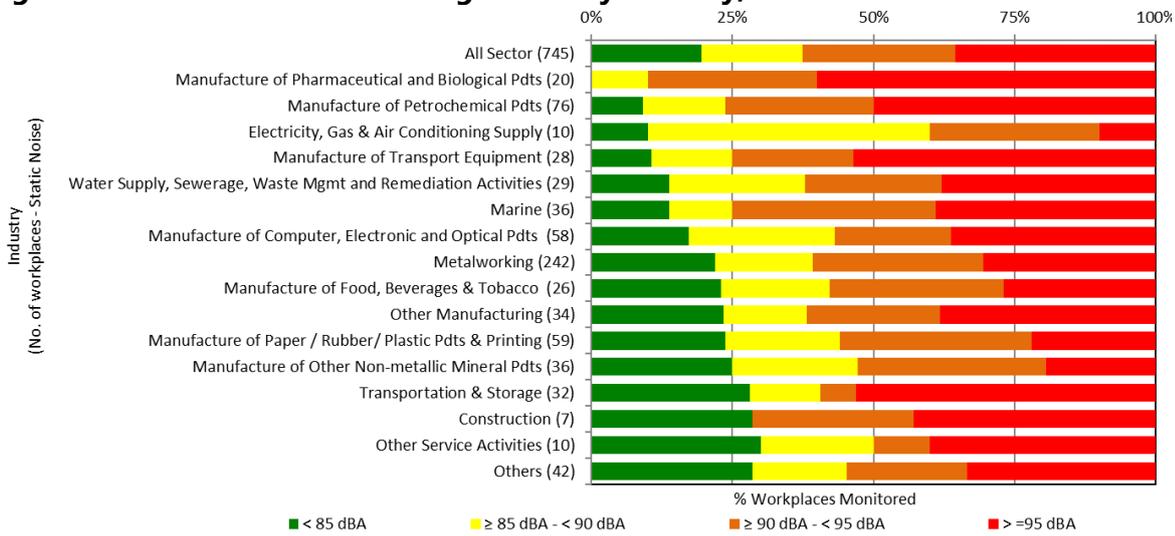
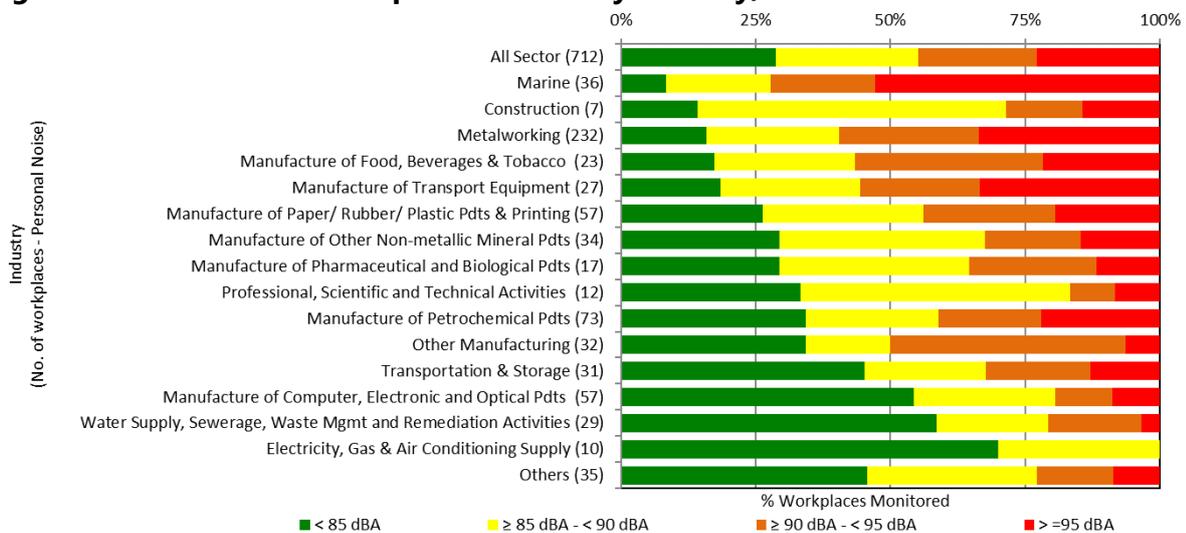


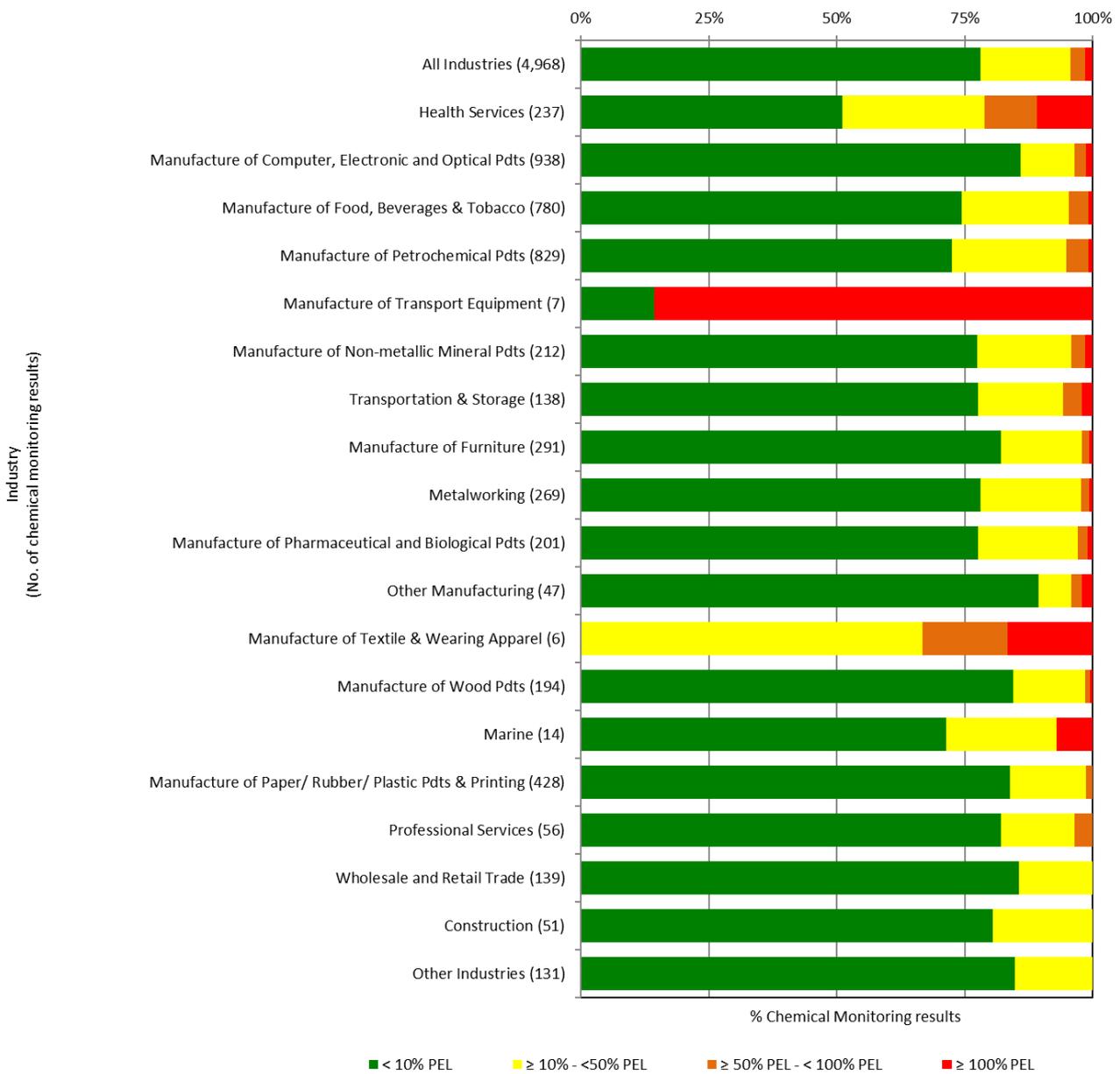
Figure 11b: Personal noise exposure results by industry, 2020-2022



CHEMICAL EXPOSURE LEVELS

A total of 4,968 chemical monitoring results were received in 2022, of which 36% of the results were from the Manufacture of Computer, Electronic & Optical Products industry (19%) and Manufacture of Petrochemical Products industry (17%). Workplaces with chemical exposure levels higher than permissible exposure level (PEL¹¹) will require implementation of additional engineering control measures to eliminate or reduce workers' exposure to below the PEL.

Figure 11c: Chemical exposure results by industry, 2022



¹¹ Permissible Exposure Level (PEL) refers to the maximum time weighted average concentration of a toxic substance to which any person may be exposed.

ANNEX A1

STATISTICAL TABLES ON INDUSTRY PROFILE

Table (iv): Major injury rates by firm size and proportion of injured by working experience for key contributing industries, 2022

Industry	Major Injury Rate* by firm size		Proportion of Injured by working experience in the company	
	SME	Larger Firms	≤ 3 years	> 3 years
Construction	38	31	66%	34%
Manufacturing	45	12	54%	46%
Transportation & Storage	46	23	50%	50%
Accommodation & Food Services	18	40	63%	37%
Administrative & Support Services	24	23	66%	34%
Wholesale & Retail Trade	10	7	55%	45%

*Per 100,000 workers

Table (v): Number of workplace fatal and major injuries by leading industry, 2022

Leading Industry	Number of Fatal and Major Injuries, 2022	Percentage of Total
Total for all Industries	660	100%
Construction	171	26%
Manufacturing	129	20%
Transportation & Storage	70	11%
Accommodation & Food Services	57	9%
Administrative & Support Services	57	9%
Wholesale & Retail Trade	41	6%
Sum for leading Industries	525	80%

ANNEX A2

INDUSTRY PROFILE OF FATAL AND MAJOR INJURIES BY INCIDENT TYPE (CAUSE) AND ROOT CAUSES, 2022

CONSTRUCTION

Common incident type (cause) for fatal and major injuries in 2022

Construction			
Type A		Type B	
Incident Type (Cause)	2022	Incident Type (Cause)	2022
Falls from Height	55	Slips, Trips, Falls	27
Vehicular Incidents	14	Machinery Incidents	19
Struck by Falling Objects	12		
Caught in/Between Objects	9		
Struck by Moving Objects	8		

Common root causes

Accident types	Root causes	Common occurrence	Common incident agent
Falls From Height	Inadequate fall prevention plan	Use of generic fall protection measures that did not address specific site conditions, e.g. lack of anchorage point for harness.	Ladders, Scaffolds , Roof works, Structures, Mobile Elevated Work Platform
	Non-compliance to fall prevention plan	Failure to ensure protective measures are in place before work commence – poor supervision.	
	Unsafe behaviours by workers	Victims fail to anchor harnesses, or adopted unsafe behaviours e.g. climbing over barriers	
Vehicular Incidents	No / inadequate Traffic Management Plan	Lack of proper control of vehicular movements on site especially due to changing site conditions	Motor vehicles
	Negligence by operator	Operator did not keep a proper lookout.	

Common root causes (Continued)

Accident types	Root causes	Common occurrence	Common incident agent
Struck by Falling Objects	Inadequate WSH management System	Inadequate and generic Risk Assessment, Safe Work Procedures, no/inadequate lifting plan, overloading	Metal Items, Industrial Hand Tools
	Isolated non-compliance to WSH management system (by victim or co worker/s)	Complacency of workers (improper rigging method)	
	Latent defects	Lifting gears or equipment failure due to poor maintenance	

MANUFACTURING

Common incident type (cause) for fatal and major injuries in 2022

Manufacturing			
Type A		Type B	
Incident Type (Cause)	2022	Incident Type (Cause)	2022
Falls from Height	10	Machinery Incidents	42
Struck by Falling Objects	5	Slips, Trips, Falls	35
Struck by Moving Objects	5	Exposure to Hazardous Substances	5
Collapse/Failure of Structure & Equipment	3	Exposure to Electrical Currents	5
		Exposure to Extreme Temperature	4

Common root causes

Accident types	Root causes	Common occurrence	Common incident agent
Machinery Incidents	No or inadequate control measures or safety procedures	No machine guarding (especially in F&B manufacturing), no Lock out, tag out (LOTO) procedures, ineffective or uncoordinated work process between 2 or more interrelated machines leading to accident	Industrial machines (Saws, Transmission machines e.g. Belts gear chain pulley, meat grinders)
	Non-compliance to safety measures	Not following LOTO procedures, bypass of safety interlocks	
Slips Trips Falls	Lack of safety measures	Failure to install non-slip flooring / anti-slip mats on wet areas	Floor/ Level surfaces
	Non-compliance to safety measures	Failure to enforce wearing of suitable footwear (e.g. rubber boots in F&B manufacturing), Lack of situational awareness	
Falls from Height	No or lack of safety measures	Unauthorized erection of mezzanine without barricade or access. Poor / unsafe means of access to materials stored at heights, e.g. unsecured ladders or lifting of persons using forklift	Ladders, Structures
	Unsafe behaviours by workers	Workers took upon them to devise their own improper and unsafe ways to access height	

TRANSPORTATION & STORAGE

Common incident type (cause) for fatal and major injuries in 2022

Transportation & Storage			
Type A		Type B	
Incident Type (Cause)	2022	Incident Type (Cause)	2022
Vehicular Incidents	17	Slips, Trips, Falls	21
Falls from Height	7	Exposure to Hazardous Substances	4
Caught in/Between Objects	6	Over Exertion/Strenuous Movement	4
		Machinery Incidents	3
		Exposure to Extreme Temperature	2

Common root causes

Accident types	Root causes	Common occurrence	Common incident agent
Vehicular (including forklifts)	Inadequate Traffic Management Plan and other controls	Lack of proper planning or supervision leading to improper use of vehicle; No proper control of keys to vehicles and designated operators; Unauthorized modification e.g. forklift attachments, poor forklift maintenance e.g. worn tires and faulty audio buzzers	Motor vehicles
	Non-compliance to Traffic management plan	Established traffic management plan looks good on paper, but workers do not adhere to it on site, e.g., demarcated lines faded over time and not repainted, workers not walking within demarcated lines etc.	
	Unsafe acts by others	Negligence by third party drivers in work-related traffic accidents	
Falls From Height	Lack of safety measures	No prohibition against lifting of persons by forklift, reach trucks etc. No instruction on safe means of access, leading to unsafe and improper use of ladders for access and work	Ladders Mobile Elevated Working Platforms
	Competency issues	Workers took upon them to devise their own improper and unsafe ways to access height; Poor situational awareness of surrounding hazards e.g. fall from lorry bed	

SERVICES

Common incident type (cause) for fatal and major injuries in 2022

Type A		Type B	
Incident Type (Cause)	2022	Incident Type (Cause)	2022
Accommodation & Food Services			
Falls from Height	5	Exposure to Extreme Temperature	19
Vehicular Incidents	3	Slips, Trips, Falls	19
		Machinery Incidents	5
Administrative & Support Services			
Vehicular Incidents	5	Slips, Trips, Falls	32
Falls from Height	3		
Struck by Falling Objects	3		
Wholesale & Retail Trade			
Vehicular Incidents	3	Slips, Trips, Falls	20
Falls from Height	3	Exposure to Extreme Temperature	4
Struck by Falling Objects	3		

Common root causes

Accident types	Root causes	Common occurrence	Common incident agent
Accommodation & Food Services			
Exposure to Extreme Temperature	Inadequate planning and procedures	Crowded food prep area lack of maneuvering space, Inadequate instructions on safe food prep methods	Hot scalding liquid / Steam
	Negligence by workers	Complacency/ lack of situational awareness during food prep (transferring hot liquids)	
Slips, Trips, Falls	Lack of safety measures	Failure to install non-slip flooring / anti-slip mats on wet areas	Floor/Level Surfaces
	Non-compliance to safety measures	Failure to enforce wearing of suitable footwear (e.g. non-slip shoes)	
Falls From Height	Inadequate safety measures	Improper / unsafe use of ladders	Ladder

Common root causes (Continued)

Accidents Type	Root Causes	Common Occurrence	Common incident agent
Administrative & Support Services			
Slips, Trips, Falls	Lack of safety measures	Failure to provide non-slip footwear; Lack of communication on Safe Work (cleaning) methods ; Lack of suitable tools provided (e.g. cleaning / drying equipment)	Floor/Level Surfaces, Stairs or Steps
	Non-compliance to safety measures	Use of improper tools (for cleaning / drying) Not wearing suitable footwear	
Wholesale & Retail Trade			
Slips, Trips, Falls	Inadequate safety measures	Lack of system of managing flow of goods, Cluttered work area	Floor/Level Surfaces; Motor vehicles; Furniture / Fittings; Stairs/Steps; Goods & Cargo

ANNEX B

STATISTICAL TABLES

Table 2: Rate of total workplace injuries by industry, 2021 - 2022

Industry	Total Workplace Injury Rate (per 100,000 workers)			
	2021	2022	2021 [N]	2022 [N]
All Industries	387	355	673	614
Construction	611	491	1,004	752
Manufacturing	726	613	1,127	980
Marine	509	488	971	798
Others	295	283	542	523

Table 3a: Number of workplace fatal injuries by industry, 2021 - 2022

Industry	2021	2022
All Industries	37	46
Construction	13	14
Transportation & Storage	9	9
<i>Logistics & Transport</i>	4	1
Manufacturing	4	7
<i>Metalworking</i>	0	3
<i>Manufacture of Petrochemical Products</i>	0	2
<i>Manufacture of Other Non-metallic Mineral Products</i>	1	1
<i>Manufacture of Paper / Rubber / Plastic Products & Printing</i>	0	1
<i>Other Manufacturing</i>	3	0
Marine	1	5
Real Estate Activities	3	3
Accommodation & Food Service Activities	0	2
<i>Food & Beverage Service Activities</i>	0	1
<i>Accommodation</i>	0	1
Administrative & Support Service Activities	0	2
<i>Cleaning & Landscape Maintenance Activities</i>	0	2
Water Supply; Sewerage, Waste Management & Remediation Activities	3	1
Agriculture and Fishing	1	1
Wholesale & Retail Trade	1	0
<i>Wholesale Trade</i>	1	0
Community, Social & Personal Services	2	2
<i>Other Service Activities</i>	2	1
<i>Public Administration & Defence</i>	0	1

Table 3b: Rate of workplace fatal injuries by industry, 2021 – 2022

Per 100,000 workers

Industry	2021	2022
All Industries	1.1	1.3
Construction	3.3	2.9
Transportation & Storage	3.6	3.4
<i>Logistics & Transport</i>	3.8	0.8
Manufacturing	1.0	1.7
<i>Metalworking</i>	0	2.9
<i>Manufacture of Petrochemical Products</i>	n.a.	n.a.
<i>Manufacture of Other Non-metallic Mineral Products</i>	n.a.	n.a.
<i>Manufacture of Paper / Rubber / Plastic Products & Printing</i>	0	3.8
<i>Other Manufacturing</i>	n.a.	n.a.
Marine	1.8	8.2
Real Estate Activities	4.2	4.1
Accommodation & Food Service Activities	0	0.8
<i>Food & Beverage Service Activities</i>	0	0.4
<i>Accommodation</i>	0	3.3
Administrative & Support Service Activities	0	0.8
<i>Cleaning & Landscape Maintenance Activities</i>	0	2.5
Water Supply; Sewerage, Waste Management & Remediation Activities	n.a.	n.a.
Agriculture and Fishing	n.a.	n.a.
Wholesale & Retail Trade	0.2	0
<i>Wholesale Trade</i>	0.3	0
Community, Social & Personal Services	0.4	0.3
<i>Other Service Activities</i>	n.a.	n.a.
<i>Public Administration & Defence</i>	n.a.	n.a.

Note: Figures for Community, Social & Personal Services are revised due to updated employment numbers.

Table 3c: Number of workplace fatal injuries by incident risk type (Type A/B), 2021 – 2022

Incident Type (Cause)	2021	2022
Total Workplace Fatal Injuries	37	46
<i>Type A (higher fatality risk)</i>	34	37
<i>Type B (Lower fatality risk)</i>	3	9

Table 3d: Number of workplace fatal injuries by incident type (cause) and incident agent, 2021 – 2022

Incident Type (Cause)	Incident Agent	2021	2022
Total Workplace Fatal Injuries for Type A		34	37
Vehicular Incidents	Total	11	15
	Work-related Traffic Accidents	6	7
In Workplaces	Total	5	8
	<i>Vehicles - Transport Equipment</i>	1	4
	<i>Vehicles - Forklifts</i>	1	3
	<i>Vehicles - Industrial Trucks</i>	3	1
Falls From Height	Total	8	8
	<i>Physical Workplace - Structures</i>	3	4
	<i>Means of Access - Ladders</i>	3	2
	<i>Physical Workplace - Roofs</i>	0	2
	<i>Physical Workplace - Formwork</i>	1	0
Crane-related Incidents	Total	1	6
	Lifting Equipment - Cranes	1	6
Collapse/Failure of Structure & Equipment	Total	0	6
	<i>Vehicles - Forklifts</i>	0	3
	<i>Physical Workplace - Structures</i>	0	1
	<i>Means of Access - Scaffold</i>	0	1
Fires & Explosion	Total	5	1
	<i>Material & Substances - Explosives/Flammable</i>	0	1
	<i>Material & Substances - Dust, Gas, Liquid/Chemicals</i>	3	0
	<i>Electrical Equipment</i>	2	0
Struck By Moving Objects	Total	0	1
	Material & Substances - Wooden Items	0	1

(Continued) Table 3d: Number of workplace fatal injuries by incident type (cause) and incident agent, 2021 – 2022

Incident Type (Cause)	Incident Agent	2021	2022
Caught In/ Between Objects	Total	3	0
	<i>Lifting Equipment - Mobile Work Platform</i>	1	0
	<i>Lifting Equipment - Lifts & Hoists</i>	1	0
	<i>Material & Substances - Metal Items</i>	1	0
Struck By Falling Objects	Total	3	0
	<i>Goods/Cargo</i>	1	0
	<i>Industrial Machines</i>	1	0
	<i>Vehicles - Transport Equipment</i>	1	0
Suffocation /Drowning	Total	3	0
	<i>Physical Workplace - Confined Space</i>	2	0
	<i>Other Incident Agents</i>	1	0
Total Workplace Fatal Injuries for Type B		3	9
Slips, Trips & Falls	Total	2	5
	<i>Vehicles - Transport Equipment</i>	1	2
	<i>Means of Access - Others</i>	0	2
	<i>Physical Workplace - Floors/Level Surfaces</i>	0	1
	<i>Vehicles - Forklifts</i>	1	0
Machinery Incident	Total	1	1
	<i>Industrial Machines</i>	1	1
Others	Total	0	3
	<i>Physical Workplace - Structures</i>	0	2
	<i>Other Incident Agents</i>	0	1

Table 3e: Number of workplace fatal injuries by industry and incident type (cause), 2022

Industry	All	Construction	Transportation & Storage	Manufacturing	Marine	Real Estate Activities	Accommodation & Food Service Activities	Administrative & Support Service Activities	Water Supply, Sewerage & Waste Management	Agriculture and Fishing	Other Service Activities	Public Administration & Defence
Total	46	14	9	7	5	3	2	2	1	1	1	1
Type A	37	13	8	5	2	2	2	2	1	1	1	0
Vehicular Incidents	15	2	8	0	1	2	0	0	1	1	0	0
Falls From Height	8	4	0	0	0	0	2	1	0	0	1	0
Crane-related Incidents	6	3	0	1	1	0	0	1	0	0	0	0
Collapse/Failure of Structure & Equipment	6	3	0	3	0	0	0	0	0	0	0	0
Fires & Explosion	1	0	0	1	0	0	0	0	0	0	0	0
Struck By Moving Objects	1	1	0	0	0	0	0	0	0	0	0	0
Type B	9	1	1	2	3	1	0	0	0	0	0	1
Slips, Trips & Falls	5	1	1	0	1	1	0	0	0	0	0	1
Machinery Incident	1	0	0	1	0	0	0	0	0	0	0	0
Others	3	0	0	1	2	0	0	0	0	0	0	0

Table 4a: Number of workplace major injuries by selected industry, 2021 - 2022

Industry	2021	2022
All Industries	610	614
Construction	126	157
Manufacturing	141	122
<i>Manufacture of Food, Beverages & Tobacco</i>	32	48
<i>Metalworking</i>	46	37
<i>Other Manufacturing</i>	11	8
<i>Manufacture of Petrochemical Products</i>	12	7
<i>Manufacture of Transport Equipment</i>	4	6
Transportation & Storage	59	61
<i>Logistics & Transport</i>	39	48
Accommodation & Food Service Activities	52	55
<i>Food & Beverage Service Activities</i>	47	45
<i>Accommodation</i>	5	10
Administrative & Support Service Activities	44	55
<i>Cleaning & Landscape Maintenance Activities</i>	27	30
<i>Security & Investigation Activities</i>	9	13
Wholesale & Retail Trade	42	41
<i>Wholesale Trade</i>	25	23
<i>Retail Trade</i>	17	18
Real Estate Activities	17	17
Marine	15	15
Professional, Scientific & Technical Activities	23	15
Community, Social & Personal Services	70	59
<i>Health & Social Services</i>	22	23
<i>Education</i>	19	18
<i>Other Services Activities</i>	16	7

Table 4b: Rate of workplace major injuries by selected industry, 2021 - 2022 Per 100,000 workers

Industry	2021	2022
All Industries	18.5	17.3
Construction	32.1	32.0
Manufacturing	36.4	28.8
<i>Manufacture of Food, Beverages & Tobacco</i>	63.2	85.6
<i>Metalworking</i>	45.3	35.2
<i>Other Manufacturing</i>	n.a.	n.a.
<i>Manufacture of Petrochemical Products</i>	n.a.	n.a.
<i>Manufacture of Transport Equipment</i>	16.3	23.3
Transportation & Storage	23.3	23.2
<i>Logistics & Transport</i>	36.7	40.7
Accommodation & Food Service Activities	21.7	21.1
<i>Food & Beverage Service Activities</i>	21.9	19.5
Accommodation	20.2	33.2
Administrative & Support Service Activities	18.2	23.0
<i>Cleaning & Landscape Maintenance Activities</i>	35.2	37.4
<i>Security & Investigation Activities</i>	18.8	27.5
Wholesale & Retail Trade	9.3	8.9
<i>Wholesale Trade</i>	8.4	7.6
<i>Retail Trade</i>	11.2	11.5
Real Estate Activities	23.6	23.0
Marine	27.0	24.6
Professional, Scientific & Technical Activities	8.9	5.4
Community, Social & Personal Services	12.4	10.1
<i>Health & Social Services</i>	11.8	12.0
<i>Education</i>	n.a.	n.a.
<i>Other Services Activities</i>	n.a.	n.a.

Note: Figures for Community, Social & Personal Services are revised due to updated employment numbers.

Table 4c: Types of workplace major injuries, 2021 - 2022

Workplace Major Injury Types	2021	2022
Total	610	614
Crushing, Fractures & Dislocations	360	356
Amputations	102	114
Burns, With More Than 20 MC Days	70	67
Multiple Injuries	44	44
Concussion, With More Than 20 MC Days	17	16
Exposure To/ Contact With Electric Current	10	13
Blindness	2	1
Mosquito Borne	2	0
Paralysis	0	0
Others	3	2

Table 4d: Number of workplace major injuries by incident risk type (Type A/B), 2021 – 2022

Incident Type (Cause)	2021	2022
Total Workplace Major Injuries	610	614
<i>Type A (higher fatality risk)</i>	220	217
<i>Type B (Lower fatality risk)</i>	390	397

Table 4e: Number of workplace major injuries by key incident type (cause) and incident agent, 2021 – 2022

Incident Type (Cause)	Incident Agent	2021	2022
Total Workplace Major Injuries for Type A		220	217
Falls From Height	Total	63	86
	<i>Means of Access - Ladders</i>	36	46
	<i>Physical Workplace - Structure</i>	8	17
	<i>Means of Access - Scaffold</i>	8	10
Vehicular Incidents	Total	46	41
	- Work-related Traffic Accidents	25	17
- In Workplaces	Total	21	24
	<i>Motor Vehicles</i>	13	13
	<i>Vehicles – Excavators / Forklifts / Reach truck / Stacker</i>	7	9
Struck by Falling Objects	Total	42	30
	<i>Goods/Cargo</i>	7	9
	<i>Metal Items (excluding knives/needles)</i>	14	5
Struck by Moving Objects	Total	34	26
	<i>Metal Items (excluding knives/needles)</i>	12	8
	<i>Furniture & Fittings</i>	8	3
Caught In/ Between Objects	Total	22	21
	<i>Metal Items (excluding knives/needles)</i>	10	8
	<i>Lifting Equipment (including cranes)</i>	4	6

Table 4e: Number of workplace major injuries by key incident type (cause) and incident agent, 2021 – 2022 (Continued)

Incident Type (Cause)	Incident Agent	2021	2022
Total Workplace Major Injuries for Type B		390	397
Slips, Trips & Falls	Total	208	200
	<i>Physical Workplace - Floors/Level Surfaces</i>	110	103
	<i>Motor Vehicles</i>	20	28
	<i>Means of Access - Stairs or Steps</i>	28	25
Machinery Incidents	Total	63	77
	<i>Industrial Machines</i>	52	60
	<i>Industrial Hand Tools</i>	10	13
Exposure to Extreme Temperatures	Total	43	38
	<i>Hot scalding liquid/Steam</i>	36	29
	<i>Industrial Machines</i>	1	4
Exposure to Electric Current	Total	18	20
	<i>Electrical Installation</i>	10	11
	<i>Industrial Machines</i>	4	5
Over-exertion/ Strenuous Movements	Total	21	18
	<i>Goods/Cargo</i>	9	7
	<i>Human Factors</i>	7	4

Table 4f: Top three incident types for workplace major injuries by industry, 2022

Industry	Top Three Incident Types (Causes)		
	1 st	2 nd	3 rd
All Industries	STF	FFH	MAC
Construction	FFH	STF	MAC
Marine	SBMO	STF	SBFO
Manufacturing	MAC	STF	FFH
<i>Manufacture of Food, Beverages & Tobacco</i>	MAC	STF	ETET
<i>Metalworking</i>	MAC	STF	FFH
<i>Other Manufacturing</i>	MAC	STF	-
<i>Manufacture of Petrochemical Products</i>	STF	CIBO, ETET, ETHS	-
<i>Manufacture of Transport Equipment</i>	STF	FFH, SBFO	-
Transportation & Storage	STF	VEH	FFH
<i>Logistics & Transport</i>	STF	VEH, FFH	-
Accommodation & Food Service Activities	STF, ETET	-	MAC
<i>Food & Beverage Service Activities</i>	ETET	STF	MAC
<i>Accommodation</i>	STF	ETET, MAC, SBFO, SBMO	-
Administrative & Support Service Activities	STF	VEH	SBFO
<i>Cleaning & Landscape Maintenance Activities</i>	STF	SBFO	FFH, SAO
<i>Security & Investigation Activities</i>	STF	VEH	EETEC, SBMO
Wholesale & Retail Trade	STF	ETET	FFH, SBFO, VEH
<i>Wholesale Trade</i>	STF	ETET, FFH, SBFO	-
<i>Retail Trade</i>	STF	ETET, VEH	-
Real Estate Activities	STF	FFH	ETET
Professional, Scientific & Technical Activities	FFH, STF	-	ETET, VEH
Community, Social & Personal Services	STF	OESM, SAO	-
<i>Health & Social Services</i>	STF	OESM	PA, SAO, VEH
<i>Education</i>	STF	ETHS, FFH	-
<i>Other Services Activities</i>	STF	CIBO, SAO	-

Legend:

<u>Type A Incidents</u>		<u>Type B Incidents</u>	
CIBO	Caught In/Between Objects	CSBO	Cut/Stabbed by Objects
CFSE	Collapse/Failure of Structures & Equipment	DODS	Discharge of Dangerous Substances
Crane	Crane-related Incident	ETBM	Exposure to/ Contact with Biological Materials
FFH	Falls from Height	EETEC	Exposure to/ Contact with Electric Current
FE	Fires & Explosion	ETET	Exposure to/ Contact with Extreme Temperature
SOD	Suffocation/Drowning	ETHS	Exposure to/ Contact with Hazardous Substances
SBFO	Struck by Falling Objects	MAC	Machinery Incident
SBMO	Struck by Moving Objects		
VEH	Vehicular Incident	OESM	Over-exertion and Strenuous Movements
		OTH	Other Incident Types
		PA	Physical Assault
		SAO	Strike Against Objects
		SOO	Stepping on Objects
		STF	Slips, Trips and Falls

Table 5a: Number of workplace minor injuries by selected industry, 2021 - 2022

Industry	2021	2022	2021[N]	2022[N]
All Industries	12,119	11,915	21,539	21,106
Manufacturing	2,670	2,469	4,223	4,023
<i>Metalworking</i>	1,077	959	1,681	1,508
<i>Manufacture of Food, Beverages & Tobacco</i>	519	512	801	802
<i>Manufacture of Computer, Electronic & Optical Products</i>	170	178	329	358
<i>Manufacture of Paper / Rubber / Plastic Products & Printing</i>	176	148	266	240
Construction	2,258	2,235	3,799	3,513
Accommodation & Food Service Activities	1,294	1,427	2,488	2,632
<i>Food & Beverage Service Activities</i>	992	1,081	1,802	1,806
<i>Accommodation</i>	302	346	686	826
Transportation & Storage	1,046	982	1,663	1,664
<i>Logistics & Transport</i>	820	778	1,256	1,326
Administrative & Support Service Activities	912	887	1,501	1,415
<i>Cleaning & Landscape Maintenance Activities</i>	476	419	769	620
<i>Security & Investigation Activities</i>	204	248	376	451
Wholesale & Retail Trade	804	734	1,353	1,295
<i>Wholesale Trade</i>	406	357	561	524
<i>Retail Trade</i>	398	377	792	771
Professional, Scientific & Technical Activities	363	401	742	796
Marine	267	277	524	466
Real Estate Activities	262	237	428	375
Financial & Insurance Services	122	123	247	238
Water Supply; Sewerage, Waste Management & Remediation Activities	116	102	193	158
Community, Social & Personal Services	1,837	1,846	3,922	4,041
<i>Health & Social Services</i>	884	905	2,308	2,407
<i>Education</i>	418	399	700	669
<i>Other Services Activities</i>	318	320	554	574
<i>Arts, Entertainment & Recreation</i>	149	159	250	273

[N] – New Series. All work injuries with any instance of medical leave or light duties.

Table 5b: Rate of workplace minor injuries by selected industry,
2021 – 2022

Per 100,000 workers

Industry	2021	2022	2021[N]	2022[N]
All Industries	368	336	653	569
Manufacturing	689	583	1,089	949
<i>Metalworking</i>	1,061	912	1,656	1,433
<i>Manufacture of Food, Beverages & Tobacco</i>	1,026	913	1,583	1,430
<i>Manufacture of Computer, Electronic & Optical Products</i>	215	206	415	413
<i>Manufacture of Paper / Rubber / Plastic Products & Printing</i>	693	567	1,047	920
Construction	575	456	968	717
Accommodation & Food Service Activities	541	547	1,040	1,008
<i>Food & Beverage Service Activities</i>	463	468	840	782
<i>Accommodation</i>	1,218	1,150	2,766	2,744
Transportation & Storage	413	373	657	632
<i>Logistics & Transport</i>	771	660	1,182	1,126
Administrative & Support Service Activities	377	370	620	591
<i>Cleaning & Landscape Maintenance Activities</i>	621	522	1,003	773
<i>Security & Investigation Activities</i>	425	524	783	953
Wholesale & Retail Trade	178	160	300	282
<i>Wholesale Trade</i>	136	118	187	173
<i>Retail Trade</i>	261	240	520	491
Professional, Scientific & Technical Activities	140	145	287	289
Marine	480	455	942	765
Real Estate Activities	364	321	594	507
Financial & Insurance Services	59	56	119	108
Water Supply; Sewerage, Waste Management & Remediation Activities	n.a.	n.a.	n.a.	n.a.
Community, Social & Personal Services	324	314	692	688
<i>Health & Social Services</i>	475	472	1,240	1,256
<i>Education</i>	n.a.	n.a.	n.a.	n.a.
<i>Other Services Activities</i>	n.a.	n.a.	n.a.	n.a.
<i>Arts, Entertainment & Recreation</i>	387	343	649	588

[N] – New Series. All work injuries with any instance of medical leave or light duties.

Note: Figures for Community, Social & Personal Services are revised due to updated employment numbers.

Table 5c: Types of workplace minor injury, 2021 - 2022

Workplace Minor Injury Types	2021	2022	2021 [N]	2022 [N]
Total	12,119	11,915	21,539	21,106
Cuts and Bruises	4,263	4,333	8,356	8,267
Crushing, Fractures and Dislocations	2,950	2,759	3,349	3,038
Sprains & Strains	1,829	1,778	3,622	3,610
Burns	397	442	823	836
Multiple Injuries	232	241	337	358
Puncture Wounds	182	176	320	290
Bites and Stings	85	79	273	253
Concussions	58	74	96	120
Mosquito Borne	23	11	24	12
Others	2,100	2,022	4,339	4,322

[N] – New Series. All work injuries with any instance of medical leave or light duties.

Table 5d: Number of workplace minor injuries by incident risk type (Type A/B), 2021 – 2022

Incident Type (Cause)	2021	2022	2021 [N]	2022 [N]
Total Workplace Minor Injuries	12,119	11,915	21,539	21,106
<i>Type A (higher fatality risk)</i>	3,800	3,677	6,490	6,217
<i>Type B (Lower fatality risk)</i>	8,319	8,238	15,049	14,889

[N] – New Series. All work injuries with any instance of medical leave or light duties.

Table 5e: Number of workplace minor injuries by key incident type (cause) and incident agent, 2021 – 2022

Incident Type (Cause)	Incident Agent	2021	2022	2021 [N]	2022 [N]
Total Workplace Minor Injuries for Type A		3,800	3,677	6,490	6,217
Struck by Moving Objects	Total	1,146	1,013	2,238	1,998
	<i>Metal Items (excluding knives/needles)</i>	506	406	878	710
	<i>Furniture & Fittings</i>	140	167	335	337
Struck by Falling Objects	Total	936	1,033	1,659	1,727
	<i>Metal Items (excluding knives/needles)</i>	320	324	538	496
	<i>Goods/Cargo</i>	139	164	254	286
Caught In/ Between Objects	Total	525	524	876	904
	<i>Metal Items (excluding knives/needles)</i>	224	199	379	339
	<i>Furniture & Fittings</i>	113	126	210	252
Vehicular Incidents	Total	637	597	967	901
- Work-related Traffic Accidents	Total	221	200	348	320
	<i>Motor vehicles</i>	221	200	348	319
- In Workplaces	Total	416	397	619	581
	<i>Motor vehicles</i>	207	174	335	279
	<i>Vehicle - Forklifts</i>	109	109	136	131
Falls from Height	Total	472	435	621	589
	<i>Means of Access - Ladders</i>	372	342	483	463
	<i>Physical Workplace - Structure</i>	33	33	45	47

Table 5e: Number of workplace minor injuries by key incident type (cause) and incident agent, 2021 – 2022 (Continued)

Incident Type (Cause)	Incident Agent	2021	2022	2021 [N]	2022 [N]
Total Workplace Minor Injuries for Type B		8,319	8,238	15,049	14,889
Slips, Trips & Falls	Total	3,565	3,536	5,785	5,869
	<i>Physical Workplace - Floors/Level Surfaces</i>	1,888	1,873	3,079	3,142
	<i>Means of Access - Stairs or Steps</i>	497	522	805	846
	<i>Furniture & Fittings</i>	172	165	347	319
Machinery Incidents	Total	1,965	1,972	3,162	3,029
	<i>Industrial Hand Tools</i>	683	722	1,189	1,144
	<i>Industrial Machines</i>	739	712	1,023	961
Over-exertion/ Strenuous Movements	Total	908	850	1,732	1,617
	<i>Human Factors</i>	501	469	949	929
	<i>Goods/Cargo</i>	219	188	425	343
Striking Against Objects	Total	689	647	1,442	1,402
	<i>Furniture & Fittings</i>	162	157	377	418
	<i>Metal Items (excluding knives/needles)</i>	233	200	459	366
Exposure to Extreme Temperatures	Total	353	391	740	775
	<i>Hot scalding liquid/Steam</i>	281	326	575	624
	<i>Industrial Machines</i>	24	22	48	43
Physical Assault	Total	161	148	672	742
	<i>Human Factors</i>	161	148	672	742

Table 5f: Top three incident types for workplace minor injuries by industry, 2022

Industry	Top Three Incident Types		
	1 st	2 nd	3 rd
All Industries	STF	MAC	SBFO
Manufacturing	MAC	STF	SBFO
<i>Metalworking</i>	MAC	STF	SBFO
<i>Manufacture of Food, Beverages & Tobacco</i>	MAC	STF	SBFO
<i>Manufacture of Computer, Electronic & Optical Products</i>	STF	MAC	CIBO, SBMO
<i>Manufacture of Paper / Rubber / Plastic Products & Printing</i>	MAC	STF	SBFO
Construction	STF	MAC	SBFO
Accommodation & Food Service Activities	STF	MAC	ETET
<i>Food & Beverage Service Activities</i>	MAC	STF	ETET
<i>Accommodation</i>	STF	MAC	SAO, SBFO, SBMO
Transportation & Storage	STF	VEH	SBFO
<i>Logistics & Transport</i>	STF	VEH	SBFO
Administrative & Support Service Activities	STF	VEH	SBMO
<i>Cleaning & Landscape Maintenance Activities</i>	STF	SBMO	MAC
<i>Security & Investigation Activities</i>	STF	VEH	OESM
Wholesale & Retail Trade	STF	MAC	SBFO
<i>Wholesale Trade</i>	STF	SBFO	MAC
<i>Retail Trade</i>	STF	MAC	SBFO
Professional, Scientific & Technical Activities	STF	MAC	SBFO
Marine	STF	CIBO, MAC	-
Real Estate Activities	STF	FFH, OESM, SBFO	-
Financial & Insurance Services	STF	OESM	SBFO
Water Supply; Sewerage, Waste Management & Remediation Activities	STF	MAC	SBFO, VEH
Community, Social & Personal Services	STF	OESM	SBMO
<i>Health & Social Services</i>	STF	OESM	PA, SBMO
<i>Education</i>	STF	OESM	SBMO
<i>Other Services Activities</i>	STF	MAC	OESM
<i>Arts, Entertainment & Recreation</i>	STF	ETBM, OESM	-

Legend:

Type A Incidents

- CIBO Caught In/Between Objects
- CFSE Collapse/Failure of Structures & Equipment
- Crane Crane-related Incident
- FFH Falls from Height
- FE Fires & Explosion
- SOD Suffocation/Drowning
- SBFO Struck by Falling Objects
- SBMO Struck by Moving Objects
- VEH Vehicular Incident

Type B Incidents

- CSBO Cut/Stabbed by Objects
- DODS Discharge of Dangerous Substances
- ETBM Exposure to/ Contact with Biological Materials
- ETEC Exposure to/ Contact with Electric Current
- ETET Exposure to/ Contact with Extreme Temperature
- ETHS Exposure to/ Contact with Hazardous Substances
- MAC Machinery Incident
- OESM Over-exertion and Strenuous Movements
- OTH Other Incident Types
- PA Physical Assault
- SAO Strike Against Objects
- SOO Stepping on Objects
- STF Slips, Trips and Falls

Table 5g: Top three incident types for workplace minor injuries by industry, 2022[N]

Industry	Top Three Incident Types		
	1 st	2 nd	3 rd
All Industries	STF	MAC	SBMO
Manufacturing	MAC	STF	SBMO
<i>Metalworking</i>	MAC	STF	SBMO
<i>Manufacture of Food, Beverages & Tobacco</i>	MAC	STF	SBMO
<i>Manufacture of Computer, Electronic & Optical Products</i>	STF	MAC	ETHS
<i>Manufacture of Paper / Rubber / Plastic Products & Printing</i>	MAC	STF	SAO
Construction	STF	MAC	SBMO
Accommodation & Food Service Activities	STF	MAC	ETET
<i>Food & Beverage Service Activities</i>	STF	MAC	ETET
<i>Accommodation</i>	STF	SAO	MAC
Transportation & Storage	STF	VEH	SBMO
<i>Logistics & Transport</i>	STF	VEH	SBMO
Administrative & Support Service Activities	STF	SBMO	VEH
<i>Cleaning & Landscape Maintenance Activities</i>	STF	SBMO	MAC
<i>Security & Investigation Activities</i>	STF	VEH	OESM
Wholesale & Retail Trade	STF	MAC	SBFO
<i>Wholesale Trade</i>	STF	SBFO	MAC
<i>Retail Trade</i>	STF	MAC	SBFO
Professional, Scientific & Technical Activities	STF	MAC	OESM
Marine	STF	CIBO	MAC
Real Estate Activities	STF	SBFO	SBMO
Financial & Insurance Services	STF	OESM	SBFO
Water Supply; Sewerage, Waste Management & Remediation Activities	STF	ETHS, MAC	-
Community, Social & Personal Services	STF	PA	OESM
<i>Health & Social Services</i>	STF	PA	OESM
<i>Education</i>	STF	OESM	SBMO
<i>Other Services Activities</i>	STF	OESM	SAO
<i>Arts, Entertainment & Recreation</i>	STF	ETBM	OESM

[N] – New Series. All work injuries with any instance of medical leave or light duties.

Legend:

<u>Type A Incidents</u>		<u>Type B Incidents</u>	
CIBO	Caught In/Between Objects	CSBO	Cut/Stabbed by Objects
CFSE	Collapse/Failure of Structures & Equipment	DODS	Discharge of Dangerous Substances
Crane	Crane-related Incident	ETBM	Exposure to/ Contact with Biological Materials
FFH	Falls from Height	ETEC	Exposure to/ Contact with Electric Current
FE	Fires & Explosion	ETET	Exposure to/ Contact with Extreme Temperature
SOD	Suffocation/Drowning	ETHS	Exposure to/ Contact with Hazardous Substances
SBFO	Struck by Falling Objects	MAC	Machinery Incident
SBMO	Struck by Moving Objects		
VEH	Vehicular Incident		
		OESM	Over-exertion and Strenuous Movements
		OTH	Other Incident Types
		PA	Physical Assault
		SAO	Strike Against Objects
		SOO	Stepping on Objects
		STF	Slips, Trips and Falls

Table 6a: Number of dangerous occurrences by industry, 2021 - 2022

Industry	2021	2022
All Industries	13	27
Construction	8	15
<i>Manufacturing</i>	2	9
<i>Manufacture of Petrochemical Products</i>	1	7
<i>Other Manufacturing</i>	1	1
<i>Metalworking</i>	0	1
Transportation & Storage	2	1
<i>Logistics & Transport</i>	1	1
Marine	0	1
Real Estate Services	0	1
Water Supply; Sewerage, Waste Management & Remediation Activities	1	0

Table 6b: Types of dangerous occurrences, 2021 - 2022

Incident Type	Incident Agent	2021	2022
Total Dangerous Occurrences		13	27
Collapse/Failure of Structure & Equipment	Total	9	20
	<i>Lifting Equipment - Cranes</i>	4	15
	<i>Physical Workplace – Formwork</i>	2	2
	<i>Lifting Equipment - Piling Machines</i>	1	1
	<i>Lifting Equipment - Mobile Work Platform</i>	0	1
	<i>Means of Access - Scaffold</i>	0	1
	<i>Lifting Equipment - Others</i>	2	0
Fires & Explosion	Total	4	7
	<i>Dust, Gas, Liquid & Chemicals</i>	1	3
	<i>Explosives/ Flammable Substances</i>	2	2
	<i>Pressurised Equipment</i>	0	2
	<i>Electrical Installation</i>	1	0

Table 7a: Number of confirmed occupational diseases cases by selected industry, 2021 - 2022

Industry	2021	2022
All Industries	659	1,052
Manufacturing	165	506
<i>Metalworking</i>	61	248
<i>Manufacture of Transport Equipment</i>	15	82
<i>Manufacture of Food, Beverages & Tobacco</i>	21	44
<i>Manufacture of Paper / Rubber / Plastic Products & Printing</i>	21	35
Construction	97	94
Transportation & Storage	57	73
<i>Logistics & Transport</i>	42	53
Marine	34	59
Accommodation & Food Service Activities	44	51
<i>Food & Beverage Service Activities</i>	31	28
<i>Accommodation</i>	13	23
Wholesale & Retail Trade	34	41
<i>Wholesale Trade</i>	13	24
<i>Retail Trade</i>	21	17
Professional, Scientific & Technical Activities	22	37
Administrative & Support Service Activities	25	27
<i>Cleaning & Landscape Maintenance Activities</i>	12	11
<i>Security & Investigation Activities</i>	5	4
Financial & Insurance Services	18	13
Electricity, Gas & Air-Conditioning Supply	9	10
Water Supply; Sewerage, Waste Management & Remediation Activities	4	7
Real Estate Activities	5	6
Information & Communications	4	6
Community, Social & Personal Services	139	121
<i>Health & Social Services</i>	107	78
<i>Other Services Activities</i>	13	25
<i>Education</i>	9	10
<i>Arts, Entertainment & Recreation</i>	7	8

Table 7b: Rate of confirmed occupational diseases incidence by selected industry, 2021 – 2022

Industry	Per 100,000 workers	
	2021	2022
All Industries	20.0	29.7
Manufacturing	42.6	119.4
<i>Metalworking</i>	60.1	235.7
<i>Manufacture of Transport Equipment</i>	61.2	317.8
<i>Manufacture of Food, Beverages & Tobacco</i>	41.5	78.4
<i>Manufacture of Paper / Rubber / Plastic Products & Printing</i>	82.7	134.1
Construction	24.7	19.2
Transportation & Storage	22.5	27.7
<i>Logistics & Transport</i>	39.5	45.0
Marine	61.2	96.9
Accommodation & Food Service Activities	18.4	19.5
<i>Food & Beverage Service Activities</i>	14.5	12.1
<i>Accommodation</i>	52.4	76.4
Wholesale & Retail Trade	7.5	8.9
<i>Wholesale Trade</i>	4.3	7.9
<i>Retail Trade</i>	13.8	10.8
Professional, Scientific & Technical Activities	8.5	13.4
Administrative & Support Service Activities	10.3	11.3
<i>Cleaning & Landscape Maintenance Activities</i>	15.6	13.7
<i>Security & Investigation Activities</i>	10.4	8.5
Financial & Insurance Services	8.7	5.9
Electricity, Gas & Air-Conditioning Supply	n.a.	n.a.
Water Supply; Sewerage, Waste Management & Remediation Activities	n.a.	n.a.
Real Estate Activities	6.9	8.1
Information & Communications	2.4	3.2
Community, Social & Personal Services	24.5	20.6
<i>Health & Social Services</i>	57.5	40.7
<i>Other Services Activities</i>	n.a.	n.a.
<i>Education</i>	n.a.	n.a.
<i>Arts, Entertainment & Recreation</i>	18.2	17.2

Note: Figures for Community, Social & Personal Services are revised due to updated employment numbers

Table 7c: Number of confirmed occupational diseases cases by type, 2021 - 2022

Occupational Diseases by Types	2021	2022
Total	659	1,052
Noise-induced Deafness	168	624
<i>NID (E) - Early</i>	165	618
<i>NID (A) - Advanced</i>	3	6
Work-related Musculoskeletal Disorders	379	340
<i>Back injuries due to ergonomic risks</i>	323	310
<i>Tendinitis</i>	21	6
<i>Trigger Finger/Thumb</i>	6	1
<i>Nerve Disorder such as Carpal Tunnel Syndrome, Cubital Tunnel Syndrome</i>	8	2
<i>Lateral Epicondylitis (Tennis elbow)</i>	3	2
<i>Tenosynovitis</i>	0	1
<i>Others</i>	18	18
Occupational Skin Disease	79	63
<i>Eczema</i>	74	59
<i>Others</i>	5	4
Compressed Air Illness	9	7
<i>CAI Type 1</i>	7	5
<i>CAI Type 2</i>	2	1
Cancers	5	5
<i>Mesothelioma</i>	5	5
Occupational Lung Disease	2	3
<i>Occupational Asthma</i>	1	1
<i>Silicosis</i>	1	1
<i>Asbestosis</i>	0	1
Infectious Disease	2	2
Heat Disorder	5	1
Barotrauma	8	0
<i>Aural</i>	4	0
<i>Sinus</i>	4	0
Others	2	7

Table 7d: Number of confirmed noise-induced deafness cases by selected industry, 2021 - 2022

Industry	2021	2022
All Industries	168	624
Manufacturing	82	430
<i>Metalworking</i>	32	228
<i>Manufacture of Transport Equipment</i>	10	76
<i>Manufacture of Food, Beverages & Tobacco</i>	7	33
<i>Manufacture of Paper / Rubber / Plastic Products & Printing</i>	18	29
Marine	25	50
Construction	29	34
Transportation & Storage	8	34
<i>Logistics & Transport</i>	8	22
Professional, Scientific & Technical Activities	3	28
Wholesale & Retail Trade	2	17
<i>Wholesale Trade</i>	2	16
<i>Retail Trade</i>	0	1
Water Supply; Sewerage, Waste Management & Remediation Activities	4	7
Financial & Insurance Services	8	6
Administrative & Support Service Activities	6	5
<i>Cleaning & Landscape Maintenance Activities</i>	1	1
<i>Security & Investigation Activities</i>	3	1
Information & Communications	0	5
Community, Social & Personal Services	0	6
<i>Other Services Activities</i>	0	5
<i>Health & Social Services</i>	0	1

Table 7e: Number of confirmed work-related musculoskeletal disorders cases by selected industry, 2021 - 2022

Industry	2021	2022
All Industries	379	340
Manufacturing	66	61
<i>Metalworking</i>	23	16
<i>Manufacture of Food, Beverages & Tobacco</i>	13	11
<i>Manufacture of Computer, Electronic & Optical Products</i>	7	6
<i>Manufacture of Pharmaceutical & Biological Products</i>	4	6
Accommodation & Food Service Activities	41	46
<i>Food & Beverage Service Activities</i>	28	26
<i>Accommodation</i>	13	20
Construction	45	42
Transportation & Storage	44	38
<i>Logistics & Transport</i>	29	30
Administrative & Support Service Activities	17	22
<i>Cleaning & Landscape Maintenance Activities</i>	10	10
<i>Security & Investigation Activities</i>	2	3
Wholesale & Retail Trade	30	19
<i>Wholesale Trade</i>	9	5
<i>Retail Trade</i>	21	14
Electricity, Gas & Air-Conditioning Supply	8	9
Professional, Scientific & Technical Activities	14	6
Financial & Insurance Services	9	6
Marine	5	5
Real Estate Activities	5	5
Community, Social & Personal Services	90	80
<i>Health & Social Services</i>	64	50
<i>Other Services Activities</i>	11	14
<i>Education</i>	7	8
<i>Arts, Entertainment & Recreation</i>	5	8

Table 7f: Number of confirmed occupational skin diseases cases by selected industry, 2021 - 2022

Industry	2021	2022
All Industries	79	63
Manufacturing	14	12
<i>Metalworking</i>	4	3
<i>Manufacture of Transport Equipment</i>	3	3
<i>Manufacture of Computer, Electronic & Optical Products</i>	0	2
Construction	8	9
Wholesale & Retail Trade	2	3
<i>Wholesale Trade</i>	2	1
<i>Retail Trade</i>	0	2
Accommodation & Food Service Activities	3	2
<i>Food & Beverage Service Activities</i>	3	1
<i>Accommodation</i>	0	1
Professional, Scientific & Technical Activities	1	2
Marine	0	1
Real Estate Activities	0	1
Transportation & Storage	4	1
<i>Logistics & Transport</i>	4	1
Administrative & Support Service Activities	2	0
<i>Cleaning & Landscape Maintenance Activities</i>	1	0
Financial & Insurance Services	1	0
Community, Social & Personal Services	44	32
<i>Health & Social Services</i>	40	24
<i>Other Services Activities</i>	2	6
<i>Education</i>	1	2
<i>Arts, Entertainment & Recreation</i>	1	0

Table 7g: Top causative agents of occupational skin diseases, 2022

Causative Agents	No. of Cases
All Occupational Skin Diseases	63
Alcohol	20
Wet work	8
Cement	6
Occlusion	6
Coolant	3

Table 8: Number of man-days lost to workplace incidents in selected industries, 2021 – 2022

Industry	2021	2022	2021 [N]*	2022 [N]*
All Industries	512,017	543,045	530,858	562,060
Construction	142,238	150,906	144,804	153,180
Marine	13,676	37,560	14,058	37,856
Manufacturing	91,988	100,423	95,208	103,701
<i>Metalworking</i>	28,850	39,293	30,092	40,428
<i>Manufacture of Food, Beverages & Tobacco</i>	13,084	15,569	13,706	16,234
<i>Manufacture of Petrochemical Products</i>	3,859	13,874	4,034	14,060
Water Supply; Sewerage, Waste Management & Remediation Activities	20,627	9,968	20,794	10,078
Wholesale & Retail Trade	23,517	16,710	24,713	17,950
<i>Wholesale Trade</i>	15,742	7,105	16,090	7,462
<i>Retail Trade</i>	7,775	9,605	8,623	10,488
Transportation & Storage	84,009	76,580	85,339	78,077
<i>Logistics & Transport</i>	47,255	24,247	48,203	25,458
Accommodation & Food Service Activities	19,510	32,229	22,086	34,951
<i>Accommodation</i>	5,137	11,649	5,889	12,655
<i>Food & Beverage Service Activities</i>	14,373	20,580	16,197	22,296
Information & Communications	1,100	1,135	1,236	1,227
Financial & Insurance Services	3,408	2,243	3,660	2,501
Real Estate Activities	23,095	22,369	23,476	22,677
Professional, Scientific & Technical Activities	10,535	11,211	11,281	12,009
Administrative & Support Service Activities	20,714	29,227	22,016	30,430
<i>Cleaning & Landscape Maintenance Activities</i>	11,800	20,067	12,449	20,524
<i>Security & Investigation Activities</i>	3,481	3,248	3,844	3,702
Community, Social & Personal Services	49,820	43,589	53,953	48,066
<i>Health & Social Services</i>	17,117	15,557	19,853	18,550
<i>Education</i>	10,585	7,572	11,192	8,127
<i>Other Services Activities</i>	18,472	10,909	18,966	11,454
<i>Arts, Entertainment & Recreation</i>	1,893	2,556	2,108	2,825

[N] – New Series. All work injuries with any instance of medical leave or light duties.

* Includes only work injuries with any instance of medical leave.

ANNEX C1

BUSINESS UNDER SURVEILLANCE

The Business under Surveillance (BUS) programme consists of two phases – Assessment and Surveillance.

The Assessment phase involves rigorous and methodical review on companies that are of concern to ascertain the effectiveness of their Risk Management programme as well as the strength of their WSH Management Systems.

Companies that fail the Assessment phase would be placed under the Surveillance phase. During the Surveillance phase, the Occupational Safety and Health Division (OSHD) of Ministry of Manpower (MOM) works closely with the senior management and WSH personnel of these BUS companies to carry out a gap analysis and to develop outcome-based action plans.

OSHD then conducts frequent inspections to verify the progress of the companies' implementation of their action plans and closely monitors the companies' WSH performance. BUS companies can only exit from the programme upon successful implementation of their Action Plan, achieved satisfactory audit outcomes, and have plans to build a strong WSH culture within the company.

ANNEX C2

HYGIENE AND MEDICAL SURVEILLANCE

HYGIENE SURVEILLANCE

Measuring the exposure levels of specific workplace chemical hazards provide a good indication on whether the conditions in the work environment are within the Permissible Exposure Levels (PEL), as stipulated under the WSH (General Provisions) Regulations. Companies with chemical exposures exceeding 10% PEL are required to monitor the exposure levels at least annually, conducted by a competent person.

Under the WSH (Noise) Regulations, workplaces with 10 or more workers who are exposed to excessive noise are required to monitor their workers' noise exposure at least once every three years, or earlier when there are changes to the processes. The monitoring must be conducted by a competent person using calibrated equipment to ensure accuracy of results.

Industrial hygiene data from assessments conducted by MOM and results submitted by companies with in-plant monitoring are maintained within a National Database for Noise and Chemical Exposure. This enables MOM to proactively identify high-risk workplaces, evaluate trends in exposure levels and advise employers on control measures and appropriate monitoring programmes.

MEDICAL SURVEILLANCE

The Medical Surveillance Programme serves to monitor workers' exposure to specific hazards and to identify early and possibly reversible changes in health effects. The programme aims to prevent overt occupational diseases through early detection of cases with excessive occupational exposure to specific health hazards. It involves monitoring of workers' health and implementation of measures to minimise the risks. High-risk workplaces would be monitored more rigorously to ensure control measures are put in place.

This monitoring assesses the "internal dose" of the worker and the effects from exposure by determining:

- a) The concentrations of the chemicals or their metabolites in biological samples (measuring the absorption or body burden) indirectly via blood, urine, and/or end-exhaled air.
- b) The indicators of health effect related to the internal dose so as to identify early and reversible changes, such as degree of hearing loss, and effects on liver and kidney.

Central to the Medical Surveillance Programme is the WSH (Medical Examinations) Regulations which prescribe a list of 19 hazards requiring medical examinations which can only be conducted by Designated Workplace Doctors (DWDs) registered with MOM. In addition, Occupational Safety and Health Division (OSHD) of the MOM may also recommend the implementation of medical surveillance programmes for non-prescribed hazards if the health risk is significant and where biological indicators are available. Some of these hazards include toluene, trinitrotoluene, xylene, fluoride and hexane.

Based on the findings of the medical examinations, workers who are medically unfit or who are over-exposed to chemicals are suspended, either on a temporary or permanent basis. The objective is to ensure that all exposed workers remain healthy and fit for work while exposed to the hazards. Medical monitoring is conducted once every six months for lead and organophosphate, and annually for all other hazards.

ANNEX C3

SOURCE OF DATA

Data on workplace and work-related traffic injuries, dangerous occurrences and occupational diseases were collated from incident reports made by employers, occupiers, medical practitioners and private insurers in fulfilment of their obligations under the Workplace Safety and Health Act and Workplace Safety and Health (Incident Reporting) Regulations.

Medical and Hygiene Surveillance data were collated from reports submitted to OSHD, MOM as well as industrial hygiene data from assessments conducted by OSHD, MOM. Business Under Surveillance information was obtained from OSHD, MOM.

Employment data used in the computation of workplace fatal, injury and occupational disease incidence rates and data on the average weekly hours worked used in the estimation of man-hours worked were extracted from records within the Ministry of Manpower.

DATA COVERAGE

The types of workplace and work-related traffic injuries and occupational diseases covered in the reported statistics include the following:

- Workplace and work-related traffic injuries sustained by employees and resulting in any instance of medical leave or light duties;
 - Workplace and work-related traffic injuries sustained by employees and resulting in at least 24 hours of hospitalisation;
 - Workplace and work-related traffic incidents resulting in the death of employees and self-employed persons;
 - Workplace and work-related traffic incidents resulting in the injury of self-employed persons who have to be taken to the hospital for treatment; and
 - Occupational diseases listed in the Second Schedule of the Workplace Safety and Health Act and Work Injury Compensation Act.
-

ANNEX C4

CONCEPTS AND DEFINITIONS

Incident Agent refers to the object or physical environment, which due to its hazardous nature/condition, leads to the occurrence of a particular type of incident. It is related to the incident, not injury.

Incident Type (Cause) refers to the type of event which resulted in the injury of a victim. Where the event involves a chain of incidents, the incident type should be the one that triggered the chain of other incidents. From 2022, a new sub-classification for Incident Type (Cause) have been introduced based on their fatality risk profile as shown below.

Higher fatality risk – Type A

- Caught in/between Objects
- Collapse/Failure of Structures & Equipment
- Crane-related Incidents
- Falls from Height
- Fires & Explosion
- Suffocation/Drowning
- Struck by Falling Objects
- Struck by Moving Objects
- Vehicular related injuries

Lower fatality risk – Type B

- Cut/Stabbed by Objects
- Discharge of Dangerous Substances
- Exposure to Biological Materials
- Exposure to Electric current
- Exposure to Extreme Temperatures
- Exposure to Hazardous Substances
- Machinery Incidents
- Physical Assault
- Over-exertion/Strenuous Movements
- Slips, Trips & Falls
- Stepping on Objects
- Striking against Objects
- Others

Major Injuries refer to non-fatal injuries which are more severe in nature. Major injuries are defined using a combination of factors, including the nature of injury, part of the body injured, incident type and duration of medical leave. These include:

- amputation
- blindness
- deafness
- paralysis
- crushing, fractures and dislocations: head, back, chest and abdomen, neck, hip and pelvis
- exposure to electric current
- asphyxia/drowning
- burns with more than 20 days of medical leave
- concussion with more than 20 days of medical leave
- mosquito borne diseases with more than 20 days of medical leave
- virus outbreak with more than 20 days of medical leave

ANNEX C5

GLOSSARY OF COMMONLY USED TERMS

Term	Description
Business Under Surveillance	Refer to Annex C1 and website below for information on Business Under Surveillance (BUS) programme. https://www.mom.gov.sg/workplace-safety-and-health/monitoring-and-surveillance/business-under-surveillance-programme
Dangerous Occurrences	Dangerous Occurrences refer to incident where no person is injured, but which had the potential to cause serious injury and death.
Heightened Safety Period	Arising from the spate of workplace fatalities in 1H 2022, MOM progressively rolled out interventions to increase enforcement, engagement and penalties; and introduced Heightened Safety Period (HSP) measures from 1 Sep 2022, to instil a stronger safe operations culture and place greater accountability on senior management. https://www.mom.gov.sg/workplace-safety-and-health/heightened-safety-period
Machinery Incidents	Machinery Incidents include Struck by Moving Objects, Caught In/Between Objects and Cut/Stabbed by Objects where the agent(s) is an industrial machine, industrial hand tool or other machines and tools.
Man-days Loss	For the purpose of this publication, MOM considers a fatal injury as equivalent to the loss of 6,000 man-days, similar to the U.S. National Institute of Occupational Safety and Health (NIOSH)'s table of scheduled charges.
Occupational Disease Incidence Rate	$\frac{\text{No. of Occupational Disease Cases}}{\text{No. of Workers}} \times 100,000$
Total Workplace Injury Rate	$\frac{\text{No. of Fatal and Non-Fatal Workplace Injuries}}{\text{No. of Workers}} \times 100,000$
Vehicular Incidents	Vehicular Incidents include Struck by Moving Objects and Caught In/Between Objects where the agent(s) is a vehicle.

GLOSSARY OF COMMONLY USED TERMS (CONTINUED)

Term	Description
Workplace Health Surveillance	Workplace Health Surveillance (WHS) is the monitoring of workplace environments to assess exposure levels of workers to workplace health hazards such as chemical or noise hazard, as well as the monitoring of workers' health through medical screening to detect over exposure and early signs of occupational diseases. In 2021, the programme was enhanced (WHS+) to (i) proactively identify at-risk companies and subject them to surveillance; (ii) focus on upstream control measures; and (iii) increase compliance through stronger enforcement levers.
Workplace Hygiene surveillance	Hygiene surveillance determines the levels of persons' exposure to noise and airborne toxic substances in the workplace. Refer to Annex C2 for more information.
Workplace Injury	A workplace injury is any personal injury or death resulting from a workplace accident, including work-related traffic injuries. Refer to Annexes C3 & C4 for the types of workplace injuries covered.
Workplace Medical Surveillance	Medical surveillance monitors the results of the medical examinations of workers who are exposed to specific hazards for early detection and prevention of potential ill health. Examinations are conducted by Designated Workplace Doctors (DWDs). Refer to Annex C2 for more information.
Work-related Traffic Accident	A work-related traffic accident (WRTA) is any unintended event that causes bodily injury to a vocational driver or rider while he or she is driving any vehicle in the course of work.

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