

DOEL 2025 National Occupational Health and Safety Conference Developing and Implementing a Medical Surveillance Programme in the Workplace

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employment & labour

Department:
Employment and Labour
REPUBLIC OF SOUTH AFRICA

Healthy, Safe, Happy & Sustainable Workplaces

PROMOTING DECENT WORK THROUGH CUTTING EDGE RESEARCH, SPECIALISED
SERVICES, INFORMATION, TEACHING AND TRAINING

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OBJECTIVES OF THE PRESENTATION

- ▶ Outline the process required for the development and implementation of a medical surveillance programme in the workplace
- ▶ Outline the necessary steps in the establishment of an adequate risk assessment, that leads to a risk based medical surveillance programme
Identify key role players and their responsibilities for designing and implementing a medical surveillance programme in the workplace
- ▶ Provide an overview on the national risk assessment monitoring
- ▶ Provide an overview on the global burden of occupational exposures/ disease and mortality
- ▶ Provide knowledge on the evaluation and monitoring systems used to assess medical surveillance programmes
- ▶ Identify barriers to an efficient medical surveillance program and provide recommendations



MEDICAL SURVEILLANCE PROGRAMME

The Occupational Health and Safety Act (OHSA) defines:

- ▶ **Medical Surveillance** as “a **planned programme** or periodic examination (which may include clinical examinations, **biological monitoring** or medical tests) of employees by an occupational health practitioner or in prescribed cases by an occupational medicine practitioner”.
- ▶ **Biological Monitoring** as “a planned programme of **periodic collection and analysis** of body fluid, tissues, excreta or exhaled air in order to detect and quantify the exposure to or absorption of any substance or organism by persons”.
- ▶ **Objective of a medical surveillance program**
 - ✓ Establish a **baseline** of the employee’s health prior to being exposed to hazards
 - ✓ Establish whether an employee is **fit** (physically/mentally) to perform certain tasks and activities
 - ✓ Determine if current **preventative and control measures** are working as intended
 - ✓ Ensuring **workers are informed** of the health hazards and risks associated with their work
 - ✓ Ensure that employees with suspected occupational disease have appropriate investigations and treatment



LEGISLATIVE FRAMEWORK MANDATING A MEDICAL SURVEILLANCE PROGRAM

- ▶ Regulations under OHSA which require medical surveillance:
 - ✓ Noise-Induced Hearing Loss Regulations
 - ✓ Hazardous Chemical Substances Regulations
 - ✓ Hazardous Biological Agents Regulations
 - ✓ Asbestos Regulations
 - ✓ Lead Regulations
 - ✓ Ergonomics Regulations

- ▶ OHSA and Regulation implies that Occupational Health Practitioners (OHPs), with the requisite qualifications in occupational health and occupational medicine, respectively, have a [legal mandate](#) to perform the examinations and tests in terms of medical surveillance.



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RISK BASED MEDICAL SURVEILLANCE PROGRAM

Risk Assessment

Occupational
Hygiene Program

Medical Surveillance
Program

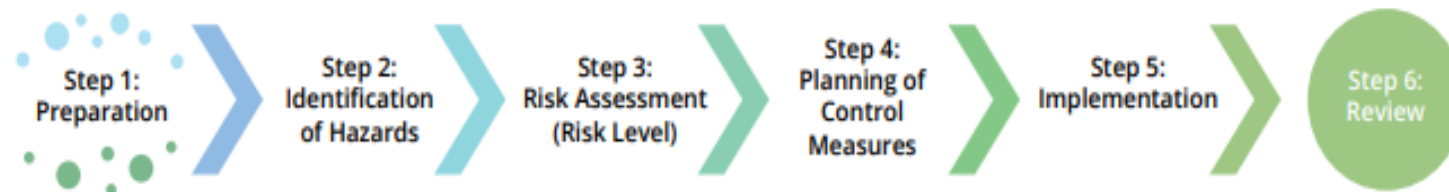


Health, Safety & Environment Management System Cycle (Bioorigin., 2020)



Risk Assessment Process Steps (Khaled Ismail., 2020)

RISK ASSESSMENT TOOLS



Toolkit comparison

HSE	Clearly written and logical
HAZPAK	Designed to be easy to use and practical
NOSA	Complex but comprehensive

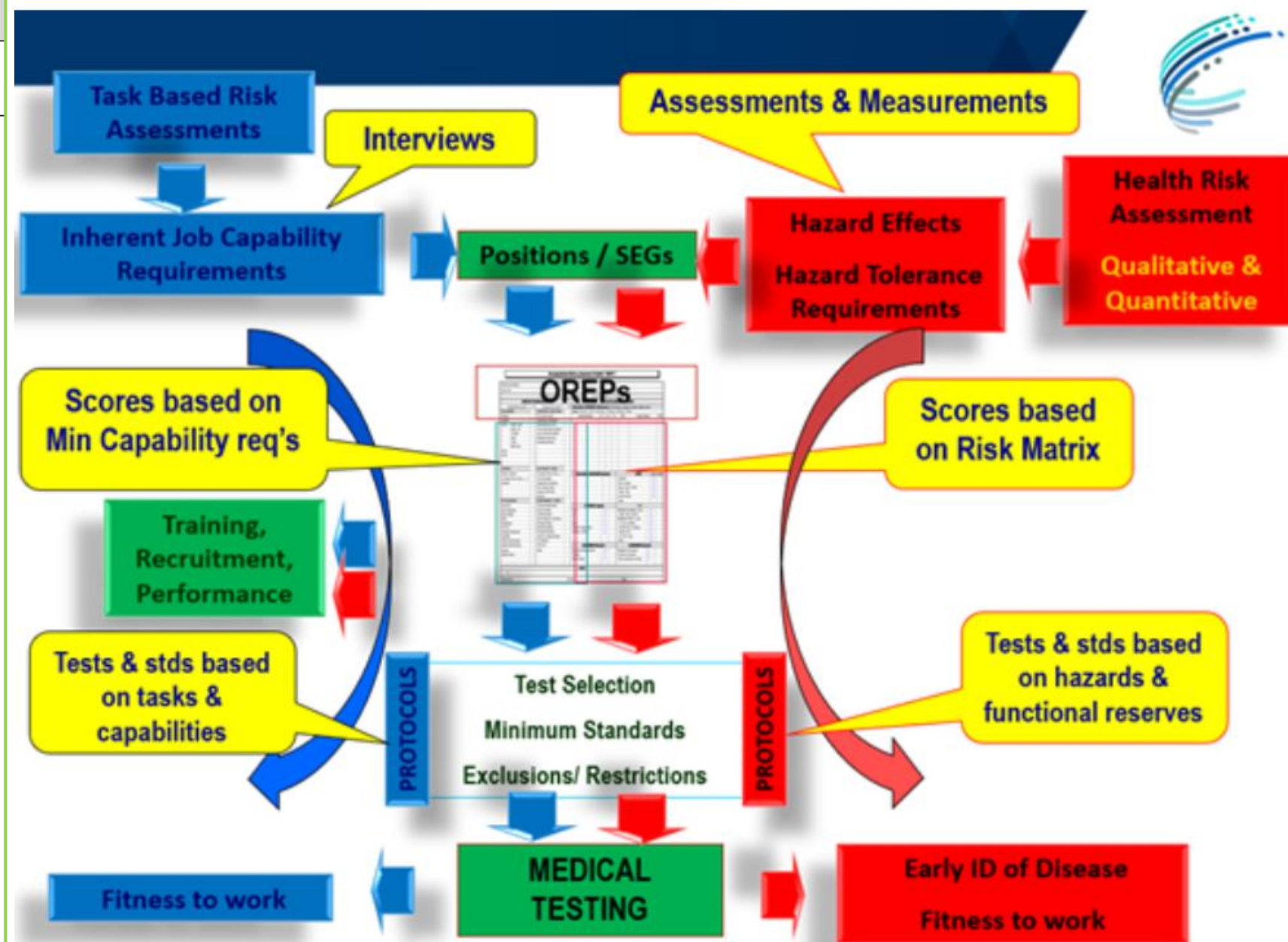
1. IDENTIFY – Look for hazards
2. ASSESS - Who might be harmed and how.
3. DECIDE on whether controls are adequate
4. RECORD
5. REVIEW

RISK MATRIX						
PROBABILITY →	Very Likely - 5	4	10	15	20	25
	Likely - 4	4	8	12	16	20
	Possible - 3	3	6	9	12	15
	Unlikely - 2	2	4	6	8	10
	Very Likely - 1	1	2	3	4	5
		1	2	3	4	5
		Negligible	Slightly	Moderate	High	Very High
		SEVERITY →				
	Risk	Risk level	Condition			
	1 to 6	Low Risk	May be acceptable but review task to see if risk can be reduced further.			
	8 to 12	Medium Risk	Task should only be executing with appropriate management authorization after consulting with specialist personal.			
	15 to 25	High Risk	Task must not proceed, until adequate action taken to minimize the risk.			

HSE Risk Matrix

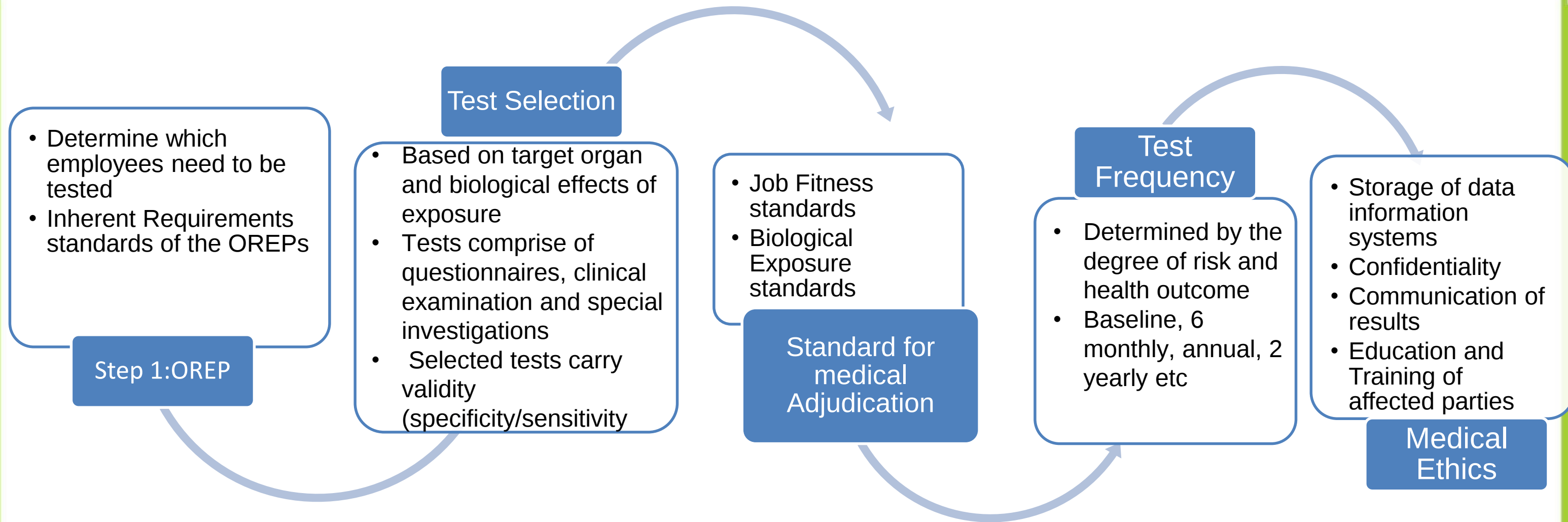
EXPOSURE RECORD AND MEDICAL SURVEILLANCE

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DESIGNING A MEDICAL SURVEILLANCE PROGRAM



WASP - Worker Allocated Surveillance Programme



OUTCOME OF A MEDICAL SURVEILLANCE PROGRAM

Case Identification

- Screen the target group for signs of work-related adverse health effects
- Adverse health effects thought to be work-related (exposure related)

Case Confirmation

- Confirm work-relatedness
- Explore the links of causality, to determine work-relatedness

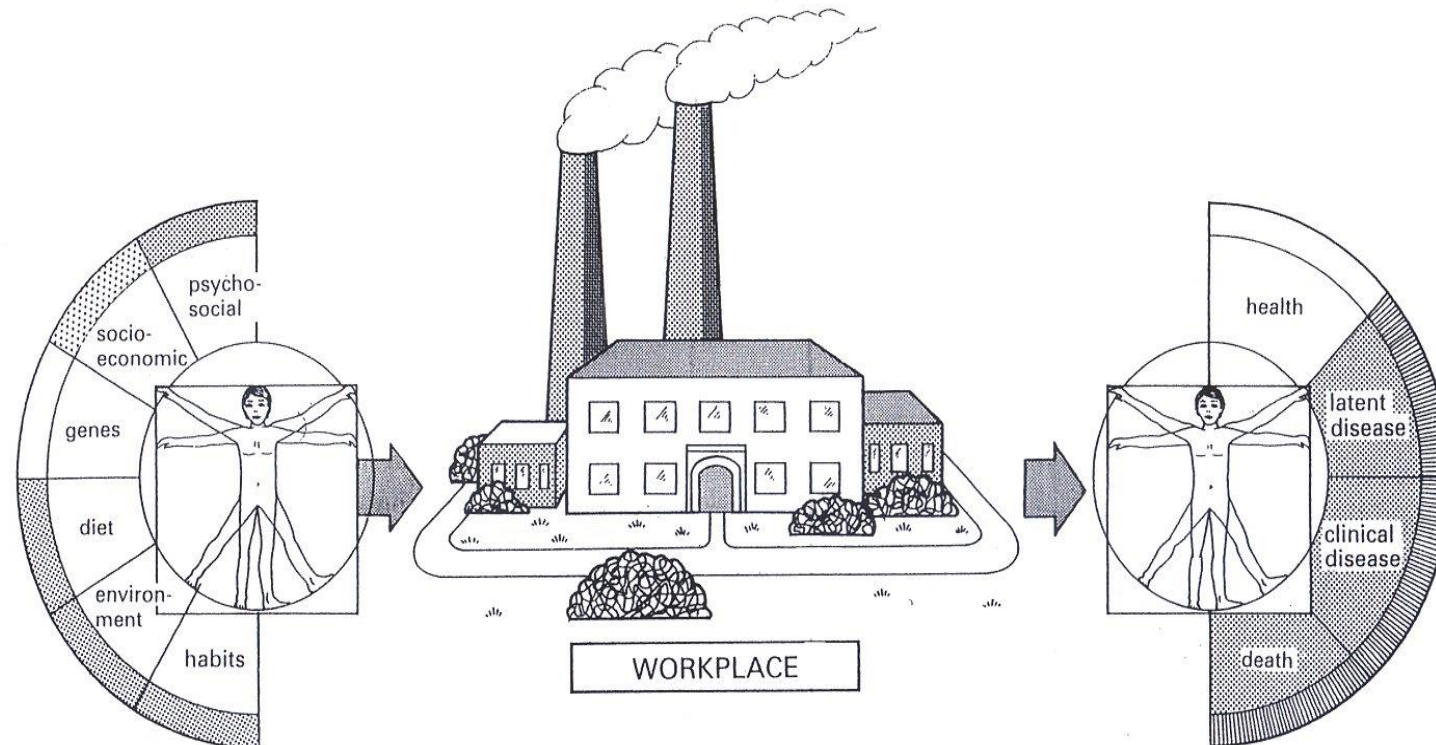
Case Management

- Treatment (medical) considerations are decided.
- Re-integrating the affected employee
- Plan future interventions, to reduce the likelihood of similar diseases affecting other employees
- Addressing the appropriate statutory reporting requirements (COID)

Case Tracking

Programme progress
Missed programme elements
Referrals, and the outcomes.
Submissions the Compensation Commissioner, and the outcomes.

DETERMINANTS FOR FITNESS TO WORK



Determinants of Work Relatedness:

Biologically
plausibility

Outcome match what is known of the pathophysiology or toxicology of the hazard

Appropriate
time
relationships

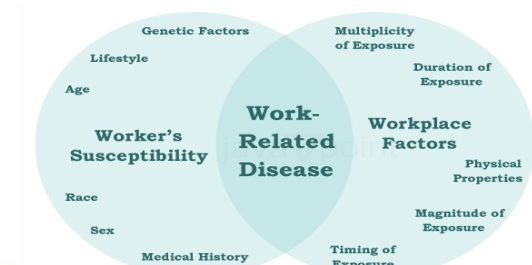
Latent period between the earliest exposure and the effect manifestation match what would be expected

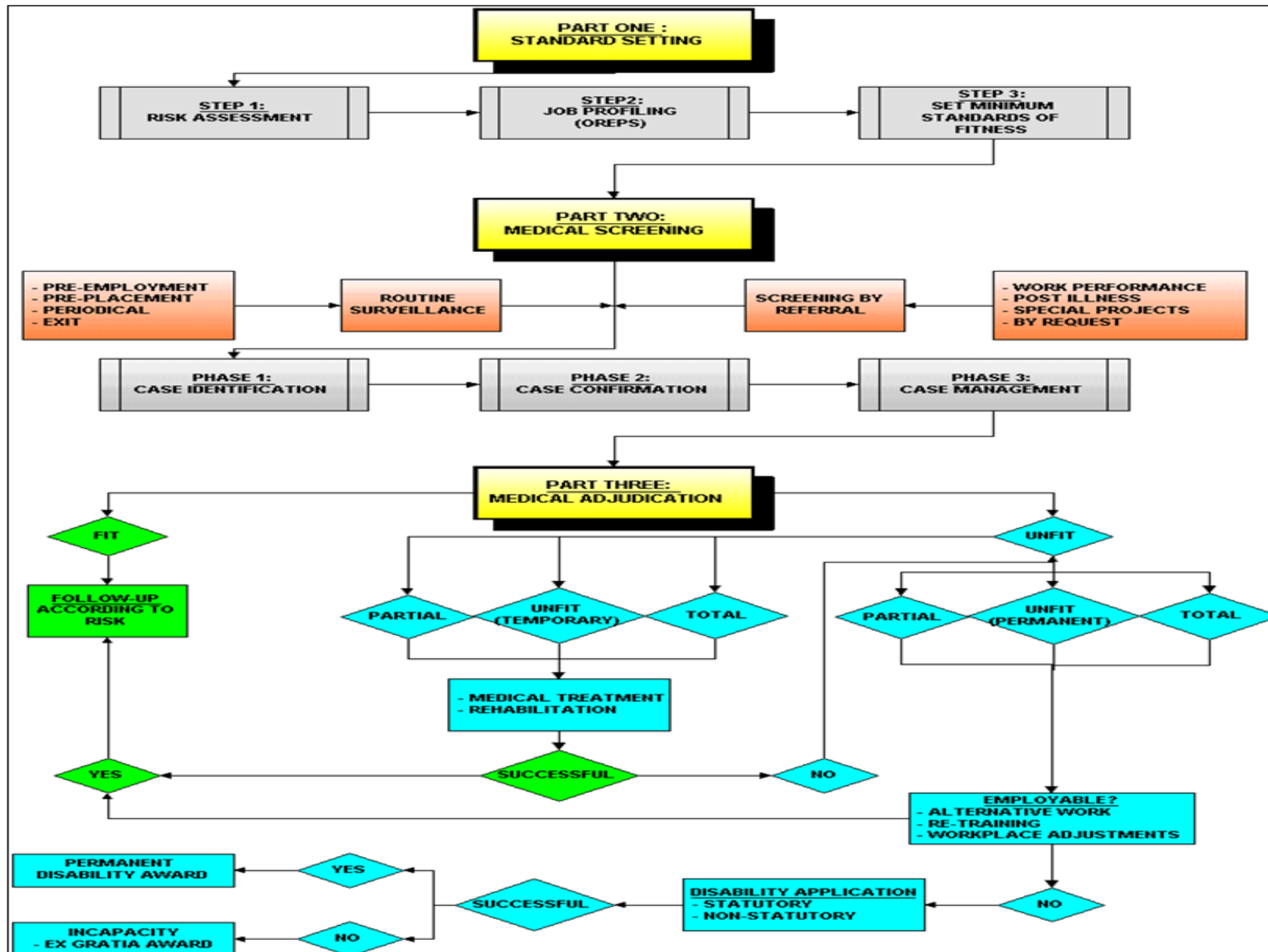
Biological
Gradient

Dose response relationship with which the exposure and the outcome can be linked

Coherence
of Evidence

Strength of association





FLOW OF IMPLEMENTING A MEDICAL SURVEILLANCE PROGRAM

Ref: Greg Kew. Synergee Occupational Health
Management Systems-Medical Surveillance
Procedure Guidelines. 2003



INDUSTRIES HYGIENE MONITORING

Percentage of Monitorings by Industry Sector

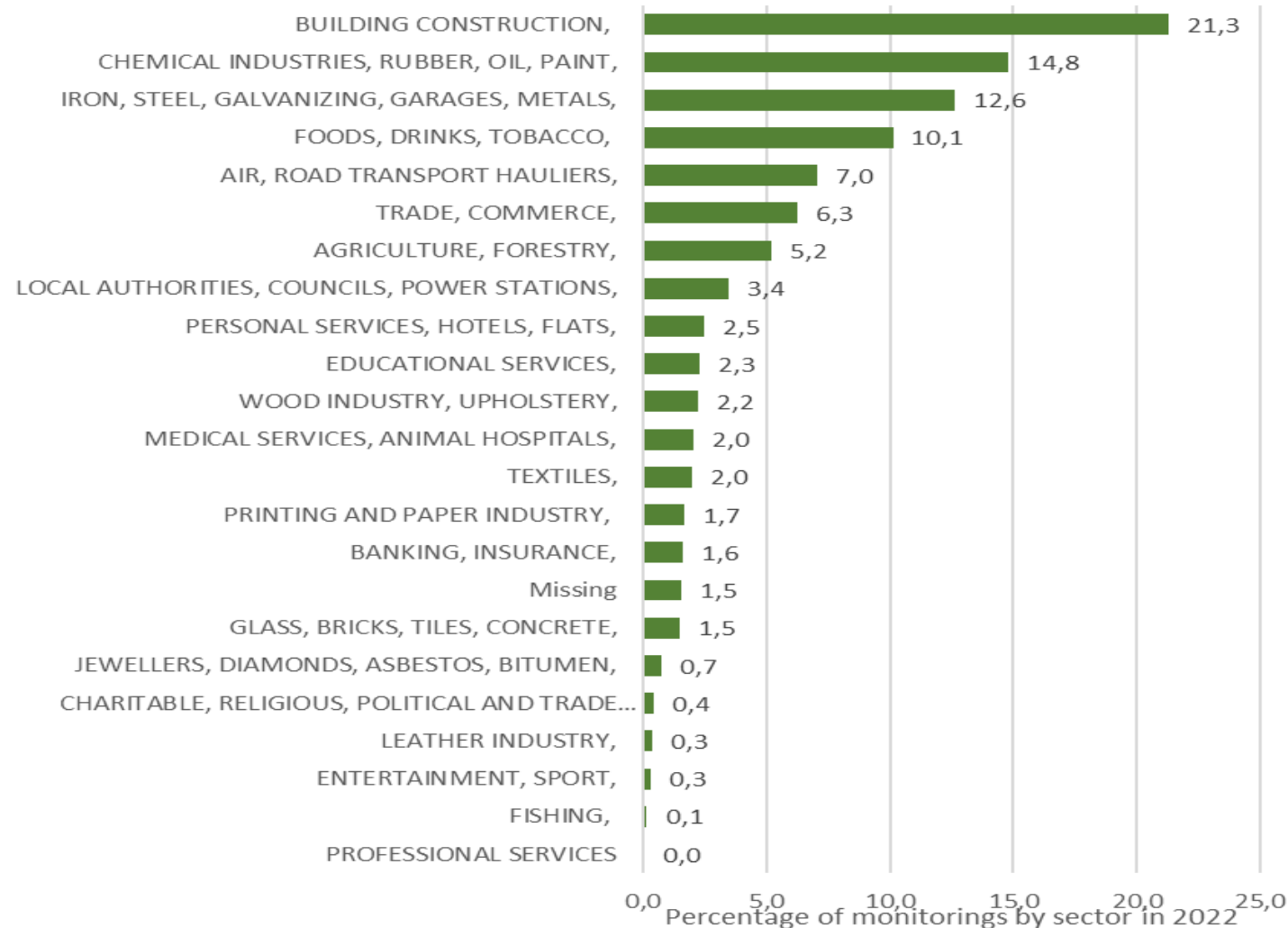


Fig 1: Ranked percentage of monitoring reported by industry sector reported by AIAs in 2022

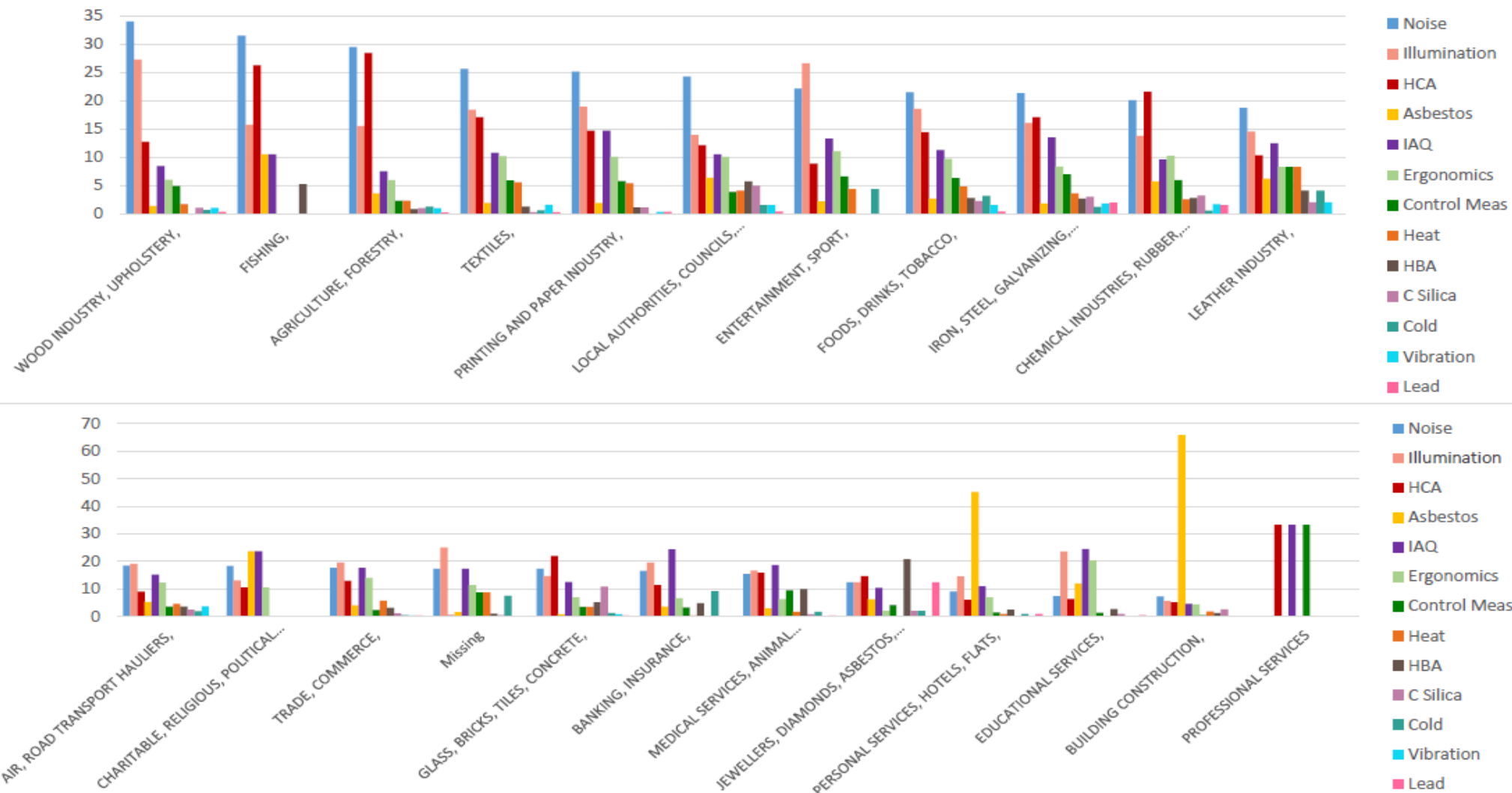
***Occupational Hazards Surveillance Report: AIA Occupational Hygiene 2023 South Africa-NIOH**

Remarks

- ✓ A total of 55 AIAs completed the online reporting tool for the year 2022/23
- ✓ There were 5868 reported assessments from 23 industry sector groups
- ✓ All 23 industry sector groups recognised by the Compensation Fund were represented in AIA monitoring's.
- ✓ The percentage of monitoring's ranged from 21% - 0%
- ✓ The top five sectors monitored had a wide range of monitoring from 21% to 7%.
- ✓ According to the 3rd Quarter South African Labour Force Survey 2022, Community and Social Services formally employ the most people (24%) in SA followed by Trade at 21% and Finance at 15%.



OCCUPATIONAL HAZARDS MONITORING



Remarks

- ✓ Noise accounted for the largest monitoring in most industries, from 34% in the Wood industry to 22% in the Iron and Steel Sector
- ✓ Hazardous Chemical Agents were commonly monitored in Chemical Industries 22%, Agriculture 29% and Iron and Steel at 17%
- ✓ Asbestos was the most common stressor monitored in Construction 66%
- ✓ Indoor air quality was commonly monitored in Banking and Insurance, Educational Activities and Charitable and Political Services at 24% each

Fig 2:Percentage of stressor monitoring by industry sector in 2022/2023 – NIOH Epidemiology Section



MONITORING PER STRESSORS.

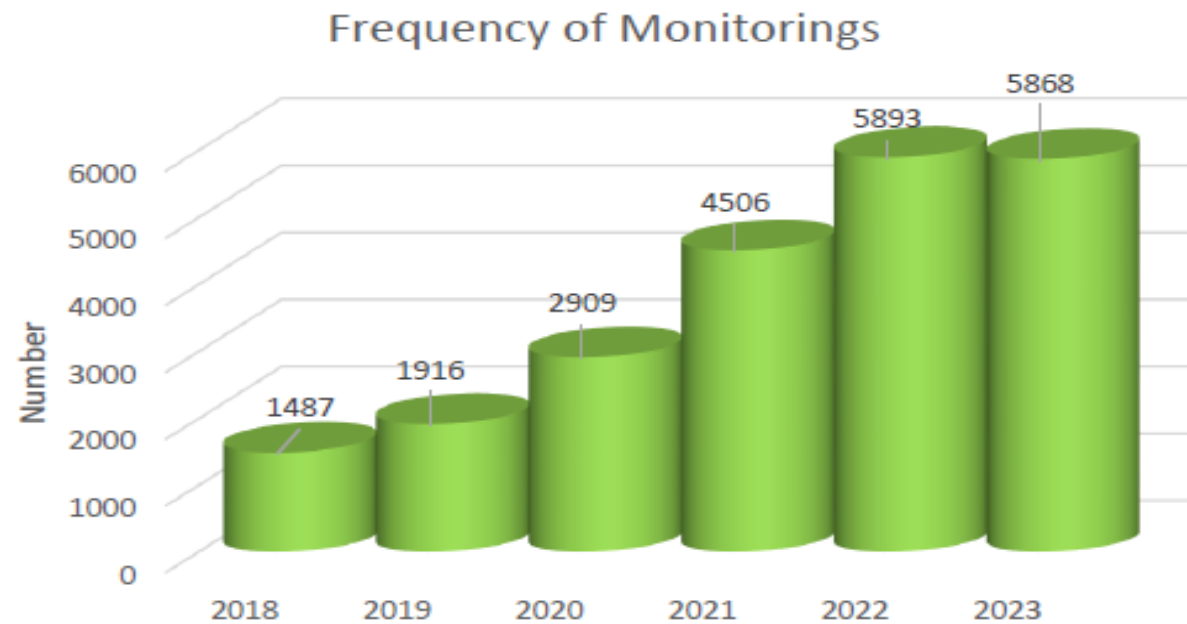


Fig 3: Number of monitoring reported from 2018 to 2023 by registered AIAs

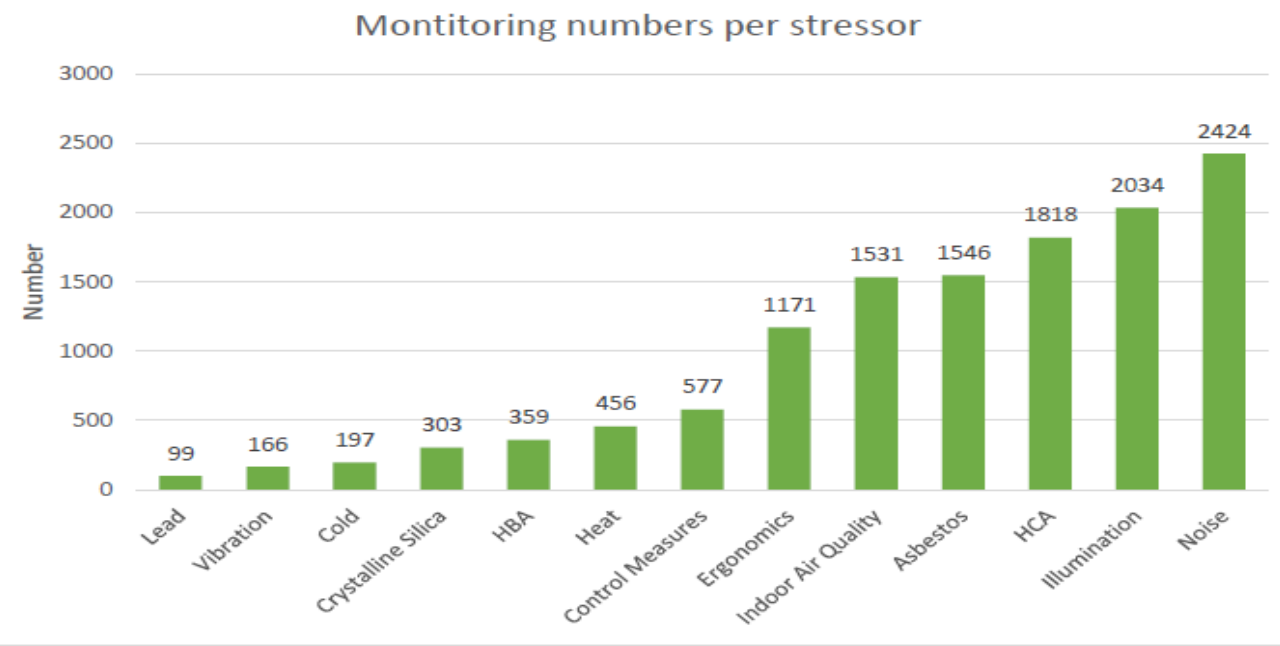


Fig 4: Total number of reported assessments in monitoring by occupational stressor

***Occupational Hazards Surveillance Report: AIA Occupational Hygiene 2023 South Africa-NIOH**

Remarks

- ✓ The number of individual stressors monitored reflects the presence and the awareness of hazards in South Africa Industry
- ✓ Figure 3 provides the number of individual monitoring reported in 2018-2023.
- ✓ The stressor most commonly measured was noise (41% of total assessments included noise) closely followed by illumination (35%).
- ✓ While the least assessed were lead 1.7% and vibration 0.3%.



OCCUPATIONAL HAZARDS MONITORING

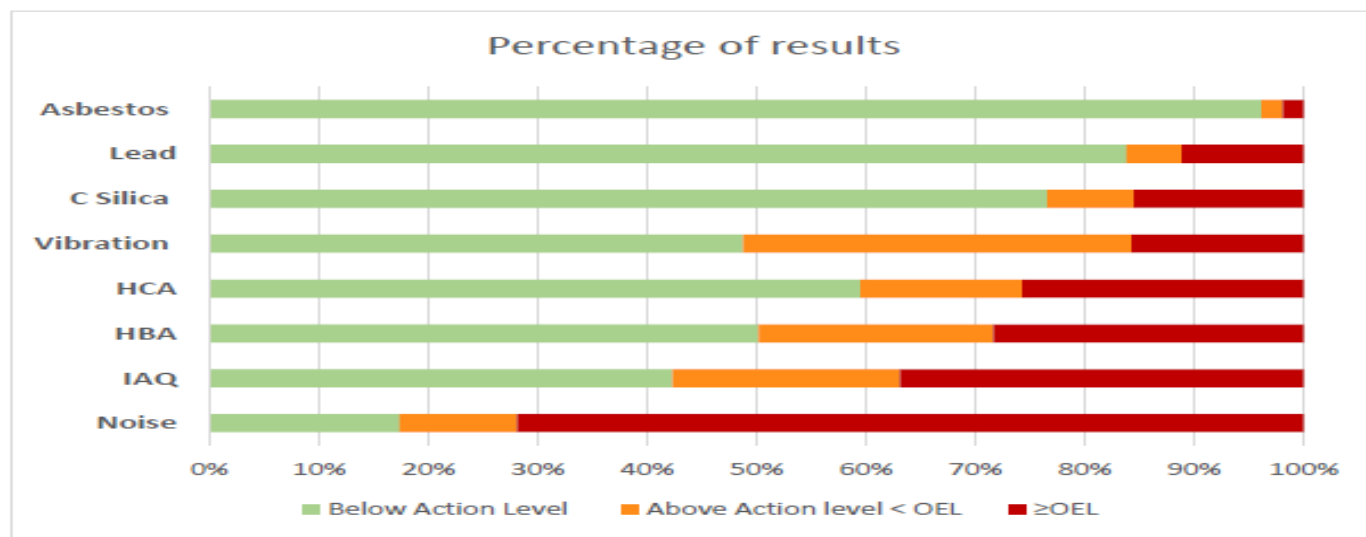


Fig 5: Percentage of results by exposure action band

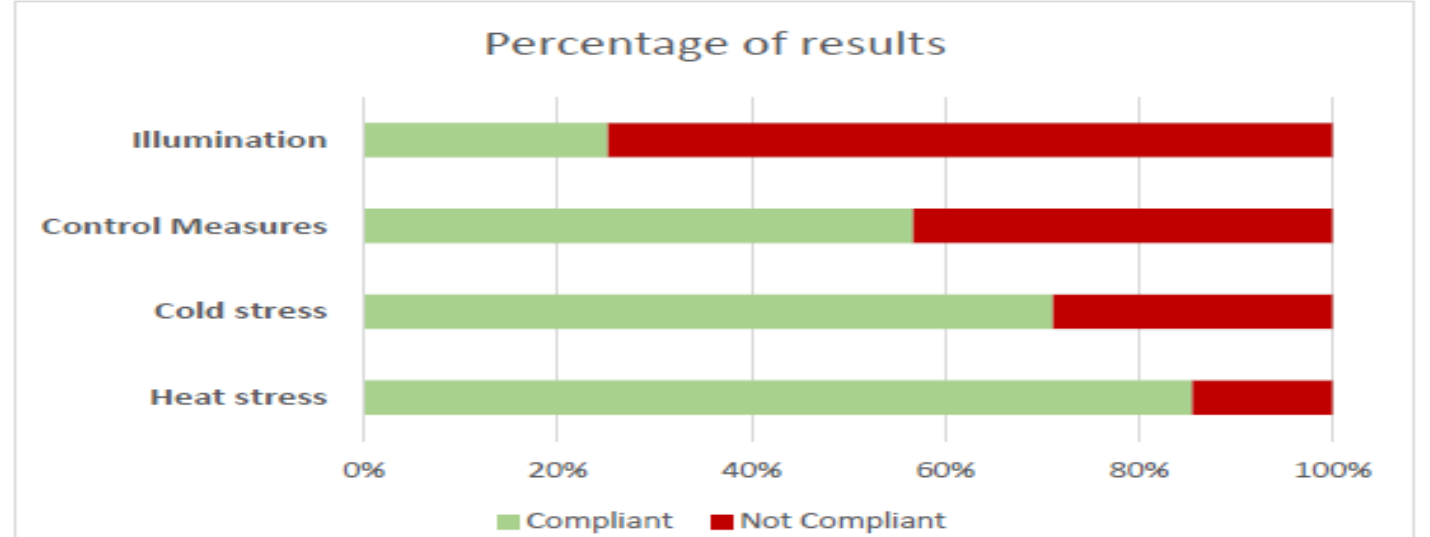


Fig 6: Percentage of results by compliant and non-compliant

***Occupational Hazards Surveillance Report: AIA Occupational Hygiene 2023 South Africa-NIOH**

Remarks

- ✓ Noise had over 72% of results above the OEL, it was the poorest performing stressor
- ✓ Followed by Indoor Air Quality and Hazardous Biological Agents (37% and 28% respectively).
- ✓ Vibration had small percentage of measurements above OEL yet a large proportion (36%) was above the action level.
- ✓ Illumination stands out as a very poorly compliant hazard. Illumination was below the set limit in 75% of monitoring.
- ✓ Control measures for hazardous chemical agents followed with above with 43% of monitoring not within OEL range.
- ✓ Research into the health and work effects of poor illumination in the workplace is recommended
- ✓ Interaction with the South African National Bureau of Standards on guidelines for workplaces to improve illumination without costly assessments and design



THE GLOBAL OCCUPATIONAL RELATED DEATH

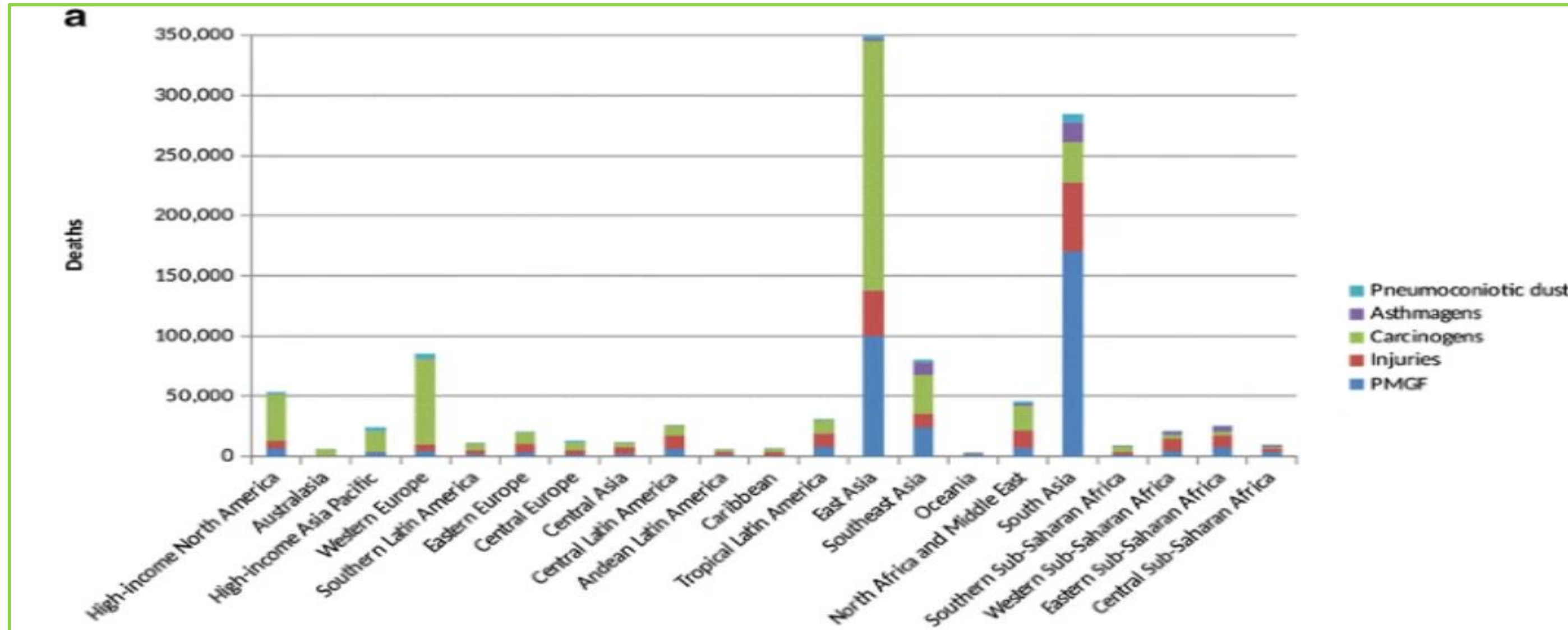


Fig 7: Numbers of global occupationally related deaths in 2015 by WHO region and major disease group



THE GLOBAL OCCUPATIONAL RELATED DALYS

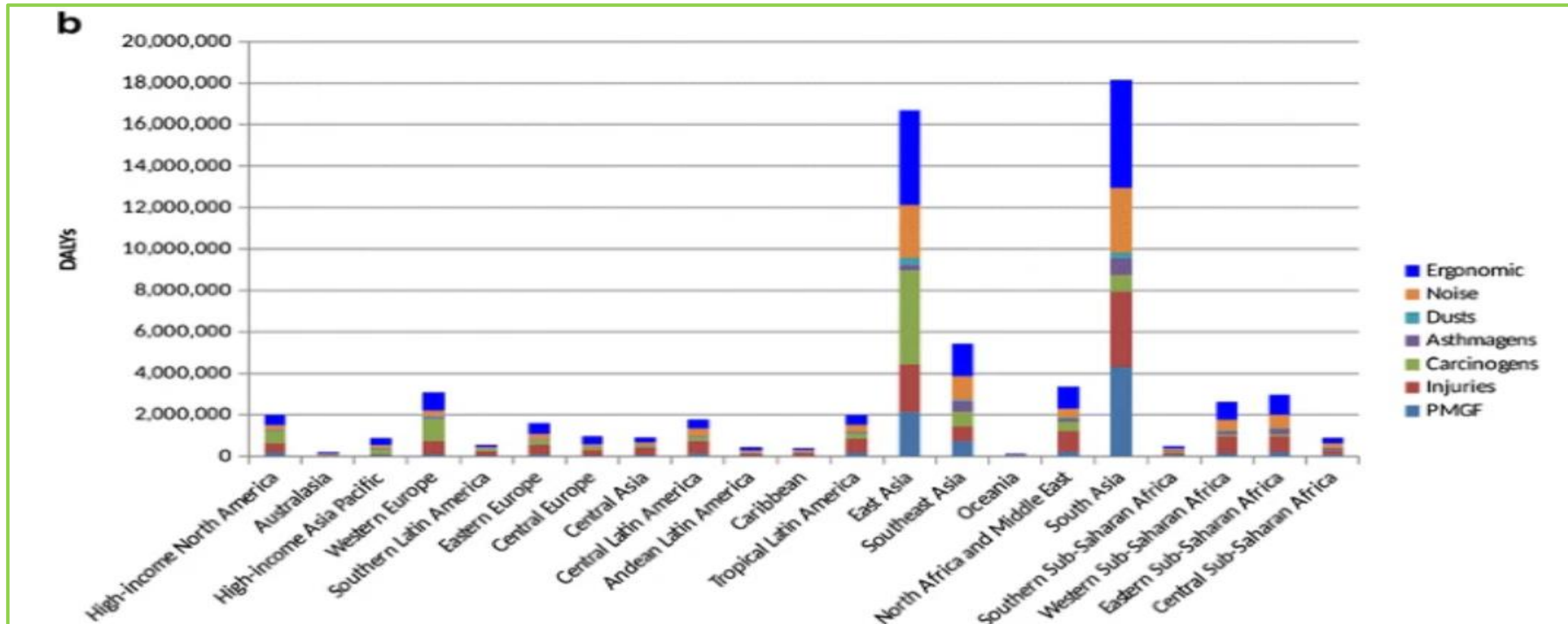
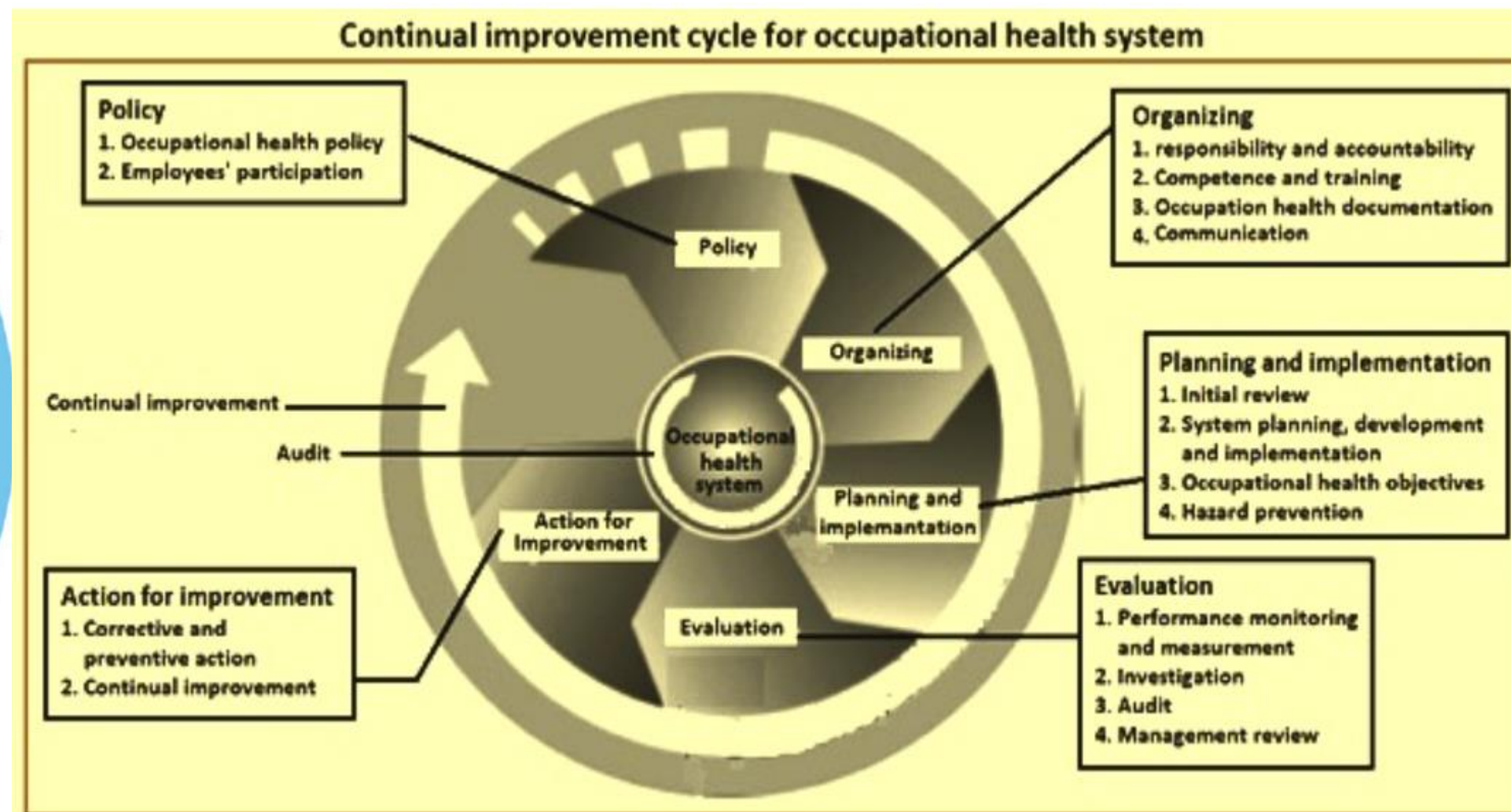
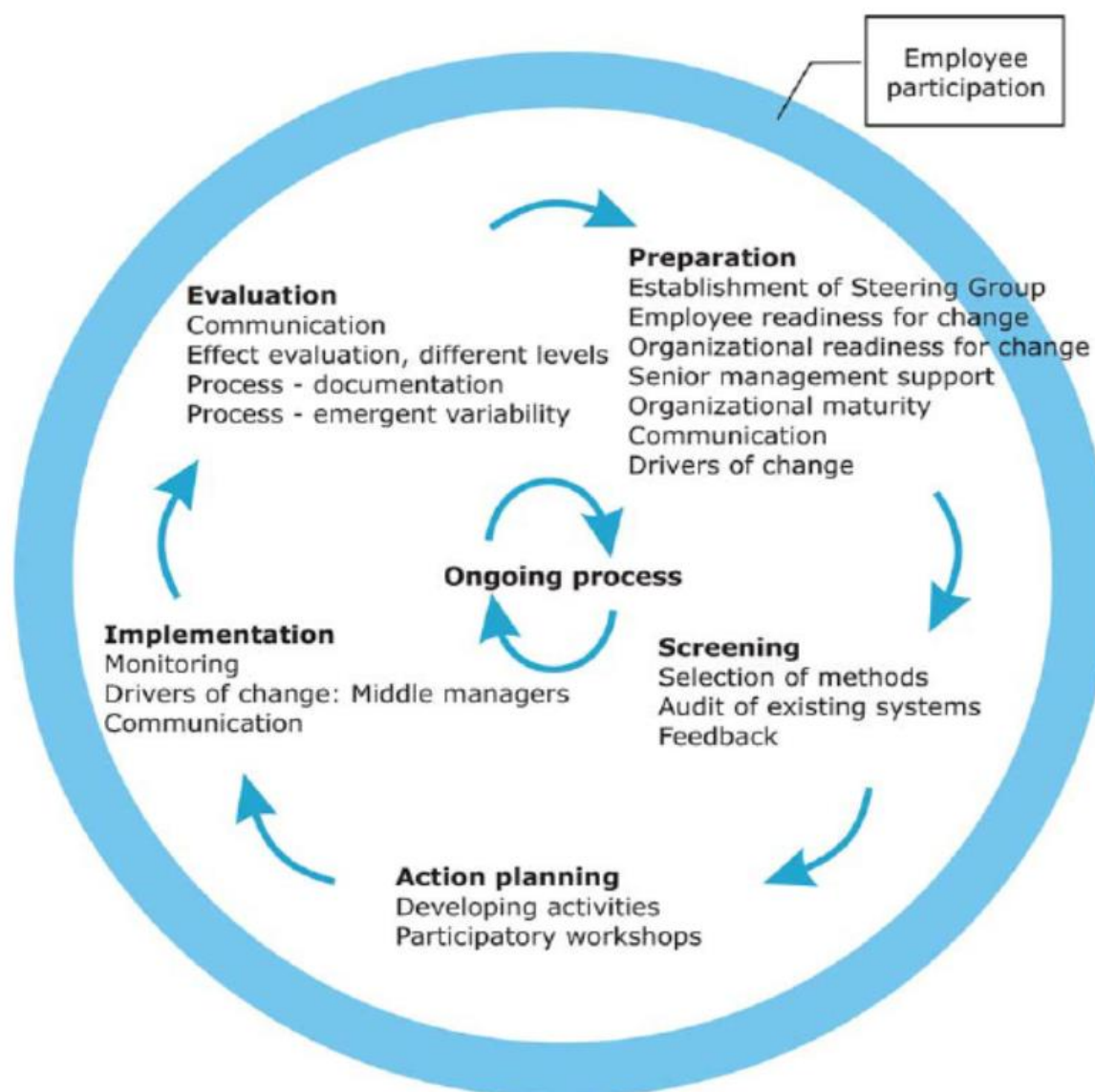


Fig 8: Numbers of global occupationally related DALYS in 2015 by WHO region and major disease group

MONITORING AND EVALUATION OF PROGRAM



Satyendra. Occupational Health and Importance of a Health Workplace. Ispatguru. 2001



OPPORTUNITIES FOR IMPROVEMENT

- ✓ Compliance with the OSH Act of 1993 and its Regulations by Industries on workplace hazards monitoring and effects on health will result in quality surveillance and reports being generated that aim to improve workers health
- ✓ Knowledge sharing with industries on collective biggest hazards might prompt industry's collective focus/ commitment in improving workplace surveillance tools
- ✓ Dissemination of the group findings would benefit small companies with limited ability to monitor work hazards.
- ✓ Risk Assessment and Medical surveillance findings could be used to drive innovative products and specifications for solutions to hazards found across industries.



CONCLUSION

- ✓ An effective Medical Surveillance Program need support and commitment from workplace management and employees
- ✓ It is a preventative measure to identify early health adverse effects and to reduce the burden and cost of diseases in relation to work
- ✓ The program should be based on the OREP and health risk assessments
- ✓ Resources should be made available for risk assessments, hygiene surveys and selection of tests investigation tools required during the surveillance
- ✓ It is comprised of multi disciplinary stakeholder of the health and safety team (Health and Safety Representative, OHP, Safety Officers/Hygienist/Ergonomist, Management etc)
- ✓ Education and training for employees concerning workplace hazards and health surveillance tools should be ongoing; this will encourage surveillance participation
- ✓ Medical surveillance must comply with the prescribed legislation



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employment & labour

Department:
Employment and Labour
REPUBLIC OF SOUTH AFRICA



THANK YOU!

