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BETTER TOGETHER.

BASICS OF WORKPLACE HEALTH RISK ASSESSMENT

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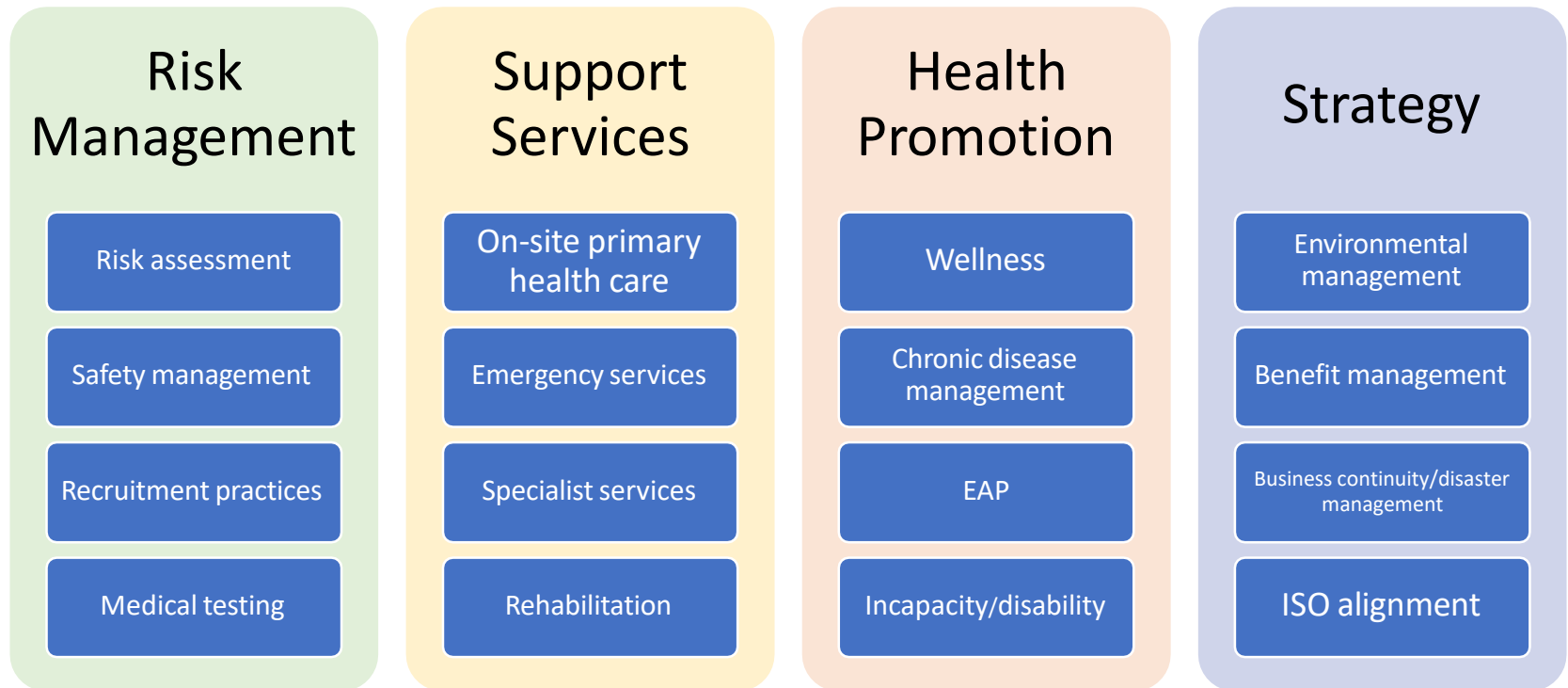
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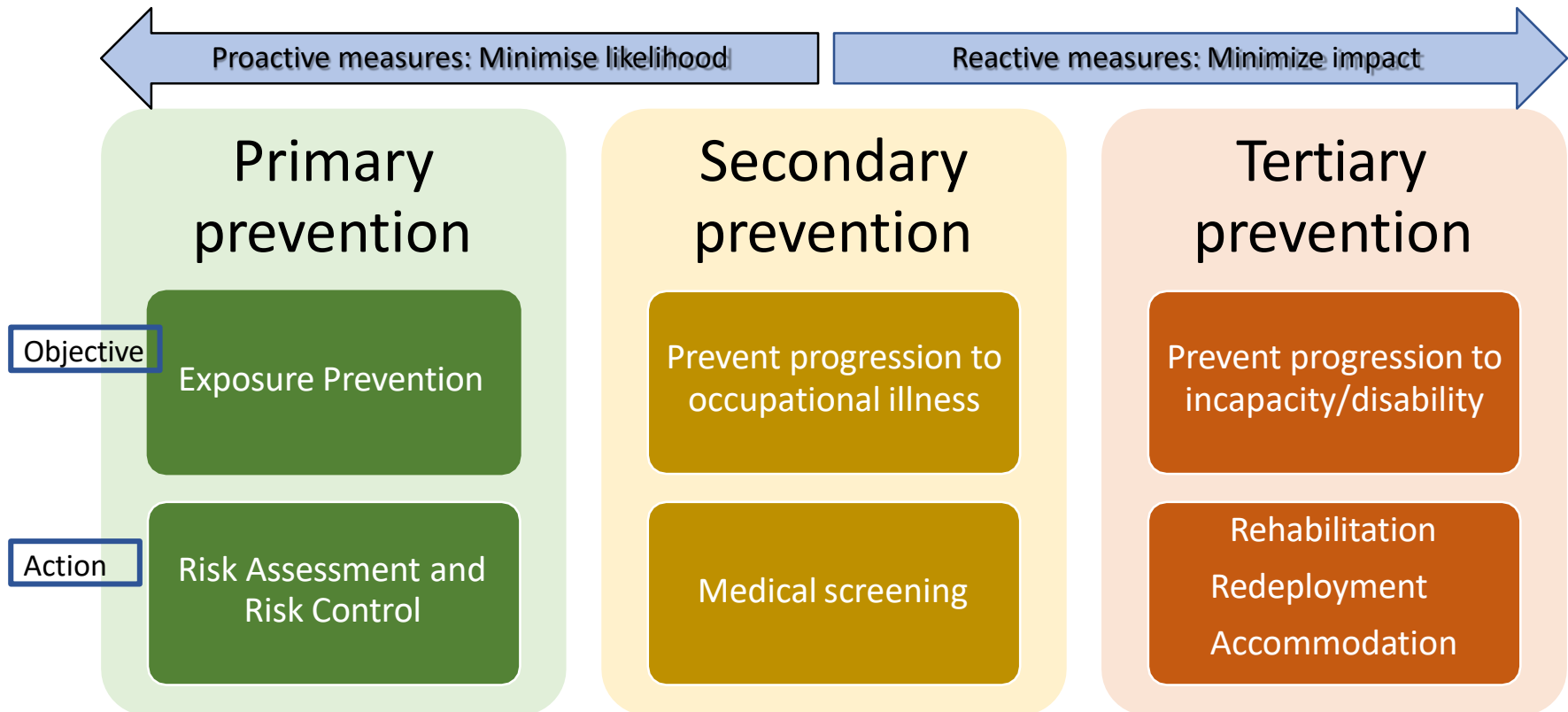
Overview

- Where does HRA fit in the spectrum of OH?
- What is an HRA?
- Why do an HRA?
- (Who does an HRA?)
- How to do an HRA?

Occupational Health overview



Implementation of a comprehensive OH program



What is a health risk assessment?

- A careful examination of what could cause harm in the workplace so that you can decide whether you have taken enough precautions or need to do more to prevent serious illnesses.

NIOH (www.nioh.ac.za)

- A systematic evaluation of *hazards* in the workplace and an assessment of the degree to which they pose a *risk* to employees. Usually also includes steps to mitigate risk where it is indentified.

(note *hazard vs risk*)

Hazard vs Risk in OH

- A hazard is an agent which has the inherent capacity to cause harm to health
- Risk is the likelihood or probability of harm occurring after exposure to the hazard
- Risk is related to exposure and harmfulness.



Health Risk Assessment

Therefore, a health risk assessment requires an understanding of:

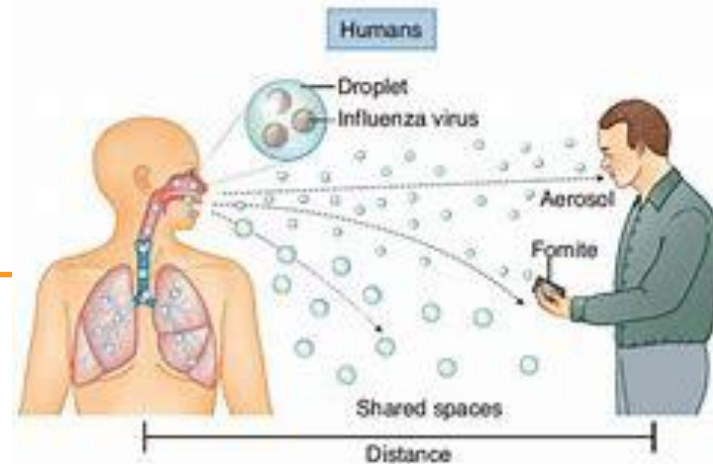
1. Health consequences of different hazards
2. How exposure can occur in different settings (e.g. inhalation, dermal absorption)



Routes of transmission for COVID-19 as an example

Methods of Disease Transmission

Direct Contact
Droplet Spread
Airborne Spread



Airborne and Aerosolized Transmission:

- Inhaling droplet nuclei (10-20 micrometer in diameter).
- People breathing the same air in a confined space.

Possible route of transmission for SARS-CoV2 especially in aerosolizing situations (scopes, nebulization, sputum induction etc.)

COVID-19 Transmission

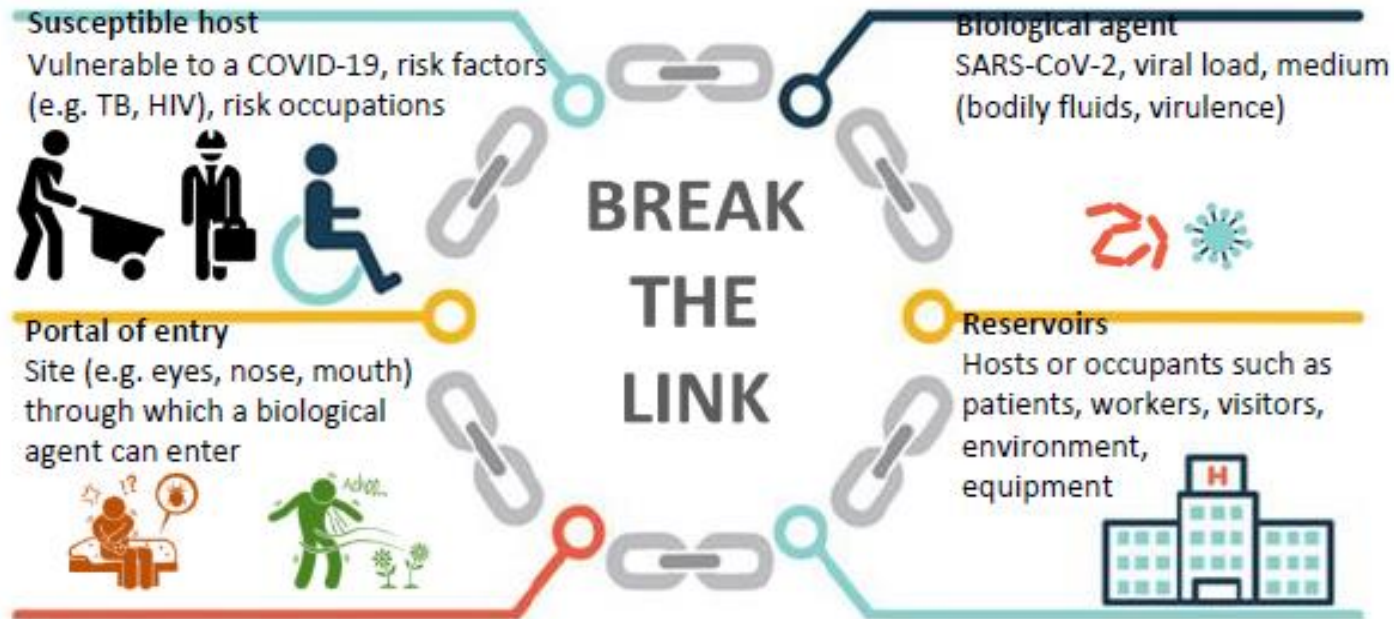


Figure 1 An illustration of the chain of transmission.

WHY IS RISK ASSESSMENT FOR COVID-19 IMPORTANT?

01

- To raise awareness of the biological hazard (SARS-CoV-2 or coronavirus) and associated risk

02

- To prevent the spread of SARS-CoV-2 or COVID-19 thus protecting the workers

03

- To determine if a prevention and control programme is required for the identified risk

04

- To evaluate the effectiveness of existing control measures or implementation of additional measures

05

- To comply with legal requirements where applicable

06

- For decision-making in prioritising risk in the context of limited financial resources

07

- To promote a culture of health and safety improvement

Who performs the HRA?

- Better to have a team
- Safety Officer, Engineers, Occupational Hygienists, Occupational Health Nurse, Occupational Medicine Practitioner,
- **Trained QA/IPC /OHS or H & S representatives or designated person**

How to perform an HRA

- Step 1: • Define the extent of the assessment
- Step 2: • Identify the hazards/Walk-through/Gather information
- Step 3: • Understand the exposure
- Step 4: • “Calculate” the risk
- Step 5: • Consider risk mitigation strategies and other actions
- Step 6: • Complete report

Step 1: Define the assessment

- Define which process or activity is being assessed
 - Are you evaluating a person, a task, or an area?
 - Is it a new area, or an update to a previous HRA?
- What is the expected outcome?
 - A full report on risks? A plan for medical surveillance?
 - Suggestions for control of hazards?

Step 2: Identify the hazards

- Normally the first step in a health risk assessment is a walk-through survey of the work area
- Ideally, before you walk through, you will have an idea of type of work or process, and may have an idea of what the potential hazards may be that is associated with the type of work
 - HSE (UK); CDC/NIOSH/OSHA (USA) are good websites

Step 2: Identify the hazards

- Prepare for the walk-through
 - Clipboard with note paper and pens
 - Draw a basic site plan which you can use to mark areas of concern
- Set a good example
 - Appropriate clothing and PPE
 - Follow instructions on site e.g. use walkways
 - Good preparation and use of correct terminology



Pixabay

Step 2: Identify the hazards

- Prime your senses!
 - Sight: Observe the process, environmental conditions and control measures
 - Smell: Many chemicals are present as gases or vapours and cannot be seen.
 - Hearing: Noise is one of the most significant and ubiquitous hazards in industry
 - Touch: Feel vibration, heat, cold
 - Taste: Not to eat the chemicals, but some airborne contaminants may cause a taste in the mouth

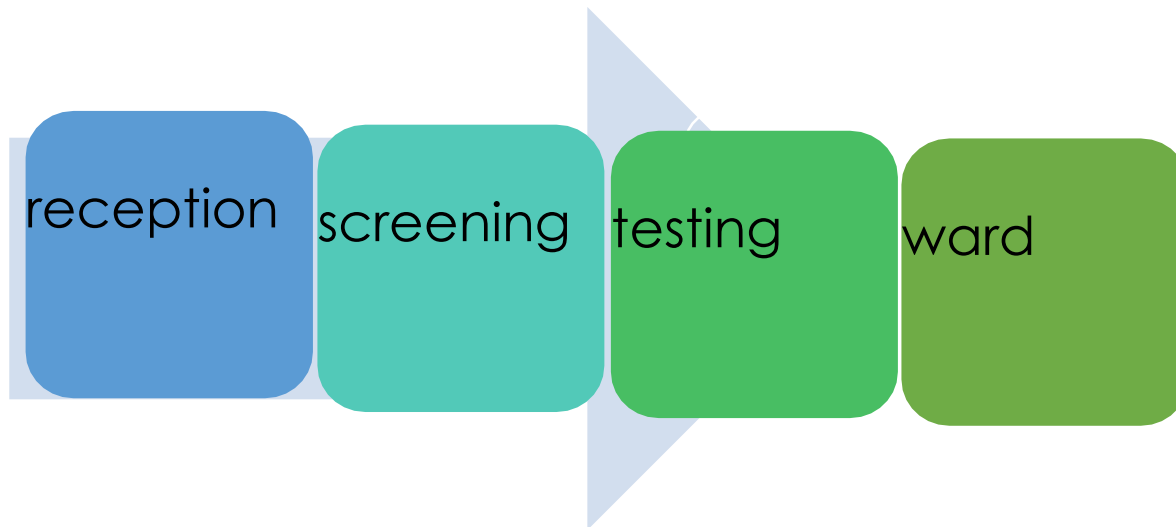
Beware of false impressions

COVID-19 INVISIBLE

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Step 2: Physical walkthrough

- Try to walk through the area in a specific and systematic order



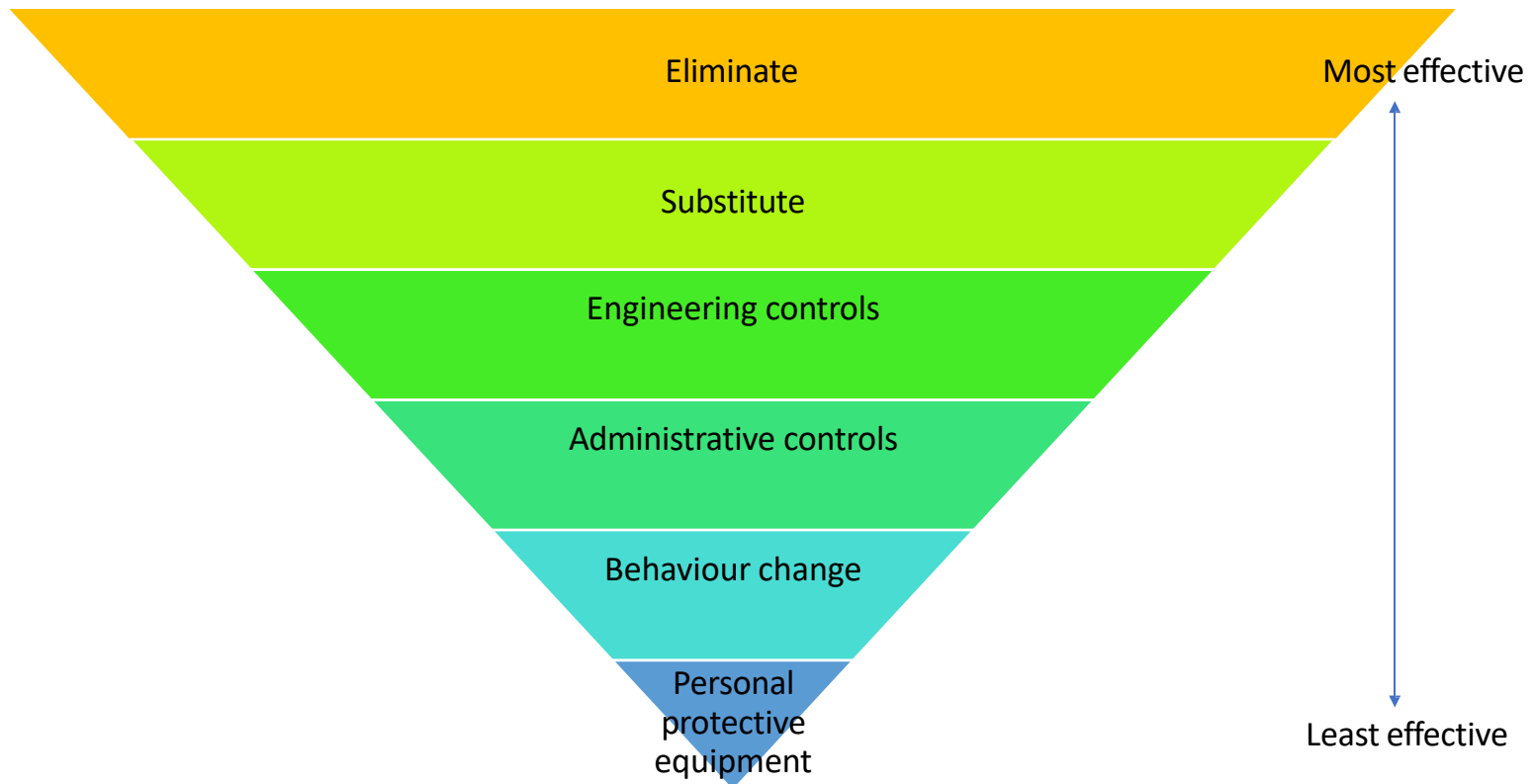
Step 2: Physical walkthrough

- Consider:
 - First impressions: clean and neat?
 - Look at housekeeping
 - General safety issues such as signage, fire systems
 - Provision of control measures and PPE
- Work area by area
 - Jot down obvious hazards
 - Pattern of exposure (intermittent, continuous, frequent, seldom)
 - Consider work practices (e.g. manual handling)
 - Consider susceptible people (pregnant women, older workers, disabled workers)

Step 2: Hazard classification

Hazard type	Examples
Physical	Noise, vibration, light/dark, temperature, electromagnetic fields
Chemical	Several thousand. Classify according to physical state (solids, liquids, gases, vapours, dusts, mists, fibres).
Biological agents	Bacteria, fungi, viruses, animals (e.g. in research)
Ergonomic hazards	Awkward postures, repetitive movements, lifting and carrying, movements at extremes of reach
Psychosocial hazards	Work organization, anti-social working hours, difficult interactions etc

Step 2: Hierarchy of control measures



Step 2: Common control measures

- Ventilation (engineering control): extraction, local exhaust, dilution or natural
- Administrative controls: training and information, safe work procedures, work rotation
- PPE: overalls, safety shoes, gloves, goggles, dust masks, respirators, SCBA

The goal is to try to answer the following questions:

- What can happen and under what circumstances?
- What are the possible consequences?
- How likely are the possible consequences to occur?
- Is the risk controlled effectively, or is further action required?

Step 2: Gather information

- Evaluate work spaces and work organization
- Check if requirement for physical distancing met
- Check if IPC plans in place

- Understand potential for high risk exposure

- Think about routes of entry (inhalation/skin absorption/ingestion)
- Look up health effects of agents

Key Points of Hazard Presentation-COVID-19

- at points of entry to the facility
- in transit through the facility
- admin areas / card office
- waiting rooms
- consulting rooms
- medical imaging
- isolation wards and rooms
- special areas:
 - hospital laundry
 - emergency services
 - laboratory services
 - mortuary

Step 3: Understand the exposure

- Recommended operating practices and precautionary measures for the specific hazard based on evidence-based guidelines or agreed policy.
- Exposure will differ depending on:
 - Concentration/dose of hazard
 - Time exposed (length of shifts/rotation to different jobs etc)
 - Physical state of hazard (droplet, aerosol, fomite)
 - Control measures in place

Step 4: Calculate the risk

- Various different tools or risk calculators available.
- All have same desired outcome: categorise risk to health from different hazards so that they can be actioned appropriately

Step 5: Identify actions based on risk

- Where there is an identified risk to health, specify steps to be taken to achieve effective control.
- Integral part of the assessment and the assessment is not complete without this being addressed

Step 5: Actions for risk mitigation

- Reduce exposures using hierarchy of control
- Medical surveillance and biological monitoring programmes if indicated
- Determine review period

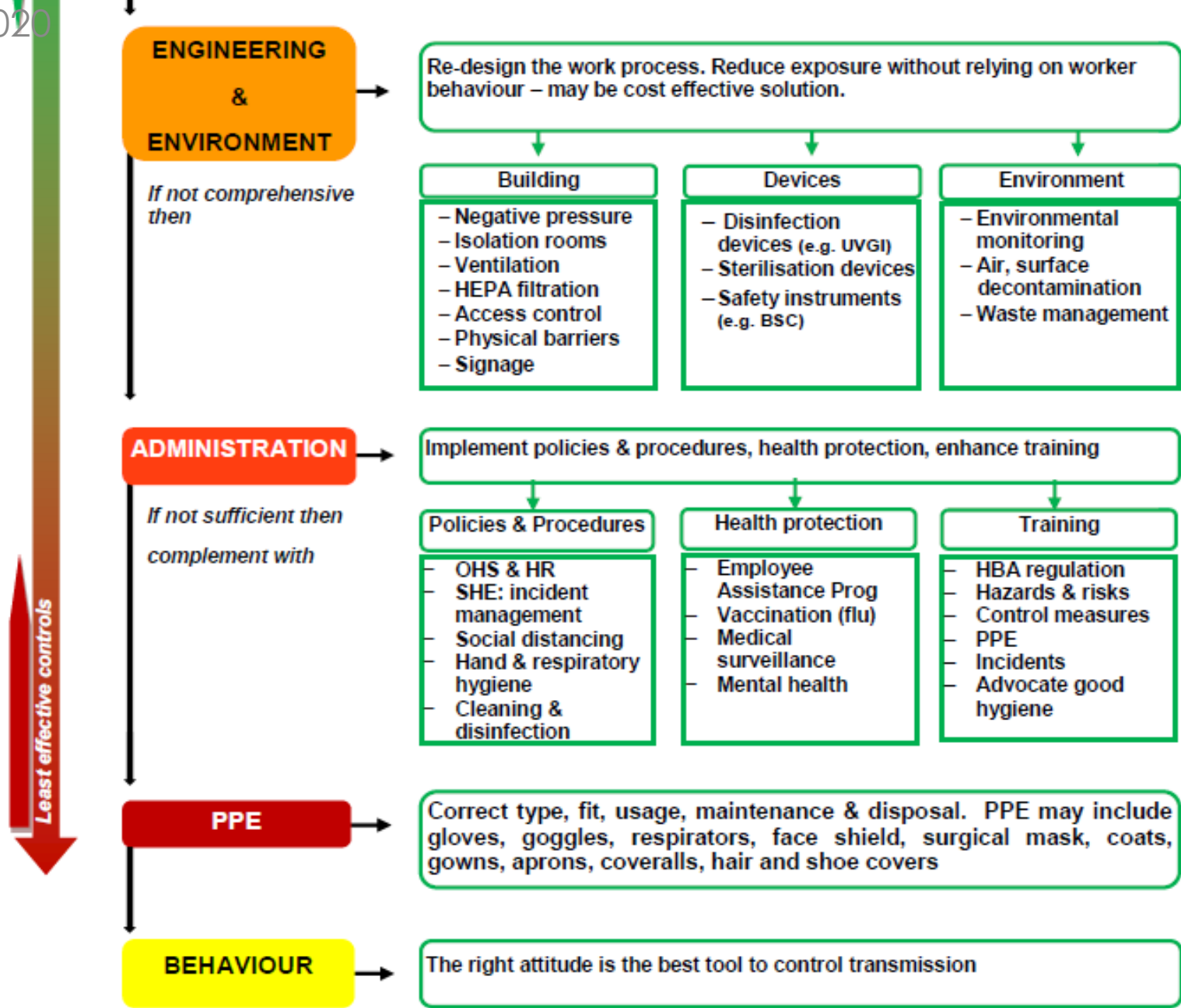


Figure 1. Flow diagram illustrating the fundamental pillars of the hierarchy of controls and possible recommendations.

Step 6: Complete report

- Demonstrates compliance with legislation
- Helps drive the actions
- Helps with later review
- Outline who is accountable for actioning measures needed to improve exposure control



Pixabay

Thank You / Enkosi / Dankie

References and Acknowledgements :

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