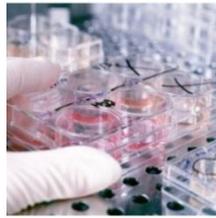




NATIONAL INSTITUTE FOR  
OCCUPATIONAL HEALTH

Division of the National Health Laboratory Service



# BioRisk Safety Management



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- **BIOLOGICAL RISK**

The chance that the biological material can cause harm to the health and safety of a person

- **TYPES OF HBA**

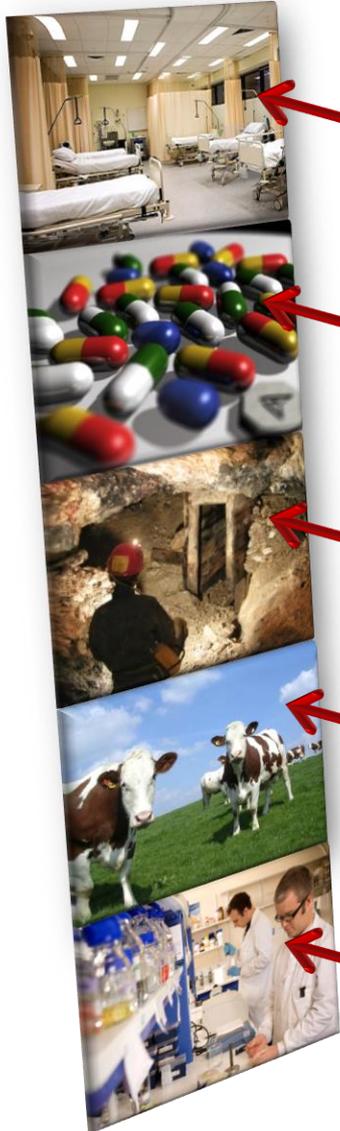
- Class 1-4; Biosafety Level 2-4
- Bacteria, fungi, viruses, parasites or protozoa, allergens
- By-products (mycotoxins, endotoxins, MVOCs)

- **PROXIMATE SOURCES**

- Human, Animal, Plants and Environment
- Infections, Allergy, Toxic and/or carcinogenic



# WHO IS AT RISK?



Healthcare

Pharmaceuticals

Mining

Agriculture

Research Labs



Metal Sector

Animal Care

Waste Plants

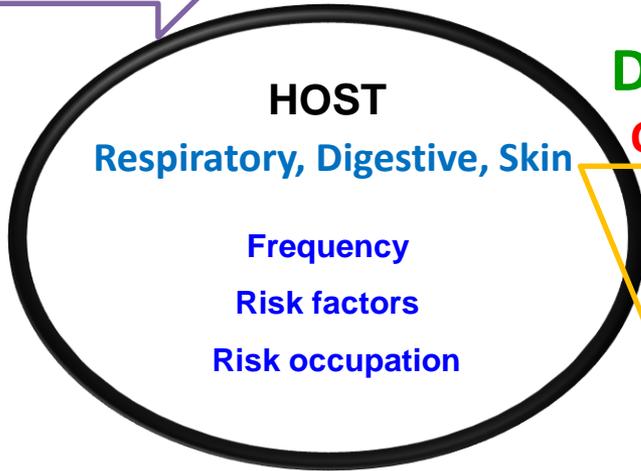
Manufacturing

General Workplaces

# HOW TO ASESSE HAZARDS AND RISKS

DECIDE

IDENTIFY



## TRANSMISSION PATHWAY

Exit and Entry portal

**Direct Exposure**

Contact, inhalation



**HEALTH EFFECTS**

Infectious

Allergic

Toxic

\*WR vs #WE

**Semi-direct Exposure**

Dirty hands

**Indirect Exposure**

Insect, instrument



RECORDS

IMPLEMENT

REVIEW

UPDATE

**Multidisciplinary**

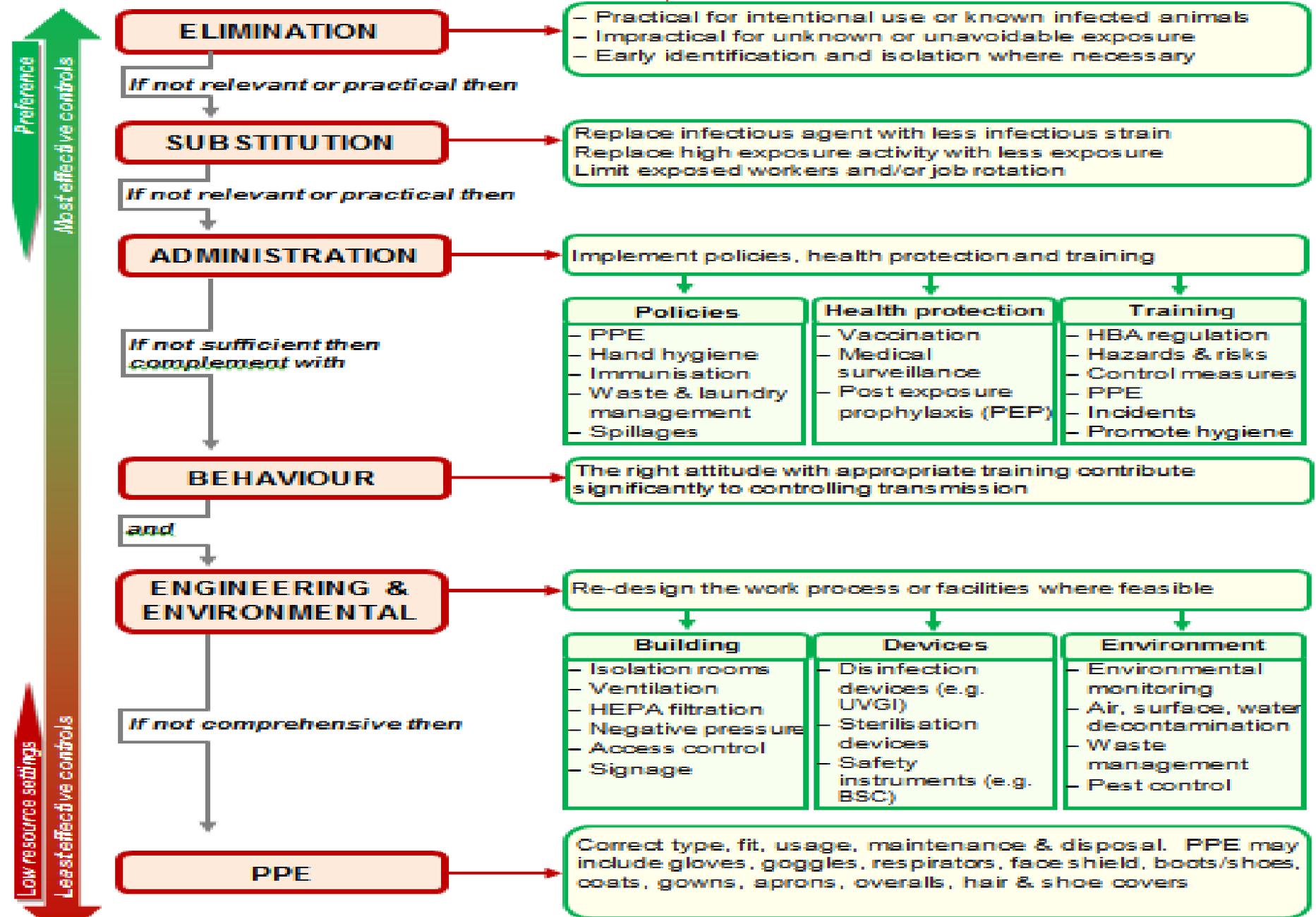
\*WR: work related  
#WE: work exacerbated



# RISK COMMUNICATION



# HAZARD AND RISK IDENTIFICATION



# SAFE WORK PRACTICES: HAND HYGIENE

**1** Wet your hands

**2** Apply soap and scrub for at least 15 seconds

**3** Scrub back of hands, wrists, between fingers & under fingernails

**4** Rinse your hands

**5** Turn off water using elbows where applicable

**6** Dry your hands

Your Health Is In Your Hands

# SAFE WORK PRACTICES: GLOVE REMOVAL

- **Single Use**
- **DO NOT** wash
- **Avoid** skin contact
- **Discard** **Inside Out**
- **Wash** and **hand rub**

Open | [Icons] | 1 / 1 | 77.9%

## Single use gloves (splash resistant)

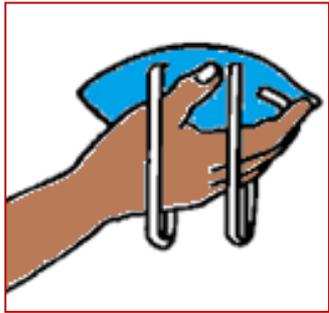
Follow the steps shown

Remove gloves carefully to protect your skin from contamination

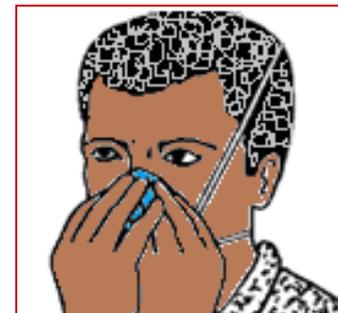
Dispose of gloves in a suitable container

www.hse.gov.uk

The diagram illustrates the correct procedure for removing single-use gloves. It consists of a sequence of nine panels connected by arrows, showing the hands being turned inside out as the gloves are pulled away from the skin. The final step shows the gloves being placed into a yellow disposal bin. The text 'Dispose of gloves in a suitable container' is written around the bin. The HSE logo is visible at the bottom.



## Perform Fit Check



- Hold **-cupped** hand
- **Nose piece** at the fingertips
- Head **straps** hang loosely in front.
- Place over **nose, mouth & chin**.
- Pull and rest the **top strap** over the top back of your head, **above ears**
- Pull & place the **bottom strap** around your neck, **below ears**.
- Use both hands fingertips **fit the nose piece** to your nose by pushing inward, **adjust to fit**
- Using **1 hand** will likely result in **less effective** respirator fit.
- **+ve pressure** check: **exhale** sharply, **no leaks** to face
- **-ve pressure** check: **inhale** deeply (should depress slightly)
- **Seal check**: Cover with both hands.
- Re adjust, **DONT use** until passed.
- To **remove**, hold with **1 gloved hand**
- With the other hand, **pull the bottom strap** over your head, then **pull the top strap** off.
- **Dispose** of it as a bio-hazardous waste.



- Poor installations
- Effectiveness
- Inferior designs
- Dose Rec: 20 mW/m<sup>3</sup>

# WORKPLACE EXPOSURE ASSESSMENT

## COMPETENT LAB

## VALIDATION

## ISO 17025

DUST



GELATIN



IMPINGER



SETTLE PLATE



TAPE



WATER



PC



PTFE



RODAC



SWABS



IMPACTION



# NO OELs

BULK SAMPLING

AIR SAMPLING

SURFACE SAMPLING

# WHY EXPOSURE MONITORING?

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- **Protect** the health of the worker and **IPC**
- **Detection**: presence or absence of HBA
- **Identification** of HBA (genus vs specie)
- Provide additional info for **severity of hazard**
- Measure the **effectiveness** & ensure **maintenance** of controls
- Exposure assessment and intervention
  - Test **hypothesis** of cause of the problem
  - Data Collection (**Surveillance**)



- **Cross-reactivity** and complex **mixed exposures**
- Individual **susceptibility** variability
- **Lack of OELs, dose response, infective dose**
- **Exposure period** does lead to **health outcome**
  - **Low dose + short exposure**
  - **Low dose + long exposure**
- **Lack of commitment and compliance**



# Discussion



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