



# Developing and Implementing a Medical Surveillance Programme in the Workplace

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# Introduction

**Aim :** Develop an understanding of the *process* required for the implementation of a medical surveillance programme in the workplace

## **Objectives of this presentation (At the end you should be able to....)**

- Outline the necessary steps in the establishment of an adequate medical surveillance programme
- Identify the responsibilities of occupational health and safety personnel involved in the operational functioning of the programme
- Have knowledge of appropriate evaluation and monitoring systems to assess medical surveillance programmes
  - *Differentiate between the term surveillance, biological monitoring and screening*

# Medical Surveillance Terms

**Occupational health surveillance** ongoing systematic collection, analysis, and dissemination of exposure and health data on groups of workers for the purpose of early detection of injury and disease

**Medical surveillance** examines health status through tracking of illnesses or changes in a biological function in an exposed person or persons. It involves monitoring health trends in a worker population

- Establishes a baseline medical record for all employees specifically those exposed to health hazards
- Preventative measure, identifies early adverse exposure effects among workers
- Utilised to determine if the control measures implemented in the workplace are effective
- Ensures employees meet the inherent health requirements for their relevant occupation “fit for duty” or “job fitness”

# Legislation

- Occupational Health and Safety Act 1993
  - Hazardous Chemical Agent Regulations
  - The Asbestos Regulations
  - The Lead Regulations
  - The Noise Induced Hearing Loss Regulation
  - Hazardous Biological Agents Regulations
  - Ergonomic Regulations
- Mine Health and Safety Act 1996

# Occupational Health and Safety Act 1993

- **Medical Surveillance:** 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 an occupational medicine practitioner
  - **Biological Monitoring:** planned programme 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

# Case Study



*Mr M 45-year-old male employed as a spray painter for twelve years in an autobody repair centre. He began experiencing respiratory symptoms five years after employment (tight chest, cough and fatigue) symptoms improve on weekends when away from work. He was referred to the MOPD for ? Occupational Asthma. **On history it was noted he had never done any medical surveillance during employment.***

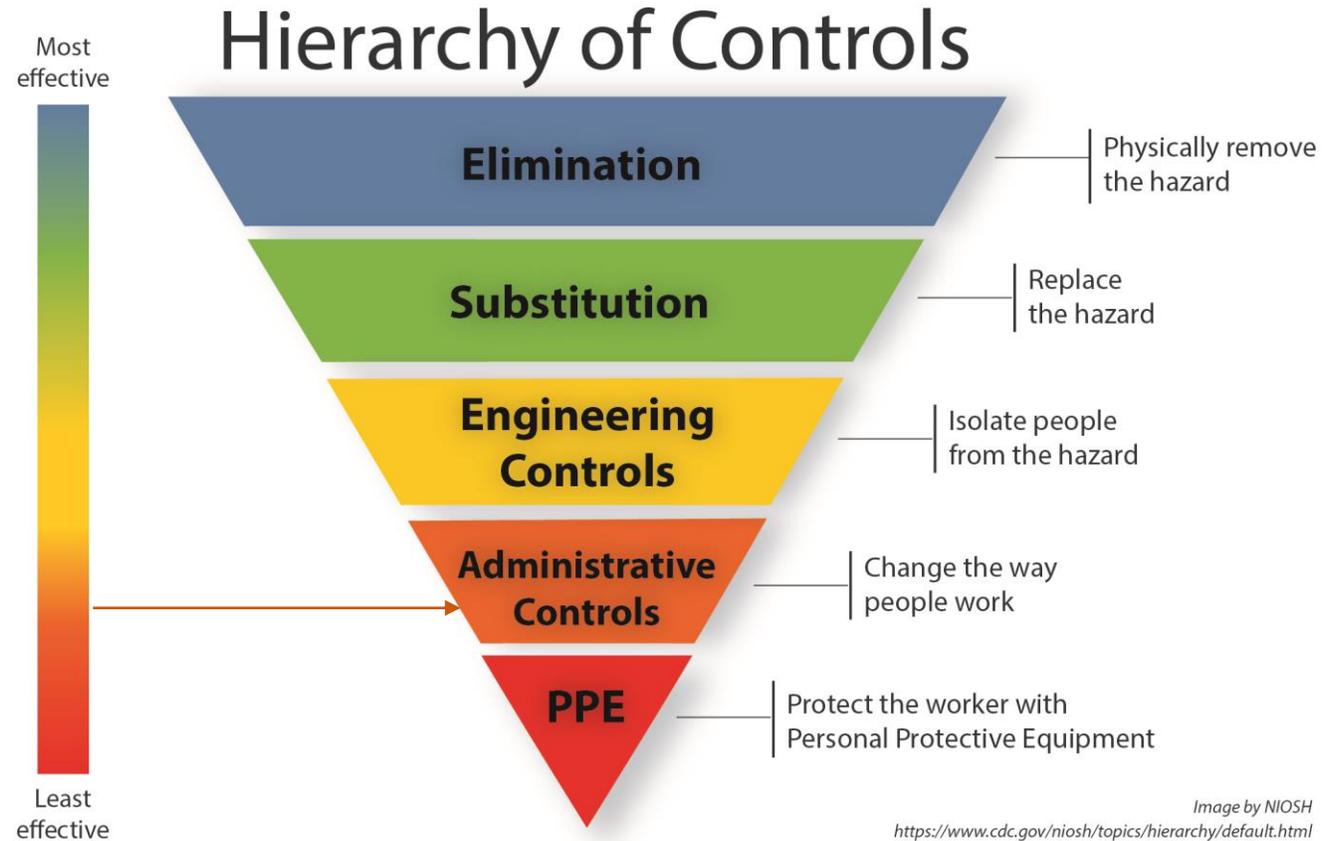
- **Absence of surveillance in the workplace**
- Inadequate surveillance, incomplete management of results, no identification of disease/compensation

# OREP (Occupational Risk Exposure Profile)

## Occupational health risk assessment

- Exposure assessment: an expression of the hazardous exposure concentration in the workplace
- Risk characterization: a method for comparing the exposure assessment and translating the result into a risk of adverse health outcomes
- Risk is associated with the **Capability Requirements** of the Occupation (Drivers and Operators of motor vehicles and dangerous equipment-worker who has uncontrolled epilepsy unfit for duty)
- Standards of fitness derived from guidelines (Legislation, SASOM)

# Secondary Prevention Measure



# WASP (Worker Allocated Surveillance Programme)

## OREP

- Derived from health risk assessment

## Test Selection

Based on the OREP

- **-Screening vs diagnostic tests**
- -Frequency/Timing
- -Non-invasive
- -Inexpensive
- -High sensitivity
- -High specificity

## WASP

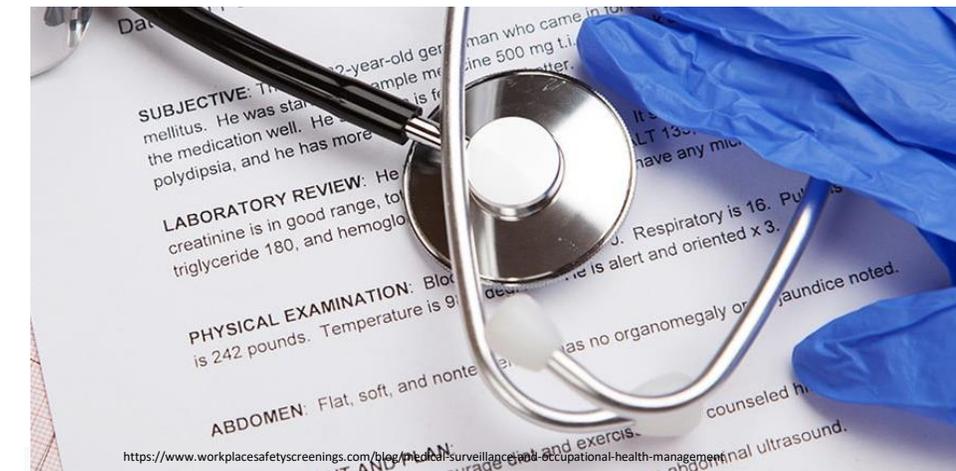
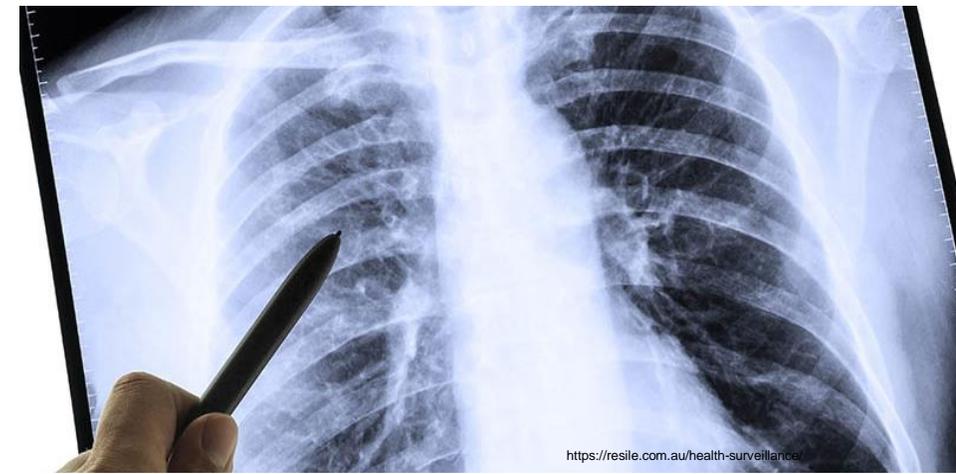
- Vulnerability
- Identify early adverse events
-

# Test Selection

“Test” an activity aimed at obtaining information pertaining to employee fitness, or hazard effect

Based on target organ and biological effects of exposure

- Interview or questionnaire
- Clinical examination
- Respiratory health effects: Spirometry, Chest X-rays
- Hearing: Audiograms
- Chemical agent exposure: Blood levels, Urine levels
- Biological agent exposure: Blood or tissue samples



# Tool Questionnaire

NOAA Form 57-17-02 (9-12) Page 1 of 4		U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	
<b>RESPIRATOR MEDICAL EVALUATION QUESTIONNAIRE</b>			
<b>INSTRUCTIONS</b>			
<b>EMPLOYEE:</b>		Complete Part A and Part B, Section I. Submit this form directly to the Medical Provider.	
<b>MEDICAL PROVIDER:</b>		Review the information provided by the employer (NOAA Form 57-17-01) and the employee (NOAA Form 57-17-02). Complete Part B, Section II of this form. Submit the completed questionnaire to MOC Health Services for distribution as needed.	
<b>PART A. SECTION I: EMPLOYEE INFORMATION</b>			
EMPLOYEE FULL NAME		DUTY STATION	
JOB TITLE		DEPARTMENT or BRANCH	DATE
AGE	GENDER <input type="radio"/> Male <input type="radio"/> Female	HEIGHT ft. in.	WEIGHT lb.
HOME or CELL PHONE NUMBER		WORK PHONE NUMBER	
Have you worn a respirator? (Question 8 is applicable)		IF "YES", LIST TYPE(S)	
<input type="radio"/> Yes <input type="radio"/> No			
<b>PART A. SECTION II: RELEVANT MEDICAL HISTORY</b>			
Questions 1-9 are mandatory for all employees who have been selected to use any type of respirator. A follow-up medical examination is required for any employee who gives a positive response to any question among questions 1-8. Questions 10-15 are mandatory for employees who have been selected to use a full mask respirator or a self-contained breathing apparatus (SCBA). Questions 10-15 are voluntary for employees who have been selected to use only a half mask respirator.			
1. Do you currently smoke tobacco or have you smoked tobacco in the last month?		<input type="radio"/> Yes <input type="radio"/> No	
2. Have you ever had any of the following conditions?			
a. Seizures (fits)		<input type="radio"/> Yes <input type="radio"/> No	
b. Diabetes (sugar disease)		<input type="radio"/> Yes <input type="radio"/> No	
c. Allergic reactions that interfere with your breathing		<input type="radio"/> Yes <input type="radio"/> No	
d. Claustrophobia (fear of closed-in places)		<input type="radio"/> Yes <input type="radio"/> No	
e. Trouble smelling odors		<input type="radio"/> Yes <input type="radio"/> No	
3. Have you ever had any of the following pulmonary or lung problems?			
a. Asbestosis		<input type="radio"/> Yes <input type="radio"/> No	
b. Asthma		<input type="radio"/> Yes <input type="radio"/> No	
c. Chronic bronchitis		<input type="radio"/> Yes <input type="radio"/> No	
d. Emphysema		<input type="radio"/> Yes <input type="radio"/> No	
e. Pneumonia		<input type="radio"/> Yes <input type="radio"/> No	
f. Tuberculosis		<input type="radio"/> Yes <input type="radio"/> No	
g. Silicosis		<input type="radio"/> Yes <input type="radio"/> No	
h. Pneumothorax (collapsed lung)		<input type="radio"/> Yes <input type="radio"/> No	
i. Lung cancer		<input type="radio"/> Yes <input type="radio"/> No	
j. Broken ribs		<input type="radio"/> Yes <input type="radio"/> No	
k. Any chest injuries or surgeries		<input type="radio"/> Yes <input type="radio"/> No	
l. Any other lung problem that you have been told about		<input type="radio"/> Yes <input type="radio"/> No	

# Frequency of Medical Examinations

- Pre-placement medical examinations
- Routine medical examinations
  - OREP
  - Shift work : An employee entitled to have an examination at the time of commencing regular night work , at regular intervals while he or she continues to work regularly at night ( Code of good practice arrangement of working time)
- Termination of service (Exit) examination
- Transfer examination
- Return to work (Occupational Injury & Disease/Incapacity)

*A medical examination to be conducted if there is any new change in the OREP*

# Planning a Surveillance System

Define aim of the programme

- Prevent injuries and illness, minimise disability, improve the quality and effectiveness of occupational health and safety services

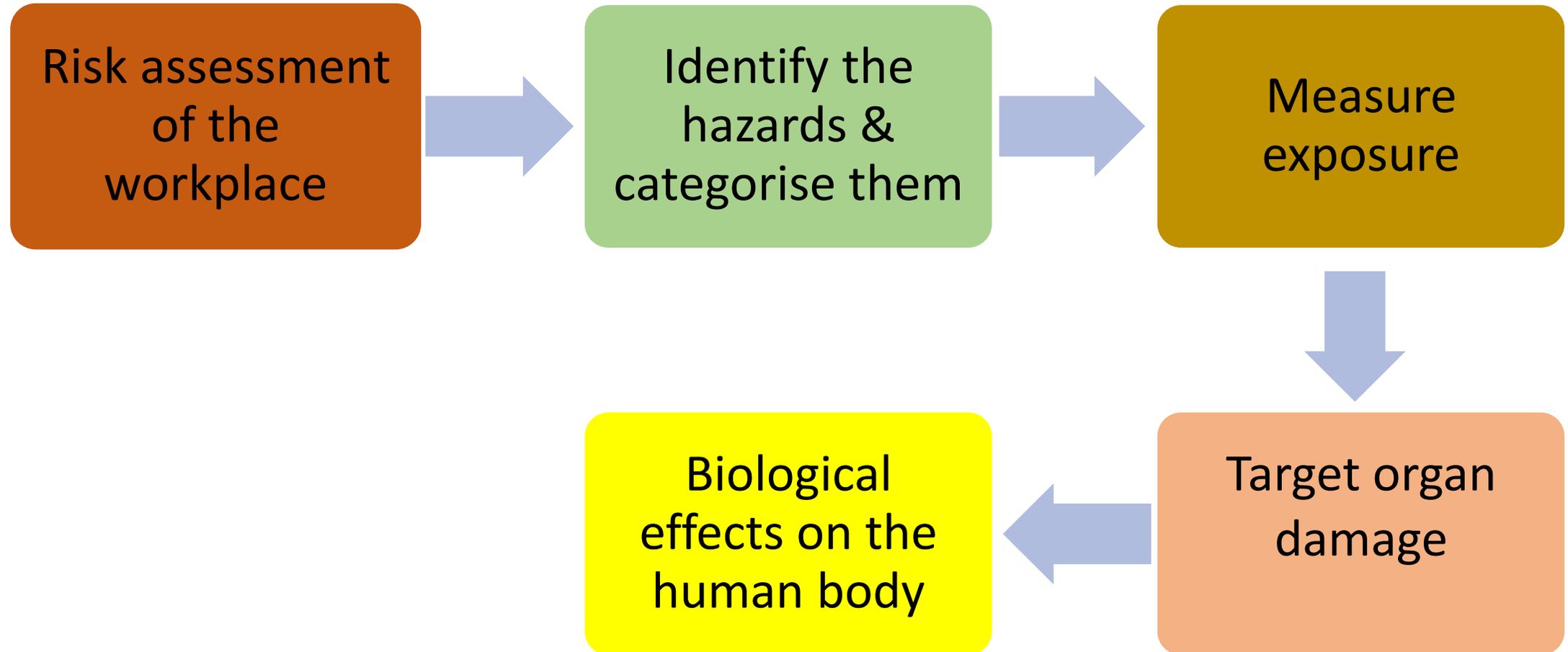
Define the Objectives

- Monitor annual changes in medical examinations for injury and disease
- Identify workers for specific surveillance (WASP)
- Link case reporting to individual case follow-up

# Implementing Medical Surveillance Programme

- Gain support and commitment from workplace management and employees
- Form a surveillance health and safety team (Health and safety representative, OHP, OMP OREP → Test Selection and Medical Examination)
- Determine available resources and requirements
- Training: Surveillance methods and Test selection
- Test selection: requirements for conducting the test, machine specs equipment calibration. Qualifications of the person doing the tests and laboratory accreditation
- Education and training for employees

# Implementing Medical Surveillance Programme



# Case Study



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- Absence of surveillance in the workplace
- **Inadequate surveillance incomplete management of results no identification of disease/compensation**

# Spirometry Results

Date	Pre FEV1 (%)	FVC (%)	FEV1/FVC Ratio	Post FEV1 (%)	Post FVC (%)	Post FEV1/FVC Ratio
2018	2,01(70%)	3.53(70.8%)	56			
Clinical Consultation 2023	1,80 (67%)	3.02(64%)	59	2.2 (71%) 22% change post bronchodilator	3.85(79%)	

Mr M has occupational asthma secondary to isocyanate exposure, found in paint.

# Fitness for work

- ***Presence of functional requirements*** (such as vision, dexterity, cognitive, function) for the work duties to be conducted safely
- Excluding persons that do not meet the requirements recorded in the OREPs
- The relevant tests are determined by the requirements and standards of fitness (Driver SASOM/Road Traffic Act )
- Medical conditions can unexpectedly cause functional impairment whilst performing critical tasks (uncontrolled diabetes mellitus may result in hypoglycaemia, with consequent cognitive impairment)
- Vulnerability work environment/individual characteristics predispose to severe outcomes



# Case Study

*Mr T 41-year-old male employed as a drill rig operator (diamond mine). He has severely uncontrolled hypertension and diabetes mellitus, now presenting for his annual medical surveillance examination.*

- Is Mr T fit for duty ??
- OREP?
- What tests should be performed to determine his fitness for work?



# Ethical Guidelines

- All test results remain confidential
- Choice of test to be ethical and conducted in confidentiality
- Employee to give permission for release of results, Group information may be shared
- Storage of data information systems electronic/paper based. What information should be kept?
- Data source: Individual records, medical surveillance/ sickness profiles/ exposure records (hygiene surveys)

# Monitoring and Evaluation

- Based on its objectives/Inputs
- Processes: What happens in terms of testing
- Outputs:, chronic disease, COIDA/ODMWA submissions, management of case-removal from exposure referral, treatment and rehabilitation
- Prioritise health problems
- Evaluate success or failure of interventions
- Provide planning data for cost effectiveness and benefit analyses
- Generate hypotheses regarding disease-exposure relationship
- Recognition of disease (Latency)
- Data quality access control

# Conclusion

- Medical surveillance must be designed and established to meet challenges arising from the workplace
- It is an essential component aimed at the protection of workers and should be prescribed by the available legislation
- Used as a preventative measure to identify early adverse effects and to reduce the burden and the cost of diseases in relation to work
- Examinations must be individualised based on the OREP and health risk assessments completed
- Education and training for employees is necessary to encourage participation

# Thank you!



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**COLLABORATION AND STRATEGIC APPROACH  
TO ENHANCE DECENT WORK IN AN EVOLVING  
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