1.5 Implement and manage ongoing monitoring and health surveillance

Learning Outcome

The learner should be able to implement and manage systematic monitoring and health surveillance programmes for physical-agent hazards, ensuring that they remain risk-based, proportionate and effective. The learner should also be able to use monitoring and health-surveillance findings to identify changing risks, verify controls and initiate further action when required.

1. Monitoring and Health Surveillance – The Difference

These two activities are related but not the same.

Exposure monitoring

Exposure monitoring measures the hazard or level of exposure in the workplace.

Examples:

- Noise measurements.
- Hand-arm vibration measurements.
- Heat-stress assessments.
- Radiation measurements.

It answers:

"What level of exposure are workers receiving?"

1. Monitoring and Health Surveillance – The Difference

Health surveillance
Health surveillance involves the systematic monitoring of workers' health to identify early signs of work-related harm.

It answers:
"Is work potentially affecting workers' health?"

For example, where workers have significant exposure to a physical agent associated with a particular health effect, an appropriate health-surveillance programme may provide an additional means of identifying early adverse effects.

2. Risk-Based Monitoring Programme Design

An ongoing monitoring programme should be based on the level and nature of risk, rather than applying exactly the same monitoring frequency to every workplace.

Factors to consider include:

- Magnitude of exposure.
- Severity of potential health effects.
- Number of workers exposed.
- Frequency and duration of exposure.
- Variability between workers and tasks.
- Reliability of existing controls.
- Previous monitoring results.
- Changes in equipment, process or materials.
- Legal or regulatory requirements.

For example, a workplace with consistently high noise exposure and variable production conditions may require more frequent assessment than an environment where exposure has remained stable and well controlled.

3. Establishing Monitoring Frequency

There should be a clear justification for when monitoring is performed and when it is repeated.
Additional or repeat monitoring may be necessary when:

- Previous results are close to an applicable limit.
- Exposure levels exceed a relevant criterion.
- Equipment or processes change.
- Engineering controls are modified.
- There is evidence of control deterioration.
- New equipment is introduced.
- Workers' tasks or exposure patterns change.
- Complaints or health concerns arise.

Monitoring should therefore be both scheduled and responsive.
A programme that samples once every few years but ignores a major process change would not be an effective ongoing monitoring system.

4. Surveillance Triggers and Thresholds

Health surveillance should be introduced where there is a credible risk of identifiable adverse health effects and surveillance can provide useful information for prevention or early detection, taking account of applicable legal requirements.

Possible triggers include:

- Exposure to a recognised occupational health hazard.
- Exposure approaching or exceeding relevant criteria.
- Evidence of potential work-related health effects.
- Previous cases of occupational illness.
- Specific regulatory requirements.
- Recommendations from competent health professionals.
- Evidence that existing controls may not be sufficiently protective.

The precise trigger depends on the hazard, jurisdiction, legislation and professional guidance.

5. Monitoring and Health Surveillance Must Work Together

An effective programme links exposure information with health information.

For example:
Noise monitoring → identify workers with significant exposure → appropriate audiometric surveillance → identify early changes → investigate exposure/control conditions → improve controls → repeat assessment

Similarly, for vibration:
Vibration assessment → identify significant exposure → appropriate health assessment → identify early symptoms/signs → investigate work practices and controls → modify exposure → review
This creates a preventive feedback loop rather than treating health surveillance as a standalone medical activity.

6. Review of Results and Trend Analysis

Individual results are useful, but trends over time can provide more valuable information.
The organisation should look for:

- Increasing exposure levels.
- Repeated threshold exceedances.
- Differences between work groups.
- Deterioration in control performance.
- Recurring health findings.
- Effects following process changes.

Example

Noise monitoring shows:
Year 1 → 82 dB
Year 2 → 84 dB
Year 3 → 87 dB
Even if individual assessments were not all above a particular legal criterion, the upward trend should prompt investigation.

6. Review of Results and Trend Analysis

Even if individual assessments were not all above a particular legal criterion, the upward trend should prompt investigation.
Possible causes could include:

- Deteriorating machinery.
- Poor maintenance.
- Increased production rates.
- Failure of acoustic controls.

This illustrates why trend analysis is an important part of ongoing management.

7. Ethical Considerations

Health surveillance involves sensitive personal information. Therefore, programmes must be managed ethically and with appropriate confidentiality.

Important principles include:

Confidentiality: Individual medical information should be protected and accessed only by authorised persons.

Informed participation: Workers should understand the purpose and nature of health surveillance and how their information will be used.

Non-discrimination: Health-surveillance findings should not be misused to unfairly disadvantage workers.

Professional independence: Health professionals should be able to make appropriate clinical judgements independently.

Appropriate communication: Management may need information about overall occupational health risks, but this does not mean that confidential individual medical details should be unnecessarily disclosed.

8. Governance and Record Management

A well-managed programme should clearly establish:

- Who is responsible for monitoring.
- Who is responsible for health surveillance.
- What records must be maintained.
- How results are reviewed.
- Who receives reports.
- What happens when an adverse result is identified.
- When regulators or other authorities must be informed.
- How corrective actions are tracked and verified.

Monitoring and health-surveillance information should form part of the organisation's wider health and safety governance system.

Management should receive appropriate aggregated information so that it can make informed decisions about:

- Risk reduction.
- Resource allocation.
- Control improvement.
- Workforce protection.

9. Practical Case Study – Hand-Arm Vibration

A construction company identifies significant vibration exposure among workers using powered hand tools.
Monitoring programme

The company:

- Identifies Similar Exposure Groups.
- Measures vibration magnitude and exposure duration.
- Establishes an appropriate monitoring frequency.
- Reviews equipment condition and maintenance.
- Repeats monitoring following major changes.

Health surveillance

Where the risk assessment and applicable requirements indicate it is appropriate, workers are enrolled in a suitable health-surveillance programme.

Management of findings

If monitoring shows increasing exposure and health information indicates possible work-related effects, the organisation should:
Investigate → review controls → reduce exposure → reassess → monitor health outcomes → verify effectiveness.
The purpose is not merely to identify illness but to use information to prevent further harm.

Critical Evaluation

A good monitoring and health-surveillance programme is dynamic rather than routine paperwork. Three common weaknesses are:

1. Monitoring without action

The organisation collects exposure data but does not improve controls when results deteriorate.

2. Health surveillance without exposure assessment

Workers undergo health checks without understanding the workplace exposures causing potential risk.

3. No response mechanism

Adverse findings are identified but there is no defined process for investigation, referral, control improvement or follow-up.

Key Takeaways

- Monitoring measures workplace exposure; health surveillance monitors workers' health.
- Monitoring frequency should be risk-based and responsive to change.
- Health surveillance should have a clear connection between exposure, potential health effect and preventive action.
- Trends and repeated findings should trigger investigation and control improvement.
- Confidentiality, informed participation, professional independence and effective governance are essential.
- The overall objective is early identification of problems and continual improvement of worker protection.

Thank you