

Ventilation Systems Policy



Title:

Ventilation Systems Policy

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Executive Summary

In healthcare premises, ventilation plant is commonly used to closely control the environment and air movement in a localised space and may be critical for the safe and effective provision of healthcare. This is for both the comfort of occupants in the buildings and to contain, control and reduce hazards to patients, staff and visitors from airborne contaminants including, dust and harmful microorganisms (infection control). NHS Lothian recognises its responsibilities under health & safety legislation and the duty to protect, so far as is reasonably practicable, all patients, employees, contractors, students, voluntary workers and members of the public (including visitors) from injury or harm resulting from any failure in the management of its ventilation systems. The management of ventilation systems within all NHS Lothian controlled and maintained properties requires systematic maintenance and examination to ensure there is suitable and adequate protection from airborne infections. There is a need to have in place a suitable maintenance programme to ensure that there are suitable and sufficient controls to prevent airborne contaminants affecting vulnerable patients.

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1.0 Purpose

This policy requires that all ventilation equipment, air conditioning and local exhaust ventilation (LEV) equipment is installed, inspected, serviced and maintained in accordance with all Statutory Instruments, NHS Guidelines and Scottish Health Technical Memoranda (SHTMs) to ensure that such equipment does not pose a health or operational risk to either staff, patients or visitors.

2.0 Policy statement

Ventilation is used extensively in healthcare premises to closely control the environment and air movement of the space that it serves. This is for both the comfort of occupants in buildings and to contain, control and reduce hazards to patients, staff and visitors from airborne contaminants including dust, harmful microorganisms and toxic substances (for example, in laboratories).

This policy sets out the detailed requirements for the maintenance and safe operation of all air conditioning, ventilation plant and local exhaust ventilation (LEV) systems, as specified in Parts A and B of SHTM 03-01. These will be maintained so that they do not present a risk to persons either in the vicinity of the plant and/or in areas served by the plant, nor should there be a statutory compliance risk to NHS Lothian.

This ventilation policy makes reference to SHTM 00 Best Practice Guidance for HealthCare Engineering with regards to emergencies, such as loss of utilities, failure of a main components and storm damage (especially relevant where air handling units and chillers are located on rooftops).

3.0 Scope

This policy applies to all staff, service users and contractors associated with NHS Lothian. Those persons with defined responsibilities should read this policy, and where applicable, read and understand the associated ventilation procedures.

This policy covers all maintenance activities on ventilation regardless of criticality, whether air conditioning or LEV plant, and at any sites where NHS Lothian is responsible for the maintenance of ventilation equipment. This will include, but is not limited to, local room extraction plants up to full air handling and conditioning systems. Comparable systems must be established where premises have been procured via PFI/PPP contracts.

This policy applies to all construction projects commissioned by NHS Lothian regardless of their size or value. This relates to all new build, change of use and refurbishment projects.

4.0 Definitions

Definition of a critical system: NHS Lothian intends to follow the definitions of criticality as set out in SHTM 03-01 Part A at paragraph 4.13. Each Ventilation Safety Group must consider the application of criteria to the systems on sites under their control.

5.0 Implementation roles and responsibilities

- Clear lines of managerial responsibility should be in place so that no doubt exists as to who is responsible for the safe operation and maintenance of the equipment.
- A periodic review of management systems should take place in order to ensure that the agreed standards are being maintained.
- Those required to inspect, verify or maintain ventilation equipment will need to show that they are competent to do so. As a minimum they should have sufficient knowledge of its correct operation to be able to recognise faults.

5.1 Designated Functions – Ventilation Safety Group

A Ventilation Safety Group (VSG) must be formed at each main hospital site and must have oversight of ventilation systems and form part of the governance structure.

Membership shall be composed of:

- The authorising engineer for ventilation (AE(V)).
- An infection prevention and control specialist.
- An appointed person for ventilation (AP(V)).
- Relevant estates operational and capital projects staff.
- Clinical staff from relevant departments for which ventilation systems are particularly critical, such as theatres, intensive/critical care/high dependency wards etc.
- Finance staff responsible for allocating resources to ventilation projects.
- Other stakeholders as deemed appropriate.
- Co-opted ventilation designers, consultants and suppliers.

Where a site is procured through a PFI/PPP contract, the VSG shall incorporate personnel from the relevant companies.

The VSG remit is to assess all aspects of design, commissioning, verification and operational management. In particular, each VSG shall have regard to:

- The assessment of ventilation systems against the criteria set out in SHTM 03-01 for the designation of critical and non-critical systems.
- Ensuring that ventilation systems are compliant with SHTM 03-01, documenting any derogations, where appropriate. An important aspect of this is the commissioning and validation of new systems and the annual verification and performance testing of existing systems.
- Ensuring that the general principles are followed, so that air is cascaded from clean to less clean areas, and that fire and smoke control requirements are not compromised.

- Ensuring that existing plant is assessed against modern requirements, drafting refurbishment requirements where necessary, and prioritising the plant replacement programme.
- Having regard for the conservation of energy.
- Ensuring that ventilation systems are able to operate safely and to decide what corrective action will be taken in the event of an operational emergency, as set out in SHTM 00. Emergency preparedness should include scenarios of unplanned interruptions to civil utilities, failure of support systems, weather-related damage, sabotage etc and such preparedness should be in keeping with major incident / contingency planning.
- The investigation of serious adverse ventilation events and the management of remedial measures.
- Where clinically appropriate to do so, to provide ultra clean ventilation systems.
- To maintain ventilation systems that underpin the NHS Lothian commitment to protect staff from hazardous and irritating airborne substances, and to promote general wellbeing and comfort.

5.2 Designated Functions – Specific Persons

A person intending to fulfil any of the staff functions specified below should be able to prove that they possess sufficient skills, knowledge and experience to be able to safely perform the designated tasks.

5.2.1 NHS Lothian Chief Executive

The Chief Executive is the dutyholder having the overall authority and responsibility for ensuring ventilation services and systems are properly operated, maintained and repaired throughout NHS Lothian, in accordance with SHTM 03-01. Specifically, the Chief Executive will appoint a Designated Person. (The Chief Executive shall normally delegate these functions to the Deputy Chief Executive.)

5.2.2 Deputy Chief Executive

The Board Member with responsibility for reporting on Estates and Facilities matters is the Deputy Chief Executive and shall be the line manager for the Designated Person. The Deputy Chief Executive will undertake the duties of the Chief Executive where these have been delegated.

5.2.3 Designated Person

The Director of Estates and Facilities is the Designated Person. This person provides the essential senior management link between the organisation and professional support. The Designated Person should provide an informed position to Board members. They are also responsible for ensuring that there are sufficient and suitable resources available to enable all systems associated with ventilation systems are operated, maintained and repaired safely and effectively. Specifically, this shall involve the appointment of the Authorising

Engineer (Ventilation) and the appointment of Authorised Persons and Competent Persons. The Designated Person shall review this Policy every year and shall present a minute of the review meeting to the Chief Executive for their consideration.

5.2.4 Role of Management

This is the manager who is responsible for the safe operation of premises. The Head of Hard FM Operations shall undertake the Role of Management. Specifically, this shall be for the operation of a staff roster, the implementation of this and other policies, arranging for maintenance, refurbishment and replacement of ventilation plant, and the making of recommendations for the appointment and management of ventilation contractors.

5.2.5 Authorising Engineer (Ventilation) (AE(V))

The AE(V) is defined as a person designated to provide independent auditing and advice on ventilation systems, to review documentation on verification and validation, and to witness processes as necessary.

5.2.6 Authorised Person (Ventilation) (AP(V))

The AP(V) will be an individual possessing adequate technical knowledge and having received appropriate training, appointed in writing by the Designated Person (in conjunction with the advice provided by the AE(V)), who is responsible for the practical implementation and operation of management's safety policy and procedures relating to the engineering aspects of ventilation systems.

5.2.7 Competent Person (Ventilation) (CP(V))

The CP(V) is defined as a person designated to carry out the maintenance and periodic testing of ventilation systems.

5.2.8 Infection Prevention and Control Person

The Infection Control Doctor is a medically qualified consultant or consultant clinical scientist. This is from an infection specialty and is provided with dedicated time allocation by NHS Lothian to advise on microbiological or virological aspects of air quality with regards to pathogens arising from or spread by ventilation systems after undergoing specialist postgraduate training. Additionally, they are able to advise on infection control policy, and have an advisory role regarding microbiological or virological airborne hazards and ventilation system related infection risk along with the other core members of the Ventilation Safety Group.

The Infection Prevention and Control Nurse advises on actions for the prevention of exposure to pathogens (e.g., choice of PPE) that can arise from or be spread by ventilation systems and is usually done in conjunction with ICDs and microbiologists or virologists. They will:

- advise on the procedures for the prevention and control of ventilation system associated pathogens.

- advise on the location of ‘high risk’ services with patients vulnerable to airborne micro-organisms and potential areas at risk of infection transmission when ventilation provision may be non-compliant with best practice guidance.

5.2.9 Capital Planning and Projects Representative

The Capital Planning department is responsible for the delivery of major capital projects in NHS Lothian. It provides technical, commercial and professional assurance that enables NHS Lothian to develop, sustain and optimise the efficient and effective use of the capital assets needed to support the delivery of clinical strategy in line with the NHS Lothian Capital Plan.

Specifically to this policy, it provides facilities in compliance with all current, relevant national guidance that relate to Ventilation Safety and its provision. This includes new buildings, major refurbishment, upgrades, department closures or re-commissioning which involve the introduction of new ventilation services, or refurbishment of existing systems.

Through management of capital project, it ensures the ventilation systems are designed, managed, and maintained to comply with the Construction (Design and Management) Regulations 2015 (CDM) and the latest Building (Scotland) Regulations (and associated amendments).

5.2.10 User

The User is the person responsible for the management of the unit in which the ventilation system is installed (for example, the head of department, operating theatre manager, head of laboratory, production pharmacist, head of research or other responsible person).

5.2.11 Contractor

The Contractor is the person or organisation responsible for the supply of the ventilation equipment, its installation, commissioning, validation, verification or decommissioning. This person may be a representative of a specialist ventilation organisation or a member of the senior staff.

6.0 Associated materials

NHS Lothian Operational Procedure for Ventilation Systems [under development]

[NHS Lothian Control of Contractors Policy](#), approved by Policy Approval Group, December 2021

[NHS Lothian Adverse Event Management Policy](#), approved by Policy Approval Group, September 2023

[NHS Lothian Adverse Event Management Procedure](#), approved by the NHS Lothian Executive Medical Director, September 2023

7.0 Evidence base

[Health and Safety at Work etc Act 1974](#)

[Provision and Use of Work Equipment Regulations 1998](#)

[Management of Health & Safety at Work Regulations 1999 \(as amended 2006\)](#)

[Personal Protective Equipment at Work Regulations 1992](#)

[Workplace \(Health, Safety and Welfare\) Regulations 1999](#)

[COSHH 2002 – Control of Substances Hazardous to Health Regulations 2002](#)

[RIDDOR – Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995](#)

[The Public Health etc \(Scotland\) Act 2008](#)

[SHTM 00 - Best Practice Guidance for Healthcare Engineering](#)

[SHTM 03-01 - Ventilation for Healthcare Premises](#)

[SHTM 04-01 Part B - The control of Legionella in healthcare premises](#)

[SHTM 08-01 – Specialist Services - Acoustics](#)

[HSE ACOP L8 - The Control of Legionella bacteria in water systems](#)

[HSG274 – Legionella Control](#)

[Electricity at Work Regulations 1989](#)

[BS7671 IET Wiring Regulations \(18th Edition\)](#)

8.0 Stakeholder consultation

This policy was brought before the Estates & Facilities Policy Group and has been distributed to all stakeholders for consultation, and will act as guidance for all employees. This policy does not impact on the requirements of the Equality and Diversity Policy.

This policy was placed on the NHS Lothian Consultation Zone to provide all staff an opportunity to provide feedback/comment on the draft document.

9.0 Monitoring and review

This policy will be subject to continuous monitoring and will be reviewed annually to ensure ongoing compliance with any changes in industry or government guidance, SHTMs and best practice updates, and subject to full formal review every 3 years.