From the Deputy Chief Medical Officer, Prof Lourda Geoghegan

Department of Health
An Roinn Sláinte
Männystrie O Poustie
www.health-ni.gov.uk

Reference: HSC (SQSD) 14/25

Date of Issue: 2 February 2026

For Action:
Chief Executives HSC Trusts
Chief Operating Officer, SPPG
Chief Executive, PHA
Chief Executive, RQIA
Chief Executive, NIMDTA

For Information:
Distribution as listed at the end of this Alert Letter.

Related documents

None

Implementation: Immediate

URGENT ACTION REQUIRED - NATIONAL PATIENT SAFETY ALERT: RISK ASSOCIATED WITH ADULT BREATHING CIRCUITS LACKING A PATENT EXHALATION ROUTE

SUMMARY

The NHS England Patient Safety Team, in collaboration with the Faculty of Intensive Care Medicine, has issued a joint National Patient Safety Alert (NaPSA) on 11 December 2025 (NatPSA/2025/008/NHSPS) regarding risk associated with adult breathing circuits lacking a patent exhalation route.

This alert instructs all organisations that care for patients on invasive and non-invasive breathing circuits to identify a clinical lead and form a working group to; (i) develop local guidance and visual aids for the assembly, connection and reconnection of breathing circuits, (ii) implement training on specific safety checks, and (iii) establish clear communication processes.

The alert is also being sent to GP Practices for information, as they may have patients who use these breathing circuits.

Chief Executives of HSC Trusts should:

1. Disseminate this circular to relevant staff within your organisation.
2. Appoint an executive member of staff, supported by clinical leaders and heads of departments in intensive care medicine, emergency medicine, long term ventilation services, respiratory medicine and physiotherapy to oversee the implementation of the actions outlined above.
3. Trusts are requested to confirm that actions above have been completed by returning a 3rd Line of Assurance Template to the Performance, Safety and Service Improvement Directorate (PSSID), Strategic Planning and Performance Group (SPPG) at Alerts.SPPG@hscni.net by 12 June 2026.

Chief Operating Officer of Strategic Performance and Planning Group should:

1. Disseminate this circular to GP practices and all relevant staff
2. Assess the level of assurance provided by the Trust's 3rd Line of Assurance Template and address any concerns.
3. Keep Quality, Safety and Improvement Directorate of the Department (qualityandsafety@health-ni.gov.uk) informed of any ongoing concerns and actions taken to address these.

Chief Executive PHA should:

1. Disseminate this circular to all relevant PHA staff.
2. Ensure relevant professionals work with colleagues in SPPG to assess the level of assurance provided by the Trust's 3rd Line of Assurance Template to address any concerns.

Chief Executive RQIA should:

1. Disseminate this circular to all relevant Independent Providers.
2. Implement relevant actions from this circular and, through the usual RQIA monitoring processes, assure implementation of the actions required and the advised approach / best practice guidance.

Chief Executive NIMDTA should:

1. Disseminate this circular to doctors in training in all relevant specialties.

ACTIONS TO BE COMPLETED BY 12 JUNE 2026

Organisations should identify a clinical lead and form a working group to develop local guidance and visual aids for the assembly, connection and reconnection of breathing circuits. NOTE B

The guidance and associated training must include the following recommendations:

1. **Before** connection to the patient, check the breathing circuit includes an exhalation route, and that there are no obstructions within the circuit. NOTE C
2. Perform the following checks when there is **any** change in the configuration of **any** breathing circuit;

   i. observe the patient, checking chest movement (inspiration and expiration), to ensure patient is ventilating normally, and check flow, volume, pressure, saturations and capnography.

   ii. ensure alarm parameters and volume are set appropriately.

   iii. ensure expiratory vents, ports or valves on NIV masks are **not** occluded. NOTE A

Organisations should:

3. Ensure the clinical lead (or deputy) oversees any revision to the local guidance.
4. Establish a clear process to ensure all updates to the guidance, checklists or visual aids are communicated to all relevant team members.
5. Establish a clear process for communicating any urgent changes to local guidance and practice when, for example, a supply chain disruption means standard consumables are unavailable and replacements are provided.

The Faculty of Intensive Care Medicine (FICM) resource[2] can be used as a template for organisations to produce local guidance and visual aids.

Please refer to the Additional Information section of the NaPSA for NOTES A-C and References (see Annex 1 or online at NatPSA/2025/008/NHSPS)

SUMMARY OF IDENTIFIED ISSUE

In the UK, many of the around 236,500 adults and children admitted to a critical care unit each year[1] will require breathing support with invasive or non-invasive ventilatory (NIV) support systems. Some patients with respiratory support needs will be cared for in other clinical areas such as emergency departments or base wards as their condition and need for support changes.

The safe set up or adaptation of a breathing circuit is a complex process. Critically, for effective respiratory support, a breathing circuit requires the patient to be able to breathe in and, via an exhalation route, to breathe out.

The National Patient Safety Team are aware of patients who have come to harm or been exposed to potential harm because the breathing circuit to which they were connected was incorrectly assembled.

A review of the national patient safety databases over a 3-year period identified 102 safety incidents describing the absence of an exhalation route because of incorrect assembly or selection of equipment. As a result the patient could not effectively exhale.

Two patients were reported as peri-arrest when exhalation routes were missed from their breathing circuits. In multiple reports describing the physiological deterioration of a patient, the potential for serious harm was mitigated when staff placed the missing exhalation port into the circuit. In addition, numerous accounts of exhalation routes on NIV masks being occluded with tape were also identified. NOTE A

The Faculty of Intensive Care Medicine (FICM) has published a resource to help in the designing of local guidance and visual aids to support the safe set up of invasive and non-invasive breathing circuits.[2]

Please refer to the Additional Information section of the NaPSA for NOTES A-C and References (see Annex 1 or online at NatPSA/2025/008/NHSPS)

ENQUIRIES

Any enquiries about the content of this circular should be addressed to:

Safety Strategy Unit
Department of Health
Room D1.4
Castle Buildings
BELFAST
BT4 3SQ
E: qualityandsafety@health-ni.gov.uk

DoH Safety and Quality Circulars including Patient Safety Alerts can be accessed here.

Thank you for your attention to this important matter.

Yours sincerely

Professor Lourda Geoghegan
Deputy Chief Medical Officer

Distributed for Information to:

Medical Directors, HSC Trusts
Nursing Directors, HSC Trusts
Governance Leads, HSC Trusts
Assurance Contacts, HSC Trusts
Executive Medical Director/Director of Public Health, PHA
Director of Nursing and Allied Health Professions, PHA
Safety Lead, PHA
Director of Performance, Safety and Service Improvement, SPPG
Director of Primary Care, SPPG (for onward dissemination to GP practices)
Safety and Quality Alerts Team, SPPG
Head of Nursing & Midwifery, QUB
Head of Medical School, QUB
Director of Centre for Medical Education, QUB
Head of School of Pharmacy QUB
Head of School of Medicine, UU
Head of School of Nursing, UU
Head of Pharmacy School, UU
Chief Executive, NIAS
Chief Executive, NIBTS
Chief Executive, NIPEC
Staff Tutor of Nursing, Open University
RQIA Director, HSCQI
NI Centre for Pharmacy Learning and Development
PG Medical Dean, NIMDTA
Clinical Education Centre
NI Royal College of Nursing

National Patient Safety Alert

The Faculty of Intensive Care Medicine

Annex 1

NHS England

Risk associated with adult breathing circuits lacking a patent exhalation route.

Date of issue:	11 December 2025	Reference no:	NatPSA/2025/008/NHSPS

This alert is for action by all organisations that care for patients on invasive and non-invasive breathing circuits.

This is a safety critical and complex National Patient Safety Alert. Implementation should be co-ordinated by an executive lead (or equivalent role in organisations without executive boards) and supported by clinical leaders in intensive care medicine, emergency medicine, long term ventilation services, respiratory medicine and physiotherapy.

Explanation of identified safety issue:

In the UK, many of the around 236,500 adults and children admitted to a critical care unit each year[1] will require breathing support with invasive or non-invasive ventilatory (NIV) support systems. Some patients with respiratory support needs will be cared for in other clinical areas such as emergency departments or base wards as their condition and need for support changes.

The safe set up or adaptation of a breathing circuit is a complex process. Critically, for effective respiratory support, a breathing circuit requires the patient to be able to breathe in and, via an exhalation route, to breathe out.

The National Patient Safety Team are aware of patients who have come to harm or been exposed to potential harm because the breathing circuit to which they were connected was incorrectly assembled.

A review of the national patient safety databases over a 3-year period identified 102 safety incidents describing the absence of an exhalation route because of incorrect assembly or selection of equipment. As a result the patient could not effectively exhale.

Two patients were reported as peri-arrest when exhalation routes were missed from their breathing circuits. In multiple reports describing the physiological deterioration of a patient, the potential for serious harm was mitigated when staff placed the missing exhalation port into the circuit. In addition, numerous accounts of exhalation routes on NIV masks being occluded with tape were also identified. NOTE A

The Faculty of Intensive Care Medicine (FICM) has published a resource to help in the designing of local guidance and visual aids to support the safe set up of invasive and non-invasive breathing circuits.[2]

Actions required:

Actions to be completed by 12 June 2026

Organisations should identify a clinical lead and form a working group to develop local guidance and visual aids for the assembly, connection and reconnection of breathing circuits. NOTE B

The guidance and associated training must include the following recommendations:

1. **Before** connection to the patient, check the breathing circuit includes an exhalation route, and that there are no obstructions within the circuit. NOTE C
2. Perform the following checks when there is **any** change in the configuration of **any** breathing circuit;
   i. observe the patient, checking chest movement (inspiration and expiration), to ensure patient is ventilating normally, and check flow, volume, pressure, saturations and capnography.
   ii. ensure alarm parameters and volume are set appropriately.
   iii. ensure expiratory vents, ports or valves on NIV masks are **not** occluded. NOTE A

Organisations should:

3. Ensure the clinical lead (or deputy) oversees any revision to the local guidance.
4. Establish a clear process to ensure all updates to the guidance, checklists or visual aids are communicated to all relevant team members.
5. Establish a clear process for communicating any urgent changes to local guidance and practice when, for example, a supply chain disruption means standard consumables are unavailable and replacements are provided.

The FICM resource[2] can be used as a template for organisations to produce local guidance.

For further details see: https://www.england.nhs.uk/2025/12/risk-associated-adult-breathing-circuits-lacking-patent-exhalation-route/

Failure to take the actions required under this National Patient Safety Alert may lead to CQC taking regulatory action

Notes

A. NIV masks are available with and without an integral vent. Breathing circuits that use a non-vented mask require an expiratory port in the circuit. Those that use a vented mask do not; the vent is integral to the mask. Care should be taken to ensure the vent on a vented mask is never covered as this is the patient's only expiratory route.
B. This alert does not apply to breathing circuits used in the operating theatre.
C. Checks should include use of speaking valves (Passy Muir). These devices close on expiration so must NEVER be used with the tracheostomy cuff inflated, as the cuff obstructs the patient's only expiratory route.[3,4]

Patient safety incident data:
The National Reporting and Learning System (NRLS) and Learning from Patient Safety Events (LFPSE) were searched on two occasions using a combination of keywords to identify relevant incidents. Incidents were thematically reviewed and together the two searches for a 3-year period identified 102 incidents describing a breathing circuit without a patent expiratory port.

Reports described:

- incorrect assembly or selection of equipment, resulting in circuits without an exhalation route
- ports on vented NIV masks were taped over or otherwise covered
- mis-selection of NIV masks; for example, non-vented mask used without the addition of a suitable expiratory port or valve to the circuit.

Resulting in:

- peri-arrest
- seizures
- raised carbon dioxide and drowsiness
- patient distress and reports of being unable to breathe

References:

1. NHS England. Hospital admitted patient care activity. Summary report: critical care records 2024. 26 September 2024
2. Faculty of Intensive Care Medicine. Breathing circuits: a resource for designing local guidance. February 2025
3. MHRA News Roundup: Passy Muir speaking valve (PMV) – reminder of safe management after incident reports. July 2025
4. National Tracheostomy Safety Project: Swallowing & Communication (Adults) – One-way valves and ventilators.

Stakeholder engagement:

- Faculty of Intensive Care Medicine (FICM)
- National Patient Safety Response Advisory Panel
- NHS England National Clinical Director (Critical & Perioperative Care)
- Consultation on resource via FICM:
  - British Thoracic Society
  - Intensive Care Society
  - Safe Anaesthesia Liaison Group

Advice for Central Alerting System (CAS) officers and risk managers
This is a safety critical and complex National Patient Safety Alert. In response to CHT/2019/001 and CHT/2023/002 your organisation should have developed new processes to ensure appropriate oversight and co-ordination of all National Patient Safety Alerts. CAS officers should send this Alert to the executive lead nominated in their new process to co-ordinate implementation of safety critical and complex National Patient Safety Alerts, copying in the leads identified on page 1.