SAFE ANAESTHESIA LIAISON GROUP

PATIENT SAFETY UPDATE

October 2023–March 2024

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Spotlight on medication safety errors

Last year, SALG set up a short life working party to consider medication errors in anaesthesia and actions that could be taken to reduce the frequency of these types of errors. The working party included representatives from a variety of stakeholder groups.

The findings of this working party were presented to the SALG Patient Safety Conference on the 31st October. A detailed report to be submitted to SALG in the New Year will recommend that SALG undertake a number of actions to support implementation of pre-filled syringes in NHS Trusts/Boards. These recommendations are supported by NHS England, the Faculty of Intensive Care Medicine (FICM) and clinical pharmacy colleagues. Information about the potential benefits of pre-filled syringes is available on the SALG website.[1] If you have an interest in this area and would like further information, please contact admin@salg.ac.uk.

1. Use of pre-filled syringes in anaesthesia, *Safe Anaesthesia Liaison Group*.

Airway hazards

SALG is aware of a continued risk of aspiration of the plastic backing supplied with items commonly found in theatre areas such as ECG electrodes and silicone tape products. In 2020, a National Patient Safety Alert was issued that required NHS hospitals to introduce controls on purchasing to ensure that ECG/ECT electrodes for use in theatres, ECT suites and emergency areas have either large sheet backing for multiple electrodes or fully coloured or patterned individual backing.

It appears from recent reports that items are still being procured that do not comply with the requirements of the alert, particularly during periods of shortage. Some consumable items that were not specifically included in the alert, but which also are supplied with plastic backing, have been implicated in similar incidents. Additionally, some items that do comply with the alert remain a risk, due to the colour/pattern used being faint and/or similar to those commonly found in hospital linen and similar items.

SALG would like to take this opportunity to ask individual anaesthetists to remain vigilant and report any ECG electrodes that do not meet the requirements of the alert to NHS England via SALG. NHS England and MHRA can take action if suppliers do not meet these requirements. SALG would like to highlight the importance of ensuring that all incidents and near misses involving plastic packaging becoming attached to airway equipment are reported through local incident reporting systems.

Examples of compliant and non-compliant products are shown below.

Compliant product

(photo reproduced with permission from Dr Katy Nicholson)

Non-compliant product

(photo reproduced with permission from Dr Katy Nicholson)

HSSIB report: Positive Patient Identification

SALG would like to highlight an HSSIB investigation of cases of mistaken patient identification, that contains recommendations relevant to anaesthetists and departments of anaesthesia.

On February 8th 2024, the Health Services Safety Investigations Body published a National Learning Report: Positive Patient Identification. Positive patient identification is the term used for correct identification to ensure that the right patient receives their intended care such as diagnostic tests or treatments. This is highly relevant to anaesthetists, who are often the last healthcare provider to confirm patient identification before anaesthesia is induced.

The Strategic Executive Information System contains 171 serious incidents over a 6-year period where harm occurred due to misidentification of patients undergoing surgery, having laboratory investigations or being prescribed medications.

The risk of misidentification increases during transfer of care – both at handovers and patient transfer between settings. Certain patient groups appear more at risk, for example the disabled or ethnic minorities whose naming conventions may be unfamiliar to their healthcare providers.

The report noted that 'technology alone is unlikely to reduce risk of misidentification'. Poorly designed environments and workspaces increased the risk. This report highlights the need for a safe workplace for anaesthetists to practice, with access to information technology systems at the bedside that minimise the risk of patient identification errors. A simple example is the provision of handheld devices so electronic consent forms can be checked with patients on trolleys in anaesthetic rooms or theatres. Where laboratory investigations require a sample label to be electronically generated, the means to do so should be immediately available to those obtaining the sample.

SALG have offered NHS England any support that might be needed in implementing the recommendations of the report.

Although not common practice, whenever possible the NHS identification number rather than the Trust MRN should be used. The former is unique to each patient, but a single patient may have more than 1 MRN.

Prevention of Future Deaths reports

All Prevention of Future Deaths reports received by the RCoA/Association of Anaesthetists are reviewed by SALG and a joint response produced. Below is a sample of those with national level learning for anaesthetists.

Misdiagnosis of Malignant Hyperpyrexia

One report concerned a post-operative death which the expert for the coroner thought was probably due to serotonin syndrome and iatrogenic pulmonary oedema. The coroner raised concerns about the apparent lack of knowledge regarding recognition and treatment of neuroleptic malignant syndrome versus serotonin syndrome.

In this case the combination of fentanyl and ondansetron was thought to have caused serotonin syndrome. The use of Dantrolene and poor fluid management were also highlighted. We pointed out that this drug combination is extremely common in analgesia and sedation, and the incidence of either of these two complications is vanishingly rare. However, we would recommend the following articles about these conditions.[1,2,3] We would also recommend as long a delay as practical between the administration of ondansetron and fentanyl during anaesthesia.

Since SALG's response was submitted, the manufacturer of Dantrium 20mg vials has withdrawn these from the UK market. The use of Dantrium (Dantrolene Sodium) 20mg vials was thought to contribute to fluid overload as each vial requires 60ml of sterile water to reconstitute, and in addition contains 3000 mg of mannitol. The initial treatment dose is 2.5 mg/kg so an 80 kg patient required 10 vials containing 600 ml of water and 30 g of mannitol.

Dantrium has now been discontinued and is being replaced by Dantrolene sodium hemiheptahydrate, produced by Agilus. This comes in 120 mg vials and has the same 2.5 mg/kg dose. A 200 mg dose of Agilus is dissolved in 33 ml of water and does not contain mannitol, reducing the risk of fluid overload.

1. Bartakke, A. *et al*, Serotonin syndrome in the perioperative period, *BJA Education*, 20(1): 10e17, 2020.
2. Adnet, P. *et al*, Neuroleptic malignant syndrome, *British Journal of Anaesthesia* 85 (1): 129-35, 2000.
3. Baldo, B. and Rose, M., The anaesthetist, opioid analgesic drugs, and serotonin toxicity: a mechanistic and clinical review. *British Journal of Anaesthesia*, 124 (1): 44e62, 2020.

Unrecognised oesophageal intubation (again)

SALG, on behalf of the RCoA responded jointly with the Faculty of Intensive Care Medicine, to a report from a coroner of the death of a patient due to unrecognised oesophageal intubation. A short case summary, from the information that appears in the coroners' report appears below:

[The deceased] ...had taken an overdose of medication which caused their collapse. They were taken to hospital and required intubation. During the procedure the tube was accidentally positioned in the oesophagus, this accidental misplacement should have been identified by the lack of a sustained capnograph at that time. [and possibly due to the volume of vomit coming from the tube and

Those in attendance during intubation remembered seeing 'a few' end tidal carbon dioxide traces, and other indicators (chest wall movement, breath sounds in the chest, fogging in the tube) which they felt at the time supported the view that the tube was in the right place. It is possible that the tube was initially in the trachea, but as it was not tied in, it became displaced. This would account for the fact that those in attendance were sure that they had seen 3 breaths on the capnograph trace but this was not checked again when events suggested the tube might have become displaced.

Once accidental osophageal intubation was recognised [the patient] was correctly intubated.

The incorrect placement caused [the patient] to suffer a cardiac arrest, which led to hypoxic encephalopathy and... death."

It remains a great concern that such incidents continue to take place, despite the work previously carried out by the specialty to try to ensure that oesophageal intubations are swiftly recognised and corrected, details of which are available on the RCoA website.[1]

A sustained capnography trace is the only reliable test, to confirm that a tracheal tube is in the right place and should override the results of all other checks. This is made clear in the Association of Anaesthetists' "Standards of monitoring during anaesthesia and recovery".[2]

The Project for Universal Management of Airways (PUMA) consensus guidelines,[3] emphasise "sustained exhaled carbon dioxide" as the test to exclude oesophageal intubation. This reflects the fact that in some cases of oesophageal intubation the capnograph trace has not been flat, but instead was attenuated and abnormal.

Our organisations are supportive of the PUMA guidelines and plan to disseminate the key messages to our members through our safety communications and events.

1. Patient Safety: Unrecognised Oesophageal Intubation, *Royal College of Anaesthetists*.
2. Recommendations for standards of monitoring during anaesthesia and recovery, *Association of Anaesthetists*, 2021.
3. Chrimes, N. *et al*, (2022), Preventing unrecognised oesophageal intubation: a consensus guideline from the Project for Universal Management of Airways and international airway societies*. *Anaesthesia*, 77: 1395-1415.

Local anaesthetic toxicity

The RCoA was requested to respond to a report from a coroner following the death of a patient, Dr Rachel Gibson, who sustained irreversible brain damage following cardiac arrest caused by administration of excessive local anaesthetic (Ropivacaine) during surgery.

The full response to the coroner's request can be read on the RCoA website.[1]

In the report, the coroner highlighted concerns regarding the wide variation in the way local anaesthetic is prescribed, checked and administered in procedures where local anaesthetic is infiltrated into the operation site.

SALG agreed that for any procedure where this surgical technique is used there should be a clear protocol in place that is understood and followed by the entire theatre team. This should include:

- Agreement during the multidisciplinary team brief prior to the procedure, about the type and dose of local anaesthetic to be given to each specific patient. The team should agree the maximum safe dose of local anaesthetic that can be given to the patient, calculated in milligrams. The concentration of local anaesthetic should be described in milligrams per milliliter and used to calculate the total allowable volume that can be injected by the surgeon and/or the anaesthetist. In accordance with the National Safety Standards for Invasive Procedures, all staff members who undertake an active role in the invasive procedure should be present, including the most senior members of the anaesthetic and surgical teams.[2] Some units have reported that they found it helpful to write the agreed drug dose and volume on the theatre whiteboard near to the swab counts.
- How and where the prescription for local anaesthetic should be documented. For example in units that use electronic systems, it might be appropriate to document on the e-prescribing system rather than the anaesthetic chart or in the surgeon's operating notes. We recommend that local anaesthetic prescriptions are recorded as 'the volume in ml of a solution containing a specified number of mg/ml of a named

local anaesthetic' to simplify any calculations of the total dose of local anesthetic received. We strongly encourage manufacturers to make the concentration in mg/ml more prominent on their product labelling rather than using percentages.

- Mandated pause prior to the surgeon undertaking the infiltration during which the whole theatre team verbally confirm that the correct drug, volume and concentration has been provided.

Human factors science indicates that engineered solutions are far more effective at reducing the risk of similar events occurring than procedural steps. The use of pre-filled syringes have been shown to reduce the risk of drug error by up to seventeen times and the use of a pre-filled syringe of local anaesthetic at the correct dilution would have substantially reduced the chance of an overdose of local anaesthetic.[3] We recommend that pre-filled syringes are used by default where available. Where manufactured pre-filled syringes are not available, we recommend that doses are standardised for specific operations by patient weight and that dilutions are drawn up prior to the start of the procedure, potentially by colleagues within pharmacy to minimise the manipulation of medicines in clinical areas.[4] Additionally, we recommend that local anaesthetics intended for intraoperative local anaesthetic infiltration are not provided in volumes larger than 100mls per bag to further reduce risk.

1. Response to the Coroner's Prevention of Future Deaths Report concerning Dr Rachel Gibson, *Royal College of Anaesthetists*.
2. National Safety Standards for Invasive Procedures 2 (NatSSIPs), *Centre for Perioperative Care*, 2023.
3. Adapa RM, Mani V, Murray LJ, *et al*. Errors during the preparation of drug infusions: a randomized controlled trial. *British Journal of Anaesthesia* 2012; 109: 729–34.
4. Professional Guidance on the Safe and Secure Handling of medicines, *Royal Pharmaceutical Society*, 2018.

Field Safety Notice – Drager Atlan Anaesthetic Machines/Ventilators

Drager have issued a 'Field Safety Notice (FSN)' about some of their Atlan machines in October this year, which is available on the MHRA website.

The position of SALG is that it is not acceptable that anaesthetic machines with faulty ventilator motors are used for patient care, particularly for general anaesthesia where patients are dependent on mechanical ventilation to keep them alive.

If your hospital has this model of machine in theatres, we strongly advise that you check the serial number against those included in the alert and take action accordingly.

Review of clinical incidents

Following is a review of incidents reported to the NHS in England and Wales in the period from October 2023–March 2024.

Stroke following anaesthesia – possible air entrainment by faulty fluid warmer

[Patient in their 30s] had a hernia repaired under combined GA and spinal anaesthesia. Once the procedure had finished and the patient woken up, they complained of being unable to move their legs. This was initially ascribed to the spinal administered for post-operative pain relief.

Hours later, the patient reported weakness and numbness in one hand and leg. An acute ischaemic stroke was suspected however CT scans of the brain and aorta, a carotid angiogram and trans-thoracic echocardiogram were reported as normal.

A differential diagnosis of air embolism was suggested as during the anaesthetic it was noted that the fluid warmer, one commonly used in theatres, was releasing some small bubbles into the drip line and had been immediately removed from the circuit.

Because of the inexplicable stroke in a young patient without risk factors, hyperbaric oxygen treatment (HBOT) was initiated as a matter of urgency, as a delay of >12 hours reduces the efficacy of such treatment. The patient tolerated the treatment well and reported slight improved ability to move the left hand and leg.

Readers are reminded that air embolism is possible following any invasive procedure. Guidelines for managing air embolism are described in the Quick Reference Handbook.[1]

1. Quick Reference Handbook. 3-5 Circulatory embolus, *Association of Anaesthetists*.

Pre-operative assessment

During the pre-operative assessment before elective surgery of a patient with multiple medical comorbidities, no physical examination was undertaken. Despite an ejection systolic murmur being documented several times in the notes, an ECHO had never been requested. The patient died of post-operative complications that might have been foreseen had their severe aortic stenosis been diagnosed.

Although not all patients require a physical examination, frail and older patients should be provided with a comprehensive assessment by a multidisciplinary team involving anaesthetists, surgeons and geriatricians. This is set out in detail in the RCoA's GPAS document (Chapter 2, section 12.29)[1] and the guideline by CPOC which is

supported by the NHS Elect perioperative care of older people undergoing surgery (POPS) programme.[2]

1. Guidelines for the Provision of Anaesthetic Services. Chapter 2: Guidelines for the Provision of Anaesthesia Services for the Perioperative Care of Elective and Urgent Care Patients, *Royal College of Anaesthetists*, 2024.
2. Preoperative assessment and optimisation guidance, *Centre for Perioperative Care*, 2021.

Perioperative care of patients with dementia

An elderly patient with complex co-morbidities was admitted from a care home with probable large bowel obstruction. The patient appeared delirious on the ward and could not tolerate NG tube insertion. Conservative management was deemed to have failed and emergency surgery planned.

Prior to induction, the oxygen saturations were between 85-87%. The patient was restless and could not cooperate with pre-oxygenation or tolerate cricoid pressure.

At laryngoscopy using a McGrath Video laryngoscope, the vocal cords were covered with what appeared to be bile fluids. The airway was secured with ETT after which the patient regurgitated and 1800ml stomach contents were aspirated via an NG tube. Subsequent CXR showed bilateral basal consolidation with an ARDS appearance. Following admission to intensive care the patient developed aspiration pneumonitis, SIRS and multiorgan failure and subsequently died.

Patients with cognitive impairment present multiple challenges to the anaesthetist. Consent may be an issue. Every effort should be made to improve capacity, which can fluctuate, in order to make decisions about management and improve the ability to cooperate with care. The Association of Anaesthetists stipulate that even in an emergency there should be vigorous, multidisciplinary assessment and management of cognitive impairment.[1] Where possible, carers/relatives should be allowed to stay with the patient and should be asked about the specific needs of that patient. When capacity is lacking, with no advanced directive in place, decisions about management should be based on the best interests [not just physical factors] of the patient.

1. Peri-operative care of people with dementia, Association of Anaesthetists, 2019.

Deterioration whilst awaiting theatre

Three days after an oesophagectomy, a patient in their 70s started complaining of abdominal pain. After 5 days of conservative treatment a CT revealed extra luminal contrast leak at the pyloroplasty site, free fluid in the abdomen, pleural effusion, atelectasis, small pneumothorax and a splenic infact. There were increasing oxygen requirements and Intra-abdominal sepsis was suspected. The on-call anaesthetic team assessed the patient and a management plan discussed with the consultant who planned to join the team in the anaesthetic room. By the time the patient was brought to theatre 2 hours later their condition had markedly deteriorated. Because of the decreased level of consciousness. The trachea was rapidly intubated, following rapid sequence induction with cricoid pressure. At laryngoscopy there were signs of aspiration. Surgery was cancelled and subsequently the patient died.

Patients with serious complications following major surgery can deteriorate suddenly and unexpectedly. Having made the decision to return to surgery, it vital that this should be expedited as soon as possible. The patient should be regularly and closely observed in the interim. The multidisciplinary team caring for acutely ill surgical patients on the ward should include intensive care consultants and critical care outreach as the level of care required may escalate. Any deterioration should trigger review by a senior clinician. The care of surgical patients on the ward is the responsibility of the surgical team, but following assessment the anaesthetic team should liaise closely with them to ensure timely transfer of patients for emergency surgery.

The Health Services Safety Investigations Body reported a similar case in their report entitled 'Recognising and responding to critically unwell patients.[1] In this report, Appendix 2 comprehensively summarises previous national publications and guidance on the topic of 'the deteriorating patient', which is very useful.

1. Investigation report: recognizing and responding to critically unwell patients, *Health Services Safety Investigations Body*, 2019.

Transfer

Case 1

A patient who had recently undergone a laparoscopic procedure to the oesophagus at a tertiary centre was transferred back to their local hospital for post-operative care. They suffered a delayed bleed and were admitted to ICU at their local hospital, where they developed airway compromise. Intubation was difficult during which they suffered cardiac arrest. A CT scan revealed mediastinal bleeding.

Transfer back to ICU at the tertiary centre was undertaken by the adult ICU transfer service. En route they were informed that a thoracic surgeon at the receiving hospital concluded that the mediastinal bleed was so severe, the patient should be transferred directly to theatres on arrival, but that the patient should have been managed at the local hospital.

The Faculty of Intensive Care Medicine and the Intensive Care Society have published guidance on Transfer of the Critically Ill Adult.[1] They state that 'prior to the transfer of a critically ill patient, a risk assessment must be undertaken and documented by a senior clinician to determine the level of anticipated risk during transfer. The outcome of the risk assessment should be used to determine the competencies of the staff required to accompany the patient during transfer.' Senior multi-disciplinary input is required when planning transfer of complex and unstable cases.

Case 2

A patient was taken back to theatres for repair of an anastomotic leak following hemicolectomy. The procedure was complicated by major haemorrhage and a vascular surgeon attended from another hospital. Surgery was still ongoing after the time theatres normally closed with no overnight anaesthetic cover. The patient was eventually taken to ITU with the abdomen packed and left open. The need for further surgery was considered substantial but as there were no facilities for overnight surgery, the patient required transfer to another hospital. Transfer was delayed and the patient's condition worsened, with a significant lactic acidosis on arrival.

Learning points: Life threatening complications requiring emergency surgery can occur during any procedure. If surgery is undertaken in units that do not have 24/7 facilities including anaesthetic cover, there must be robust arrangement for early transfer for such patients.

Familiarity with equipment (out of hours)

A Patient was admitted for emergency cardiac catheterisation in a state of cardiogenic shock with ongoing chest pain and pulmonary oedema. The anaesthetic team were called urgently. An anaesthetist, who was unfamiliar with the equipment, arrived without an ODP, but could not activate capnography. In the absence of this and an ODP the anaesthetist managed the airway with an i-gel rather than intubate. The patient subsequently went into cardiac arrest from which they could not be resuscitated.

It's vital that all anaesthetists are familiar with the available anaesthetic and emergency equipment in all clinical areas where they may be called to work. This is particularly important where staff work across multiple areas/hospitals such as temporary/locum staff. This requirement is clearly described in the Guidelines for the Provision of Anaesthetic Services Chapter 1: The Good Department Section 3.1.[1]

The Association's Guideline on Checking anaesthetic equipment explains the anaesthetists' responsibilities in relation to this in the following way: 'The anaesthetist has a primary responsibility to understand the function of the anaesthetic equipment and check it before use.[2]

1. Guidelines for the Provision of Anaesthetic Services. Chapter 1: The Good Department, *Royal College of Anaesthetists*, 2024.
2. Checking Anaesthetic Equipment, *Association of Anaesthetists*, 2012.

Tracheal injury

This content has been developed for SALG by the Association for Cardiothoracic Anaesthesia and Critical Care

A patient suffered tracheal injury secondary to difficult placement of a double lumen tube. Bronchoscopy revealed defectin the left bronchus + injury to the distal trachea.

Following MDT – patient put on VV ECMO, and the injury repaired. The patient is recovering on intensive care unit, still awaiting surgery for lung cancer.

Tracheal injury is a known rare but life threatening risk from double lumen tube (DLT) insertion, thought to occur in 1 in 20,000 cases.[1] A systematic review suggested common possible contributors include stylet use, cuff over-inflation, multiple attempts to adjust the DLT position, difficult intubation, and using an oversized DLT2. Mortality of patients with airway rupture by DLTs was 8.8%.[2] Overinflating tracheal and bronchial cuffs of the DLT can transmit high pressure to the mucosa, leading to mucosal erosion and inflammation which can potentially lead to scar formation and airway stenosis.[3]

In this case it appears the defect was likely during actual insertion. The bronchial injury was noticed immediately and appropriate management implemented to allow surgical correction of the defect. Showing the importance of bronchoscopic visualisation of the airway after insertion of the DLT.

1. Minambres, E., Buron, J., Ballesteros, M.A., *et al*. Tracheal rupture after endotracheal intubation: a literature systematic review. *Eur J Cardiothorac Surg*. 2009; 35: p 1056-62.
2. Liu, S., Mao, Y., Qiu, P. *et al*. Airway Rupture Caused by Double-Lumen Tubes: A Review of 187 Cases. *Anesthesia & Analgesia*. 2020; 131(5): p 1485-1490.
3. Patel, M., Wilson, A. and Ong, C. Double-lumen tubes and bronchial blockers. *BJA Education*. 2023; 23(11): p 416 – 424.

Perioperative anaphylaxis

This content has been developed for SALG by the Perioperative Allergy Network

A multi-co-morbid patient underwent general anaesthesia and regional nerve blocks for reverse shoulder replacement. Induction of anaesthesia was uneventful and the patient was placed into beach chair position in the anaesthetic room. The patient remained stable and was transfered into theatre. Following administration of antibiotics a rise in heart rate was noted. This also coincided with the surgeons moving and prepping the upper limb, as such, morphine was administered. High airway pressures were noted along with angioedema and a red rash, on removing the drapes. Pulse oximetry and blood pressure recordings were lost. The patient was flattened from the beach chair position. Anaphylaxis was suspected and adrenaline 0.5mg was administered intravenously (I.V.). An anaesthetic emergency was declared, defibrillation pads were placed on the patient and a further 0.5mg adrenaline I.V. dose was given, 5 minutes after the initial dose. A metaraminol infusion was started. Arterial and central lines were sited, and a noradrenaline infusion commenced. The patient was transferred to critical care, intubated and ventilated with ongoing noradrenaline support. Blood samples to measure Mast Cell Tryptase were taken.

Perioperative anaphylaxis is a difficult diagnosis due to the wide range of differential diagnoses, including exaggerated physiological responses to induction agents; airway manipulation; and surgical interventions.

The emergency treatment of peri-operative anaphylaxis: Resuscitation Council UK algorithm for anaesthetists[1] recommends:

1. Anaphylaxis is considered whenever unexpected and significant cardiovascular or respiratory compromise occurs.
2. First-line treatment of peri-operative anaphylaxis is intravenous adrenaline (epinephrine). An initial dose of 50 micrograms (0.5 ml of 1 mg.10 ml-1 [1:10,000]) is recommended in adults and children aged 12 years and over. 0.5mg adrenaline (0.5ml of 1mg. ml-1 [1:1000]) may be administered intramuscularly if venous access is not available. Care must be taken with correct dosing due to the risk of cardiovascular complications with excessive doses of adrenaline.
3. Adrenaline must be supported by intravenous crystalloid fluid. Multiple large volume fluid boluses may be required. Patient positioning is important to aid venous return. Head-down table tilt or leg elevation should be considered.
4. If signs of anaphylaxis persist despite adrenaline boluses, an adrenaline infusion should be initiated. A low-dose adrenaline infusion, given via a peripheral venous line, is an effective alternative if central venous access is unavailable. Where the clinical response is suboptimal despite an adrenaline infusion and appropriate fluid resuscitation, a second-line vasopressor should be started (in addition to adrenaline).
5. Cardiopulmonary resuscitation should be started if systolic blood pressure is < 50 mmHg despite initial adrenaline and intravenous fluid boluses.
6. Appropriately timed tryptase measurements can help to determine whether anaphylaxis might have occurred. However, anaphylaxis is fundamentally a clinical diagnosis. All patients with suspected peri-operative hypersensitivity reactions, should be referred to a specialist allergy service for formal allergy testing, irrespective of tryptase results. Guidance on who should be referred has been outlined by the Perioperative Allergy Network (PAN).[2]

Perioperative anaphylaxis is likely to be under-reported and investigated. PAN has developed a digital referral process for suspected perioperative allergy which would facilitate central data collection and help ensure patient safety (PASS system). PASS is currently being piloted at two large NHS Trusts, and has onboarding at 2 further NHS Trusts. Anyone interested in piloting PASS within their site can complete an expression of interest form via the PAN website.[2]

1. Dodd A, Turner PJ, Soar J, Savic L; representing the UK Perioperative Allergy Network. Emergency treatment of peri-operative anaphylaxis: Resuscitation Council UK algorithm for anaesthetists. *Anaesthesia*. 2024 May;79(5):535-541. doi:10.1111/anae.16206.
2. Perioperative Allergy Network, *BSACI*.

Safe Anaesthesia Liaison Group
Churchill House, 35 Red Lion Square, London WC1R 4SG
Tel 020 7092 1571 | **Email** salg@rcoa.ac.uk | **Website** salg.ac.uk

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