

DRAFT - Standard Operating Procedure on requirements for group and screen sampling for adult patients undergoing surgery for suspected appendicitis at CAVUHB

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| Authors: | S Tan (Anaesthetic Registrar), UB Bahlmann (Consultant Anaesthetist), R Carnegie (Blood Transfusion Laboratory Manager), A Goringe (Consultant Haematologist and Clinical Lead for Blood Transfusion), J Parker (Consultant Colorectal and Emergency General Surgeon) |
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IT IS THE RESPONSIBILITY OF ALL USERS OF THIS SOP TO ENSURE THAT THE CORRECT VERSION IS BEING USED

Version History Log

This area will be updated with details of all changes made to the SOP whether due for full review or not.

| Version | Detail of Change | Date Implemented |
|---------|------------------|------------------|
| 1.0 | Original SOP | 11/07/2025 |

This SOP will be reviewed every 2 years unless changes to any relevant legislation require otherwise.

Related documents

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| SOPs |
| Massive haemorrhage protocol. Ref UHB068.12 v6 |
| Procedure for the 5 steps to safer surgery in the perioperative care environment |
| Blood component transfusion procedure. Ref UHB348 v4 |
| Clinical Guidelines |
| Assessment of Acute Appendicitis Pathway Version 2.0 30/04/2020 ¹ |
| Guidelines for urgent red cell transfusion in patients with complex antibodies (non-ABO or rhesus) |
| National Guidelines |
| BHNOG Standards for the acceptance of pre-transfusion samples in Wales (v5 Sept 2023) |

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1. Introduction, Background and Purpose

Diagnostic laparoscopy and laparoscopic appendectomy for suspected appendicitis remain the most common general surgery emergency procedures performed.¹ These procedures are associated with a very low rate of haemorrhage and very low rate of requiring a blood product transfusion within 24 hours of surgery (PBPT).^{2,3,4}

The financial cost of processing a group and screen (G&S) sample can be estimated at £10-24 per sample, whilst the environmental impact has been estimated at 10.39 KgCO₂e per sample.⁵ Additionally, each sample taken incurs the risks associated with venepuncture to patients and staff, as well as using finite laboratory resources and healthcare provider time.

The purpose of this SOP is to detail when G&S sampling is, and is not, required for patients, aged 16 years and over, undergoing laparoscopic appendectomy or diagnostic laparoscopy for suspected appendicitis at CAVUHB.

This guidance is not absolute and cannot encompass all clinical variables. Patients should always be considered on an individual basis. Final decision-making remains with the clinical team caring for the individual patient.

2. Scope

This SOP covers all patients aged 16 years and above who are booked to undergo an emergency or planned laparoscopic appendectomy or diagnostic laparoscopy for suspected appendicitis at CAVUHB.

It does not include patients booked to undergo diagnostic laparoscopy or laparoscopic appendectomy where the primary diagnosis is suspected to be something other than appendicitis (e.g. suspected cancer) or where additional procedures are planned (e.g. right hemicolectomy). It does not include patients undergoing diagnostic laparoscopy for a suspected gynaecological diagnosis.

3. Definitions and Glossary

For the purposes of this SOP:

Suspected appendicitis is defined according to the “Assessment of Acute Appendicitis Pathway”

G&S sampling refers to obtaining a blood sample from a patient which is then processed in blood bank to determine a patient’s blood group and screen for antibodies.

Glossary

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|--------------------------|---|
| SOP | Standard operating procedure |
| G&S | Group and screen sample |
| CAVUHB | Cardiff and Vale University Health Board |
| PBPT | Perioperative blood product transfusion |
| FBC | Full blood count |
| KgCO₂e | Kilograms of carbon dioxide equivalent (the unit of measure for the warming effect of greenhouse gases, commonly referred to as a 'carbon footprint') |

4. Responsibilities

Emergency department – to be aware that patients with suspected appendicitis do not routinely require any G&S samples to be taken. However, if this team identify risk factors for requiring a PBPT, and it is considered likely that the patient will be booked for theatre, then assisting the surgical on-call team by ensuring the patient has two valid G&S samples may reduce delays to theatre.

Surgical assessment unit nursing team – to be aware that patients with suspected appendicitis do not routinely require any G&S samples to be taken and that most patients will be 'low-risk'. However, if this team identify risk factors for requiring a PBPT, and it is considered likely that the patient will be booked for theatre, then assisting the surgical on-call team by ensuring the patient has two valid G&S samples may reduce delays to theatre. It remains the responsibility of the surgeons to determine which patients require G&S sampling, but they may request competent staff to take these samples in line with health board policy.

Surgical admissions / take / on-call team – are responsible for ensuring that all patients with suspected appendicitis who are booked to undergo a laparoscopic appendicectomy or diagnostic laparoscopy undergo a risk assessment to determine whether they are high or low-risk. For high-risk patients, it is the responsibility of this team to ensure that the patient has two valid G&S samples (validity of samples can be confirmed with blood bank according to the SOP 'Blood component transfusion procedure').

Anaesthetic team – to be aware of which patients are high or low-risk of requiring a PBPT, and to inform the surgical on-call team of any patient they have pre-assessed who require G&S sampling where this has not already taken place. Responsible for ensuring confirmation during WHO surgical safety checklist sign-in that samples, where required, are valid.

5. Guidance

All patients booked to undergo a laparoscopic appendicectomy or diagnostic laparoscopy for suspected appendicitis should undergo a risk assessment to determine whether G&S samples are required.

Risk factors for requiring a PBPT:

| Patient pre-existing factors | Surgical factors |
|-------------------------------------|--|
| Pregnancy | Suspected appendicitis not the most likely diagnosis |

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| Anticoagulant or antiplatelet therapy (other than aspirin monotherapy) | Suspected cancer |
| Haematological disease | High clinical suspicion of conversion to laparotomy |
| Known or suspected malignancy | Overriding clinical concern about complexity or risk of bleeding |
| Coagulopathy or INR* >1.3 | |
| Hb < 100 g/L | |
| Platelet count < 80 x10 ⁹ /L | |

*NB: a coagulation screen is not routinely required for patients with suspected appendicitis.

Patients without any risk factors for PBPT can be considered low-risk and do not require any G&S samples to be taken.

For patients with one or more risk factor, two valid samples are required.

- It should first be confirmed whether two valid samples already exist for the patient.
- Validity of samples can be confirmed with blood bank, or according to the 'blood component transfusion procedure' SOP.
- Staff are reminded that each G&S sample requires a separate venepuncture episode as per national policy (see 'blood component transfusion procedure' and 'BHNOG Standards for the acceptance of pre-transfusion samples in Wales').

6. References

1. Assessment of Acute Appendicitis Pathway Mr Chris Morris, Clinical Lead for Emergency General Surgery Version 2.0 30/04/2020
2. Fadel et al. Requirement of preoperative blood typing for cholecystectomy and appendectomy: a systematic review. *Langenbecks Arch Surg.* 2022; 407(6): pp2205–2216.
3. Al-Musawi et al. Perioperative group and save testing are not routinely indicated for emergency laparoscopic appendicectomy and laparoscopic hernia repairs: A North West London retrospective study. *Journal of Perioperative Practice.* 2023; 33(5): 153–157. DOI:10.1177/17504589221110333.
4. Magowan et al. Utility of preoperative 'group and save' samples in laparoscopic appendicectomy Do we overestimate the risk of significant bleeding? *The Bulletin of the Royal College of Surgeons of England.* 2020; 102 (7). DOI: 10.1308/rcsbull.2020.188.
5. Centre for Sustainable Healthcare. SusQI project report: Eliminating the second group and save prior to laparoscopic cholecystectomies [Online]. 2022. [Accessed 30th May 2024]. Available from: <https://networks.sustainablehealthcare.org.uk/sites/default/files/resources/East%20Sussex%20SusQI%20Project%20report%20.pdf>