

[HOSPITAL / HEALTH AUTHORITY NAME]

# GASTROINTESTINAL BLEEDING PATHWAY

## Protocol 25: Rapid Recognition, Haemorrhage Control, Blood-Product Stewardship, Endoscopy / CT Angiography, Antithrombotic Management, Transfer, and Safe Disposition

DRAFT FOR EMERGENCY MEDICINE, INTERNAL MEDICINE, GASTROENTEROLOGY, GENERAL SURGERY, HEPATOLOGY, ANAESTHESIA, CRITICAL CARE, INTERVENTIONAL RADIOLOGY, RADIOLOGY, LABORATORY, BLOOD BANK, PHARMACY, PAEDIATRICS, OBSTETRICS, EMS, TRANSFER, AND CLINICAL-GOVERNANCE REVIEW

**STATUS:** This is a draft clinical-governance document. Exact triage categories, major-haemorrhage triggers, transfusion and coagulation targets, medication doses, anticoagulant-reversal criteria, endoscopy and CT-angiography access, interventional-radiology and surgical pathways, paediatric and pregnancy adaptations, observation intervals, transfer arrangements, and discharge follow-up must be reconciled with current national guidance, local formulary, blood-bank capability, diagnostic resources, specialist availability, and approved linked protocols before implementation.

**IMMEDIATE SAFETY RULE:** Treat active or suspected gastrointestinal bleeding as a haemorrhage syndrome until physiological stability, bleeding activity, source, antithrombotic exposure, and definitive-control plan have been established. Do not delay resuscitation, blood-bank notification, vasoactive and antibiotic therapy for suspected variceal bleeding, urgent endoscopy, CT angiography, interventional radiology, surgery, or transfer while waiting for haemoglobin to fall.

Document control	Details
Document owner	Emergency Department / Medical Services Directorate / Nursing Services / Clinical Governance
Clinical leads	Emergency Medicine; Internal Medicine; Gastroenterology / Endoscopy; General Surgery; Hepatology; Anaesthesia / Critical Care
Supporting departments	Interventional Radiology; Radiology; Laboratory; Blood Bank / Transfusion; Pharmacy; Cardiology; Paediatrics; Obstetrics; EMS; Transfer Coordination
Applies to	Adults and adolescents presenting with overt or strongly suspected acute gastrointestinal bleeding; with age-specific escalation principles for children and pregnancy
Linked protocols	Shock; Major Haemorrhage; Sepsis; Altered Mental Status; Acute Abdominal Pain; Anticoagulant Reversal; Procedural Sedation; Blood Transfusion; Palliative Care; Transfer
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## 1. Purpose

To provide a standardized emergency-department pathway for patients with haematemesis, coffee-ground emesis, melaena, haematochezia, maroon stool, suspected occult ongoing gastrointestinal blood loss with physiological compromise, or bleeding from a known gastrointestinal lesion. The protocol prioritizes immediate stabilization, early haemorrhage control, appropriate blood-product use, prompt differentiation of upper, portal-hypertensive, lower, and non-gastrointestinal sources, timely endoscopy or CT angiography, safe management of antithrombotic therapy, recurrent-bleeding rescue, and reliable disposition.

## 2. Scope

This protocol applies to acute overt gastrointestinal bleeding in the emergency department, including non-variceal upper bleeding, suspected portal-hypertensive bleeding, lower gastrointestinal bleeding, post-procedural bleeding, and selected small-bowel or obscure bleeding. It does not replace dedicated trauma, obstetric haemorrhage, ruptured aortic aneurysm, isolated epistaxis, chronic iron-deficiency anaemia, or palliative-care pathways, although these diagnoses may initially mimic or coexist with gastrointestinal bleeding.

## 3. Core policy statements

- Physiological severity determines urgency. A normal initial haemoglobin does not exclude major acute blood loss, and hypotension may occur late in young or fit patients.
- Assessment, resuscitation, blood sampling, blood-bank communication, identification of antithrombotic exposure, and activation of definitive-control pathways must occur in parallel.

- Use a restrictive red-cell strategy for haemodynamically stable patients, generally considering transfusion below 7 g/dL, while individualizing for active exsanguination, persistent shock, myocardial ischaemia, severe cardiovascular disease, hypoxaemia, or delayed access to haemostasis.
- Do not use crystalloids as a substitute for blood in ongoing major haemorrhage. Avoid excessive fluid and over-transfusion, particularly in portal-hypertensive bleeding.
- Known or suspected cirrhosis with gastrointestinal bleeding must be treated as possible portal-hypertensive haemorrhage from presentation: start an approved vasoactive agent and intravenous antibiotic therapy promptly and arrange upper endoscopy within the locally approved urgent window.
- Most admitted patients with non-variceal upper gastrointestinal bleeding should undergo upper endoscopy within 24 hours after adequate resuscitation. Uncontrolled shock requires immediate senior gastroenterology, anaesthesia, interventional-radiology, surgical, and transfer decisions.
- Ongoing haemodynamically significant haematochezia generally requires CT angiography as the initial localization test, with prompt interventional-radiology referral when active extravasation is demonstrated.
- Urgent colonoscopy within 24 hours is not routinely required for most admitted lower gastrointestinal bleeding once bleeding has slowed or stopped; bowel preparation and timing should be individualized with gastroenterology.
- Tranexamic acid is not routinely indicated for acute gastrointestinal bleeding. Do not administer it solely because bleeding is present unless another approved indication exists.
- Anticoagulant reversal must balance bleeding severity, drug activity, time since last dose, renal function, thrombotic risk, and access to definitive haemostasis. Use the approved reversal pathway; do not reverse minor or self-limited bleeding reflexively.
- Routine platelet transfusion is not indicated solely because a patient takes an antiplatelet drug. Aspirin used for secondary cardiovascular prevention should usually be continued or resumed promptly after haemostasis, with cardiology input when coronary stents or recent acute coronary syndrome are relevant.
- Safe discharge requires stable physiology, no ongoing bleeding, acceptable haemoglobin trend, controlled comorbidity, reviewed antithrombotic plan, a credible source and follow-up strategy, responsible supervision, written return precautions, and ownership of pending results.

## 4. Definitions

Term	Operational definition
Overt gastrointestinal bleeding	Visible haematemesis, coffee-ground emesis, melaena, maroon stool, or haematochezia believed to arise from the gastrointestinal tract.
Upper gastrointestinal bleeding (UGIB)	Bleeding proximal to the ligament of Treitz, commonly peptic ulcer disease, erosive disease, varices, portal hypertensive gastropathy, Mallory-Weiss tear, malignancy, or vascular lesion.
Lower gastrointestinal bleeding (LGIB)	Bleeding arising from colon or rectum; brisk upper or small-bowel bleeding may also present as haematochezia.
Portal-hypertensive / variceal haemorrhage	Bleeding from oesophageal, gastric, or ectopic varices, portal-hypertensive gastropathy, or another portal-hypertension-related lesion.
Haemodynamically significant bleeding	Bleeding associated with shock, persistent tachycardia, hypotension, syncope, altered perfusion, ongoing large-volume blood loss, or a continuing transfusion requirement.
Recurrent bleeding	New haematemesis, melaena, haematochezia, shock, rising urea, or clinically significant haemoglobin fall after initial control or apparent cessation.
Definitive haemostasis	Endoscopic, angiographic, operative, or other source-directed therapy that controls active bleeding and addresses high-risk stigmata.
Very-low-risk UGIB	A clinically stable patient with a validated low-risk score, no ongoing bleeding or major comorbidity, and reliable outpatient follow-up; commonly Glasgow-Blatchford Score 0-1 when locally approved.
Major haemorrhage	Life-threatening bleeding requiring immediate blood-bank activation, rapid blood products, haemostatic resuscitation, and definitive source control under the local major-haemorrhage protocol.

## 5. Roles and accountability

Role	Minimum responsibility
Triage / first-contact clinician	Recognize overt bleeding and shock; obtain immediate vital signs, mental state, anticoagulant history, cirrhosis clues, bleeding description, and senior escalation.
Lead ED clinician	Direct ABCDE care; activate haemorrhage, variceal, endoscopy, CT-angiography, interventional-radiology, surgical, and transfer pathways; define working source and disposition.

Role	Minimum responsibility
Nursing team	Continuous monitoring; vascular access; blood sampling; safe blood and medication administration; quantify observed bleeding; reassess physiology; document response and escalation.
Gastroenterology / endoscopy	Advise on timing and modality of endoscopy, endoscopic haemostasis, variceal management, recurrent bleeding, bowel preparation, and post-procedure care.
Anaesthesia / critical care	Airway and haemodynamic support, procedural risk assessment, post-endoscopy critical care, vasopressor support, and transport planning.
Interventional radiology	Review CT angiography, provide transcatheter arteriography and embolization, advise on portal-hypertension interventions and transfer needs.
Surgery	Assess uncontrolled bleeding, perforation, ischaemia, malignancy, aortoenteric fistula, failed endoscopic or radiological control, and need for operative rescue.
Blood bank / laboratory	Prioritize group and screen / crossmatch, haemoglobin and coagulation testing, support major-haemorrhage activation, product traceability, and transfusion-reaction response.
Pharmacy / medicines support	Ensure access to PPIs, vasoactive therapy, antibiotics, anticoagulant antidotes, PCC, infusion guidance, compatibility, and formulary stewardship.
Receiving / transfer team	Accept clinical responsibility explicitly, confirm destination and required capability, and maintain a documented contingency plan during transport.

## 6. Pathway activation and triage

Category	Operational criteria
RED / immediate resuscitation	Shock or rapidly worsening physiology; active large-volume haematemesis or haematochezia; altered consciousness or aspiration risk; suspected exsanguination; ongoing bleed with severe comorbidity; post-procedural bleeding with instability.
ORANGE / very urgent	Syncope, orthostatic symptoms, persistent tachycardia, significant melaena or maroon stool, recurrent haematemesis, cirrhosis / portal hypertension, anticoagulant use, significant haemoglobin fall, frailty, or high-risk comorbidity.
YELLOW / urgent	Stable overt bleeding requiring focused assessment, risk stratification, serial haemoglobin, medication review, and source-directed investigation.
GREEN / lower acuity only after screening	Minor self-limited rectal bleeding with normal physiology, no anaemia or high-risk feature, credible benign source, and reliable follow-up. Do not assign before clinician assessment.

**DO NOT MISS:** Brisk upper gastrointestinal bleeding can present as haematochezia; aortoenteric fistula can cause a small herald bleed before catastrophic haemorrhage; cirrhosis-related INR does not measure bleeding risk reliably; and swallowed blood, haemoptysis, vaginal bleeding, iron, bismuth, and food dyes can mimic gastrointestinal bleeding.

## 7. First 10 minutes: parallel action

Action	Required practice
Stabilize	ABCDE assessment; oxygen for hypoxaemia; suction; airway plan; continuous ECG, oximetry, and frequent blood pressure; temperature and mental-state monitoring.
Obtain access	Two large-bore peripheral IV lines where feasible; consider rapid infuser, arterial line, central access, or intraosseous access only when clinically necessary and expertise is available.
Send critical tests	FBC, group and screen / crossmatch, urea and electrolytes, creatinine, liver profile, coagulation studies, fibrinogen when major bleeding, glucose, lactate / blood gas, and pregnancy test when applicable.
Notify	Senior ED clinician, blood bank, gastroenterology / endoscopy, anaesthesia / critical care, surgery or interventional radiology according to severity and suspected source.

Action	Required practice
Treat suspected variceal bleed	Start approved vasoactive therapy and IV antibiotics immediately in known or suspected cirrhosis / portal hypertension; do not wait for endoscopic confirmation.
Review medicines	Identify warfarin, DOAC, heparin, aspirin, P2Y12 inhibitor, NSAID, steroid, SSRI, alcohol, and herbal products; record exact last dose and indication.
Begin haemostatic resuscitation	Use blood products for life-threatening ongoing haemorrhage under the major-haemorrhage protocol; avoid large unmonitored crystalloid loads.
Plan definitive control	Upper endoscopy, CT angiography with possible embolization, urgent colonoscopy, operative management, or transfer. Record the responsible service and target time.

## 8. Immediate stabilization: ABCDE

### 8.1 Airway and breathing

- Position safely, use high-flow suction, and provide oxygen for hypoxaemia. Anticipate aspiration during active haematemesis, reduced consciousness, agitation, severe encephalopathy, or urgent endoscopy.
- Do not intubate routinely solely because UGIB is present. Intubate when the patient cannot protect the airway, has uncontrolled vomiting with aspiration risk, severe hypoxaemia, impending respiratory failure, or requires a high-risk procedure that cannot be performed safely otherwise.
- Use an experienced airway team. Haemodynamic collapse may follow induction in hypovolaemic patients; prepare blood, vasopressor support, and rescue equipment before induction whenever time allows.
- Consider aspiration pneumonitis / pneumonia, pulmonary oedema, acute coronary syndrome, pulmonary embolism, and severe anaemia as contributors to dyspnoea.

### 8.2 Circulation

- Assess heart rate, blood pressure, pulse pressure, capillary refill, skin temperature, mental state, urine output, peripheral pulses, shock index, and ongoing visible blood loss. Trend rather than relying on a single observation.
- Give small, reassessed crystalloid boluses while blood is being prepared if hypotension is present, but move promptly to blood products in continuing major haemorrhage. Warm the patient, fluids, and blood.
- Activate the local major-haemorrhage protocol for exsanguinating bleeding, persistent shock, anticipated large transfusion, or rapidly escalating blood-product need. Do not wait for laboratory confirmation.
- Treat hypotension with source control and blood replacement. Vasopressors may be required after appropriate resuscitation or during anaesthesia, but they must not substitute for haemorrhage control.
- Insert urinary catheter when shock, major transfusion, critical care, or close urine-output monitoring is indicated and no contraindication exists.

### 8.3 Disability and exposure

- Check GCS, glucose, pupils, focal neurological signs, agitation, alcohol withdrawal, hepatic encephalopathy, uraemia, hypoxia, and shock-related confusion.
- Expose sufficiently to identify melaena, haematochezia, abdominal distension or tenderness, surgical scars, stomas, bruising, jaundice, ascites, caput medusae, chronic liver-disease signs, and non-gastrointestinal bleeding while preserving dignity.
- Measure temperature and actively prevent hypothermia, which worsens coagulopathy and transfusion complications.

## 9. Blood products and haemostatic resuscitation

Intervention	Safety principles
Red blood cells	For haemodynamically stable patients, use a restrictive strategy and generally consider transfusion below 7 g/dL. Consider a higher threshold around 8 g/dL for significant cardiovascular disease, and individualize further for acute coronary syndrome, ongoing shock, hypoxaemia, or active exsanguination.
Massive / active haemorrhage	Use the locally approved balanced major-haemorrhage pack, rapid laboratory or viscoelastic guidance when available, warming, calcium monitoring / replacement, and frequent review of haemoglobin, platelets, coagulation, fibrinogen, pH, lactate, and temperature.
Platelets	Do not transfuse solely for antiplatelet use. Consider for severe thrombocytopenia with active bleeding or an invasive haemostatic procedure according to local transfusion guidance; discuss cirrhosis separately because routine count targets may not improve portal-hypertensive bleeding.
Plasma	Use for specific factor deficiency or major-haemorrhage indications. Do not use fresh frozen plasma simply to normalize INR in cirrhosis; it may worsen portal pressure and volume overload.

Intervention	Safety principles
Fibrinogen replacement	Use cryoprecipitate or fibrinogen concentrate when clinically significant hypofibrinogenaemia is present under the major-haemorrhage / transfusion protocol.
Calcium and temperature	Monitor ionized calcium during major transfusion and replace according to protocol. Maintain normothermia and correct severe acidosis and hypoxia.
Patient blood-management preferences	Identify advance directives, religious refusal of blood, prior antibodies, sickle-cell history, pregnancy, and transfusion reactions early. Engage transfusion medicine and use blood-conservation strategies without delaying life-saving care.
<b>TRANSFUSION RULE:</b> Haemoglobin may remain normal early in acute blood loss. Transfuse according to the whole clinical picture; conversely, avoid automatic transfusion to a normal haemoglobin target once perfusion is restored and bleeding is controlled.	

## 10. Focused history

Domain	Key questions
Bleeding description	Haematemesis, coffee grounds, melaena, maroon stool, bright red blood, clots, blood mixed with stool or coating it; first episode, frequency, estimated volume, witnessed loss, ongoing bleeding in ED.
Physiological impact	Syncope, presyncope, dyspnoea, chest pain, palpitations, weakness, confusion, reduced urine, falls, exertional symptoms, or seizure-like activity.
Upper-source clues	Epigastric pain, dyspepsia, retching, dysphagia, odynophagia, prior ulcer or bleed, H. pylori, NSAID use, alcohol binge, recent endoscopy or sphincterotomy.
Portal-hypertension clues	Known cirrhosis, varices, ascites, encephalopathy, splenomegaly, portal vein thrombosis, prior banding / TIPS, alcohol-related or viral liver disease, previous variceal bleed.
Lower-source clues	Painless large-volume haematochezia, abdominal pain, diarrhoea, change in bowel habit, weight loss, diverticular disease, inflammatory bowel disease, colorectal neoplasia, radiation, angiodysplasia, haemorrhoids.
High-risk structural causes	Aortic graft or aneurysm, recent vascular surgery, pancreatic or hepatobiliary disease, portal interventions, abdominal surgery, malignancy, transplant, dialysis, or recent polypectomy.
Medicines and haemostasis	Exact anticoagulant / antiplatelet agent, dose, last administration, indication, adherence, renal function; NSAID, steroid, SSRI, herbal supplement, alcohol, and recent antibiotics.
Comorbidity and baseline	Cardiac, pulmonary, renal, hepatic, haematological, oncological, frailty, pregnancy, baseline haemoglobin, functional status, transfusion history, and goals of care.
Mimics	Epistaxis or oral bleeding swallowed, haemoptysis, vaginal bleeding, haematuria, iron, bismuth, beetroot / food colouring, and dark stool without tarry consistency.

## 11. Focused examination

- Record complete vital signs, shock index, GCS, perfusion, pallor, diaphoresis, respiratory effort, temperature, hydration, body habitus, frailty, and pain score. Repeat after each intervention.
- Inspect mouth and nose when swallowed blood is possible. Assess chest and cardiovascular system for aspiration, heart failure, myocardial ischaemia, valvular disease, and signs of chronic anaemia.
- Examine abdomen for tenderness, guarding, peritonism, distension, mass, organomegaly, ascites, hernia, stoma output, surgical scars, pulsatile mass, or features of bowel ischaemia or perforation.
- Look for jaundice, spider naevi, palmar erythema, muscle wasting, asterixis, ascites, splenomegaly, oedema, and other evidence of advanced liver disease.
- Digital rectal examination is selective, consented, and chaperoned. It may confirm melaena, maroon stool, rectal blood, mass, fissure, or impaction, but a negative examination does not exclude active bleeding.
- Inspect anorectal and perineal areas when a local source is plausible. Do not attribute shock, anaemia, or large-volume bleeding to haemorrhoids without excluding a proximal lesion.
- Assess for bruising, petechiae, other bleeding sites, and signs of anticoagulant excess or systemic coagulopathy.

## 12. Time-critical diagnoses and red flags

Threat	Red flags / action
Exsanguinating upper or lower GI bleed	Shock, active large-volume haematemesis / haematochezia, altered mental state, continuing transfusion need. Activate major haemorrhage and definitive-control teams immediately.
Variceal / portal-hypertensive bleeding	Known or suspected cirrhosis, prior varices, ascites, splenomegaly, thrombocytopenia. Start vasoactive agent and IV antibiotics promptly; urgent endoscopy and critical care.
Aortoenteric fistula	Aortic graft / aneurysm, abdominal or back pain, herald bleed, sepsis, or recurrent unexplained bleeding. Immediate vascular / surgical consultation and CTA if stable enough; do not delay transfer.
Post-procedural haemorrhage	Recent polypectomy, sphincterotomy, endoscopic resection, biopsy, surgery, TIPS, or radiological intervention. Contact the responsible service and arrange urgent source-directed therapy.
Ischaemic / inflammatory colitis	Abdominal pain out of proportion, hypotension, vascular risk, bloody diarrhoea, fever, peritonism. CTA / CT and surgical or gastroenterology review as indicated.
Malignancy or obstructing lesion	Weight loss, change in bowel habit, progressive dysphagia, iron-deficiency anaemia, recurrent bleeding, mass, or constitutional symptoms. Stabilize and establish expedited definitive pathway.
Bleeding with acute coronary syndrome	Chest pain, ischaemic ECG change, troponin rise, severe anaemia. Coordinate cardiology, transfusion, antithrombotic, and endoscopy decisions urgently.
Bleeding in pregnancy	Haemodynamic compromise, haematemesis / melaena, coagulopathy, or differential including obstetric haemorrhage. Simultaneous maternal stabilization and obstetric assessment.

## 13. Targeted investigations

Investigation	Indications and cautions
FBC and serial haemoglobin	Obtain at presentation and repeat according to severity, ongoing bleeding, fluids / transfusion, and disposition. Early haemoglobin may underestimate acute loss.
Group and screen / crossmatch	All moderate or severe bleeding, anaemia, anticoagulant use, cirrhosis, significant comorbidity, or anticipated procedure. Crossmatch sufficient units according to risk and local stock.
Urea, creatinine, electrolytes	Assess volume loss, renal function, urea rise suggestive of upper source, DOAC clearance, contrast risk, and electrolyte disturbance.
Liver tests and albumin	Assess cirrhosis severity, portal-hypertension context, hepatic injury, and Child-Pugh / MELD inputs when relevant.
PT / INR, aPTT, fibrinogen	Identify warfarin effect, major haemorrhage coagulopathy, liver dysfunction, DIC, and hypofibrinogenaemia. Normal tests do not exclude DOAC activity; abnormal INR in cirrhosis does not directly predict bleeding.
Blood gas, lactate, ionized calcium	Shock, major haemorrhage, severe anaemia, major transfusion, or critical illness. Trend perfusion, pH, and calcium.
ECG and troponin	Older age, syncope, chest pain, dyspnoea, shock, severe anaemia, cardiovascular disease, or tachyarrhythmia.
Pregnancy test	All patients with pregnancy potential when status is uncertain and testing will affect imaging, medication, or procedure planning; do not delay life-saving care.
Infection testing / cultures	Fever, shock, suspected cirrhosis-related infection, cholangitis, bowel ischaemia, neutropenia, or sepsis. Do not delay antibiotics when indicated.
Drug-specific testing	Document last dose. Use calibrated anti-Xa level or diluted thrombin time when available and results will change reversal decisions; standard PT / aPTT may be misleading.



## 14. Risk stratification

- Use scores to support, not replace, clinical judgment. Scores are invalidated by missing data, early treatment, unusual populations, and conditions outside the derivation cohort.
- For suspected UGIB, calculate the Glasgow-Blatchford Score after initial data are available. A score of 0-1 may identify a very-low-risk group suitable for outpatient management only when there is no ongoing bleeding, significant comorbidity, social risk, unreliable follow-up, or alternative reason for admission.
- For LGIB, an Oakland Score may supplement assessment of self-limited bleeding. A low score does not mandate discharge, and prospective evidence for score-led ED discharge remains limited.
- Use shock index, observed ongoing bleeding, transfusion requirement, comorbidity, anticoagulant activity, liver disease, frailty, and access to definitive care as immediate risk modifiers.
- For cirrhosis, document Child-Pugh and MELD-Na elements when feasible because they influence prognosis and early-TIPS eligibility, but do not delay acute treatment.

## 15. Non-variceal upper gastrointestinal bleeding

- Keep nil by mouth initially. Provide antiemetic therapy and analgesia when needed, avoiding NSAIDs. Correct shock and major physiological disturbance before endoscopy whenever possible.
- Administer IV proton-pump inhibitor therapy according to the local UGIB pathway when non-variceal bleeding is suspected, particularly if endoscopy will be delayed. PPI treatment must not delay endoscopy or source control.
- For substantial ongoing UGIB or large clot burden, consider erythromycin 125-250 mg IV 30-120 minutes before endoscopy according to local monograph, after checking QT prolongation, drug interactions, allergy, and electrolyte disturbance.
- Arrange upper endoscopy within 24 hours for admitted or observed patients after resuscitation. Earlier endoscopy may be required for persistent bleeding, but very early endoscopy before adequate stabilization can be harmful.
- Endoscopic therapy is indicated for active bleeding and selected high-risk stigmata. Epinephrine injection must not be used as monotherapy; combine it with a mechanical or thermal modality when used.
- After successful haemostasis of a high-risk bleeding ulcer, use high-dose PPI continuously or intermittently for 72 hours, followed by twice-daily oral PPI through 14 days, then ongoing therapy according to the lesion and H. pylori / NSAID plan.
- Test for H. pylori in peptic-ulcer bleeding and ensure eradication with documented test of cure. Review and stop unnecessary NSAIDs; use gastroprotection when antiplatelet or NSAID therapy must continue.
- Suspect Mallory-Weiss tear after forceful retching, but do not assume spontaneous resolution when bleeding is ongoing or the patient is unstable.

## 16. Suspected variceal or portal-hypertensive bleeding

Action	Required practice
Treat on suspicion	Known or suspected cirrhosis with acute GI bleeding should receive an approved vasoactive agent and IV antibacterial therapy as soon as possible, before endoscopy.
Vasoactive therapy	Examples include octreotide, somatostatin, or terlipressin according to local formulary and contraindications. Continue for 2-5 days if portal-hypertensive bleeding is confirmed.
Antibiotic therapy	Use a regimen adapted to local resistance and allergy; ceftriaxone 1 g IV every 24 hours is commonly used for up to 5 days, stopping earlier when stable and no active infection remains under the approved pathway.
Transfusion	Use a conservative red-cell strategy targeting haemoglobin around 7 g/dL unless comorbidity or instability requires higher. Avoid over-transfusion that can increase portal pressure.
Coagulation products	Do not give FFP or platelets simply to normalize INR or achieve arbitrary platelet targets in acute variceal haemorrhage. Use individualized transfusion-medicine / hepatology advice for major haemorrhage, profound thrombocytopenia, low fibrinogen, or procedures.
Endoscopy	Arrange upper endoscopy within 12 hours of presentation after initial stabilization. Use endoscopic variceal ligation for oesophageal variceal bleeding.
High-risk early TIPS	Identify Child-Pugh B >7 with active bleeding at endoscopy or Child-Pugh C 10-13 for pre-emptive TIPS within 72 hours, ideally within 24 hours of endoscopy, when no contraindication exists. Transfer early if TIPS is not available locally.
Uncontrolled bleeding	Use covered oesophageal stent where available or balloon tamponade as a temporary bridge only, with airway protection, experienced staff, continuous monitoring, and a definitive TIPS / endoscopic / operative plan. Balloon tamponade should generally not exceed 24 hours.

Action	Required practice
Gastric / ectopic varices	Require specialist endoscopic and endovascular planning, often including tissue adhesive / coiling, TIPS, or retrograde transvenous obliteration. Obtain contrast-enhanced imaging when stable enough to define anatomy.
After control	Stop unnecessary PPI if the source is purely variceal, start nutrition when safe, address encephalopathy and infection, and plan non-selective beta-blocker plus repeat banding or other secondary prophylaxis unless pre-emptive TIPS was performed.

## 17. Lower gastrointestinal bleeding

- Consider a brisk upper source in haematochezia with shock, melaena, elevated urea-to-creatinine ratio, liver disease, or upper-GI symptoms. Upper endoscopy may be required even when rectal blood is prominent.
- For ongoing haemodynamically significant haematochezia, obtain urgent CT angiography as the initial localization test. Notify radiology and interventional radiology before scanning when severe bleeding is likely.
- A positive CTA showing extravasation requires prompt interventional-radiology referral for transcatheter arteriography and possible embolization. Delays reduce the chance of finding active bleeding.
- CTA has low yield when minor bleeding has stopped. Stable patients generally undergo colonoscopy after adequate bowel preparation; most do not benefit from urgent colonoscopy within 24 hours solely to improve rebleeding or mortality outcomes.
- Use 4-6 L polyethylene-glycol bowel preparation or the locally approved regimen when colonoscopy is planned. Do not perform routine unprepared colonoscopy because poor visualization reduces diagnostic and therapeutic value.
- Common sources include diverticular bleeding, angiodysplasia, haemorrhoids, colorectal neoplasia, post-polypectomy bleeding, inflammatory or ischaemic colitis, radiation proctopathy, and rectal ulcer. Pain, fever, or peritonism requires CT and surgical / gastroenterology review.
- If severe recurrent bleeding cannot be controlled endoscopically or radiologically, involve surgery early. Precisely localize the source before resection whenever possible.

## 18. Anticoagulants, antiplatelets, and haemostatic medicines

Exposure	Emergency approach
Warfarin	Hold therapy. For life-threatening or uncontrolled bleeding with clinically relevant anticoagulation, use the approved reversal pathway; 4-factor PCC is preferred to plasma for rapid reversal, with IV vitamin K when sustained reversal is required. Minor bleeding may not require reversal.
Dabigatran	Record last dose and renal function. Consider idarucizumab only for life-threatening / uncontrolled bleeding or urgent high-risk procedure when meaningful drug activity is likely, according to local criteria and specialist discussion.
Apixaban / rivaroxaban / edoxaban	Record last dose, renal function, and interacting drugs. Consider andexanet alfa or 4-factor PCC only for life-threatening / uncontrolled bleeding under the approved pathway; routine reversal for all GI bleeds is not supported.
Unfractionated / low-molecular-weight heparin	Stop therapy. Use protamine according to dose and time since administration when severe bleeding is present; recognize incomplete reversal of LMWH.
Aspirin for secondary prevention	Continue if possible. If held during uncontrolled bleeding, resume on the day haemostasis is confirmed or as soon as safely possible after multidisciplinary review.
P2Y12 inhibitor / dual antiplatelet therapy	Do not stop reflexively in recent coronary stent or acute coronary syndrome. Obtain urgent cardiology input; usually continue aspirin and individualize temporary P2Y12 interruption.
Platelet transfusion	Do not administer routinely for antiplatelet-associated GI bleeding without thrombocytopenia, major haemorrhage, or a specific specialist indication.
Tranexamic acid	Do not use routinely for acute GI bleeding because large-trial evidence did not show mortality benefit and identified harm. Use only for another approved indication or within a trial.
Restarting anticoagulation	Create a documented plan before discharge or transfer. Restart timing depends on haemostasis, source, rebleeding risk, thrombotic indication, renal function, and specialist advice; indefinite interruption can be harmful.



## 19. Endoscopy, CT angiography, interventional radiology, and surgery

Clinical scenario	Preferred pathway
Admitted / observed non-variceal UGIB	Upper endoscopy within 24 hours after resuscitation; earlier when persistent bleeding or high-risk features justify it and the patient is adequately stabilized.
Suspected acute variceal haemorrhage	Vasoactive therapy and antibiotics immediately; upper endoscopy within 12 hours; evaluate early-TIPS eligibility and transfer requirements.
Ongoing haemodynamically significant haematochezia	Urgent CTA; prompt IR arteriography / embolization if extravasation is seen. Consider upper source and urgent EGD if CTA localizes proximally or suspicion remains high.
Stable LGIB after bleeding subsides	Bowel preparation and nonurgent inpatient colonoscopy, or carefully selected outpatient colonoscopy when low risk and follow-up is reliable.
Recurrent ulcer bleeding after initial endoscopic control	Repeat endoscopy and endoscopic therapy is generally preferred before transcatheter embolization or surgery, unless clinical or anatomical factors require a different approach.
Failed endoscopic haemostasis	Prompt interventional-radiology embolization for appropriate non-variceal sources; surgery when IR is unavailable, contraindicated, unsuccessful, or the pathology requires operation.
Suspected aortoenteric fistula	Immediate vascular / surgical pathway; CTA if stable enough, but do not allow negative or delayed imaging to defer definitive expert care when suspicion is high.

## 20. Ongoing or recurrent bleeding

- Reassess ABCDE, repeat haemorrhage activation, quantify further blood loss, obtain urgent haemoglobin / coagulation / fibrinogen / calcium / lactate testing, and review the original diagnosis and intervention.
- Recognize recurrence through fresh haematemesis, new maroon stool or haematochezia, worsening melaena with shock, haemoglobin fall, rising urea, vasopressor need, or increasing transfusion requirement.
- For recurrent ulcer bleeding, arrange repeat endoscopy and endoscopic treatment where feasible. Escalate to transcatheter embolization or surgery if repeat endoscopy fails or is inappropriate.
- For recurrent variceal bleeding, continue vasoactive and antibiotic therapy, involve hepatology / IR urgently, and pursue rescue TIPS or another definitive portal-hypertension intervention.
- For recurrent severe LGIB, repeat CTA during active bleeding and coordinate IR. Surgery requires accurate localization whenever possible.
- Conduct a diagnostic time-out: Is the source truly gastrointestinal? Could there be aortoenteric fistula, haemobilia, hemosuccus pancreaticus, small-bowel bleeding, swallowed blood, malignancy, or coexisting coagulopathy?

## 21. Special populations

Group	Additional safeguards
Older adult / frailty	Atypical symptoms, blunted tachycardia, polypharmacy, renal impairment, falls, delirium, and lower physiological reserve are common. Use early senior review and conservative discharge thresholds.
Cirrhosis / advanced liver disease	Treat as possible portal-hypertensive bleeding, avoid excessive crystalloid and plasma, assess encephalopathy / infection / renal injury, and arrange high-acuity monitoring and TIPS-capable transfer when indicated.
Cardiovascular disease	Balance restrictive transfusion with myocardial oxygen demand. Monitor ECG / troponin, treat ischaemia, and coordinate antiplatelet decisions with cardiology.
Renal failure / dialysis	DOAC clearance may be prolonged; uraemic platelet dysfunction and volume sensitivity complicate care. Coordinate nephrology, dialysis timing, contrast, and transfusion.
Pregnancy / postpartum	Prioritize maternal resuscitation, involve obstetrics, choose medications and imaging with fetal considerations, and distinguish GI bleeding from obstetric haemorrhage or hyperemesis-related mucosal injury.
Children and adolescents	Use age-adjusted vital signs, weight-based treatment, paediatric blood volumes, early paediatric / surgical consultation, and safeguarding assessment. Consider swallowed maternal blood in neonates, Meckel diverticulum, intussusception, IBD, varices, and post-surgical causes.

Group	Additional safeguards
Immunocompromised / neutropenic	Consider CMV, invasive infection, neutropenic enterocolitis, severe colitis, thrombocytopenia, and medication toxicity. Fever or abdominal pain requires early antimicrobial and specialist pathways.
Recent endoscopy / surgery	Contact the procedural team early. Post-polypectomy, sphincterotomy, anastomotic, and pseudoaneurysm bleeding may require targeted endoscopy, CTA, embolization, or operation.
Limited blood availability / refusal	Engage blood bank, anaesthesia, surgery, and ethics early; minimize phlebotomy, correct reversible deficiencies, use meticulous haemostasis, and document informed preferences and capacity.

## 22. Monitoring, reassessment, and observation

- Use continuous ECG and oximetry for unstable or significant bleeding. Repeat blood pressure at intervals matched to severity; consider invasive monitoring in shock or major transfusion.
- Document every observed episode of haematemesis, melaena, or haematochezia, including time, approximate volume, colour, clots, and associated physiological change.
- Trend haemoglobin, platelets, coagulation, fibrinogen, creatinine, lactate, calcium, urine output, temperature, and transfusion requirement according to clinical trajectory. Avoid unnecessary repeated phlebotomy in stable patients.
- Reassess after fluids, each blood-product cycle, vasoactive therapy, reversal, endoscopy, embolization, and any new bleed. Record objective response and the next trigger for escalation.
- Observation requires a named responsible clinician, clear inclusion criteria, a maximum duration, scheduled vital signs and laboratory review, a planned definitive test or follow-up, and explicit conversion criteria for admission or discharge.
- Before disposition, perform a bleeding time-out: Is bleeding truly stopped? Is the haemoglobin trend interpretable? Is the antithrombotic plan safe? Has the cause been addressed? Who owns follow-up and pending results?

## 23. Disposition

Disposition	Minimum criteria
Immediate procedure / ICU / transfer	Persistent shock, active major bleeding, airway risk, ongoing transfusion, suspected variceal haemorrhage requiring high-acuity care, positive CTA needing embolization, aortoenteric fistula, or unavailable definitive capability.
Admission	Ongoing or recurrent bleeding; significant haemoglobin fall; need for endoscopy / colonoscopy / CTA; anticoagulant reversal; severe comorbidity; cirrhosis; frailty; uncertain source; inadequate support; or inability to guarantee urgent follow-up.
ED observation / short stay	Stable patient with no current major bleeding and a defined question resolvable within the approved period, such as serial haemoglobin, medication adjustment, planned endoscopy, or specialist review.
Discharge	Normal and stable physiology; no ongoing bleeding; acceptable haemoglobin and trend; low validated risk when applicable; no high-risk comorbidity or source; medication and restart plan documented; oral tolerance; reliable supervision, transport, follow-up, and return access.
Palliative / goals-of-care pathway	Management aligns with informed goals, capacity / surrogate decisions, symptom relief, transfusion preferences, and a documented ceiling of treatment without abandoning comfort or communication.

## 24. Discharge information and safety net

- Provide the likely diagnosis and degree of certainty, key results, haemoglobin level and trend, medications stopped or started, gastroprotection plan, and explicit anticoagulant / antiplatelet instructions.
- Give immediate return instructions for recurrent haematemesis, black tarry stool, increasing rectal blood or clots, dizziness, fainting, chest pain, dyspnoea, weakness, confusion, abdominal pain, fever, or inability to hydrate.
- Arrange named follow-up for endoscopy, colonoscopy, H. pylori testing and cure confirmation, pathology, colorectal-cancer exclusion, anaemia treatment, hepatology / variceal care, and antithrombotic review.
- Confirm contact details, transport, caregiver understanding, and ownership of pending results. Provide written information in an accessible language and format.

## 25. Transfer and handover

- Transfer early when endoscopy, IR embolization, TIPS, surgery, critical care, blood products, or specialist support is unavailable or delayed beyond a safe interval.
- Stabilize as far as possible without delaying definitive care. Continue suction, monitoring, warming, blood, vasoactive / antibiotic / PPI infusions, and reversal during transport as required.

- Use closed-loop clinician-to-clinician handover and document acceptance, destination, transport mode, escort skill, equipment, blood products, medication infusions, anticipated deterioration, and contingency instructions.
- Send laboratory trends, blood-bank information, antibody history, ECG, imaging reports and images, medication list and last antithrombotic dose, endoscopy findings, procedure notes, and goals of care.

## 26. Documentation and handover

Required element	Minimum content
Presentation	Bleeding type, onset, volume, frequency, witnessed episodes, syncope / shock symptoms, abdominal symptoms, liver disease, prior bleeding, procedures, and mimics considered.
Physiology	Serial vital signs, shock index, GCS, perfusion, urine output, temperature, oxygen requirement, observed blood loss, and response to treatment.
Medicines	Anticoagulant / antiplatelet name, indication, dose, exact last administration, renal function, NSAID and alcohol use, reversal decision, and restart plan.
Investigations	Haemoglobin and trend, platelets, coagulation, fibrinogen, renal / liver results, lactate, crossmatch status, ECG / troponin, pregnancy status, imaging, and risk score.
Treatment	Fluids, blood products, calcium, warming, PPI, erythromycin, vasoactive agent, antibiotics, reversal, airway care, endoscopic / radiological / surgical intervention, and adverse events.
Consultation	Names, times, advice, agreed procedure or transfer target, responsible clinician, and escalation triggers.
Disposition	Clinical stability, bleeding status, haemoglobin trend, final risk assessment, medication plan, follow-up, pending-result ownership, written safety net, and patient understanding.

## 27. Quality indicators and audit

Indicator	Suggested measure
Recognition and escalation	Percentage of haemodynamically significant bleeds receiving senior review, blood-bank notification, and definitive-control activation within the locally approved target.
Risk assessment	Percentage of suspected UGIB with documented Glasgow-Blatchford Score and lower-GI cases with documented clinical risk assessment before disposition.
Blood stewardship	Percentage of stable patients transfused below / above approved thresholds with documented rationale; major-haemorrhage protocol compliance and wastage.
Variceal bundle	Time to vasoactive therapy and IV antibiotics; percentage undergoing endoscopy within 12 hours; early-TIPS eligibility documented.
Non-variceal endoscopy	Percentage of admitted / observed UGIB undergoing endoscopy within 24 hours after presentation, excluding justified delays.
Severe LGIB pathway	Percentage of ongoing haemodynamically significant haematochezia receiving timely CTA and prompt IR referral after positive extravasation.
Antithrombotic safety	Documentation of last dose, indication, reversal rationale, cardiology / haematology input when indicated, and restart plan.
Reassessment	Documented serial vital signs, haemoglobin trend, bleeding episodes, and post-intervention review before disposition.
Outcomes	Rebleeding, transfusion, ICU admission, intervention, transfer delay, mortality, 7- and 30-day reattendance, and adverse drug / transfusion events.

## 28. Training and implementation

- All ED clinicians and nurses must be trained in major-haemorrhage activation, blood-product administration, transfusion reactions, variceal bundle initiation, anticoagulant history, reversal access, and recognition of active lower-GI bleeding requiring CTA.
- Simulation should include massive haematemesis with airway compromise, cirrhotic variceal bleeding, positive CTA with transfer to IR, recurrent post-endoscopy bleeding, and anticoagulant-associated haemorrhage.

- The department must maintain visible contact pathways for endoscopy, anaesthesia, blood bank, IR, surgery, hepatology, TIPS-capable centres, paediatrics, obstetrics, and retrieval / transfer.
- Audit serious delays, over-transfusion, missed variceal bundles, reversal complications, recurrent bleeding after discharge, failed transfers, and deaths through multidisciplinary review.

## ANNEX A. One-page gastrointestinal bleeding workflow

Step	Action
1. Recognize	Haematemesis / coffee grounds / melaena / maroon stool / haematochezia; assess shock, airway, cirrhosis, anticoagulants, and active bleeding.
2. Resuscitate	ABCDE, suction, oxygen if hypoxaemic, two IV lines, monitoring, bloods, crossmatch, warming, blood products / major haemorrhage as needed.
3. Start source-specific bundle	Cirrhosis: vasoactive agent + IV antibiotic. Suspected non-variceal UGIB: PPI pathway. Severe LGIB: urgent CTA. Anticoagulant: approved reversal assessment.
4. Risk-stratify	GBS for UGIB; clinical / Oakland support for LGIB; assess comorbidity, frailty, observed bleeding, transfusion need, and access to care.
5. Obtain definitive control	Endoscopy within 24 h for admitted UGIB; within 12 h for variceal bleeding; CTA -> IR for active severe haematochezia; surgery when required.
6. Reassess	Serial vitals, bleeding, haemoglobin, coagulation / fibrinogen / calcium, urine output, response, recurrent bleeding, and diagnostic time-out.
7. Dispose safely	ICU / admission / transfer / observation / carefully selected discharge with medication plan, follow-up, pending-result ownership, and written safety net.

## ANNEX B. Immediate red-flag card

- ☐ Shock, altered consciousness, active large-volume haematemesis or haematochezia.
- ☐ Ongoing transfusion requirement or rapid haemoglobin fall.
- ☐ Known / suspected cirrhosis, prior varices, ascites, or encephalopathy.
- ☐ Aortic graft / aneurysm with any GI bleed or herald bleed.
- ☐ Recent polypectomy, sphincterotomy, endoscopic resection, or abdominal / vascular surgery.
- ☐ Chest pain, ischaemic ECG change, severe cardiovascular disease, or hypoxaemia.
- ☐ Anticoagulant use with recent dose, renal failure, or unavailable drug level.
- ☐ Abdominal pain, peritonism, fever, or suspected bowel ischaemia / perforation.
- ☐ Pregnancy, child, frailty, immunocompromise, or limited access to definitive care.

## ANNEX C. First-10-minute checklist

- ☐ ABCDE, suction, oxygen if hypoxaemic, temperature, continuous monitoring, frequent BP.
- ☐ Two large-bore IV lines; consider rapid infuser / arterial line / urinary catheter according to severity.
- ☐ FBC, crossmatch, U&E / creatinine, liver tests, PT / INR, aPTT, fibrinogen, gas / lactate / calcium, glucose.
- ☐ Major-haemorrhage protocol and blood-bank notification when indicated.
- ☐ Exact bleeding description, observed volume, last anticoagulant / antiplatelet dose, indication, renal function.
- ☐ Known / suspected cirrhosis: vasoactive therapy and IV antibiotics started.
- ☐ PPI / erythromycin considered for upper source according to local pathway.
- ☐ Gastroenterology / anaesthesia / IR / surgery / transfer contacted according to severity.
- ☐ Definitive-control target and responsible clinician documented.

## ANNEX D. Focused history and examination card

History	Examination
Haematemesis, coffee grounds, melaena, maroon stool, bright red blood, clots, volume, frequency	Vital signs, shock index, GCS, perfusion, pallor, respiratory effort, temperature
Syncope, chest pain, dyspnoea, weakness, abdominal pain, vomiting / retching, bowel symptoms	Mouth / nose, chest, cardiovascular system, abdomen, peritonism, stoma, surgical scars

History	Examination
Ulcer, H. pylori, NSAID, alcohol, cirrhosis, varices, prior bleed / banding / TIPS	Jaundice, ascites, splenomegaly, chronic liver signs, encephalopathy
Aortic graft, recent endoscopy / surgery, malignancy, IBD, diverticular disease	Selective DRE / anorectal exam, other bleeding sites, bruising, petechiae
Warfarin / DOAC / heparin / aspirin / P2Y12, exact last dose and indication	Medication list, renal function context, baseline frailty and functional state

## ANNEX E. Initial investigation card

- ☐ FBC with repeat plan; group and screen / crossmatch.
- ☐ Urea, creatinine, electrolytes, glucose, liver tests, albumin.
- ☐ PT / INR, aPTT; fibrinogen for major bleeding; drug-specific level when available and useful.
- ☐ Blood gas, lactate, ionized calcium, temperature for shock / major transfusion.
- ☐ ECG and troponin for syncope, chest pain, dyspnoea, severe anaemia, or cardiovascular disease.
- ☐ Pregnancy test when applicable without delaying life-saving care.
- ☐ CTA for ongoing haemodynamically significant haematochezia or suspected aortoenteric source.
- ☐ CT abdomen / pelvis for pain, fever, colitis, ischaemia, perforation, tumour, or postoperative complication.

## ANNEX F. Upper GI bleeding bundle

- ☐ Nil by mouth, antiemetic, avoid NSAID, restore perfusion and correct major disturbance.
- ☐ Calculate Glasgow-Blatchford Score after initial laboratory data.
- ☐ IV PPI pathway started when non-variceal UGIB suspected; do not delay endoscopy.
- ☐ Consider erythromycin 125-250 mg IV 30-120 minutes pre-endoscopy for significant blood / clot burden, after safety screen.
- ☐ Upper endoscopy within 24 hours for admitted / observed UGIB after resuscitation.
- ☐ High-risk ulcer after haemostasis: high-dose PPI for 72 hours, then BID oral PPI through day 14.
- ☐ H. pylori testing, eradication, test of cure, NSAID / gastroprotection plan.
- ☐ Recurrent bleed: repeat endoscopy first when appropriate; escalate to embolization / surgery if failure.

## ANNEX G. Suspected variceal haemorrhage bundle

- ☐ Known / suspected cirrhosis or portal hypertension identified.
- ☐ Vasoactive agent started immediately according to local monograph.
- ☐ IV antibiotic started; ceftriaxone 1 g every 24 h commonly used, adapted to local resistance / allergy.
- ☐ Restrictive red-cell strategy; avoid over-transfusion and routine FFP / platelet correction of INR / count.
- ☐ Airway and aspiration risk reviewed; anaesthesia / critical care involved when needed.
- ☐ Upper endoscopy planned within 12 hours after initial stabilization.
- ☐ Child-Pugh / MELD elements documented; early-TIPS criteria assessed and transfer initiated if needed.
- ☐ Uncontrolled bleed: oesophageal stent or balloon tamponade only as monitored bridge to definitive therapy.
- ☐ After control: nutrition, encephalopathy / infection care, stop unnecessary PPI, secondary prophylaxis plan.

## ANNEX H. Lower GI bleeding and CT-angiography pathway

Presentation	Action
Ongoing haemodynamically significant haematochezia	Resuscitate; urgent CTA as initial localization test; notify IR.
CTA shows active extravasation	Prompt transcatheter arteriography and possible embolization; urgent EGD if upper source shown.
CTA negative but bleeding continues / recurs	Reassess timing and source; repeat CTA during active bleeding, upper endoscopy, colonoscopy, capsule / enteroscopy, or surgery according to specialist plan.
Bleeding has stopped and patient stable	Bowel preparation and nonurgent colonoscopy; outpatient pathway only when low risk and reliable.
Pain, fever, peritonism, or suspected ischaemia / colitis	CT abdomen / pelvis and surgical / gastroenterology review; do not manage as uncomplicated diverticular bleeding.

## ANNEX I. Blood-product and major-haemorrhage checklist

- ☐ Major-haemorrhage activation criteria met / not met and time documented.

- [ ] Blood bank informed; crossmatch and prior antibodies reviewed.
- [ ] Red cells given according to physiology and approved thresholds, not isolated haemoglobin alone.
- [ ] Balanced products / fibrinogen used according to major-haemorrhage protocol when active massive bleeding.
- [ ] Temperature, ionized calcium, pH, lactate, platelets, coagulation, and fibrinogen monitored.
- [ ] No routine FFP for cirrhosis INR correction; no routine platelets solely for antiplatelet use.
- [ ] Transfusion reactions monitored and treated; product traceability complete.
- [ ] Blood refusal / special requirements documented and specialist support engaged.

## ANNEX J. Antithrombotic and reversal checklist

- [ ] Agent, dose, indication, exact last dose, adherence, renal / liver function, interacting medicines.
- [ ] Bleeding classified as minor, major, life-threatening, or uncontrolled; definitive haemostasis available / delayed.
- [ ] Warfarin: INR and approved 4F-PCC / vitamin K pathway considered.
- [ ] Dabigatran: renal function, last dose, drug level if available, idarucizumab criteria considered.
- [ ] Factor-Xa inhibitor: last dose, renal function, anti-Xa level if available, andexanet / PCC criteria considered.
- [ ] Heparin: timing and protamine pathway considered.
- [ ] Aspirin secondary prevention continued or prompt resumption plan documented.
- [ ] Recent coronary stent / ACS: cardiology consulted before interrupting P2Y12 therapy.
- [ ] No routine platelet transfusion for antiplatelet therapy alone.
- [ ] Anticoagulant / antiplatelet restart date, owner, and follow-up documented.

## ANNEX K. Risk-score card

Score / tool	Use and limitation
Glasgow-Blatchford Score	Use for suspected UGIB. Score 0-1 may support outpatient management only with stable physiology, no ongoing bleeding, no high-risk comorbidity, and reliable follow-up.
Oakland Score	May support assessment of self-limited LGIB; score $\leq 8$ has been associated with safe discharge, but use as an adjunct because prospective score-led ED evidence is limited.
Shock Index	Heart rate divided by systolic BP. A value $\geq 1$ suggests significant haemodynamic compromise but does not replace examination or resuscitation.
Child-Pugh / MELD-Na	Prognosis and portal-hypertension planning; helps identify early-TIPS candidates. Do not delay acute treatment for score completion.

## ANNEX L. Recurrent-bleeding checklist

- [ ] New haematemesis / haematochezia / maroon stool / shock / haemoglobin fall confirmed.
- [ ] ABCDE repeated, haemorrhage protocol reactivated, bloods / crossmatch / calcium / fibrinogen repeated.
- [ ] Original lesion, endoscopic therapy, CTA / embolization, and medication plan reviewed.
- [ ] Repeat endoscopy considered first for recurrent ulcer bleeding when appropriate.
- [ ] Rescue / salvage TIPS pathway activated for uncontrolled or recurrent variceal bleeding.
- [ ] Repeat CTA during active severe LGIB and IR review arranged.
- [ ] Surgery involved early when endoscopy / IR fails or anatomy requires operation.
- [ ] Alternative source and diagnostic time-out documented.

## ANNEX M. Observation and discharge checklist

- [ ] No haematemesis, melaena progression, maroon stool, or haematochezia during the defined observation period.
- [ ] Vital signs stable without orthostatic symptoms; patient mobilizes safely.
- [ ] Haemoglobin level and trend acceptable and interpreted in context of fluids / transfusion.
- [ ] No high-risk source, severe comorbidity, active anticoagulant effect, cirrhosis risk, or unresolved diagnostic concern.
- [ ] Medication stop / restart and PPI / iron / H. pylori plan documented.
- [ ] Endoscopy / colonoscopy / hepatology / primary-care follow-up booked or reliably accessible.
- [ ] Pending-result owner, patient contact, responsible adult, transport, and written return precautions confirmed.

## ANNEX N. Transfer and handover minimum dataset

- [ ] Bleeding type, onset, observed volume, latest episode, suspected source, prior bleed / procedure.



- [ ] Serial vital signs, shock index, GCS, urine output, oxygen / airway status, temperature.
- [ ] Haemoglobin trend, platelets, INR / aPTT, fibrinogen, creatinine, liver tests, lactate, calcium, crossmatch / antibodies.
- [ ] Anticoagulant / antiplatelet agent, last dose, indication, reversal given, restart concerns.
- [ ] Blood products, fluids, calcium, PPI, erythromycin, vasoactive agent, antibiotics, vasopressors, and response.
- [ ] Endoscopy / CTA / embolization findings and images; procedures and complications.
- [ ] Receiving clinician, accepted destination, transport mode, escort skill, infusion / blood needs, and deterioration plan.
- [ ] Goals of care, blood preferences, allergies, pregnancy status, and key comorbidities.

## ANNEX O. Audit tool

Case review item	Yes / No / N/A / notes
Triage category and haemodynamic severity appropriate	
Senior review, blood-bank notification, and escalation timely	
Crossmatch and critical laboratory tests obtained	
Major-haemorrhage protocol used appropriately	
GBS / risk assessment documented	
Variceal vasoactive therapy and antibiotics timely	
Upper endoscopy within target window or justified delay	
Severe haematochezia received CTA / IR pathway	
Antithrombotic last dose, reversal, and restart plan documented	
Blood products consistent with approved thresholds and context	
Serial reassessment and bleeding episodes documented	
Transfer / discharge handover and safety net complete	
Rebleeding, reattendance, adverse event, or mortality reviewed	

## ANNEX P. Local configuration checklist

- [ ] Approved triage categories, major-haemorrhage triggers, blood packs, transfusion thresholds, fibrinogen / calcium targets.
- [ ] 24-hour contact and activation for endoscopy, anaesthesia, critical care, IR, surgery, hepatology, vascular surgery, TIPS centre, and transfer.
- [ ] PPI, erythromycin, octreotide / terlipressin / somatostatin, ceftriaxone, reversal agents, PCC, protamine, and infusion monographs.
- [ ] Anticoagulant-reversal algorithm including laboratory access, antidote criteria, stock location, and specialist approval.
- [ ] CTA protocol for active GI bleeding, image-transfer process, IR response target, and surgery backup.
- [ ] Endoscopy timing standards, out-of-hours staffing, bowel-preparation regimen, airway / sedation policy, and post-procedure monitoring.
- [ ] Paediatric, pregnancy, cirrhosis, blood-refusal, palliative-care, and transfusion-reaction policies.
- [ ] Observation-unit criteria, maximum stay, serial haemoglobin schedule, discharge follow-up access, and pending-result ownership.
- [ ] Simulation plan, audit lead, morbidity-and-mortality review, stock checks, and protocol review date.

## ANNEX Q. References and source tools

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11. HALT-IT Trial Collaborators. Effects of a High-Dose 24-Hour Infusion of Tranexamic Acid on Death and Thromboembolic Events in Patients With Acute Gastrointestinal Bleeding. *Lancet*. 2020;395:1927-1936. doi:10.1016/S0140-6736(20)30848-5.
12. Local source tools to attach before approval: major-haemorrhage protocol; blood-component and transfusion-reaction policy; anticoagulant-reversal algorithm; endoscopy and procedural-sedation policy; portal-hypertension / TIPS pathway; CTA / IR pathway; antimicrobial formulary and antibiogram; transfer directory; paediatric and pregnancy medication monographs; discharge and follow-up templates.