

NICE support for commissioning for acute upper gastrointestinal bleeding

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1 Introduction

Implementing the recommendations from NICE guidance and other NICE-accredited guidance is the best way to support improvements in the quality of care or services, in line with the statements and measures that comprise the NICE quality standards. This report:

- considers the cost of implementing the changes needed to achieve the quality standard at a local level
- highlights improvement areas from the quality standard that have potential implications for commissioners
- directs commissioners and service providers to a package of support tools that can help them implement NICE guidance and redesign services.

NICE quality standards describe high-priority areas for quality improvement in a defined care or service area. Each standard consists of a prioritised set of specific, concise and measurable statements. They draw on existing guidance, which provides an underpinning, comprehensive set of recommendations, and are designed to support the measurement of improvement. For more information see [NICE quality standards](#).

NHS England's [CCG outcomes indicator set](#) is part of a systematic approach to promoting quality improvement. The outcomes indicator set provides CCGs and health and wellbeing boards with comparative information on the quality of health services commissioned by CCGs and the associated health outcomes. The set includes indicators derived from NICE quality standards.

By commissioning services in line with the quality standards, commissioners can contribute to improvements in health outcomes.

Commissioners can use the quality standards to improve services by including quality statements and measures in the service specification of the standard contract and establishing key performance indicators as part of tendering. They can also encourage improvements in provider performance by using quality standard measures in association with incentive payments such as [Using the commissioning for quality and innovation \(CQUIN\) payment framework](#). NICE quality standards provide a baseline against which improvements can be measured and rewarded, enabling commissioners to address gaps in service provision, support best practice and encourage evidence-based services and care.

This report on the acute upper gastrointestinal bleeding quality standard should be read alongside:

- [Acute upper gastrointestinal bleeding](#). NICE clinical guideline 141 (2012).

2 Overview of acute upper gastrointestinal bleeding

Acute upper gastrointestinal bleeding is a common medical emergency that has a 10% hospital mortality rate. People with acute upper gastrointestinal bleeding develop haematemesis (vomiting of blood from the upper gastrointestinal tract) or melaena (black tarry stools). The most common causes are peptic ulcer and oesophagogastric varices. Although crude hospital mortality of acute upper gastrointestinal bleeding has not improved much over several decades, patients are now older and have many more comorbidities than in the past. In addition, the number of people with variceal bleeding has increased greatly as a consequence of alcohol misuse and obesity. The stable hospital mortality rate in the face of the increased incidence shows that management of acute upper gastrointestinal bleeding has improved substantially.

Older people and people with chronic medical diseases withstand acute upper gastrointestinal bleeding less well than younger, fitter people, and have a higher risk of death. Almost all people who develop acute upper gastrointestinal bleeding are treated in hospital.

Endoscopy is the primary diagnostic investigation in patients with acute upper gastrointestinal bleeding. Endoscopy aids diagnosis, yields information that helps predict outcome and most importantly allows treatments to be delivered that can stop bleeding and reduce the risk of re-bleeding.

Drugs may have a complementary role in reducing gastric acid secretion and portal vein pressure. Not every patient responds to endoscopic and drug treatments. In some patients, emergency surgery and a range of radiological procedures may be needed to control bleeding.

2.1 *Epidemiology of acute upper gastrointestinal bleeding*

The incidence of acute upper gastrointestinal bleeding ranges from approximately 50 to 150 per 100,000 population each year¹.

Rockall et al.² reported the overall annual UK incidence of acute upper gastrointestinal bleeding to be 103 per 100,000 of the population. The authors also noted the pronounced increase in incidence with age. People from areas of high deprivation have up to 3 times the rate of hospitalisation for upper gastrointestinal bleeding compared with people from more affluent areas³.

Based on data from Hearnshaw et al.⁴ (2011), it can be estimated that 83% of cases of acute upper gastrointestinal bleeding are treated in hospital as new

¹ Palmer K (2002) Non-variceal upper gastrointestinal haemorrhage: guidelines. *Gut* 51: IV1–IV6

² Rockall T, Logan R, Devlin H et al. (1995) Incidence of and mortality from acute upper gastrointestinal haemorrhage in the United Kingdom. *British Medical Journal* 311: 222

³ Crooks CJ, West J, Card TR (2012) Upper gastrointestinal haemorrhage and deprivation: a nationwide cohort study of health inequality in hospital admissions. *Gut* 61: 514–20

⁴ Hearnshaw S, Logan R, Lowe D et al. (2011) Acute upper gastrointestinal bleeding in the UK: patient characteristics, diagnoses and outcomes in the 2007 UK audit. *Gut* 60: 1327–35

admissions, with around 17% of patients already being in hospital when their bleed occurs⁵.

Acknowledging the significant impact associated with older age and deprivation, commissioners may wish to investigate the incidence in their population.

3 Commissioning and resource implications

The cost of meeting the quality standard for acute upper gastrointestinal bleeding depends on current local practice and the progress organisations have made in implementing NICE and NICE-accredited guidance.

It is likely that the quality statements on the timing of endoscopy (statements 2 and 3) will be of most significance for commissioners, and to achieve them both commissioners and providers will need to review capacity within services, particularly capacity outside of normal working hours. The quality of current service provision for people with acute upper gastrointestinal bleeding is variable, and there can be challenges in providing timely specialist management for people who are haemodynamically unstable and live in remote and rural areas.

To provide a high-quality service for people with acute upper gastrointestinal bleeding 24 hours a day, 7 days a week, secondary care units may need to work in partnership with other endoscopy units to develop clinical networks. These may be necessary to provide access to transjugular intrahepatic portosystemic shunts (TIPS) and embolization in some localities, particularly outside of normal working hours. Clinical networks may also have a role in reducing the risks associated with delayed transfer of care, ensure appropriate governance and provide equity of access by developing care pathways across secondary care units.

Commissioners may also wish to refer to [Scope for improvement: A toolkit for safer Upper Gastrointestinal Bleeding \(UGIB\) service](#).

⁵ Acute upper gastrointestinal bleeding. NICE costing report (2012).

Table 1 summarises the commissioning and resource implications for commissioners working towards achieving this quality standard. See section 4 for more detail on commissioning and resource implications.

Table 1 Potential commissioning and resource implications of achieving the quality standard for acute upper gastrointestinal bleeding

Area of care	Commissioning implications	Estimated resource impact
Risk assessment	Commissioners should seek assurance from providers that they can carry out risk assessment in line with NICE clinical guideline 141 .	Unlikely to result in significant cost increase. Systematic use of risk assessment scoring could result in financial savings through reduced length of hospital stay and reduced re-admissions.
Timing of endoscopy	Commissioners will need to review capacity within services, particularly availability of services outside of normal working hours.	Providing endoscopy to patients who are haemodynamically unstable and have severe acute upper gastrointestinal bleeding immediately after resuscitation is likely to have resource implications for a large proportion of service providers.
Management of non-variceal bleeding	Commissioners should expect providers to demonstrate that the management of non-variceal bleeding is consistent with NICE clinical guideline 141 .	No significant costing issues in the management of non-variceal bleeding were identified by the costing report for NICE clinical guideline 141 .
Management of variceal bleeding	Commissioners should expect providers to demonstrate that the management of variceal bleeding is consistent with NICE clinical guideline 141 .	Improved management of variceal bleeding could lead to cost savings for providers.
Continuation on low-dose aspirin	Commissioners should ask providers to demonstrate that clinicians are aware of the recommendations and risks relating to the control of bleeding and re-bleeding in patients on aspirin.	There are no significant costing issues .

4 Commissioning implications and cost impact

This section considers the commissioning implications and potential resource impact of implementing the recommendations to achieve the NICE quality standard for acute upper gastrointestinal bleeding.

4.1 Risk assessment

Quality statement 1: Risk assessment

People with acute upper gastrointestinal bleeding receive a risk assessment using a validated risk score.

The prognosis for people with acute upper gastrointestinal bleeding can vary so it is important to carry out a risk assessment using a validated risk score. This can inform the best course of further treatment, and in some instances can identify people for whom early discharge or outpatient endoscopy are appropriate.

[Acute upper gastrointestinal bleeding](#) (NICE clinical guideline 141) recommends that the Blatchford and full Rockall scoring system should be used for all patients with acute upper gastrointestinal bleeding. The Blatchford and Rockall scoring system are [screening tools](#) used by trained healthcare professionals to assess the likelihood that a patient with an acute upper gastrointestinal bleed will need to have a medical intervention such as a blood transfusion or endoscopy.

The Topic Expert Group agreed that risk assessment remains an area for quality improvement, because many services do not routinely use these scoring systems. In the British Society of Gastroenterology's [UK comparative audit of upper gastrointestinal bleeding and the use of blood](#) (2007), 50% of hospitals who took part in the audit reported that they routinely calculated and documented a risk score. However, only 19% of cases in the audit had a risk score recorded in the medical notes. This is despite the fact that the

Blatchford and Rockall scoring systems are easy to implement within services and are available at no additional cost.

Commissioners should seek assurance from providers that they can carry out risk assessment in line with [NICE clinical guideline 141](#). Commissioners may wish to work with providers to audit current practice.

The Guideline Development Group (GDG) for [NICE clinical guideline 141](#) agreed that the implementation of these scores was unlikely to result in a significant cost increase. It seems reasonable to assume that the systematic use of risk assessment scoring could result in financial savings through reduced length of hospital stay and reduced re-admissions.

Commissioners and others may wish to refer to the [initial management clinical audit tool](#) and [electronic audit tools for NICE clinical guideline 141](#) on acute upper gastrointestinal bleeding.

4.2 *Timing of endoscopy*

Quality statement 2: Immediate endoscopy for people who are haemodynamically unstable

People with severe acute upper gastrointestinal bleeding who are haemodynamically unstable are given an endoscopy within 2 hours of optimal resuscitation.

Quality statement 3: Endoscopy within 24 hours for people who are haemodynamically stable

People admitted to hospital with **acute** upper gastrointestinal bleeding who are haemodynamically stable are given an endoscopy within 24 hours of admission.

In most cases, endoscopy identifies the cause of bleeding, provides information about the likely prognosis and facilitates delivery of a range of haemostatic therapies. Providing endoscopy within the timeframes set out in the quality statement will help to avoid further bleeding and reduce the length of their hospital stay.

It is estimated that only 50% of patients with acute upper gastrointestinal bleeding receive endoscopy within 24 hours of presenting to hospital⁶ (Hearnshaw et al. 2010). Therefore ensuring that all patients are offered endoscopy in line with quality statements 2 and 3 is likely to have resource implications for a large proportion of service providers. This is supported by the [costing report for NICE clinical guideline 141](#), which suggests that providing endoscopy immediately after resuscitation to patients with severe acute upper gastrointestinal bleeding who are haemodynamically unstable is likely to have resource implications for a large proportion of service providers.

Many endoscopy units do not currently operate a 24-hour rota and/or service. The British Society of Gastroenterology's [UK comparative audit of upper gastrointestinal bleeding and the use of blood](#) (2007) found that only 56% of the hospitals audited had an out-of-hours consultant endoscopy on-call rota⁷.

[NICE clinical guideline 141](#) recommends that units investigating more than 330 cases a year should offer daily planned emergency endoscopy lists, because this was considered to be cost effective. Units investigating fewer than 330 cases a year should arrange their service according to local circumstances. Commissioners and providers should therefore review current levels of service provision locally, including:

- the number of people presenting with acute upper gastrointestinal bleeding inside and outside of normal working hours.
- the proportion of people who are haemodynamically unstable and who are given an endoscopy within 2 hours of optimal resuscitation.

⁶ Hearnshaw S, Logan R, Lowe D et al. (2010) Use of endoscopy for management of acute upper gastrointestinal bleeding in the UK: results of a nationwide audit. *Gut* 59: 1022–9

⁷ In-hours was regarded as between 8am and 5pm Monday to Friday.

- the proportion of people with acute upper gastrointestinal bleeding who are haemodynamically stable and who are given an endoscopy within 24 hours of admission.

Commissioners and others may wish to refer to the [initial management clinical audit tool](#) and [electronic audit tools](#) for NICE clinical guideline 141 on acute upper gastrointestinal bleeding.

Commissioners may also find [shared learning example on enhanced access to endoscopy at the Royal Bolton](#) useful.

4.3 Management of non-variceal bleeding

Quality statement 4: Endoscopic treatment for non-variceal bleeding

People with non-variceal acute upper gastrointestinal bleeding and stigmata of recent haemorrhage are offered endoscopic treatments (combination or a mechanical method).

Quality statement 5: Treatment of non-variceal bleeding after first or failed endoscopic treatment

People with non-variceal acute upper gastrointestinal bleeding who continue to bleed or re-bleed after endoscopic treatment and who are haemodynamically unstable are given interventional radiology treatment.

Endoscopic treatment of non-variceal acute upper gastrointestinal bleeding can control active bleeding, reduce the rate of re-bleeding and the need for blood transfusion. Sometimes endoscopic therapy is technically difficult and the endoscopist cannot achieve or secure haemostasis, or bleeding recurs despite full or maximal endoscopic treatment. One additional therapeutic option is interventional radiology (embolisation), which can identify and stop the bleeding. This can be preferable to surgery, because postoperative

mortality is high for this group of patients, most of whom are extremely ill at the time of surgery.

The Topic Expert Group reported significant variation in the management of non-variceal acute upper gastrointestinal bleeding. Commissioners should be aware that interventional radiology treatment for acute upper gastrointestinal bleeding is often only available in specialised centres and with limited services outside of normal working hours. Therefore if patients are transferred to a specialised centre for interventional radiology commissioners should ensure money follows the patients.

Commissioners will need to review current service provision and capacity with local clinicians and identify changes in order to meet the quality statements. This may include ensuring that safe and timely arrangements are in place to transfer patients who are haemodynamically unstable to an interventional radiology centre. Commissioners may also need to review workforce plans to ensure that local recruitment is undertaken when appropriate, as more trained interventional radiologists become available.

No significant costing issues in the management of non-variceal bleeding were identified by the [costing report for CG141](#).

Commissioners and others may wish to refer to the [non-variceal bleeding clinical audit tool](#) and [electronic audit tools](#) for NICE clinical guideline 141 on acute upper gastrointestinal bleeding.

4.4 Management of variceal bleeding

Quality statement 6: Prophylactic antibiotic therapy for variceal bleeding

People with suspected or confirmed variceal acute upper gastrointestinal bleeding are given antibiotic therapy at presentation.

Quality statement 7: Band ligation for oesophageal variceal bleeding

People with acute upper gastrointestinal bleeding from oesophageal varices are given band ligation.

Quality statement 8: N-butyl-2-cyanoacrylate for gastric variceal bleeding

People with acute upper gastrointestinal bleeding from gastric varices are given an endoscopic injection of N-butyl-2-cyanoacrylate.

Quality statement 9: Management of variceal bleeding using transjugular intrahepatic portosystemic shunts (TIPS)

People with uncontrolled acute upper gastrointestinal bleeding from varices are given transjugular intrahepatic portosystemic shunts (TIPS).

Commissioners should expect providers to demonstrate that the management of variceal bleeding is consistent with [NICE clinical guideline 141](#) in order to achieve quality statements in this area of care.

People with variceal acute upper gastrointestinal bleeding are prone to infection. Infection has adverse effects on renal function and commonly precipitates hepatorenal failure, characterised by oliguria, sodium and fluid retention and death. Early antibiotic therapy reduces these risks. Antibiotic therapy is unlikely to incur significant costs but may reduce the rate of infections and the adverse effect on renal function. Commissioners should

ensure that all relevant specialties within acute hospital care, such as gastroenterology and general medicine, are aware of this quality statement.

Band ligation will stop oesophageal bleeding and has significant benefits over the alternative of injection sclerotherapy. The benefits include reduced mortality, a reduction in re-bleeding, numbers of additional procedures needed to control bleeding, total units of blood transfused and number of sessions of treatment needed to eradicate varices. Compared with injection sclerotherapy, band ligation for oesophageal variceal bleeding should reduce the number of additional procedures and the number of units of blood transfused.

Endoscopic injection of N-butyl-2-cyanoacrylate can obliterate gastric varices, whereas attempts at banding are likely to be unsuccessful for these varices. Because an endoscopic injection of N-butyl-2-cyanoacrylate can be given during the initial endoscopy, it has the potential to stop bleeding at an early stage. This can lead to cost savings for providers.

In some cases variceal bleeding cannot be controlled with endoscopic treatment. In these instances transjugular intrahepatic portosystemic shunts (TIPS) can be used to stop the bleeding. Using TIPS only when necessary may lead to cost savings for providers.

Commissioners will need to work with clinicians locally to identify the availability of the procedures specified in the quality statements for secondary care settings. Commissioners should also expect providers to demonstrate the outcomes of these procedures and that relevant healthcare professionals are competent to deliver them.

Commissioners and others may wish to refer to the [variceal bleeding clinical audit tool](#) and the [variceal electronic audit tool](#) for NICE clinical guideline 141 on acute upper gastrointestinal bleeding.

4.5 *Continuation on low dose aspirin*

Quality statement 10: Continuation on low-dose aspirin

People with acute upper gastrointestinal bleeding who take aspirin for secondary prevention of vascular events and in whom haemostasis has been achieved are advised to continue on low-dose aspirin.

Aspirin can cause gastrointestinal ulcers to form and pre-existing ulcers to bleed. Clinicians have therefore withheld aspirin at the time of acute gastrointestinal bleeding. However, the antiplatelet effects of aspirin persist for at least 7 days after discontinuation. This means that people with acute upper gastrointestinal bleeding who are already taking low-dose aspirin to prevent further vascular events should be advised to continue taking aspirin if their bleeding has stabilised so that the benefit of taking aspirin can be maintained.

There are no significant costing issues associated with the continuation of low-dose aspirin in people with acute upper gastrointestinal bleeding in whom homeostasis has been achieved.

Commissioners may wish to ask providers to demonstrate that patients and clinicians are aware of the recommendations and the risks relating to the control of bleeding and prevention of re-bleeding in patients on non-steroidal anti-inflammatory drugs (NSAIDs), aspirin or clopidogrel and when appropriate that prescribing is consistent with [NICE clinical guideline 141](#).

5 Other useful resources

5.1 Useful resources

- British Society of Gastroenterologists (2007) [UK comparative audit of upper gastrointestinal bleeding and the use of blood](#)
- NHS Improvement (2012) [Rapid review of endoscopy services](#)
- British Society of Gastroenterology: [Commissioning report acute management GI bleeding](#)
- Academy of Medical Royal Colleges, the Association of Upper GI Surgeons, the British Society of Gastroenterology, Royal College of Nursing, Royal College of Physicians, Royal College of Radiologists (2010) [Scope for improvement: A toolkit for safer Upper Gastrointestinal Bleeding \(UGIB\) service](#)

5.2 NICE implementation support

- [Acute upper GI bleeding](#). NICE baseline assessment (2012).
- [Acute upper GI bleeding: initial management](#). NICE clinical audit tool (2012).
- [Acute upper GI bleeding: non-variceal](#). NICE clinical audit tool (2012).
- [Acute upper GI bleeding: variceal](#) . NICE clinical audit tool (2012).
- [Acute upper GI bleeding: initial management](#). NICE electronic audit tool (2012).
- [Acute upper GI bleeding: non-variceal](#). NICE electronic audit tool (2012).
- [Acute upper GI bleeding: variceal](#). NICE electronic audit tool (2012).
- [Acute upper gastrointestinal bleeding: enhanced access to endoscopy at the Royal Bolton](#). NICE shared learning example (2012).

5.3 NICE pathways

- [Acute upper gastrointestinal bleeding](#) (2012)

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