AUSTRALIAN COMMISSION
ON SAFETY AND QUALITY IN HEALTH CARE

Selected best practices and suggestions for improvement for clinicians and health system managers

Hospital-Acquired Complication **9**

GASTROINTESTINAL BLEEDING

	HOSPITAL-ACQUIRED COMPLICATION	RATE[a]
1	Pressure injury	10
2	Falls resulting in fracture or intracranial injury	4
3	Healthcare-associated infections	135
4	Surgical complications requiring unplanned return to theatre	20
5	Unplanned intensive care unit admission	na[b]
6	Respiratory complications	24
7	Venous thromboembolism	8
8	Renal Failure	2
9	Gastrointestinal bleeding	14
10	Medication complications	30
11	Delirium	51
12	Persistent incontinence	8
13	Malnutrition	12
14	Cardiac complications	69
15	Third and fourth degree perineal laceration during delivery (per 10,000 vaginal births)	358
16	Neonatal birth trauma (per 10,000 births)	49

a per 10,000 hospitalisations except where indicated
b na = national data not available

This hospital-acquired complication includes the diagnoses of:

- Haematemesis
- Malaena
- Gastrointestinal haemorrhage
- Gastric ulcer with haemorrhage
- Duodenal ulcer with haemorrhage
- Peptic ulcer with haemorrhage
- Gastrojejunal ulcer with haemorrhage
- Acute haemorrhagic gastritis.*

Why focus on gastrointestinal bleeding?

Each year, patients in Australia experience more than 6,185 gastrointestinal bleeds while in hospital.[1] Patients with gastrointestinal bleeds may experience distressing vomiting or diarrhoea with haematemesis and malaena, as well as tiredness, shortness of breath, faintness, dizziness and collapse.

The rate of hospital-acquired gastrointestinal bleeding in Australian hospitals was 14 per 10,000 hospitalisations in 2015–16.[1] Hospital-acquired gastrointestinal bleeds extend the length of hospitalisation, which impacts on patients and their families. These complications also increase the cost of admission incurred by the health service. This additional cost may be the result of an increased length of stay or more complex care requirements.[2] While there is an increased financial cost, the most significant cost is the pain and discomfort experienced by the patient.

A majority of gastrointestinal bleeds are preventable. Significant reductions in gastrointestinal bleeding rates are being achieved in some hospitals by preventive initiatives. The rate of gastrointestinal bleeding at Principal Referral Hospitals† was 16 per 10,000 hospitalisations. If all Principal Referral Hospitals above this rate reduced their rate to 16 per 10,000 hospitalisations, then 824 gastrointestinal bleeds during hospitalisation in Principal Referral Hospitals would have been prevented, and more when other facilities are considered.

* The specifications for the hospital-acquired complications list providing the codes, inclusions and exclusions required to calculate rates is available on the Commission's website.

† Hospitals were classified in the Principal Referral Hospitals peer group for these purposes according to the Australian Institute of Health and Welfare's former definition of major city hospitals with more than 20,000 acute weighted separations and regional hospitals with more than 16,000 acute weighted separations.

What is considered best practice for preventing gastrointestinal bleeding?

All hospital-acquired complications can be reduced (but not necessarily eliminated) by the provision of patient care that mitigates avoidable risks to patients.

The **health service organisation** providing services to patients at risk of gastrointestinal bleeding:

- Has systems for prevention and management of gastrointestinal bleeding that are consistent with best-practice guidelines
- Ensures that equipment and devices are available to effectively manage gastrointestinal bleeding.

Clinicians caring for patients at risk of gastrointestinal bleeding:

- Conduct comprehensive assessments in accordance with best practice
- Provide bleeding prevention and care in accordance with best practice guidelines.

The National Safety and Quality Health Service (NSQHS) Standards (second edition), in particular the Comprehensive Care Standard[3], support the delivery of safe patient care.

The advice contained in the hospital-acquired complication fact sheets aligns with the criteria in this standard, which are as follows:

- Clinical governance structures and quality-improvement processes supporting patient care
- Developing the comprehensive care plan
- Delivering the comprehensive care plan
- Minimising specific patient harms.

Clinical governance structures and quality-improvement processes

to support best practice in the prevention and management of gastrointestinal bleeding

Health service organisations need to ensure systems are in place to prevent gastrointestinal bleeding through effective clinical governance and quality improvement.

The NSQHS Standards (2nd ed.) describe actions that are relevant to the prevention and management strategies outlined below. These actions are identified in brackets.

Policies, procedures and protocols

Health service organisations ensure policies, procedures and protocols are consistent with national evidence-based guidelines for the risk assessment, prophylaxis and management of gastrointestinal bleeding. **(1.27, 5.1a)**

Best-practice risk assessment and management

Health service organisations:

- Agree on the process and criteria for gastrointestinal bleeding risk assessment **(5.7, 7.1b, 7.4b)**
- Inform the clinical workforce of risk assessment requirements **(5.1a, 5.1c, 7.1a, 7.1c)**
- Identify a format for gastrointestinal bleeding action plans for high-risk patients or patients with active gastrointestinal bleeding **(5.10, 5.7, 7.4)**
- Apply criteria to trigger early recognition of deterioration and appropriate clinical intervention. **(8.4)**

Identification of key individuals/ governance groups

Health service organisations identify an individual or a governance group that is responsible for:

- Monitoring compliance with the organisation's gastrointestinal bleeding procedures and protocols **(1.7b, 7.2)**
- Presenting data on the performance of gastrointestinal bleeding prevention and management systems to the governing body **(1.9, 5.2c)**
- Overseeing the care of patients at risk of or with gastrointestinal bleeding. **(5.5b, 5.14)**

Training requirements

Health service organisations:

- Identify workforce training requirements **(1.20a)**
- Train relevant workers on the use of risk assessment and gastrointestinal bleeding action plans **(1.20b, 1.20c)**
- Ensure workforce proficiency is maintained. **(1.20d, 1.22, 1.28b)**

Monitoring the delivery of prophylaxis and care

Health service organisations ensure mechanisms are in place to:

- Report gastrointestinal bleeding **(1.9, 5.2)**
- Manage risks associated with prevention and management of gastrointestinal bleeding **(7.1b)**
- Identify performance measures and the format and frequency of reporting **(1.8a)**
- Set performance measurement goals **(1.8a)**
- Collect data on compliance with policies **(1.7b)**
- Collect data about gastrointestinal bleeding risk assessment activities, including whether risk assessment is leading to appropriate action **(1.8, 7.1b, 7.2)**
- Identify gaps in systems for risk assessing patients for gastrointestinal bleeding, collect data on incidence and severity of gastrointestinal bleeding **(7.2)**
- Provide timely feedback and outcomes data to staff. **(1.9)**

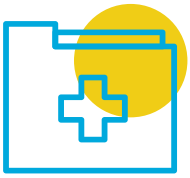
Quality-improvement activities

Health service organisations:

- Implement and evaluate quality-improvement strategies to reduce the frequency and harm from gastrointestinal bleeding **(7.2)**
- Use audits of patient clinical records and other data to:
  - identify opportunities for improving bleeding action plans **(5.2, 7.2)**
  - identify gaps and opportunities to improve the use of bleeding action plans **(5.2, 7.2)**
  - monitor the overall effectiveness of systems for prevention and management of gastrointestinal bleeding. **(5.2, 7.2)**
- Use audits of patient clinical records, transfer and discharge documentation and other data to:
  - identify opportunities for improving bleeding action plans **(5.2, 7.2)**
  - assess compliance with bleeding action plan requirements **(5.2, 7.2)**
  - identify strategies to improve the use and effectiveness of bleeding action plans. **(5.2, 7.2)**

Equipment and devices

Health service organisations facilitate access to equipment and devices for the prevention and management of gastrointestinal bleeding. **(1.29b)**



Developing the patient's comprehensive care plan

to support best practice in gastrointestinal bleeding prevention and management

Clinicians should collaborate with patients, carers and families in assessing risk, in providing appropriate information to support shared decision making, and in planning care that meets the needs of patients and their carers.

Identifying risk factors for gastrointestinal bleeding

Clinicians should identify risk factors associated with gastrointestinal bleeding which include[4,5]:

- Patients requiring mechanical ventilation
- Intensive care unit stay
- Platelet dysfunction
- Stress ulceration due to sepsis, renal or hepatic insufficiency
- Use of steroids and non-steroidal anti-inflammatory medicines
- Smoking
- Use of anticoagulants and anti-platelet medicines
- Burn injuries
- Head or spinal trauma
- History of peptic ulcer or upper gastrointestinal bleed.

Implement risk assessment screening

Clinicians use relevant risk assessment processes at presentation to assess the risk of gastrointestinal bleeding and requirements for prevention strategies.

Clinical assessment

Clinicians comprehensively assess:

- Conditions
- Medicines
- Risks identified through risk assessment process.

Clinicians undertake routine observations, including heart rate and blood pressure, stool charts where appropriate, and document these observations in the clinical record.

Clinicians monitor haemoglobin levels as clinically appropriate.

Informing patients with a high risk

Clinicians provide information for high-risk patients and their carers about prevention and management of gastrointestinal bleeding.

Planning in partnership with patients and carers

Clinicians inform patients, family and carers about the purpose and process of developing a bleeding prevention and action plan and invite them to be involved in its development.

Collaboration and working in teams	Medical, nursing, pharmacy and allied health staff work collaboratively to perform gastrointestinal bleeding risk assessment and clinical assessment.
Documenting and communicating the care plan	Clinicians document in the clinical record and communicate: • The findings of the risk assessment process • The findings of the clinical assessment process including routine observations of heart rate and blood pressure. • The bleeding prevention plan and bleeding action plan.

Delivering comprehensive care

to prevent and manage gastrointestinal bleeding

Safe care is delivered when the individualised care plan, that has been developed in partnership with patients, carers and family, is followed.

Collaboration and working as a team	Medical, nursing, pharmacy staff and allied health staff collaborate to deliver prevention and management of gastrointestinal bleeding.
Delivering gastrointestinal bleeding prevention strategies in partnership with patients and carers	Clinicians work in partnership with patients and carers to use the comprehensive care plan to deliver gastrointestinal bleeding prevention strategies where clinically indicated, for example by using: • Proton pump inhibitors • Stress ulcer prophylaxis • Early gastric feeding where clinically appropriate • Careful management of anti-coagulants.
Delivering gastrointestinal bleeding management in partnership	Clinicians work in partnership with patients and carers to ensure patients who have gastrointestinal bleeding are managed according to best practice guidelines.
Monitoring and improving care	Clinicians: • Monitor the effectiveness of these strategies in preventing gastrointestinal bleeding and reassess the patient if gastrointestinal bleeding occurs • Review and update the care plan if it is not effective or is causing side effects • Ensure clear plan for managing ongoing care once risk factors are no longer present, such as discharge from ICU, which includes considering cessation of proton pump inhibitors • Engage in reviewing clinical outcomes, identifying gaps and opportunities for improvement.

Additional resources

National Institute for Health and Care Excellence. Acute upper gastrointestinal bleeding in over 16s Quality standard 141. London (UK) 2012.

National Institute for Health and Care Excellence. Acute upper gastrointestinal bleeding in adults Quality standard. [QS38] London (UK) 2013.

Strate LL, Gralnek IM. ACG Clinical Guideline: Management of Patients with Acute Lower Gastrointestinal Bleeding. The American Journal of Gastroenterology. 2016;111(4):459–74

Chavalitdhamrong D, Hughes S, Abbitt P. A Multidisciplinary Management Algorithm of Acute Gastrointestinal Bleeding: A Quality Improvement Project. Journal of Gastrointestinal Digestive System. 2016;6:439

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Barletta JF, Bruno JJ, Buckley MS, Cook DJ. Stress Ulcer Prophylaxis. Critical Care Medicine. 2016;44(7):1395–405.

Krag M, Perner A, Møller MH. Stress ulcer prophylaxis in the intensive care unit. Current opinion in critical care. 2016;22(2):186–90

Herzig SJ, Rothberg MB, Feinbloom DB, Howell MD, Ho KK, Ngo LH, et al. Risk factors for nosocomial gastrointestinal bleeding and use of acid-suppressive medication in non-critically ill patients. J Gen Intern Med. 2013;28(5):683–90

Note on data

The data used in this sheet are for hospital-acquired complications recorded during episodes of care in Australian public hospitals in 2015–16. Data are included where hospitals were able to identify that the complication had arisen during an admission using the condition onset flag. Figures reported by the Independent Hospitals Pricing Authority (IHPA) may differ due to the IHPA's methodology, which applies different inclusion/exclusion criteria.

References

1. Independent Hospital Pricing Authority (AU). Activity Based Funding Admitted Patient Care 2015–16, acute admitted episodes, excluding same day.
2. Independent Hospital Pricing Authority, Pricing and funding for safety and quality – Risk adjustment model for hospital acquired complications – version 3, March 2018, IHPA: Sydney.
3. Australian Commission on Safety and Quality in Health Care. National Safety and Quality Health Service Standards (second edition). Sydney 2017.
4. Victorian Department of Health & Human Services. A Clinical Practice Guide: Stress Ulcer Prophylaxis in surgical patients. (Archived) ed: Victorian Surgical Consultative Council 2013.
5. Tielleman T, Bujanda D, Cryer B. Epidemiology and Risk Factors for Upper Gastrointestinal Bleeding. Gastrointest Endosc Clin N Am. 2015;25(3):415–28. Epub 2015/07/05.

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