Key Aspects of Care:

- The first priority is to ensure that the patient is hemodynamically stable, which often requires admission to the ICU for monitoring and fluid resuscitation.
- Peptic ulcers account for most cases of upper GI bleeding, but bleeding from varices has a much higher case fatality rate and demands aggressive treatment.
- Antithrombotic agents may pose challenges to managing GI bleeding and efforts toward hemostasis need to be balanced with risks of thrombosis.
- This is considered a guidance document only. Clinical decisions can lead to a determination to escalate therapy in a way that is dictated by patient response. Implementing the algorithm as outlined has the highest likelihood of managing patients with upper GI bleeding.

Algorithm 1. Patient Assessment and Risk Stratification

### Symptoms of Possible GI Bleed
- Hematemesis (vomiting of blood or coffee-ground-like material)
- Melena (black, tarry stools)
- Hematochezia (red or maroon blood in the stool)
- Nonspecific features include nausea, vomiting, epigastric pain, vasovagal phenomena and syncope.

### Assess for Complicating Comorbidities

#### Rapid Assessment
- Positive history of cirrhosis, varices (known or suspected), AAA repair, gastric surgery, ETOH, VAD
- Age > 60 years
- Renal failure
- Liver failure
- Disseminated malignancy
- Cardiac failure
- Ischemic heart disease
- Chronic anticoagulation

See page 4, Related Tools for additional recommendations on management of chronic anticoagulation and variceal bleeding.

### Risk Stratification
- Endoscopic, clinical, and laboratory features may be useful for risk stratification of patients who present with acute upper GI bleeding.
- Use of the Glasgow-Blatchford Bleeding Score (GBS) may aid with triage of patients with UGIB to determine need for ICU admission, timing of endoscopy, need for transfusion, length of stay, risk of rebleeding, and mortality.

#### GBS Score= 0
- Consider outpatient management

#### GBS Score ≥ 1
- High risk hospital admission
- Consider ICU admission and urgent endoscopy

### Table 1. Glasgow-Blatchford Score

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUN, mg/dL</td>
<td></td>
</tr>
<tr>
<td>≥ 18.2 to &lt; 22.4</td>
<td>2</td>
</tr>
<tr>
<td>≥ 22.4 to &lt; 28.0</td>
<td>3</td>
</tr>
<tr>
<td>≥ 28.0 to &lt; 70.0</td>
<td>4</td>
</tr>
<tr>
<td>≥ 70.0</td>
<td>6</td>
</tr>
<tr>
<td>Hemoglobin, men, g/dL</td>
<td></td>
</tr>
<tr>
<td>&gt; 12.0 to &lt;13.0</td>
<td>1</td>
</tr>
<tr>
<td>≥ 10.0 to &lt; 12.0</td>
<td>3</td>
</tr>
<tr>
<td>&lt; 10.0</td>
<td>6</td>
</tr>
<tr>
<td>Hemoglobin, women, g/dL</td>
<td></td>
</tr>
<tr>
<td>≥ 10.0 to &lt; 12.0</td>
<td>1</td>
</tr>
<tr>
<td>&lt; 10.0</td>
<td>6</td>
</tr>
<tr>
<td>SBP, mmHg</td>
<td></td>
</tr>
<tr>
<td>100-109</td>
<td>1</td>
</tr>
<tr>
<td>90-99</td>
<td>2</td>
</tr>
<tr>
<td>&lt; 90</td>
<td>3</td>
</tr>
<tr>
<td>Other markers</td>
<td></td>
</tr>
<tr>
<td>Heart rate &gt; 100bpm</td>
<td>1</td>
</tr>
<tr>
<td>Melena</td>
<td>1</td>
</tr>
<tr>
<td>Syncope</td>
<td>2</td>
</tr>
<tr>
<td>Hepatic diseases</td>
<td>2</td>
</tr>
<tr>
<td>Heart failure</td>
<td>2</td>
</tr>
<tr>
<td>Maximum score</td>
<td>23</td>
</tr>
</tbody>
</table>

GBS Score 0: Consider outpatient management

GBS Score ≥ 1: High risk hospital admission, Consider ICU admission and urgent endoscopy

See Algorithm 2, page 2, for management recommendations.
Algorithm 2. Management of Upper GI Bleed Patients

**Monitoring and Laboratory Tests**
- Supplemental oxygen by nasal cannula if hypoxic, and **airway assessment - may need intubation for airway protection**
- NPO
- Insert two large bore (16 gauge or larger) peripheral IV catheters or a central venous catheter
- Check vital signs
- Order Lab Tests: CBC, PT/INR, PTT, electrolytes, BUN/Cr ratio
- Type & Cross

**Resuscitation**
- Adequate **resuscitation and stabilization** are essential prior to endoscopy to minimize treatment-associated complications.
- For patients with active bleeding, **provide IV fluids** (0.9 NS, 1-2 liters, based on vital signs)
- Consider **NG-tube placement** with lavage (e.g., 180-240 cc tap water x1-4 or until clear) if not already done. May be helpful in hematochezia to exclude torrential upper GI bleeding, and to enhance endoscopic visibility.

**Pharmacotherapy**
- IV proton pump inhibition*
- Consider octreotide and prophylactic antibiotics if varices suspected.
- NSAIDs can be held but consider continuing ASA if is part of dual antiplatelet therapy and the 2\textsuperscript{nd} agent is held in patients at high risk of thrombotic events
  - Consider anticoagulation reversal based on risk/benefit profile. See OSUWMC guidelines for recommendations on anticoagulation reversal.
- Consider a prokinetic agent, such as erythromycin 250 mg IV or Reglan 10 mg IV ~30-60 minutes before planned EGD, to enhance endoscopic visibility in suspected upper GI bleeding

**Consults**
- Obtain GI Consult
- Consult Cardiology and/or Pharmacy if patient on antithrombotic therapies (and high thrombotic risk)

**What is the patient’s response to fluid resuscitation?**

See Algorithm 3, on page 3.

*Current evidence does not provide evidence of a significant clinical difference between intermittent and continuous infusion PPIs in acute GI bleeds prior to or after endoscopy.
Algorithm 3. Management Based on Patient Response to Fluid Resuscitation

WITHIN FIRST HOUR

Evaluate patient response to fluid resuscitation

Full Positive Response
- Improved HR and BP without vasopressor support
- Hgb stable and/or appropriate response if transfused

Consult GI to evaluate for endoscopy within 12-24 hours

Await further recommendations from GI and Surgery

Partial Positive Response
- HR still > 100 bpm
- SBP still < 100 mmHg
- Fresh blood on NG lavage/inability to clear after 900-100cc water

LIFE-THREATENING EMERGENCY
- Page GI Fellow and Acute Care Surgery Service on call – LIFE THREAT
- Immediate evaluation by Surgery and GI
- Endoscopy as needed
- Antithrombotic addressed/reversed (see page 4, Related Tools)
- Consider CVC or cordis
- Transfuse as indicated
- Massive transfusion if needed; see page 8 of Massive Transfusion Protocol

No Response
- Continued bleeding
- Significant Hgb decline/inappropriate response if transfused
- No improvement in HR or BP

Ensure adequate IV access
Page GI fellow on call to evaluate for emergent endoscopy within 3-6 hours

Clinical deterioration or ≥ 4 units PRBCs in 6 hours or ≥ 6 units in 24 hours?

YES
- Notify GI/GS for reevaluation
- Admit/transfer to ICU

NO

Await further recommendations from GI and Surgery
Related Tools

OSUWMC Guidelines
- Dabigatran (Pradaxa®) Reversal Treatment for Bleeding Events
- Management of Antiplatelet Therapy in Patients with Arterial Stents Around the Time of Surgeries and Procedures
- Rivaroxaban, Apixaban: Factor Xa Inhibitors - Reversal Treatment for Bleeding
- Variceal Bleeding: Diagnosis and Management
- Warfarin - Management of Elevated INR and Reversal

Protocols
- Massive Transfusion Protocol
- IHIS Massive Transfusion Protocol (MTP) Documentation

Ordersets
- OSU IP ED: GI BLEED
- OSU IP ED: ACUTE ABDOMINAL PAIN
- OSU IP GE: ADMISSION ACTIVE GI BLEED
- OSU IP MIC: ADMISSION MICU

Calculators
- International consensus statements and ACG practice guidelines emphasize use of prognostic scales in the care of patients with UGIB to help guide management.
- Use of validated risk scoring, such as Glasgow Blatchford, may aid in triage of patients with UGIB

Quality Measures
- Length of stay
- Endoscopy within 12 hours of admission
- Percent of patients transfused and amount of units used
- Re-bleed rate
- Mortality rate
- Percent of patients discharged home on PPI
- Percent of patients with antiplatelet therapy withheld

References
Guideline Authors

- Bennie Ray Upchurch III, MD
- Samer Eldika, MD
- Royce Groce, MD
- Eric Adkins, MD
- Daniel Eiferman, MD
- Jessica Kynyk, MD

Guideline Approved


Disclaimer: Clinical practice guidelines and algorithms at The Ohio State University Wexner Medical Center (OSUWMC) are standards that are intended to provide general guidance to clinicians. Patient choice and clinician judgment must remain central to the selection of diagnostic tests and therapy. OSUWMC's guidelines and algorithms are reviewed periodically for consistency with new evidence; however, new developments may not be represented.

Copyright © 2014. The Ohio State University Wexner Medical Center. All rights reserved. No part of this document may be reproduced, displayed, modified, or distributed in any form without the express written permission of The Ohio State University Wexner Medical Center.