Oral Bleeding Emergency Management

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PRESENTATION

1. Bleeding from the oral cavity, nose, and/or stoma site (e.g. tracheostomy or laryngostoma)
2. Respiratory failure: need > 50% FiO₂ to maintain oxygen saturation of 90%, increased work of breathing, respiration rate > 30 breaths/minute
3. Acute hypercapnic respiratory failure: PaCO₂ > 45 mmHg with pH < 7.35
4. Hemodynamic instability: heart rate > 110 beats/minute, systolic blood pressure < 90 mmHg, inability to protect airway, gcs < 13
5. Avoid using a face mask if the patient continues to have heavy oral bleed
6. If the patient is actively bleeding and unstable, obtain untyped and uncrossmatched blood. If vitals are stable and patient is not actively bleeding, wait for hemoglobin and hematocrit results then transfuse for hemoglobin < 7 g/dL
7. Consider tranexamic acid 1g (consider topical or inhalation as necessary); fresh frozen plasma (FFP); platelets; cryoprecipitate; specific reversal agents for fractionated and unfractionated heparin, andexanet alfa for direct oral anticoagulants (DOACs). Providers may refer to the Emergency Anticoagulation Reversal orderset in OneConnect or referred to the Anticoagulation Stewardship: Bleeding Complications page for additional references. For treatment of hemostatic defects, see Appendix A. For reversal of anticoagulants, see Appendix B.
8. Head and Neck sentinel bleed may present as hematemesis. Hematemesis does not always equal GI bleed for Head and Neck patients.

INITIAL EVALUATION

Perform resuscitation measures:
- Provide oxygen support and intubate if needed
- Direct tamponade for visualized bleed
- Labs: CBC, CMP, PT with INR, aPTT, d-dimer, fibrinogen, type and screen, lactic acid, POC hemoglobin and hematocrit (if available)
- Establish IV access (2 large bore IV catheters)
- IV Fluids
- Blood transfusion
- Reverse coagulopathy
- Rapid history and exam

Is the patient in respiratory distress or/hemodynamic instability?
1. Yes
2. No

Is the patient stable?
1. Yes
2. No

Assess for the source of the bleed

- Complete history and physical exam
- Direct tamponade of visible bleed
- Labs (including type and screen)
- Chest x-ray
- Initiate a Goal Concordant Care (GCC) conversation with the patient or if clinically indicated, with Surrogate Decision-Maker and the Primary Oncologist/Primary Team/Attending Physician. The Advance Care Planning (ACP) note should be used to document GCC discussion.
- Protect airway
- Consult Anesthesia and/or Head and Neck Surgery for possible surgical airway
- Consider transfer to ICU or higher level of care or palliative unit as clinically indicated and as consistent with the patient’s goal concordant care

DISPOSITION

1. Is the patient stable?
2. No

- Continue resuscitation measures (ACLS)
- Initiate a Goal Concordant Care (GCC) conversation with the patient or if clinically indicated, with Surrogate Decision-Maker and the Primary Oncologist/Primary Team/Attending Physician. The Advance Care Planning (ACP) note should be used to document GCC discussion.
- Protect airway
- Consult Anesthesia and/or Head and Neck Surgery for possible surgical airway
- Consider transfer to ICU or higher level of care or palliative unit as clinically indicated and as consistent with the patient’s goal concordant care

- Is the patient in Respiratory distress and/or hemodynamic stability?
1. Yes
2. No

ACLS = advanced cardiovascular life support
SOB = shortness of breath
DNR = do not resuscitate

1. No

- Consult Anesthesia and/or Head and Neck Surgery for possible surgical airway
- Consider transfer to ICU or higher level of care or palliative unit as clinically indicated and as consistent with the patient’s goal concordant care

Gastrointestinal (GI) bleed
- Melena
- Hematemesis

Lower respiratory bleed
- SOB, coughing, wheezing
- Hemoptyisis

Upper respiratory bleed
- Choking, coughing, epistaxis, hematemesis

Unknown source of bleed
- Consider consultation from Pulmonary, GI, and Thoracic Surgery as clinically indicated

See Page 2
See Page 3
See Page 2

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**Oral Bleeding Emergency Management**

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### ASSESSMENT

- Assess for head and neck tumor
- CTA head and neck with contrast
- Consider risk factors for sentinel bleed (e.g., carotid or innominate):
  - Neck surgery
  - Radiation therapy
  - Tracheostomy
  - Laryngectomy
  - Targeted therapy (i.e., VEGF inhibitors)
- Anticoagulation therapy
- Assess for lung lesions or chest mass
- CT chest with contrast
- Consider risk factors for hemothysis:
  - Lung cancer
  - Mediastinal mass
  - Tracheal tumor
  - Anticoagulation therapy
  - Lung metastasis
  - Pulmonary embolism
  - Tuberculosis
  - Fungal pneumonia
  - Radiation therapy to the lung or mediastinal area
- Initiate a Goal Concordant Care (GCC) conversation with the patient or if clinically indicated, with Surrogate Decision-Maker and the Primary Oncologist/Primary Team/Attending Physician. The Advance Care Planning (ACP) note should be used to document GCC discussion.

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### TREATMENT

**Consult Head and Neck Surgery**
- Head and Neck Surgery may consider consulting Interventional Radiology (IR) for possible embolization
- Provide supplemental oxygen
- Intubate if needed
- Place on lateral decubitus with bleeding side down if known
- Tranexamic acid 1g IV for one dose
- Consult Pulmonary Medicine and speak with the pulmonary interventionist on-call
- Consult IR for embolization
- Consult Thoracic Surgery if patient is unstable, intubated, or recommended by Pulmonary Medicine

**Consult Pulmonary Medicine**
- Consider an ambulatory referral to Cardiopulmonary Center if the patient is discharged

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### DISPOSITION

**Admit patient to ICU**
- or an acute care floor
- or palliative care unit as clinically indicated and as consistent with patient’s goal concordant care

**Admit patient to ICU**
- or an acute care floor
- or palliative care unit as clinically indicated

**Admit patient to an acute care floor**
- Disposition as clinically indicated

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1 Refer to GCC home page (for internal use only)
2 Defined by bleeding volume, respiratory failure or hemodynamic instability:
   - Volume of blood > 500 mL in 24 hours or > 200 mL in 1 hour
   - Respiratory failure: need of > 50% FiO₂ to maintain oxygen saturation of 90%, increased work of breathing, respiration rate > 30 breaths/minute
   - Acute hypoxemic respiratory failure: PaCO₂ > 45 mmHg with pH < 7.35
   - Hemodynamic instability: heart rate > 110 beats/minute, systolic blood pressure < 90 mmHg, inability to protect airway, GCS < 13
3 Avoid using a face mask if the patient continues to have heavy oral bleed
4 Moderate volume is between less than massive hemothysis (> 500 mL in 24 hours or > 200 mL in 1 hour) and more than blood tinged sputum
5 Minimal volume is blood tinged sputum

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CTA = computed tomography angiography  
VEGF = vascular endothelial growth factor

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ASSESSMENT

- Complete history and physical (with a rectal exam to identify gross blood1)
- Assess for esophageal or gastric tumor
- Consider risk factors for GI bleed:
  - PUD/GIB
  - Portal hypertension (cirrhosis)
  - Liver with tumor metastasis
  - NSAID and/or anticoagulation therapy
  - Splenic vein thrombosis
  - Known upper GI tumor
  - Portal vein thrombosis
  - Severe retching prior to hematemesis
- Initiate a Goal Concordant Care (GCC) conversation2 with the patient or if clinically indicated, with Surrogate Decision-Maker and the Primary Oncologist/Primary Team/Attending Physician. The Advance Care Planning (ACP) note should be used to document GCC discussion.

GI source

Suspected variceal hemorrhage?

- Yes
  - See Appendix C for suspected variceal bleed management
  - STAT emergent GI consult for management
  - Endoscopy within 12 hours
  - Trend hemoglobin and hematocrit every 6-8 hours

- No
  - History, exam, and risk factors compatible with GI bleed?
    - Yes
      - History, exam, and risk factors compatible with GI bleed?
        - Yes
          - Suspected variceal hemorrhage?
            - Yes
              - See Appendix C for suspected variceal bleed management
              - STAT emergent GI consult for management
              - Endoscopy within 12 hours
              - Trend hemoglobin and hematocrit every 6-8 hours
            - No
              - See Appendix D for non-variceal bleed management
              - Consult GI3 for management
              - Consider endoscopy within 24 hours
              - Trend hemoglobin and hematocrit every 6-8 hours
        - No
          - See Appendix D for non-variceal bleed management
          - Consult GI3 for management
          - Consider endoscopy within 24 hours
          - Trend hemoglobin and hematocrit every 6-8 hours
    - No
      - Work up for other diagnosis
        - Disposition as clinically indicated

TREATMENT

DISPOSITION

Admit patient to ICU or palliative unit as clinically indicated and as consistent with the patient’s goal concordant care

Admit patient to ICU or a cardiac monitored unit or palliative unit as clinically indicated and as consistent with the patient’s goal concordant care

Disposition as clinically indicated

PUD/GIB = peptic ulcer disease/gastrointestinal bleed

NSAID = nonsteroidal anti-inflammatory drug

1 Fecal occult blood test is not needed for oral bleeding workup
2 Refer to GCC home page (for internal use only)
3 If patient is unstable and vomiting blood, place STAT urgent GI consult. If the patient is stable, place routine GI consult after the patient is admitted or at the discretion of the inpatient team.
## APPENDIX A: Hemostatic Defect

<table>
<thead>
<tr>
<th>Hemostatic Finding</th>
<th>Recommended Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disseminated Intravascular Coagulation (DIC)</td>
<td>Fresh frozen plasma (10-15 mL/kg) with ideal recovery would raise factor levels 15-20%</td>
</tr>
<tr>
<td>Hepatic dysfunction</td>
<td>Vitamin K 10 mg IV at 1 mg/minute daily</td>
</tr>
<tr>
<td>Vitamin K deficiency</td>
<td>Cryoprecipitate 1 unit/5 kg up to a total dose of 10 units (target fibrinogen ≥ 150 mg/dL)</td>
</tr>
<tr>
<td>Fibrinogen &lt; 150 mg/dL</td>
<td>Recombinant Factor VII activated 15-30 mcg/kg every 4-6 hours (not recommended for spontaneous intracerebral hemorrhage (ICH) without Factor VII deficiency or oral anticoagulant reversal). Dose ranges from 10-90 mcg/kg based on indication and severity of bleeding.</td>
</tr>
<tr>
<td>Congenital Factor VII deficiency</td>
<td>Factor VIII deficiency (Hemophilia A)</td>
</tr>
<tr>
<td></td>
<td>● Each Factor VIII unit raises plasma Factor VIII levels by 2% [50 units/kg used to raise levels to 100% (80-100 international units/dL)]</td>
</tr>
<tr>
<td></td>
<td>● Target Factor VIII activity level of 100 international units/dL and maintain level of 50% for 7-10 days (a variety of Factor VIII products are available)</td>
</tr>
<tr>
<td>Factor VIII deficiency (Hemophilia A)</td>
<td>Factor IX deficiency (Hemophilia B)</td>
</tr>
<tr>
<td></td>
<td>● Each Factor IX unit raises plasma Factor IX levels by 1% [100 units/kg used to raise levels to 100% (60-80 international units/dL)]</td>
</tr>
<tr>
<td></td>
<td>● Target Factor IX activity level of 100 international units/dL and maintain level of 50% for 7-10 days (a variety of Factor VIII products are available)</td>
</tr>
<tr>
<td>Von Willebrand Disease</td>
<td>Target von Willebrand Ristocetin Cofactor (VWF:RCo) and Factor VIII activity levels of 100 international units/dL and maintain levels of 50% for 7-10 days. Use Humate-P® or Alphanate®, begin 40-60 international units/kg.</td>
</tr>
<tr>
<td>Thrombocytopenia</td>
<td>Ideal target platelet count of 100 K/microliter in patients who are not refractory to platelets. Each unit transfused should increase platelet count by 5-10 K/microliter.</td>
</tr>
</tbody>
</table>
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APPENDIX B: Reversal of Anticoagulants

<table>
<thead>
<tr>
<th>Anticoagulant</th>
<th>Recommended Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warfarin</td>
<td>Administer prothrombin complex concentrate (Kcentra&lt;sup&gt;®&lt;/sup&gt;) IVPB based on INR and actual body weight:</td>
</tr>
<tr>
<td></td>
<td><strong>INR</strong></td>
</tr>
<tr>
<td></td>
<td>2-3.9</td>
</tr>
<tr>
<td></td>
<td>4-6</td>
</tr>
<tr>
<td></td>
<td>&gt; 6</td>
</tr>
<tr>
<td></td>
<td>Consider using ideal or adjusted body weight for obese patients</td>
</tr>
<tr>
<td></td>
<td>Add vitamin K 10 mg IV at 1 mg/minute for 1 dose for prolonged reversal of warfarin</td>
</tr>
<tr>
<td></td>
<td>If prothrombin complex concentrate (Kcentra&lt;sup&gt;®&lt;/sup&gt;) not available, use fresh frozen plasma 15 mL/kg or if INR is not supratherapeutic (e.g., ≤ 3); may use 5-8 mL/kg for urgent reversal</td>
</tr>
<tr>
<td>Dabigatran</td>
<td>Administer activated charcoal 25-50 grams oral or nasogastric tube times one dose if ingested within the previous 2 hours</td>
</tr>
<tr>
<td></td>
<td>Administer idarucizumab 2.5 grams IV times two doses</td>
</tr>
<tr>
<td></td>
<td>Consider repeated dose of idarucizumab if after several hours the patient re-bleeds or has worsening coagulopathy</td>
</tr>
<tr>
<td></td>
<td>Consider hemodialysis for life-threatening bleeds</td>
</tr>
<tr>
<td>Apixaban or rivaroxaban</td>
<td>Administer activated charcoal 25-50 grams oral or nasogastric tube times one dose if ingested within the previous 2 hours</td>
</tr>
<tr>
<td></td>
<td>Andexanet alfa: If last dose of apixaban or rivaroxaban was given within 18 hours</td>
</tr>
<tr>
<td></td>
<td>Administer prothrombin complex concentrate (Kcentra&lt;sup&gt;®&lt;/sup&gt;) IVPB based on INR and actual body weight:</td>
</tr>
<tr>
<td></td>
<td><strong>INR</strong></td>
</tr>
<tr>
<td></td>
<td>≤ 2.0</td>
</tr>
<tr>
<td></td>
<td>2.1-5.0</td>
</tr>
<tr>
<td></td>
<td>&gt; 5.0</td>
</tr>
<tr>
<td></td>
<td>Consider using ideal or adjusted body weight for obese patients</td>
</tr>
<tr>
<td></td>
<td>Add vitamin K 10 mg IV at 1 mg/minute for 1 dose for prolonged reversal of warfarin</td>
</tr>
<tr>
<td></td>
<td>If prothrombin complex concentrate (Kcentra&lt;sup&gt;®&lt;/sup&gt;) not available, use fresh frozen plasma 15 mL/kg or if INR is not supratherapeutic (e.g., ≤ 3); may use 5-8 mL/kg for urgent reversal</td>
</tr>
</tbody>
</table>

**Recommended Treatment**

<table>
<thead>
<tr>
<th>FXa Inhibitor</th>
<th>FXa Inhibitor Last Dose</th>
<th>Timing of FXa Inhibitor Last Dose Before Andexanet Alfa Initiation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apixaban</td>
<td>≤ 5 mg</td>
<td>Low dose</td>
</tr>
<tr>
<td></td>
<td>&gt; 5 mg/unknown</td>
<td>High dose</td>
</tr>
<tr>
<td>Rivaroxaban</td>
<td>≤ 10 mg</td>
<td>Low dose</td>
</tr>
<tr>
<td></td>
<td>&gt; 10 mg/unknown</td>
<td>High dose</td>
</tr>
</tbody>
</table>

**Low dose:** 400 mg IV bolus, followed by 4 mg/minute IV infusion for up to 120 minutes

**High dose:** 800 mg IV bolus, followed by 8 mg/minute IV infusion for up to 120 minutes

- If last dose of apixaban or rivaroxaban given > 18 hours, andexanet alfa may be given if compelling indication necessitating reversal is present (e.g., acute renal failure or overdose)
- If andexanet alfa not available, administer prothrombin complex concentrate (Kcentra<sup>®</sup>) 25 units/kg (maximum dose 2,500 units) to 50 units/kg (maximum dose 5,000 units) IVPB based on actual body weight. Consider using ideal or adjusted body weight for obese patients.
## APPENDIX B: Reversal of Anticoagulants - continued

<table>
<thead>
<tr>
<th>Anticoagulant</th>
<th>Recommended Treatment</th>
</tr>
</thead>
</table>
| Edoxaban¹ or betrixaban¹      | ● Administer activated charcoal 25-50 grams oral or nasogastric tube times one dose if ingested within the previous 2 hours  
                                                                       ● Administer prothrombin complex concentrate (Kcentra®) 25 units/kg (maximum dose 2,500 units) to 50 units/kg (maximum dose 5,000 units) IVPB  
                                                                       based on actual body weight  
                                                                       ● Consider using ideal or adjusted body weight for obese patients |
| Heparin                       | ● Administer 1 mg of protamine IV for every 100 units of IV heparin given over the last 2-2.5 hours  
                                                                       ● Single doses should not exceed 50 mg  
                                                                       ● Consider repeat dosing if continued bleeding or a prolonged aPTT  
                                                                       ● Administer prothrombin complex concentrate (Kcentra®) 25 units/kg (maximum dose 2,500 units) to 50 units/kg (maximum dose 5,000 units) IVPB  
                                                                       based on actual body weight  
                                                                       ● Consider using ideal or adjusted body weight for obese patients  
                                                                       ● Consider coagulation factor VIIa recombinant 20 mcg/kg IV times one dose |
| Enoxaparin or dalteparin      | ● Administer 1 mg of protamine IV for every 100 units of dalteparin or 1 mg of enoxaparin given within the previous 8 hours  
                                                                       ● Administer 0.5 mg of protamine IV for every 100 units of dalteparin or 1 mg of enoxaparin given in the previous 8 to 12 hours  
                                                                       ● Single doses of protamine should not exceed 50 mg  
                                                                       ● Consider coagulation factor VIIa recombinant 20 mcg/kg IV times one dose |
| Fondaparinux                  | ● Administer prothrombin complex concentrate (Kcentra®) 25 units/kg (maximum dose 2,500 units) to 50 units/kg (maximum dose 5,000 units) IVPB  
                                                                       based on actual body weight  
                                                                       ● Consider using ideal or adjusted body weight for obese patients  
                                                                       ● Consider coagulation factor VIIa recombinant 20 mcg/kg IV times one dose |

¹ Non-formulary
APPENDIX C: Suspected Variceal Bleed Management

Resuscitation
- IV fluids
- Blood product transfusion
  - Transfuse PRBC for a hemoglobin goal of 7 g/dL (over-transfusing can increase intravenous hydrostatic pressure, leading to more bleeding). May consider a higher target if history of cardiac/comorbidities.
  - Transfuse platelet or plasma
  - Avoid over-transfusion due to concern for increasing portal hypertension
- Hold diuretics and beta blockers

Antithrombotic Management
- Consider consulting Benign Hematology
- Hold anticoagulants
- Consider holding anti-platelet agents - weigh thrombotic risk, clinical stability/urgency, and bleeding risk
- Consider continuing aspirin if on dual antiplatelet therapy (DAPT)
- For life-threatening bleeds, consider reversal agents, 4-factor prothrombin complex, vitamin K, FFP, cryoprecipitate, activator factors VIIa
- Exercise caution when stopping DAPT with stents, platelet transfusion in patients on anti-platelet agents, and giving vitamin K or reversal agents

Infusions
- Prophylactic antibiotics (e.g., ceftriaxone 1 g IV every 24 hours preferred or fluoroquinolone can be used)
- Octreotide 50 mcg IV for one dose then 50 mcg/hour IV infusion
- Consider pantoprazole 80 mg IV for one dose then 8 mcg/hour IV infusion

Procedural Management
- Endoscopy within 12 hours
- Interventional Radiology
- Surgery

Post Procedure Management
- Octreotide infusion for at least 72 hours
- Prophylactic antibiotic for 7 days

Post Procedure Anticoagulation Management
- Reinitiate anti-platelet once hemostasis achieved and in discussion with prescribing provider
- Consider resuming anticoagulation after discussion with prescribing provider

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**Resuscitation**
- IV fluids
- Blood product transfusion
  - Transfuse PRBC for a hemoglobin goal of $\geq 7$ g/dL. May consider a higher target if history of cardiac/comorbidities.
  - Transfuse platelet or plasma
- Consider consulting Benign Hematology
- Hold anticoagulants
- Consider holding anti-platelet agents - weigh thrombotic risk, clinical stability/urgency, and bleeding risk
- Consider continuing aspirin if on dual antiplatelet therapy (DAPT)
- For life-threatening bleeds, consider reversal agents, 4-factor prothrombin complex, vitamin K, FFP, cryoprecipitate, activator factors VIIa
- Exercise caution when stopping DAPT with stents, platelet transfusion in patients on anti-platelet agents, and giving vitamin K or reversal agents

**Antithrombotic Management**
- Consider consulting Benign Hematology
- Hold anticoagulants
- Consider holding anti-platelet agents - weigh thrombotic risk, clinical stability/urgency, and bleeding risk
- Consider continuing aspirin if on dual antiplatelet therapy (DAPT)
- For life-threatening bleeds, consider reversal agents, 4-factor prothrombin complex, vitamin K, FFP, cryoprecipitate, activator factors VIIa
- Exercise caution when stopping DAPT with stents, platelet transfusion in patients on anti-platelet agents, and giving vitamin K or reversal agents

**Infusions**
- Pantoprazole 80 mg IV for one dose then 8 mcg/hour IV infusion
- Consider octreotide 50 mcg IV for one dose then 50 mcg/hour IV infusion if uncertain about possibility of variceal bleeding

**Procedural Management**
- Endoscopy within 24 hours
- Interventional Radiology
- Surgery

**Post Procedure Management**
- Continue high dose IV proton pump inhibitor (PPI) for 72 hours in PUD with high risk stigmata
- Transition to oral PPI in PUD with low risk stigmata
- Consider the need for PPI long term

**Post Procedure Anticoagulation Management**
- Reinitiate anti-platelet once hemostasis achieved
- Discuss anti-platelet agents with prescribing provider for high risk of rebleeding or other concerns
- Resume anticoagulation within first week or consider bridge with short acting agent
- Discuss anticoagulant timing with prescribing provider
SUGGESTED READINGS


MD Anderson Institutional Policy #CLN1202 - Advance Care Planning Policy
Advance Care Planning (ACP) Conversation Workflow (ATT1925)


Oral Bleeding Emergency Management

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DEVELOPMENT CREDITS

This practice consensus statement is based on majority opinion of the Oral Bleeding Emergency Management workgroup at the University of Texas MD Anderson Cancer Center for the patient population. These experts included:

Core Development Team Leads
Roberto F. Casal, MD (Pulmonary Medicine)
Emmanuel Coronel, MD (Gastroenterology Hepatology and Nutrition)
Maria S Gaeta, MD (Emergency Medicine)
Reza Mehran, MD (Thoracic & Cardiovasc Surgery)
David Richards, MD (Gastroenterology Hepatology and Nutrition)
Adriana H. Wechsler, MD (Emergency Medicine)
Mark Zafereo, MD (Head & Neck Surgery)

Workgroup Members
Olga N. Fleckenstein, BS*
Thoa Kazantsev, MSN, RN, OCN*
Ethan Miller, MD (Gastroenterology Hepatology and Nutrition)
William Ross, MD (Gastroenterology Hepatology and Nutrition)
Lan Wang, MD (Gastroenterology Hepatology and Nutrition)
Brian Weston, MD (Gastroenterology Hepatology and Nutrition)
Hao Chi Zhang, MD (Gastroenterology Hepatology and Nutrition)

* Clinical Effectiveness Development Team