### Background Information

- 75% of the AN/AI population is colonized with *H. pylori* (range: 61-84%, by region)
- Screening or testing for *H. pylori* for routine evaluation of dyspepsia or other GI symptoms is not clinically useful or supported by clinical evidence for high prevalence populations
- For routine clinical practice, there is insufficient evidence-based data to support community-wide treatment eradication as a mechanism for gastric cancer prevention.
- Current literature DO NOT support a test and treat method

### Local Antimicrobial Resistance Patterns

**Quadruple therapy** is recommended over triple therapy in the AN/AI population due to resistance

- 30-36% resistance to clarithromycin with no significant differences between age groups or urban vs. rural setting
- 42-65% resistance to metronidazole with no difference between urban or rural settings but higher in females and patients aged 30-40 years of age (ie, prior metronidazole exposure)
- 0-5% resistance to amoxicillin
- 19-26% resistance to levofloxacin with higher rates in urban vs rural setting
- No resistance to tetracycline
- No local surveillance data for rifabutin

### When *H. pylori* is identified by histology and/or CLOtest from EGD, should treatment occur?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Endoscopy reveals the following:</strong></td>
<td><strong>Gastroesophageal reflux disease (GERD)</strong></td>
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<tr>
<td>- Duodenal ulcers</td>
<td>- Irritable bowel syndrome (IBS)</td>
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<tr>
<td>- Gastric ulcers</td>
<td>- Mild/moderate gastritis w/wo anemia</td>
</tr>
<tr>
<td>- MALT lymphoma</td>
<td>- Excessive/chronic NSAID use</td>
</tr>
<tr>
<td>- Intestinal metaplasia</td>
<td>- Heavy alcohol use</td>
</tr>
<tr>
<td>- Gastritis regardless of <em>H. pylori</em> status</td>
<td>- Poor gastric motility (bezoars or conditions predisposing to GI motility disorders such as scleroderma or diabetes)</td>
</tr>
</tbody>
</table>

### Testing Strategy

1. **Dyspepsia**
   - **Weight Loss, Fecal Blood**
     - **Yes**
       - Perform Upper Endoscopy**
     - **No**
       - **Empiric Treatment**
         - H2 Blocker or PPI
         - **No Improvement**
         - **Improvement**
         - Follow up for recurrence of clinical symptoms

**Further evaluation and treatment are dependent on findings of pathology found on endoscopy**

### REFERENCES:


## ANMC *Helicobacter pylori* Treatment Guideline

### CONSIDERATIONS

#### Pediatrics
- Goal is to determine underlying cause of symptoms, not solely the presence of *H. pylori* infection
- Diagnostic testing is NOT recommended with functional abdominal pain
- Consider formal consult with Gastroenterology

#### Pregnancy & Lactation
- Delay treatment until after pregnancy

<table>
<thead>
<tr>
<th>Symptomatic Relief Medications</th>
<th>Eradication Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults</td>
<td>Children</td>
</tr>
<tr>
<td>Ranitidine 150mg PO BID OR</td>
<td>Ranitidine 2.5-5mg/kg PO BID (max 150mg/dose)</td>
</tr>
<tr>
<td>Omeprazole 20mg PO BID</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Eradication Testing</th>
<th>Adults</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>UBT for test of cure is necessary to determine need for retreatment</td>
<td>Metronidazole 500mg PO QID</td>
<td>14 days</td>
</tr>
<tr>
<td>10-35% of individuals will fail treatment</td>
<td>Amoxicillin 1000mg PO BID</td>
<td></td>
</tr>
<tr>
<td>Serologic testing is not recommended due to prolonged antibody persistence beyond date of cure and false positive results</td>
<td>Omeprazole 20mg PO BID</td>
<td></td>
</tr>
<tr>
<td>Must be off PPI ≥ 2 weeks prior to UBT</td>
<td>Bismuth subsalicylate 524mg PO QID</td>
<td></td>
</tr>
</tbody>
</table>

### Antibiotic Selection

#### Preferred Treatment (4 drug regimen)
- **Adults**
  - Metronidazole 500mg PO QID
  - Amoxicillin 1000mg PO BID
  - Omeprazole 20mg PO BID
  - Bismuth subsalicylate 524mg PO QID

#### PCN allergic (4 drug regimen)
- **Adults**
  - Metronidazole 500mg PO QID
  - Doxycycline 100mg PO BID
  - Omeprazole 20mg PO BID
  - Bismuth subsalicylate 524mg PO QID

#### Recurrence/Failure
- **Adults**
  - Metronidazole 500mg PO QID
  - Doxycycline 100mg PO BID
  - Omeprazole 20mg PO BID
  - Bismuth subsalicylate 524mg PO QID
  - OR
    - Amoxicillin 1000mg PO BID
    - Levofloxacin 500mg PO Daily
    - Omeprazole 20mg PO BID

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**REFERENCES:**