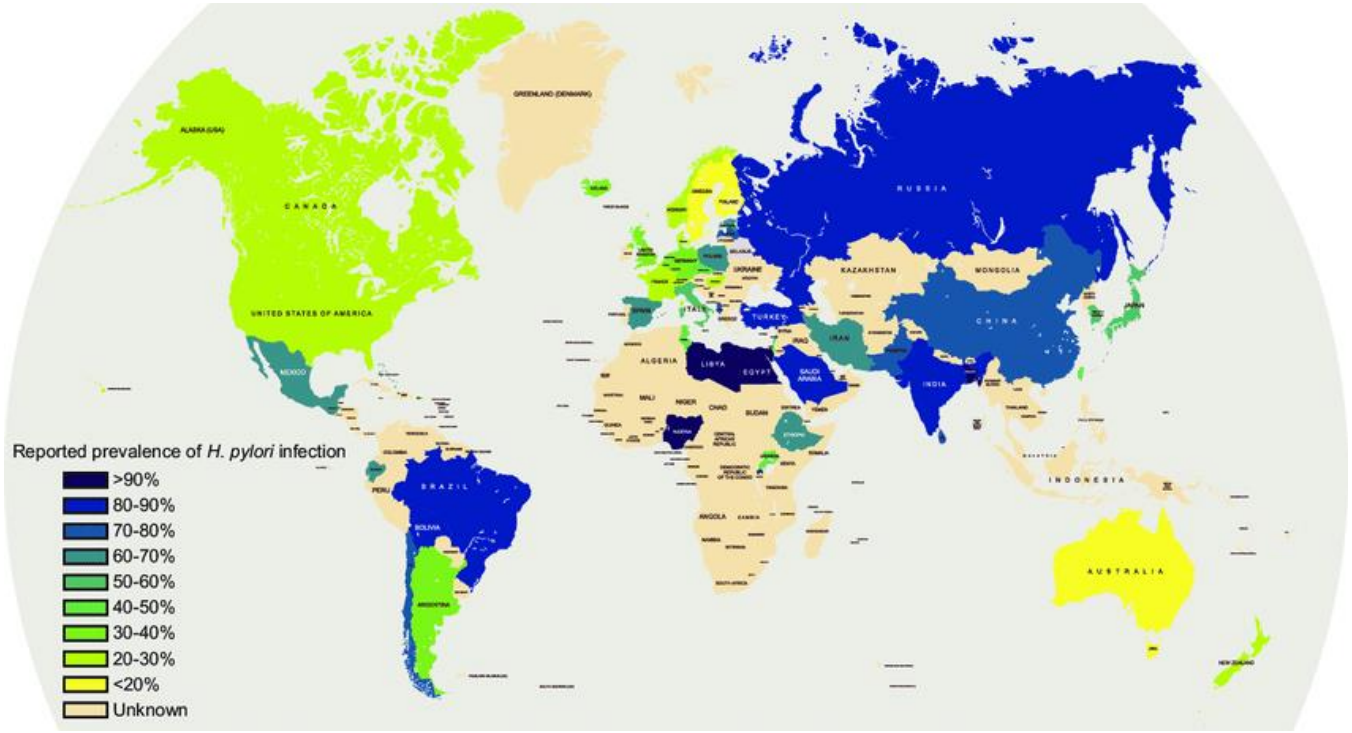
**Helicobacter pylori infection**
**Kentucky chapter AAP ICHTF**

**Case presentation:**
A 10 year old female presents with worsening abdominal pain and associated diarrhea for two weeks. The patient is not having vomiting, weight loss, or rashes. There is no blood in the stools. She is premenarchal. Patient has tried a non-irritating diet without improvement in her symptoms. Her family just returned from a trip to Mexico where she spent two months with her older sister who is having similar symptoms and has been diagnosed with infection due to Helicobacter pylori. Stool culture and O&P are negative, but H pylori stool antigen results are positive.

**Q & A**
**Is it more common in immigrant and refugee populations?**
Yes. There are certain regions where *H pylori* is endemic, so it is important to inquire as to recent travel or exposure to others traveling from endemic regions to assess for risk as it is transmissible from person to person and risk is higher when living with an infected family member. Parents can pass it to children by sharing utensils.

Around 50% of the world's population is infected with *H pylori.* Below is a map of reported prevalence worldwide.



(Helicobacter pylori-induced gastric pathology: Insights from in vivo and ex vivo models - Scientific Figure on ResearchGate. Available from: https://www.researchgate.net/figure/Worldwide-prevalence-of-Helicobacter-pylori-infection-The-map-shows-the-prevalence-of-H_fig1_313254979 [accessed 29 Jan 2025])

**Which are the patients at greatest risk of *H pylori* infection?**
It is important to inquire about recent travel to high risk areas, immigration from high risk areas, persistent abdominal pain with associated weight loss, tenderness on palpation of epigastrium on exam, and household contacts of those with severe symptoms of the disease in order to eradicate it from the house and prevent reinfection of the severely affected household contact.
**When should I <u>not</u> test for *H pylori*?**

While there may be overlap in symptoms, there is no indication to test for *H pylori* when obtaining a workup for the following entities:

- Inflammatory bowel disease
- Celiac disease
- Eosinophilic esophagitis
- Chronic ITP*
- Growth failure
- Short stature

Not all who have an infection due to *H pylori* will have peptic ulcer disease and gastritis due to the bacterium, so testing is only indicated for those with symptoms of diseases caused by *H pylori.*

It is also important to consider the timing of testing in relation to timing of treatment. Testing within 6 weeks after completion of antibiotics or within 2 weeks after stopping PPI or bismuth therapy will lead to unreliable results and is not recommended.

*Also of note, there is no role for treating H pylori to increase platelet count in the setting of chronic ITP.

**If susceptibilities are unknown, how should I treat for *H pylori*?**

Treatment without susceptibilities should include bismuth, proton pump inhibitor (PPI), amoxicillin and metronidazole. You do not have to perform biopsy on every patient diagnosed with *H pylori.*

Avoid clarithromycin. There is high resistance to clarithromycin with H pylori, so unless there is confirmed susceptibility, this is not a good treatment option. Younger children have higher rates of treatment failure.

It is not always possible to refer to gastroenterology in order to obtain biopsy to determine if patient has infection vs disease due to *H pylori.*

Please keep in mind that ESPGHAN/NASPGHAN guidelines recommend obtaining susceptibilities via real-time PCR (rather than antibody tests or stool molecular tests/cultures).

**What are the risks of *not* treating *H pylori* infection?**

As with all medical treatments, risks of treating should be weighed with risks of not treating. Untreated H pylori can lead to iron deficiency, peptic ulcer disease, intestinal atrophy or metaplasia, gastric MALT lymphoma, and even gastric cancer. These complications are uncommon, but there are not reliable ways to identify who will develop these. Children are generally at low risk for peptic ulcer disease.

Treatment risks are antibiotic resistance, exposure to side effects from antibiotic exposure and negative effects on gut microbiota. Even with proper treatment, there is a risk of treatment failure and the need for retreatment. In certain high-prevalence areas, the risk of reinfection after eradication can reach 10%. Of note, there is a hypothetical protective effect of H pylori against some chronic diseases in children, although there is not data to support this at this time.

**What can I use if my patient is allergic to penicillin?**

For patients with clarithromycin susceptible *H pylori* and allergies to penicillin, treatment with PPI, metronidazole and clarithromycin for 14 days is appropriate.

If a patient has penicillin allergy without sensitivities, or clarithromycin resistant *H pylori*, treatment should include bismuth, PPI, metronidazole and a tetracycline (if patient is >8 years old).

**Additional pearls and pitfalls:**

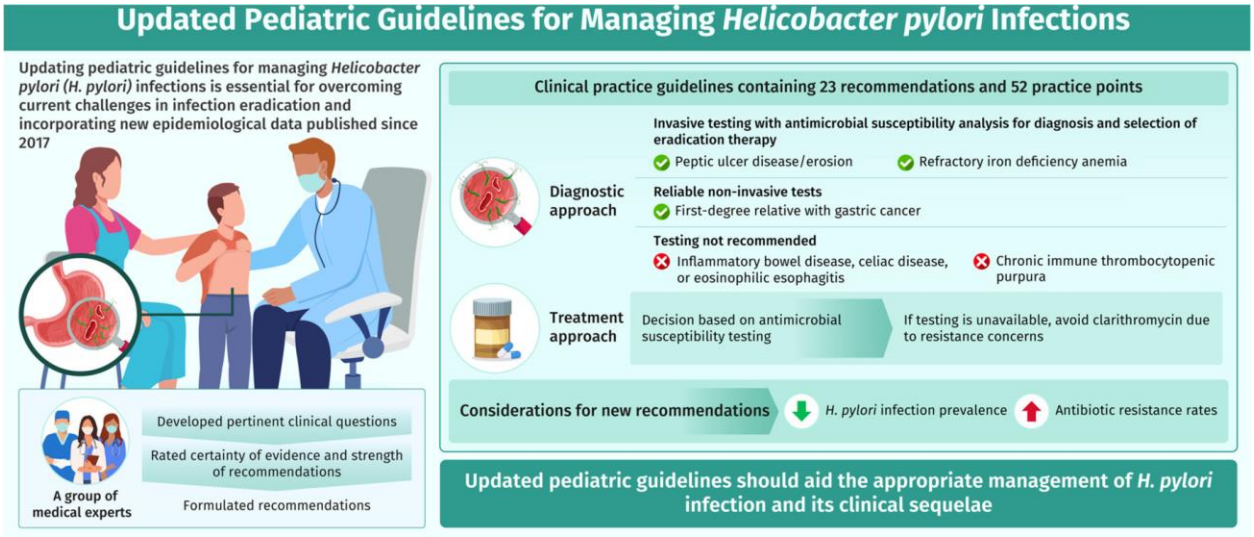
Emphasize to the family the importance of not starting treatment until all medications have been picked up from the pharmacy and the stool sample has been returned.

- If symptoms are severe, the patient may start the PPI while awaiting the results of the *H pylori* antigen, but the stool sample must be obtained prior to starting the PPI

Insurance does not cover twice daily PPI therapy, so the provider can send twice the needed number of doses and instruct family to use it twice daily, writing "see instructions" in the Sig to the pharmacy.

**Links to learn more/handouts:**

- Full NASPGHAN guidelines for management of H pylori: https://onlinelibrary.wiley.com/doi/10.1002/jpn3.12314
- H pylori info for families:
  - Spanish: https://www.gikids.org/files/documents/digestive%20topics/spanish/H%20pylori%20-%20Spanish.pdf
  - French: https://gikids.org/wp-content/uploads/2019/09/Helicobacter-pylori_Fr.pdf
  - Additional languages including Arabic: https://www.espghan.org/knowledge-center/education/H-Pylori-Patient-Parent-Guide




Jones, et al. Updated joint ESPGHAN/NASPGHAN guidelines for management of Helicobacter pylori infection in children and adolescents (2023). J Pediatr Gastroenterol Nutr. (2024)

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