Appendix 3. *Helicobacter pylori* modeling.

	Population	Adults
1	Theoretical population count	1,000,000
2	Estimated prevalence count of anemia in the theoretical population	56,500
3	Estimated prevalence count of iron-deficiency anemia (IDA) in the theoretical population	32,900
4	Estimated prevalence of H. pylori in the United States	35.6%
5	Estimated prevalence count of H. pylori infection in IDA patient	11,712
6	Urea Breath Test Sensitivity	96%
7	Urea Breath Test Specificity	93%
8	Estimated number of missed H. pylori infections due to false negatives	468
9	Estimated number of patient treated with antibiotics unnecessarily due to false positives	1483
10	Estimated additional cost of performing routine gastric biopsies (a single biopsy specimen container) to diagnosed H. pylori during the first endoscopic encounter	$6,436,556
11	Estimated additional cost of performing urea breath testing to diagnose H. pylori then repeating endoscopy for patients who tested negative falsely	$3,445,600
12	Estimated additional cost of treating patients who falsely tested positive for H. pylori using urea breath testing	$733,438
13	Difference in additional costs between routine biopsies versus indirect testing for H. pylori	$2,257,518

1. A theoretical number of adult people
2. Calculated by multiplying the estimated prevalence percentage of anemia from Ioannou GN et al. (2002) by the theoretical population count in line 1{Ioannou, 2002 #2}
3. Calculated by multiplying the estimated prevalence percentage of iron-deficiency anemia from Ioannou GN et al. (2002) by the count in line 2{Ioannou, 2002 #2}
4. Pooled estimate of H. pylori in the United States from Hooi JKY et al. (2017) {Hooi, 2017 #47}
5. Calculated by multiplying the estimated prevalence percentage of H. pylori from 4 by the estimated prevalence count of IDA from 3
6-7. From Ferwana M et al. (2015)
8. Calculated by multiplying the estimated prevalence count of H. pylori (line 5) by the false negatives rate (1-sensitivity from line 6)
9. Calculated by multiplying the false positives rate (1-specificity from line 7) by the estimated count of patients with iron deficiency anemia without H. pylori infection (line 5 subtracted from line 3)
10. Calculated by multiplying 3 by the additional cost of performing biopsies
11. Calculated by multiplying 3 by the cost of urea breath testing then combined with the product of multiplying 8 by the cost of repeat upper endoscopy with gastric biopsies and staining for H. pylori.
12. Calculated by multiplying 9 by the average cost of treating H. pylori
13. Calculated by subtracting 12 and 11 from 10