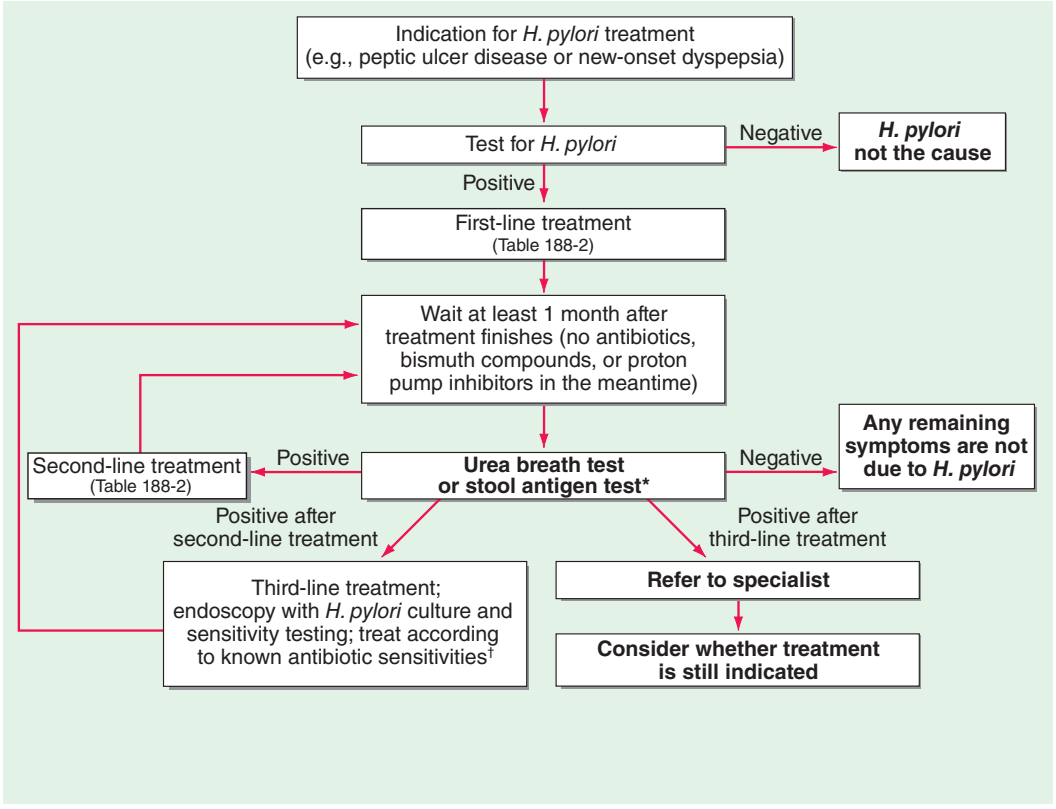

FIGURE 188-2 Algorithm for the management of *Helicobacter pylori* infection. *Note that either the urea breath test or the stool antigen test can be used in this algorithm. Occasionally, endoscopy and a biopsy-based test are used instead of either of these tests in follow-up after treatment. The main indication for these invasive tests is gastric ulceration; in this condition, as opposed to duodenal ulceration, it is important to check healing and to exclude underlying gastric adenocarcinoma. However, even in this situation, patients undergoing endoscopy may still be receiving proton pump inhibitor therapy, which precludes *H. pylori* testing. Thus a urea breath test or a stool antigen test is still required at a suitable interval after the end of therapy to determine whether treatment has been successful (see text). †Some authorities use empirical third-line regimens, of which several have been described.

TREATMENT *HELICOBACTER PYLORI* INFECTION

INDICATIONS

The most clear-cut indications for treatment are *H. pylori*–related duodenal or gastric ulceration or low-grade gastric B-cell lymphoma. Whether or not the ulcers are currently active, *H. pylori* should be eradicated in patients with documented ulcer disease to prevent relapse (Fig. 188-2). Testing for *H. pylori* and treatment if the results are positive also have been advocated in uninvestigated simple dyspepsia, but only when the prevalence of *H. pylori* in the community is >20% are these measures more cost-effective than simply treating the dyspepsia with PPIs. Guidelines have recommended *H. pylori* treatment in functional dyspepsia in case the patient is one of the perhaps 0–7% who will benefit from such treatment (beyond placebo effects). Some guidelines also recommend treatment of conditions not definitively known to respond to *H. pylori* eradication, including idiopathic thrombocytopenic purpura, vitamin B12 deficiency, and iron-deficiency anemia (in the last instance, only when other causes have been carefully excluded). Test-and-treat has emerged as a common clinical practice in recent years despite the lack of direct evidence that it is advantageous; whether this practice will survive the scrutiny of time and further study remains to be determined. For individuals with a strong family history of gastric cancer, treatment to eradicate *H. pylori* in the hope of reducing their cancer risk is reasonable but of unproven value. Currently, widespread community screening for and treatment of *H. pylori* as primary prophylaxis for gastric cancer and peptic ulcers are not recommended in most countries, mainly because the extent of the consequent reduction in cancer risk is not known. Several studies have found a modestly reduced cancer risk after treatment, but the period of follow-up is still fairly short and the size of the effect in different populations remains unclear. Other reasons not to treat *H. pylori* in asymptomatic populations at present include (1) the adverse side effects (which are common and can be severe in rare cases) of the multiple-antibiotic regimens used; (2) antibiotic resistance, which may emerge in *H. pylori* or other incidentally carried bacteria; (3) the anxiety that may arise in otherwise healthy people, especially if treatment is unsuccessful; and (4) the existence of a subset of people who will develop GERD symptoms after treatment, although, on average, *H. pylori* treatment does not affect GERD symptoms or severity. Despite the absence of screening strategies, many doctors treat *H. pylori* if it is known to be present (particularly in children and younger adults), even when the patient is asymptomatic. The rationale is that it reduces patient concern and may reduce future gastric cancer risk and that any reduction in risk is likely to be greater in younger patients. However, such practices do not factor in any potential benefits of *H. pylori* colonization. Overall, despite widespread clinical activity in this area, most treatment of asymptomatic *H. pylori* carriage is given without a firm evidence base.

REGIMENS

Although *H. pylori* is susceptible to a wide range of antibiotics in vitro, monotherapy is not usually successful, probably because of inadequate antibiotic delivery to the colonization niche. Failure of monotherapy prompted the development of multidrug regimens, the most successful of which are triple and quadruple combinations. Current regimens consist of a PPI and two or three antimicrobial agents given for 7–14 days **(Table 188-2)**. Research on optimizing drug combinations to increase efficacy continues, and guidelines are likely to change as the field develops and as countries increasingly tailor treatment to suit local antibiotic resistance patterns and economic needs.