

7.1 CIRRHOSIS

AEROMEDICAL CONCERNS: Symptoms relevant to aviation include gastrointestinal hemorrhage, malaise and lethargy, symptoms arising from encephalopathy, peripheral neuropathy, abdominal pain, and Dupuytren's contracture. Osteomalacia arising in cases of primary biliary cirrhosis could theoretically give problems on ejection. Other concerns exist if the cirrhosis is secondary to alcohol use.

WAIVER: Waiver is will be considered only in asymptomatic, stable cases that do not require treatment and do not exhibit any evidence of esophageal varices. The requirements for waiver for alcoholic cirrhosis are found in the section on alcohol abuse.

INFORMATION REQUIRED:

1. Internal medicine or gastroenterology consultation (liver biopsy may be required, and the results submitted with any waiver request if performed)

TREATMENT: The need for therapy is disqualifying.

DISCUSSION: Cirrhosis resulting from Wilson's disease, hemochromatosis, or chronic active hepatitis tends to present in the teens and 20s, while patients with other etiological factors present after the age of 40. The male to female ratio for alcoholic cirrhosis ranges from 2-10:1, in contrast to that for primary biliary cirrhosis where it is 1:9. Alcoholic cirrhosis occurs in 15% of heavy drinkers. In clinically compensated cases, the 5 year survival for those who stop drinking alcohol is 90% compared with 70% for those who continue drinking; for cases who are not clinically compensated, the corresponding figures are 60% and 30%. The incidence of symptoms in cirrhosis is malaise (found in 30-80% of cases), abdominal pain (up to 30%), gastrointestinal hemorrhage (up to 25%), neurological features (<10%), and Dupuytren's contracture (10-30%). Survival rates in progressive cases are reported as >50% at 1 year falling to 10% at 6 years. In primary biliary cirrhosis, pruritus occurs as the first symptom in 80% of cases and jaundice in the remainder. The incidence of collagen diseases in association with primary biliary cirrhosis is 70-80% with joint involvement in over 40%. Bacteriuria is found in 35% of cases, but may be asymptomatic. For primary biliary cirrhosis the average survival is 11.9 years, but may be less than 2 years when serum bilirubin starts to rise quickly.

ICD-9 CODES:

571.2 Alcoholic cirrhosis of the liver

571.6 Biliary Cirrhosis

571.8 Other chronic non-alcoholic liver disease

7.2 CROHN'S DISEASE

AEROMEDICAL CONCERNS: Frequent bowel movements are an inconvenience in flight, particularly when protective clothing is worn. Abdominal pain or hemorrhage can both cause incapacitation in flight. Disqualifying anemia is a common complication. Surgical intervention may be necessary on an emergent basis for obstruction or hemorrhage.

WAIVER: Crohn's Disease is CD, no waiver for all DIF. NOMI does not recommend waivers for Crohn's disease.

INFORMATION REQUIRED: These patients should be referred to medical board (PEB) for disposition.

TREATMENT: The treatment of Crohn's disease is extremely difficult in the operational setting. Bowel rest with hyperalimentation is not an option. High dose steroids with or without antibiotics cannot be undertaken in the majority of deployed situations. Emergent surgical intervention may be required, and the nature of the condition is that it is unpredictably recurrent.

DISCUSSION: The disease is most common in young adults, with a positive family history in 6-15%. There is an association with smoking. Patients present with diarrhea (70-90%), abdominal pain (45-60%), weight loss (65-75%), fever (30-40%), and rectal bleeding (50%). Extraintestinal manifestations include gallstones (13-34%), sacroiliitis (15-18%), aphthous ulceration of the mouth (20%), erythema nodosum (5-10%), and acute arthropathy (6-12%). The risk of carcinoma of the colon is reported to be 3-5%. After the initial episode, there is a 70% chance of relapse in the following 5 years, with most occurring in the first 2 years. Between 70-80% of patients will need at least 1 operation (for failure of medical therapy in 33%, fistula formation in 24%, and intestinal obstruction in 22%). After resection, the risk of recurrence in the following 5 years is 30-70% and 50-85% in the next 10 years. Without operation, the annualized risk for recurrence is 1.6% in those with single site involvement and 4% in those with multiple site disease. The overall mortality is 10-15%.

ICD-9 CODE:

555.9 Crohn's Disease

7.3 DIVERTICULAR DISEASE

AEROMEDICAL CONCERNS: There is a slight risk of in-flight incapacitation, but the symptoms of altered bowel habit, pain, nausea, and flatulence could affect crew performance.

WAIVER: Waivers can be considered for aircrew with diverticulae provided symptoms are minimal and that medication is not required. Surgical intervention may be required to control symptoms, but colectomy for incidentally noted asymptomatic diverticulae should not be undertaken.

INFORMATION REQUIRED:

1. Surgical consultation to exclude malignancy.

TREATMENT: A high fiber diet is compatible with flying.

DISCUSSION: Diverticulosis is rare before the age of 30 but affects 30% of the population by the sixth decade. It is more frequent in the 20s and 30s in patients with Marfan's syndrome. Some 20-25% of patients require surgery on their initial admission to hospital. The 5-year survival is 70%; of the 70% who survive, 40% will do so without symptoms. The disease is one of frequent recurrence. Aeromedical disposition will usually be based on individual assessment of the risk of recurrence and complications.

ICD-9 CODES:

562 Diverticular Disease

562.10 Diverticulosis of Colon

562.11 Diverticulitis of Colon

7.4 GALLSTONES

AEROMEDICAL CONCERNS: There is risk of incapacitation secondary to biliary colic.

WAIVER: Waivers are recommended for aviators and applicants with incidentally noted asymptomatic stones. Aviators with symptoms should be grounded until the stones are removed. Aviators who have undergone extracorporeal shock wave lithotripsy (ESWL) may apply for a waiver after a 6-month period free of biliary colic. **A history of cholecystectomy, either open or laparoscopic, is NCD in all aviation personnel.** No evidence of cholecystitis on ultrasound examination should be present. A nuclear medicine study may be necessary to assure proper function of the gall bladder.

INFORMATION REQUIRED:

1. Confirmation that the patient is symptom-free
2. All radiology and/or nuclear medicine studies
3. GI consult (if applicable)
4. Documentation that bile duct stones are absent

TREATMENT: Patients who have undergone conventional cholecystectomy can normally return to flying duties within 3 months provided that an absence of bile duct stones is demonstrated. Return to flying after endoscopic cholecystectomy may be sooner provided the same criteria can be met. Those who have undergone ESWL may return to unrestricted flying after clearance of all the stone fragments. This may take up to 2 years, although restricted waiver can be recommended sooner. Chemical dissolution of the stones is not recommended for aviators.

DISCUSSION: Gallstones affect between 10 and 20% of the world's population. Cholesterol stones account for 70% of those found in the USA. The prevalence of asymptomatic cholelithiasis in USAF aircrew has been estimated as 2%; this is less than in the general population because of age and gender factors. An annual rate of 1-4% for developing severe medical symptoms requiring eventual cholecystectomy can be anticipated in this group. Overall, it may be appropriate to offer treatment to younger patients with asymptomatic gallstones who, because of their potential for a longer disease course, run a greater risk of developing complications than older patients. However, the total incidence of acute cholecystitis would not be affected by cholecystectomy being carried out on incidentally found, asymptomatic gallstones. While 60% of patients with cholesterol stones and a functioning gall bladder will have a successful chemical dissolution of their stones, the risk of recurrence in the first year after treatment is 10-30%. Chemical dissolution is not therefore recommended. The clearance rate in ESWL for those with 1 stone <20mm diameter at 2/4/8/18/24 months is reported as 45/69/78/95/100%; the corresponding figures for a single stone <30mm diameter are 18/29/51/81/100 and for 2-3 stones 13/17/29/40/67%. About 35% of all patients undergoing

ESWL have 1 or more episodes of biliary colic before the clearance of all stone fragments. About 10-15% of patients with gallstones will also have stones in the common bile duct.

ICD-9 CODES:

574.2 Gallstones

574.0 Gallstones with acute cholecystitis

574.2 Gallstones without cholecystitis

575.0 Acute Cholecystitis

575.11 Chronic Cholecystitis

P51.22 Cholecystectomy

7.5 GASTRITIS/DUODENITIS

AEROMEDICAL CONCERNS: Chronic gastritis may occur in conjunction with other conditions which themselves may be disqualifying for flying duties. The condition can be asymptomatic, or associated with severe pain. Exsanguinating hemorrhage can be a consequence in both symptomatic and asymptomatic patients. Protracted or severe retching may cause Mallory-Weiss tears that can cause severe pain or hemorrhage.

WAIVER: If symptoms are mild and controlled with antacids, waiver recommendation is possible. If the condition is completely healed and the inciting factors have been eliminated, no waiver is required.

INFORMATION REQUIRED:

1. Internal medicine consultation (to exclude pernicious anemia, thyrotoxicosis, diabetes, and iron deficiency anemia)
2. Endoscopy (to exclude ulceration, hiatal hernia, and malignancy)

TREATMENT: Antacids, Carafate, or sucralfate and life style changes such as reduction in smoking and alcohol intake are compatible with flying duties. In many cases, non-steroidal anti-inflammatory agents are associated with subclinical gastritis.

DISCUSSION: Up to 25% of clinically significant upper gastrointestinal bleeding is caused by acute gastritis/duodenitis. Less than 5% require surgery to control the hemorrhage. The test for the presence of parietal cell canaliculi antibodies is positive in 93% of cases of pernicious anemia in patients under 60 years old. Chronic atrophic gastritis increases the risk of pernicious anemia 3-fold in the normal population and the risk of adenocarcinoma of the stomach 20-fold.

ICD-9 CODES:

535.50 Gastritis/Duodenitis

535.3 Acute Gastritis

535.6 Acute Duodenitis

7.6 GILBERT'S SYNDROME

AEROMEDICAL CONCERNS: Symptoms may include abdominal pain, weakness, and malaise, but many cases are asymptomatic.

WAIVER: Waiver is not required for Gilbert's disease provided the patient is asymptomatic.

INFORMATION REQUIRED:

1. Internal medicine consultation (to confirm the diagnosis)

Liver biopsy is not indicated unless there is doubt about the diagnosis.

TREATMENT: N/A.

DISCUSSION: The incidence of Gilbert's syndrome is 1-7% of the population. Up to 50% of cases have a slightly reduced red cell survival time compared to normal. The condition is totally benign and there is no known association with more serious conditions. The condition may result in slower liver detoxification of some therapeutic agents, such as acetaminophen.

ICD-9 CODE:

277.4 Gilbert's Syndrome

7.7 HEPATITIS

AEROMEDICAL CONCERNS: The symptoms of acute and chronic hepatitis relevant to aviation are mainly fatigue, malaise, and nausea; other symptoms may occur which could be distracting in flight. Cases may progress to cirrhosis, which has its own aeromedical significance. Care should be taken to identify whether or not alcohol has contributed to the disease. Public health concerns of hepatitis A transmission should be paramount in the flight surgeon's thought process.

WAIVER: Hepatitis A and Hepatitis E are both enterically transmitted and self-limited. Serologic evidence of prior hepatitis A infection (anti-HAV IgG) is NCD. Acute hepatitis A (positive anti-HAV IgM, symptomatic, elevated liver enzymes - AST, ALT) is grounding. When hepatitis A has resolved (positive anti-HAV IgG, asymptomatic, normal liver enzymes), the member can be cleared to fly. Acute hepatitis E (positive anti-HEV, symptomatic, elevated liver enzymes- AST, ALT) is grounding. When hepatitis E has resolved (asymptomatic, normal liver enzymes), the member can be cleared to fly.

Hepatitis B, Hepatitis C, and Hepatitis D are transmitted parenterally, sexually, and perinatally. They can result in chronic infections and progress to cirrhosis or hepatocellular carcinoma.

Acute hepatitis B (anti-HBcore IgM and/or HBsAg) infection is grounding. Resolved acute hepatitis B (positive anti-HbsAg, normal liver enzymes, asymptomatic) is NCD, and member can be returned to flying without requiring a waiver. Chronic hepatitis B infection with persistent HBsAg and anti-HBcore IgG (asymptomatic carrier state, chronic persistent hepatitis, or chronic active hepatitis) is disqualifying. Waivers are not considered for applicants. Waivers can be recommended for designated members with chronic hepatitis B provided liver enzymes are less than 100 or 2.5 times upper limits of normal, liver biopsy shows only mild inflammation and no evidence of fibrosis, and member is asymptomatic. NAMI evaluation for these individuals is strongly encouraged. Waiver recommendation will be tempered by the possibility of infecting others in uncontrolled situations. Any chronic hepatitis B infection that produces symptomatic relapses (abdominal pain, jaundice) is disqualifying, and members should be referred to PEB for disposition.

Hepatitis D appears only in the presence of HBsAg in acute or chronic hepatitis B. Acute co-infection with hepatitis B and hepatitis D (anti-HDV) is grounding. Resolved acute co-infection (positive anti-HbsAg, normal liver enzymes, asymptomatic) is NCD, and member can be returned to flying without requiring a waiver. Chronic co-infection or superinfection with hepatitis B and hepatitis D is disqualifying with no waiver recommended because of the more frequent and severe symptomatology and greater risk of progression.

Chronic Hepatitis C infection (anti-HCV by EIA and Western blot) is disqualifying. Waivers are not considered for applicants. Waivers can be recommended for designated members with chronic hepatitis C provided liver enzymes are less than 100 mIU or 2.5 times upper limits of normal, liver biopsy shows only mild inflammation and no evidence of fibrosis, qualitative HCV

PCR is negative, and member is asymptomatic. Cases should be referred to NAMI for evaluation.

INFORMATION REQUIRED:

1. Internal medicine or GI consultation
2. Liver function tests
3. Full hepatitis serology
4. Liver biopsy (if chronic hepatitis B or C is present)
5. Ultrasound of right upper quadrant to rule out hepatocellular carcinoma

Waiver continuations for chronic hepatitis B infections require annual submission including:

1. Liver enzymes (ALT, AST)
2. Serum alpha-fetoprotein
3. HbsAg, and anti-HBsAg
4. GI consultation

Waiver continuations for chronic hepatitis C infections require annual submission including:

1. Liver enzymes (ALT, AST)
2. Serum alpha-fetoprotein
3. HCV PCR
4. GI consultation

TREATMENT: Drug therapy is not compatible with continuation on flying duties. However, waivers may be considered if treatment of hepatitis B with interferon-alfa and lamivudine leads to improvement of HBV infection, resolution of HbsAg and/or HBeAg, appearance of anti-HbsAg and/or anti-HbeAg, reduction in liver enzymes, and providing the member remains asymptomatic. Also, waivers may be considered if treatment of hepatitis C with interferon-alfa and ribavirin leads to improvement of HCV infection, negative HCV RNA by PCR, reduction in liver enzymes, and providing the member remains asymptomatic.

DISCUSSION: The majority of those with chronic persistent hepatitis following acute hepatitis do not progress to cirrhosis. In autoimmune chronic active hepatitis, 70% have established cirrhosis at the time of the first biopsy; 75% of the cases are female with the peak incidence at 10-25 and 50-65 years. Up to 50% will have evidence of other autoimmune disorders such as arthritis or thyroiditis. In those who are untreated, there is a 10-year survival rate of 27%; the mortality is highest in the first 2 years, with most patients then progressing to inactive macronodular cirrhosis. Treatment with steroids with or without azathioprine increases the 10 year survival to 63%. Treatment is often withdrawn at 2 years, but there is a 60-70% relapse rate in the following year. For those patients whose hepatitis is a result of infection with hepatitis B virus as an adult, 10% progress to chronic disease; cases arising in childhood progress to chronicity more frequently. Spontaneous recovery after 1 year is rare. Chronic hepatitis B

predisposes to the development of hepatoma, and annual ultrasound evaluation with alpha-fetoprotein levels is necessary for follow up. Hepatitis C infection is recognized with greater frequency since the advent of an appropriate antibody assay. Transmission is parenteral, like hepatitis B. An enteral form of non-A/non-b hepatitis distinct from HCV is also seen. Chronic hepatitis C is not uncommon. Treatment with interferon alfa has not lived up to its earliest billing. Most patients will experience a transient normalization of their liver enzymes, but these values return to abnormal when the treatment is stopped. **Interferon treatment is disqualifying for the duration of the therapy.**

Between 20-50% of cases of hepatitis C progress to chronic disease. Approximately 40% of all patients with acute alcoholic hepatitis will have developed cirrhosis by 5 years; abstinence in the interim does not guarantee protection from developing the condition. Perplexing cases of hepatitis that do not fit typical clinical scenarios may in fact represent occult alcoholic hepatitis.

ICD-9 CODES:

070 Hepatitis

070.1 Hepatitis A

070.3 Hepatitis B

070.35 Chronic Hepatitis B

070.5 Other Viral Hepatitis (including NANB, C)

571.1 Acute Alcoholic Hepatitis

571.4 Chronic Hepatitis

7.8 IRRITABLE BOWEL SYNDROME

AEROMEDICAL CONCERNS: The urgency and frequency of defecation, together with the discomfort felt by many patients, can be distracting in flight and can be inconvenient when living in field conditions. There is a tendency for the syndrome to be associated with depression and anxiety.

WAIVER: In the absence of pathology and psychological factors that would otherwise be disqualifying, the condition may be NCD. Dietary manipulation is the only therapeutic intervention permitted, and the individual must be asymptomatic on diet alone. If other factors are present, waiver can be recommended for the condition provided the symptoms could be controlled.

INFORMATION REQUIRED:

1. Internal medicine or gastroenterology consultation (to exclude bowel pathology)
2. Psychiatry evaluation (when indicated)

TREATMENT: Advice and dietary management are compatible with flying status. Caffeine restriction may be particularly useful.

DISCUSSION: Over 50% of patients are under 35 years old, with the female to male ratio being reported as 2:1. The criteria for making the diagnosis can be met by 6-15% of normal young people.

ICD-9 CODE:

564.1 Irritable Bowel Syndrome

7.9 PEPTIC ULCER DISEASE

AEROMEDICAL CONCERNS: The major concern is the risk of acute hemorrhage or perforation in flight. Chronic blood loss can cause iron deficiency anemia, which can then lead to cardiorespiratory compromise in flight.

WAIVER: Waivers may be recommended for single, uncomplicated ulcers once healed for 4-6 weeks. Waivers for recurrent ulcers are considered on a case-by-case basis. Healing should be documented by endoscopy. Waiver recommendations are readily made, but are particularly appropriate when the condition was in response to a known precipitant such as aspirin or other nonsteroidal anti-inflammatory drug. Maintenance medication, limited to H2 blockers or Carafate QHS, is waiverable.

INFORMATION REQUIRED:

1. Gastroenterology or internal medicine consult
2. Endoscopy report
3. Pathology report (if applicable)

TREATMENT: Treatment with full antiulcer doses of H2 receptor blockers requires grounding because of the risk of mild sedation and drowsiness. Maintenance therapy is CD, waiver possible for QHS doses only. Successful surgical treatment may lead to unrestricted waiver, provided there is no evidence of post-surgical complications.

DISCUSSION: In one study, gastric ulcers and ulcers of the small bowel were found in 21.7% and 8.4% respectively of users of nonsteroidal anti-inflammatory drugs. Between 3 and 5% of gastric ulcers are a result of malignancy. The death rate from acute hemorrhage from duodenal ulcer is 6-10% and is up to 22% in all cases of acute upper gastrointestinal hemorrhage. Mortality is closely tied to age, with increasing mortality with increasing age. The age at which patients present with acute hemorrhage is increasing, and in Europe more than half are over 60 years of age. Bleeding stops spontaneously in 85% of those cases presenting with acute gastrointestinal hemorrhage. Of those who perforate, 10% will do so with no previous history or symptoms. Simple closure of the perforation is associated with a 37% recurrence within 3 years, although rates as disparate as 14 and 70% have been reported. The use of H2 receptor blockers such as cimetidine or ranitidine is associated with response rates of 80-90% within 2-3 months, although healing can be delayed in smokers. Subsequent relapse rates while on maintenance therapy are also higher in smokers than nonsmokers. Without maintenance medication, the relapse rate has been reported to be 50-100% at one year, with 30% of the relapses being asymptomatic. The risk of hemorrhage has been reported as 2.5-2.7% per year in patients not on maintenance medication. The rate increased to 5%/year if there was a history of previous ulcer complications. The annual risk of perforation in similar patients ranges from 0.8-2% in males. There is no evidence that painless ulcers are less likely to bleed or perforate, although one bleed is predictive of others. With surgery, 5-15% of duodenal ulcers will recur after highly selective

vagotomy and 3% will relapse after partial gastrectomy. Recurrence rates are less if the patient abstains from tobacco products and alcohol.

The role of *Helicobacter pylori* in the pathogenesis of peptic ulcer disease is becoming clearer. The bacterium is strongly associated with gastritis, ulcer disease, and recently has been linked to the development of gastric carcinoma. Eradication of the organism is difficult and time consuming, and reinfection is the rule

ICD-9 CODES:

531.9 Gastric Ulcer

532.9 Duodenal Ulcer

7.10 Gastroesophageal Reflux Disease (GERD) & Hiatal Hernia

AEROMEDICAL CONCERNS: Retrosternal pain associated with either condition can be distracting in flight. Exposure to -Gz may exacerbate the symptoms of both esophagitis and hiatus hernia.

WAIVER:

Applicants:

- A. Symptomatic GERD currently requiring medication is CD.
- B. Waiver may be requested if symptoms controlled on stable dose of medication.
- C. Mild symptoms in the past that were controlled with H-2 blockers or proton pump inhibitors (PPI's) but are currently asymptomatic with lifestyle changes alone or only intermittent over the counter (OTC) antacids may be recommended for a waiver. Waiver packages will be considered on an individual basis with proper documentation of prior treatment.
- D. If any of the below '**five warning symptoms of complicated disease**' are present, a waiver is not recommended.
- E. Asymptomatic hiatal hernia that does not require therapy is NCD.
- F. Symptomatic hiatal hernia is CD, waiver not recommended.

Designated:

- A. Individuals with mild GERD (**none of the below criteria of complicated disease listed below**) whose symptoms are controlled with lifestyle modifications or intermittent antacids are PQ.
- B. GERD controlled with H-2 Blockers or PPI's is CD and requires a waiver.
- C. Individuals who have any of the five warning symptoms of GERD should be grounded and worked up as indicated below.
- D. Asymptomatic hiatal hernia that does not require therapy is NCD.
- E. Symptomatic hiatal hernia is CD, waiver may be considered after successful surgical repair.

INFORMATION REQUIRED:

- A. Documentation regarding the presence or absence of the following five warning symptoms:

Warning Symptoms of Complicated GERD

1. Dysphagia or odynophagia
2. Symptoms which are persistent or progressive on therapy
3. Bleeding or iron deficiency
4. Unexplained weight loss
5. Extra-esophageal symptoms (cough, choking, chest pain, asthma, etc.)

Work-up/treatment: (Designated)

1. Evaluation and treatment per the attached algorithm.
2. Individuals should be grounded and not recommended for a waiver until asymptomatic.
3. Individuals with uncomplicated GERD (typical heartburn) or who have mild intermittent dyspepsia may be given a trial of therapy without endoscopic evaluation
4. Surgical repair of hiatal hernia is CD, waiver considered once asymptomatic, 30 days post-op and cleared to full duty by operating surgeon
5. If any of the five warning symptoms mentioned above are present then waiver package must include:
 - a. Endoscopy results
 - b. Gastroenterology consult
 - c. Documentation of symptom relief on therapy

Follow-up endoscopy is generally unnecessary and is restricted to the patient whose symptoms fail to respond to therapy.

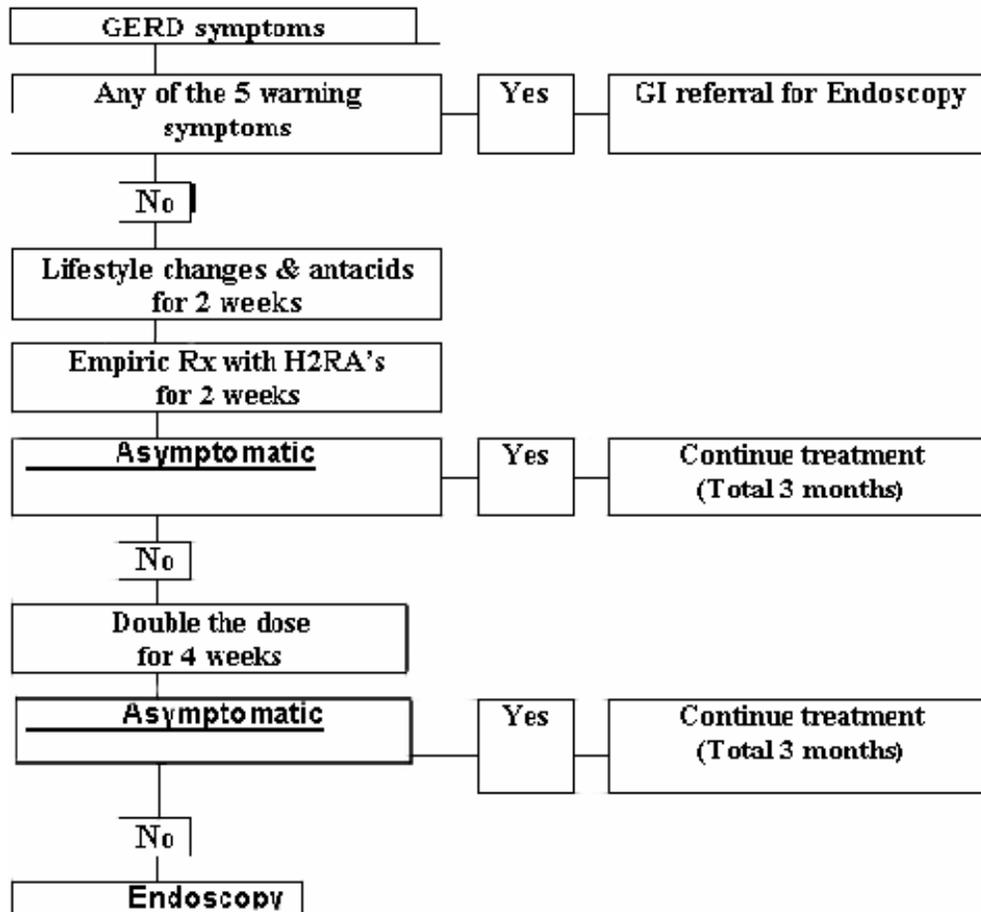
H-2 blockers and PPI's are CD; waiver may be recommended if patient remains asymptomatic on medication.

DISCUSSION: About 18% of the adult U.S. population has heartburn at least once a week and 6% have weekly episodes of acid regurgitation. Heartburn, the primary symptom of GERD, is classically defined as retrosternal burning discomfort which commonly radiates to the pharynx is accentuated by reclining and relieved by food or antacids. As mentioned previously, patients with symptoms of uncomplicated GERD may undergo an initial trial of empirical therapy without endoscopic evaluation. Patients in whom empirical therapy is unsuccessful or who have symptoms suggesting complicated disease should have further diagnostic testing.

Complications of GERD: Barrett's esophagitis and esophageal stricture are CD. Waiver may be recommended on a case by case basis after EGD evidence of improvement, favorable GI consult, and the aviator being asymptomatic.

Lifestyle modification and antacids provide relief in 20% of patients. Patients requiring medication need to receive adequate doses of H-2 blockers prior to proceeding to PPI therapy. Recurrent or persistent symptoms while on regular H-2 blockers should have trial of double dose H-2 blocker therapy. PPI's should be reserved for patients who fail to respond to maximum doses of H-2 blockers and those with endoscopically proven erosive esophagitis.

Proposed changes Gastroesophageal Reflux Disease (GERD)
 Adopted from Pharmacoeconomic Center Update (May 8 1998:Vol 98 Issue 4)



ICD-9 CODES:

- 530.81 Esophageal reflux
- 530.11 Reflux esophagitis
- 530.3 Esophageal stricture
- 530.7 Mallory-Weiss Tear
- 553.3 Hiatal Hernia

7.11 ULCERATIVE COLITIS

AEROMEDICAL CONCERNS: There is a small risk of in-flight incapacitation. Discomfort and fatigue persist between episodes, which can detract from operational performance and availability. Patients may have diarrhea and considerable urgency of defecation. Iritis is a complication in up to 3% of patients.

WAIVER: Applicants with UC are CD, no waiver. Restricted waivers are possible for designated aircrew, but are reserved for mild cases in remission for at least one month. The only waiverable maintenance medications are sulfasalazine (max 2 grams/d), Asacol (up to 2.4 grams daily), and/or steroid enemas. If the disease is treated by partial colectomy, a waiver recommendation can be made one year after surgery, provided the patient is asymptomatic.

INFORMATION REQUIRED:

1. Internal medicine or gastroenterology consultation
2. Recent sigmoidoscopy
3. Documentation of the extent of the disease process

FOLLOW-UP: Annual submission with gastroenterology consultation including flexible sigmoidoscopy report. The appropriate specialist must evaluate joint or ophthalmologic symptoms.

TREATMENT: Sulfasalazine in doses up to 2 g/day, or Asacol up to 2.4 grams daily as maintenance therapy. Higher doses may be required for treatment, but are not recommended for waivers. All other pharmacologic therapy, except for dietary adjuncts such as folic acid, is CD. Patients can be considered for waiver after partial colectomy, but a colostomy or ileostomy is CD, no waiver. **All patients requiring surgery for control of the disease must have a PEB finding them fit for full duty before waiver recommendation will be considered.**

DISCUSSION: Following the initial attack, less than 10% remain in remission for 10 years without treatment. 90% of patients younger than 40 years old relapse within 5 years. Even on maintenance treatment of sulfasalazine and Asacol, there is an annual relapse rate of between 13% and 20%. Side effects of sulfasalazine therapy include headaches and nausea (which can be prevented by using an enteric coated formulation), oligospermia, skin rashes, agranulocytosis, and interference with folate absorption. About 15% of patients cannot tolerate the drug. In patients who present with moderately severe symptoms, the 5 year mortality is up to 20%; those who present with severe symptoms run a 10% chance of dying during the first episode and an up to 40% chance of dying in the first 5 years. Of those presenting with disease of any severity, up to 25% will have required total proctocolectomy within 5 years. After 5 years, the risk of requiring surgery for the colitis is fairly constant at about 8%.

ICD-9 CODES:

556.9 Ulcerative Colitis
556.1 UC controlled with Azulfidine

7.12 EOSINOPHILIC ESOPHAGITIS

DEFINITION: To date no absolute diagnostic criteria exist for Eosinophilic Esophagitis (EE) also called allergic esophagitis and small caliber esophagus. The condition is found primarily in children and young men with dysphagia or food impaction. Endoscopic findings include mucosal rings and or furrows, eosinophilic mucosal plaques, and smooth strictures. See article *Eosinophilic Esophagitis in adults: an emerging problem with unique esophageal features* Gastrointestinal Endoscopy vol 59, no.3, 2004 for more complete description.

AEROMEDICAL CONCERNS: Symptoms relevant to aviation include dysphagia, food impaction, nausea, vomiting, chest and or abdominal pain. The symptoms are of concern primarily due to the potential impact while operating the aircraft or their effects on mission completion.

WAIVER: Waiver will be considered only in asymptomatic, stable cases.

Applicants: Considered Disqualifying / Waiver considered on case by case basis.

Designated: Considered Disqualifying / Waiver recommended if asymptomatic while on or off medications.

FOLLOW-UP: Annual submission with consult from FP, IM or GI unless otherwise specified by code 42.

INFORMATION REQUIRED FOR INITIAL WAIVER:

1. Endoscopy with esophageal biopsy along length of esophagus to confirm presence of Eosinophils. Biopsy of antrum and duodenum should also be obtained to exclude eosinophilic gastritis.
2. Allergy consultation to determine if food allergy is present.
3. IM or GI consultation with treatment recommendations.
4. Waiver considered 3 months after initiation of treatment provided the patient is asymptomatic during that time.

TREATMENT: Options for treatment vary and will be waived separately. Options for treatment include: acid suppression with Proton Pump Inhibitors (PPI), esophageal dilation, elimination diets, topical steroids, non-sedating approved antihistamines and cromolyn. Repeat treatment is often needed due to a high relapse rate (50%). Should significant symptoms recur after initial waiver, the member should be grounded locally until a response to therapy is clearly demonstrated. The waiver will terminate if multiple relapses are noted within one year as this is unexpected.

ICD-9 CODES:

530.19 Other Esophagitis