**Appendix 1 : International Classification of Diseases, Ninth Revision, Clinical Modification**

Patients with cirrhosis and complications of portal hypertension

571.0 571.1, 571.2, 571.3, 571.40-571.49, 571.5, 571.6, 571.8, 571.9

456.0, 456.20-456.21

572.0

576.0

572.2, 572.4

571 Chronic liver disease and cirrhosis

571.0 Alcoholic fatty liver

571.1 Acute alcoholic hepatitis, acute alcoholic liver disease

571.2 Alcoholic cirrhosis of liver, florid cirrhosis, Laennec's cirrhosis (alcoholic)

571.3 Alcoholic liver damage, unspecified

571.4 Chronic hepatitis viral hepatitis (acute) (chronic) (070.0-070.9)

571.40 Chronic hepatitis, unspecified

571.41 Chronic persistent hepatitis

571.42 Autoimmune hepatitis

571.49 Other Chronic hepatitis: active aggressive, recurrent hepatitis

571.5 Cirrhosis of liver without mention of alcohol: Cirrhosis of liver: NOS, cryptogenic, macronodular, micronodular, posthepatitic, postnecrotic, healed yellow atrophy (liver), Portal cirrhosis Code first, if applicable, viral hepatitis (acute) (chronic)

571.6 Biliary cirrhosis: Chronic destructive, cholangitis, cirrhosis: Cholangitic, cholestatic.

571.8 Other chronic nonalcoholic liver disease: Chronic yellow atrophy (liver), fatty liver, without mention of alcohol

571.9 Unspecified chronic liver disease without mention of alcohol

572 Liver abscess and sequelae of chronic liver disease

572.0 Abscess of liver, amebic liver abscess

572.2 Hepatic encephalopathy Hepatic coma Hepatocerebral intoxication Portal-systemic encephalopathy hepatic coma associated with viral hepatitis

572.4 Hepatorenal syndrome, that following delivery (674.8)

576.0 Postcholecystectomy syndrome

456.0 Esophageal varices with bleeding

456.1 Esophageal varices without mention of bleeding

456.2 Esophageal varices in diseases classified elsewhere

**Appendix 2 : Selected Quality Indicators**

A.Ascites:

1) If patients with ascites are admitted to the hospital for evaluation and management of symptoms related to ascites or encephalopathy , then they should receive a diagnostic paracentesis during the index hospitalization (Grade II-3, class I, level C).

2) If patients undergo paracentesis and have no clinically evident fibrinolysis or disseminated intravascular coagulation, then they should not receive fresh frozen plasma or platelet replacement before paracentesis unless the international normalized ratio > 2.5 and platelet count < 100,000/ mm3 (Grade II-3, class III, level B).

3) If patients receive an abdominal paracentesis at the time of ascites diagnosis, then they should receive the following ascitic fluid tests: cell count and differential, total protein, albumin, and culture/sensitivity (Grade II-3, class I, level C).

4) If patients with known portal hypertension–related ascites receive an abdominal paracentesis during hospitalization, then they should have ascitic fluid cell count and differential performed (Grade II-3, class I, level C).

5) If patients with ascites have serum sodium of 110 mEq/L or less, then they should be managed with discontinuation of diuretics and fluid restriction (Grade III, class IIb, level B).

6) If hospitalized patients with ascites have an ascitic fluid polymorphonuclear count of more than 250 cells/mm3, then they should receive empiric antibiotics within 6 hours of the test results (Grade I, class I, level A).

7) If patients have ascitic fluid total protein less than 1.1 gm/dL and serum bilirubin of more than 2.5 mg/dL, then they should receive prophylactic antibiotics (Grade I, class I, level A).

8) If patients have clinically apparent ascites and normal renal function, then they should be managed with both salt restriction and diuretics (including a combination of spironolactone and loop diuretics) (Grade I, class I, level A).

B. Gastrointestinal bleeding:

9) If patients with cirrhosis present with upper gastrointestinal (GI) bleeding, then they should receive upper endoscopy within 24 hours of presentation (Grade I, class I, level A).

10) If patients with cirrhosis are found to have bleeding esophageal varices, then they should receive endoscopic variceal ligation (EVL) or sclerotherapy at the time of index endoscopy (Grade I, class I, level A).

11) If patients are admitted with or develop gastrointestinal (GI) bleeding as an inpatient, then they should receive antibiotics within 24 hours of admission or presentation (Grade I, class I, level A).

12) If patients with cirrhosis are admitted with or develop suspected variceal bleeding, then they should receive somatostatin or analogues (somatostatin, octreotide, terlipressin) within 12 hours of presentation (Grade I, class IIa, level A)

13) If patients with cirrhosis and variceal bleeding experience a second episode of bleeding within 72 hours of initial endoscopic hemostasis, then they should receive repeat endoscopy or transjugular intrahepatic portosystemic shunt (Grade II-2, class IIa, level B).

 3. Evaluation for liver transplantation:

14) If patients with cirrhosis have a Model for End-Stage Liver Disease (MELD) score of 15 or more or a score of less than 15 and one of the following conditions: new onset ascites, variceal bleeding, hepatic encephalopathy, spontaneous bacterial peritonitis, hepatopulmonary syndrome, hepatocellular cancer or hepatorenal syndrome), then they should be evaluated for liver transplantation. (Grade III, class I, level C)

4. Hepatic encephalopathy:

15) If patients with cirrhosis have hepatic encephalopathy, then a search for reversible factors should be documented in the chart.(Grade III, class I, level B)

16) If patients with cirrhosis have persistent hepatic encephalopathy, then they should receive oral disaccharides or rifaximin. (Grade I, class IIa, level A)