**Supplemental Table 1: Diagnosis and procedure codes for cirrhosis and decompensation.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Severity** | **Code** | **Code Type** | **Description** |
| Cirrhosis | 571.2 | ICD-9 Dx | Alcoholic cirrhosis of liver |
| 571.5 | ICD-9 Dx | Cirrhosis of liver without mention of alcohol |
| Compensated cirrhosis | With a cirrhosis code, but with no code indicating decompensation events  |
| Decompensated cirrhosis | 456.0 | ICD-9 Dx | Esophageal varices with bleeding |
| 456.20 | ICD-9 Dx | Esophageal varices in diseases classified elsewhere, with bleeding |
| 456.6 | ICD-9 Dx | Vulval/rectal varices |
| 348.3x  | ICD-9 Dx | Encephalopathy, not elsewhere classified |
| 789.5 | ICD-9 Dx | Ascites |
| 789.59 | ICD-9 Dx | Other ascites |
| 572.2 | ICD-9 Dx | Hepatic encephalopathy |
| 572.3 | ICD-9 Dx | Portal hypertension |
| 572.4 | ICD-9 Dx | Hepatorenal syndrome |
| 782.4 | ICD-9 Dx | Jaundice, unspecified, not of newborn |
| 530.82 | ICD-9 Dx | Esophageal hemorrhage |
| 578.x | ICD-9 Dx | Gastrointestinal hemorrhage (rule: with gastric varices (ICD10 I86.4) or esophageal varices (456.x) |
| 567.23 | ICD-9 Dx | Spontaneous bacterial peritonitis |
| 276.1 | ICD-9 Dx | Hyponatremia |
| 273.8 | ICD-9 Dx | Hypoalbuminemia |
| 286 | ICD-9 Dx | Coagulopathy but without codes for anticoagulation |
| Pleural effusion (511.1, 511.8, 511.81, 511.9) and ascites (789.59)  | ICD-9 Dx | Hepatic hydrothorax |
| 49080, 49081, 49082, 49083, 54.91- Percutaneous abdominal drainage | CPT, ICD-9 proc codes | Paracentesis |
| 43204, 42.33 | CPT, ICD-9 proc codes | Esophagoscopy, rigid or flexible, with injection sclerosis of esophageal varices, Endoscopic excision or destruction of lesion or tissue of esophagus |
| 42.91 | ICD-9 proc codes | Ligation of esophageal varices |
| 44.91 | ICD-9 proc codes | Ligation of gastric varices |
| 96.06 | ICD-9 proc codes | Insertion of Sengstaken tube |
| 37182, 37183, 39.1  | CPT, ICD-9 proc codes | TIPS (Intra-abdominal venous shunt, Insertion of transvenous intrahepatic portosystemic shunt, Revision of transvenous intrahepatic portosystemic shunt) |
| 37140 | CPT codes | Venous anastomosis, open; portocaval |
| 37160 | CPT codes | Venous anastomosis, open; caval-mesenteric |
| 37180 | CPT codes | Venous anastomosis, open; splenorenal, proximal |
| 37181 | CPT codes | Venous anastomosis, open; splenorenal, distal (selective decompression of esophagogastric varices, any technique) |
| 43205 | CPT codes | Esophagoscopy, rigid or flexible; with band ligation of esophageal varices |
| 43243 | CPT codes | Upper gastrointestinal endoscopy including esophagus, stomach, and either the duodenum and/or jejunum as appropriate; with injection sclerosis |
| 43244 | CPT codes | Upper gastrointestinal endoscopy including esophagus, stomach, and either the duodenum and/or jejunum as appropriate; with band ligation of esophageal/gastric varices |
| 43400 | CPT codes | Ligation, direct, esophageal varices |
| 43401 | CPT codes | Transection of esophagus with repair, for esophageal varices |

**Suppl Table 2: Frequency of recommended tests during long-term follow-up**

**(A) By gender and (B) By age**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **A** | **Overall long-term monitoring cohort****(n=45,435)** | **Male****(n=26,196)** | **Female****(n=19,239)** | ***P-*value** |
| **Clinic visits** q 6 months q 12 months | 29.2%58.8% | 29.2%58.9% | 29.1%58.8% | 0.850.83 |
| **ALT** q 6 months q 12 months | 11.9%40.3% | 13.1%41.9% | 10.4%38.1% | <0.001<0.001 |
| **HBV DNA** q 6 months q 12 months | 6.4%28.0% | 6.7%28.8% | 5.9%27.0% | 0.002<0.001 |
| **ALT and HBV DNA**  q 6 months q 12 months | 5.1%25.1% | 5.4%26.0% | 4.7%23.9% | <0.001<0.001 |
| **CBC** (cirrhosis only) q 6 months q 12 months | 7.3%30.7% | 8.1%31.5% | 6.3%29.6% | <0.001<0.001 |
| **PT/INR** (cirrhosis only) q 6 months q 12 months | 1.6%9.2% | 1.8%9.9% | 1.2%8.4% | <0.001<0.001 |
| **Creatinine** (cirrhosis only) q 6 months q 12 months | 8.0%31.5% | 9.3%33.7% | 6.4%28.4% | <0.001<0.001 |
| **EGD** (cirrhosis only) q 36 months | 12.0% | 12.3% | 11.5% | 0.017 |

Abbreviations: ALT, alanine aminotransferase; CBC, complete blood count; EGD, esophagogastroduodenoscopy; GI/ID, gastroenterology/infectious diseases; HBV DNA, hepatitis B virus DNA; INR, international normalized ratio; PT, prothrombin time.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **B** | **Overall long-term monitoring cohort****(n=45,435)** | **Age < 45****(n=22,368)** | **Age 45-64****(n=21,013)** | **Age ≥ 65****(n=2,054)** | ***P-*value** |
| **Clinic visits** q 6 months q 12 months | 29.2%58.8% | 23.3%54.9% | 33.4%61.8% | 50.2%71.7% | <0.001<0.001 |
| **ALT** q 6 months q 12 months | 11.9%41.9% | 10.6%38.6% | 13.7%43.2% | 8.3%29.1% | <0.001<0.001 |
| **HBV DNA** q 6 months q 12 months | 6.4%28.0% | 7.1%31.1% | 6.0%26.6% | 2.2%9.2% | <0.001<0.001 |
| **ALT and HBV DNA**  q 6 months q 12 months | 5.1%25.1% | 5.7%27.9% | 4.9%23.7% | 1.9%8.6% | <0.001<0.001 |
| **CBC** (cirrhosis only) q 6 months q 12 months | 7.3%30.7% | 5.6%28.0% | 9.1%33.9% | 8.1%27.8% | <0.001<0.001 |
| **PT/INR** (cirrhosis only) q 6 months q 12 months | 1.6%9.2% | 1.1%7.8% | 2.0%10.6% | 2.4%10.4% | <0.001<0.001 |
| **Creatinine** (cirrhosis only) q 6 months q 12 months | 8.0%31.5% | 6.2%27.7% | 10.0%35.9% | 7.5%27.2% | <0.001<0.001 |
| **EGD** (cirrhosis only) q 36 months | 12.0% | 6.7% | 16.4% | 23.2% | <0.001 |

Abbreviations: ALT, alanine aminotransferase; CBC, complete blood count; EGD, esophagogastroduodenoscopy; GI/ID, gastroenterology/infectious diseases; HBV DNA, hepatitis B virus DNA; INR, international normalized ratio; PT, prothrombin time.

**Suppl Fig 1. Percentage of patients with recommended testing during initial evaluation period.\***

**(A) By gender and (B) By age**

**\*\*Denotes *P-*value <0.01**



\*Initial evaluation: Within 12 months of index CHB diagnosis date

AFP, alpha-fetoprotein; ALT, alanine aminotransferase; anti-HAV, hepatitis A virus antibody; anti-HBe, hepatitis B e antibody; anti-HCV, hepatitis C virus antibody; anti-HDV, hepatitis delta virus antibody; CBC, complete blood count; GI/ID, gastroenterologist or infectious disease; HAV, hepatitis A virus; HBeAg, hepatitis B e antigen; HIV, human immunodeficiency virus; INR, international normalized ratio; PT, prothrombin time.

**Suppl Fig. 2. Adherence to hepatocellular carcinoma surveillance**

**(A) By gender and (B) By age**

***P*<0.001for all comparisons**

