AAVBC

AMERICAN ACADEMY OF VALUE BASED CARE

Liver Cancer

Quick Reference Guide

2026

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1 CLINICAL SNAPSHOT

Definition: Hepatocellular carcinoma (HCC) is the most common primary malignancy of the liver (~75–85% of primary liver cancers) and arises predominantly from hepatocytes in the setting of chronic liver disease.[1] Cirrhosis is present in >80% of cases;[1] the dual diagnostic challenge of HCC and the failing liver must both be managed simultaneously. Liver cancer incidence in the US has tripled over the past four decades,[2] driven by the convergence of three epidemics: HCV (birth cohort 1945–1965, now Medicare-aged), MASLD/NASH fueled by obesity and type 2 diabetes, and historically undertreated HBV.[3]

ICD-10 Codes:

Primary tumor: **C22.0** (liver cell carcinoma — most common; preferred over C22.8/C22.9), **C22.1** (intrahepatic cholangiocarcinoma), **C22.2–C22.4** (rare histologies), **C22.7** (other specified), **C22.8** (unspecified type — **AVOID**), **C22.9** (not specified as primary or secondary — AVOID, commonly overused). Secondary/metastatic liver involvement: **C78.7** (secondary malignant neoplasm of liver and intrahepatic bile duct). **Status code: Z85.05** (personal history — only after complete eradication and end of active surveillance). Concurrent **comorbidities to code: K74.60** (cirrhosis), **B18.2** (HCV), **B18.0/B18.1** (HBV), **K75.81/K76.0** (NASH/MASLD), **E11.x** (T2DM), **K76.6** (portal hypertension), **Z94.4** (liver transplant status), **K76.82** (hepatic encephalopathy).[4,5,6]

Prevalence and Burden: Approximately **42,340 new cases** of primary liver and intrahepatic bile duct cancer projected in the US in 2026 (27,790 men; 14,550 women), with **30,980 deaths**.[2] **5-year survival across all stages remains below 20%**; most patients are diagnosed at intermediate or advanced BCLC stages when curative options are foreclosed.[7] **Incidence is rising most rapidly in adults ≥60 years** and in rural areas (5.7% annual increase).[8] Black patients have 50% higher incidence and are diagnosed at more advanced BCLC stages (74% at stage C/D vs 57% in White patients).[8] **HCV effect on HCC risk strengthens with age**: HR 22.51 at age ≥70 vs HR 5.72 at age 50.[3] Surveillance utilization remains ~24% across all settings; only ~16% achieve guideline-concordant semiannual surveillance.[9,25]

HCC/RAF V28 Mapping

ICD-10 CODE(S)	HCC CATEGORY (V28)	RAF (CNA)	DOCUMENTATION REQUIREMENT
C22.0 Hepatocellular carcinoma (primary)	HCC 22 — Bladder, Colorectal and other Cancers (incl. hepatocellular carcinoma)[10]	0.363	Active **primary liver malignancy** confirmed by **imaging** (LI-RADS LR-5) or biopsy;[11] document 'hepatocellular carcinoma' explicitly to support C22.0 — preferred over C22.8/C22.9

ICD-10 CODE(S)	HCC CATEGORY (V28)	RAF (CNA)	DOCUMENTATION REQUIREMENT
C22.1–C22.8 (other primary histologies)	HCC 22— Bladder, Colorectal and other Cancers (incl. hepatocellular carcinoma)[10]	0.363	Document **histologic subtype** from pathology — intrahepatic cholangiocarcinoma (C22.1), hepatoblastoma (C22.2), angiosarcoma (C22.3), other sarcomas (C22.4), other specified carcinomas (C22.7), or primary unspecified-type **(C22.8 — AVOID)**
C22.9 (not specified as primary or secondary)	HCC 22— Bladder, Colorectal and other Cancers[10]	0.363	Commonly **overused** when documentation says only 'liver cancer'
Liver transplant status (Z94.4)	HCC 62 — Liver Transplant Status	0.376	Use for patients with a history of liver transplant **without current complications**;Z94.4 is frequently undercoded; Document history of liver transplant and Routine follow-up without complications
C78.7 — Secondary malignant neoplasm of liver	HCC 17 — Cancer Metastatic to Lung/Liver/Brain[10]	4.209	**Liver metastases from a known non-hepatic primary**; document 'metastatic [primary site] cancer to the liver' and code both primary site and C78.7

ABBREVIATIONS: BCLC = Barcelona Clinic Liver Cancer; CIRRH = cirrhosis; CMS = Centers for Medicare & Medicaid Services; CNA = Community Non-Dual Eligible, Aged; HCC = Hierarchical Condition Category; HCV = hepatitis C virus; LI-RADS = Liver Imaging Reporting and Data System; PPV = positive predictive value; RAF = Risk Adjustment Factor; V28 = CMS-HCC Model Version 28

*Annual value illustrative at AAVBC representative MA base rate ~$10,402/year, applied at CMS-HCC 2024 model normalization factor 1.067 for PY2026; actual plan payment varies by county and contract

RAF values represent the Community Non-Dual Eligible Aged (CNA) coefficient from the 2026 CMS-HCC model; values vary across patient populations based on eligibility and care setting

Risk-Adjusted Care Resources per Patient/Year

RAF weight × MA base rate = estimated annual care coordination support per documented HCC

Hepatocellular carcinoma
~$3,776
HCC 22 · RAF 0.363 · per active patient/year

Secondary malignant neoplasm of liver
~$43,783
HCC 17 · RAF 4.209 · per active patient/year

RAF coefficients are CNA segment, 2026 CMS-HCC Model V28. The impact of this condition varies across patient populations, particularly in individuals with disability, dual eligibility, or those receiving care in institutional settings

AAVBC PERSPECTIVE

Hepatocellular carcinoma presents a surveillance challenge that is fundamentally different from most cancers managed in primary care. More than 80% of cases arise in the setting of cirrhosis, yet the majority of at-risk patients remain unrecognized, not because they avoid care, but because their underlying liver disease is metabolic, post-viral, or simply undocumented.[7] *The result is that* ***fewer than one in four eligible patients receives any HCC surveillance, and fewer than 16% achieve the guideline-recommended semiannual ultrasound with AFP.*** *The critical reframe for primary care is that early HCC is asymptomatic. A patient with compensated cirrhosis who feels well is not a low-risk patient, they are the intended surveillance target. The practice change is straightforward: identify every patient with cirrhosis of any etiology, chronic HBV, or MASLD with FIB-4 ≥3.25, establish semiannual ultrasound and AFP, and maintain that surveillance in post-SVR hepatitis C patients with cirrhosis regardless of viral clearance. AAVBC encourages clinicians to initiate the right timely, protocol-driven HCC surveillance for the right patients.*

2 RECOGNITION AND DIAGNOSIS

Clinical Diagnostic Workups Covered Under Medicare Part B (high-risk populations)

TEST	COVERAGE	FREQUENCY	CPT CODE	CLINICAL INDICATION
Abdominal ultrasound + AFP — high-risk surveillance[11]	Covered when medically indicated for cirrhosis, chronic hepatitis; no NCD-specific frequency limit[11]	Every 6 months in high-risk patients (cirrhosis any etiology; select HBV without cirrhosis)[11]	76700 + 82105	AASLD v2023 surveillance achieved **94% sensitivity** and **99.6% NPV** in a prospective multicenter validation;[12] ultrasound + **AFP yields 63% sensitivity** vs 51% for ultrasound alone[11]

TEST	COVERAGE	FREQUENCY	CPT CODE	CLINICAL INDICATION
Multiphasic CT abdomen with contrast[11]	Covered for diagnostic workup of suspicious lesions[13]	Per LI-RADS algorithm for lesions ≥10 mm	74160/74177	For lesions **≥10 mm** in high-risk patients — LI-RADS criteria yield **near-100% specificity for HCC**; biopsy not always required when LR-5 criteria met[11]
Multiphasic MRI abdomen[11]	Covered for diagnostic workup; preferred per ACR appropriateness[13]	Per LI-RADS algorithm	74182/74183	**Preferred** for HCC characterization per ACR; multiphasic protocol with arterial, portal-venous, and delayed phases per LI-RADS[11,13]
Liver biopsy (percutaneous)[11]	Covered when noninvasive criteria not met[11]	Diagnostic procedure	47000	When **LI-RADS criteria not met**; or when evaluating for **systemic therapy**; ~7% of radiographically diagnosed HCC has alternative histology[11]
FIB-4/liver elastography (risk stratification)[14]	Elastography covered when medically indicated; FIB-4 calculated from routine labs[13]	At-risk evaluation for MASLD/chronic liver disease	91200 (elastography)	**FIB-4 ≥3.25** or **liver stiffness ≥20 kPa** identifies patients exceeding **1%** annual HCC incidence threshold where surveillance is cost-effective[14]
Hepatitis C screening[11]	Covered as preventive service for adults 18–79 (one-time)[11]	Once per lifetime (adults 18–79)	G0472	HCV is leading US HCC etiology; post-SVR cirrhotics retain **elevated HCC risk for ≥10 years**

TEST	COVERAGE	FREQUENCY	CPT CODE	CLINICAL INDICATION
Hepatitis B screening[11]	Covered as preventive service (HCPCS G0499)[11]	Per CDC risk-based screening	G0499	Most **common** global HCC cause; HCC can occur **without cirrhosis in HBV**; antiviral therapy reduces but does not eliminate risk[11]
Advance care planning (AWV)[14]	Covered under Part B; no copay during AWV[14]	Annually + when goals change	99497, 99498	Important given **5-year survival <20%** across stages and prevalent advanced-stage presentation[7]

ABBREVIATIONS: AASLD = American Association for the Study of Liver Diseases; AFP = alpha-fetoprotein; AGA = American Gastroenterological Association; AWV = annual wellness visit; ACR = American College of Radiology; CDC = Centers for Disease Control; CT = computed tomography; FIB-4 = Fibrosis-4 Index; HCV = hepatitis C virus; HCC = hepatocellular carcinoma (clinical entity); LI-RADS = Liver Imaging Reporting and Data System; MASLD = metabolic dysfunction-associated steatotic liver disease; MRI = magnetic resonance imaging; NCD = National Coverage Determination; NPV = negative predictive value; SVR = sustained virologic response

Subtle Early Signs in Older Adults

SIGN/SYMPTOM	CLINICAL SIGNIFICANCE
Newly identified cirrhosis[15]	**17.6% of patients** diagnosed with HCC had **unrecognized cirrhosis** prior to cancer diagnosis[15] — enroll in surveillance immediately. **Cirrhotic** patients have **~2% annual HCC incidence**; surveillance is cost-effective above 1% annual incidence[16]
Post-SVR HCV with cirrhosis[3,9]	**HCC risk strengthens with age** — HR 22.51 at ≥70 vs 5.72 at 50;[3] AGA 2026 explicitly states surveillance continues indefinitely in post-SVR cirrhotics.[9] 'Cured HCV' perception frequently lapses surveillance in Medicare populations
MASLD with elevated FIB-4 (≥3.25) or liver stiffness (≥20 kPa)[17]	**20–40% of MASLD**-related HCC occurs **without** cirrhosis — patients **lack a routine surveillance** indication under cirrhosis-only guidelines. **FIB-4** in primary care is the first-step risk-stratification tool[18]
Persistent vague right upper-quadrant pain or weight loss in chronic liver disease[19]	Late-onset HCC symptoms are **vague** and often **misattributed** to underlying liver disease; in cirrhotic patients with new symptoms — **escalate imaging to multiphasic CT or MRI**

SIGN/SYMPTOM	CLINICAL SIGNIFICANCE
Decompensation in previously stable cirrhosis (new ascites, encephalopathy, variceal bleed)[7]	**New hepatic decompensation** in a stable cirrhotic patient warrants HCC evaluation; the new clinical event may signal a vascular invasion or rapidly progressing tumor[7]
Rising AFP trend during surveillance[11]	**AFP cutoff 20 ng/mL**: ~60% sensitivity, ~90% specificity for HCC;[11] **AFP ≥400 ng/mL** qualifies for **ramucirumab** second-line systemic therapy per ASCO 2024.[20] Document AFP trend **at each** surveillance visit

ABBREVIATIONS: AFP = alpha-fetoprotein; AGA = American Gastroenterological Association; CT = computed tomography; FIB-4 = Fibrosis-4 Index; HCV = hepatitis C virus; HR = hazard ratio; MASLD = metabolic dysfunction-associated steatotic liver disease; MRI = magnetic resonance imaging; SVR = sustained virologic response

Geriatric Risk Factors

FACTOR	RISK SIGNAL	NOTES
Cirrhosis (any etiology)	**~2%** annual HCC incidence; present in >80% of HCC cases[7]	**Strongest single risk factor**; document etiology (HCV B18.2; HBV B18.0/B18.1; alcohol K70.30/K70.31; MASLD K75.81; primary biliary, autoimmune); CTP class drives treatment eligibility
Chronic HCV with cirrhosis (post-SVR)	HR **22.51** at **age ≥70**; HR 5.72 at age 50[3]	Post-SVR cirrhotic patients require **indefinite semiannual surveillance**
Chronic HBV	Most **common** global HCC cause; HCC can occur **without** cirrhosis	Antiviral therapy reduces but **does not** eliminate risk; some HBV patients without cirrhosis are surveillance candidates[11]
MASLD/NASH	Up to **50%** of MASLD-HCC occurs without cirrhosis;[21] fastest-growing HCC etiology	**FIB-4 ≥3.25 or LSM ≥20 kPa** identifies surveillance-eligible **non-cirrhotic** patients[17]
Type 2 diabetes mellitus	Independent HCC risk factor (HR ~**1.80**)[22]	**Nearly doubles risk even without obesity**; complicates systemic therapy monitoring
Black race	**50%** higher HCC incidence than White patients[8]	**Proactive surveillance enrollment** and system advocacy required; address access disparities
Age ≥60 with chronic liver disease	HCC incidence rising **most rapidly in adults ≥60 years**[8]	Lower threshold for surveillance enrollment; **CGA preferred** over ECOG alone for treatment decisions

FACTOR	RISK SIGNAL	NOTES
Rural/safety-net setting	**5.7%** annual incidence increase in rural areas approaching urban rates[8]	EHR-based surveillance reminders, FIB-4 in primary care, multidisciplinary tumor board access **close the gap**

ABBREVIATIONS: AGA = American Gastroenterological Association; BCLC = Barcelona Clinic Liver Cancer; CGA = comprehensive geriatric assessment; CTP = Child-Turcotte-Pugh; ECOG = Eastern Cooperative Oncology Group; FIB-4 = Fibrosis-4 Index; HCV = hepatitis C virus; HBV = hepatitis B virus; HR = hazard ratio; LSM = liver stiffness measurement; MASLD = metabolic dysfunction-associated steatotic liver disease; NASH = nonalcoholic steatohepatitis; OR = odds ratio; PCP = primary care provider; SVR = sustained virologic response

Diagnostic Thresholds — LI-RADS and Surveillance

TEST/MARKER	DIAGNOSTIC CRITERION	NOTES
Ultrasound + AFP (surveillance)	63% sensitivity; AASLD v2023 algorithm achieved 94% sensitivity and 99.6% NPV in multicenter validation[11]	**Every 6 months** in cirrhotic and select non-cirrhotic high-risk patients;[11] ultrasound has **reduced** sensitivity in **obese** MASLD patients with severe steatosis
AFP (single value)	**≥20 ng/mL**: ~60% sensitivity, ~90% specificity;[11] ≥400 ng/mL qualifies for ramucirumab second-line systemic therapy	Not a screening tool alone; **pair with ultrasound**; document trend over surveillance visits
Multiphasic CT or MRI (LI-RADS)	**LR-5 criteria yield near-100%** specificity for HCC in high-risk patients; biopsy not required when met[11]	For lesions **≥1 cm** in high-risk patients; **<1 cm** → repeat US + AFP in 3–6 months[11]
FIB-4 (primary care risk stratification)	**FIB-4 ≥3.25 OR** liver **stiffness ≥20 kPa** exceeds the 1% annual HCC incidence threshold[17]	Calculated from **age, AST, ALT, platelets**; first-step PCP risk stratification in MASLD
BCLC staging	Stage 0 (very early) → A (early) → B (intermediate) → C (advanced) → D (terminal)	BCLC determines **treatment allocation**; requires CTP class, AFP, MELD, portal hypertension status, performance status[23]
Child-Turcotte-Pugh (CTP) class	CTP A (score 5–6) B (7–9) C (10–15)	**Drives treatment eligibility**; CTP C generally contraindicates systemic therapy[11]

TEST/MARKER	DIAGNOSTIC CRITERION	NOTES

ABBREVIATIONS: AASLD = American Association for the Study of Liver Diseases; AFP = alpha-fetoprotein; ALT = alanine aminotransferase; AST = aspartate aminotransferase; BCLC = Barcelona Clinic Liver Cancer; CT = computed tomography; CTP = Child-Turcotte-Pugh; FIB-4 = Fibrosis-4 Index; HCC = hepatocellular carcinoma (clinical entity); LI-RADS = Liver Imaging Reporting and Data System; MELD = Model for End-Stage Liver Disease; MRI = magnetic resonance imaging; NPV = negative predictive value; PCP = primary care provider; US = ultrasound

Cardinal Symptoms

CLINICAL CLUE	WHY IT MATTERS	NEXT DIAGNOSTIC STEP
Post-SVR HCV cirrhosis with no documented surveillance enrollment	HCC risk persists **≥10 years** post-SVR; HR 22.51 at **≥70 years**[3,24]	Enroll in **6-month US + AFP surveillance** per AGA 2026;[24] document indefinitely on problem list
MASLD with diabetes, obesity, or both — without cirrhosis	Up to **50% of MASLD-HCC** occurs **without cirrhosis**;[22] cirrhosis-only surveillance criteria miss this group	Calculate FIB-4 from routine labs; **if ≥3.25 → elastography and consider surveillance enrollment** per AGA 2026[24]
New ascites, encephalopathy, or variceal bleed in previously stable cirrhotic	New decompensation in stable cirrhosis may signal a vascular invasion or rapid tumor progression[7]	Multiphasic CT or MRI per LI-RADS criteria within **1–2 weeks**[11]
Newly identified cirrhosis without prior surveillance	**17.6%** of HCC patients had unrecognized cirrhosis at the time of cancer diagnosis[15]	Initiate 6-month US + AFP immediately;[11] problem-list cirrhosis with etiology and CTP class
Liver transplant recipient with a new liver lesion	Checkpoint inhibitors are contraindicated post-transplant;[11] tacrolimus/cyclosporine drug interactions complicate systemic therapy	Multiphasic MRI per LI-RADS;[11] if HCC confirmed → sorafenib or lenvatinib (NOT checkpoint inhibitors)[11,12]

ABBREVIATIONS: AGA = American Gastroenterological Association; AFP = alpha-fetoprotein; CT = computed tomography; CTP = Child-Turcotte-Pugh; FIB-4 = Fibrosis-4 Index; HCV = hepatitis C virus; HR = hazard ratio; HCC = hepatocellular carcinoma; LI-RADS = Liver Imaging Reporting and Data System; MASLD = metabolic dysfunction-associated steatotic liver disease; MRI = magnetic resonance imaging; SVR = sustained virologic response; US = ultrasound

Common Oversights

OVERSIGHT/SHORTCUT	WHY IT MATTERS — WHAT TO DO INSTEAD
Assuming all cirrhotic patients are enrolled in surveillance[25]	Only **~24% of eligible patients** receive any **surveillance**; ~16% achieve guideline-concordant semiannual surveillance. Surveillance enrollment is an **active clinical action** — confirm at every PCP visit
Discontinuing surveillance in post-SVR HCV patients with cirrhosis[24]	Post-SVR cirrhotics retain HCC risk for ≥10 years; HR 22.51 at age ≥70. **Continue surveillance indefinitely** per AGA 2026
Not screening MASLD patients without cirrhosis for HCC risk[26]	**20–40% of MASLD-HCC** occurs **without** cirrhosis; FIB-4 ≥3.25 or LSM ≥20 kPa identifies surveillance candidates per AGA 2026[24]
Initiating atezolizumab + bevacizumab without variceal assessment[20]	IMbrave150 protocol **requires EGD before bevacizumab** to assess varices and bleeding risk; document the EGD result in the chart before therapy initiation
Considering checkpoint inhibitors in a post-transplant HCC patient[11]	Checkpoint inhibitors are **contraindicated** post-liver transplant due to acute rejection risk; use **sorafenib or lenvatinib instead**; coordinate with hepatology and transplant team

ABBREVIATIONS: AGA = American Gastroenterological Association; EGD = esophagogastroduodenoscopy; FIB-4 = Fibrosis-4 Index; HCV = hepatitis C virus; HCC = Hierarchical Condition Category (coding)/hepatocellular carcinoma (clinical); HR = hazard ratio; LSM = liver stiffness measurement; MASLD = metabolic dysfunction-associated steatotic liver disease; PCP = primary care provider; PPV = positive predictive value; RAF = Risk Adjustment Factor; SVR = sustained virologic response

Key Differentials in Elderly

PRESENTATION	DIFFERENTIAL	KEY TESTS
Liver lesion in cirrhotic patient[11]	Hepatocellular carcinoma **vs**. regenerative nodule; dysplastic nodule; cholangiocarcinoma; hemangioma; focal nodular hyperplasia; metastasis	**<1 cm:** Repeat US + AFP in 3–6 months **≥1 cm**: Multiphasic CT or MRI per LI-RADS; LI-RADS 5 → proceed to treatment planning without biopsy LI-RADS 3–4 → multidisciplinary discussion ± biopsy within **2 weeks**
Liver lesion in non-cirrhotic MASLD patient	MASLD-HCC (20–40% of MASLD-HCC without cirrhosis);[26] hepatic adenoma; FNH; metastasis; cholangiocarcinoma	**<1 cm:** Repeat US + AFP in 3–6 months; FIB-4 and elastography for fibrosis staging. **≥1 cm**: Multiphasic MRI; LI-RADS 5 → noninvasive HCC diagnosis; LI-RADS 3–4 → multidisciplinary review ± biopsy. FIB-4 ≥3.25 or LSM ≥20 kPa identifies surveillance candidacy **regardless** of lesion finding[11]

PRESENTATION	DIFFERENTIAL	KEY TESTS
Decompensation in stable cirrhosis	HCC with vascular invasion; portal vein thrombosis; bleeding varices; spontaneous bacterial peritonitis[7]	**Multiphasic CT or MRI**; AFP; ascitic fluid analysis if applicable
RUQ pain + weight loss in chronic HCV patient[2]	HCC **vs.** cholangiocarcinoma; benign biliary disease; metastatic disease[1]	**Multiphasic CT or MRI**; AFP trend[11]
Liver lesion in post-transplant patient[11]	Recurrent HCC **vs.** new primary HCC **vs.** metastatic disease **vs.** lymphoproliferative disease; biliary stricture	Multiphasic MRI; AFP; coordinate with **transplant hepatology**

ABBREVIATIONS: AFP = alpha-fetoprotein; CT = computed tomography; FIB-4 = Fibrosis-4 Index; FNH = focal nodular hyperplasia; HCC = hepatocellular carcinoma; HCV = hepatitis C virus; LI-RADS = Liver Imaging Reporting and Data System; MASLD = metabolic dysfunction-associated steatotic liver disease; MRI = magnetic resonance imaging; RUQ = right upper quadrant

Comorbidity Screening

CONDITION	PREVALENCE/ASSOCIATION	SCREENING APPROACH
Cirrhosis (K74.6x)	Present in **>80% of HCC cases**; ~2% annual HCC incidence[7]	FIB-4 calculated **annually** for at-risk patients;[24] document etiology and CTP class; enroll in surveillance if confirmed cirrhotic
Chronic HCV (B18.2)	Leading US HCC etiology; **HR 22.51 at age ≥70 vs 5.72 at 50**[3]	One-time HCV screening per Medicare; treat to SVR; continue **surveillance indefinitely in cirrhotics**[24]
Chronic HBV (B18.0/ B18.1)	Most **common** global HCC cause; HCC can occur without cirrhosis[11]	**Risk-based screening** per CDC;[11] antiviral therapy reduces but does not eliminate risk; some HBV patients without cirrhosis are surveillance candidates
MASLD/NASH (K75.81/ K76.0)	**Fastest**-growing HCC etiology; 20–40% of MASLD-HCC occurs without cirrhosis[26]	FIB-4 in primary care; elastography if FIB-4 elevated; surveillance enrollment if FIB-4 ≥3.25 or LSM ≥20 kPa[24,27]
Type 2 diabetes mellitus (E11.x)	Independent HCC risk factor (HR ~1.80)[11]	**HbA1c** trend; coordinate **glycemic management** during bevacizumab-based therapy

CONDITION	PREVALENCE/ASSOCIATION	SCREENING APPROACH
Portal hypertension (K76.6)	**Contraindicates** resection in most cases;[11] requires EGD before atezolizumab + bevacizumab[20]	**EGD for variceal screening before bevacizumab-based therapy**; document varices grade and prophylaxis plan
Liver transplant status (Z94.4)	**Immunosuppression contraindicates checkpoint inhibitors**;[11] frequently undercoded	Maintain Z94.4 on active problem list; coordinate immunosuppression management with transplant team; **checkpoint inhibitors are contraindicated**

ABBREVIATIONS: AGA = American Gastroenterological Association; CDC = Centers for Disease Control; CTP = Child-Turcotte-Pugh; EGD = esophagogastroduodenoscopy; FIB-4 = Fibrosis-4 Index; HbA1c = glycated hemoglobin; HBV = hepatitis B virus; HCV = hepatitis C virus; HR = hazard ratio; LSM = liver stiffness measurement; MASLD = metabolic dysfunction-associated steatotic liver disease; NASH = nonalcoholic steatohepatitis; SVR = sustained virologic response

BCLC Staging — Treatment Options

BCLC STAGE/ SITUATION	CRITERIA	PREFERRED TREATMENT
Stage 0 (very early)	Single tumor <2 cm; CTP A; ECOG 0[23]	**Resection** (preferred) or **ablation** (RFA/microwave); **highest** likelihood of cure[11,23]
Stage A (early)	Single tumor or up to 3 tumors ≤3 cm; CTP A/B selected[23]	Resection, transplantation (UNOS criteria — **single 2–5 cm** or **2–3 tumors each 1–3 cm**, AFP ≤1000 ng/mL), or ablation[23]
Stage B (intermediate)	Multiple tumors confined to liver; liver function relatively preserved	**TACE** (preferred), TARE/Y-90, SBRT, ablation;[16] **goal: control disease**, downstage for transplant
Stage C (advanced)	Vascular invasion or extrahepatic spread; CTP A; ECOG 0–1[23]	First-line systemic therapy — **immunotherapy combinations preferred**; see Therapy Escalation table
Stage D (terminal)	CTP C or ECOG PS 3–4[23]	Best supportive/**palliative** care;[23] goals-of-care discussion; hospice when goals align

ABBREVIATIONS: AFP = alpha-fetoprotein; BCLC = Barcelona Clinic Liver Cancer; CTP = Child-Turcotte-Pugh; ECOG = Eastern Cooperative Oncology Group; PS = performance status; RFA = radiofrequency ablation; SBRT = stereotactic body radiation; TACE = transarterial chemoembolization; TARE = transarterial radioembolization; UNOS = United Network for Organ Sharing

Populations At Risk

POPULATION	CLINICAL ACTION/KEY CONSIDERATIONS
MASLD/NASH patients[11]	**HCC** can occur **without cirrhosis**; obtain FIB-4 in primary care; enroll in surveillance if FIB-4 ≥3.25 or LSM ≥20 kPa
Patients with unrecognized cirrhosis[11]	**Actively screen with FIB-4**; pursue elastography if elevated; document cirrhosis diagnosis to trigger surveillance eligibility
Black and African American patients[11]	**Higher HCC incidence and lower surveillance rates**; prioritize proactive enrollment and follow-up
Rural and low-SES patient[11]	**Access barriers increase surveillance gaps**; consider telehealth hepatology referral; flag for care coordination
Elderly patients ≥65[11]	Surveillance benefit **persists with age**; assess functional status; avoid undertreatment based on age alone
Post-SVR HCV patients[11]	SVR reduces but **does not eliminate** risk; continue indefinite surveillance if cirrhosis is present

ABBREVIATIONS: FIB-4 = Fibrosis-4 index; HCC = hepatocellular carcinoma; HCV = hepatitis C virus; LSM = liver stiffness measurement; MASLD = metabolic-associated steatotic liver disease; NASH = nonalcoholic steatohepatitis; SES = socioeconomic status; SVR = sustained virologic response

3 MEAT DOCUMENTATION ESSENTIALS

HCC documentation translates a chronic-disease + cancer dual diagnostic challenge into a record that supports continuity, quality measurement, and appropriate risk adjustment. The most common documentation failures are coding 'liver cancer' as **C22.9(**Malignant neoplasm of liver) without specifying primary vs secondary, failing to code concurrent comorbidities (cirrhosis, HCV/HBV, portal hypertension, transplant status), and using Z85.05(Personal history of malignant neoplasm of liver) during active surveillance or treatment.[6] A complete MEAT documentation ties each element to clinical action, monitoring AFP and surveillance imaging; evaluating LI-RADS, biopsy, and liver-function markers; assessing the active diagnosis with subsite and BCLC stage; treating with documented regimen, supportive care, and continuity through surveillance.

Case vignette: A 73-year-old patient with chronic HCV (treated to SVR in 2019) and known compensated cirrhosis presents for routine follow-up. Surveillance US 1 week ago noted a 2.8 cm hepatic lesion. PCP orders AFP (412 ng/mL) and multiphasic MRI (4 days later) showing an LR-5 lesion in segment VI with arterial hyperenhancement and washout — diagnostic for HCC by LI-RADS criteria without biopsy. CTP class A; ECOG 1; G8 score 13 → CGA placed per ASCO 2023.[14]

MONITOR: AFP 412 ng/mL (5/14), trending up from **18 ng/mL** (1/14); surveillance ultrasound confirmed **2.8 cm lesion** (5/7). Liver function stable: **CTP A (score 5), MELD 9, ALT 42, AST 38, bilirubin 1.1, albumin 3.6, INR 1.1.** Performance status **ECOG 1; G8 = 13**, CGA initiated per ASCO 2023 guidelines. Surveillance adherence confirmed: 6-month US + AFP × 2 cycles since SVR documented (5/7 vs prior 11/14).

EVALUATE: Multiphasic MRI (5/11): **2.8 cm LR-5 lesion segment VI** with arterial hyperenhancement and portal-venous washout, diagnostic of HCC per LI-RADS criteria; biopsy not required. Staging imaging negative for extrahepatic disease and portal vein thrombosis. **BCLC stage A (single tumor 2–5 cm, CTP A, ECOG 0–1)**; resection or transplantation candidate. EGD (5/13): small esophageal varices, no high-risk features; nadolol prophylaxis initiated.

ASSESS: Hepatocellular carcinoma, **BCLC stage A**, on chronic HCV (post-SVR) with compensated cirrhosis: **C22.0** (hepatocellular carcinoma, primary). Associated comorbidities: **K74.60** (cirrhosis of liver, unspecified); **B18.2** (chronic hepatitis C without delta-agent, continues post-SVR); **K76.6** (portal hypertension); **E11.9** (T2DM, independent HCC risk factor).

TREAT: Multidisciplinary tumor board **recommends resection** as preferred approach for **BCLC A with CTP A**; **transplant evaluation documented as backup**. Nadolol continued for variceal prophylaxis; nutritional support initiated; hepatitis C surveillance continues per AGA 2026 guidance. Referrals placed: surgical oncology, hepatology, geriatric oncology, registered dietitian, palliative care. Advance care planning: CPT 99497 documented at AWV; surrogate decision-maker named; code status discussed.

Clinical Documentation Elements

- **Specify histology and primary vs secondary:** Document 'hepatocellular carcinoma' **(C22.0)** explicitly rather than 'liver cancer' or **C22.9**; for liver metastases, document 'metastatic [primary site] cancer to the liver' and code both **C78.7** and the primary site
- **Code concurrent liver comorbidities:** Cirrhosis **K74.6x** (specify etiology when known); HCV **B18.2** (continues post-SVR in cirrhotics); HBV **B18.0/B18.1**; MASLD **K75.81/K76.0**; portal hypertension **K76.6**; hepatic encephalopathy **K76.82**; transplant status **Z94.4** (frequently undercoded)
- **Document BCLC stage and CTP class:** Both required for treatment allocation per NCCN v1.2026; document BCLC 0/A/B/C/D and CTP A/B/C with score; MELD when relevant
- **Active vs personal history:** Use **C22.x** while disease is active OR under surveillance OR with known residual disease. **Z85.05** (personal history) **applies ONLY after** complete eradication AND end of active surveillance
- **Document performance and frailty status:** Record ECOG and G8 (if obtained), with CGA findings when triggered. Comorbidity burden — not chronological age — is the true predictor of in-hospital mortality

Reframing Common Documentation Shortcuts

INSTEAD OF…	DOCUMENT…
'Liver cancer'	'Hepatocellular carcinoma, BCLC stage A, in chronic HCV post-SVR cirrhosis (CTP A) — **C22.0** + **K74.60** + **B18.2**

INSTEAD OF…	DOCUMENT…
'Liver mass'	'Hepatocellular carcinoma diagnosed by multiphasic MRI on [date], LI-RADS LR-5, 2.8 cm lesion in segment VI — **C22.0'**
'Metastatic liver cancer'	'Metastatic colorectal adenocarcinoma to the liver (4 lesions confirmed on MRI [date]) — **C18.x** (primary) + **C78.7**' — RAF differential ~3.7× when both codes documented
'History of HCC' (in patient on active surveillance)	'Active hepatocellular carcinoma, BCLC A, on active surveillance post-resection [date] — **C22.0**' (**Z85.05** applies ONLY after complete eradication and end of active surveillance)
'On chemo'	'BCLC stage C HCC on first-line atezolizumab + bevacizumab per IMbrave150; cycle 4 of 21-day cycle administered [date]; tolerating with grade 1 hypertension and grade 0 proteinuria; EGD pre-treatment showed grade I varices on nadolol prophylaxis'
'Cirrhosis'	'Compensated cirrhosis of liver, unspecified etiology, CTP A (score 5), MELD 9 — K74.60'; document etiology when known (HCV → **B18.2**; HBV → **B18.0/B18.1;** alcohol → **K70.3x**; MASLD → **K75.81**)

ABBREVIATIONS: AGA = American Gastroenterological Association; BCLC = Barcelona Clinic Liver Cancer; CTP = Child-Turcotte-Pugh; HCV = hepatitis C virus; HCC = hepatocellular carcinoma; HBV = hepatitis B virus; LI-RADS = Liver Imaging Reporting and Data System; MASLD = metabolic dysfunction-associated steatotic liver disease; MELD = Model for End-Stage Liver Disease; MRI = magnetic resonance imaging; RAF = Risk Adjustment Factor; SVR = sustained virologic response

DOCUMENTATION REMINDER: GOOD DOCUMENTATION IS COMPREHENSIVE CODING

*Every active hepatocellular carcinoma encounter requires four elements: **a diagnosis** that specifies histology and primary versus secondary distinction (**C22.0** for primary HCC; **C78.7** for metastatic disease to the liver); **current** BCLC **stage** and CTP **class**; the active **management plan** (resection, ablation, transplantation, TACE, TARE, SBRT, or systemic therapy); and all concurrent liver-disease comorbidities — cirrhosis with etiology, HCV status (**B18.2** even post-SVR), portal hypertension **(K76.6)**, and **transplant status (Z94.4)** when applicable. Incomplete documentation of any of these elements creates gaps in risk stratification, care coordination, and accurate reimbursement.*

4 TREATMENT AND REFERRAL QUICK GUIDE

Treatment in hepatocellular carcinoma is driven by BCLC stage and underlying liver function (CTP class).[11,23] **BCLC operates on two axes simultaneously: tumor burden and liver functional reserve.** This dual-axis framework means that two patients with identical tumor characteristics may be candidates for entirely different treatment pathways based on CTP class alone. NCCN HCC v1.2026 organizes treatment selection across resection, transplantation, ablation, TACE/TARE, SBRT, and immunotherapy-based systemic therapy according to BCLC stage and biomarker status.[11] The primary care role centers on surveillance enrollment (closing the ~24% utilization gap),[25] coordination of cirrhosis-associated complications (portal hypertension, varices, ascites, encephalopathy), continuity through chronic disease management, and HCV/HBV oversight. **Shared decision-making is anchored by objective measurement**: AFP trend, LI-RADS category, CTP class, MELD score, and CGA in older adults.[11,14]

Therapy Escalation Criteria

TRIGGER	ACTION*
High-risk patient without surveillance enrollment (cirrhosis, post-SVR cirrhotic, HBV, MASLD with FIB-4 ≥3.25)[11,24]	Enroll in **6-month US** + **AFP surveillance**;[11] document indefinitely on problem list; surveillance is an active clinical action not a passive default
LR-3 lesion (intermediate) on surveillance imaging	Repeat **US + AFP in 3–6 months**;[11] multiphasic CT or MRI if growth or risk factors evolve
LR-4 or LR-5 lesion on multiphasic imaging	Multidisciplinary tumor board within **1–2 weeks;**[11] coordinate hepatology, surgical oncology, transplantation evaluation, IR
BCLC 0 (very early) or A (early)	Resection, ablation, or transplantation (UNOS criteria — **single 2–5 cm or 2–3 tumors each 1–3 cm**, AFP ≤1000 ng/mL)[11,23]
BCLC B (intermediate)[23]	**TACE** (preferred), TARE/Y-90, SBRT, ablation; **goal: control disease**, downstage for transplant
BCLC C (advanced) — CTP A, ECOG 0–1[20]	**First-line systemic immunotherapy**: atezolizumab + bevacizumab (IMbrave150 — mOS 19.2 vs 13.4 mo);[20] durvalumab + tremelimumab (HIMALAYA — mOS 16.4 vs 13.8 mo) if **high bleeding risk**; ipilimumab + nivolumab (CheckMate-9DW)
Post-liver-transplant HCC	**Sorafenib or lenvatinib** (NOT checkpoint inhibitors — contraindicated due to acute rejection risk);[11] coordinate calcineurin inhibitor (tacrolimus, cyclosporine) drug interactions

TRIGGER	ACTION*
Disease progression on first-line systemic therapy	Second-line per prior regimen — sorafenib, lenvatinib, regorafenib, cabozantinib, ramucirumab **(if AFP ≥400 ng/mL)**, nivolumab, pembrolizumab[28]
BCLC D (terminal — CTP C or ECOG 3–4)[23]	Best supportive/palliative care; goals-of-care discussion at diagnosis; **hospice when goals align**

ABBREVIATIONS: AFP = alpha-fetoprotein; BCLC = Barcelona Clinic Liver Cancer; CTP = Child-Turcotte-Pugh; ECOG = Eastern Cooperative Oncology Group; HCC = hepatocellular carcinoma; IR = interventional radiology; LI-RADS = Liver Imaging Reporting and Data System; mOS = median overall survival; SBRT = stereotactic body radiation; TACE = transarterial chemoembolization; TARE = transarterial radioembolization; UNOS = United Network for Organ Sharing; US = ultrasound
***Consult FDA labels for the most up-to-date dosage information, contraindications, and drug-drug interactions**

NCCN-Aligned First-Line Systemic Therapy (BCLC C)

REGIMEN	EVIDENCE/OUTCOME*	KEY NOTES
Atezolizumab + bevacizumab (preferred)[12]	IMbrave150: mOS 19.2 vs 13.4 months sorafenib (HR 0.66); category 1	Requires **EGD for variceal assessment** before bevacizumab initiation; HTN, proteinuria, bleeding risk monitoring
Durvalumab + tremelimumab (HIMALAYA preferred if high bleeding risk)[12]	HIMALAYA: mOS 16.4 vs 13.8 months sorafenib; category 1	Single-dose tremelimumab + ongoing durvalumab; **no anti-VEGF** — preferred when **bevacizumab contraindicated**
Ipilimumab + nivolumab[12]	CheckMate-9DW: category 1; 29% required high-dose steroids; **higher** early-death risk in **first 6 months**	Counsel on **immune-related AE risk**; coordinate corticosteroid management
Durvalumab monotherapy[12]	HIMALAYA: **noninferior** to sorafenib; category 1; **lower** toxicity than combinations	Option when c**ombination therapy contraindicated**
Lenvatinib (TKI)[12]	REFLECT: **noninferior** to sorafenib; ORR 18.8%; category 1	Option when **immunotherapy contraindicated**; **HTN, fatigue, proteinuria monitoring**
Sorafenib (TKI)[12]	SHARP: mOS 10.7 vs 7.9 months placebo; category 1	Use when **immunotherapy contraindicated** (post-transplant); hand-foot skin reaction, diarrhea, fatigue[11,12]

REGIMEN	EVIDENCE/OUTCOME*	KEY NOTES
Tislelizumab[12]	RATIONALE-301: **noninferior** to sorafenib; category 1	Checkpoint inhibitor option

ABBREVIATIONS: AE = adverse event; BCLC = Barcelona Clinic Liver Cancer; EGD = esophagogastroduodenoscopy; HR = hazard ratio; HTN = hypertension; mOS = median overall survival; ORR = objective response rate; TKI = tyrosine kinase inhibitor; VEGF = vascular endothelial growth factor ***Consult FDA labels for the most up-to-date dosage information, contraindications, and drug-drug interactions**

Non-Pharmacologic Care and Supportive Interventions

INTERVENTION	TARGET/RECOMMENDATION	NOTES
6-month US + AFP surveillance (high-risk patients)[11]	Every **6 months** in cirrhotic and select non-cirrhotic high-risk patients	Only **~24%** of eligible patients currently receive surveillance;[25] PCP enrollment closes the gap
FIB-4 risk stratification (MASLD)[23,24]	Calculated from **age, AST, ALT, platelets**; **FIB-4 ≥3.25** → consider surveillance	**First-step** PCP risk-stratification tool; followed by **elastography** if **elevated**
Variceal screening EGD before bevacizumab[20]	Required **before** atezolizumab + bevacizumab initiation per IMbrave150 protocol	Document varices **grade and prophylaxis plan**; band ligation or nonselective beta-blockers for high-risk varices[7,20]
Alcohol abstinence[11]	Complete cessation **regardless** of cirrhosis etiology	**Alcohol accelerates** fibrosis progression and increases HCC risk independently; counsel at every encounter
Multidisciplinary tumor board[11]	For all **new** HCC diagnoses and treatment-decision points	Hepatology, surgical oncology, IR, medical oncology, radiation oncology, transplant evaluation
Comprehensive geriatric assessment[14]	**G8 ≤14 → CGA**; CGA-guided management reduces grade 3–5 toxicity (RR 0.74, 95% CI 0.64–0.86) per GAP70+[29]	No HCC-specific guideline mandates CGA — actionable VBC gap;[14] CGA preferred over ECOG alone in **elderly** HCC patients
Hepatotoxic drug avoidance	Review all medications, supplements, and OTC agents at **each** visit	**Avoid NSAIDs, herbal supplements** (kava, comfrey), and dose-adjust acetaminophen to **≤2 g/day** in cirrhotics[30]
Advance care planning[14]	Document advance directives, surrogate, code status **during AWV**	CPT 99497/99498 covered with no copay during AWV; 5-year survival **<20%**[7]

INTERVENTION	TARGET/RECOMMENDATION	NOTES

ABBREVIATIONS: AASLD = American Association for the Study of Liver Diseases; AGA = American Gastroenterological Association; AFP = alpha-fetoprotein; ALT = alanine aminotransferase; AST = aspartate aminotransferase; AWV = annual wellness visit; CGA = comprehensive geriatric assessment; CI = confidence interval; DAA = direct-acting antiviral; ECOG = Eastern Cooperative Oncology Group; EGD = esophagogastroduodenoscopy; FIB-4 = Fibrosis-4 Index; G8 = Geriatric 8; HCV = hepatitis C virus; HCC = hepatocellular carcinoma; IR = interventional radiology; MASLD = metabolic dysfunction-associated steatotic liver disease; RR = relative risk; SVR = sustained virologic response; US = ultrasound; VBC = value-based care

Medication Safety and Key Interactions

DRUG/CLASS	INTERACTION/TOXICITY*	CLINICAL ACTION
Atezolizumab + bevacizumab[20]	Variceal bleeding risk (requires EGD pre-treatment);[12] hypertension, proteinuria, immune-related AEs (colitis, pneumonitis, hepatitis, endocrinopathies)	**EGD before initiation**; monitor BP **each** cycle; coordinate steroid management for **immune-related** AEs
Durvalumab + tremelimumab[20]	**Immune-related** AEs; no anti-VEGF — preferred when bevacizumab contraindicated	**Single-dose tremelimumab + ongoing durvalumab**; immune-related AE surveillance
Ipilimumab + nivolumab[20]	**High** rate of severe immune-related AEs	Counsel on higher **early-death risk in first 6 months**; aggressive immune-related AE surveillance
Sorafenib/Lenvatinib (TKIs)[20]	Hand-foot skin reaction, fatigue, diarrhea, HTN, proteinuria; QTc prolongation (lenvatinib)	Used in **post-transplant HCC** where checkpoint inhibitors are contraindicated;[11] coordinate with hepatology/oncology
Checkpoint inhibitors in post-transplant patients[11]	**CONTRAINDICATED** — acute rejection risk	Use **sorafenib or lenvatinib instead**; monitor calcineurin inhibitor drug interactions with tacrolimus or cyclosporine[11]
Calcineurin inhibitors (post-transplant) + TKIs[11]	Drug-drug interactions affect both **immunosuppression and HCC therapy levels**	Coordinate with transplant pharmacy; monitor tacrolimus/cyclosporine trough levels

DRUG/CLASS	INTERACTION/TOXICITY*	CLINICAL ACTION

ABBREVIATIONS: AE = adverse event; AFP = alpha-fetoprotein; BP = blood pressure; HCC = hepatocellular carcinoma; HTN = hypertension; QTc = corrected QT interval; TKI = tyrosine kinase inhibitor; VEGF = vascular endothelial growth factor ***Consult FDA labels for the most up-to-date dosage information, contraindications, and drug-drug interactions**

When to Refer

CRITERION	SPECIALIST	URGENCY
Variceal bleeding; severe hepatic encephalopathy; SBP suspected[1]	Emergency department/GI/ hepatology	Emergent
LR-4 or LR-5 lesion on multiphasic imaging[11]	Multidisciplinary tumor board	**Urgent** — within 1–2 weeks
Rising AFP during surveillance[11]	Hepatology + multiphasic imaging	**Urgent** — within 1–2 weeks
Newly identified cirrhosis[15]	Hepatology + surveillance enrollment	Routine — within 4 weeks
MASLD with FIB-4 ≥3.25[24]	Hepatology for elastography and possible surveillance enrollment	Routine — within 4 weeks
Confirmed HCC (BCLC stage 0/A)[11]	Surgical oncology/transplant evaluation	**Urgent** — within 1 week
BCLC stage C — systemic therapy candidate[20]	Medical oncology + variceal screening EGD	**Urgent** — within 1–2 weeks
G8 ≤14 in older adult with HCC[14]	Geriatric oncology/ comprehensive geriatric assessment	**Urgent** — before next treatment
End-of-life trajectory, hospice eligible[14,23]	Hospice (Medicare Hospice Benefit)	When goals align

ABBREVIATIONS: AFP = alpha-fetoprotein; BCLC = Barcelona Clinic Liver Cancer; EGD = esophagogastroduodenoscopy; FIB-4 = Fibrosis-4 Index; G8 = Geriatric 8; HCC = hepatocellular carcinoma; LI-RADS = Liver Imaging Reporting and Data System; MASLD = metabolic dysfunction-associated steatotic liver disease; SBP = spontaneous bacterial peritonitis

Follow-Up Timing

STAGE/CATEGORY	FREQUENCY	LABS/MONITORING
High-risk surveillance (cirrhosis, post-SVR cirrhotic, HBV, MASLD with FIB-4 ≥3.25)[11]	Every 6 months	US + **AFP at each visit**; CBC, CMP, INR, LFTs annually; FIB-4 trend
Post-resection or ablation HCC[11]	Multiphasic CT or MRI + AFP every 3 months × 2 years, then every 6 months × 3 years, then annually	**AFP at each visit**; CTP class reassessed; CBC, CMP, INR, LFTs
Post-transplant HCC[11]	Per transplant protocol	Calcineurin inhibitor trough levels; multiphasic MRI; AFP
BCLC B on TACE/TARE[23]	Multiphasic imaging every 2–3 months during active therapy[23]	**AFP each cycle**; CTP class reassessed at each restaging[11]
BCLC C on systemic therapy[20]	Multiphasic imaging every 8–12 weeks; symptom-based reassessment	**AFP each cycle**; CBC, CMP, LFTs; immune-related AE surveillance; ECOG; **G8 in older adults**
BCLC D — best supportive care[23]	Per palliative care plan; symptom-driven follow-up[14,23]	Goals-of-care reviews; symptom management; hospice referral when goals align

ABBREVIATIONS: AFP = alpha-fetoprotein; AE = adverse event; BCLC = Barcelona Clinic Liver Cancer; CBC = complete blood count; CMP = comprehensive metabolic panel; CT = computed tomography; CTP = Child-Turcotte-Pugh; ECOG = Eastern Cooperative Oncology Group; FIB-4 = Fibrosis-4 Index; G8 = Geriatric 8; HBV = hepatitis B virus; HCC = hepatocellular carcinoma; INR = international normalized ratio; LFTs = liver function tests; MASLD = metabolic dysfunction-associated steatotic liver disease; MRI = magnetic resonance imaging; SVR = sustained virologic response; TACE = transarterial chemoembolization; TARE = transarterial radioembolization; US = ultrasound

Comorbidity Management — Primary Care Role

COMORBIDITY	APPROACH	CAUTION
Cirrhosis (K74.6x)	Document etiology and CTP class; enroll in **6-month US + AFP surveillance**[11]	Surveillance utilization is only **~24%** across all settings;[25] closing this gap is the highest-yield PCP action
Chronic HCV (B18.2)[24]	Treat to SVR with DAAs; continue surveillance indefinitely in cirrhotics	**'Cured HCV' perception frequently lapses surveillance**; HCV effect on **HCC risk strengthens with age** (HR 22.51 at ≥70)[3]

COMORBIDITY	APPROACH	CAUTION
Chronic HBV (B18.0/ B18.1)[11]	**Antiviral** therapy per hepatology; risk-based HCC surveillance per AASLD	HCC can occur without cirrhosis in HBV; some HBV patients without cirrhosis are surveillance candidates
MASLD/NASH (K75.81/ K76.0)[24,26]	**FIB-4** in **primary** care;[27] elastography if FIB-4 elevated; surveillance enrollment if FIB-4 ≥3.25 or LSM ≥20 kPa per AGA 2026[24]	**20–40%** of MASLD-HCC occurs without cirrhosis;[26] cirrhosis-only criteria miss this group
Portal hypertension (K76.6)[11]	EGD for variceal screening; prophylactic NSBB or banding for high-risk varices[7]	**Contraindicates resection** in most cases; required EGD before atezolizumab + bevacizumab[11]
Liver transplant status (Z94.4)[11]	Maintain on active problem list; coordinate **immunosuppression** with transplant team	Frequently **undercoded** despite high impact on treatment selection and risk score; checkpoint inhibitors contraindicated
Type 2 diabetes (E11.x)[11]	**HbA1c** trend; coordinate glycemic management during bevacizumab-based therapy[20]	Independent HCC risk factor (HR ~1.80) even without obesity[11]
Hepatic encephalopathy (K76.82)	**Lactulose, rifaximin per AASLD**;[7] document on active problem list as it indicates advanced liver dysfunction	Affects treatment tolerance and functional assessment

ABBREVIATIONS: AASLD = American Association for the Study of Liver Diseases; AGA = American Gastroenterological Association; AFP = alpha-fetoprotein; DAA = direct-acting antiviral; EGD = esophagogastroduodenoscopy; FIB-4 = Fibrosis-4 Index; HbA1c = glycated hemoglobin; HBV = hepatitis B virus; HCV = hepatitis C virus; HR = hazard ratio; LSM = liver stiffness measurement; MASLD = metabolic dysfunction-associated steatotic liver disease; NSBB = nonselective beta-blocker; SVR = sustained virologic response; US = ultrasound

Cost-Smart Options

BRAND (EST. COST)	GENERIC/ALTERNATIVE (EST. COST)	MO. SAVINGS	COST-SMART TIP
Brand DAAs for HCV (Epclusa ~$35,700/mo)	Generic sofosbuvir/velpatasvir (~$9,100/mo); glecaprevir/ pibrentasvir[31]	~$26,500	DAA therapy is upstream HCC prevention; **high cost-effectiveness** for the Medicare HCV cohort

BRAND (EST. COST)	GENERIC/ALTERNATIVE (EST. COST)	MO. SAVINGS	COST-SMART TIP
Brand atezolizumab + bevacizumab (~$15,000+/mo, 1L systemic)	**No biosimilar substitution** standard yet for **atezolizumab**; bevacizumab biosimilars available	Variable	Bevacizumab biosimilars may reduce cost; biosimilar substitution per FDA guidance[12]
Conventional fractionated radiotherapy	SBRT (**cost-effective** alternative for BCLC B)	Variable	**SBRT preferred** for selected **BCLC B** patients[16]
Brand TKIs — Nexavar/sorafenib (~$14,800/mo); lenvatinib	Generic sorafenib (~$2,750/mo with discount)[32]	~$12,000	Use TKIs in post-transplant patients where checkpoint inhibitors are contraindicated[11]

ABBREVIATIONS: 1L = first-line; BCLC = Barcelona Clinic Liver Cancer; DAA = direct-acting antiviral; FDA = Food and Drug Administration; HCV = hepatitis C virus; SBRT = stereotactic body radiation; TKI = tyrosine kinase inhibitor

Patient Education and Adherence

Patient education for **hepatocellular carcinoma (HCC)** should address two conditions at the same time: the **active liver cancer** and the **chronic liver disease** that often drives future risk. Each visit is an opportunity to explain the diagnosis, **Barcelona Clinic Liver Cancer (BCLC) stage**, current treatment intent, and the patient's next step in plain language. For patients at ongoing risk, reinforce that surveillance with **abdominal ultrasound and alpha-fetoprotein (AFP) testing every 6 months** should not lapse while the patient remains a candidate for detection and treatment. Education should also clarify that viral hepatitis and fibrosis risk remain clinically important even after treatment milestones, including **sustained virologic response (SVR)** for hepatitis C. Patients with **hepatitis B, prior hepatitis C, cirrhosis, or metabolic dysfunction-associated steatotic liver disease (MASLD)** should understand why the care team continues to follow **liver enzymes, viral markers when indicated, FIB-4, fibrosis staging, and surveillance eligibility** over time.

Safety counseling is especially important when treatment includes **immunotherapy, anti-VEGF therapy, transplant medications, or evolving goals of care**. Before bevacizumab-containing therapy, patients should understand why **variceal screening with esophagogastroduodenoscopy (EGD)** is needed to identify high-risk bleeding sources before treatment begins. Patients receiving **immune checkpoint inhibitors** should be taught to report **new diarrhea, worsening shortness of breath, jaundice, severe fatigue, rash, or endocrine symptoms** promptly, because immune-related adverse events may affect the **colon, lungs, liver, skin, thyroid, adrenal axis, or other organs**. For post-transplant patients, counseling should include **medication reconciliation and interaction review for tacrolimus or cyclosporine**, with emphasis on avoiding new prescriptions, supplements, or over-the-counter medications without care team review. **Advance care planning** should be introduced early and revisited respectfully, with families informed that Medicare covers **CPT 99497 and 99498** when advance care planning is provided, and that **cost-sharing is waived when the service is furnished as part of the Annual Wellness Visit**.

DOCUMENTATION REMINDER — PATIENT EDUCATION

Document the topics covered (diagnosis, BCLC stage, surveillance schedule, etiologic comorbidity management, immune-related AE warning signs, advance directives), the patient and caregiver present, materials provided, and the patient's understanding and questions asked. CPT 99497/99498 are billable for advance care planning during AWV with no copay; documenting the conversation supports continuity, COA composite, and care planning across primary care, hepatology, and oncology.

Quality Metrics Tie-In

MEASURE	STANDARD	NOTES
MIPS #400 — HCV Screening and Treatment Initiation[33]	**Denominator:** patients ≥18 with no prior documented HCV antibody or RNA test and a qualifying encounter during the performance period **Numerator:** one-time HCV antibody test performed **Exclusions:** documented medical reason due to limited life expectancy	**HCV is the leading US HCC etiology**; a positive screen in a cirrhotic patient triggers immediate surveillance enrollment (ultrasound ± AFP every 6 months per AASLD). Referral for DAA treatment initiation within 1 month of a confirmed positive reduces HCC incidence even after SVR in cirrhotics
MIPS #401 — HCC Screening in HCV Cirrhosis[33]	**Denominator:** patients ≥18 with chronic HCV cirrhosis diagnosis and a qualifying encounter during the performance period **Numerator:** abdominal imaging (ultrasound, contrast-enhanced CT, or contrast MRI) performed at least once within the 12-month period **Exclusions:** none specified	**Most directly actionable MIPS measure for HCC**; maps to the AASLD surveillance standard. MIPS #401 requires only annual imaging — document that the more frequent AASLD-recommended cadence (every 6 months) is being followed in the problem list, since the measure alone does not capture semiannual adherence

MEASURE	STANDARD	NOTES
MIPS #236/CMS Stars — Controlling Blood Pressure[33]	**Denominator:** patients 18-85 with hypertension (≥2 outpatient visits with HTN diagnosis in measurement period or year prior) **Numerator:** most recent BP <140/90 mmHg during measurement period. 2026 Stars 5-star target: ≥86% **Exclusions:** ESRD, hospice, palliative care, pregnancy[33]	Bevacizumab (used in atezolizumab-bevacizumab first-line HCC therapy) is contraindicated in uncontrolled hypertension; uncontrolled HTN is also an independent HCC risk factor. **BP must be at target before initiating bevacizumab-containing regimens and monitored closely throughout**
Diabetes Care: Glycemic Status (HEDIS GSD; MIPS #1; CMS Stars)	**Denominator:** patients 18-75 with diabetes (≥2 diagnoses on different service dates in measurement period or prior year, or diagnosis + dispensed diabetes medication) **Numerator (inverse for MIPS #1):** most recent HbA1c >9.0% or missing. CMS Stars targets HbA1c <9.0% (better); 2026 Stars 5-star target: ≥91% **Exclusions:** hospice, palliative care, frailty + advanced illness (≥66)[33]	**MIPS #1 is an inverse measure**; CMS Stars measures the same threshold from the opposite direction. Glycemic management is required during bevacizumab-based therapy given bevacizumab's effect on wound healing and vascular integrity in poorly controlled diabetes
Plan All-Cause Readmissions (CMS Stars PCR; MIPS #479)	**Denominator:** enrollees ≥18 with acute inpatient discharge **Numerator:** unplanned readmission within 30 days (lower is better). 2026 Stars 5-star target: <7% **Exclusions:** planned readmissions, hospice, psychiatric	**MIPS #479 is group-level only**; individual PCPs cannot submit it directly. Cirrhosis decompensation (variceal bleeding, hepatic encephalopathy, spontaneous bacterial peritonitis, hepatorenal syndrome) drives high readmission rates in this population; active coordination with hepatology at every discharge is required

ABBREVIATIONS: AASLD = American Association for the Study of Liver Diseases; AFP = alpha-fetoprotein; BP = blood pressure; CBP = Controlling High Blood Pressure; CMS = Centers for Medicare & Medicaid Services; DAA = direct-acting antiviral; ESRD = end-stage renal disease; GSD = Glycemic Status Assessment; HbA1c = hemoglobin A1c; HCC = hepatocellular carcinoma; HCV = hepatitis C virus; HEDIS = Healthcare Effectiveness Data and Information Set; MIPS = Merit-based Incentive Payment System; PCR = Plan All-Cause Readmissions; SVR = sustained virologic response; T2DM = type 2 diabetes mellitus

5 CODING REMINDERS AND CASE EXAMPLES

Coding Specificity

ELEMENT	DOCUMENTATION REQUIREMENT
Primary vs secondary distinction[5]	**The largest coding accuracy gap in liver cancer**. **C22.x** (primary, HCC 22, RAF 0.363) vs **C78.7** (secondary/metastatic, HCC 17, RAF 4.209).[5,34] Document 'hepatocellular carcinoma' (**C22.0**) or 'metastatic [primary] cancer to the liver' (**C78.7** + primary code) — never just 'liver cancer'
Histologic type (C22.0–C22.7)[5]	Document specific **histology** — hepatocellular carcinoma **(C22.0)**, intrahepatic cholangiocarcinoma (C22.1), hepatoblastoma **(C22.2)**, angiosarcoma **(C22.3)**, other sarcomas **(C22.4)**, other specified **(C22.7)**.[5] **Avoid C22.8** (unspecified type) **and C22.9** (not specified as primary or secondary)
BCLC stage and CTP class	Document **BCLC stage** 0/A/B/C/D and **CTP class** A/B/C with score;[11,16] both drive treatment allocation per NCCN v1.2026[11]
LI-RADS category (for radiographically diagnosed HCC)[11]	Document **LI-RADS LR-5** (definite HCC), **LR-4** (probable HCC), or **LR-M** (probably malignant, not HCC-specific);[11] supports noninvasive diagnosis when biopsy not required
Active vs personal history[5]	Use **C22.x** while disease is **active** OR **under surveillance** OR with **known residual disease**.[5] **Z85.05** applies ONLY after complete eradication AND end of active surveillance
Concurrent liver-disease comorbidities[5]	Cirrhosis **K74.6x** with etiology (HCV **B18.2**; HBV **B18.0/B18.1**; alcohol **K70.30/K70.31**; MASLD **K75.81**); portal hypertension **K76.6**; hepatic encephalopathy **K76.82**; transplant status **Z94.4** (frequently undercoded)[5]
Performance and frailty status	Document **ECOG and G8** (if obtained), with CGA findings when triggered;[14] comorbidity burden — not chronological age — is the true mortality predictor
Biomarker status	Document AFP value (**≥400 ng/mL** qualifies for **ramucirumab second-line**);[20] relevant molecular markers when systemic therapy is considered

ABBREVIATIONS: AFP = alpha-fetoprotein; BCLC = Barcelona Clinic Liver Cancer; CGA = comprehensive geriatric assessment; CTP = Child-Turcotte-Pugh; ECOG = Eastern Cooperative Oncology Group; G8 = Geriatric 8; HBV = hepatitis B virus; HCC = Hierarchical Condition Category (coding)/hepatocellular carcinoma (clinical); HCV = hepatitis C virus; LI-RADS = Liver Imaging Reporting and Data System; MASLD = metabolic dysfunction-associated steatotic liver disease; RAF = Risk Adjustment Factor

Annual Clinical Review and Confirmation

- **Annual review:** Active hepatocellular carcinoma **(C22.0)** must be reassessed annually with MEAT documented; patients on active surveillance, post-resection/ablation surveillance, or with known residual disease remain **C22.x** — **Z85.05** applies only after complete eradication and end of active surveillance
- **Visit modality:** Face-to-face or synchronous audio-video telehealth qualifies when it supports meaningful clinical evaluation; chart updates without an encounter do not satisfy MEAT
- **Clinical context:** Primary hepatocellular carcinoma (**C22.0–C22.9**) and secondary/metastatic liver involvement (**C78.7**) represent distinct disease entities with different staging systems, treatment pathways, and prognoses; accurate code selection requires confirming whether the liver is the site of origin or a site of metastatic spread, as this distinction directly guides clinical management
- **Avoid rollover:** Do not copy forward last year's HCC note without updating BCLC stage, CTP class, MELD, current treatment status, biomarker results, and concurrent liver-disease comorbidities — silent rollover misrepresents the care being delivered

AAVBC PERSPECTIVE

BCLC staging integrates tumor burden and liver functional reserve together, recognizing that each patient presents a distinct clinical picture. The interplay between these two assessments shapes which therapeutic options are most appropriate for that individual, making both equally essential to the evaluation.
For older patients, frailty and comorbidity burden, assessed through comprehensive geriatric evaluation, offer meaningful insight into treatment tolerance that complements performance status. AAVBC encourages clinicians to incorporate these dimensions into the conversation, supporting therapy selection that reflects the whole patient rather than a single metric.
Finally, documentation accuracy determines the clinical picture every specialist sees: cirrhosis, portal hypertension, transplant status, and hepatitis etiology must be coded at every encounter. ***AAVBC encourages clinicians to recognize that detection is the beginning; accurate staging, geriatric assessment, and complete documentation are what convert a diagnosis into appropriate care.***

Good Documentation is Comprehensive Coding

EHR SHORTCUT/RISK	PREFERRED DOCUMENTATION LANGUAGE
Defaulting to C22.9 when documentation says only 'liver cancer'[5]	Document **'hepatocellular carcinoma'** explicitly: 'Hepatocellular carcinoma, BCLC stage A, LI-RADS LR-5 on multiphasic MRI [date] — **C22.0**'[5,11]

EHR SHORTCUT/RISK	PREFERRED DOCUMENTATION LANGUAGE
Treating C78.7 as equivalent to C22.x	Document the **primary site** explicitly: 'Metastatic colorectal adenocarcinoma to the liver **(C18.x + C78.7)**';[5]
Using Z85.05 (personal history) during active surveillance or treatment[5]	Use **C22.x** while disease is **active or under surveillance**. 'Active hepatocellular carcinoma on active surveillance post-resection [date] — **C22.0**'. **Z85.05 only after complete eradication and end of active surveillance**
Failing to code concurrent comorbidities[5]	Document **all active codes**: 'Hepatocellular carcinoma **(C22.0)**; cirrhosis of liver, HCV etiology, CTP A **(K74.60 + B18.2)**; portal hypertension **(K76.6)**; T2DM **(E11.9)**'
Discontinuing surveillance documentation post-SVR	'Post-SVR HCV cirrhosis on indefinite 6-month US + AFP surveillance per AGA 2026 **(B18.2 + K74.60)**'[24]
'Liver cancer, on chemo'	'BCLC C HCC on first-line atezolizumab + bevacizumab per IMbrave150 (mOS 19.2 vs 13.4 mo);[20] cycle 4 administered [date]; EGD pre-treatment showed grade I varices, on nadolol prophylaxis; tolerating with grade 1 HTN and grade 0 proteinuria'

ABBREVIATIONS: AFP = alpha-fetoprotein; AGA = American Gastroenterological Association; BCLC = Barcelona Clinic Liver Cancer; CTP = Child-Turcotte-Pugh; EGD = esophagogastroduodenoscopy; HCV = hepatitis C virus; HCC = hepatocellular carcinoma; HTN = hypertension; LI-RADS = Liver Imaging Reporting and Data System; MRI = magnetic resonance imaging; mOS = median overall survival; RAF = Risk Adjustment Factor; SVR = sustained virologic response; US = ultrasound

EHR Workflow Tips

TAG	TIP
SMARTPHRASE	Build a '**.hcc**' or '**.livercancer**' dot phrase that documents histology and primary vs secondary distinction,[5] BCLC stage and CTP class, LI-RADS category at diagnosis, AFP trend, current treatment (resection/ablation/transplant/TACE/TARE/SBRT/systemic), ECOG/G8,[24] and concurrent liver-disease comorbidities (cirrhosis etiology, HCV/HBV status, transplant status **Z94.4**)
FILTER	**Worklist filter for cirrhosis (K74.6x) without surveillance imaging in last 7 months** — surface patients to enroll; secondary filter for active C22.x without hepatology visit in last 12 months[11]
PROBLEM LIST	Maintain **active C22.x with histology and BCLC stage;** document concurrent cirrhosis, HCV/HBV, portal hypertension, transplant status **(Z94.4)** on active problem list
ANNUAL DX	**Year-end workflow flag** for active **C22.x** without face-to-face or synchronous audio-video encounter and MEAT documentation in past 12 months; flag post-SVR cirrhotics not enrolled in indefinite surveillance[17]

TAG	TIP
ORDER SET	**New HCC diagnosis bundle:** multiphasic MRI or CT per LI-RADS,[11] AFP, CBC, CMP, LFTs, INR, coagulation, EGD (pre-bevacizumab), multidisciplinary tumor board referral, hepatology referral; surveillance bundle for high-risk patients: US + AFP every 6 months
REFERRAL	**Triggered referrals:** LR-4/LR-5 → multidisciplinary tumor board within 1–2 weeks;[11] confirmed HCC → surgical oncology + hepatology + transplant evaluation if BCLC 0/A; G8 ≤14 → geriatric oncology[14]

ABBREVIATIONS: AFP = alpha-fetoprotein; BCLC = Barcelona Clinic Liver Cancer; CBC = complete blood count; CMP = comprehensive metabolic panel; CT = computed tomography; CTP = Child-Turcotte-Pugh; ECOG = Eastern Cooperative Oncology Group; EGD = esophagogastroduodenoscopy; G8 = Geriatric 8; HBV = hepatitis B virus; HCC = hepatocellular carcinoma; HCV = hepatitis C virus; INR = international normalized ratio; LFTs = liver function tests; LI-RADS = Liver Imaging Reporting and Data System; MEAT = monitor/evaluate/assess/treat; MRI = magnetic resonance imaging; SVR = sustained virologic response; US = ultrasound

Brief Case Examples

✓ SUCCESS — COMPREHENSIVE DOCUMENTATION

Patient: 73-year-old patient with chronic HCV treated to SVR in 2019, compensated cirrhosis (CTP A), and T2DM. Primary care continued 6-month US + AFP surveillance post-SVR per AGA 2026. Surveillance US 1 week ago identified a 2.8 cm hepatic lesion; AFP rising from 18 → 412 ng/mL.

Documentation: 'Hepatocellular carcinoma, BCLC stage A, segment VI, 2.8 cm — C22.0, confirmed by multiphasic MRI [date] (LI-RADS LR-5 — biopsy not required). Concurrent: cirrhosis of liver, CTP A, score 5 **(K74.60)**; chronic HCV post-SVR (B18.2 — continues per AGA 2026); portal hypertension **(K76.6)**; T2DM **(E11.9)**. EGD prior to atezolizumab + bevacizumab consideration showed grade I varices — nadolol initiated. ECOG 1; G8 13 → CGA placed per ASCO 2023. Multidisciplinary tumor board recommended resection per BCLC A for CTP A.'

Outcome: HCC 20 (active malignancy) documented with histologic specificity **(C22.0)**;cirrhosis with etiology, portal hypertension, T2DM, and post-SVR HCV all coded concurrently for accurate complexity documentation; surveillance enrollment closed the documented gap; CGA placement supports geriatric-tailored care.

⚠ PITFALL — INSUFFICIENT DOCUMENTATION

Documentation as written: 'Liver cancer; on chemo.' Coded as **C22.9**. Patient is in cycle 4 of atezolizumab + bevacizumab for BCLC C HCC with chronic HCV and compensated cirrhosis. The chart references 'HCV' and 'cirrhosis' but does not code **B18.2** or **K74.60**; T2DM is in the chart but not linked. EGD pre-treatment is in the hepatology consult but not in the PCP problem list. No BCLC stage, no CTP class, no AFP trend documented.

Consequence: C22.9 (not specified as primary or secondary) is the documented overuse default; without the explicit **C22.0** designation, the record fails the 97.4% PPV ≥10-entry validated EHR algorithm threshold. Missing concurrent codes for cirrhosis **(K74.60)**, HCV **(B18.2)**, T2DM **(E11.9)**, and portal hypertension **(K76.6)** understate the actual care complexity. No BCLC stage documentation impairs continuity across PCP, hepatology, and oncology.

RAF Impact: Active malignancy still supports HCC 22 (CNA RAF 0.363 ≈ $3776/year illustrative)—but missing comorbidity coding (cirrhosis, HCV, T2DM, portal hypertension) significantly understates clinical complexity. If **C22.9** is replaced silently with **C78.7** in some workflows, the patient would falsely be classified as having metastatic liver disease (HCC 17, RAF 4.209) — incorrect upcoding.

Fix: Update problem list and assessment: 'BCLC C hepatocellular carcinoma **(C22.0)**, CTP A, on first-line atezolizumab + bevacizumab per IMbrave150 (cycle 4 of 21-day cycle);concurrent cirrhosis with HCV etiology (**K74.60 + B18.2** — surveillance continues per AGA 2026); portal hypertension (**K76.6**, EGD with grade I varices, nadolol prophylaxis); T2DM (**E11.9** — independent HCC risk factor); AFP trend 412 → 318 ng/mL on therapy.' Document MEAT for each at the next encounter.

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