Liver Cancer Screening

This practice algorithm has been specifically developed for MD Anderson using a multidisciplinary approach and taking into consideration circumstances particular to MD Anderson, including the following: MD Anderson’s specific patient population; MD Anderson’s services and structure; and MD Anderson’s clinical information. Moreover, this algorithm is not intended to replace the independent medical or professional judgment of physicians or other health care providers.

Note: The screening technique should be performed with a consistent technique and process.

### INITIAL ASSESSMENT

**Low risk:** Those patients that do not meet the criteria for intermediate or increased risk

**Intermediate risk:**
- Chronic hepatitis C infection
- Primary biliary cirrhosis (PBC)
- Inherited metabolic disease
  - Hemochromatosis
  - Alpha-1 antitrypsin deficiency
  - Glycogen storage disease
  - Porphyria cutanea tarda
  - Tyrosinemia
- Autoimmune hepatitis
- Non-alcoholic fatty liver disease (NAFLD)

**Increased risk:**
- Known diagnosis of cirrhosis from any cause
- Chronic hepatitis B infection

### RISK FACTORS

**SCREENING**

- Evaluation by clinician experienced in the management of chronic liver disease
- Baseline liver ultrasound

- New diagnosis of cirrhosis or chronic HCV with stage 3 fibrosis?
  - Yes
    - Screening every 6 months with:
      - Liver ultrasound
      - Alpha-fetoprotein (AFP)
  - No

- Screening not recommended

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1See Appendix A and C for hepatitis B and C virus screening. Refer to CDC risk assessment tool: [https://www.cdc.gov/hepatitis/riskassessment/](https://www.cdc.gov/hepatitis/riskassessment/)
2See Appendix A and B for hepatitis C virus (HCV)
3Diagnosis of cirrhosis based on imaging and pathology
4See Appendix C and D for hepatitis B virus (HBV)
5These patients require management by an experienced clinician
6Alpha-fetoprotein as a sole screening marker is inadequate
APPENDIX A: Persons for Whom HCV Screening is Recommended

- Persons born during 1945-1965
- Persons who have injected illicit drugs in the recent and remote past, including those who injected only once and do not consider themselves to be drug users
- Persons with conditions associated with a high prevalence of HCV infection including:
  - Persons with HIV infection
  - Persons with hemophilia who received clotting factor concentrates prior to 1987
  - Persons who have ever been on hemodialysis
  - Persons with unexplained abnormal aminotransferase levels
- Prior recipients of transfusions or organ transplants prior to July 1992 including:
  - Persons who were notified that they had received blood from a donor who later tested positive for HCV infection
  - Persons who received a transfusion of blood or blood products
  - Persons who received an organ transplant
- Children born to HCV-infected mothers
- Health care, emergency medical and public safety workers after a needle stick injury or mucosal exposure to HCV-positive blood
- Current sexual partners of HCV-infected persons

APPENDIX B: Test Used to Screen and Diagnose HCV

Test used to screen for HCV:
- Antibody to HCV (anti-HCV)
  
  Diagnostic work up and therapy should be undertaken by providers experienced in management of viral hepatitis in close collaboration with primary teams.

Test used to diagnose HCV:
- HCV RNA level

Although the prevalence of infection is low, a negative test in the partner provides reassurance, making testing of sexual partners of benefit in clinical practice.
### APPENDIX C: Persons for Whom HBV Screening is Recommended

<table>
<thead>
<tr>
<th>Region</th>
<th>Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia</td>
<td>All countries</td>
</tr>
<tr>
<td>Africa</td>
<td>All countries</td>
</tr>
<tr>
<td>South Pacific Islands</td>
<td>All countries</td>
</tr>
<tr>
<td>Middle East</td>
<td>Except Cyprus and Israel</td>
</tr>
<tr>
<td>European Mediterranean</td>
<td>Malta and Spain</td>
</tr>
<tr>
<td>The Arctic</td>
<td>Indigenous populations of Alaska, Canada, and Greenland</td>
</tr>
<tr>
<td>South America</td>
<td>Ecuador, Guyana, Suriname, Venezuela and Amazon regions of Bolivia, Brazil, Colombia and Peru</td>
</tr>
<tr>
<td>Eastern Europe</td>
<td>All countries except Hungary</td>
</tr>
<tr>
<td>Caribbean</td>
<td>Antigua and Barbuda, Dominica, Granada, Haiti, Jamaica, St. Kitts and Nevis, St. Lucia, and Turks and Caicos</td>
</tr>
<tr>
<td>Central America</td>
<td>Guatemala and Honduras</td>
</tr>
</tbody>
</table>

**Other groups recommended for screening**

- U.S. born persons not vaccinated as infants whose parents were born in regions with high HBV endemicity (greater than or equal to 8%)
- Household and sexual contacts of HBsAg-positive persons
- Persons who have ever injected drugs
- Persons with multiple sexual partners or history of sexually transmitted disease
- Men who have sex with men
- Inmates of correctional facilities
- Individuals with chronically elevated ALT or AST
- Individuals infected with HCV or HIV
- Patients undergoing renal dialysis
- All pregnant women
- Persons needing immunosuppressive therapy

### APPENDIX D: Tests to Screen and Confirm HBV Diagnosis

**Tests used to screen for HBV:**
- Hepatitis B surface antigen – HBsAg
- Antibody to hepatitis B surface antigen – anti-HBs (HBsAb)
- Antibody to hepatitis B core antigen – anti-HBc (HBcAb)

**Diagnostic work up and therapy should be undertaken by providers experienced in management of viral hepatitis in close collaboration with primary teams.**

**Test used to confirm HBV diagnosis:**
- HBV DNA level
SUGGESTED READINGS


Liver Cancer Screening

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DEVELOPMENT CREDITS

This screening algorithm is based on majority expert opinion of the Liver Screening work group at the University of Texas MD Anderson Cancer Center. It was developed using a multidisciplinary approach that included input from the following:

- Thomas Aloia, MD
- Tharakeswara Bathala, MD
- Deepak Bedi, MD
- Therese Bevers, MD
- Boris Blechacz, MD, PhD
- Powel Brown, MD, PhD
- Elise Cook, MD
- Robin Coyne, APRN, FNP-BC
- Joyce Dains, DrPH, APRN, FNP-BC
- Marta Davila, MD
- Suzanne Day, APRN, FNP-BC
- Wendy Garcia, BS
- Manal Hassan, MD, MPH, PhD
- Ernest Hawk, MD, MPH
- Jessica Hwang, MD, MPH
- Tiffiny Jackson, APRN, FNP-BC
- Ahmed Kaseb, MD
- Harmet Kaur, MD
- Marita Lazzaro, APRN, ANP-BC
- Evelyne Loyer, MD, BS
- Ethan Miller, MD
- Ana Nelson, APRN, FNP-BC
- Lonzetta Newman, MD
- Tilu Ninan, APRN, ANP-BC
- Amy Pai, PharmD
- Harrys Torres, MD
- Eduardo Vilar-Sanchez, MD, PhD
- Jean-Nicholas Vauthey, MD

T Core Development Team
♦ Clinical Effectiveness Development Team