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DIAGNOSING AND MANAGING HEPATITIS C

- Hepatitis C can be cured with new, more effective treatment options.
- Ask all patients about hepatitis C risk factors.
- Order a hepatitis C antibody test for all patients at risk and everyone born between 1945 and 1965.
 - Test anyone with a positive antibody test for viral RNA to assess current infection status.
- For patients infected with hepatitis C:
 - Educate and counsel about the risks of alcohol use and preventing hepatitis C transmission.
 - Offer hepatitis A and B vaccines and others, as appropriate.
 - Assess liver function and stage of liver disease.
 - Discuss antiviral treatment options and make a plan for treatment.
 - If you cannot provide treatment, refer to a provider who manages hepatitis C.

Hepatitis C virus (HCV) is the most prevalent chronic bloodborne infection in the United States (US).¹ It is also the most common cause of cirrhosis, hepatocellular carcinoma (HCC), and liver transplantation^{2,3} and the principal cause of death from liver disease.³ More US deaths are attributable to HCV- than to HIV-related disease.^{4,5} Nationwide, an estimated 2.7 million (1%) (excluding homeless and incarcerated populations)⁶ to 5.2 million (2%)⁷ people have HCV infection. In New York City (NYC), an estimated 2.4% of adults (or 146,500 people) had current HCV infection in 2010.⁸

Three-fourths of people with current HCV infection in the US were born between 1945 and 1965,⁹ and almost 75% of HCV-related deaths occur in that cohort.^{4,10} NYC and other jurisdictions continue to see concerning numbers of infections among people aged 30 and younger.^{5,11} Injection drug users (IDUs) are at highest risk for HCV infection and account for 60% to 70% of new US cases.^{9,12} The estimated prevalence of HCV among IDUs is 70% to 77% nationwide¹³ and 71% in NYC.¹⁴

HCV infection can result in both acute and chronic hepatitis. Acute HCV infection is often not diagnosed because it is usually asymptomatic, but patients may experience fatigue, low-grade fever, nausea, myalgias, jaundice, and/or abdominal pain.¹⁵ Up to 75% to 85% of acutely infected patients will develop chronic HCV¹⁵; of those, 15% to 25% will develop cirrhosis in 20 to 30 years^{12,15} and from 1% to 5% will die



from liver cancer or end-stage liver disease.¹⁵ Many people with chronic HCV are unaware that they are infected¹; chronic HCV infection is often not suspected because it can remain asymptomatic for many years while damaging the liver.

Early identification and treatment of HCV improves clinical outcomes, can reverse liver damage, and reduces risk of transmission.^{1,16} New direct-acting antiviral agents (DAAs) are revolutionizing HCV treatment, with cure rates that surpass 90% in most patient groups.¹⁷ The new agents have fewer side effects than previous regimens and require as few as 12 weeks of treatment in some patients.^{18,19} Interferon-free oral regimens are now available and DAAs are the new standard of care.^{17,18,20} Primary care providers (PCPs), gastroenterologists, and infectious disease (ID)

specialists are uniquely positioned to offer these simpler treatments.

It is important to ask **all** patients about risk factors for HCV infection, including history of injection drug use.¹⁷ While risk of sexual transmission of HCV is low for most people without specific risk factors, counsel **all** patients to protect themselves and their partners against sexually transmitted infections, including HIV. Patients who are not in a monogamous relationship should always use latex condoms, limit the number of sex partners, and have regular exams.

For patients with risk factors for HCV infection (**Box 1**^{17,21,22}), counsel on risk reduction and test for HCV antibodies.¹⁷

Follow a positive HCV antibody result with a test for viral RNA to ascertain current infection status.^{21,23,24} A negative HCV RNA test following a positive antibody test in a previously untreated person suggests that the patient has a resolved infection and does not need an automatic referral to a specialist¹⁷ (see Diagnostic assay). In NYC, one-third of those with a newly positive HCV antibody test were not given a viral RNA test to ascertain their infection status.²⁵

You are also urged to become familiar with the new antiviral treatments and, if not prepared to manage HCV infection yourself, make referrals to a specialist. Excellent online educational materials are available for providers who want to enhance their HCV knowledge and clinical management skills (**Resources—Online Clinical Training**).

RISK ASSESSMENT AND TESTING

Test all people born between 1945 and 1965 for HCV once, unless periodic testing is indicated due to ongoing risk factors such as injection drug use.^{17,21,23} New York State law now mandates that providers offer HCV testing to people born between 1945 and 1965 who receive inpatient or primary care services from a physician, physician assistant, or nurse practitioner.²⁶ Ask all patients about other risk factors for HCV and offer testing when indicated (**Box 1**). Counsel patients with ongoing risk behaviors or exposures about the potential for HCV infection, regardless of their test results. See Managing Patients with Current HCV Infection (**Box 2**) for specific messages for IDUs.

Routine testing is **not** recommended for HIV-negative MSM, HIV-negative, monogamous sex partners of people with HCV infection, pregnant women without risk factors, nonsexual household contacts of people with HCV infection, or health care workers, unless there is a recognized exposure (eg, needle stick) to HCV-infected blood.^{17,21}

LABORATORY TESTS

Screening assay

Current HCV antibody tests recommended for people with risk factors are highly sensitive and specific.^{1,27} They include enzyme immunoassays (EIA or ELISA) for initial testing (third-generation EIAs are sensitive, specific, less expensive than the viral RNA test, and readily available); chemiluminescent immunoassays (CIA); and rapid, point-of-care antibody tests (OraQuick[®] HCV Rapid Antibody Test). A negative HCV antibody test result indicates that the patient probably has not been infected with HCV, but if you suspect recent infection (within the past 6 months) or if the patient is immunocompromised, test for HCV RNA^{17,28} (**Figure**). If the HCV antibody test result is positive, the patient has either a current or previous infection

BOX 1. HEPATITIS C TESTING RECOMMENDATIONS

Age cohort testing. Test once.^{17,21}

- All people born between 1945 and 1965

Risk behaviors: Test once. Retest if risk is ongoing.^{17,21}

- Injection drug use—even if only once in the remote past (*test current injection drug users at least annually*)
- Intranasal illicit drug use

High-endemic countries: Test once.

- People who were born in or had invasive medical procedures or blood transfusions in areas of highest prevalence: Central and East Asia and North Africa/Middle East¹⁹

Risk exposures. Test once. Retest if exposure is repeated.

- History of long-term hemodialysis^{17,21}
- Getting a tattoo or piercing in an unregulated setting^{17,21}
- Other injections without medical supervision (eg, silicone, cosmetics, self-prescribed hormones)²²
- Health care, emergency medical, and public safety workers after needle sticks, sharps, or mucosal exposures to HCV-infected blood^{17,21}
- Children born to HCV-infected women. *Do not test before the child is 18 months old.*^{17,21}
- History of incarceration^{17,21}
- Prior recipients of transfusions or organ transplants if they^{17,21}
 - were notified that they received blood from a donor who later tested positive for HCV infection,
 - received a transfusion of blood or blood components or underwent organ transplantation before July 1992, or
 - received clotting factor concentrates produced before 1987.

Other medical conditions^{17,21}

- HIV infection (*test at diagnosis, then test at least annually if patient is a man who has sex with men without a condom*)
- Unexplained chronic liver disease and chronic hepatitis, including elevated alanine aminotransferase levels

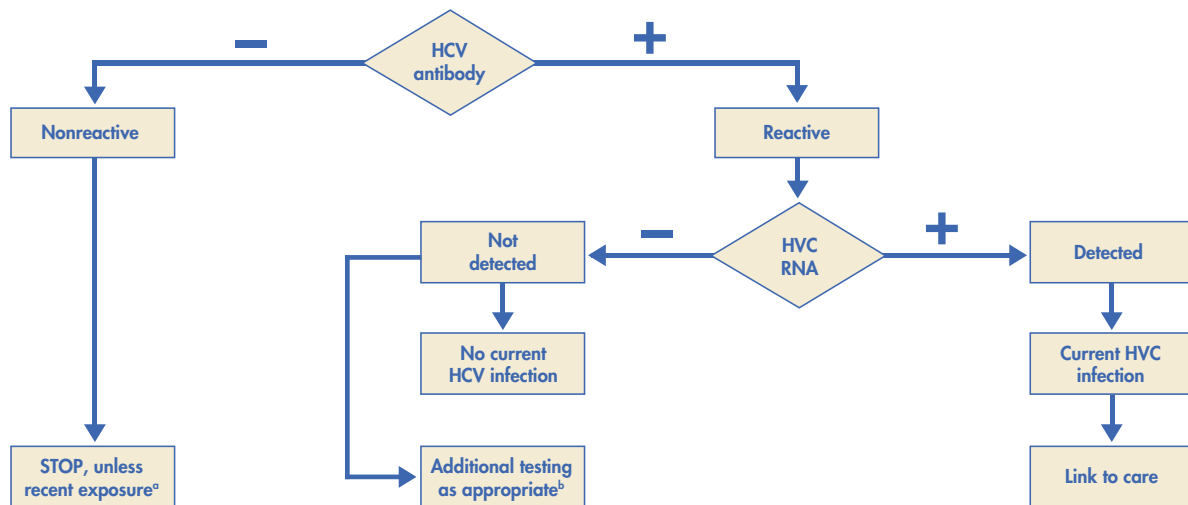
or it is a false-positive result, which may occur when people at low risk for HCV infection are tested.¹⁷

Diagnostic assay

In patients who test positive for HCV antibody, test for HCV RNA with an FDA-approved quantitative or qualitative nucleic acid amplification test with a detection level of 25 IU/mL or lower.¹⁷

Quantitative HCV RNA test: This test measures the presence of viral nucleic acid in blood in standardized international units. It is not recommended for initial testing unless acute HCV or a false negative HCV antibody test is suspected.¹⁷ Polymerase chain reaction (PCR) is commonly used to detect HCV RNA. If HCV RNA is detected, the patient has current infection.¹⁵ If HCV RNA is not detected, the HCV infection is resolved or successfully treated, the HCV antibody result was false positive, or HCV infection is acute with intermittent viremia.²⁹ Repeat the HCV RNA test in 6 months if there is a high index of suspicion of infection.¹⁷ People with positive HCV antibody and negative HCV RNA should be informed that there is no laboratory evidence of current HCV infection.¹⁷

FIGURE. HEPATITIS C VIRUS DIAGNOSTIC TESTING ALGORITHM



^aFor persons who might have been exposed to HCV within the past 6 months, testing for HCV RNA or follow-up testing for HCV antibody is recommended.

For persons who are immunocompromised, testing for HCV RNA can be considered.

^bTo differentiate past, resolved HCV infection from biologic false positive for HCV antibody, consider testing with another HCV antibody assay. Repeat HCV RNA testing if the person tested is suspected to have had HCV exposure within the past 6 months or has clinical evidence of HCV disease, or if there is concern regarding the handling or storage of the test specimen.

Adapted from Centers for Disease Control and Prevention. Recommended Testing Sequence for Identifying Current Hepatitis C Virus (HCV) Infection.

www.cdc.gov/hepatitis/HCV/PDFs/hcv_flow.pdf.

Qualitative viral RNA test: Typically less expensive than the quantitative RNA test, this assay is only useful to assess infection status. Quantitative tests are now very sensitive and required to monitor antiviral treatment response.

HCV genotype test: This test identifies the HCV genotype that a patient is carrying. HCV is now classified into 7 major genotypes (GT) and more than 67 subtypes.³⁰ Currently, genotype and subtype determine the optimal treatment regimen. This may become less important as new antivirals are approved. In the US, approximately 75% of isolates belong to GT 1 (subtype 1a is more common than 1b) and roughly 20% to GT 2 and 3 (2 more common than 3).³¹ People can be reinfected with the same or a different genotype after spontaneous resolution or successful treatment of infection; they can also be infected with multiple genotypes.^{15,32,33}

MANAGING PATIENTS WITH CURRENT HCV INFECTION

Advise HCV-infected patients that there is no known safe level of alcohol use in people with chronic HCV infection (**Box 2**^{15,17,34}). Alcohol is the most important modifiable cofactor of liver disease progression. Excess alcohol intake can also cause steatohepatitis.¹⁷ Even moderate alcohol use can increase the risk of advanced liver disease, including cirrhosis and HCC.^{35,36}

Many patients do not receive counseling to avoid alcohol^{37,38}; in one survey of newly reported HCV cases in NYC, 17% of those interviewed said that they drink alcohol.³⁷ Screen for alcohol and drug use with Screening, Brief Intervention, and Referral to Treatment (SBIRT), an evidence-based assessment and intervention reimbursable under commercial insurance, Medicaid, and Medicare (**Resources—SBIRT Training and CHI archives**). If you detect an alcohol or substance use disorder, refer the patient to treatment (**Resources—Referrals**).

Conduct a thorough medical assessment, including past evaluation and treatment for HCV, comorbidities or conditions that might affect disease progression or treatment, ongoing risk

factors that could result in HCV transmission or reinfection, behavioral disorders, and medications.

Screen all HCV-infected patients for HIV and hepatitis B virus (HBV) infection.³⁹ Coinfection with HBV or HIV leads to worse outcomes.¹⁷ Nationwide, between 15% and 30% of people living with HIV are coinfecting with HCV,^{40,41} and 16% of NYC residents are known to be coinfecting, according to NYC Health Department reports.⁴² See **Box 3**^{15,17,43-50} for recommended initial assessments and laboratory tests. Be sure to explain why you are testing and what the results mean, and direct patients to or provide them with educational materials available in different languages (see **Resources—Patient Education**). Some patients may benefit from referral to an HCV support group and/or psychological counseling (**Resources—Referrals**).

Insulin resistance, type 2 diabetes, metabolic syndrome, obesity, and nonalcoholic fatty liver disease (NAFLD) also have been associated with poor outcomes in HCV-infected patients, including worsening fibrosis, cirrhosis, and HCC.^{34,50} Counsel patients who are overweight or obese or who have metabolic syndrome about exercise, diet, and medication interventions to improve insulin sensitivity.¹⁷ Screen for diabetes if warranted. Administer hepatitis A and B vaccines to susceptible patients, and influenza and pneumococcal vaccines to all eligible patients.

Assess the extent of liver fibrosis (ie, stage of the disease) for all patients with current HCV infection. With the advent of noninvasive methods, liver biopsy is no longer the only option. Transient elastography (TE), approved for use in the US in 2013, reliably identifies most patients with either minimal or advanced fibrosis, but is less useful in those with moderate fibrosis. When combining 2 unrelated noninvasive methods (eg, TE + serum markers), concordant results can provide sufficient diagnostic confidence for many.⁴⁷ For some patients, liver biopsy, which can also detect steatosis, iron deposition, other liver diseases, and grade of inflammation, will remain the best option for staging of fibrosis. When the decision is unclear, discuss with an expert.

Treatment is particularly important for patients with

- advanced fibrosis or cirrhosis,
- complications of cirrhosis (eg, ascites, variceal bleeding, or hepatic encephalopathy),
- clinically significant extrahepatic manifestations of HCV infection,
- HCV/HIV coinfection.

Refer patients with these conditions to a specialist if you do not routinely provide HCV treatment.

See **Resources—Online Clinical Training** for detailed guidance on managing patients with HCV infection.

TREATING HCV INFECTION

Evaluate all patients with current HCV infection for possible antiviral treatment, regardless of HCV genotype, stage of fibrosis, prior treatment experience, or comorbidities such as substance use disorder or depression. Refer to American Association for the Study of Liver Diseases (AASLD)/Infectious Diseases Society of America (IDSA) Practice Guidelines at www.hcvguidelines.org and full product information for updated treatment recommendations and safety information. Discuss the advantages and disadvantages of current antiviral treatment with patients and refer those who have concerns about cost and insurance coverage to medication assistance programs (**Resources—Medication Assistance**). Each patient needs a plan for HCV treatment. For those who decide against immediate treatment, revisit the issue periodically, as individual circumstances may change (eg, changes in insurance coverage) and new medications become available.

The goal of antiviral treatment is cure, known as a sustained virologic response (SVR): having undetectable HCV RNA 12 weeks⁴⁶ following completion of treatment. SVR is associated with long-term improvement in biochemical markers, reduction of liver fibrosis and inflammation and reduced mortality,^{51,52} and lower all-cause mortality and reduced risks of liver transplantation and HCC in patients with advanced fibrosis and cirrhosis.¹⁶

DAAs now in use and those currently under evaluation⁵³⁻⁵⁵ have fewer known contraindications than interferon-based regimens. DAAs are also more effective (including in prior nonresponders and cirrhotic patients), are easier to tolerate because of fewer side effects and adverse events, and are taken for a much shorter duration.

Gauge clinical response by comparing quantitative HCV RNA with a pretreatment baseline measurement, and follow RNA testing rules in AASLD/IDSA guidelines at www.hcvguidelines.org.

Guidance for hepatitis C treatment is changing constantly with the advent of new therapies and other developments. See AASLD/IDSA Practice Guidelines at www.hcvguidelines.org for updates on treatment recommendations.

SPECIAL POPULATIONS

Certain groups are at increased risk for HCV infection:

Injection drug users: Injection drug users are at greatest risk of new HCV infection.¹⁷ Refer to substance use disorder treatment and/or harm reduction programs that offer syringe and other services (**Resources—Referrals**). Provide key harm reduction messages for patients who continue to inject drugs (**Box 2**). Injection drug use itself is not a contraindication to HCV treatment. People who inject drugs and/or have other comorbidities can be treated for HCV infection if they want to be treated, are willing to take the medications, and have multidisciplinary support (**Resources—PREP-C**).⁵⁶

HIV-infected patients: HCV/HIV coinfection can accelerate progression of liver disease.^{57,58} Test all HIV-infected patients for HCV at diagnosis and at least annually based on risk (**Box 1**). False-negative HCV antibody test results occur in some HIV-infected individuals. HIV-infected persons are now treated with the same treatment regimens as HIV-negative persons.¹⁷ See AASLD/IDSA Practice Guidelines at www.hcvguidelines.org or refer to a provider with expertise in treating HCV/HIV coinfection.

BOX 2. WHAT TO TELL PATIENTS WHO HAVE CURRENT HCV INFECTION^{15,17,34}

To prevent progression of liver disease¹⁷

- Avoid alcohol. There is no safe level of alcohol use if you have chronic HCV infection. Alcohol can damage your liver. If you need help in making this change, I can offer some resources.
- Come back for regular office visits, even if you don't feel sick. It's important that we monitor your liver health.
- Eat a healthy diet and exercise regularly. Maintaining a healthy weight may slow the progress of liver damage.³⁴
- Check with me before you take any medications, even over-the-counter medicines or supplements. Some of these can damage your liver.

For injection and intranasal drug users¹⁷

- Consider entering a drug treatment program.¹⁷ I can help you find one.
- If you continue to use drugs, **never** reuse or share syringes or other equipment.¹⁷
- Never divide drugs with a syringe (ie, "backloading").
- Use new sterile syringes and filters, water, cotton, and other equipment every time you inject. You can get new needles and syringes at many places in NYC¹⁷ (**Resources**).
- Clean the injection site with a new alcohol swab.¹⁷

- Dispose of syringes and needles after one use in a safe, puncture-proof container.¹⁷

- Plan ahead to avoid withdrawal, which increases the risk for unsafe practices (eg, sharing).

For people who are HIV-positive, have multiple sex partners, or have a sexually transmitted infection

- Use condoms to prevent sexual transmission of HCV.^{15,17} To protect against other STIs, including HIV, all patients who are not in a monogamous relationship should always use latex condoms, limit the number of sex partners, and have regular exams.

To prevent infecting others with HCV^{15,17}

- Hepatitis C is usually spread when blood from an infected person gets into the body of someone who is not infected.^{15,17}
- Don't share anything that may have come in contact with your blood or body fluids, like toothbrushes, razors, needles, nail files, clippers, nail scissors, or washcloths.^{15,17}
- Cover open cuts and sores with bandages.^{15,17}
- Throw away used bandages or menstrual pads in a plastic bag.
- Don't donate blood, organs, semen, or other tissue.
- If you see blood on any household surface, clean it with a mixture of 1 part household bleach and 9 parts water. Wear gloves when you clean up blood spills.¹⁷

Children: Approximately 4,000 new HCV infections occur in US children annually, largely from mother-to-infant transmission.⁵⁹ No intervention has proven to be successful in preventing mother-to-infant transmission, so antiviral treatment should be discussed before a pregnancy is planned. An extremely small proportion of HCV-infected children have been diagnosed and linked to appropriate care; even fewer have been treated.⁶⁰ All children born to women with HCV infection should be tested for HCV, regardless of symptoms.¹⁷ Refer children with detected viremia to a pediatric gastroenterologist or infectious disease specialist for evaluation and possible treatment.

Pregnant women: Pregnancy does not appear to adversely affect the course of chronic HCV infection,⁶¹ but HCV infection may lead to poor pregnancy outcomes, including intrahepatic cholestasis of pregnancy,⁶¹ gestational diabetes,⁶² low-birth-weight infants, and prematurity.^{61,62} In pregnant, HCV-infected women, the risk of perinatal HCV transmission is 4% to 6%²⁷ and as high as 20% in women who are HCV/HIV coinfecting.^{27,61,63} There is insufficient evidence that mode of delivery (vaginal, cesarean delivery) or breastfeeding is related to mother-to-infant transmission.⁵⁸

Ribavirin-containing HCV antiviral therapies are contraindicated in pregnancy and in male sex partners of pregnant women, due to ribavirin's embryocidal and teratogenic effects.⁶¹ Whenever

possible, HCV treatment should be discussed with patients before they consider becoming pregnant.

SUMMARY

Primary care providers play an essential role in diagnosing, managing, and preventing HCV infection. Early identification of the disease and treatment with the new curative antiviral agents improves clinical outcomes, can reverse liver damage, and reduces risk of transmission. Evaluate all patients for risk factors and test everyone at risk, including all patients born between 1945 and 1965, for HCV antibody. If the patient is seropositive, test with an HCV RNA assay to determine the current infection status. For patients with current infection, educate and counsel them about the risks of using alcohol and sharing drug use equipment, and offer appropriate vaccinations against hepatitis A and B if the patient is susceptible. Assess patients' liver function and stage of disease, discuss options, and make a plan to start antiviral treatment. Providers are urged to become familiar with the new antiviral treatments, and if not prepared to manage and treat HCV infection, refer to a specialist. ♦

Use of brand names is for informational purposes only and does not imply endorsement by the New York City Department of Health and Mental Hygiene.

BOX 3. INITIAL ASSESSMENT AND MANAGEMENT OF PATIENTS INFECTED WITH HEPATITIS C VIRUS^{15,17,43-50}

- Collect details of past staging of liver fibrosis and HCV treatment.¹⁷
- Identify all comorbidities and conditions that may accelerate liver damage (HIV, HBV, diabetes, obesity, metabolic syndrome, steatosis, and alcohol use disorder) or complicate treatment (cardiac disease, hematologic disorders, autoimmune disorders).¹⁷
- Screen for behavioral health disorders, including depression and substance use¹⁷ (**Resources—Depression and Drug User CHIs**).
- Assess all medications used, including over-the-counter (eg, acetaminophen and NSAIDs)¹⁷ and alternative or herbal therapies⁴⁴ for potential hepatotoxicity.
- Identify past, current, and ongoing risk factors for HCV infection that might lead to transmission or reinfection.¹⁷
- Determine if there is a family history of liver disease that might complicate HCV infection (eg, hemochromatosis, alpha-1 anti-trypsin deficiency).¹⁷
- Review body systems, focusing on symptoms of chronic hepatitis and extrahepatic manifestations of HCV infection (mixed cryoglobulinemia, renal syndromes, lymphoproliferative disorders, porphyria cutanea tarda, Sjögren syndrome, neuropathies)¹⁷
- Determine if patients may have complications from advanced liver disease (gastrointestinal bleeding, ascites, hepatic encephalopathy) that would require referral to a hepatologist.¹⁷
- Conduct a complete physical examination, including assessment for chronic liver disease and extrahepatic manifestations of HCV infection.¹⁷
- Counsel patients about the risks of alcohol use and how to prevent transmission of HCV¹⁷ (**Box 2; Resources—Alcohol CHI**).
- Order initial laboratory tests
 - Hepatic profile, renal profile, CBC with differential, TSH if IFN is being contemplated¹⁷
 - If treatment is planned: quantitative HCV RNA (to establish baseline) and HCV genotype (to determine optimal regimen)^{17,45}
 - Hepatitis A total antibody, hepatitis B surface antibody, and hepatitis B surface antigen if immune status is unknown. Do not order hepatitis A or B IgM tests unless acute infection with one of these viruses is suspected.¹⁷
 - HIV¹⁷
- Vaccinate^a
 - Hepatitis A and B vaccines if patient is susceptible¹⁷
 - Annual influenza vaccine
 - For other recommended vaccines, see www.cdc.gov/mmwr/preview/mmwrhtml/su6201a3.htm.
- Assess stage of liver fibrosis^{7,48}
 - Noninvasive methods (serum markers, eg, FIB-4)⁵⁰ and imaging (ie, transient elastography, diffuse-weighted MRI and MRI elastography, acoustic radiation force impulse imaging) can help assess minimal or advanced fibrosis or cirrhosis, but are less accurate in staging patients with mid-level disease.
 - Concordant results from 2 unrelated methods may provide sufficient information when making many HCV treatment decisions.¹⁷
 - Liver biopsy¹⁷

^aFor adolescents and young adults, check the Citywide Immunization Registry (CIR) for the patient's immunization history. To register, visit the CIR Web site, nyc.gov/health/cir, or call 347-396-2400 for more information. You must report immunizations administered to persons <19 years of age and you are encouraged to report immunizations given to patients ≥19 years of age, with patients' verbal consent, to the CIR.

RESOURCES

For Providers

- New York City Department of Health and Mental Hygiene
 - Hepatitis C Healthcare Provider Resources: nyc.gov/html/doh/html/living/hep-c-provider-info.shtml
 - Alcohol and Drug Use resources: nyc.gov/html/doh/html/mental/alcohol-drug.shtml
 - *City Health Information*: nyc.gov/health/chi
Diagnosing and Managing the Mental Health Needs of Adults Exposed to Disaster (PDF) (mental health and substance use screening)
Brief Intervention for Excessive Drinking (PDF)
Detecting and Treating Depression in Adults (PDF)
Improving Medication Adherence (Special Issue) (PDF)
Improving the Health of People Who Use Drugs (PDF)

Online Hepatitis C Clinical Training and Guidelines

- American Association for the Study of Liver Diseases (AASLD) and Infectious Diseases Society of America (IDSA) Practice Guidelines. Recommendations for Testing, Managing, and Treating Hepatitis C: www.hcvguidelines.org
- AASLD. LiverLearning®-ACT-First: Free, Online CME Hepatitis C Course for Primary Care Providers: liverlearning.aasld.org/aasld/2014/actfirst/50846/aasld.act-first.a.practical.introduction.to.liver.disease.%3Cspan%3Eunit.2.html?history_id=572592
- University of Washington School of Medicine/International Antiviral Association (USA) Hepatitis C Online Course (CME available): www.hepatitisc.uw.edu
- Clinical Care Options-HCV (CME available): www.clinicaloptions.com/hepatitis/topics/hcv.aspx
- Medscape. Hepatitis C Resource Center: www.medscape.com/resource/hepc
- University of Liverpool. Hepatitis C Drug Interaction Charts: hep-druginteractions.org

Behavioral Health Education and Tools

- Mount Sinai Hospital. Psychosocial Readiness Evaluation and Preparation for Hepatitis C Treatment (PREP-C): prepc.org
Interactive online tool to assess a patient's readiness to begin hepatitis C treatment
- New York State Office of Alcoholism and Substance Abuse Services (NYS OASAS)
 - Addiction Medicine Free Educational Series: www.oasas.ny.gov/admed/edseries.cfm
 - Screening, Brief Intervention and Referral to Treatment (SBIRT): www.oasas.ny.gov/adMed/sbirt/index.cfm
- NYC Department of Health and Mental Hygiene. SBIRT training program: nycdohmhtrainings.eventbrite.com
- NYC Syringe Exchange Programs: IDUHA.org
- New York State Department of Health. Expanded Syringe Access Program (ESAP): www.health.ny.gov/diseases/aids/consumers/prevention/needles_syringes/index.htm

Referrals

- NYC Hepatitis Services Site Locator: nyc.gov/health/sitelocator
- All Mental Health Concerns
 - LIFENET general website: newyorkcity.ny.networkofcare.org/mh/index.aspx
For teens: nyc.gov/html/doh/teen/html/home/home.shtml
LIFENET telephone numbers (24 hours a day/7 days a week):
In English: 800-LIFENET (800-543-3638)
In Spanish: 800-AYUDESE (877-298-3373)
In Chinese: 800-ASIAN LIFENET (877-990-8585)
TTY: 212-982-5284
For other languages, call 800-LIFENET or 311 and ask for an interpreter
- National Mental Health America. Finding help: www.mentalhealthamerica.net/finding-help
- Substance Abuse and Mental Health Services Administration (SAMHSA) National Drug and Alcohol Treatment Referral Routing Service: 800-662-HELP (x4357) or www.findtreatment.samhsa.gov
- Buprenorphine Physician Locator: buprenorphine.samhsa.gov/bwns_locator
- 12-Step/Self-Help Groups
 - Alcoholics Anonymous (AA): 212-870-3400 or www.aa.org
 - Narcotics Anonymous (NA): 212-929-6262 or newyorkna.org
- New York City Al-Anon: 212-941-0094, or 888-4ALANON (888-425-2666) from 8 AM to 6 PM, Monday-Friday
E-mail: nycalanon@verizon.net
Support for families and friends: www.nycalanon.org

Medication Assistance

- NYC Hep C Task Force. Medication Coverage and Prior Authorization: hepfree.nyc/resources/health-care/medications
Comprehensive listing of programs available to persons who need assistance purchasing medication, including pharmaceutical manufacturer patient assistance programs

For Patients

- New York City Department of Health and Mental Hygiene. Hepatitis C. Get Tested. Get Cured!: nyc.gov/html/doh/html/living/hep-c.shtml
- New York State Department of Health. Information for Consumers – Hepatitis C: www.health.ny.gov/diseases/communicable/hepatitis/hepatitis_c/consumer.htm
- NYS Hepatitis C Information Hotline: 800-522-5006
- US Department of Veterans Affairs: Hepatitis C for Veterans and the Public: www.hepatitis.va.gov/patient
- Centers for Disease Control and Prevention: www.cdc.gov/hepatitis/HCV/PatientEduHCV.htm
Fact sheets about testing and living with hepatitis C for a variety of patient populations (English/Spanish)
- HCV Advocate: www.hcvadvocate.org/hepatitis/factsheets.asp
- American Liver Foundation: hepc.liverfoundation.org
- National Hepatitis Helpline: 800-GO-LIVER (800-465-4837)
- Online Support Group: www.liverfoundation.org/support

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