

Prime Colors Clinic

Dallas VA Medical Center

Your Role as Provider

- Manage chronic conditions
- Address health maintenance
- Address any acute problems

Clinic Schedule

PGY I: During VA ward rotations only

PGY II-III: Year round

Primary care clinic

Pre-op and urgent care clinics

8:30-12 noon and 1-4:30 p.m.

Show up on time, inform faculty before leaving

Visit Documentation

- In CPRS
- Complete before you leave clinic
- Progress note
 - Avoid "copy and paste" of previous notes
 - Individualize note to the visit
 - Open "Clinical Reminders" to address preventive health
 - Complete Encounter form – this is how you get paid for taking care of patients in practice
 - Do "Orders" – medications, tests, return appointments

CPRS Documentation – Primary Care Clinic

- Create a new note
 - Prime clinic 3 progress note template
 - SOAP format
 - Review clinical reminders for preventive health
 - Complete encounter
- Review medicine profile
- Give adequate refills for all medicines
 - 90 day supply with 3 refills or 30 day supply with 11 refills
 - Narcotics (except codeine, hydrocodone) require written prescription, 30 day supply, no refill
 - Complete NDR/Pharmacy consults for restricted drugs
- Use "Order" tab for
 - Return to clinic
 - Tests
 - Consults
- Send pt to "check-out"

Clinic Resources

- Faculty physicians
 - Discuss/Check out all patients
 - Notify any problems or concerns regarding clinic or patients
- Lilly Bagley, RN: Case Manager
 - Trouble shooting
 - Following critical tests, consults etc
- Prime Interval Clinic (staffed by PA or NP)
 - Patients requiring clinical evaluation earlier than your schedule allows
- Gloria Ramirez x71577 = Program Assistant/Clinic mother
- Prime psychologist
- Prime social workers

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There Is No "Chart Check" Clinic!

- Everything is on CPRS!
- **Review** all labs/tests on your patients during clinic
- **Review** pending tests/results later
Enter an unsigned addendum to your note for tests or
Make notes for pending results in your organizer or
Keep reminders in your clinic folder
- **Review** your folder for
Important notifications
Alerts
Forms patients may need

Make Clinics Less Stressful

- **Time management**
 1. Avoid spending more than the allotted time for a patient
 2. Prioritize problems
 3. Resist impulse to address all problems in one visit
 4. Use clinic resources judiciously
 5. If stumped ask for help
 6. If time permits review charts before clinic
 7. Maintain a personal file of your patients

Clinical Reminders

- Things we don't document/do well
 1. Depression screening
 2. Tobacco use screening
 3. Counseling smokers
 4. Diabetic foot exam
 5. Counseling alcohol users

What Happens When Computers Are Down?

- Use paper for lab requests, pharmacy orders
- Use MS Word:
Create notes for patients and save as a Word file.
- Create CPRS notes later
Delete template note
Cut and paste the word file notes into the blank template

Dallas VAMC: HIV Clinical Care Guidelines

Welcome to our clinic. As HIV medicine is a rapidly moving field, this manual is designed to orient you to our clinic's operations and our standards of care. **Please read the first page of this manual prior to seeing patients in clinic.** You are encouraged to read all material following, which is provided for your reference. The clinic has several reference texts, a white binder with the few drug resistance test results prior to 2001 not recorded in the computer, and a black binder with several helpful recent journal articles and a list of the most common drug interactions associated with HIV medications.

We provide both primary care and HIV care for many of our patients. Focus on the complexities of antiretroviral therapy, as well as general internal medicine needs. Visits are not always exhaustive; see the shadow chart for a summary of Hx facts. IT IS NOT necessary to retake a long-time patient's entire history (eg. "how did you get HIV....."). However, detailed inquiry sometimes reveals unexpected issues.

Diana Turner and Mary Beth Kvanli, our P.A.s provide day-to-day care for our 400 patients in collaboration with an assigned ID attending. The cover of each patient's duplicate chart identifies the primary physician. When writing Return to Clinic orders on CPRS, under special instructions, specify "RTC Dr....." so the clerks will reappoint to the appropriate clinic. If it is important that a patient be seen in a certain time frame, specify that overbook is OK.

Orient yourself to a patient's case by using the chart and discussing the case briefly with primary MD (if available) or the PAs. Lab values are checked and charted by the PAs on a weekly basis. Chart lab values available on the day of the visit. CD4s and VLs take a few days to be completed. Check the face sheet on the duplicate chart and add any new information (e.g. vax, serology). Please inform the PAs of any follow-up that is in need of particular attention.

You **must** use the HIV Follow-up Note template under Infectious Disease, Medicine templates on CPRS to write your clinic note. Make sure you identify the ID attending physician who you checked the patient out to as a cosigner on the note. Use ID Quick Orders, found under Medicine Quick Orders to order medications (so that dosing errors of antiretroviral medications are minimized), lab tests, and return to clinic orders. Use the standard ID Lab panels to order CBC/Metab/Liver (panel 2) and CD4/std viral load (panel 3) or CD4/ultra viral load < 50 (panel 4).

Helen Lacy is our HIV counselor. She usually meets with patients during their visit to the clinic to discuss psychosocial needs, medical assistance issues, and issues of adherence to therapy. Use her long experience with our patients for insight into these issues. It has been widely observed that medical providers measure adherence to therapy inaccurately. If there is an issue of adherence to therapy Ms. Lacy should be consulted, and a plan of action formulated in collaboration with her. Special educational sessions are now available; send patients to Ms. Lacy to enroll.

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Anthony Busti Pharm. D assist s us with medication and adherence issues, pain control, and lipid management. Patients should be sent to see them whenever starting or changing HIV medications. If they are not available, ask how to send them a consult in the computer. Also, they may be helpful when working with non-adherent patients, and when patients have very complicated regimens that need to be assessed for drug interactions and patient understanding.

Holly Wise & Joyce Wagner coordinate and recruit for research studies in HIV. Please always consider enrolling a patient in a study when they are failing therapy and you are considering a change. Talk to Diana Turner, PA-C, Mary Beth Kvanli, PA-C, or Dr. David Margolis about what studies are enrolling patients. Current clinical trials and expanded access to investigational medicines available for failure of therapy, metabolic disorders related to HIV or its therapy, HIV with active Hep B. Ask staff if these are clinically appropriate.

Patients should be sent to check out with Venita, our nurse, at the end of their visit. Send text orders to her for vaccines, PPDs, etc. reappointments should be made to ID Specialty clinic (if the patient is followed by the Metals or Primary care clinics) or ID Primary clinic (if we are their primary care provider)

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HISTORY: Clinicians evaluating HIV-infected patients for the first time should take a careful history, focusing specifically on common HIV-related symptoms, including: fevers, night sweats, weight loss, diarrhea, skin rashes or lesions, oral thrush or ulceration, and changes in neurologic function or mental status. Patients should be questioned about their past medical history, with special attention to sexually transmitted diseases, chicken pox or shingles, viral hepatitis, bacterial infections, gynecological problems, and exposure to tuberculosis. It is important that the history also include questions about where the patient has lived and traveled. For example, patients reporting travel in endemic areas for histoplasmosis (Ohio and Mississippi River Valleys) and coccidioidomycosis (Southwestern deserts) may be at risk for reactivation disease, even after moving to non-endemic areas.

Patients should also be questioned about behaviors that might lead to further transmission of HIV. Specifically, a sexual history should be taken to assess the patient's current sexual practices and to determine whether sexual partners are aware of the patient's HIV status and have been tested for HIV. Patients should be encouraged to inform their partners of their HIV status. The health care professional can offer to help with this difficult but necessary task. Release of this information could compromise the patient's physical safety, and may detrimentally affect supportive family relationships. Laws vary from state to state regarding the obligation of health care providers to notify sexual partners, and clinicians should be aware of such laws in their own jurisdiction. Active injection drug users should be asked about their drug using practices, their source of needles, whether they share needles and if so, with whom.

Depression is common in HIV-infected patients, and clinicians should be alert to the possibility of this treatable condition. Since newly diagnosed patients may assume that depression is an inevitable sequela of learning one's HIV status, they may not volunteer their symptoms. The history should include questions focusing on changes in mood, libido, sleeping patterns, appetite, concentration, and memory.

In the course of taking a complete history, the clinician can begin to assess the patient's level of awareness about HIV infection and treatment, evaluating the patient's educational needs, and determining the form that such support might take. A variety of topic-focused educational materials geared to varying educational levels are an invaluable resource, since much of the verbal education that frequently takes place during initial visits may be lost as a result of the informational and emotional overload that often accompany such encounters.

Do not assume that patients are properly taking prescribed medications. Review of medications, **inquiry about side effects, and non-judgmental, concrete questions about compliance should be asked at every visit** (e.g. "can you remember missing a dose of your medication for any reason in the last 3-4 days? During the last 1-2 weeks?"). Use the pill charts in the clinic to identify anti-retrovirals. Give these charts to patients to take home for their use. Review the concept that

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antiretroviral therapy should always be used in its proper and complete combination (eg. never take just one or two)

PHYSICAL EXAMINATION: Patients should be questioned about how their current weight compares to what they consider their normal or baseline weight. Special attention should be paid to the examination of the skin, looking for evidence of seborrheic dermatitis, Kaposi's sarcoma, folliculitis, fungal infections, psoriasis and prurigo nodularis. Fundoscopic examination should be performed, and in patients with advanced HIV disease (CD4+ count less than 100 cells/mm³) it may be appropriate to refer the patient to an ophthalmologist. The oropharynx should be carefully examined, noting evidence of candidiasis, oral hairy leukoplakia, mucosal Kaposi's sarcoma, aphthous ulceration, and periodontal disease. While persistent generalized lymphadenopathy (PGL) is common among HIV-infected patients, it does not correlate with prognosis or disease progression. Localized lymphadenopathy or splenomegaly, however, may be a sign of infection or malignancy, and should be evaluated further. It is important to perform a careful anogenital examination for evidence of sexually transmitted diseases, including condylomata and herpes simplex lesions. HIV-infected women demonstrate high rates of vaginal candidiasis, cervical dysplasia, and pelvic inflammatory disease and a screening pelvic examination with Pap smear is mandatory. Women with abnormal pap smears or a history of infection with human papillomavirus (HPV) should be referred for colposcopy. The neurologic examination should include a general assessment of cognitive function. Patients in whom dementia is suspected may benefit from more sensitive neuropsychologic testing.

Follow-up Evaluation: The frequency of evaluation depends in part on the stage of HIV disease. Asymptomatic patients not on therapy with normal CD4+ cell counts and low viral loads can be followed infrequently, repeating CD4+ cell counts and viral load measurements every 3 months. Although HIV-related complications are unlikely at this stage, these visits are useful for addressing health care maintenance issues (performance of periodic PPD skin tests, syphilis serologies, and Pap smears), as a teaching opportunity about the disease and the prevention of transmission, and to build the therapeutic relationship that will become increasingly important as patients progress to more advanced disease.

Once such therapy has been initiated, one must monitor the response to therapy within 3 to 4 weeks with a repeat CD4+ cell count and viral load measurement. If the response is acceptable, the laboratory values should be monitored **approximately every month, until a stable pattern** of undetectable HIV RNA is established, so that any treatment failure can be detected early and the drug regimen modified. It is important to recognize that "pill fatigue" can set in at any time, usually after a few months of therapy. Each visit is an important opportunity to discuss in detail how a patient copes with and manages their antiretroviral therapy, and to provide positive feedback and encouragement. Once a patient is stable and doing well, and HIV RNA < 50 copies, visits can be decreased in frequency to every 2-3 months. CD4+ cell counts should be followed every several months (ca. 2-6) both for assessment of antiretroviral

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efficacy and to determine the need for opportunistic infection prophylaxis. However, in patients whose CD4+ counts are consistently less than 50 cells/mm³, there is little utility in repeated testing except to monitor the response to a new antiretroviral regimen.

LAB STUDIES: It is important to educate patients about the meaning of the CD4+ cell count and viral load measurement in the context of the natural history of HIV disease. The CD4+ cell count and viral load are markers that provide clinicians with an important but incomplete measure of the state of a patient's HIV disease and immunosuppression. Both patients and clinicians must maintain a holistic approach to HIV disease, which incorporates laboratory markers as only 1 component of the total picture.

A flow sheet of current lab values is found in the patient's clinic chart. The face page documents yearly testing and serological baselines. Please keep these charts current.

Viral Load Assays Quantitative virology, or "viral load" testing, is now an essential and standard part of the evaluation of an HIV-infected individual. Viral load testing is used to assess prognosis, determine the need for antiretroviral therapy and the type of antiretroviral therapy required, and to define a baseline laboratory value so that the response to therapy can be measured. HIV RNA PCR (Amplicor HIV-1 Monitor, Roche Laboratories) is used at the Dallas VAMC.

Two assays are in use at the Dallas VAMC. Upper and lower thresholds for the assays differ: > 1 million copies/ml to 400 copies/mL for the standard assay, and 75,000 to 50 copies/mL for the ultrasensitive assay. Be explicit when ordering a standard VL or Ultrasensitive VL. The standard assay should be ordered in the initial evaluation of the untreated patient. The Ultrasensitive test is more expensive but should be ordered if the patient in question is expected or hoped to have a low viral load. Viral loads tend to be highest (100,000-10,000,000 copies/mL) during the acute retroviral syndrome and advanced disease. Asymptomatic patients commonly demonstrate lower viral loads (100-100,000 copies/mL). Viral loads may be increased by intercurrent illness or recent vaccination, and measurement should probably be deferred in such cases.

CD4+ Cell Counts: This continues to be essential in the management of HIV-infected individuals. The CD4+ cell count is used to stage the disease, help establish the risk of specific HIV-associated complications, to determine the need for opportunistic infection prophylaxis, and to assess response to antiretroviral therapy. It is important that the clinician and patient be aware of the substantial variation in the results of CD4+ cell counts. Factors affecting the CD4+ cell count include:

- seasonal and diurnal variation;
- intercurrent illness;
- inter- and intra- laboratory variation;
- recent alcohol use
- the use of corticosteroids;
- co-infection with HTLV-I;
- variation in the white blood cell count.

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The absolute CD4+ cell count is determined by multiplying the white blood cell count, the percentage of lymphocytes, and the percentage of CD4+ lymphocytes, so variation in any one of these components can affect the total CD4+ cell count. The CD4+ percentage is not subject to variation based on the complete blood count and differential, the clinical trials that are used to guide HIV therapy have consistently used the absolute CD4+ cell count, and therefore the CD4+ percentage is less frequently used clinically. However, CD4% is helpful in evaluating trends in the CD4 count.

The CD4+ cell count is used to determine the risk of specific HIV-related complications. Patients with counts in the normal range (> 500 cells/mm³) are usually asymptomatic, although women may have more recurrent or severe Candida vaginitis, and persistent generalized lymphadenopathy (PGL) can occur at any stage of HIV infection. Pulmonary tuberculosis, bacterial pneumonia, Kaposi's sarcoma, and systemic non-Hodgkin's lymphoma also occur at all stages, although they become more frequent when the CD4+ count falls below 500 cells/mm³. Patients with CD4+ counts between 200 and 500 cells/mm³ are also at risk for herpes zoster, oral thrush, cervical intraepithelial neoplasia, idiopathic thrombocytopenic purpura (ITP), and anemia. AIDS-indicator conditions are unlikely at this state, with the exceptions of Kaposi's sarcoma, non-Hodgkin's lymphoma, and the 3 indicator conditions added by the 1993 CDC case definition: recurrent pneumonia, tuberculosis, and invasive cervical carcinoma. Most opportunistic conditions can occur when the CD4+ count falls below 200 cells/mm³, but are usually not seen until the CD4 count is < 100 /mm³. These include *P. carinii* pneumonia (PCP), disseminated herpes simplex virus infection, disseminated histoplasmosis and coccidioidomycosis, miliary or extrapulmonary tuberculosis (but not typical *Tb*), and cryptosporidiosis. Toxoplasmosis and cryptococcosis require even greater immunosuppression, typically occurring at CD4+ counts less than 100 cells/mm³, and disseminated *M. avium* complex (MAC) and CMV end-organ disease are usually restricted to patients with CD4+ counts less than 50 cells/mm³.

Routine, periodic or baseline tests: Anemia, leukopenia, and thrombocytopenia are common in HIV-infected individuals, and are readily detected with a complete blood count (CBC). Hepatic and renal disease is more common in the HIV+ population, and a routine metabolic panel should be performed every 3-6 months, and more often if baseline tests are abnormal. Abnormalities of lipid metabolism are now recognized in late stage disease and in those treated with protease inhibitors or the "D drugs" (D4T, DDI, DDC); fasting lipid panels should be checked every 6-12 months.

A non-treponemal test for syphilis, such as a VDRL or RPR, should be performed at baseline and repeated yearly due to the high rates of coinfection with HIV and *Treponema pallidum*. Biologically false-positive tests are not uncommon and can be excluded with a confirmatory FTA test.

The CDC recommends routine testing with the PPD skin test (Mantoux, 5 TU units) for all HIV-infected individuals. Annual testing should be considered for those at high risk

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for tuberculosis. However, routine anergy testing is no longer recommended because of its variability, poor predictive value, and because prophylaxis in anergic individuals has been shown to prevent few cases of tuberculosis. Tuberculosis prophylaxis is recommended for all HIV-infected patients with: a positive PPD (5 mm of induration); a history of a positive PPD and no prophylaxis; or close contact with a patient with active tuberculosis.

A single test for prior exposure to *Toxoplasma gondii* using the anti-toxoplasma IgG should be recorded. This is useful for evaluation of the need for specific prophylaxis against toxoplasmic encephalitis if the CD4+ count falls below 100 cells/mm³.

Baseline testing for Hepatitis C IgG antibody, Hepatitis B Antigen and IgG Antibody, and Hepatitis A IgG antibody are useful for assessing the risk of progressive liver disease, and the need for vaccination.

HIV-infected women are at increased risk for a number of gynecological problems, including pelvic inflammatory disease and tubo-ovarian abscesses, *Candida* vaginitis, and cervical dysplasia. The latter, a complication of infection with human papillomavirus (HPV), may be more aggressive and rapidly progressive as immunodeficiency progresses, and can lead to invasive cervical carcinoma, now an AIDS-indicator condition. All HIV-infected women should have a baseline pelvic examination with pap smear. The use of routine colposcopy is controversial, but the test is clearly indicated in women with abnormal pap smears or a history of vaginal condylomata. Pap smears should be repeated at least annually in asymptomatic women; more frequent evaluations are recommended in women with abnormalities on PAP smear or with more symptomatic HIV disease. PSA testing should be performed in older males, as should yearly stool heme testing and prostate exams.

Vaccines:

- The pneumococcal polysaccharide vaccine is now considered standard of care by the USPHS/IDSA Working Group, because of the high incidence of pneumococcal pneumonia and bacteremia associated with HIV disease. The vaccine given as a single dose (0.5 cc IM), and revaccination should be considered after 5 to 6 years.
- The influenza vaccine should be considered particularly if they patient has standard indications (eg. smoking, COPD). It is given as a single dose of 0.5 cc IM annually, usually in October or November.
- Patients without prior exposure may benefit from the hepatitis B vaccine if they remain at continued risk of infection. The ACIP recommends that the hepatitis B vaccine be offered to: HIV-infected injection drug users; sexually active gay men; prostitutes; sexually active heterosexual men and women with STDs or more than 1 partner in the past 6 months; and, household or sexual contacts of HBsAg carriers. Recipients should first be screened for past infection using the HBsAb or anti-HBc serology. The vaccine is given in a series of 3 IM injections at

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0, 1, and 6 months using 20 mcg/dose of Energix B or 10 mcg/dose of Recombivax.

- Hepatitis A vaccine is safe, and is recommended for HCV+ infected individuals because of their greater risk of developing fulminant hepatitis A. It should be considered in all nonimmune individuals, especially those who are traveling to an endemic area, sexually active gay men, injection drug users, or those exposed to a community outbreak. Prevacination screening with anti-HAV IgG is recommended in Dallas.

Recommendations for the tetanus-diphtheria (dT) vaccine do not differ from those for immunocompetent adults. A single booster (

Liver Clinic Referrals: Who, When and How

Liver Disease	Current Patient Location	Liver Clinic Appt: Timing after Discharge & Labs
<i>Acute, complicated or unknown liver disease:</i>		
Acute hepatitis (AST or ALT >500 U/L)	Inpatient: <i>Consultation*</i> ED or OPC: Clinic**	3-10 days "Acute hepatitis" labs
Jaundice (new)	Inpatient: <i>Consultation*</i> ED or OPC: Clinic**	3-14 days "Acute hepatitis" labs
Uncontrolled complications of chronic liver disease (ascites or encephalopathy)	Inpatient: <i>Consultation*</i> ED or OPC: Clinic**	3-10 days "Ascites" labs
Liver disease of unknown etiology, including liver mass(es)	Inpatient: <i>Consultation*</i> ED or OPC: Clinic**	1-2 weeks "Chronic liver disease" labs
Uncommon or rare liver disease e.g. PBC, autoimmune hepatitis	Inpatient: <i>Consultation*</i> ED or OPC: Clinic**	2-3 weeks "Chronic liver disease" labs
New liver test abnormalities (previously normal tests)	Inpatient: <i>Consultation*</i> ED or OPC: Clinic**	3-14 days "Acute hepatitis" labs
<i>Uncomplicated or stable chronic liver disease:</i>		
Hepatitis C	Inpatient or ED: PCP OPC: PCP	After completion of screening by PCP
Hepatitis B (HBsAg positive)	Inpatient: <i>Consultation*</i> ED or OPC: Clinic**	2-3 weeks "Chronic liver disease" labs
Cirrhosis or chronic hepatitis	Inpatient or ED: PCP OPC: PCP PCP: Clinic referral	State reason for referral

* Get an inpatient service consultation by contacting the Liver Fellow

** Complete a referral with details of concerns and questions

Identifier	Basic Tests	Other Tests
Acute hepatitis labs	LFTs = total bilirubin, alkaline phosphatase, AST, ALT, total protein, albumin PT	
Chronic liver disease labs	LFTs	GGT if alcoholism
Ascites labs	LFTs	Electrolytes, BUN creatinine Urine Na and K

Liver Clinic Referrals: Who, When and How

I would like to explain our current policies and procedures related to referrals to the subspecialty Liver Clinic. Any patient requiring subspecialty follow-up care should be referred to the clinic.

1. Inpatients:

For hospitalized inpatients, we request that the inpatient consultation service see the patient during the hospitalization before discharge and follow-up in the outpatient clinic. In this way, the patient is seen in a timely manner and continuity of care is provided. In addition, we are able to accommodate more patients (we usually see between 65 and 85 patients on Thursday afternoons) when they are follow-up visits

In determining whether a particular inpatient NEEDS subspecialty follow-up care, I suggest the following:

1.1 **Acute hepatitis and other causes of new jaundice?** These patients are seen initially by the inpatient consultation service and in clinic 1-2 weeks after discharge, depending on the severity of their illness at the time of discharge.

1.2 **Complications of liver disease** that should be monitored soon after discharge? e.g. ascites patients and those with hepatic encephalopathy on NEW therapy. These patients are seen initially by the inpatient consultation service and in clinic 3-10 days after discharge to ascertain the appropriateness of their treatment regimen.

1.3 **NEW or undiagnosed liver disease including liver mass(es)**? If a subspecialty opinion is desired, complete the necessary referral information for inpatient or outpatient evaluation. All outpatient referrals will be reviewed and an appointment scheduled for appropriate patients. Currently, new patients classified as "Routine" are scheduled for an appointment within about 3 weeks. Patients with more urgent clinical findings should be seen as in-patients. If patients are not seen while hospitalized, a discharge summary and a medical record are needed for a complete evaluation in the clinic.

1.4 **Uncommon or rare liver disease** for which subspecialty knowledge is preferred during outpatient care? e.g. primary biliary cirrhosis, autoimmune hepatitis. These patients are followed in the Liver Clinic long-term. We like to follow them in the hospital also, so that we can contribute to their care and to the education of the housestaff. Please note that chronic liver disease from alcohol and/or hepatitis C is not uncommon or rare.

1.5 **Uncomplicated chronic liver disease**

1.5.1 Hepatitis C: Patients with chronic HCV infection are candidates for anti-viral therapy. All patients with chronic hepatitis C MUST be referred by a primary care provider from an outpatient clinic or private office if the question is that of candidacy for anti-viral therapy (see below).

1.5.2 Hepatitis B: Patients with chronic HBV infections (HBsAg positive) are candidates for anti-viral therapy. They may be referred directly to the Liver Clinic. Results of hepatitis B virology and serology tests are useful when being assessed in the clinic (see table).

1.5.3 Other diagnoses: Please indicate the reason for referral.

Liver Clinic Referrals: Who, When and How

2. Emergency Department

For patients seen in the Emergency Department **because** they have acute liver disease or its complications, the general guidelines are similar to those for hospitalized inpatients. The major exception is that the inpatient consultation service does NOT need to be notified.

In determining whether a particular Emergency Department patient NEEDS subspecialty follow-up care, I suggest the following:

2.1 **Hepatitis with aminotransferases >500 U/L** but NOT being admitted? These patients should be seen in the Liver Clinic within 10 days with "Acute hepatitis" labs on arrival (see above for laboratory test details).

2.2 **NEW liver disease**

2.2.1 Abnormal hepatic enzymes with normal results previously? These patients should be seen in the Liver Clinic within 10 days with "Acute hepatitis" labs and a GGT on arrival, regardless of the pattern of enzyme elevation.

2.2.2 Hepatic mass(es)? Suspected metastatic disease should be referred to Radiology for biopsy. Other patients should be seen in Liver Clinic with timing dependent on clinical findings stated on referral and investigations.

2.3. **Complications of liver disease** that need to be monitored within the next 10 days to assess NEW therapy instituted at discharge? These patients should be seen in the Liver Clinic within 10 days with "Ascites" labs on arrival plus any other appropriate tests.

2.4. **Other liver disease:**

2.4.1 All patients with stable liver disease should be referred to a primary care provider. Liver Clinic does not provide primary care.

2.4.2 Hepatitis B: Patients with chronic hepatitis B may be directly referred to the Liver Clinic for evaluation as above.

2.4.3 Hepatitis C: Patients with chronic hepatitis C CANNOT be referred directly for assessment unless they meet the criteria in 2.1 - 2.3 above. They must be referred to PCP for pre-clinic screening.

Liver Clinic Referrals: Who, When and How

3. Outpatients:

Unfortunately, the number of new referrals to our clinic (up to 24 scheduled each week) and the number of patients seen on a regular basis, means that we cannot offer subspecialty care for all patients with any liver disease or even all patients with cirrhosis. The following guidelines are used:

3.1 **NEW liver disease**

3.1.1 Abnormal hepatic enzymes with normal results previously? These patients should be seen in the Liver Clinic within 10 days with "Acute hepatitis" labs and a GGT on arrival, regardless of the pattern of enzyme elevation.

3.1.2 Hepatic mass(es)? Suspected metastatic disease should be referred to Radiology for biopsy. Other patients should be seen in Liver Clinic with timing dependent on clinical findings stated on referral and investigations.

3.2 **Elevated hepatic enzymes or other evidence of liver disease of unknown etiology** - are appropriate referrals. If inpatients, they should be seen by the inpatient consultation service.

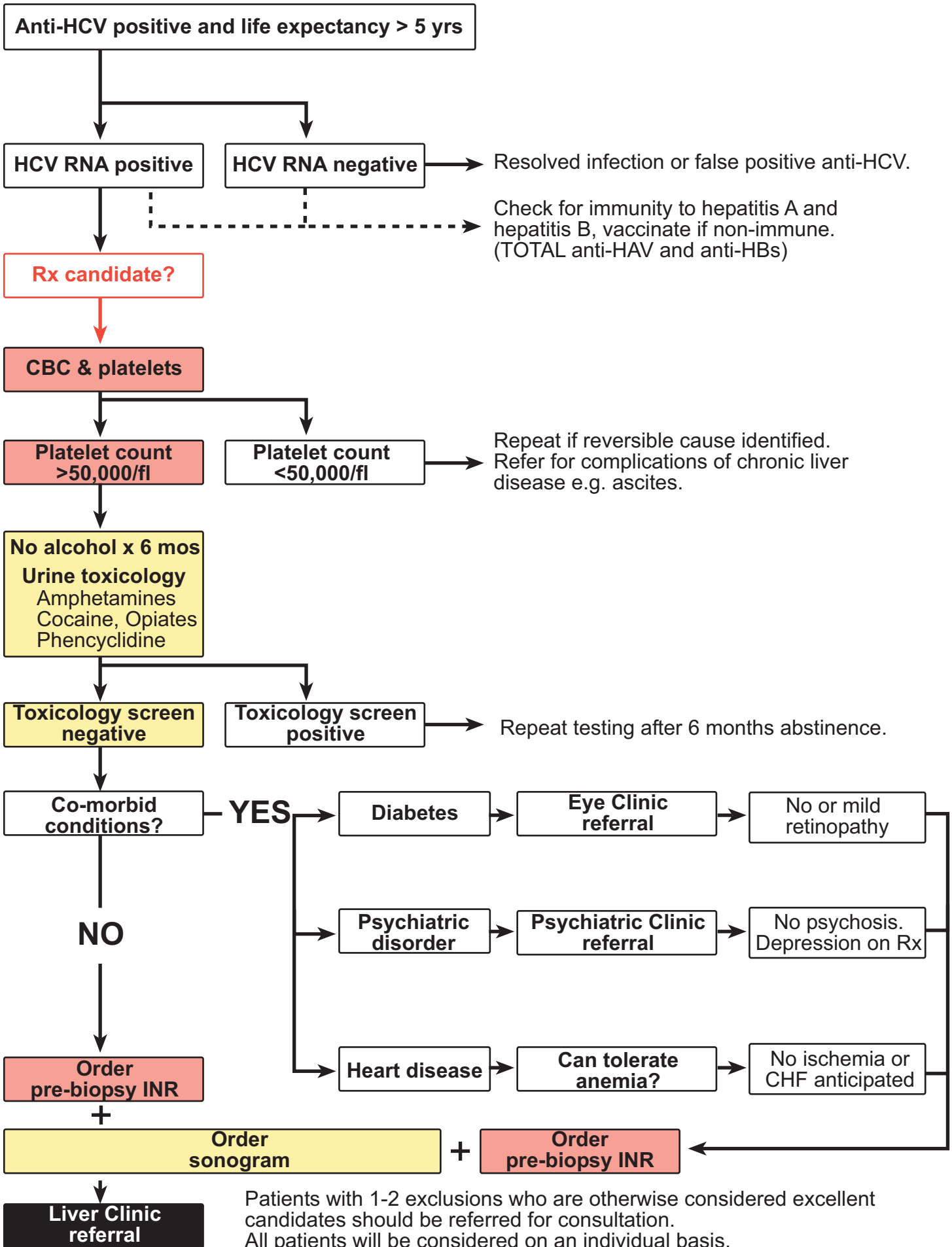
3.3 **Hepatitis C without complications of liver disease** - these patients MUST be referred by a primary care provider at an outpatient clinic or private office. Patients with chronic hepatitis C and a life expectancy of <5 years from other diseases are NOT candidates for anti-viral therapy. Before the patient's appointment is scheduled, screening tests must be completed (see algorithm). In particular, documentation of viremia and a recent negative urine toxicology screen are necessary. Diabetic patients must have a recent ophthalmologic assessment.

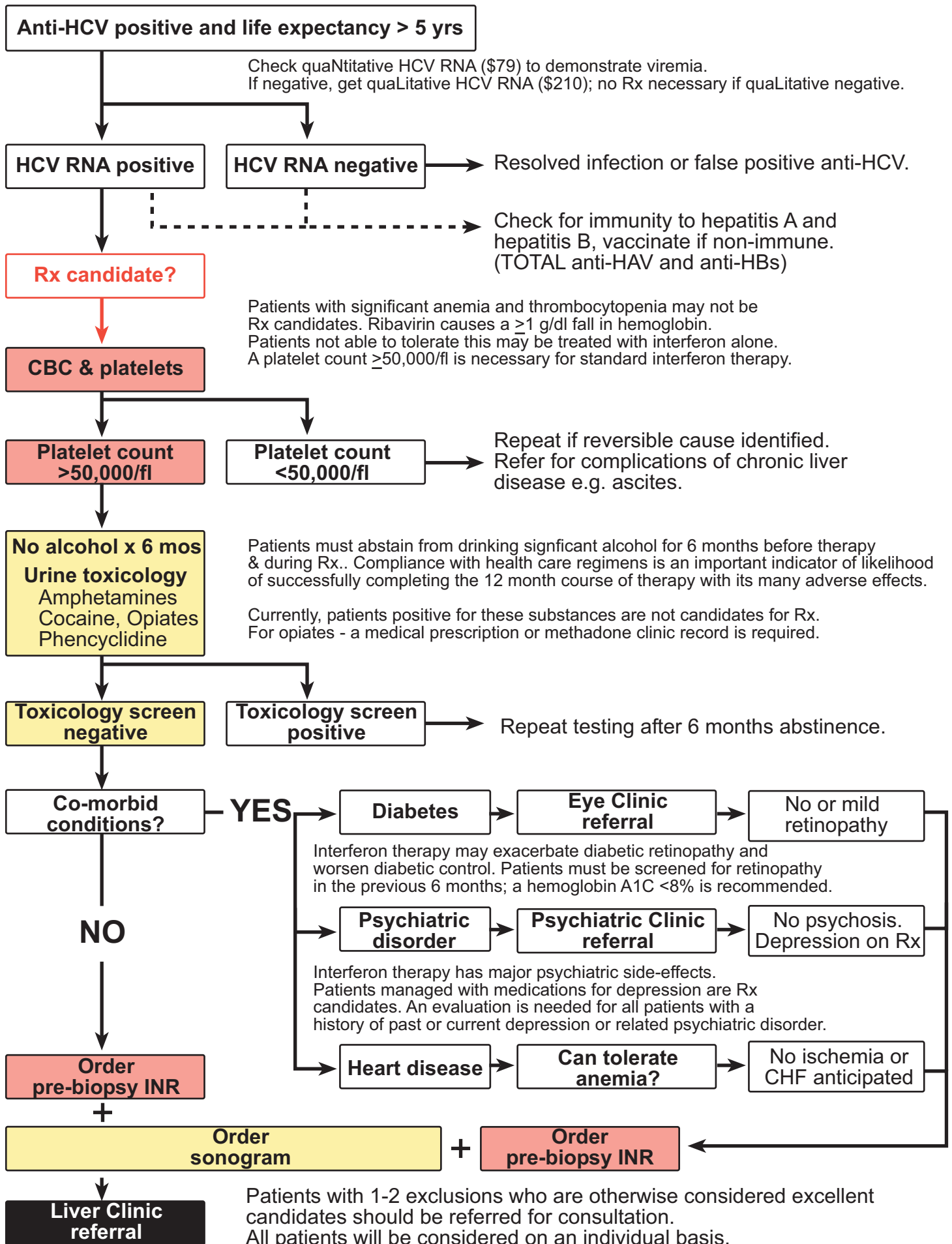
3.4 **Hepatitis B** All patients with chronic hepatitis B (HBsAg positive) may be directly referred to the Liver Clinic for evaluation of their candidacy for anti-viral therapy, recommendations for hepatocellular carcinoma screening etc.

3.5 **Liver disease of known etiology** and either requiring no medications for their liver disease or on a stable regimen (no changes in >3 months)? These patients do not need to be followed in Liver Clinic. If you are following such an outpatient and have a specific question regarding their management/care, please refer them making the question clear.

3.6 **Alcoholism without jaundice or complications of liver disease** - should be referred for counseling (not liver clinic).

Identifier	Basic Tests	Other Tests
Chronic hepatitis C screen	LFTs HCV RNA Urine toxicology (recent) Sonogram	Ophthalmology Clinic Psychiatry Clinic
Chronic hepatitis B screen	LFTs	HBV DNA HBeAg anti-HBe antibody





PHHS Liver Clinic - Thursday p.m., 7A & 7B

- I. **Objectives:** At the completion of your clinic experience you should be able to
- A. Given a patient with acute or chronic elevation of hepatic enzymes, generate an appropriate differential diagnosis and assessment plan to determine etiology.
 - B. Determine whether any given patient with chronic viral hepatitis is a candidate for anti-viral therapy.
 - C. Given a patient with cirrhotic ascites, assess adequacy of diuretic therapy and determine choice of therapy if inadequate.
- II. **Clinic organization:**
- A. *Patient assignment:*
 1. Patients are assigned to either individual fellows or to a combined group to be seen by housestaff and students, not to individual housestaff and students *unless follow-ups.*
 2. Patients are seen in order of their appointment time (1:00 p.m. to 3:30 p.m. in 30 minute intervals with laboratory appointments 60 - 90 minutes beforehand) and their registration time unless they are late for their scheduled appointment.
 3. All fellows, housestaff and students continue to see patients until there are no patients waiting.
 - B. *Clinic charts:*
 1. Liver clinic visits are denoted by a round yellow sticker that is affixed to the bottom right hand corner of the page.
 2. Laboratory test results are recorded in the Master Laboratory sheet, **NOT** in the individual clinic visit note.
- III. **New patients:** what to do
- A. Obtain and record a liver disease-related history and physical examination. Include other pertinent medical history, family history, social history and systems review. For example, in patients with hepatitis C, it is important to document diabetes, psychiatric disease and neurologic disease. The systems review should include the cardiovascular (angina?), musculoskeletal (arthritis-related to cryoglobulins?, lupus?), dermatologic (leukocytoclastic vasculitis?), neurologic (seizures?), psychiatric (depression, psychosis) and endocrine (diabetes, thyroid) systems.
 - B. Ascertain the patient's knowledge about their referral, their disease and their expectations for the clinic visit. (Patients may expect a liver biopsy and prescription for interferon - their expectations will NOT be met).
 - C. Record the appropriate laboratory test results (e.g. enough representative past LFTs to demonstrate tempo of disease, etiologic work-up etc.) on the Master Laboratory sheet. This is located at the end of the Laboratory Results section of the chart. Individual results can be obtained from OACIS or the LIS (Laboratory Information System = green screen computers used in ED, MICU, CCU etc.). Use the list of test result numbers to filter available LIS data.
 - D. Present information to faculty (leave patient in room while doing this). To increase your learning, choose different faculty members when disease presentation is similar to previous patient(s).
- IV. **Follow-up patients:** what to do
- A. Check for directions on front of chart related to assessment e.g. can this patient be discharged from Liver Clinic and followed by primary care?
 - B. As in section II. A.-D. above.

Check for directions on front of chart related to follow-up e.g. reappoint to Dr. Ganeshappa's clinic. There are no clinic follow-up appointments beyond 3 months unless approved by jc.

PHHS Liver Clinic - Thursday p.m., 7A & 7B

Child-Turcotte Pugh Score

	Points Scored		
	1	2	3
Encephalopathy	None	1-2	3-4
Ascites	Absent	Slight or controlled	Moderate
Albumin	>3.5	2.8-3.5	<2.8
Prothrombin Time (INR)	<1.7	1.7-2.3	>2.3
Bilirubin (mg/dl) or	<2	2-3	>3
For PBC, PSC or other cholestatic liver disease bilirubin =	<4	4-10	>10
Child's A: 5 or 6, Child's B: 7-9, Child's C: ≥10			

Hepatitis B DNA Quantification

10⁵ copies/mL 0.35 pg/mL lower limits of detection by Abbott direct hybrid. assay
Gastroenterology 120:1828-1853, 2001.

Indications for hospitalization for acute viral hepatitis:

- 1.) Hypovolemia / dehydration
- 2.) Hepatic encephalopathy
- 3.) Biochemically severe disease (serum bilirubin > 20 mg/dl or PT > 20 seconds)

Maddrey Discriminant Function for Severe Alcoholic Liver Disease (post 1998 PT assay)

DF = total bilirubin (mg/dl) + 2.44(Prothrombin Time_{sec})
DF > 74 = severe disease (consider corticosteroids)

Mayo PBC Prognostic Model

R = 0.871 log_e(bilirubin mg/dl) + -2.53log_e(albumin gm/dl) + 0.039 age + 0.881 log_e(INR) + 5.92 + 0.859 (edema: 0, 0.5, or 1)

To calculate survival over one year, fraction surviving = 0.97^{exp(R-5.07)}, over three years, fraction surviving = 0.88^{exp(R-5.07)}, over five years fraction surviving = 0.77^{exp(R-5.07)} or go to <http://www.mayoclinic.org/gi-rst/models.html>.

MELD scale for estimating short term mortality in patients with cirrhosis

MELD score = 3.8*log_e(bilirubin[mg/dl]) + 11.2*log_e(INR) + 9.6*log_e(creatinine[mg/dl]) + 6.4

3 month death rates :

MELD Score:	.9	10-19	20-29	30-39	.40
3 month death rates:	2-8%	6-29%	50-76%	62-83%	~100%

or use calculator at: <http://www.mayo.edu/int-med/gi/model/mayomodl.htm> Hepatology 33:464, 2001

Prothrombin Time Conversions between pre-11/98 and post-11/98

"old" PT = 4.087 + 0.5297 ("new"PT)

Ambulatory Care Rotation: Geriatrics

Residents:

Welcome to the Geriatrics portion of your ambulatory care rotation. During your rotation your patient visits at our Geriatrics clinic will expose you to:

1. Elements of a comprehensive geriatric assessment, i.e., enhanced history, physical and mental function assessment, social supports evaluation
2. Multiple geriatric syndromes: dementia, depression in late life, gait instability and falls, etc.
3. Age-related changes in pharmacology, polypharmacy
4. Difference between normal aging from disease processes
5. Atypical presentations of disease in older adults
6. Disease prevention and health promotion strategies for older adults
7. Ethical issues: patient autonomy, driving, elder abuse
8. Identification and use of community services

At the end of your weeks with us, you will be able to:

1. Communicate sensitively and effectively with older persons
2. Recognize the functional impact of acute and chronic disease processes
3. Organize management of multiple acute and chronic diseases simultaneously
4. Incorporate patient values into the medical decision-making processes

To guide you in your patient encounters, we ask that you read the following materials. Your final evaluation will be based on demonstration of ability to apply these skills and knowledge of care of the geriatric patient.

We will see you on Monday morning. Please bring along your lab coat, stethoscope, compassion, and sense of humor. **If you will be late or absent from clinic due to illness or vacation please call the clinic by 9:00 a.m. 214-590-8369.**

Sincerely,

Belinda Vicioso, M.D.
Associate Professor
General Internal Medicine
Geriatrics Section

BAV/acb