ABIM Human Immunodeficiency Virus (HIV) PIM™ Practice Improvement Module Measures Catalogue

Human Immunodeficiency Virus (HIV) PIM
Measures Catalogue
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Introduction

This catalogue provides information related to the American Board of Internal Medicine's Human Immunodeficiency Virus (HIV) Practice Improvement Module®. It is written in language that addresses the physician who might choose to complete this module, and it details the specifics of the module. Included is information regarding:

- **Purpose and structuring of the module**
- **Patient inclusion criteria**
- **Detailed description of the measures**

This PIM examines the care you provide to your patients by addressing key processes and outcomes of care related to HIV infection. These are based on guidelines from the HIV Medicine Association of the Infectious Disease Society of America and the Centers for Disease Control and Prevention.

The PIM is divided into three parts, with multiple sections in each part.

Part 1 -Performance Data

Provide baseline data about your practice's current performance by...

- Reviewing your charts
- Assessing your practice systems

The 36 chart review measures are summarized below. **ABIM requires a minimum of 25 chart reviews.** The practice systems assessment comprises questions covering various aspects of practice structure and protocols.

Patients can be **included** in this module if **all** of the following are true:

1. They are between the ages of 15 and 90 (inclusive);
2. Management decisions regarding HIV are made primarily by providers in the practice;
3. They have been patients in the practice for at least one year; *AND*
4. They have been seen by the practice within the past 12 months.

Part 2 - Quality Improvement (QI) Plan
Develop a plan for improving one aspect of your practice after reviewing the analysis of your current performance data. The analysis will include many aspects of care you provide to your patients. Ultimately, you will target only one of these to use in this quality improvement (QI) cycle.

Part 3 - Remeasurement
Remeasure your performance data after you have implemented your QI plan to see if you achieved your goal. Then, you will reflect on the process of developing and implementing a QI plan.

You may claim CME credit for completing this activity. The University of Pennsylvania School of Medicine designates this educational activity for a maximum of 20 *AMA PRA Category 1 Credit(s)*™.

HIV - OUTCOMES OF CARE

CD4 Count & Viral Load				
Measure Title	**Description**	**Numerator**	**Denominator**	**Rationale**
Patients on ART for at least 6 months with most recent viral load < 50 (undetectable)	Patients in the sample receiving antiretroviral therapy for at least six months and whose viral load is below the limits of detection. Viral load testing must have been done within six months, plus one-month grace period, of the most recent visit.	Number of patients in the sample receiving antiretroviral therapy for at least six months and whose viral load is below the limits of detection. Viral load testing must have been done within six months, plus one-month grace period, of the most recent visit.	Number of patients in the sample receiving antiretroviral therapy for at least six months	Viral load testing provides valuable information regarding prognosis, as well as in determining the need for and monitoring response to antiretroviral therapy (ART). The goal of ART is an undetectable viral load (generally below 50 copies/mL, although some labs may differ). Resistance testing may be appropriate for patients whose viral load is above 1000 copies/mL.

Common Coexisting Infections				
Measure Title	**Description**	**Numerator**	**Denominator**	**Rationale**
Hepatitis C status known	Patients in the sample whose hepatitis C status was known, excluding those who refused testing	Number of patients in the sample whose hepatitis C status was known, excluding those who refused testing	Number of patients in the sample, excluding those who refused testing for hepatitis C	Overall HIV-HCV coinfection rates are 25%-30%; significantly higher rates (72%-95%) are seen in injection drug users. Liver disease also tends to progress more rapidly in HIV-infected patients. Thus, all HIV-infected patients should be screened for hepatitis C.
HCV RNA testing done to confirm active hepatitis C	Patients in the sample who are co-infected with hepatitis C and in whom active infection has been confirmed with HCV RNA testing	Number of patients in the sample who are co-infected with hepatitis C and in whom active infection has been confirmed with HCV RNA testing	Number of patients in the sample who are co-infected with hepatitis C	Patients with hepatitis C co-infection should have HCV RNA testing to confirm active infection. HCV-associated conditions are among the leading causes of hospital admission and death in the HIV-infected population.
Hepatitis B status known	Patients in the sample whose hepatitis B status was known, excluding those who refuse testing	Number of patients in the sample whose hepatitis B status was known (i.e., immune, susceptible, or chronic infection), excluding those who refuse testing	Number of patients in the sample, excluding those who refused to be tested for hepatitis B	Coinfection with HIV and hepatitis B is common, and liver disease tends to progress more rapidly in patients with HIV. Thus, all HIV-infected patients should be screened for hepatitis B.
Hepatitis B vaccine	Patients in the sample who have received hepatitis B vaccine or who have documented immunity or chronic infection, excluding those who refused vaccination or could not be vaccinated due to medical reasons	Number of patients in the sample who have received hepatitis B vaccine or who have documented immunity or chronic infection, excluding those who refused vaccination or could not be vaccinated due to medical reasons	Number of patients in the sample, excluding those who refused hepatitis B vaccination or could not be vaccinated due to medical reasons	Liver disease tends to progress more rapidly in patients with HIV. Thus, all HIV-infected patients should be screened for hepatitis B. Patients who are not immune should be vaccinated.
Testing for syphilis done within 12 months	Patients in the sample who have been tested for syphilis within 12 months. Patients who are not sexually active or	Number of patients in the sample who have been tested for syphilis within 12 months.	Number of patients in the sample, excluding those who are not	HIV-infected patients who are at risk for sexually transmitted infections (STIs) should be tested annually for syphilis. More frequent

Common Coexisting Infections				
Measure Title	**Description**	**Numerator**	**Denominator**	**Rationale**
	refused testing are excluded.		sexually active or refused testing	testing may be appropriate for those at high risk.
Screening for chlamydial infection done	Patients in the sample who have had screening for chlamydial infection done since the diagnosis of HIV infection, excluding those who refused testing	Number of patients in the sample who have had screening for chlamydial infection done since the diagnosis of HIV infection.	Number of patients in the sample, excluding those who refused testing	All HIV-infected patients should be tested for sexually transmitted infections (STIs). Periodic testing is appropriate for patient at high risk.
Screening for gonorrhea done	Patients in the sample who have had screening for gonorrhea done since the diagnosis of HIV infection, excluding those who refused testing	Number of patients in the sample who have had screening for gonorrhea done since the diagnosis of HIV infection.	Number of patients in the sample, excluding those who refused testing	All HIV-infected patients should be tested for sexually transmitted infections (STIs). Periodic testing is appropriate for patient at high risk.
Results of screening for tuberculosis (or reason for not screening) documented	Patients in the sample who have results of screening for tuberculosis (or prior history of positive screening test or treatment) documented, excluding those who refused testing	Number of patients in the sample who have results of screening for tuberculosis (or prior history of positive screening test or treatment) documented	Number of patients in the sample, excluding those who refused testing	All HIV-infected patients should be screened for tuberculosis at the initiation of care. Repeat testing may be considered for those whose initial test is negative but who subsequently have an increase in CD4 count wile taking antiretroviral therapy. Additional testing also may be indicated because of new exposure.
Influenza vaccination during the most recent flu season	Patients in the sample who have had influenza vaccination during the most recent flu season, excluding those who refused vaccination or could not be vaccinated due to medical reasons	Number of patients in the sample who have had influenza vaccination during the most recent flu season	Number of patients in the sample, excluding those who refused influenza vaccination or could not be vaccinated due to medical reasons	All HIV-infected patients should receive influenza vaccination (inactivated) annually. Live attenuated intranasal vaccine should not be used.
Pneumococcal vaccine	Patients in the sample who received pneumococcal vaccine, excluding those who refused vaccination or could not	Number of patients in the sample who received pneumococcal vaccine	Number of patients in the sample, excluding those who refused	HIV-infected patients have a high incidence of Streptococcus pneumoniae pneumonia. Complications include bacteremia

Common Coexisting Infections				
Measure Title	**Description**	**Numerator**	**Denominator**	**Rationale**
	be vaccinated due to medical reasons		pneumococcal vaccination or could not be vaccinated due to medical reasons	and relapse of pneumonia. Some experts recommend pneumococcal vaccine for all HIV-infected persons. Other guidelines recommend it only for patients whose CD4 lymphocyte count is above 200 cells/mL.
Hepatitis A vaccine	Patients in the sample who are at risk for acquiring hepatitis A infection and who received hepatitis A vaccine	Number of patients in the sample who are at increased risk of acquiring hepatitis A infection, or for its complications, and who have received hepatitis A vaccine, excluding those who refused vaccination or could not be vaccinated for medical reasons. Patients at increased risk are those with risk factors of male-to-male sexual contact or injection drug use; patients at increased risk of complications are those with hepatitis B or C.	Number of patients in the sample who have risk factors of male-to-male sexual contact or injection drug use, or who have hepatitis B or C, excluding those who refused hepatitis A vaccination, or could not be vaccinated due to medical reasons	Liver disease tends to progress more rapidly in patients with HIV. Vaccination is appropriate for HIV-infected patients who are not immune to hepatitis A virus (i.e., lack anti-HAV IgG antibodies) and are at increased risk for hepatitis A or its complications.

Treatment and Monitoring				
Measure Title	**Description**	**Numerator**	**Denominator**	**Rationale**
CD4 count done within six months of most recent visit	Patients in the sample whose CD4 lymphocyte count has been measured within six months, plus one-month grace period, of the most recent visit	Number of patients in the sample whose CD4 lymphocyte count has been measured within six months, plus one-month grace period, of the most recent visit	Number of patients in the sample	CD4 lymphocyte count provides valuable information for staging and monitoring HIV disease, estimating the risk for complications, and determining the need for prophylactic and primary therapies. CD4 count should be measured at least every six months; more frequent intervals (every three to four months) may be appropriate, depending on the

Treatment and Monitoring				
Measure Title	**Description**	**Numerator**	**Denominator**	**Rationale**
				stage of HIV disease.
PCP prophylaxis for patients with CD4 <100 OR CD4 100-199 and detectable viral load	Patients in the sample whose CD4 lymphocyte count is less than 100 cells/mL OR whose CD4 count is 100-199 cells/mL and whose viral load is detectable (i.e., 50 or above) and who are receiving PCP prophylaxis	Number of patients in the sample whose CD4 lymphocyte count is less than 100 cells/mL OR whose CD4 count is 100-199 cells/mL and whose viral load is detectable (i.e., 50 or above) and who are receiving PCP prophylaxis	Number of patients in the sample whose CD4 lymphocyte count is less than 100 cells/mL OR whose CD4 count is 100-199 cells/mL and whose viral load is detectable (i.e., 50 or above)	Pneumocystis pneumonia (PCP) remains a common opportunistic infection in HIV. If prophylaxis is not given, PCP occurs in more than half of HIV-infected patients. Risk is inversely related to CD4 count, with infection rarely occurring in patients whose count is above 200 cells/mL. Some experts suggest that prophylaxis is needed only for patients whose CD4 count is below 100 cells/mL or whose CD4 count is 100-199 cells/mL but with a detectable (i.e., 50 copies/mL or greater) viral load.
PCP prophylaxis for patients with CD4 <200	Patients in the sample whose CD4 lymphocyte count is less than 200 cells/mL and who are receiving PCP prophylaxis	Number of patients in the sample whose CD4 lymphocyte count is less than 200 cells/mL and who are receiving PCP prophylaxis	Number of patients in the sample whose CD4 lymphocyte count is less than 200 cells/mL	Pneumocystis pneumonia (PCP) remains a common opportunistic infection in HIV. If prophylaxis is not given, PCP occurs in more than half of HIV-infected patients. Risk is inversely related to CD4 count, with infection rarely occurring in patients whose count is above 200 cells/mL. Some experts suggest that prophylaxis is needed only for patients whose CD4 count is below 100 cells/mL or whose CD4 count is 100-199 cells/mL but with a detectable (i.e., 50 copies/mL or greater) viral load.
MAC prophylaxis for patients with most recent CD4 <50	Patients in the sample whose CD4 lymphocyte count is less than 50 cells/mL and who currently are receiving MAC prophylaxis	Number of patients in the sample whose CD4 lymphocyte count is less than 50 cells/mL and who currently are receiving MAC prophylaxis	Number of patients in the sample whose CD4 lymphocyte count is less than 50 cells/mL	Mycobacterium avium-complex (MAC) disease, which can cause severe illness in patients with advanced AIDS, is directly related to the severity of immunosuppression. MAC typically occurs at CD4 counts

Treatment and Monitoring				
Measure Title	**Description**	**Numerator**	**Denominator**	**Rationale**
				below 50 cells/mL, and its frequency increases as CD4 count declines. If prophylaxis is not given, MAC occurs in up to 40% of AIDS patients.
Antiretroviral therapy prescribed for patients with CD4 count <= 500	Patients in the sample whose CD4 lymphocyte count has fallen below 500 cells/mL since 2009 and who are prescribed antiretroviral therapy	Number of patients in the sample whose CD4 lymphocyte count has fallen below 500 cells/mL since 2009 and who are prescribed antiretroviral therapy	Number of patients in the sample whose CD4 lymphocyte count has fallen below 500 cells/mL since 2009	Antiretroviral therapy (ART) is indicated for patients whose CD4 lymphocyte count is 500 cells/mL or lower. ART also is appropriate for patients who have symptoms of HIV or an AIDS-defining condition.
Viral load testing done within six months of most recent visit	Patients in the sample who have had viral load testing done within six months, plus one-month grace period, of the most recent visit	Number of patients in the sample who have had viral load testing done within six months, plus one-month grace period, of the most recent visit	Number of patients in the sample	Viral load testing provides valuable information regarding prognosis, as well as in determining the need for and monitoring response to antiretroviral therapy. Patients with low viral load and stable clinical/immunologic status should be tested every six months; most other patients will benefit from more frequent testing.
Documented plan of care to further suppress viral replication	Patients in the sample who have received antiretroviral (ART) therapy for at least six months, and whose viral load is not fully suppressed, who have a documented plan of care to further suppress viral replication, such as changing ART or repeating viral load measurement	Number of patients in the sample receiving antiretroviral therapy (ART) for at least six months with detectable viral load (i.e., 50 copies/mL or above) who have a documented plan of care to further suppress viral replication, such as changing ART or repeating viral load measurement	Number of patients in the sample receiving antiretroviral therapy for at least six months with detectable viral load (i.e., 50 copies/mL or above)	If a six-month course of antiretroviral therapy fails to suppress viral load, the physician and patient must work together to determine an appropriate course of action. Patient adherence must be determined and enhanced, if necessary. Additional diagnostic studies may be indicated to assess ART efficacy.
Medical record has updated HIV flow sheet	Patients in the sample whose medical record has an updated HIV flow sheet to record information including CD4	Number of patients in the sample whose medical record has an updated HIV flow sheet to record information including	Number of patients in the sample	A detailed record of medications is essential for the provision of high-quality care for any patient. A simple medication list does not

Treatment and Monitoring				
Measure Title	**Description**	**Numerator**	**Denominator**	**Rationale**
	count, viral load, and prescribed medications, with response and adverse reactions noted	CD4 count, viral load, and prescribed medications, with response and adverse reactions noted		provide enough information, particularly for the complex regimens used to treat HIV infection. A medication flow sheet allows tracking of regimens, dosages, start/stop dates, side effects, adverse reactions, and changes in CD4 count and viral load.
Appropriate HIV resistance testing done	Patients in the sample who started or changed antiretroviral therapy (ART) after viral genotyping was available or recommended and who have had HIV resistance testing (genotyping) done	Number of patients in the sample who started or changed antiretroviral therapy (ART) after viral genotyping was available or recommended and who have had HIV resistance testing (genotyping) done	Number of patients in the sample who started or changed antiretroviral therapy (ART) after viral genotyping was available or recommended	HIV resistance testing is recommended for patients whose antiretroviral therapy (ART) has been changed because of virologic failure that occurred in 2007 or later, or who are receiving initial ART that began in 2007 or later. Some experts recommend baseline resistance testing for all patients. If the start date of initial ART is not documented, it was assumed to be 2007 or after.

General and Preventive Health Care (all patients)				
Measure Title	**Description**	**Numerator**	**Denominator**	**Rationale**
Discussion about reducing the risk of transmission of HIV to others documented	Patients in the sample whose medical record documents a discussion about reducing the risk of transmission of HIV to others	Number of patients in the sample whose medical record documents a discussion about reducing the risk of transmission of HIV to others	Number of patients in the sample	Reducing the risk of HIV transmission is important for patient care and from the public-health perspective. Special attention should be paid to patients with ongoing high-risk behaviors.
Screening for injection drug use within the past 12 months	Patients in the sample who were screened for injection drug use within 12 months, plus a three-month grace period, of the most recent visit	Number of patients in the sample who were screened for injection drug use within 12 months, plus a three-month grace period, of the most recent	Number of patients in the sample	General information about risk reduction should be given at every visit. Tailored information for patients reporting ongoing high-risk behaviors should be

		visit		accompanied by counseling and/or referral to appropriate programs.
Screening for high-risk sexual behaviors within the past 12 months	Patients in the sample who were screened for high-risk sexual behaviors within 12 months, plus a three-month grace period, of the most recent visit	Number of patients in the sample who were screened for high-risk sexual behaviors within 12 months, plus a three-month grace period, of the most recent visit	Number of patients in the sample	General information about risk reduction should be given at every visit. Tailored information for patients reporting ongoing high-risk behaviors should be accompanied by counseling and/or referral to programs.
Blood pressure measured within 12 months of visit	Patients in the sample whose blood pressure was measured	Number of patients in the sample whose blood pressure was measured during the specified abstraction period (within 12 months of the visit date, with a three-month grace period); date and value of the measurement must be documented	Number of patients in the sample	Blood pressure should be checked at least annually in all HIV-positive patients.
LDL cholesterol tested within 12 months of visit	Patients in the sample who had serum LDL cholesterol tested within 12 months of the visit date, with a three-month grace period; date and value of the measurement must be documented	Number of patients in the sample who had serum LDL cholesterol tested within 12 months of the visit date, with a three-month grace period; date and value of the measurement must be documented	Number of patients in the sample	HIV infection and antiretroviral therapy have been associated with dyslipidemia. As HIV infection has become a chronic manageable disease, the need for assessment and management of other aspects of patient health (e.g., lipid levels) is important. Fasting lipid profile should be measured every six to 12 months in all HIV-positive patients. Testing also is recommended one to three months after starting or modifying antiretroviral therapy.
Triglycerides tested within 12 months of visit	Patients in the sample who had serum triglycerides tested within 12 months of visit date, with a three-month grace period; date and value of the measurement must be documented	Number of patients in the sample who had serum triglycerides tested within 12 months of visit date, with a three-month grace period; date and value of the measurement must be documented	Number of patients in the sample	HIV infection and antiretroviral therapy have been associated with dyslipidemia. Fasting lipid profile should be measured every six to 12 months in all HIV-positive patients. Testing also is recommended one to three months after starting or modifying antiretroviral therapy.

Diabetes screening or documentation of diagnosis	Patients in the sample who have had a screening test for diabetes mellitus OR who have the diagnosis of diabetes. Patients who refused testing are excluded.	Number of patients in the sample who have had a screening test for diabetes mellitus OR who have the diagnosis of diabetes	Number of patients in the sample, excluding those who refused testing for diabetes mellitus	Fasting glucose should be measured every six to 12 months in all HIV-positive patients. Testing also is recommended one to three months after starting or modifying antiretroviral therapy.
Depression screening done within past 12 months	Patients in the sample who have documentation of depression screening done within past 12 months	Number of patients in the sample who have documentation of depression screening done within past 12 months	Number of patients in the sample	Depression is common among HIV-infected patients and can interfere with adherence to medication regimen. Review of systems should include questions focusing on changes in mood, sleep patterns, appetite, etc. Patients should be assessed for depression annually, using validated screening tools.
Smoking status documented	Patients in the sample whose smoking status was documented	Number of patients in the sample whose smoking status was documented	Number of patients in the sample	The rate of cigarette smoking is higher in HIV-infected individuals than in the general public, and smoking has been shown to increase the risks of HIV-related medical conditions. The routine and thorough assessment of tobacco use is an important step in smoking-cessation counseling.
Smoking-cessation support within past 12 months	Patients in the sample who are smokers and who received smoking-cessation counseling or treatment during the 12-month abstraction period or three months prior to the abstraction period	Number of patients in this sample who are smokers and for whom smoking-cessation counseling or treatment was documented during the 12-month abstraction period or three months prior to the abstraction period	Number of patients in this sample who are smokers	A number of large randomized clinical trials have demonstrated the efficacy and cost-effectiveness of smoking-cessation counseling in changing smoking behavior and reducing tobacco use. The routine and thorough assessment of tobacco use is an important step in smoking-cessation counseling.
Cervical Papanicolaou testing done within the past 12 months and results documented	Female patients in the sample who have had cervical Papanicolaou testing done within 12 months, plus a three-month grace period, of the most recent visit. Patients without an intact cervix or who refused	Number of female patients in the sample who have had cervical Papanicolaou testing done within 12 months, plus a three-month grace period, of the most recent visit	Number of female patients in the sample who have an intact cervix, excluding those who refused testing	HIV-infected women are at increased risk for cervical cancer. Annual Papanicolaou testing is appropriate, regardless of patient age.

	testing are excluded.			

General/Preventive Care (primary care patients)				
Measure Title	**Description**	**Numerator**	**Denominator**	**Rationale**
Screening mammography done for women age 40-49 within past 12 months	Female patients in the sample age 40-49 for whom you provide primary care and who have had screening mammography done within 12 months	Number of female patients in the sample age 40-49 for whom you provide primary care and who have had screening mammography done within 12 months	Number of female patients in the sample age 40-49 for whom you provide primary care	HIV-infected women do not appear to be at increased risk for breast cancer, although unusual clinical presentation and rapid progression have been reported. Recommendations for mammography should follow standard guidelines.
Screening mammography done for women age 50 and over within past 12 months	Female patients in the sample age 50 and over for whom you provide primary care and who have had screening mammography done within 12 months	Number of female patients in the sample age 50 and over for whom you provide primary care and who have had screening mammography done within 12 months	Number of female patients in the sample age 50 and over for whom you provide primary care	HIV-infected women do not appear to be at increased risk for breast cancer, although unusual clinical presentations and rapid progression have been reported. Recommendations for mammography should follow standard guidelines.
Colorectal cancer screening up-to-date for patients over age 50	Patients in the sample age 50 and over for whom you provide primary care and whose colorectal cancer screening is up-to-date	Number of patients in the sample age 50 and over for whom you provide primary care and whose colorectal cancer screening is up-to-date	Number of patients in the sample age 50 and over for whom you provide primary care	HIV-infected patients appear to be at increased risk for colorectal cancer. It is essential, therefore, to assure that screening is up-to-date.

Patient Engagement				
Measure Title	**Description**	**Numerator**	**Denominator**	**Rationale**
Patient refusal of recommended services, including certain tests and vaccinations	Percentage of testing and vaccination questions in the chart review for which "No, patient refused" was listed as an option and selected as an response	Number of testing and vaccination questions in the chart review for which "No, patient refused" was listed as an option and selected as a response. Testing questions asked about hepatitis B and C, syphilis, chlamydial infection, gonorrhea, latent tuberculosis, cervical Papanicolaou, and type 2 diabetes; vaccination questions are for influenza, pneumococcal, and hepatitis A and B vaccines.	Number of test and vaccination questions in the chart review for which "No, patient refused" is listed as an option	A competent patient's right to refuse treatment is a cornerstone of medical ethics. However, if a significant number of patients refuse relatively minor treatments such as vaccines or diagnostic tests, this may indicate that a different approach to informing patients about risks and benefits is needed. The practice team may need to use specific techniques to encourage patients to receive beneficial care.