

11. Laboratory and Specimen Management Procedures

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11.1 Overview of Section 11

This section contains information on the laboratory procedures performed in HPTN 083.

Laboratory procedures will be performed in a variety of settings, including:

1. Clinics
2. Local laboratories
3. The HPTN Laboratory Center (“LC”, Baltimore, MD and Aurora, CO, USA)
4. Other laboratories designated by the HPTN LC

Tables in this document list the time points, testing location(s), and specimen requirements for each test. In all settings, laboratory procedures will be performed according to the guidelines included in this section of the SSP and in addition study site Standard Operating Procedures (SOPs) that have been reviewed and approved by the HPTN LC. In addition, package insert instructions must be followed.

Ideally, one method, test kit, and/or combination of test kits will be used for each test throughout the duration of the study. **If for any reason a new or alternative method, kit, or test must be used after study initiation, site laboratory staff must inform the HPTN LC to determine if any test kit validation is required.**

Regardless of whether tests are performed in clinic or laboratory settings, study staff that perform the tests must be trained in proper testing and associated quality control (QC) procedures before performing the tests for study purposes; documentation of training should be available for inspection at any time.

As transmission of HIV and other infectious agents can occur through contact with contaminated needles, blood, blood products, and vaginal secretions, all study staff must take appropriate precautions when collecting and handling biological specimens. Guidance on universal precautions is available from the US Centers for Disease Control and Prevention at:

http://www.cdc.gov/ncidod/dhqp/bp_universal_precautions.html

Additional reference information can be requested from the HPTN LC. The information provided below is intended to standardize laboratory procedures for HPTN 083 across the study sites. Adherence to the specifications detailed in this section is essential to ensure that primary, secondary and exploratory endpoint data derived from laboratory testing will be considered acceptable to regulatory authorities.

11.2 Specimen Labeling

All containers into which specimens are initially collected (e.g., blood collection tubes) will be appropriately labeled according to local practices. Participant Identification (PTID) labels will be provided by the HPTN Statistical Data and Management Center

(SDMC, SCHARP) if required for this function. LDMS Tracking Forms will also be provided for use if required, although sites may use their own specimen transport documentation. The staff member who collects the samples will ensure the visit code (as found in section 13 of this SSP), specimen collection date and time, as well as their initials or code is fully documented.

More detailed information about the labeling procedures must be provided in the site's Chain of Custody SOP.

When specimens are tested at the laboratories, any additional labeling required for in-country specimen management or chain of custody will be performed in accordance with site-specific SOPs. Stored specimens will be entered into the LDMS and labeled with LDMS-generated labels.

11.2.1 Local Specimen Processing and Storage

For samples that are processed and stored locally, each sample will be entered into the LDMS and labeled with the LDMS generated labels.

11.2.2 Local Specimen Testing

Sites will follow local testing arrangements for the collection and testing of samples, this will be described in the site SOPs. All lab results must be recorded following local guidelines.

11.2.3 Remote Specimen Testing

Samples that will be sent to the HPTN LC will be entered into the LDMS and labeled with the LDMS generated labels.

11.2.4 Use of the LDMS

LDMS must be used at all sites to track specimens that will be tested, stored, or shipped off-site for testing. Detailed instructions for use of LDMS are available in the LDMS User Manual:

<https://www.fstrf.org/apps/cfmx/apps/ldms/ldmsManual/webhelp/index.html>

<https://www.ldms.org/resources/ldms/web/>

All sites are responsible for ensuring they are using the most recent version of LDMS. All sites must use the *HPTN barcode* label format in order to ensure that both the specimen ID and the global specimen ID assigned to each specimen are printed on LDMS-generated labels.

Examples of two-dimensional LDMS-generated barcode labels are below:

PC-based Systems



500V08000009
FEQ0043F-01
999515640 057
03/Jan/2005 08:00
BLD EDT PL2 N/A
1.00 ML 0 Scr

- Row 1: LDMS Specimen ID
- Row 2: Global Specimen ID
- Row 3: Patient Identifier (ID1) and Study/Protocol Identifier (ID2)
- Row 4: Specimen Date or Harvest Date and Specimen Collection Time
- Row 5: Primary Type, Additive Type, Derivative Type, and Sub Additive/Derivative Type
- Row 6: Volume/Volume Unit and Visit/Visit Unit (VID)
- Row 7: Other Specimen ID (if applicable)

Web-based Systems:



0500-001RDD00-001
999515640 057.0
07/Jul/2017 08:30
BLD EDT PL2 N/A
1.00 ML 0 Scr

- Row 1: Global Specimen ID
- Row 2: Patient Identifier (ID1) and Study/Protocol Identifier (ID2)
- Row 3: Specimen Date or Harvest Date and Specimen Collection Time
- Row 4: Primary Type, Additive Type, Derivative Type, and Sub Additive/Derivative Type
- Row 5: Volume/Volume Unit and Visit/Visit Unit (VID)
- Row 6: Other Specimen ID (if applicable)

Questions related to use of LDMS for HPTN 083 should be directed to Paul Richardson (pricha18@jhmi.edu).

Technical support for the general use of LDMS is available from Frontier Science.

LDMS User Support at Frontier Science

Regular Hours: 24-hour coverage 7 days a week with the exception of Select US Holidays – Thanksgiving Day, Christmas Day, New Year’s Day, Memorial Day, Independence Day. See below for contact details.

Email: ldmshelp@fstrf.org

Phone: +1 (716) 834-0900, extension 7311

Fax: +1 (716) 832-8448 (should be used to fax Installation Reports only)

LDMS User Support can be contacted during off-hours on U.S. holidays, by completing the LDMS help form on the Frontier Science portal. This form can be found on the portal by clicking the “Contact LDMS User Support” link. You will need a portal account to access this form.

While it is preferred that users use the “Contact LDMS User Support” link on the portal, there may be times when you need immediately assistance during off-hours and cannot access the portal. In these situations, you can contact LDMS User Support by emailing the pager email addresses directly.

Pager 1: ldmspager1@fstrf.org

Pager 2: ldmspager2@fstrf.org

Pager 3: ldmspager3@fstrf.org

Try pager 1 first. If you do not receive a response within 15 minutes, try pager 2, and then finally pager 3.

When you contact LDMS user support, there are certain pieces of information that you can provide to help them better respond to your question. Please provide the following information in your email support:

1. Your name

2. Your laboratory’s LDMS ID number

This is a 3-digit number assigned by Frontier Science to uniquely identify your laboratory. It appears when you start LDMS, and can also be found in the bottom-right corner of the screen.

3. A full explanation of the issue

Your explanation should include any error messages or error numbers that appeared, what you were doing in LDMS at the time the issue occurred, and steps needed to reproduce the issue. The more details that you can provide, the faster LDMS User Support can help you.

4. How you want to be contacted

If you want LDMS user support to call a specific telephone number, please provide that number and extension.

5. (If applicable) The license code or challenge code being generated by LDMS

Note: If you are contacting user support about a license or challenge code, do not close the window with the code. Doing so will cause LDMS to generate a new code.

Below are a few other details that can also be helpful to include in your email:

1. Have there been any recent changes to the computer with LDMS, such as new hardware installed, a firewall upgrade, a network name change, or another change?
2. Are you or another user able to repeat the issue?
3. If you have LDMS installed on multiple computers, does the issue occur on all of them or does it only occur on a specific computer?

Each site must export its LDMS data to Frontier Science (FSTRF) on a weekly basis or whenever changes or additions are made to the LDMS database. Exported data are used by the HPTN SDMC to generate a discrepancy reports comparing the data from the LDMS with that entered onto the CRFs. Any discrepancies identified during the reconciliation are included in a discrepancy report for each site. Sites are expected to resolve all discrepancies within one week of receipt of the report. The HPTN LC is responsible for reminding sites to adhere to the one-week timeframe and for following up with sites that do not resolve discrepancies within one week. The HPTN SDMC reviews the discrepancy reports for critical samples (e.g., plasma needed for confirmatory HIV testing) that appear to be missing, and works with the LC and site staff to undertake appropriate corrective action. All corrective action should be documented in paper-based clinic and/or laboratory records as appropriate, and entered in the details section of LDMS. The LC and SDMC will discuss and document any items that, although resolved, appear ‘unresolvable’ in LDMS. Any corrections to the LDMS need to be made following guidelines provided by FSTRF.

11.2.5 LDMS Reconciliation

All sites must follow the HPTN LC approved site-specific SOP for regular reconciliation and verification of specimens that are stored; these independent SOPs or detailed Chain of Custody procedures must be followed throughout the study. All sites must also create an HPTN 083 Primary Specimen report upon LC request. In the event that the required volume or number of sample aliquots is not obtained at any time point, designated site clinic and lab staff must immediately inform the HPTN LOC, HPTN SDMC, and the LC. The HPTN LOC, SDMC, and LC will provide guidance on how to respond to the problem. In addition to following this guidance, designated site and lab staff will work together to document the problem, take appropriate corrective and preventive action, and document all action taken. Reconciliation must be performed for all specimen types that are received by the laboratory and stored in the LDMS. Emailed reconciliation reports require a documented response within one week of the original email date.

11.3 Protocol related testing and sample collection

Samples will be collected and processed at the screening, enrollment, and follow-up visits as indicated in tables 11-1 to 11-5.

Participants on either arm who have received at least one injection and refuse further injections or discontinue due to an AE will enter Step 3 and be followed on open-label TDF/FTC according to Step 3, as indicated in table 11-3. Annual follow-up will occur after this until 3 years from the enrollment date is reached.

Participants in Step 1 of the study who are unable to transition to Step 2 of the study for any reason other than HIV infection will be followed annually for 3 years from the date of enrollment or as directed by the CMC (including HIV testing, plasma storage, and DBS storage indicated in table 11-4). If the reason is due to HIV infection, those participants will be referred for care and will be terminated from the study.

Laboratory results for safety monitoring cannot be used for multiple visits within the same calendar day. Sample test results should only be used (once) to meet the requirements of one visit and not duplicated for a second visit of the same day. Merged Study Visits: In unforeseen circumstances, and at sites with the capacity of rapidly (same day) receiving laboratory tests results, including all required HIV test results (FDA-cleared HIV rapid test, and 4th or 5th generation HIV immunoassay), missed safety visit procedures can be merged with an injection study visit. In this case, all laboratory test results must be received and reviewed prior to administration of study product without repeating laboratory testing. Although safety visit procedures are conducted, sites should use the visit code for the injection visit for all laboratory testing and study procedures. Sample test results should only be used (once) to meet the requirements of one visit and not duplicated for a second visit of the same day. Meaning, one sample test results cannot have two different visit codes. The safety visit should be considered missed and documented as such.

Collect specimens and label tubes according to local regulations and the Blood Collection and Urine Collection SOPs. Blood collection tubes must be filled to the appropriate fill level as indicated by the tube manufacturer. After collection:

- EDTA tubes should be gently inverted at least 8 times (or as specified by manufacturer) after specimen collection to prevent clotting.
- For plasma storage, approximately 20 mL of whole blood should be collected into spray dried EDTA tubes, e.g. BD 366643 or other, to yield 5 x 1.8mL plasma aliquots.
- For Pharmacogenomic testing, a minimum of 1mL of whole blood should be stored from an EDTA tube (DPE) collection per site SOP and Chain of Custody. Contact the LC if there is a missed collection at the Enrollment visit.

Note: Biological samples must be transported in a sturdy, hard-shelled closeable container per local safety regulations

Table 11-1: Schedule of Study Visits and Specimen Collection –Step 1. Screening, Enrollment, Week 2 and 4.

		Step 1		
	Screening	Day 0 Enrollment	Week 2	Week 4
HIV testing ¹	X	X	X	X
HBsAg and HCV antibody testing	X			
HBsAb and HBcAb		X		
CBC with Differential	X	X	X	X
Chemistry testing ² (BUN/urea, creatinine, CPK, calcium, phosphorous, glucose, amylase and lipase)	Creatinine only	X	X	X
LFT ³ (AST, ALT, total bilirubin, alkaline phosphatase)	Only ALT, bilirubin	X	X	X
Fasting Lipid Profile ⁴		X		
Syphilis serological testing		X		
25-OH-D (Vitamin D, DXA subset only)		X		
Urine GC/CT testing ⁵		X		
Rectal swab GC/CT testing ⁶		X		
Urinalysis (protein and glucose) ⁷		X		
Plasma Storage ⁸	X	X	X	X
DBS storage ⁹				X
Whole blood storage ¹⁰		X		

¹ Following the HIV algorithms described in SSP figures 11-1 to 11-3, section 11.3.1 HIV testing does not need to be performed after confirmation of HIV infection (based on results from samples collected on two separate dates).

² The only chemistry test required at screening is creatinine.

³ The only LFT's required at screening are ALT and bilirubin.

⁴ The fasting lipid profile includes total cholesterol, HDL, triglycerides, and LDL (either calculated or measured). Participants should have fasted for at least 8 hours, preferably 12 hours, prior to sample collection. If participants are not fasting, do not order the lipid testing. Participants may return for testing or it can be performed at next visit.

⁵ Urine for GC/CT, will be performed at enrollment. Testing will be performed locally.

⁶ Rectal swabs for GC/CT will be performed at enrollment. If testing cannot be performed at the local laboratory, testing at another laboratory will be considered.

⁷ Urinalysis may be performed in the clinic or the laboratory. Results from urinalysis are not needed prior to enrollment.

⁸ See section 11.4 for plasma processing and storage instructions.

⁹ See section 11.5 for DBS processing and storage instructions.

¹⁰ See section 11.6 for whole blood storage instructions.

Table 11-2: Schedule of Study Visits and Specimen Collection – Step 2. Blinded Injections and Daily Oral Pills

	Week 5	Week 6	Week 9	Week 10	Week 17	Week 19	Week 25	Week 27	Week 33	Week 35	Week 41	Week 43	Week 49	Week 51	Week 57
HIV testing ¹	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HCV antibody testing															X
CBC with Differential		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Chemistry testing (BUN/urea, creatinine, CPK, calcium, phosphorous, glucose, amylase and lipase)		X	X	X	X	X	X	X	X	X	X	X	X	X	X
LFT (AST, ALT, total bilirubin, alkaline phosphatase)		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Fasting Lipid Profile ² (Total Cholesterol, HDL, LDL, Triglycerides)															X
Syphilis serological testing									X						X
Urine GC/CT testing									X						X
Rectal swab GC/CT testing ³									X						X
Urinalysis (protein and glucose)															X
Plasma Storage ⁴	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DBS storage ⁵			X		X		X		X		X		X		X

¹ Following the HIV algorithms described in SSP figures 11-1 to 11-3, section 11.3.1 HIV testing does not need to be performed after confirmation of HIV infection (based on results from samples collected on two separate dates).

² Participants should have fasted for at least 8 hours, preferably 12 hours, prior to sample collection. If participants are not fasting, do not order the lipid testing. Participants may return for testing or it can be performed at next visit.

³ If GC/CT testing cannot be performed at the local laboratory, testing at another laboratory will be considered.

⁴ See section 11.4 for plasma processing and storage instructions.

⁵ See section 11.5 for DBS processing and storage instructions.

Table 11-2 (Cont'd): Schedule of Study Visits and Specimen Collection – Step 2. Blinded Injections and Daily Oral Pills

	Week 59	Week 65	Week 67	Week 73	Week 75	Week 81	Week 83	Week 89	Week 91	Week 97	Week 99	Week 105
HIV testing ¹	X	X	X	X	X	X	X	X	X	X	X	X
HCV antibody testing												X
CBC with Differential	X	X	X	X	X	X	X	X	X	X	X	X
Chemistry testing (BUN/urea, creatinine, CPK, calcium, phosphorous, glucose, amylase and lipase)	X	X	X	X	X	X	X	X	X	X	X	X
LFT (AST, ALT, total bilirubin, alkaline phosphatase)	X	X	X	X	X	X	X	X	X	X	X	X
Fasting Lipid Profile ² (Total Cholesterol, HDL, LDL, Triglycerides)												X
Syphilis serological testing						X						X
Urine GC/CT testing						X						X
Rectal swab GC/CT testing ³						X						X
Urinalysis (protein and glucose)												X
Plasma Storage ⁴	X	X	X	X	X	X	X	X	X	X	X	X
DBS storage ⁵		X		X		X		X		X		X

¹ Following the HIV algorithms described in SSP figures 11-1 to 11-3, section 11.3.1 HIV testing does not need to be performed after confirmation of HIV infection (based on results from samples collected on two separate dates).

² Participants should have fasted for at least 8 hours, preferably 12 hours, prior to sample collection. If participants are not fasting, do not order the lipid testing. Participants may return for testing or it can be performed at next visit.

³ If GC/CT testing cannot be performed at the local laboratory, testing at another laboratory will be considered.

⁴ See section 11.4 for plasma processing and storage instructions.

⁵ See section 11.5 for DBS processing and storage instructions.

Table 11-2 (Cont'd): Schedule of Study Visits and Specimen Collection – Step 2. Blinded Injections and Daily Oral Pills

	Week 107	Week 113	Week 115	Week 121	Week 123	Week 129	Week 131	Week 137	Week 139	Week 145	Week 147	Week 153 / Day 0 step 3
HIV testing ¹	X	X	X	X	X	X	X	X	X	X	X	X
HCV antibody testing												X
CBC with Differential	X	X	X	X	X	X	X	X	X	X	X	X
Chemistry testing (BUN/urea, creatinine, CPK, calcium, phosphorous, glucose, amylase and lipase)	X	X	X	X	X	X	X	X	X	X	X	X
LFT (AST, ALT, total bilirubin, alkaline phosphatase)	X	X	X	X	X	X	X	X	X	X	X	X
Fasting Lipid Profile ² (Total Cholesterol, HDL, LDL, Triglycerides)												
Syphilis serological testing						X						X
Urine GC/CT testing						X						X
Rectal swab GC/CT testing ³						X						X
Urinalysis (protein and glucose)												X
Plasma Storage ⁴	X	X	X	X	X	X	X	X	X	X	X	X
DBS storage ⁵		X		X		X		X		X		X

¹ Following the HIV algorithms described in SSP figures 11-1 to 11-3, section 11.3.1 HIV testing does not need to be performed after confirmation of HIV infection (based on results from samples collected on two separate dates).

² Participants should have fasted for at least 8 hours, preferably 12 hours, prior to sample collection. If participants are not fasting, do not order the lipid testing. Participants may return for testing or it can be performed at next visit.

³ If GC/CT testing cannot be performed at the local laboratory, testing at another laboratory will be considered.

⁴ See section 11.4 for plasma processing and storage instructions.

⁵ See section 11.5 for DBS processing and storage instructions.

Table 11-3: Schedule of Study Visits and Specimen Collection – Step 3. Open Label TDF/FTC Daily Oral (Post-Last Injection)

	Post-Injection Week 12	Post-Injection Week 24	Post-Injection Week 36	Post-Injection Week 48
HIV testing ¹	X	X	X	X
Chemistry testing (BUN/urea, creatinine, CPK, calcium, phosphorous, glucose, amylase, lipase)		X		X
LFT (AST, ALT, total bilirubin, alkaline phosphatase)		X		X
Syphilis serological testing		X		X
Urine GC/CT testing		X		X
Rectal swab GC/CT testing ²		X		X
Plasma Storage ³	X	X	X	X

¹ Following the HIV algorithms described in SSP figures 11-1 to 11-3, section 11.3.1 HIV testing does not need to be performed after confirmation of HIV infection (based on results from samples collected on two separate dates).

² If GC/CT testing cannot be performed at the local laboratory, testing at another laboratory will be considered.

³ See section 11.4 for plasma processing and storage instructions.

Table 11-4: Schedule of Study Visits and Specimen Collection – Annual Follow-up (Until 3 years from the date of enrollment)

Procedure	Annual HIV Testing Visit
HIV testing ¹	X
Plasma storage ²	X
DBS storage ³	X

¹Following the HIV algorithms described in SSP figures 11-1 to 11-3, section 11.3.1 HIV testing does not need to be performed after confirmation of HIV infection (based on results from samples collected on two separate dates).

² See section 11.4 for plasma processing and storage instructions.

³ See section 11.5 for DBS processing and storage instructions.

11.3.1 HIV Testing

All HIV test results from previous visits, and at least one HIV test result from the current visit, must be available and reviewed prior to administration of study products. If any of these tests is reactive/positive, study drug should not be administered. **HIV rapid testing must be performed the same day and prior to administration of study drug i.e. the Turnaround Time (TAT) for the HIV rapid test assay is “same day”.**

Rapid HIV test results will be reported to the appropriate study staff within the clinic.

HIV testing will be performed using blood collected by phlebotomy (no finger-stick or oral fluid testing) at participant visits in accordance with the testing algorithms described in Figures 11-1 through 11-3.

Per the HPTN 083 Protocol, there is no requirement to retain blood specimens used for HIV rapid testing for repeat analysis.

For further help on implementing the HIV testing algorithm, seek guidance from the HPTN LC.

Whole blood will be collected according to site-specific procedures.

Participants with one or more reactive HIV test results at either the screening or enrollment visit will not be eligible for enrollment, regardless of subsequent test results.

RNA testing for acute HIV infection must be collected and performed within the 14 days prior to the Enrollment visit.

The Seroconversion Committee (083HIV@hptn.org) must be notified immediately if one or more HIV test results are reported as reactive (or if rapid HIV results are not able to be reported during a visit) at any follow-up visit after enrollment. The Seroconversion committee may request further testing and sample collections on a case by case basis as detailed in Appendix V of the HPTN 083 SSP.

Additional HIV testing may be performed at any time at the discretion of the site investigator.

All tests and associated QC procedures must be documented on local laboratory log sheets or other laboratory source documents. Kit lot numbers and expiry dates must also be documented.

All staff involved in HIV testing and verification of HIV test results should be aware of the testing time frame for the HIV test, so that all tests are performed, read, and confirmed within the specified time frame of testing. Place appropriate timekeeping devices in all test settings to ensure that each test is read and verified at appropriate time points. Documentation is required for the testing start and stop times, as well as, result

confirmation and verification times (second trained staff member confirms initial reading). These must be recorded on testing log sheets.

If a participant has a reactive or positive HIV test, the participant will not receive additional doses of study products pending further direction regarding testing and continued participation in the study from designated study team members.

If a participant has a reactive or positive HIV test at any time after enrollment, a follow-up confirmation visit and testing is required as detailed in Table 11-5.

HIV infection must be confirmed using two independent samples collected on different days. Plasma storage is required at every visit at which HIV testing is performed. Every time a blood specimen is drawn for HIV testing, additional blood must be drawn for plasma storage if it does not exceed the visit blood draw limits stated in your local consent forms. This includes split visits, interim visits, and all visits for repeat HIV testing and confirmatory testing. The amount of blood drawn if not limited by consent forms should be sufficient to yield 5 x 1.8mL (approximately) plasma aliquots.

For split visits, excluding confirmation visits (held specifically to perform further HIV testing), the laboratory-based HIV instrumented assay does not need to be repeated if the split visit (i.e. X.1) occurs less than seven days from the initial visit (i.e. X.0). If the split visit is seven or more days from the initial visit, the HIV laboratory based HIV instrumented assay must be repeated. This also applies to DBS samples if regularly scheduled for that visit (i.e. repeat DBS collection and storage at 7 or more days). Keep all samples from all visits unless specifically directed to handle stored samples differently by the HPTN LC.

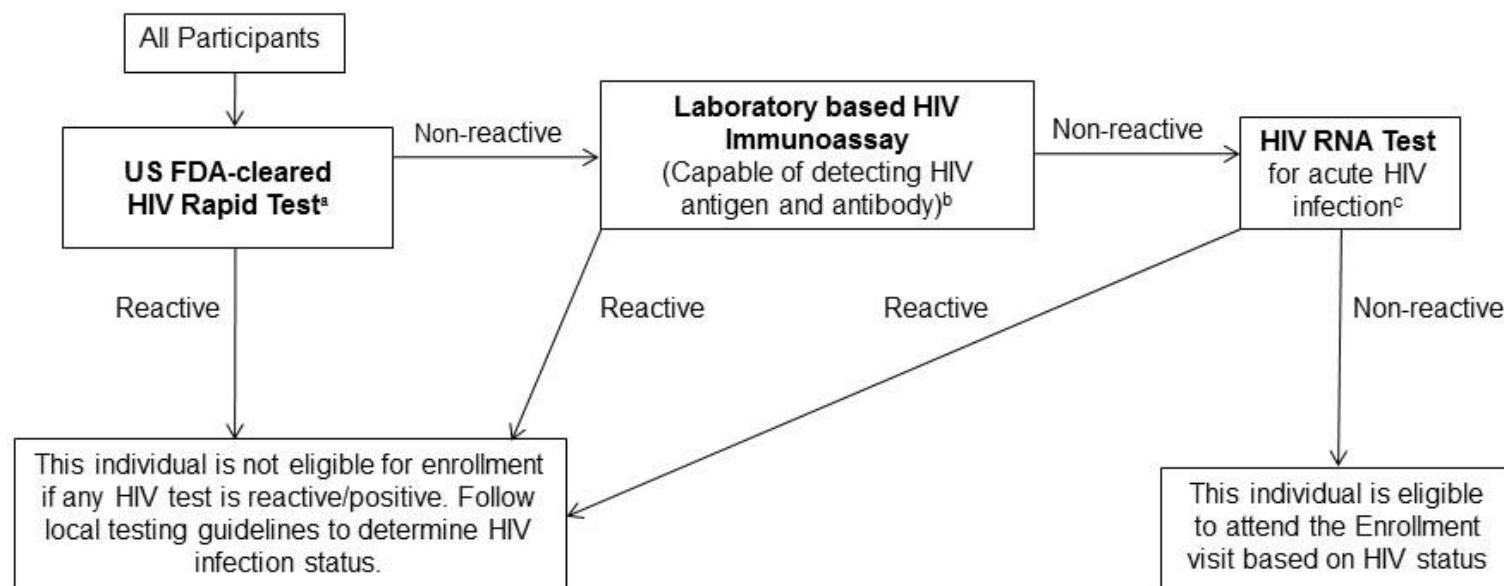
Participants with confirmed HIV infection during Step 1, prior to receipt of their first injection, will have oral study product permanently discontinued and will be transitioned to local HIV-related care and terminated from the study.

Participants with confirmed HIV infection during Step 2 will not receive additional injections or oral study product, and will be followed per the Schedule of Evaluations and Procedures in Appendix II of the protocol for approximately 48 weeks.

Participants with confirmed HIV infection during Step 3 will be followed at least for the duration of Step 3, with possible additional assessments and follow-up to be determined by the members of 083HIV@hptn.org.

Figure 11.1 HIV Testing Algorithm at the Screening Visit:

HIV Testing Algorithm at Screening*



NOTES:

* Site-specific HIV testing plans must be approved by the HPTN LC before the study opens.

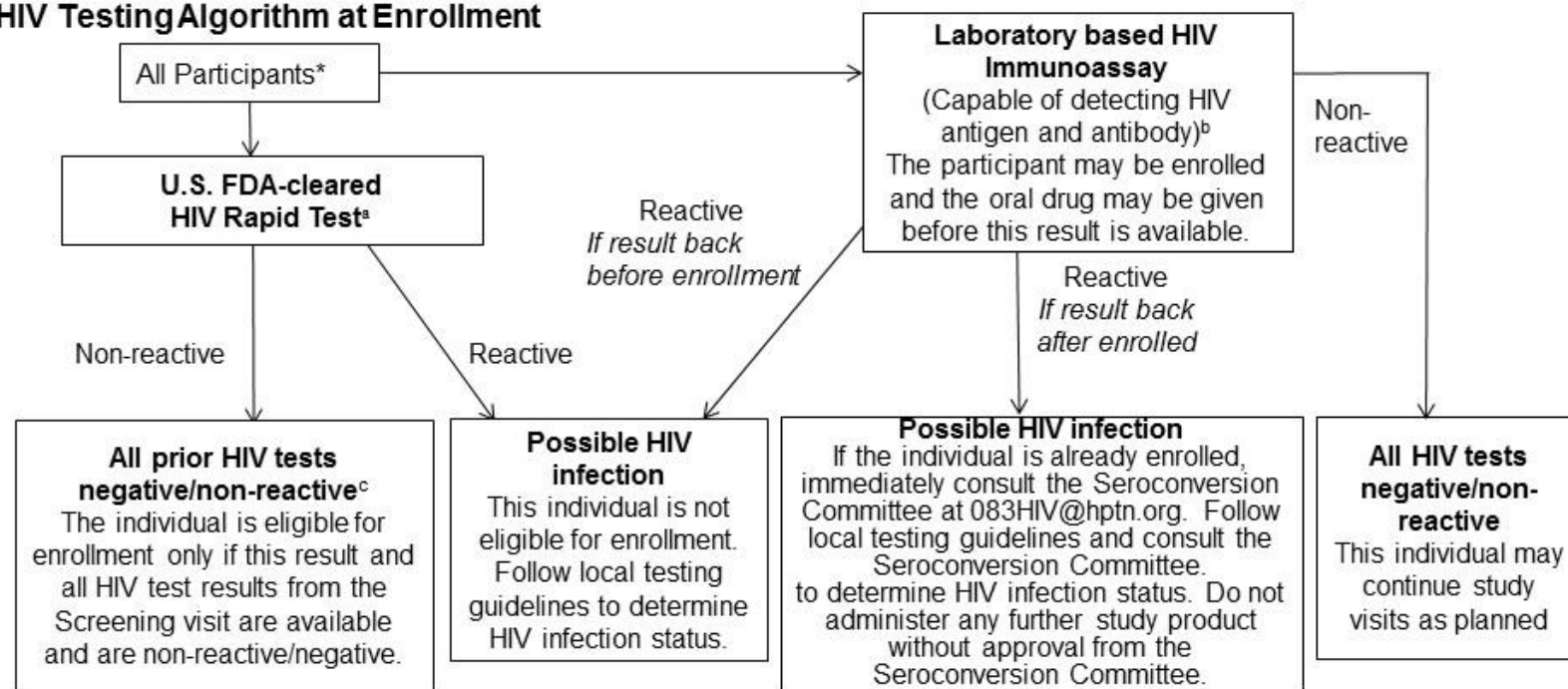
* Sites that are not able to obtain HIV rapid test kits that are cleared by the US FDA may seek approval from the HPTN LC to use an alternate kit.

^b This testing must be performed using a laboratory based, non-rapid HIV immunoassay that detects both HIV antigen and HIV antibody (either a 4th generation or 5th generation assay).

^c Screening for acute infection should be performed using an RNA test that, in the opinion of the site investigator, is able to detect early HIV infection. If possible, the site should use an assay that is FDA-cleared for this testing, such as the APTIMA HIV-1 RNA Qualitative Assay. RNA test results must be obtained from a specimen collected within 14 days prior to enrollment.

Figure 11.2 HIV Testing Algorithm at the Enrollment Visit:

HIV Testing Algorithm at Enrollment



NOTES:

* If acute HIV infection is suspected, do not enroll the participant or administer study product at this time. In addition to following the algorithm above, the site should send a sample for an RNA test that, in the opinion of the site investigator, is able to detect early HIV infection. If possible, the site should use an assay that is FDA-cleared for early HIV diagnosis, such as the APTIMA HIV-1 RNA Qualitative Assay. The site should contact the Seroconversion Committee (083HIV@hptn.org) for additional guidance once all of the test results from this visit (including the HIV RNA test) are available.

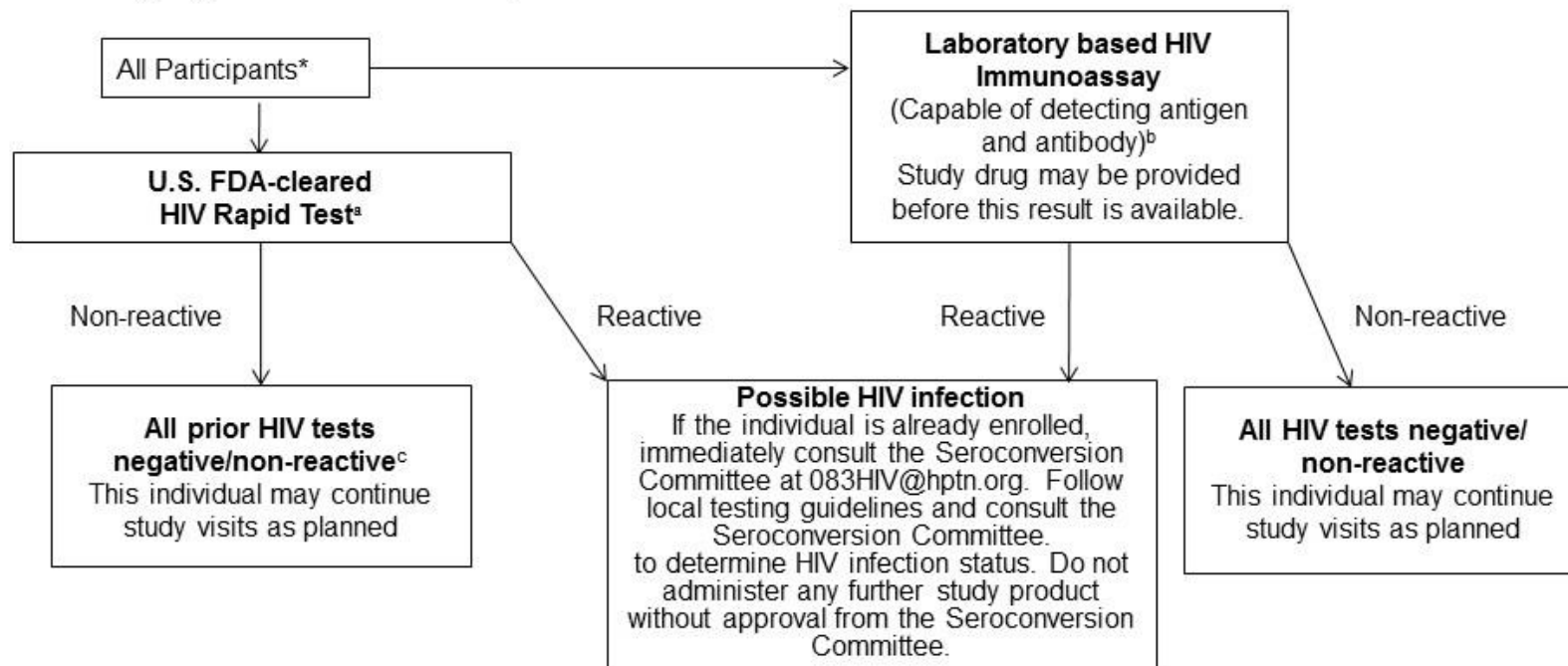
^a Sites that are not able to obtain HIV rapid test kits that are cleared by the US FDA may seek approval from the HPTN LC to use an alternate kit.

^b This testing must be performed using a laboratory based, non-rapid HIV immunoassay that detects both HIV antigen and HIV antibody (either a 4th generation or 5th generation assay).

^c Before providing study drug, the site must ensure that the HIV rapid test from the Enrollment visit, and all HIV results from the Screening visit are available and are negative or non-reactive.

Figure 11.3 HIV Testing Algorithm at Follow-up Visit:

HIV Testing Algorithm for Follow up Visits



NOTES:

^{*}If acute HIV infection is suspected, do not administer any further study product. Immediately consult the Seroconversion Committee. In addition to following the algorithm above, the site should send a sample for an RNA test that, in the opinion of the site investigator, is able to detect early HIV infection. If possible, the site should use an assay that is FDA-cleared for early HIV diagnosis, such as the APTIMA HIV-1 RNA Qualitative Assay. The site should contact the Seroconversion Committee (083HIV@hptn.org) for additional guidance once all of the test results from this visit (including the HIV RNA test) are available.

^a Sites that are not able to obtain HIV rapid test kits that are cleared by the US FDA may seek approval from the HPTN LC to use an alternate kit.

^b This testing must be performed using a laboratory based, non-rapid HIV immunoassay that detects both HIV antigen and HIV antibody (either a 4th generation or 5th generation assay).

^c At any visit where study product will be given, the site must ensure that the HIV rapid test from this visit, and all HIV results from prior study visits are negative or non-reactive.

Table 11-5: Additional Procedures for Participants who have a Reactive or Positive HIV test at any time after Enrollment.

The Seroconversion Committee (083HIV@hptn.org) must be notified immediately if one or more reactive HIV test results are obtained at any follow-up visit **after** enrollment. The procedures listed for Weeks 12, 24, 36, and 48 apply only to participants with confirmed HIV infection during Step 2 of the study. Participants with confirmed HIV infection in Step 3 of the study may undergo similar procedures, and will be determined by the Seroconversion Committee.

The Confirmation visit for HIV testing and plasma storage should be performed on a different date than the blood draw that gave the initial reactive or positive HIV test. Contact the 083HIV Seroconversion committee as soon as possible if this is not feasible or conflicts with site-specific policy.

	HIV Confirmation visit	Post HIV + Week 12	Post HIV + Week 24	Post HIV + Week 36	Post HIV + Week 48 ¹
HIV testing ²	X				
CD4 cell count.	X		X		X
HIV Viral Load Testing	X		X		X
HIV resistance testing ³	X				
Chemistry Testing (BUN/Urea, creatinine, CPK, calcium, phosphorous, glucose, amylase, lipase)		X	X	X	X
LFT (AST, ALT, total bilirubin, alkaline phosphatase)		X	X	X	X
Plasma Storage ⁴	X	X	X	X	X
DBS storage	X				

¹ The week 48 visit should be timed as closely as possible to 52 weeks after the participant received their last injection.

² Following approved HIV testing algorithm shown in figure 11.3. HIV rapid testing may be performed in the clinic or the laboratory.

³ Sites may collect specimens for resistance testing at a local laboratory to assist with clinical management; results from resistance testing performed at local laboratories will not be reported to the SDMC. Stored plasma may not be used for real-time/local resistance testing.

⁴ Stored plasma will be used for Quality Assurance testing at the HPTN LC and for other assessments described in Section 9.0 of the study protocol. Assessments will be performed retrospectively; results will not be returned to study sites or participants, except as noted in section 9.0 of the study protocol.

11.3.2 Hepatitis Testing

Testing for HBV (HBsAb, HBsAg, HBcAb Total) and HCV will be performed at screening, enrollment, and other time points as dictated by tables 11-1 and 11-2. Sites will follow local testing arrangements for the collection and testing of samples, this will be described in the site SOPs.

Test results are required for the enrollment visit.

Persons with a positive HBsAg and/or HCV antibody test will be excluded from the study. There are no exceptions to this exclusion.

11.3.3 Safety Testing

CBC, Chemistry, and LFTs will be performed at various time points throughout the study. Sites will follow local testing arrangements for the collection and testing of samples, this will be described in the site SOPs. Participants do not have to be fasting before having blood drawn for glucose.

Test results from the screening visit are required prior to enrollment.

Same day test results are not required prior to the issue of study product.

11.3.4 Creatinine Clearance

Calculated creatinine clearance will be performed at all visits where chemistry testing is performed, using the Cockcroft-Gault formula.

$$eCcr \text{ (male) in mL/min} = [(140 - \text{age in years}) \times (\text{actual body weight in kg})] / (72 \times \text{serum creatinine in mg/dL}).$$

11.3.5 Fasting Lipid Profile

A fasting lipid profile (total cholesterol, HDL, triglycerides, LDL – calculated or measured) will be collected at the enrollment, week 57, and week 105 visits. Participants should be fasting for at least 8 (preferably 12) hours prior to sample collection. If participants are not fasting, do not order the lipid testing. Participants are recommended to return for sample collection and testing within 72-hours, or it is acceptable to be collected at the next scheduled visit. Proper fasting for a Lipid Profile will automatically provide a fasting sample for glucose testing at the same visits; no additional actions, other than marking the glucose order as a fasting sample, are required.

Sites will follow local testing arrangements for the collection and testing of the lipid profile. This will be described in the site SOPs.

Results from the lipid profile at the enrollment visit are NOT required prior to the issue of study product.

11.3.6 Urinalysis Testing

Sites will follow local testing arrangements for the collection and testing of urine for urinalysis (only for protein and glucose). This will be described in the site SOPs.

Urinalysis results from the enrollment visit are not required prior to enrollment. Per the HPTN 083 Protocol, there is no requirement to retain urine specimens used for urinalysis testing for repeat analysis.

11.3.7 Syphilis Testing

Sites will follow local testing arrangements for the collection and testing of serum or plasma for syphilis testing. This will be described in the site SOPs.

Syphilis results from the enrollment visit are not required prior to enrollment.

11.3.8 Urine Sample for GC/CT Testing.

Sites will follow local testing arrangements for the collection and testing of urine sample for GC/CT nucleic acid testing. This will be described in the site SOPs.

Urine GC/CT results from the enrollment visit are not required prior to enrollment.

11.3.9 Rectal Swab Collection for GC/CT

Sites will follow local testing arrangements for the collection and testing of rectal swabs for GC/CT nucleic acid testing. It is preferred that all rectal swabs be provider-performed. Self-collect swabs are acceptable as a second choice if provider-performed collection is not possible.

Rectal GC/CT results from the enrollment visit are not required prior to enrollment.

If testing cannot be performed at the local laboratory, testing at another laboratory may be considered following consultation with the HPTN LC.

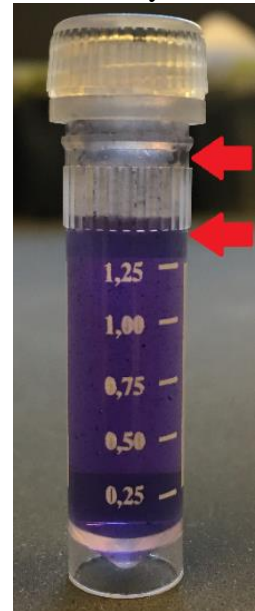
11.4 Plasma Processing for Storage

Approximately 20 mL of EDTA whole blood should be drawn into spray dried EDTA tubes for plasma storage at each time point at which HIV testing is performed as indicated in Tables 11-1 to 11-3. Sites are requested to store 5 x 1.8 mL aliquots of plasma if possible. The HPTN LC should be informed any time that three or fewer aliquots with 1.8mL or less are stored.

Note: The 1.8mL plasma volume stated in this SSP is an approximate volume. This can be estimated using for example the volume markings on the cryovials. The use of a precision pipette is not required for this purpose.

The manufacturer of this example tube stops gradations at 1.25mL for the 2mL cryovial. The 1.8mL needed is an approximate volume. For these cryovials, the top of the vertical striped area is an estimated maximum fill 'line' for a limit fill volume to prevent cracking of the container during freezing, and will provide an acceptable 1.8mL estimate. See photo to the right for reference. The plasma level needs to be between the two arrows for 1.8mL to be delivered and stored. The optimal level is at the indicated top arrow, near the cryovial 'ring' below the cap. Various methods for achieving the desired volume are possible. Example list, other methods are not prohibited or excluded:

- Use of a pipette with a precise measurement (not required)
- Use of a graduated disposable transfer pipette
- A marked-up a cryovial, or filled cryovial with a liquid for a comparison level (properly labeled as a blank for lab safety requirements)



An additional approximate 20 mL of EDTA whole blood will be drawn for plasma storage for participants with a reactive or positive HIV test at any time after enrollment, as indicated in Table 11-5. This additional plasma will be stored in the same way.

Sites will follow the instructions below or may follow site specific SOPs for plasma processing which will include the following:

- Collect blood into lavender top blood collection tubes (EDTA) labeled with a SCHARP-provided PTID label. An alternate, site-specific labeling process may be used if an SOP is in place, and HPTN LC approved, but still must use the PTID with other identifiers. Size and number of collection tubes may vary depending on local lab requirements.
- Deliver the samples to the local LDMS laboratory along with the LDMS Specimen Tracking Sheet or site specific requisition that contains the required information.
- Using the LDMS Specimen Tracking Sheet or site specific requisition, log the sample into LDMS (specimen type = BLD) and generate the appropriate number of LDMS cryovial labels. The lab should store plasma in labeled cryovials.
 - Cryovial size must be 2.0 mL. We request the use of Sarstedt (cat# 72.694.006) 2mL Cryovials, or cryovials of the same dimensions. Reminder: Do not add more than 1.8 mL due to expansion of plasma during freezing.
 - Other cryovials types may only be used if specifically approved by the HPTN LC
- Blood processing and plasma storage should be performed within 6 hours of sample collection. The use of a negative airflow biosafety cabinet is not required for this specimen processing and storage.

- Centrifuge tube at 800 - 1000 x g for 10 minutes to separate cells and plasma.
- Carefully remove plasma and avoid disturbing the cell layer. Transfer the plasma to an appropriately labelled sterile centrifuge tube.
- Centrifuge plasma again at 800 - 1000 x g for 10 minutes to remove any contaminating debris, cells, or platelets.
- Log samples into LDMS and generate LDMS labels (PL2). Each aliquot will have its own individual identification number (Global Specimen ID).
 - Store plasma in aliquot number order. For example, if there is only 3 mL of plasma for storage: store 1.8 mL in aliquot 1, then store the remaining 1.2 mL of plasma in aliquot 2 and adjust the aliquot volume in LDMS to indicate 1.2 mL. The remaining aliquots (3, 4, and 5) should be entered as QNS.
 - Additional sample condition codes besides QNS, to be used as directed by the HPTN LC, include “SNP” and “SNR”.
- Store the aliquots in the freezer locations assigned in LDMS in a minus 70° to minus 90° freezer.

Plasma for storage will be stored on site until all protocol-related testing is complete. Note that some testing will be performed after study visits have been completed.

Study sites should plan to store specimens until all of the protocol specified testing (including assessments at the HPTN LC) has been completed and the primary research paper has been published.

LDMS Entry:

PL2 aliquots from the 20mL EDTA draw as follows:

- Several possible tube combinations equaling at least 20mL (per individual site chain of custody)
- A single primary container of EDTA whole blood is created
- 5 PL2 aliquots of 1.8mL are created (adjusted to approximate aliquot volume as needed during storage)
 - Primary container and aliquot entries should have the “SHV” (short volume) condition code used as needed when incomplete volumes are obtained
 - Please remember to contact the HPTN LC when using condition codes not listed in the SSP.
- No other aliquots are created from this primary container
- See figures 11.4 through 11.9

LDMS Specimen Code for Plasma Storage

Test	Primary LDMS Code	Additive	Derivative	Sub Add/Deriv
Plasma Storage	BLD	DPE	PL2	N/A

Codes used in table:

BLD	Blood
DPE	Spray Dried EDTA
PL2	Plasma, Double Spun
N/A	Not Applicable

- All plasma vials are stored electronically in the LDMS and physically in a minus 70°C to minus 90°C freezer. Selected aliquots will be shipped to HPTN Laboratory Center (LC) when requested.

All enrolled study participants must consent to collection and storage of their plasma for the duration of their study participation and until all protocol-specified testing has been completed. Participants are asked to consent separately to indefinite storage and possible future research testing of their plasma after the study is completed. Participants may refuse to consent to indefinite storage and possible future research testing and still enroll in the study. After all protocol-specified testing has been completed; the stored plasma of participants who do not consent to indefinite storage and possible future research testing must be destroyed. After all protocol-specified testing has been completed, the HPTN SDMC will provide each site with a list of participants who did not consent to indefinite storage and possible future research testing and the HPTN LC will provide detailed instructions for specimen destruction and documentation thereof.

11.5 Dried Blood Spots (DBS)

11.5.1 DBS Supplies:

Possible vendors for DBS supplies: Thermo Fisher Scientific, VWR, Sigma Aldrich, and Market Lab. Some Whatman items may be listed as GE Healthcare Life Sciences. The following supplies may be used. Contact HPTN LC if alternate supplies are to be used.

- EDTA spray dried Blood Collection Tubes
- Whatman Protein Saver Card #903 (Whatman 10534612 or Fisher Scientific # 05-715-121). Please handle with gloves and do not touch spot areas.
- Whatman Plastic Sample Bags (Whatman 10548232 or Fisher Scientific # 09-800-16) or Whatman Foil-Barrier Sample Bags (Whatman 10534321 or Sigma Aldrich # WHA10534321).
- Desiccant pack (GE Healthcare Life Sciences (Whatman) 10548234 or WB100003,

or Fisher Scientific # 09-800-17).

- Humidity indicator Cards (Manufacturer # MS200032 or MS200033; ADCOA # MS20003-2 or MS20003-3; Fisher Scientific # NC9511648). Or similar products with similar indicator levels, suitable for storage bag size.
- Whatman card drying rack (VWR # 89015-592 or Sigma Aldrich # WHA10539521) or other suitable drying rack.
- Gloves, preferably powder free.
- Water proof marker (Fisher Scientific# 50853571 or VWR # 95042-566)
- LDMS labels.
- A fixed 25uL, variable 10-100uL, or 20-200uL micropipette with appropriate filtered pipette tips. Sites should check with local suppliers for appropriate tips for their micropipettes.

11.5.2 DBS Preparation and Storage

The use of a negative airflow biosafety cabinet is not required for this specimen processing and storage. Sites will follow the instructions below or may follow site specific SOPs for DBS processing and storage which will include the following: DBS will be prepared and stored at Week 4 (not week 5 injection), multiple injection follow-up visits, and HIV positive confirmation visits. See Tables 11-1 to 11-5 for complete schedules.

DBS should be prepared from an EDTA blood tube received in the laboratory. For HPTN 083 it is acceptable to use one of the tubes received for plasma storage before it is processed for plasma storage or a sample received for HIV rapid testing after testing has been performed.

The EDTA tube should be well mixed before preparing the DBS. Pipette 25 µl of whole blood directly onto the center of each spot on the filter paper so that it is contained within the circle (Figure 11.13).

- There will be a total of 5 blood spots created.
- Whole blood for DBS should be stored at room temperature (approximately 15°C to 25°C) until spots have been created.
- Samples should be processed (spotted) within 6 hours of the time of collection; the actual time of collection should be recorded on the Case Report Form, as well as DBS creation time.
- Ensure that both hands are gloved before handling the Protein Saver (DBS) card; Do not touch the areas where the blood spots will be placed (the filter paper portion).
- Label each Protein Saver Card with study protocol number, PID#, Study date and time of sample collection. Use a waterproof pen or a non-removable label.

- Create an LDMS label and enter specimen information into LDMS. See Figures 11.4 to 11.12.
 - Additional sample condition codes besides QNS, to be used as directed by the HPTN LC, include “SNP” and “SNR”.
 - Primary container and aliquot entries should have the “SHV” (short volume) condition code used as needed when incomplete volumes are obtained.
 - Please remember to contact the HPTN LC when using condition codes not listed in the SSP.
- Assure the blood tube has been inverted 8 times and is well mixed. Remove the cap from the EDTA tube and spot 25µl of blood, using a pipette, onto the center of the designated circles on the Protein Saver Cards (see Figures 11.13 to 11.15 below). Return the cap to the tube and process for other lab tests (i.e. plasma processing) as needed.
 - a. The pipette tip should be held approximately 3mm above the spot location and the blood dispensed onto the card with one single dispensing motion from the micropipette. Do not touch, press, or smear the spots.
- Air dry the cards in a card holder or other drying rack (Figure 11.16). Ideally drying time should be between 2 and 16 hours. If storage cannot take place within 16 hours for example over a weekend, an appropriate comment must be made in LDMS to indicate the drying time.
- Keep the DBS cards away from direct sunlight. DBS cards should be dried at the designated lab room temperature, which should be between 15°C and 40 °C. DBS cards should not be dried in excess of 40°C. Do not dry the DBS cards with a fan or any heat source in an attempt to decrease drying time. Air dry only. The use of a biosafety cabinet is not required for the drying of dried blood spots for HPTN 083. If a cabinet is used there is no requirement for the airflow to be operational or documented for DBS purposes.
- After DBS cards have dried, place DBS card in low gas-permeability plastic bags with humidity indicator and desiccant pack to reduce humidity. See figures 11.17 and 11.18. Indicator cards and desiccant packs should be kept in their manufacturer stock containers (airtight) until the DBS card is dried and ready for freezer storage.
- Store bag in an appropriately labeled box at -70 to -90°C.
 - a. If the indicator indicates too much humidity exposure (color change from blue to pink- 40% to 50% level or higher), replace the old desiccant pack and indicator card with a new one and comment the change in LDMS.
 - b. There is no need to check the humidity indicators unless DBS are handled for another purpose (i.e. shipping), and action is needed if a problem is noticed.

LDMS Entry:

DBS from EDTA whole blood (example 4mL draw) as follows:

- A single primary container of 4mL EDTA whole blood is created
- 5 aliquots of 25uL each are created (1 for each spot on the DBS card)
- See figures 11.5 and 11.8

LDMS Specimen Code for DBS Storage

Test	Primary LDMS Code	Additive	Derivative	Sub Add/Deriv
Dried Blood Spots	BLD	DPE	DBS	N/A

Codes used in table:

BLD	Blood
DPE	Spray Dried EDTA
DBS	Dried Blood Spot
N/A	Not Applicable

- All DBS are stored electronically in the LDMS and physically in a minus 70°C to minus 90°C freezer. Selected cards will be shipped to HPTN Laboratory Center (LC) when requested.
- In addition to the illustrations, include the date and time of specimen receipt, date and time of DBS processing (spot time), and date and time of DBS completion and storage for each aliquot. Note the primary aliquot is BLD with 5 aliquots created from the primary specimen. Each aliquot will be 25uL having its own Global Specimen ID. DBS need to be entered into LDMS and stored in appropriate location so they can be easily retrieved when necessary.

Figure 11.4 Example LDMS Entry Visit 2.0 (PC-based)

Entry

Find OPID:
Load

Example Visit 2.0 (Enrollment) LDMS entry
2 primary containers for a 24mL EDTA collection

	Group	TYPE1	ID1	TYPE2	ID2	TYPE3	ID3	Visit	Unit	OPID	CLINIC	Detail
1	HPTN	PID	999515640	PROTOCOL	083.0	ID3		2.00	Vst			Details
2												Details
3												Details
4												Details
5												Details
6												Details

Spec. Date: Recd Time: Exp. Date: Export ID:

☐ Remote
☐ Imported
 Import date:

of Tubes:
Primary Type:
Other Spec ID:
Spec. Time:
Add Delete

	Specimen #	Global Spec ID	Primary	Additive	Volume	Units	Spec Time	Time	Time Unit	Cond	Other Spec Id	Details
1	500V17000022		BLD	DPE	20.00	ML	11:45			SAT		ED
2	500V17000022		BLD	DPE	4.00	ML	11:45			SAT		ED

of Aliquots:
Vol:
Units:
Derivative:
Sub Add/Der:
Other Spec ID:
Add Delete Modify Clear

	Specimen	Global Spec ID	Primary	Add	Der	Sub Add/Der	Volume	Units	Cond	Other Spec Id	Group/ID	Details
1	500V17000023		BLD	DPE	PL2	N/A	1.80	ML	SAT		HPTN/083.0	ERD
2	500V17000023		BLD	DPE	PL2	N/A	1.80	ML	SAT		HPTN/083.0	ERD
3	500V17000023		BLD	DPE	PL2	N/A	1.80	ML	SAT		HPTN/083.0	ERD
4	500V17000023		BLD	DPE	PL2	N/A	1.80	ML	SAT		HPTN/083.0	ERD
5	500V17000023		BLD	DPE	PL2	N/A	1.80	ML	SAT		HPTN/083.0	ERD
6	500V17000024		BLD	DPE	BLD	N/A	1.00	ML	SAT	PGEN	HPTN/083.0	ERD

Figure 11.5 Example LDMS Entry Visit 4.0 (PC-based)

Find OPID:

Example Visit 4.0 (follow-up) LDMS entry 2 primary containers for a 24mL EDTA collection

	Group	TYPE1	ID1	TYPE2	ID2	TYPE3	ID3	Visit	Unit	OPID	CLINIC	Detail
1	HPTN	PID	999515640	PROTOCOL	083.0	ID3		4.00	Vst			Details
2												Details
3												Details
4												Details
5												Details
6												Details

Spec. Date: Recd. Date: Recd. Time: Exp. Date: Export ID:

☐ Remote ☐ Imported ☐ Import date:

of Tubes: Primary Type: Other Spec ID: Spec. Time:

	Specimen #	Global Spec ID	Primary	Additive	Volume	Units	Spec Time	Time	Time Unit	Cond	Other Spec Id	Details
1	500V17000025		BLD	DPE	20.00	ML	13:00			SAT		ED
2	500V17000025		BLD	DPE	4.00	ML	13:00			SAT		ED

of Aliquots: Vol: Units: Derivative: Sub Add/Der: Other Spec ID:

	Specimen	Global Spec ID	Primary	Add	Der	Sub Add/Der	Volume	Units	Cond	Other Spec Id	Group/ID	Details
1	500V17000026		BLD	DPE	PL2	N/A	1.80	ML	SAT		HPTN/083.0	ERD
2	500V17000026		BLD	DPE	PL2	N/A	1.80	ML	SAT		HPTN/083.0	ERD
3	500V17000026		BLD	DPE	PL2	N/A	1.80	ML	SAT		HPTN/083.0	ERD
4	500V17000026		BLD	DPE	PL2	N/A	1.80	ML	SAT		HPTN/083.0	ERD
5	500V17000026		BLD	DPE	PL2	N/A	1.80	ML	SAT		HPTN/083.0	ERD
6	500V17000027		BLD	DPE	DBS	N/A	25.00	UL	SAT		HPTN/083.0	ERD
7	500V17000027		BLD	DPE	DBS	N/A	25.00	UL	SAT		HPTN/083.0	ERD
8	500V17000027		BLD	DPE	DBS	N/A	25.00	UL	SAT		HPTN/083.0	ERD
9	500V17000027		BLD	DPE	DBS	N/A	25.00	UL	SAT		HPTN/083.0	ERD
10	500V17000027		BLD	DPE	DBS	N/A	25.00	UL	SAT		HPTN/083.0	ERD

Figure 11.6 Example LDMS Entry Visit 5.0 (PC-based)

Find OPID:

Example Visit 5.0 (follow-up) LDMS entry 1 primary container for a 24mL EDTA collection

	Group	TYPE1	ID1	TYPE2	ID2	TYPE3	ID3	Visit	Unit	OPID	CLINIC	Detail
1	HPTN	PID	999515640	PROTOCOL	083.0	ID3		5.00	Vst			Details
2												Details
3												Details
4												Details
5												Details
6												Details

Spec. Date: Recd. Date: Recd. Time: Exp. Date: Export ID:

☐ Remote ☐ Imported ☐ Import date:

of Tubes: Primary Type: Other Spec ID: Spec. Time:

	Specimen #	Global Spec ID	Primary	Additive	Volume	Units	Spec Time	Time	Time Unit	Cond	Other Spec Id	Details
1	500V17000028		BLD	DPE	24.00	ML	11:45			SAT		ED

of Aliquots: Vol: Units: Derivative: Sub Add/Der: Other Spec ID:

	Specimen	Global Spec ID	Primary	Add	Der	Sub Add/Der	Volume	Units	Cond	Other Spec Id	Group/ID	Details
1	500V17000029		BLD	DPE	PL2	N/A	1.80	ML	SAT		HPTN/083.0	ERD
2	500V17000029		BLD	DPE	PL2	N/A	1.80	ML	SAT		HPTN/083.0	ERD
3	500V17000029		BLD	DPE	PL2	N/A	1.80	ML	SAT		HPTN/083.0	ERD
4	500V17000029		BLD	DPE	PL2	N/A	1.80	ML	SAT		HPTN/083.0	ERD
5	500V17000029		BLD	DPE	PL2	N/A	1.80	ML	SAT		HPTN/083.0	ERD

Figure 11.7 Example LDMS Entry Visit 2.0 (Web-based)

Quick Add

Template Comments

Participant Information

Project

HPTN

*

PID

999515640

*

OPIDs

Add OPID

OPID

Action

Enrollment Information

PROTOCOL

083.0

Visit Information

ID3

Clinic

Collection Date

17/Ju1/2017

*

Visit Value

2.00

Visit Units

Vst

Primary Information

Add New

#	Primary Type	Additive Type	Condition	Collection Time	Received Date	Received Time	Volume	Volume Unit	
1	BLD	DPE	SAT	08:00	17/Ju1/2017	09:15	20	ML	Edit
2	BLD	DPE	SAT	08:00	17/Ju1/2017	09:15	4	ML	Edit

Aliquots for Primary #1

Add New

Total Aliquots	Derivative Type	Sub A/D Type	Condition	Volume	Volume Units	Other Specimen ID	
5	PL2	N/A	SAT	1.8	ML		Edit

Aliquots for Primary #2

Add New

Total Aliquots	Derivative Type	Sub A/D Type	Condition	Volume	Volume Units	Other Specimen ID	
1	BLD	N/A	SAT	1	ML	PGEN	Edit

Web LDMS
Example Visit 2.0
24mL EDTA collection
2 primary containers for PL2 and Pharmacogenomics Whole Blood

Figure 11.8 Example LDMS Entry Visit 4.0 (Web-based)

Quick Add

Template Comments

Participant Information

Project *

PID *

OPIDs

OPID

Web LDMS

Example Visit 4.0

24mL EDTA collection

2 primary containers for PL2 and DBS

Enrollment Information

PROTOCOL

Visit Information

ID3

Clinic

Collection Date *

Visit Value

Visit Units

Primary Information

#	Primary Type	Additive Type	Condition	Collection Time	Received Date	Received Time	Volume	Volume Unit	
1	BLD	DPE	SAT	08:00	17/Ju1/2017	09:15	20	ML	<input type="button" value="Edit"/>
2	BLD	DPE	SAT	08:00	17/Ju1/2017	09:15	4	ML	<input type="button" value="Edit"/>

Aliquots for Primary #1

Total Aliquots	Derivative Type	Sub A/D Type	Condition	Volume	Volume Units	Other Specimen ID	
5	PL2	N/A	SAT	1.8	ML		<input type="button" value="Edit"/>

Aliquots for Primary #2

Total Aliquots	Derivative Type	Sub A/D Type	Condition	Volume	Volume Units	Other Specimen ID	
5	DBS	N/A	SAT	25	UL		<input type="button" value="Edit"/>

Figure 11.9 Example LDMS Entry Visit 5.0 (Web-based)

Quick Add

Template Comments

Participant Information

Project *

HPTN ▼

PID *

999515640 ▼

OPIDs

Add OPID

OPID

Web LDMS

Example Visit 5.0

24mL collection for PL2

1 primary container

Action

Enrollment Information

PROTOCOL ▼

083.0

Visit Information

ID3 ▼

Clinic ▼

Collection Date *

17/Jul/2017 ▼

Visit Value

5.00

Visit Units

Vst ▼

Primary Information

Add New

#	Primary Type	Additive Type	Condition	Collection Time	Received Date	Received Time	Volume	Volume Unit	
1	BLD ▼	DPE ▼	SAT ▼	08:00	17/Jul/2017 ▼	09:15	24	ML	<div>Edit ▼</div>

Aliquots for Primary #1

Add New

Total Aliquots	Derivative Type	Sub A/D Type	Condition	Volume	Volume Units	Other Specimen ID	
5	PL2 ▼	N/A ▼	SAT ▼	1.8	ML ▼		<div>Edit ▼</div>

Figure 11.10 Example DBS LDMS Labels for each aliquot (PC-based)



Figure 11.11/11.12 Suggested labeling of DBS cards



Figure 11.13 Example of correctly spotted DBS card (25µl spot volume)



Note: 25µl spot volume may not completely fill target circle on DBS card.

Figure 11.14 Example of *incorrectly* spotted DBS card

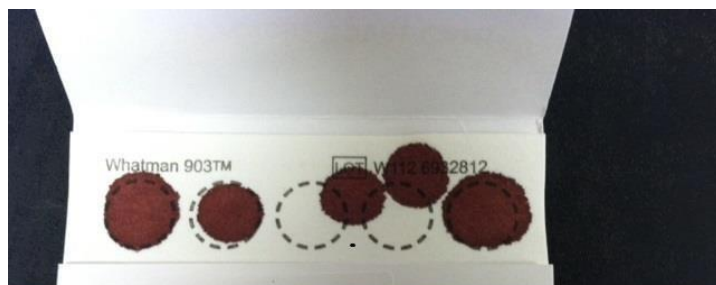


Figure 11.15 Example of *incorrectly* spotted DBS card (continued)

Invalid Specimens



1. Specimen quantity insufficient for testing.



2. Specimen appears scratched or abraded.



3. Specimen not dry before mailing.



4. Specimen appears supersaturated.



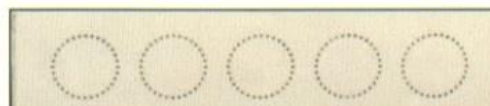
5. Specimen appears diluted, discolored or contaminated.



6. Specimen exhibits serum rings.



7. Specimen appears clotted or layered.



8. No blood.

Figure 11.16 Whatman card drying rack (VWR catalogue # 89015-592)

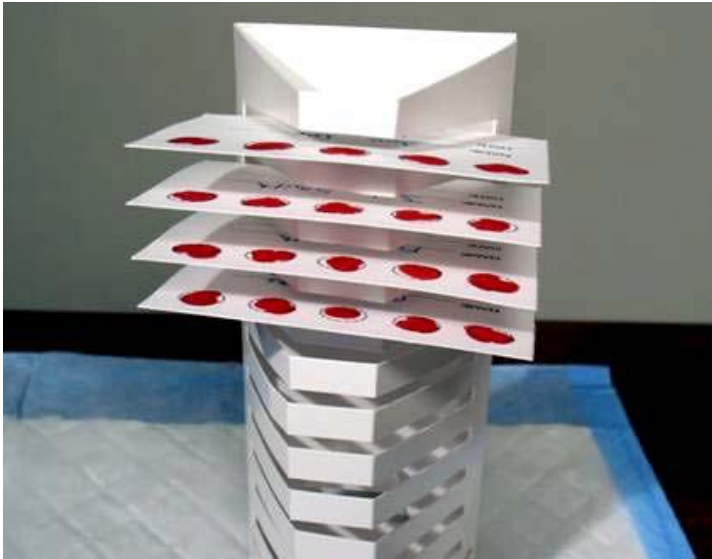


Figure 11.17 Properly labeled and packaged DBS card for storage



Figure 11.18 Properly labeled and packaged DBS card for storage (2)



11.6 Whole Blood Storage for Pharmacogenomic Testing.

Specimen Type: Whole blood collected in dried EDTA anticoagulant (“purple top”) tube.

Specimen volume: Minimum 1 mL whole blood. Note. The 1.0mL volume stated in this SSP is an approximate volume. This can be estimated using for example the volume markings on the cryovials. The use of a precision pipette is not required for this purpose.

Handling Instructions: Whole blood is transferred to a suitable cryovial and frozen at minus 70°C to minus 90°C within 6 hours of collection. The use of a negative airflow biosafety cabinet is not required for this specimen processing and storage.

Whole Blood samples should be prepared from an EDTA blood tube received in the laboratory. For HPTN 083 it is acceptable to use one of the tubes received for plasma storage, before it is processed for plasma storage, or a sample received for HIV rapid testing after testing has been performed.

Sites will follow the instructions below or may follow site specific SOPs for whole blood storage which will include the following:

Procedure –Stepwise

1. An appropriately labeled and filled EDTA whole blood tube will be received.
2. Log specimens into LDMS upon receipt using the following:
 - a. Whole Blood for Pharmacogenomics (Example 4mL draw):
 - i. Occurs only once at visit 2.0 (Enrollment)
 - ii. Single primary container created of 4mL DPE
 - iii. One aliquot of 1mL BLD created
 - iv. Other Spec ID field for aliquot container filled with **PGEN**
 - v. Primary container and aliquot entries should have the “SHV” (short volume) condition code used as needed when less than 1mL is obtained
 - vi. Please remember to contact the HPTN LC when using condition codes not listed in the SSP.
 - i. See figures 11.4 and 11.7

Test	Primary	Additive	Derivative	Sub Add/Deriv	Other Spec ID
Whole Blood for Storage	BLD	DPE	BLD	N/A	PGEN

Codes used in table:

BLD	Blood
DPE	Spray Dried EDTA
N/A	Not Applicable
PGEN:	Pharmacogenomics

3. Transfer a minimum of 1.0mL of the whole blood to a labeled cryovial.
4. Do not fill cryovials to more than $\frac{3}{4}$ of capacity (1.75mL).
Optional - Parafilm can be used to secondarily seal the caps of the cryovials to prevent leakage during shipping.
5. Ensure PTID, date, visit number and laboratory identifier are on the LDMS label.
6. Store whole blood in a freezer at minus 70°C to minus 90°C until requested for shipment. All Whole Bloods are stored electronically in the LDMS and physically in a freezer. Storage in a dedicated container for HPTN 083 Whole Blood samples only may help expedite storage, retrieval, and shipping of the samples, and is suggested by the LC.
7. Ship when requested by the LC, on dry ice overnight for arrival on Monday through Friday only, site must follow appropriate shipping regulations. Other shipping directions may be made at the time of request by the LC and are to be followed as directed.

11.7 Shipping of Samples to the HPTN Laboratory Center

Each site will ship plasma, whole blood, or DBS samples to the LC or designated laboratory upon request or following a shipping schedule as determined by the LC. The site will batch the shipment, export the LDMS data and notify the SDMC and LC. Additional samples may be specifically requested by the HPTN LC (e.g., archive/back-up samples); in this case, the SDMC will provide the site(s) with specific shipping lists.

Contact the HPTN LC at Johns Hopkins University (Estelle Piwowar-Manning: epiwowa@jhmi.edu, +410-614-6736 and Paul Richardson pricha18@jhmi.edu, +410-614-6737) to coordinate the timing and logistics of each shipment.

Sites will ship samples to the LC using the LDMS following the LC approved Shipping SOP indicating the LDMS Lab number as the ship to lab ID number. The site should export the data to FSTRF after a batch has been made and notify the HPTN LC with the batch number.

Personnel involved in the shipping process must be IATA trained and certified for the shipping of Category B Biological specimens UN 3373 (Diagnostic) Packing Instructions 650.

Include a copy of the shipping manifest and box map with the shipment. For dry ice shipments, use diagnostics packing code 650, UN 3373, and address the shipment as indicated in the following pages, for Johns Hopkins Hospital (plasma and whole blood) or the University of Colorado (DBS). For some shipments, an alternate address may be provided at the time of request. Shipment containers may be returned to sites if in suitable condition and a return slip or account number is

provided. Returning of shipping containers is at the discretion of the HPTN LC.

Notify the HPTN LC via email (epiwowa@jhmi.edu) when the shipment has been picked up from the site by the courier/shipping company. Attach an electronic copy of the shipping manifest and LDMS batch to the email notification, and include the following information in the notification:

- Name of courier/shipping company
- Shipment tracking number
- Number of boxes shipped
- Date of shipment
- Expected date of arrival

Plasma Shipping:

Each site is requested to keep “To Be Shipped” sample storage box(es) in their freezers.

- a. Starting at Visit 2 (enrollment visit), and until the end of the study, all plasma aliquots with an LDMS global ID ending “-01” (Web LDMS ending “-001”) should be stored in these boxes.
- b. The remaining plasma aliquots should be stored as per normal site standards.

All aliquots in these “To Be Shipped” boxes should be shipped, on a quarterly basis, during the second week of the months of January, April, July, and October for the remainder of the study.

Samples will be shipped to:

Estelle Piwovar-Manning
Johns Hopkins University Hospital
Department of Pathology
Pathology Building, Room 313
600 North Wolfe Street
Baltimore, MD 21287
USA
Phone: 410-502-0752
LDMS Number 300

Other samples, such as those from seroconverters, will also be requested on an ad-hoc basis and may be included in quarterly shipments. Separate shipping instructions will be provided at that time by LC non-protocol team members.

Separate LDMS batches are required for the quarterly shipments, any QA requested samples, and Seroconverter samples if they are sent in the same shipment.

Whole Blood

Whole blood shipping will be on an as requested basis. No scheduled shipments are in place for pharmacogenomic samples.

DBS Shipping

DBS sample lists for shipment will be posted on the SCHARP Atlas website for each site. An Email will be sent one week before the quarterly shipments are scheduled to notify each site that the up-to-date shipping list is posted. This should allow each site to have more than one week for DBS shipment preparation (and approximately one week for plasma shipment preparation). Dried blood spot cards should also be shipped during the second week of the months of January, April, July, and October.

Storing Dried Blood Spots by individual participant will simplify the shipment process.

Sites should ship the DBS cards directly to:

Lane Bushman
C/O Pete Anderson
University of Colorado at Denver
Skaggs School of Pharmacy and Pharmaceutical Sciences
CAVP Laboratory
C-238-V20, Rm V20-4410
12850 East Montview Blvd
Aurora, CO 80045
USA
Phone: 303-724-6132
LDMS Number 533

When shipping DBS, make sure specimens are shipped on dry ice. Check the desiccant packs and humidity indicators before shipping, and replace if needed. Boxes should be placed in a water tight secondary containers (Tyvek bags) to protect from humidity while in transit. Make sure to generate an LDMS shipping manifest with each shipment including all requested information.

The following sections describe types of specimens to be shipped to the HPTN LC for testing:

11.7.1 HIV QA Testing

Selected plasma aliquots will be shipped to the HPTN LC for HIV QA testing according to the HPTN Manual of Operations; additional testing may be performed e.g. ABO typing.

When samples are received at the HPTN LC, the LC will perform additional QA and HIV testing. This will include:

- Quality assurance testing (to confirm results of in-country testing)
- Testing to confirm seroconversion events

Data from the HPTN LC will be submitted to the SDMC.

11.7.2 Pharmacology Testing

Plasma samples for drug levels will be collected throughout the study. These samples will be collected from all participants, although PK testing may be limited to a subset of the samples. At each injection visit a blood sample will be collected PRIOR to the injections. The actual date and time of each blood sample collection will be recorded, as well as the time of each injection. This information should be captured on the relevant CRF.

Specimens for pharmacology testing will be stored on site for shipment to the HPTN LC upon request or following a shipping schedule as determined by the LC.

Pharmacology testing will be performed at the HPTN LC or at an outside laboratory designated by the HPTN LC. The primary pharmacologic assessments will be performed using assays that have been validated and approved by the Clinical Pharmacology Quality Assurance (CPQA) Committee. Results will not be returned to the sites or study participants.

Stored plasma may also be tested for the presence of other ARV drugs or other substances.

11.7.3 Pharmacogenomic Testing

Specimens for pharmacogenomic analysis will be collected at the enrollment visit for participants who consent to Pharmacogenomic testing. Samples will be stored on site for shipment to the HPTN LC upon request. Assays will be performed at the HPTN LC. Results will not be returned to the sites or study participants.

11.7.4 Other Testing

The HPTN LC will perform QA testing, including testing to determine HIV infection status in selected cases. Additional assays may be performed at the HPTN LC or a laboratory designated by the HPTN LC. This testing may include the following tests for participants who acquire HIV infection: HIV viral load, HIV resistance testing, HIV subtyping, and other tests to characterize HIV viruses and/or the host response to HIV infection. Results will not be returned to the sites or study participants, with the exception of HIV testing (if results obtained at the HPTN LC do not agree with site results) and the exception for resistance test results, noted below.

Resistance testing will be performed at the HPTN LC or a laboratory designated by the HPTN LC. This testing will be performed retrospectively at the end of the study. If real-time resistance testing is needed for clinical management, that testing should be arranged by the site outside of the study; separate specimens should be collected for that testing. Results from specialized resistance testing (e.g., minority variants analysis, if performed) will not be returned to study sites.

11.8 Laboratory Monitoring

LC staff will conduct periodic site visits to review in-clinic documentation, LDMS reports, specimen storage and other laboratory documentation relevant to this protocol.