

## **ANNEX F: General Supplies for Laboratory Levels I, II and III**

### **LEVEL I**

#### **HIV Serology: Rapid Test**

1. Positive and negative controls (if not included with kit)
2. Timer with alarm
3. Rapid kit
4. Good source of lighting
5. Phlebotomy (whole blood [WB]), safety and clerical supplies

#### **Hemoglobin**

##### ***Manual CBC: Hemoglobin***

1. Cuvettes
2. Hemoglobinometer
3. Pipettes and tips
4. 4x4 gauze
5. Lint-free tissue
6. Standards and control material
7. Phlebotomy (EDTA WB) and clerical supplies
8. Equipment-specified reagents

##### ***HemoCue Hemoglobin***

1. Phlebotomy (WB), safety and clerical supplies
2. HemoCue Analyzer
3. Microcuvette
4. Lint-free tissue
5. Alcohol
6. HemoCue cuvette cleaning swabs or cotton-tipped swabs moistened with alcohol or water
7. AC adaptor or batteries (4 AA batteries); extra batteries should be available
8. Hemoglobin controls

##### ***Hemoglobin Color Scale***

1. Phlebotomy (WB), safety and clerical supplies
2. WHO color scale
3. Chromatography paper

#### **Urine Pregnancy Rapid Test**

1. Rapid kit
2. Positive and negative controls (if not included with kit)
3. Collection cups
4. Specimen transport bags
5. Waterproof markers
6. Timer with alarm
7. Appropriate pipettes and tips (if not included with kit)
8. Good source of lighting

**Urine Dipstick**

1. Reagent strips
2. Positive and negative controls
3. Interpretive color chart
4. Collection cups
5. Specimen transport bags
6. Waterproof markers
7. Pedi UA collection bags
8. Timer with alarm
9. Disposable plastic pipettes
10. 4x4 gauze

**Dried Blood Spot (DBS) Collection**

1. Phlebotomy (WB-lancet), safety and clerical supplies
2. Appropriate DBS filter paper card
3. Drying stand or rack
4. Individual card packaging: Glassine paper, wrap sheets or gas permeable plastic bag
5. Batch packaging: Gas permeable zip-enclosure plastic bag
6. Desiccant packs
7. Humidity indicator cards
8. Foam mailing pouch or cooler for transporting

**Whole Blood Glucose**

1. Glucometer
2. Glucometer strips
3. Glucometer calibrator and controls
4. Extra batteries
5. Phlebotomy (WB-lancet), safety and clerical supplies

**AFB Smear**

1. Disposable wooden applicator sticks or wire loops using sand-alcohol flask/spirit lamp
2. Flask to hold sand-alcohol (if used)
3. Biohazard receptacle with lid and separate disposable bag inserts to burn or autoclave
4. Slides
5. Funnel
6. Filter paper
7. Double basin sink
8. Marking instrument - depends on slide (frosted-lead pencil; unfrosted-diamond stylus)
9. AFB staining (kit or prepared stain)
10. Distilled water
11. Timer with alarm
12. Spirit lamp
13. Methanol and spare wicks for lamp
14. Staining rack
15. Slide warming tray (optional)
16. Drying rack
17. Forceps
18. Phenolic agents or bleach

19. Bottle to store 1:10 bleach solutions for that day's use
20. Sputum collection cups
21. Specimen transport bags
22. 4x4 gauze
23. Waterproof marker
24. AFB positive and negative unstained smears
25. Register of TB suspects
26. Laboratory log book
27. Red ink pen for positives
28. Black/blue pen for negatives
29. Microscopy and clerical supplies

### **Malaria Smear (thick and thin)**

1. Phlebotomy (EDTA WB), clerical and microscope supplies
2. Coplin jars with screw cap lids (4 to 5) or staining rack
3. Diff counter
4. Wooden applicator sticks
5. 4x4 gauze
6. Wright-Giemsa stain or other acceptable malarial stain such as Field Stain A and B
7. Absolute methanol
8. Slides
9. Drying rack
10. Waterproof marker or pencil
11. Slide storage box
12. Water for rinsing
13. Timer with alarm

### **Malaria Rapid Test**

1. Rapid kit
2. QC system developed that includes a source of positive and negative control material
3. Timer with alarm
4. Phlebotomy (EDTA WB), safety and clerical supplies

### **Wet Mounts – Direct Microscopy**

1. Specimen collection devices such as sterile swab transported in tube, collection cups
2. Waterproof marker
3. Specimen transport bags
4. Slides
5. Coverslips
6. Bottle with droppers
7. 5% w/v KOH
8. 0.9% NaCl
9. Spirit lamp (to accelerate clarifying of KOH prep)-optional
10. Forceps
11. Aliquot test tubes to prepare suspensions
12. Petri dish
13. 4x4 gauze
14. Disposable plastic pipettes

15. Microscopy and clerical supplies

### **Rapid Syphilis Test**

1. Rapid kit
2. Positive and negative controls (if not included with kit)
3. Timer with alarm
4. Good source of lighting
5. Phlebotomy (WB-lancet), safety and clerical supplies

### **Automated ALT and Creatinine**

1. Forceps (to remove pedi-tubes from centrifuge)
2. 4x4 gauze
3. Appropriate pipettes and tips
4. Aliquot tubes and caps (to remove cells from serum if delays are encountered or for dilutions if above linearity)
5. Plastic disposable pipettes (to transfer serum)
6. Waterproof markers
7. Equipment-specified calibrators, controls, reagents and consumables
8. Additional print out supplies dependent upon equipment (e.g., paper tape, printer cartridge, paper)
9. Phlebotomy (serum) and clerical supplies
10. Test tube racks
11. Analyzer
12. Diluent (probably saline for this level); if result is above linearity-optional; may report "greater than..." if acceptable

### **Microscopy**

1. Microscope
2. Flat table/bench with chair
3. 10x, 40x, 100x oil immersion objectives
4. Microscope dust cover
5. Immersion oil (tropicalized type)
6. Bottle dropper
7. Spare bulb/fuse
8. Lens cleaner
9. Lens paper
10. Slide storage containers
11. Xylene (to remove oil before placing into storage box)
12. Pictorial reference material or colored atlases

### **Additional Supplies if Preparing Stains**

1. Balance or weight scale (sensitivity of 0.1g)
2. Adhesive labels
3. Amber bottles
4. Distilled water system
5. Filter paper
6. Funnels
7. Boiling flask or Erlenmeyer flask

8. Measuring cylinders (100ml, 500ml and 1000ml)
9. Volumetric flasks
10. Glass cleaner
11. Bottle brush
12. Insulated gloves
13. Heating plate with magnetic stirrers
14. Reagent grade acids, staining crystals, chemicals
15. Parafilm
16. Waterproof markers
17. Weigh boats
18. Disposable plastic pipettes

### **Phlebotomy**

1. Lancet
2. 2x2 gauze
3. 21G needles
4. 22G needles
5. Alcohol prep pad
6. Band-aids or paper tape
7. Safety needle holder and adapter
8. Butterfly safety assembly
9. Disposable tourniquets
10. Phlebotomy chair or stationary chair with arm rests
11. EDTA tubes (plastic)
12. SST tubes (plastic)
13. Red top tubes with clot activator (plastic)
14. Pedi EDTA tubes
15. Pedi red tubes
16. Microtainer EDTA tubes
17. Microtainer amber red tops
18. Betadine preps
19. Sharps container

### **Microbiological Transport**

1. Blood culture tubes
  - a. Aerobic
  - b. Anaerobic
  - c. Pedi
  - d. Myco
2. Urine culture
3. PVA and Formalin
4. Carey Blair
5. Sterile cups
6. Sterile tubes with screw cap lids or plain red top tubes with no clot activator
7. Culturette swabs
8. Sealable plastic transport bags
9. Cool box or thermal cooler

### **Transport Supplies for Referral Testing**

1. Insulated cool boxes to hold ambient temperature and refrigerated specimens
2. Transfer list
3. Transfer log
4. Fax or other system of reporting results from recipient laboratory
5. Appropriate sending containers and preservatives
6. Sealable plastic transport bags
7. Specimen holders or racks

### **Safety**

1. Safety goggles or glasses
2. Gloves (small, medium and large)
3. Fluid-resistant lab coats (to use in the laboratory)
4. Lab coats for patient processing
5. Eye wash station or portable dispenser
6. ABC fire extinguisher
7. Hazardous spill kit
8. Hand soap
9. Paper towels
10. Bleach
11. Disinfectant wipes (optional)
12. Biohazard receptacle with lid and separate disposable bag inserts to burn or autoclave
13. First aid kit

### **Clerical**

1. Binders for SOPs
2. Page protectors for SOPs
3. Log books for QC and patient data management
4. Waterproof markers
5. Pens
6. Paper for all printers (clerical and equipment attached)
7. Printer cartridges for all printers
8. Requisition forms (if separate from request-result forms)
9. Calendar
10. Clock
11. Adhesive labels

### **Multi-Purpose**

1. Disposable plastic pipettes
2. 4x4 gauze
3. Required pipettes (e.g., 10 $\mu$ l, 20 $\mu$ l, 25 $\mu$ l, 50 $\mu$ l, 100 $\mu$ l, 250 $\mu$ l, 500 $\mu$ l, 1000 $\mu$ l)
4. Small pipette tips
5. Large pipette tips
6. Forceps
7. Wash bottles (to store various reagents such as 1:10 bleach made fresh daily, etc.)
8. Wooden applicator sticks
9. Thermometers for room, refrigerated and frozen temperatures
10. Timers with alarms

11. Paper towels
12. Paper towel stand and holder
13. Appropriate volumetric pipettes for control/calibrator reconstitution
14. Rubber bulbs for volumetric pipettes

**Waste Disposal**

1. Biohazard bags

## **LEVEL II**

### **General Laboratory Supplies**

#### ***Centrifuge Maintenance***

1. Reflective strip
2. Lubricant
3. Brushes
4. Timer with alarm (to verify centrifuge's timer)

#### ***Pipette Calibration and Maintenance***

1. Cleaning and lubricant solutions (refer to manufacturer's acceptable choices)
2. O-rings
3. Inserts
4. Pipette wrench to adjust delivery amounts (pipettes which initially fail calibration)
5. Spare pipettes for Level I to use while current pipette is being calibrated
6. Pipette tips
7. Spectrophotometer calibration kits
  - a. Lint-free tissue
  - b. Spectrophotometer
  - c. Ruler
  - d. Graph paper
8. Analytical balance calibration kit
  - a. Distilled water
  - b. Calculator

#### ***Analytical Balance Verification and Maintenance***

1. Calibration weights
2. Gloves
3. Forceps
4. Soft bristle brush

### **HIV Serology**

For rapid test, refer to Level I for a list of supplies.

For EIA, refer to Level III for a list of supplies.

### **Automated CBC with Automated Differential**

1. Wooden applicator sticks
2. 4x4 gauze
3. Bleach (for maintenance)
4. Wash bottles (to prepare correct bleach dilution)
5. 100ml graduated cylinder (if wash bottle does not have tick marks)
6. Equipment-specified calibrators, controls and reagents
7. Additional print out supplies dependent upon equipment (e.g., paper tape, printer cartridge, paper)
8. Phlebotomy (EDTA) and clerical supplies
9. Microscope supplies (if peripheral smear review is warranted)
10. Test tube racks
11. Analyzer
12. Calendar (to determine on-board stability expirations)

## **Manual CBC**

### ***WBC Count***

1. Hemacytometers
2. Hemacytometer coverslips (standardized thickness)
3. WBC pipette
4. WBC pipette bulb
5. Alcohol pads
6. Lens paper
7. 4x4 gauze
8. Petri dish and cover
9. Timer with alarm
10. WBC diluting fluid (2% acetic acid or 1% HCl or Turks solution)
11. Tally counter
12. Phlebotomy (EDTA WB), clerical and microscope supplies
13. Glass cleaner
14. 500ml beaker to hold cleaner
15. Calculator

### ***Hematocrit***

1. Capillary microhematocrit tubes
2. Tube sealant
3. 4x4 gauze
4. Timer with alarm (if not included on centrifuge)
5. Phlebotomy (EDTA WB) and clerical supplies

## **Differential (Manual)**

1. Coplin jars with screw cap lids (4 to 5) or staining rack
2. Diff counter
3. Wooden applicator sticks
4. 4x4 gauze
5. Wright-Giemsa stain
6. Slides
7. Waterproof marker or pencil
8. Slide storage box
9. Water for rinsing
10. Timer with alarm
11. Phlebotomy (EDTA WB), clerical and microscope supplies

## **CSF/Body Fluid Cell Counts**

1. Hemacytometers
2. Hemacytometer coverslips (standardized thickness)
3. Microcapillary tubes (if dilutions are not needed)
4. WBC pipette
5. RBC pipette
6. Pipette bulb
7. Alcohol pads
8. Lens paper

9. 4x4 gauze
10. Petri dish and cover
11. Timer with alarm
12. WBC diluting fluid (2% acetic acid or 1% HCl or Turks solution)
13. RBC diluting fluid (Hayem's or Grower's solution, or 0.85% w/v NaCl)
14. Tally counter
15. Glass cleaner
16. 500ml beaker to hold cleaner
17. Calculator
18. Sterile tubes with screw cap lids
19. Centrifuge (for xanthochromic specimens)
20. WBC and RBC (platelet for differentials) Unopette System if available
21. Slide and differential stain for WBC cell type percentages
22. Sterile disposable pipette
23. Phlebotomy (EDTA WB), clerical and microscope supplies

#### **CD4**

1. Pipettes (50 $\mu$ l, 100 $\mu$ l and 1000 $\mu$ l)
2. Pipette tips (100 $\mu$ l and 1000 $\mu$ l)
3. 12 x 75mm capped polystyrene tubes
4. Vortex mixer
5. Reagent grade distilled water
6. Bleach
7. Phosphate buffer solution (PBS)
8. EDTA (purple top) vacutainer tubes
9. Equipment manufacturer-specific controls
10. Equipment manufacturer-specific reagents
11. Equipment manufacturer-specific sheath fluid
12. Timer with alarm
13. Wash bottles (deionized water and bleach solutions)
14. Phlebotomy (EDTA WB) and clerical supplies
15. Equipment-specified calibrators, controls, reagents and consumables
16. Additional print out supplies dependent upon equipment (e.g., paper tape, printer cartridge, paper)
17. Required pipettes and tips
18. 4x4 gauze
19. Wooden applicator sticks
20. Sharps container
21. Biohazard bags

#### **Automated Chemistry Panel**

1. Forceps (to remove pedi tubes from centrifuge)
2. 4x4 gauze
3. Required pipettes and tips
4. Aliquot vials and caps
5. Aliquot tubes and caps (to remove cells from serum if delays are encountered or for dilutions if above linearity)
6. Plastic disposable pipettes (to transfer serum)

7. Waterproof markers
8. Equipment-specified calibrators, controls, reagents, diluents and consumables
9. Additional print out supplies dependent upon equipment (e.g., paper tape, printer cartridge, paper)
10. Phlebotomy (serum) and clerical supplies
11. Test tube racks
12. Analyzer
13. Containers to hold distilled water
14. Calendar (to determine on-board stability expirations)

### **Whole Blood Lactate**

1. Phlebotomy (WB-lancet), safety and clerical supplies
2. Lactate POC device
3. Test strips
4. Control material
5. Additional batteries

### **AFB Smear**

Refer to Level I for a list of supplies.

### **Cryptococcal Antigen Test**

1. Timer with alarm
2. Forceps (to remove pedi-tubes from centrifuge)
3. 4x4 gauze
4. Water bath thermometer
5. Sterile plain red top tubes with no clot activator
6. Sterile disposable pipettes
7. 50 $\mu$ l pipette and tips
8. Slide rotator
9. Disposable stirrers
10. Isopropyl alcohol
11. Brush
12. Lint-free tissues
13. Water
14. Phlebotomy (serum) supplies or sterile tubes with screw cap lids (CSF)
15. Clerical supplies
16. For quantitation:
  - a. Second slide
  - b. 12 x 75mm test tubes
  - c. 250 $\mu$ l pipette and tips

### **India Ink Stain**

1. India ink reagent droppers
2. Positive and negative saline suspension of *C. albicans* and *C. neoformans*
3. Sterile tubes
4. Sterile saline
5. Sterile disposable pipettes
6. If greater than 1ml of fluid, centrifuge

7. Forceps
8. Slides
9. Coverslips
10. Microscope and clerical supplies

### **Hepatitis B Surface Antigen and Hepatitis C Antibody Testing**

Refer to Level III for a list of supplies.

### **Gram's Stain**

1. Disposable inoculating wires or sterile swabs
2. Biohazard receptacle with lid and separate disposable bag inserts to burn or autoclave
3. Slides
4. Double basin sink
5. Marking instrument—depends on slide (frosted-lead pencil; unfrosted-diamond stylus)
6. Gram's stain (kit or prepared stain)
7. Distilled water
8. Timer with alarm
9. Spirit lamp
10. Methanol and spare wicks for lamp
11. Staining rack
12. Slide warming tray (optional)
13. Drying rack
14. Forceps
15. Phenolic agents or bleach
16. Bottle to store 1:10 bleach solutions for that day's use
17. Appropriate specimen collection devices
18. Specimen transport bags
19. 4x4 gauze
20. Waterproof marker
21. Positive and negative unstained smears using *E. coli* and *S. aureus*
22. Microscope and clerical supplies
23. Media if plating will be performed at this site and sent to tertiary
  - a. Adhesive labels
  - b. Plate sleeves or racks
  - c. Thermometers
  - d. CO<sub>2</sub> canister

### **Gram's Smear**

1. Crystal Violet
2. Iodine
3. Decolorizer
4. Safranin

### **Malaria Smear**

Refer to Level I for a list of supplies.

### **Malaria Rapid Test**

Refer to Level I for a list of supplies.

## **Rapid Syphilis Test**

Refer to Level I for a list of supplies.

### **TPPA/TPHA**

1. Microplate
2. Timer with alarm
3. Forceps (to remove pedi-tubes from centrifuge)
4. 4x4 gauze
5. Required pipettes and tips
6. Kit
7. Phlebotomy (serum) and clerical supplies
8. Test tube racks
9. Tray viewer or good source of lighting

### **RPR**

1. Timer with alarm
2. Forceps (to remove pedi tubes from centrifuge)
3. 4x4 gauze
4. Required pipettes and tips
5. Kit
6. Positive and negative controls (if not included in kit)
7. Phlebotomy (serum) and clerical supplies
8. Test tube racks
9. Rotator cover (old pipette plastic box lid will work if it covers rotating slide)
10. Good source of lighting
11. 0.9% saline for qualitative testing

### **Type and Crossmatch**

1. 4x4 gauze
2. Thermometers for refrigerator, freezer, room temperature, water bath and incubator
3. Circular graph paper for temperature monitoring
4. Ink cartridges
5. Saline (liter boxes)
6. Calibrated disposable pipettes
7. Microscope
8. Slides
9. Coverslips
10. 12 x 75mm test tubes
11. Scissors
12. Aliquot tubes with caps
13. Unit holders
14. Reagents
15. Reagent holders
16. Controls
17. Wash bottles
18. Specimen tube centrifuge
19. Forceps
20. 12 x 75mm tube centrifuge (washing)

21. Unit tags
22. Adapters to pool platelets
23. Unit bags
24. Blood bank results log
25. QC log book
26. Blood bank registry book
27. Unit identification numbers and labels
28. Clerical supplies

### **Urine Dipstick – Microscopy**

1. Reagent strips
2. Positive and negative controls
3. Interpretive color chart
4. Collection cups
5. Specimen transport bags
6. Waterproof markers
7. Pedi UA collection bags
8. Timer with alarm
9. Disposable plastic pipettes
10. Disposable plastic centrifugal aliquot tubes
11. Clerical and microscope supplies
12. Double basin sink
13. Slides
14. Coverslips

### **Urine Pregnancy Rapid Test**

Refer to Level I for a list of supplies.

### **Wet Mounts – Direct Microscopy**

Refer to Level I for a list of supplies.

### **Microscopy**

Refer to Level I for a list of supplies.

### **Additional Supplies if Preparing Stains**

Refer to Level I for a list of supplies.

### **Phlebotomy**

1. Supplies 1-19 same as Level I
2. Disposable plastic pipettes

### **Microbiological Transport**

Refer to Level I for a list of supplies.

### **Transport/Receiving Supplies for Referral Testing**

1. Supplies 1-7 same as Level I
2. Test tube racks and trays
3. Recipient log

**Safety**

1. Supplies 1-13 same as Level I
2. Chemical safety cabinet

**Clerical**

Refer to Level I for a list of supplies.

**Multi-Purpose**

1. Supplies 1-14 same as Level I
2. Glassware cleaner

**Waste Disposal**

1. Biohazard bags
2. Autoclave or burning receptacle
3. Indicators (to verify acceptable performance of autoclave)

## **LEVEL III**

### **General Laboratory Supplies**

1. Log maintenance book
2. Clerical supplies

#### ***pH Meter Maintenance (if preparing media)***

1. Lint-free cloth
2. Deionized water
3. Beakers
4. Buffers (3.0 pH, 4.0 pH, 7.0 pH, and 10.0pH)
5. Wash bottle
6. Glassware and pipette washers
  - a. Verification indicator

#### ***Centrifuge Maintenance***

Refer to Level II for a list of supplies.

#### ***Pipette Calibration and Maintenance***

Refer to Level II for a list of supplies.

#### ***Analytical Balance Verification and Maintenance***

Refer to Level II for a list of supplies.

#### ***Method Validation***

1. Calculator to assess linearity, sensitivity, precision and accuracy

#### ***Biosafety Cabinet Class II\****

1. Tissue paper to assess inward air flow
2. Disinfectant to wipe interior services (70% ethanol, 0.5% bleach with second wiping using sterile water)
3. UV replacement bulb and UV meter for verification (if UV is installed)
4. HEPA filter replacement
5. Appropriate disposal bag for replaced filters

\*Annual verification should be performed by accredited field certifiers.

#### ***Thermometer Calibration and Verification***

1. Reference thermometer

### **HIV Serology**

For rapid test, refer to Level I for a list of supplies.

#### **HIV Serology by EIA (Automated)**

1. System-specific:
  - a. Anti-HCV reagent pack
  - b. Hbs Ag reagent pack
  - c. Anti- HBs reagent pack
  - d. HIV 1/2 Antibody reagent pack
  - e. Bulk reagents (e.g., diluents)
2. MLA pipettes
3. Pipette tips
4. Sample wheel, tray or cups
5. Barcode labels
6. Biohazard bags

### **HIV Serology by EIA**

1. Precision pipettes to deliver 5µl, 10µl, 100µl, 200µl, 1ml, 5ml and 10ml (accurate within ± 10%) or automated pipettor-dilutor and pipette tips
2. Appropriate containers to prepare diluted specimens and reagents
3. Dry-heat incubator capable of maintaining 37° ± 1°C
4. Microwell plate or strip washer qualified for use with this assay (washer must be capable of dispensing at least 300µl per well and cycling five times)
5. Microwell plate or strip reader qualified for use with assay
6. Household bleach (5% to 8% sodium hypochlorite), which may be diluted to a minimum concentration of 10% bleach (or 0.5% sodium hypochlorite); alternative disinfectants include: 70% ethanol or 0.5% Wescodyne (West Chemical Products, Inc.)
7. Paper towels or absorbent pads for blotting
8. Labeled null strips (for testing partial plates)
9. Clean, polypropylene containers for preparation of working conjugate and chromogen solutions (do not use polystyrene containers)
10. Deionized or distilled water
11. Gloves
12. Laboratory timer
13. EIA reagent reservoirs (optional)

### **Viral Load**

#### ***Cavidi ExaVir Load Assay***

1. ExaVir Load Reagent Kit (includes ExaVir Load consumables)
2. 1000µl filter pipette tips
3. 200µl filter pipette tips
4. 200µl pipette tips
5. 5ml pipette tips
6. 12.5ml repeater pipette tips
7. 15ml tubes
8. Reagent reservoirs
9. Distilled water
10. Absorbing paper
11. Pasteur pipettes

#### ***VERSANT HIV-1 bDNA Assay***

1. VERSANT HIV-1 bDNA Reagent Kit
2. 1.5ml tubes
3. 1000µl filter pipette tips
4. 200µl pipette tips
5. Repeater pipette tips
6. 5ml pipette
7. 10ml pipette
8. 15ml tubes
9. 50ml tubes
10. Reagent reservoirs
11. Distilled water
12. Bleach

13. Absorbing paper

***Amplicor Monitor vs. 1.5***

1. Amplicor Monitor Reagent Kit
2. 96 well plate
3. 1.5ml tubes
4. 1000µl filter pipette tips
5. 200µl pipette tips
6. Repeater pipette tips
7. 5ml pipets
8. 10ml pipets
9. 15ml tubes
10. 50ml tubes
11. Reagent reservoirs
12. Distilled water
13. Bleach
14. Absorbing paper

**CBC with Automated Differential**

Refer to Level II for a list of supplies.

**CD4**

Refer to Level II for a list of supplies.

**Urine Dipstick - Microscopy**

Refer to Level II for a list of supplies.

**Chemistry Panel/Whole Blood Lactate**

Refer to Level II for a list of supplies.

**AFB Smear**

Refer to Level I for a list of supplies.

**AFB Culture and Susceptibility**

1. Acid-alcohol for Ziehl-Neelsen staining
2. Aniline
3. Aqueous methylene blue
4. Basic fuchsin
5. Carbofuchsin for Ziehl-Neelsen staining
6. Dry zink dust
7. Eggs
8. Ethyl alcohol (70%)
9. Glycerol
10. Hydrochloric acid concentrated (reagent grade)
11. Hydrogen peroxide 30% (superoxol)
12. L-asparagine
13. Magnesium sulphate  $MgSO_4 \cdot 7H_2O$
14. Magnesium citrate

15. Malachite green
16. Methylated spirit
17. N-naphthylethylene-diamine-dihydrochloride
18. Na<sub>2</sub>HPO<sub>4</sub> (anhydrous)
19. p-Nitrobenzoic acid (NPB)
20. Phenol crystals
21. Potassium permanganate KMNO<sub>4</sub>
22. Potassium dihydrogen phosphate KH<sub>2</sub>PO<sub>4</sub> (anhydrous)
23. Sodium hydroxide (NaOH)
24. Sodium chloride
25. Sodium pyruvate
26. Sodium nitrate
27. Sulfanilamide
28. Sulfuric acid (reagent grade)
29. Tween 80
30. Xylene
31. Prepared AFB media

### **Microbiology Smear and Culture**

#### ***Gram's Smear***

1. Crystal Violet
2. Iodine
3. Decolorizer
4. Safranin
5. QC Slides

#### ***Culture/ID***

1. Blood agar
2. MacConkey agar
3. Chocolate agar
4. Hektoen Enteric Agar
5. Thayer Martin Agar
6. Campy CVA Agar
7. Thioglycollate media
8. Anaerobic agar
9. Selenite Broth (Salmonella, Shigella)
10. Trypticase soy agar
11. Trypticase soy broth
12. Triple sugar iron agar
13. Simmons citrate agar slants
14. Oxidase dropper
15. Indole dropper
16. Brain heart infusion with 6.5% NaCl
17. Urea
18. Lysine
19. Arginine
20. Ornithine
21. SIM motility media
22. Bile esculin slants

23. Shigella group antisera
24. Salmonella group antisera
25. Coagulase plasma
26. Desoxycholate solubility reagent
27. Optochin disc
28. Group A disc
29. API strips 20 E
30. API strips non-fermenter
31. Rapid ID strips
32. Gas pak EZ

***Susceptibility***

1. Kirby Bauer plates
2. Mueller-Hinton agar plain (large)
3. Mueller-Hinton blood agar (large)
4. Antibiotic discs (variety)
5. Etest (certain organisms)
6. Kirby-Bauer dispenser

***Other***

1. ATCC organisms (all organisms identified)

**Blood Cultures**

1. Blood culture bottles (aerobic, anaerobic, AFB)
2. Venting units

**Malaria Smear**

Refer to Level I for a list of supplies.

**Malaria Rapid Test**

Refer to Level I for a list of supplies.

**Syphilis**

For rapid test, refer to Level I for a list of supplies.

For TPPA/TPHA/RPR, refer to Level II for a list of supplies.

**Hepatitis B and C (Manual)**

1. Precision pipettes to deliver 5µl, 10µl, 100µl, 200µl, 1ml, 5ml and 10ml (accurate within ± 10%) or automated pipettor-dilutor and pipette tips
2. Appropriate containers to prepare diluted specimens and reagents
3. Dry-heat incubator capable of maintaining 37° ± 1°C
4. Microwell plate or strip washer qualified for use with this assay (washer must be capable of dispensing at least 300µl per well and cycling five times)
5. Microwell plate or strip reader qualified for use with assay
6. Household bleach (5% to 8% sodium hypochlorite), which may be diluted to a minimum concentration of 10% bleach (or 0.5% sodium hypochlorite); alternative disinfectants include: 70% ethanol or 0.5% Wescodyne (West Chemical Products, Inc.)
7. Paper towels or absorbent pads for blotting
8. Labeled null strips (for testing partial plates)

9. Clean, polypropylene containers for preparation of working conjugate and chromogen solutions (do not use polystyrene containers)
10. Deionized or distilled water
11. Gloves
12. Laboratory timer
13. EIA reagent reservoirs (optional)

### **Hepatitis B and C (Automated)**

1. System-specific:
  - a. Anti-HCV reagent pack
  - b. Hbs Ag reagent pack
  - c. Anti- HBs reagent pack
  - d. HIV 1/2 Antibody reagent pack
  - e. Bulk reagents (e.g., diluents)
2. MLA pipettes
3. Pipette tips
4. Sample wheel, tray or cups
5. Barcode labels
6. Biohazard bags

### **Type and Crossmatch**

Refer to Level II for a list of supplies.

### **Urine Pregnancy Rapid Test**

Refer to Level I for a list of supplies.

### **Wet Mounts – Direct Microscopy**

Refer to Level I for a list of supplies.

### **Cryptococcal Antigen Test**

Refer to Level II for a list of supplies.

### **India Ink Stain**

Refer to Level II for a list of supplies.