

# Draft

# Second National

# Essential

# Diagnostics List



2025

## **Overview**

The Indian Council of Medical Research released the first National Essential Diagnostics List (NEDL) in 2019 to make diagnostics an essential component of the health care system.

The list enumerates minimum number of tests that should be available at various levels of healthcare facilities, including – village level, Sub Health Centre/Health & Wellness Centres (HWCs), Primary Health Centres (PHC)/HWCs, Community Health Centres (CHC), Sub-District Hospital (SDH), and District Hospital (DH).

ICMR has now proposed a revised version of the NEDL, incorporating inputs from relevant stakeholders and feedback from multiple consultation meetings. The draft of the second National Essential Diagnostics List (NEDL) reflects advancements made in recent years. Notably, the nomenclature of healthcare facilities has been updated, with Sub-Centres now being referred to as Ayushman Arogya Mandirs. Additionally, new guidance documents, such as the Integrated Public Health Laboratories (IPHL) for District Hospitals (released in 2021) and the Indian Public Health Standards (IPHS) for Sub-Centres, PHCs, CHCs, SDHs, and DHs (released in 2022), have also been considered.

The revised NEDL has been harmonized with the available MoHFW guidance documents and aligned with national health programs. It builds upon the first list and provides recommendations for diagnostic tests across various levels of healthcare facilities, including village-level facilities, Ayushman Arogya Mandirs -Sub-Centres, PHCs, CHCs and SDHs-DHs.

**Table 1: List of diagnostic tests at village level**

S.No	Diagnostic test	Specimen type	Equipment used for test
<b>Haematology</b>			
1.	Slide preparation for peripheral blood smear	Capillary blood	Sample (prepared slide) to be collected and sent to PHC for microscopy
<b>Clinical pathology</b>			
2.	Urine albumin and glucose	Urine	Dipstick
3.	Urine pregnancy test	Urine	RDT
<b>Biochemistry</b>			
4.	Blood glucose	Capillary blood	Glucometer
<b>Specific diseases</b>			
5.	Malaria	Capillary/whole blood	RDT (Antigen based bivalent)
6.	Peripheral blood smear (thick smear for Filariasis*)	Capillary blood	Sample (prepared slide) to be collected and sent to PHC for microscopy
7.	HIV and Syphilis screening	Whole blood	RDT
8.	TB infection testing (TST/Cy-TB)	Blood	Sample to be collected and sent for IGRA
9.	Sputum for TB	Sputum collection in disposable sterile containers	Sample to be collected and sent to PHC for microscopy

\*For endemic areas

 Hub and spoke, sample to be transferred to lab with available facility

**Table 2: List of diagnostic tests at Ayushman Arogya Mandir Sub-Centre**

S.No	Diagnostic test	Specimen type	Equipment used for test
<b>Haematology</b>			
1.	Haemoglobin	Capillary blood	Digital haemoglobinometer
2.	Slide preparation for peripheral blood smear	Capillary blood	Sample (prepared slide) to be collected and sent to PHC for microscopy
3.	Sickle cell test	Capillary blood	RDT
<b>Clinical pathology</b>			
4.	Urine pregnancy test	Urine	RDT
5.	Urine albumin and glucose	Urine	Dipstick
6.	Haemoglobin, bile salts, bile pigments, ketone bodies, specific gravity and reaction (pH)	Urine	Dipstick (multiparameter urine strip)
7.	Visual Inspection acetic acid	Visual examination using vaginal speculum	Vaginal speculum
<b>Microbiology</b>			
8.	Test for Syphilis	Whole blood	RDT
<b>Biochemistry</b>			
9.	Blood glucose	Capillary blood	Glucometer
<b>Specific Diseases</b>			
10.	Malaria	Capillary/whole blood	RDT (Antigen based bivalent)
11.	Peripheral blood smear (thick smear ) for filariasis*	Capillary blood	Sample (prepared slide) to be collected and sent to PHC for microscopy

<b>12.</b>	TB infection testing (TST/Cy-TB)	Blood	Sample to be collected and sent for IGRA
<b>13.</b>	Sputum for TB	Sputum collection in disposable sterile containers	Sample to be collected and sent to PHC for microscopy
<b>14.</b>	HIV test (Antibodies 1/2) <sup>^</sup>	Whole blood	RDT
<b>15.</b>	HBs Ag test for Hepatitis B	Whole blood	RDT
<b>16.</b>	Test for screening for HIV and Syphilis@ <sup>^</sup>	Whole blood – if Dual kit is being used for HIV and Syphilis  Serum/Plasma – if RPR kits are being used for Syphilis separately	RDT

\*For endemic areas

<sup>^</sup> Test available only after pre-test counseling for HIV

@Dual or combined test kit can be used

 Hub and spoke, sample to be transferred to lab with available facility

**Table 3: List of diagnostic tests at Primary Health Centre (PHC)**

S.No	Diagnostic test	Specimen type	Equipment used for test
<b>Haematology</b>			
1.	Haemoglobin	Capillary blood	Digital haemoglobinometer
2.	Peripheral blood smear	Capillary blood	Microscopy
3.	RBC count <sup>#</sup>	EDTA whole blood	Microscopy
4.	Reticulocyte count <sup>#</sup>	EDTA whole blood	Microscopy
5.	Absolute eosinophil count <sup>#</sup>	EDTA whole blood	Microscopy
6.	Total leucocyte count <sup>#</sup>	EDTA whole blood	Microscopy
7.	Differential leucocyte count <sup>#</sup>	EDTA whole blood	Microscopy
8.	Platelet count <sup>#</sup>	EDTA whole blood	Microscopy
9.	CBC <sup>#</sup>	EDTA whole blood	3-part Hematology Analyzer
10.	ESR <sup>#</sup>	EDTA whole blood	Manual/ ESR analyser
11.	Bleeding time	Whole blood	Manual
12.	Clotting time	Whole blood	Manual
13.	Blood grouping and Rh typing	EDTA whole blood	Manual
14.	Sickle cell test*	Capillary blood/ EDTA whole blood	Screening: Sickling/solubility test; RDT  Confirmation: Sample to be collected & sent to DH for HPLC / electrophoresis
15.	Naked Eye Single Tube Red Cell Osmotic Fragility Test [NESTROFT] (screening for beta-thalassaemia)	Whole blood	Observation test
16.	Reduction test for screening G6PD deficiency*	EDTA whole blood	Sample to be collected and sent to DH for qualitative visual method

## Clinical pathology

<b>17.</b>	Urine pregnancy test	Urine	RDT
<b>18.</b>	Urine albumin and glucose	Urine	Dipstick
<b>19.</b>	Haemoglobin, bile salts, bile pigments, ketone bodies, specific gravity and reaction (pH)	Urine	Dipstick (multiparameter urine strip)
<b>20.</b>	Urine microscopy	Urine	Microscopy
<b>21.</b>	Urine for microalbumin	Urine	Sample to be sent to CHC and above
<b>22.</b>	Urine for creatinine and Albumin to creatinine ratio (ACR)	Urine	Sample to be sent to CHC and above
<b>23.</b>	Vaginal smear for presence of sperms (Medico Legal Case)	Vaginal smear	Microscopy (Samples to be sent to SFSL/CFSL as per guideline)  <a href="https://mohfw.gov.in/sites/default/files/953522324.pdf">https://mohfw.gov.in/sites/default/files/953522324.pdf</a> (This will be included in ref section)
<b>24.</b>	Visual Inspection acetic acid	Visual examination using vaginal speculum	Vaginal speculum
<b>25.</b>	Pap smear	Cervical smear	Sample to be sent to DH for microscopy

## Biochemistry

<b>26.</b>	Blood glucose <sup>#</sup>	Capillary blood	Glucometer
<b>27.</b>	Glucose tolerance test (GTT) <sup>#</sup>	Plasma (Fluoride Tube)	Semiautoanalyzer
<b>28.</b>	LFT: Serum Bilirubin (Total, direct, indirect) <sup>#</sup>	Serum	Semiautoanalyzer
<b>29.</b>	Serum ALT <sup>#</sup>	Serum	Semiautoanalyzer
<b>30.</b>	Serum AST <sup>#</sup>	Serum	Semiautoanalyzer
<b>31.</b>	Serum Alkaline phosphatase <sup>#</sup>	Serum	Semiautoanalyzer
<b>32.</b>	Serum total protein <sup>#</sup>	Serum	Semiautoanalyzer
<b>33.</b>	Serum Albumin and AG ratio <sup>#</sup>	Serum	Semiautoanalyzer

<b>34.</b>	Blood Urea <sup>#</sup>	Serum	Semiautoanalyzer
<b>35.</b>	Serum creatinine <sup>#</sup>	Serum	Semiautoanalyzer
<b>36.</b>	Serum uric acid <sup>#</sup>	Serum	Semiautoanalyzer
<b>37.</b>	<b>Lipid Profile:</b> S. Total Cholesterol <sup>#</sup>	Serum	Semiautoanalyzer
<b>38.</b>	S. Triglycerides <sup>#</sup>	Serum	Semiautoanalyzer
<b>39.</b>	S.VLDL-C <sup>#</sup>	Serum	Semiautoanalyzer
<b>40.</b>	S.HDL-C <sup>#</sup>	Serum	Semiautoanalyzer
<b>41.</b>	S.LDL-C <sup>#</sup>	Serum	Semiautoanalyzer
<b>42.</b>	Serum Sodium <sup>#</sup>	Serum	Sample to be sent to Hub (CHC/DH) for Electrolyte analyser
<b>43.</b>	Serum Potassium <sup>#</sup>	Serum	Sample to be sent to Hub (CHC/DH) for Electrolyte analyser
<b>44.</b>	Serum Calcium <sup>#</sup>	Serum	Sample to be sent to Hub (CHC/DH) for Electrolyte analyser
<b>45.</b>	Total T3	Serum	Sample to be collected and sent to DH for Chemiluminescence analyzer
<b>46.</b>	Total T4/Free T4	Serum	Sample to be collected and sent to DH for Chemiluminescence analyzer
<b>47.</b>	TSH (including for newborn screening)	Serum	Sample to be collected and sent to DH for Chemiluminescence analyzer
<b>48.</b>	Glycosylated haemoglobin (HbA1C)	EDTA Whole blood	Sample to be collected and sent to DH for Fully automated biochemistry analyser/HPLC

### Microbiology

<b>49.</b>	Smear for RTI/STDs <sup>&amp;</sup>	Representative sample	Wet mounting, gram staining-microscope
<b>50.</b>	Urine M/E for pus cells	Urine	Microscopy
<b>51.</b>	Smear examination for <i>Mycobacterium leprae</i>	Slit skin smear	Microscopy
<b>52.</b>	Gram staining	Pus, body fluids	Microscopy

<b>53.</b>	Throat swab for Diphtheria	Throat swab	Gram and Albert's stain, Microscopy
<b>54.</b>	Hanging drop test for <i>V. cholera</i>	Stool	Microscopy
<b>55.</b>	Stool routine examination including ova and cyst		Microscopy
<b>56.</b>	Stool for occult blood	Stool	Manual
<b>57.</b>	Test for syphilis	Serum/Plasma/Whole blood	RDT
<b>58.</b>	rK39 test for Kala-Azar*	Serum	RDT
<b>59.</b>	CRP(including new born) (semiquantitative)	Serum	Semiquantitative analyzer  Sample to be collected and sent to DH for Turbidimetric based analyzer
<b>60.</b>	RA factor (semiquantitative)	Serum	Semiquantitative analyzer  Sample to be collected and sent to DH for Turbidimetric based/ Fully automated biochemistry analyzer

### Specific Diseases

<b>61.</b>	Peripheral blood smear for malaria parasite detection	Capillary/whole blood	Microscopy
<b>62.</b>	Malaria	Capillary/whole blood	RDT (Antigen based bivalent)
<b>63.</b>	Peripheral blood smear (thick smear ) for filariasis*	Capillary blood	Microscopy
<b>64.</b>	Dengue	Serum	Sample to be collected and sent to DH for ELISA
<b>65.</b>	Japanese encephalitis*	Serum	Sample to be collected and sent to DH for ELISA
<b>66.</b>	Scrub Typhus IgM*	Serum	Sample to be collected and sent to DH for ELISA
<b>67.</b>	Tuberculosis: Sputum for AFB	Sputum	Microscopy (ZN stain)
<b>68.</b>	TB infection testing (TST/Cy-TB)	Blood	Sample to be collected and sent for IGRA

<b>69.</b>	HIV test (Antibodies 1/2) <sup>^</sup>	Serum/Plasma/Whole blood	RDT
<b>70.</b>	Test for screening for HIV and Syphilis <sup>@^</sup>	Whole blood – if Dual kit is being used for HIV and Syphilis  Serum/Plasma – if RPR kits are being used for Syphilis separately	RDT
<b>71.</b>	HBs Antigen test for Hepatitis B	Whole blood	RDT
<b>72.</b>	Hepatitis C antibody test	Whole blood	RDT
<b>Radiology</b>			
<b>73.</b>	X-Ray		
<b>Other tests</b>			
<b>74.</b>	ECG		

\*For endemic areas

#These tests may follow a hub-and-spoke model where analyzers are unavailable or for fully automated analyser/indirect ion selective electrode analyzer for confirmation. The nearest hub lab could be CHC, SDH and DH

<sup>^</sup> Test available only after pre-test counseling for HIV

<sup>@</sup>Dual or combined test kit can be used

<sup>&</sup>*Neisseria gonorrhoeae*, Bacterial Vaginosis (*Gardnerella vaginalis*, *Mobiluncus mulieris*, etc.), *Haemophilus ducreyi*, *Candida* spp.; Wet mount - *Trichomonas vaginis*

 Hub and spoke, sample to be transferred to lab with available facility

**Table 4: List of diagnostic tests at Community Health Centre (CHC)**

S.No	Diagnostic test	Specimen type	Equipment used for test
<b>Haematology</b>			
1.	Haemoglobin	Capillary blood	Digital haemoglobinometer
2.	Peripheral blood smear	Capillary blood	Microscopy
3.	Total RBC count	EDTA whole blood	Microscopy
4.	Reticulocyte count	EDTA whole blood	Microscopy
5.	Absolute eosinophil count	EDTA whole blood	Microscopy
6.	Total leucocyte count	EDTA whole blood	Microscopy
7.	Differential leucocyte count	EDTA whole blood	Microscopy
8.	Platelet count	EDTA whole blood	Microscopy
9.	CBC	EDTA whole blood	Fully automated hematology analyzer
10.	ESR	EDTA whole blood	Manual/ ESR analyser
11.	Prothrombin time and INR	Plasma (citrate)	Automated coagulation analyser
12.	Bleeding time	Whole blood	Manual
13.	Clotting time	Whole blood	Manual
14.	Blood grouping and Rh typing	EDTA whole blood	Manual
15.	Blood cross matching	EDTA whole blood	Manual
16.	Packed Cell volume	EDTA whole blood	Automated haematology analyser
17.	Sickle cell test*	Capillary blood/EDTA whole blood	Screening: Sickling/solubility test; RDT Confirmation: Sample to be collected & sent to DH for electrophoresis/HPLC
18.	Naked Eye Single Tube Red Cell Osmotic Fragility Test [NESTROFT] (screening for beta-thalassaemia)	Whole blood	Observation test
19.	Reduction test for screening G6PD deficiency*	EDTA whole blood	Sample to be collected and sent to DH for qualitative visual

			method
<b>20.</b>	Haemoglobinopathies screening/testing (in high prevalence areas)	EDTA whole blood and serum	Sample to be collected and sent to DH for HPLC and analyzer
<b>21.</b>	Haemoglobin electrophoresis	EDTA Whole blood and serum	Sample to be collected and sent to DH for HPLC
<b>Clinical pathology</b>			
<b>22.</b>	Urine pregnancy test	Urine	RDT
<b>23.</b>	Urine albumin and glucose	Urine	Dipstick
<b>24.</b>	Haemoglobin, bile salts, bile pigments, ketone bodies, specific gravity and reaction (pH)	Urine	Dipstick (multiparameter urine strip)
<b>25.</b>	Urine microscopy	Urine	Microscopy
<b>26.</b>	Urine for microalbumin	Urine	Manual/Analyzer/ Turbidometer
<b>27.</b>	Urine for creatinine and Albumin to creatinine ratio (ACR)	Urine	Analyzer
<b>28.</b>	24- hrs urinary protein	Urine	Manual
<b>29.</b>	Vaginal smear for presence of sperms (Medico Legal Case)	Vaginal smear	Microscopy(Samples to be sent to SFSL/CFSL as per guideline)
<b>30.</b>	Visual Inspection acetic acid	Visual examination using vaginal speculum	Vaginal speculum
<b>31.</b>	Pap smear	Cervical smear	Sample to be sent to DH and above for microscopy
<b>Biochemistry</b>			
<b>32.</b>	Blood glucose	Capillary blood	Glucometer
<b>33.</b>	Glucose tolerance test (GTT)	Plasma	Fully automated biochemistry autoanalyzer
<b>34.</b>	LFT:Serum Bilirubin (Total, direct, indirect)	Serum	Fully automated biochemistry autoanalyzer
<b>35.</b>	Serum ALT	Serum	Fully automated biochemistry autoanalyzer
<b>36.</b>	Serum AST	Serum	Fully automated biochemistry autoanalyzer

37.	Serum Alkaline phosphatase	Serum	Fully automated biochemistry autoanalyzer
38.	Serum total protein	Serum	Fully automated biochemistry autoanalyzer
39.	Serum Albumin and AG ratio	Serum	Fully automated biochemistry autoanalyzer
40.	Serum Globulin	Serum	Fully automated biochemistry autoanalyzer
41.	Blood Urea	Serum	Fully automated biochemistry autoanalyzer
42.	Serum creatinine	Serum	Fully automated biochemistry autoanalyzer
43.	Serum uric acid	Serum	Fully automated biochemistry autoanalyzer
44.	<b>Lipid Profile:</b> S. Total Cholesterol	Serum	Fully automated biochemistry autoanalyzer
45.	S. Triglycerides	Serum	Fully automated biochemistry autoanalyzer
46.	S.VLDL-C	Serum	Fully automated biochemistry autoanalyzer
47.	S.HDL-C	Serum	Fully automated biochemistry autoanalyzer
48.	S.LDL-C	Serum	Fully automated biochemistry autoanalyzer
49.	Serum Sodium	Serum	Electrolyte analyser (Indirect ion selective electrode)
50.	Serum Potassium	Serum	Electrolyte analyser (Indirect ion selective electrode)
51.	Serum Calcium	Serum	Fully automated biochemistry autoanalyzer
52.	Serum Amylase	Serum	Fully automated biochemistry autoanalyzer
53.	Serum Iron	Serum	Fully automated biochemistry autoanalyzer
54.	Serum Magnesium	Serum	Electrolyte Analyser (Indirect ion selective electrode)
55.	Total iron binding capacity	Serum	Fully automated biochemistry autoanalyzer
56.	Serum Ferritin	Serum	Sample to be collected and sent to DH and above for ELISA

<b>57.</b>	Total T3	Serum	Sample to be collected and sent to DH for Chemiluminescence analyzer
<b>58.</b>	Total T4/Free T4	Serum	Sample to be collected and sent to DH for Chemiluminescence analyzer
<b>59.</b>	TSH (including for newborn screening)	Serum	Sample to be collected and sent to DH for Chemiluminescence analyzer
<b>60.</b>	Serum Prolactin	Serum	Chemiluminescence analyzer
<b>61.</b>	Troponin I	Serum	RDT (If a physician is available at the CHC, troponin I testing may be included)
<b>62.</b>	Troponin T	Serum	RDT (If a physician is available at the CHC, troponin T testing may be included)
<b>63.</b>	Glycosylated haemoglobin (HbA1C)	EDTA Whole blood	Sample to be collected and sent to DH for Turbidimetric based/ Fully automated biochemistry analyser/HPLC

### **Microbiology**

<b>64.</b>	Smear for RTI/STDs <sup>&amp;</sup>	Representative sample	Wet mounting, gram staining-microscope
<b>65.</b>	Urine M/E for pus cells	Urine	Microscopy
<b>66.</b>	Smear examination for <i>Mycobacterium leprae</i>	Slit skin smear	Microscopy
<b>67.</b>	Gram staining	Pus, body fluids	Microscopy
<b>68.</b>	Throat swab for Diphtheria	Throat swab	Gram and Albert's stain, Microscopy
<b>69.</b>	Hanging drop test for <i>V. cholera</i>	Stool	Microscopy
<b>70.</b>	Stool routine examination including ova and cyst	Stool	Microscopy
<b>71.</b>	Stool for occult blood	Stool	Manual
<b>72.</b>	Stool, pus, throat, blood and body fluids culture, and antimicrobial sensitivity	Stool, pus, blood, throat swab, and body fluids	Samples to be collected and sent to DH for manual/ automated analyzer
<b>73.</b>	Test for syphilis	Serum/Plasma/Whole blood	RDT
<b>74.</b>	rK39 test for Kala-Azar*	Serum	RDT

75.	CRP(including new born) (quantitative)	Serum	Fully automated analyzer Sample to be collected and sent to DH for Turbidimetric based analyzer
76.	RA factor (quantitative)	Serum	Fully automated analyzer Sample to be collected and sent to DH for Turbidimetric based/ Fully automated biochemistry analyzer

### Specific Diseases

77.	Peripheral blood smear for malaria detection	Capillary blood	Microscopy
78.	Malaria	Capillary/whole blood	RDT (Antigen based bivalent)
79.	Peripheral blood smear (thick smear ) for filariasis*	Capillary blood	Microscopy
80.	Dengue	Serum	Sample to be collected and sent to DH for ELISA
81.	Japanese encephalitis*	Serum	Sample to be collected and sent to DH for ELISA
82.	Scrub Typhus IgM*	Serum	Sample to be collected and sent to DH for ELISA
83.	TB infection testing (TST/Cy-TB)	Blood	Sample to be collected and sent for IGRA
84.	Tuberculosis: Sputum for AFB	Sputum	Microscopy (ZN stain)
85.	Tb: Chip based Real time micro PCR test	Sputum	Micro PCR
86.	TB: Sample collection	Sputum	Sample to be collected and sent to DH for NAAT <sup>V</sup>
87.	HIV test (Antibodies 1/2) <sup>^</sup>	Serum/Plasma/Whole blood	RDT
88.	Test for screening for HIV and Syphilis@ <sup>^</sup>	Whole blood – if Dual kit is being used for HIV and Syphilis Serum/Plasma – if RPR kits are being used for Syphilis separately	RDT

<b>89.</b>	HBs Ag test for Hepatitis B	Serum	RDT
<b>90.</b>	Hepatitis C (Anti HCV)	Serum	RDT
Radiology			
<b>91.</b>	X-Ray		
<b>92.</b>	USG with color doppler		
Other tests			
<b>93.</b>	ECG		

\*For endemic areas

@Dual or combined test kit can be used

^ Test available only after pre-test counseling for HIV

<sup>&</sup>*Neisseria gonorrhoeae, Bacterial Vaginosis (Gardnerella vaginalis, Mobiluncus mulieris, etc.), Haemophilus ducreyi, Candida spp.; Wet mount - Trichomonas vaginis*

<sup>^</sup>Pulmonary and extra pulmonary fluid specimen (biopsy specimen needing homogenization to be sent to nearest IRL/ State level laboratory)

 Hub and spoke, sample to be transferred to lab with available facility

**Table 5: List of diagnostic tests at Sub-District Hospital (SDH) - District Hospital (DH)**

S.No	Diagnostic test	Specimen type	Equipment used for test
<b>Haematology</b>			
1.	Haemoglobin estimation	Capillary blood/ EDTA Whole blood	Digital haemoglobinometer/ Fully automated haematology analyser
2.	Peripheral blood smear	Capillary blood	Microscopy
3.	Total RBC count	EDTA whole blood	Microscopy/ Fully automated haematology analyser
4.	Reticulocyte count	EDTA whole blood	Microscopy/ Fully automated haematology analyser
5.	Absolute eosinophil count	EDTA whole blood	Microscopy/ Fully automated haematology analyser
6.	Total leucocyte count	EDTA whole blood	Microscopy / Fully automated haematology analyser
7.	Differential leucocyte count	EDTA whole blood	Microscopy/ Fully automated haematology analyser
8.	Platelet count	EDTA whole blood	Microscopy / Fully automated haematology analyser
9.	CBC	EDTA whole blood	Fully automated haematology analyser
10.	ESR	EDTA whole blood	Manual /ESR analyser
11.	Prothrombin time and INR	Plasma (citrate)	Automated coagulation analyser
12.	Activated partial thromboplastin time (APTT)	Plasma (citrate)	Automated coagulation analyser
13.	D-dimer	Plasma (citrate)	Coagulometer
14.	Plasma fibrinogen test	Plasma (citrate)	Coagulometer
15.	Bleeding time	Whole blood	Manual
16.	Clotting time	Whole blood	Manual
17.	Blood grouping and Rh typing	EDTA whole blood	Manual

<b>18.</b>	Blood cross matching	EDTA whole blood	Manual
<b>19.</b>	Packed Cell volume	EDTA whole blood	Fully automated haematology analyser (3-Part/5-part)
<b>20.</b>	Coomb's test-Direct with titre	EDTA whole blood	Manual
<b>21.</b>	Coomb's test-Indirect with titre	EDTA whole blood	Manual
<b>22.</b>	Bone Marrow Aspiration	Bone marrow Aspiration	Microscopy
<b>23.</b>	Sickle cell test*	EDTA whole blood and serum	Electrophoresis
<b>24.</b>	Reduction test for screening G6PD deficiency*	EDTA whole blood	Qualitative visual method
<b>25.</b>	Thalassemia	EDTA whole blood and serum	Screening: NESTROFT/POC Confirmatory: HPLC Machine
<b>26.</b>	Mixing study and Factor VIII Assay for Hemophilia	Whole blood in sodium citrate (1:9)	Automated Coagulation Analyser
<b>27.</b>	Mixing study and Factor XI Assay for Hemophilia	Whole blood in sodium citrate (1:9)	Automated Coagulation Analyser
<b>28.</b>	Haemoglobinopathies screening/testing (in high prevalence areas)	EDTA whole blood and serum	HPLC analyzer
<b>29.</b>	Haemoglobin electrophoresis	EDTA Whole blood and serum	HPLC
<b>Clinical pathology</b>			
<b>30.</b>	Urine pregnancy test	Urine	RDT
<b>31.</b>	Urine albumin and glucose	Urine	Dipstick
<b>32.</b>	Haemoglobin, bile salts, bile pigments, ketone bodies, specific gravity and reaction (pH)	Urine	Dipstick (multiparameter urine strip)
<b>33.</b>	Urine microscopy	Urine	Microscopy
<b>34.</b>	24-hours urinary protein	Urine	Manual/Analyzer
<b>35.</b>	Urine for microalbumin	Urine	Analyzer
<b>36.</b>	Urine for creatinine and Albumin to creatinine ratio (ACR)	Urine	Analyzer

<b>37.</b>	Vaginal smear for presence of sperms (Medico Legal Case)	Vaginal smear	Microscopy(Samples to be sent to SFSL/CFSL as per guideline)
<b>38.</b>	Visual Inspection acetic acid	Visual examination using vaginal speculum	Vaginal speculum
<b>39.</b>	Pap smear	Cervical smear	Microscopy
<b>40.</b>	Sputum cytology	Sputum	Microscopy
<b>41.</b>	Histopathology	Tissue biopsy	Microscopy
<b>42.</b>	Cytology - FNAC	Aspirate	Microscopy
<b>43.</b>	Semen analysis (Morphology, Vitality, pH, fructose (Qualitative) and Viscosity	Semen	Microscopy/10 micron depth chamber
<b>44.</b>	Fluid analysis (Cell count, biochemistry and cytology)	Fluid	Fully automated biochemistry and haematology analyser, Microscopy

### Biochemistry

<b>45.</b>	Blood glucose	Capillary blood	Glucometer and fully automated biochemistry autoanalyzer
<b>46.</b>	Glucose tolerance test (GTT)	Plasma	Fully automated biochemistry autoanalyzer
<b>47.</b>	LFT: Bilirubin (Total, direct, indirect)	Serum	Fully automated biochemistry autoanalyzer
<b>48.</b>	Serum ALT	Serum	Fully automated biochemistry autoanalyzer
<b>49.</b>	Serum AST	Serum	Fully automated biochemistry autoanalyzer
<b>50.</b>	Alkaline phosphatase	Serum	Fully automated biochemistry autoanalyzer
<b>51.</b>	Serum total protein	Serum	Fully automated biochemistry autoanalyzer
<b>52.</b>	Serum Albumin	Serum	Fully automated biochemistry analyser
<b>53.</b>	Serum Globulin	Serum	Fully automated biochemistry autoanalyzer
<b>54.</b>	Serum Albumin and AG ratio	Serum	Fully automated biochemistry autoanalyzer
<b>55.</b>	Blood Urea	Serum	Fully automated biochemistry

			autoanalyzer
56.	Serum creatinine	Serum	Fully automated biochemistry autoanalyzer
57.	Serum uric acid	Serum	Fully automated biochemistry autoanalyzer
58.	<b>Lipid profile:</b> Total Cholesterol	Serum	Fully automated biochemistry autoanalyzer
59.	S. Triglycerides	Serum	Fully automated biochemistry autoanalyzer
60.	S.VLDL-C	Serum	Fully automated biochemistry autoanalyzer
61.	S.HDL-C	Serum	Fully automated biochemistry autoanalyzer
62.	S.LDL-C	Serum	Fully automated biochemistry autoanalyzer
63.	Serum Amylase	Serum	Fully automated biochemistry autoanalyzer
64.	Serum lipase	Serum	Fully automated biochemistry analyser
65.	Serum Sodium	Serum	Electrolyte analyser (Indirect ion selective electrode)
66.	Serum Potassium	Serum	Electrolyte analyser (Indirect ion selective electrode)
67.	Serum Calcium	Serum	Electrolyte analyser (Indirect ion selective electrode)
68.	Serum Chlorides	Serum	Electrolyte analyser (Indirect ion selective electrode)
69.	Serum Phosphorous	Serum	Electrolyte analyser (Indirect ion selective electrode)
70.	Serum Magnesium	Serum	Electrolyte analyser (Indirect ion selective electrode)
71.	Serum Iron	Serum	Fully automated biochemistry autoanalyzer
72.	Total iron binding capacity	Serum	Fully automated biochemistry autoanalyzer
73.	Serum ionized calcium	Serum	Fully automated biochemistry autoanalyzer
74.	Blood Gases analysis	Serum	Blood gas analyser

<b>75.</b>	Creatine phosphokinase (CPK)	Serum	Fully automated biochemistry analyser
<b>76.</b>	LDH	Serum	Fully automated biochemistry analyser
<b>77.</b>	Serum ferritin	EDTA whole blood/Serum	ELISA/ Chemiluminescence
<b>78.</b>	Total T3	Serum	Chemiluminescence analyzer
<b>79.</b>	Total T4/Free T4	Serum	Chemiluminescence analyzer
<b>80.</b>	TSH (including for newborn screening)	Serum	Chemiluminescence analyzer
<b>81.</b>	S. Thyroid peroxidase antibody	Serum	Chemiluminescence analyzer
<b>82.</b>	Troponin I	Serum	Immunoassay analyser/RDT
<b>83.</b>	Troponin T	Serum	Immunoassay analyser/RDT
<b>84.</b>	CSF analysis (Sugar, protein, cell count)	CSF	Fully automated biochemistry analyser
<b>85.</b>	Creatine Kinase-muscle/brain (CK-MB)	Serum	Fully automated biochemistry analyser
<b>86.</b>	Prostate-specific antigen (PSA)	Peripheral blood	ELISA/ Chemiluminescence analyser
<b>87.</b>	Serum Lithium	Serum	Fully automated analyser
<b>88.</b>	NtProBNP (N-terminal prohormone of brain natriuretic peptide)	Serum	Fully automated analyser/ Chemiluminescence analyser
<b>89.</b>	Serum Beta HCG	Serum	Chemiluminescence analyzer
<b>90.</b>	Serum Prolactin	Serum	Chemiluminescence analyzer
<b>91.</b>	Serum Total Testosterone	Serum	Chemiluminescence analyzer
<b>92.</b>	S. Alfa Feto protein	Serum	Chemiluminescence analyzer
<b>93.</b>	S. CA-125	Serum	Chemiluminescence analyzer
<b>94.</b>	S. CEA	Serum	Chemiluminescence analyzer
<b>95.</b>	S. Vitamin D (25 Hydroxy)	Serum	Chemiluminescence analyzer
<b>96.</b>	S. Vitamin B12	Serum	Chemiluminescence analyzer
<b>97.</b>	Total IgE	Serum	Fully automated analyser
<b>98.</b>	Glycosylated haemoglobin (HbA1C)	EDTA Whole blood	Fully automated biochemistry analyser/HPLC Machine
<b>99.</b>	Protein electrophoresis	Serum	Electrophoresis machine

### Microbiology

<b>100.</b>	Smear for RTI/STDs <sup>&amp;</sup>	Representative sample	Wet mounting, gram staining-microscope
<b>101.</b>	Urine M/E for pus cells	Urine	Microscopy
<b>102.</b>	Smear examination for <i>Mycobacterium leprae</i>	Slit skin smear	Microscopy
<b>103.</b>	Gram staining	Pus, body fluids	Microscopy
<b>104.</b>	Throat swab for Diphtheria	Throat swab	Gram and Albert's stain, Microscopy
<b>105.</b>	Hanging drop test for <i>V. cholera</i>	Stool	Microscopy
<b>106.</b>	Stool routine examination including ova and cyst	Stool	Microscopy
<b>107.</b>	Stool for occult blood	Stool	Manual
<b>108.</b>	Gram stain for Meningococci	Fluid, CSF cell type, cell count	Microscopy
<b>109.</b>	KOH study for fungus	Sputum, Tissue, Nail, Hair, CSF etc.	Fluorescent microscopy/Microscopy
<b>110.</b>	Blood culture and antimicrobial sensitivity	Whole Blood	Automated/Manual
<b>111.</b>	Urine, stool, pus, sterile body fluid, throat swab, culture and antimicrobial sensitivity	Representative sample	Automated/Manual
<b>112.</b>	Stool culture for <i>Vibrio cholera</i> and other bacterial enteropathogens	Stool	Automated/Manual
<b>113.</b>	Culture for Diphtheria	nose, throat, membrane or nasopharynx swab	Automated/Manual
<b>114.</b>	Fungal culture	Representative sample	Automated/Manual
<b>115.</b>	Cholera	Stool	RDT
<b>116.</b>	Test for syphilis	Serum/Plasma/Whole blood	RDT
<b>117.</b>	rK39 test for Kala-Azar*	Serum	RDT
<b>118.</b>	IgM for measles	Serum	ELISA
<b>119.</b>	Rapid antigen detection test for Bacterial meningitis	CSF	RDT
<b>120.</b>	C-reactive protein (CRP)	Serum	Turbidimeter
<b>121.</b>	Procalcitonin	Serum/Plasma	RDT/Immunoassay
<b>122.</b>	TORCH: Toxoplasma, Rubella,	Serum	ELISA

	CMV and HSV 1 and 2. Antibody detection test (IgM and IgG)		
<b>Serology</b>			
123.	Rheumatoid Factor quantitative	Serum	Turbidometer /Fully automated analyser
124.	Antistreptolysin O quantitative	Serum	Turbidometer /Fully automated analyser
<b>Specific Diseases</b>			
125.	Peripheral blood smear for malaria detection	Capillary blood	Microscopy
126.	Malaria	Capillary/whole blood	RDT (Antigen based bivalent)
127.	Peripheral blood smear (thick smear ) for filariasis*	Capillary blood	Microscopy
128.	Dengue: NS1 antigen and IgM antibody based test	Serum	ELISA
129.	Japanese encephalitis IgM, Antibody test	CSF,Serum	ELISA
130.	Chikungunya IgM, Antibody test	Serum	ELISA
131.	Scrub Typhus IgM*	Serum	ELISA
132.	Leptospirosis IgM, Antibody test	Serum	RDT and ELISA
133.	Brucellosis :Antigen based test	Serum	Standard tube agglutination test
134.	TB infection testing (TST/Cy-TB)	Blood	Sample to be collected and sent for IGRA
135.	Tuberculosis: Sputum, pus for AFB	Sputum , body fluids Gram staining for body fluids	Fluorescent microscopy
136.	Tb: Nucleic Acid Amplification Test (NAAT)	Sputum	PCR <sup>V</sup>
137.	TB culture (liquid)	Sputum, fluid etc.	Sample to be collected and sent to nearest TB lab/State Tb lab
138.	TB DST (liquid)	Sputum, fluid etc.	Sample to be collected and sent to nearest TB lab/State Tb lab
139.	HIV test (Antibodies 1/2) <sup>^</sup>	Serum/Plasma/Whole blood	RDT and ELISA
140.	HIV: CD4 count <sup>#</sup>	Capillary/venous whole blood	Flow cytometry
141.	HIV: Early infant diagnosis	Dried blood spot	Sample to be collected and sent

		(DBS)/Plasma/Whole blood <sup>\$</sup>	to tertiary care for molecular testing
<b>142.</b>	HIV: Quantitative virological nucleic acid test	Plasma/Whole blood <sup>\$</sup>	Sample to be collected and sent to tertiary care for PCR
<b>143.</b>	Test for screening for HIV and Syphilis <sup>@^</sup>	Whole blood – if Dual kit is being used for HIV and Syphilis Serum/Plasma – if RPR kits are being used for Syphilis separately	RDT
<b>144.</b>	Hepatitis A IgM detection test	Serum	ELISA
<b>145.</b>	Hepatitis B surface antigen test	Serum	RDT and ELISA
<b>146.</b>	Hepatitis B :Quantitative test for viral load detection	Whole blood	Sample to be collected and sent to tertiary care for PCR
<b>147.</b>	Hepatitis C: Anti HCV (Total)	Serum	ELISA
<b>148.</b>	Hepatitis C: Quantitative test for viral load detection	Whole blood	Sample to be sent to tertiary care for PCR
<b>149.</b>	Hepatitis E: IgM detection test	Serum	ELISA
<b>150.</b>	HBc (Core antibodies): IgM detection test to hepatitis B core antigen	Serum	ELISA
<b>Radiology (as per IPHS)</b>			
<b>151.</b>	X-Ray		
<b>152.</b>	CT scan		
<b>153.</b>	MRI		
<b>154.</b>	USG with Color Doppler		
<b>Other tests (as per IPHS)</b>			
<b>155.</b>	ECG		
<b>156.</b>	C –Arm		
<b>157.</b>	Dental X-ray/Intra Oral periapical IOPA X-Ray		
<b>158.</b>	Orthopantomogram (OPG)		
<b>159.</b>	Occlusal radiography and Bite wing radiography		
<b>160.</b>	Echocardiography		
<b>161.</b>	Mammography		

<b>162.</b>	EEG
<b>163.</b>	NCV(Nerve Conduction Velocity )
<b>164.</b>	EMG
<b>165.</b>	TMT
<b>166.</b>	PFT
<b>167.</b>	Angiography <sup>@</sup>
<b>168.</b>	Ocular Coherence Tomography
<b>169.</b>	Perimetry (automated)
<b>170.</b>	Pachymetry
<b>171.</b>	Refraction

\*For endemic areas

#Only where ART centres are located

^ Test available only after pre-test counseling for HIV

@ Where cardiologist is available

\$ For whole blood sample: Freshly drawn specimens (whole blood) may be held at 15 to 30°C for up to 6 hours or at 2 to 8°C for up to 24 hours, prior to centrifugation

<sup>a</sup>*Neisseria gonorrhoeae*, Bacterial Vaginosis (*Gardnerella vaginalis*, *Mobiluncus mulieris*, etc.), *Haemophilus ducreyi*, *Candida* spp.; Wet mount - *Trichomonas vaginis*

<sup>v</sup>Pulmonary and extra pulmonary fluid specimen (biopsy specimen needing homogenization to be sent to nearest IRL/ State level laboratory)

 Hub and spoke, sample to be transferred to lab with available facility