

Foreword

Today many developing countries lack standards due to resource constraint, failure to understand the concept of quality and vastness of the subject resulting in poor planning of human resource, infrastructure, equipment and services. The dreaded consequences are disease transmissions, loss of lives and economic burden to the nation.

Ministry of Health over a period of time has focused on consolidation of health care services by improving quality, enhancing sustainability, improving accessibility and strengthening human resource development and deployment.

Based on the principle of delivering quality in clinical laboratory services, QASD has endeavored to draw up standards for services, equipment, reagents and human resources. The efforts of the division are commended and appreciated at this point of time as it has come at a critical juncture where our efforts are geared towards providing quality health care services.

These standards drawn up for clinical laboratory services are in no way complete but will allow health care providers to imbibe the concept of quality and make them aware of the diagnostic services offered at different levels of health facilities. All health care providers are therefore urged to adhere to the standards drawn. As time changes and medical science expands there is always room to amend and improve diagnostic services further.

Besides adhering to clinical laboratory standards I would urge all health providers and friends to make use of other clinical standards, guidelines, operating procedures, handbook on universal precaution etc while delivering services to the clients. Your efforts will definitely bring in quality in health care facilities.

Our quest is to improve quality of health care services across the country and I wish all health family members good luck in this endeavor.



Dr. Gado Tshering
Secretary

Introduction

Diagnostic laboratory tests are making an increasingly important contribution to the quality and cost-effective delivery of clinical health care worldwide, mainly due to ongoing technological innovation, advances in evidence-based medicine and changing demographic profiles. Increasing affluence and improved medical care have resulted in a population that is ever more dependent on diagnostic testing to support increasingly sophisticated diseases treatment and disease prevention programmes.

In Bhutan, these global trends have translated into a higher patients expectations and demand for services but a diagnostic laboratory expenditure in excess of what generally can be borne by the Royal Government. The rate of increase in tests parameters are increasing with addition of newer clinical services at the referral hospitals, expansion of peripheral health facilities and programmes which directly has a bearing on the laboratory service's continued acceleration of cost and management issues that are of concern to the health funders and planners.

In developing country like Bhutan, where emergencies and acutely ill patients comprise between a quarter to a third of the total patient load, good quality care requires reliable and prompt laboratory support. In seriously ill patient, tests are needed to confirm the diagnosis and for deciding on immediate resuscitative care, for monitoring of patient during the stage of rehabilitation and for prognosis during follow up. To be of benefit in the decision making the laboratory support must be reliable, accurate and prompt. However, such laboratory back up is available only in bigger hospitals like the regional ones. Heavy capital outlay for equipment and its maintenance cost of reagents and the need for trained and highly skilled personnel has hitherto impeded the development of laboratory services to the desired levels.

Thus, it was envisioned that the laboratory services need to be standardized at various levels of health facilities to match the requirement of the hospitals matched equally with skilled manpower and availability of a constant supply of reagents and consumables. Therefore, except for the high -end equipments with a broad range of tests parameters at the national and regional hospitals levels, the aim is to promote simple and low cost, but robust assays methodologies at the district hospitals and beyond which can be performed by minimally trained technicians utilizing simple equipments and yet capable of giving results with acceptable accuracy and precision.

Clinical laboratory services is a multi-disciplinary specialty comprising of clinical hematology, biochemistry, microbiology, molecular and serodiagnostics, cytology, hispopathology, blood banking, parasitology and allied services. Efforts are made to standardize the clinical laboratory services at different levels of health facilities starting from the wide parameters of tests at the National Referral Hospital to a few parameters at the Basic Health Unit II levels, matched with the expected skilled human resource and equipment and supplies.

It is expected that these standards would help the hospitals and planners to:

- Provide minimum standard packages of laboratory tests at each level of facility.
- Promote rational use in order to ensure prevention, diagnosis and treatment of diseases.
- Ensure a minimum standard of HR skills and competencies to support the packages of care and maintain professionalism among laboratory personnel.
- Ensure provision of appropriate standardized equipment and supplies at each level of facility
- Help easier forecast of supplies and adequate indenting
- Help maintenance of equipments and spares stock.
- Establish appropriate standardized laboratory designs for each level of facility.
- Promote partnership and collaboration at local and regional levels by sharing of technologies, supplies and human resources.

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As we all are aware that Medical Science is rapid in expansion and these clinical laboratory standards are therefore not static and would require amendment from time to time. Till such revisions are incorporated all health professionals are urged to adhere to the standards while providing diagnostic services to the clients.

STANDARD MICROBIOLOGY TEST AT DIFFERENT LEVELS

Sl. No	Procedure/Specimen/Test	Disease/organism	NRH	RRH	DH	BHU-I	BHU-II
BACTERIOLOGY							
Unstained wet preparations							
1	Urine deposits	Microscopic/RS	+	+	+	+	-
Stained smears (Gram, AFB, Albert)							
2	Nasopharynx and throat	Diphtheria, Vincent's angina	+	+	+	-	-
3	Sputum	AFB	+	+	+	+	-
4	CSF	Minigitidis (pyogenic & TB)	+	+	+	+	-
5	Skin and nasal	Leprosy	+	+	+	+	-
6	Urethra/vagina	Gonorrhoea	+	+	+	+	-
7	Wounds/exudates	Other organisms	+	+	+	+	-
Dark field microscopy							
8	Ulcer, exudates	T.pallidum	+	-	-	-	-
		Leptospira	+	-	-	-	-
Culture & Antibiotic susceptibility							
9	Nasopharynx and throat	Streptococcus pyogenes,	+	+	+	-	-
10	Urethra/vagina	Neisseria gonorrhoea	+	+	+	-	-
11	Wounds/exudates	Pyogenic organisms	+	+	+	-	-
12	Blood	Salmonella species, others	+	+	+	-	-
13	Faeces	Salmonella, Shigella, V.cholerae	+	+	+	-	-
14	Urine	Pyogenic organisms	+	+	+	-	-
15	Nasopharynx and throat	Corynebacterium diphtheria	+	+	-	-	-
16	Sputum	AFB + Atypical mycobacterium complex	+	Only C/I	-	-	-

STANDARD MICROBIOLOGY TEST AT DIFFERENT LEVELS

Sl. No	Procedure/Specimen/Test	Disease/organism	NRH	RRH	DH	BHU-I	BHU-II
17	CSF	AFB + Atypical mycobacterium complex	+	Only C/I	-	-	-
18	Pus	AFB + Atypical mycobacterium complex	+	Only C/I	-		
19	Gastric washings	AFB + Atypical mycobacterium complex	+	Only C/I	-	-	-
20	Anaerobic culture & AST testing	Clostridium and other anaerobic organisms *	+	-	-	-	-
21	ELISA/Rapid test	H.pylori IgM antibodies	+	-	-	-	-
22	Fluorescent antibody staining	Tuberculosis	+	+	-	-	-
23		"Chlamydia"	+	+	-	-	-
Serological							
24	ASO rapid	Common bacterial antibodies	+	+	+	+	-
25	RF rapid		+	+	+	+	-
26	CRP rapid		+	+	+	+	-
27	Widal rapid		+	+	+	+	-
MYCOLOGY							
KOH mounts							
28	Hair, Nails, Skins	Dermatophytes	+	+	+	+	-
29	Pus	Yeast, mycelium	+	+	+	+	-
30	Spinal fluid	Yeast, mycelium	+	+	+	+	-
31	Pus	Yeast, mycelium	+	+	+	+	-
32	Bronchial washings	Yeast, mycelium	+	+	+	+	-
33	Spinal fluid	Yeast, mycelium	+	+	+	+	-
Stained smears							
34	Sputum (gram and acid fast)	Yeast	+	+	+	+	-

STANDARD MICROBIOLOGY TEST AT DIFFERENT LEVELS

Sl. No	Procedure/Specimen/Test	Disease/organism	NRH	RRH	DH	BHU-I	BHU-II
35	Blood (Wright or Giemsa)	Actinomyses	+	-	-	-	-
36	Bronchial washings	Histoplasmosis capsulatum, Actinomyces*	+	+	-	-	-
37	Culture and identification	Dermatophytes	+	+	-	-	-
		All pathogenic fungi	+	-	-	-	-
39	Skin	Chromoblastomycosis	+	-	-	-	-
40	CSF, Sputum	Rhinosporidosis	+	-	-	-	-
PARASITOLOGY							
Wet preparations							
41	Faeces	Ova, cyst and trophozoites	+	+	+	+	-
42	Vaginal swab	Trichomonas	+	+	+	+	-
43	Blood	Microfilaria	+	+	+	+	-
44	Aspirates	Entamoeba histolytica	+	+	+	+	-
45	Stained faecal smears	Entamoeba histolytica	+	-	-	-	-
46	Blood	Leishmaniasis, Filariasis	+	+	-	-	-
47	Egg count in faeces	Estimation of worm loads	+	+	-	-	-
48	Thick and thin Blood film	Malaria	+	+	+	+	+
		Filariasis	+	+	+	+	-
		Leishmaniasis	+	+	+	-	-
Concentration							
51	Faeces	Ova and cyst	+	+	+	+	-
Rapid test Immuno-chromatography							

STANDARD MICROBIOLOGY TEST AT DIFFERENT LEVELS

Sl. No	Procedure/Specimen/Test	Disease/organism	NRH	RRH	DH	BHU-I	BHU-II
52	Blood	Malaria parasites	+	+	+	+	-
53	Examination of arthropods	Identi. of vectors, intermediate hosts etc.	+	-	-	-	-
Serological test							
54	Complement fixation test	Common parasitic diseases	+	+	-	-	-
55	Latex agglutination						
56	ELISA, dye test for toxoplasma						
57	Haemagglutination.						
58	Aldehyde	Kalahazar	+	+	+	-	-
59	RPR Rapid	Treponema pallidum	+	+	+	+	-
60	TPHA Rapid	Treponema pallidum	+	+	+	+	-
61	TORCH	Toxoplasma, Rubella, CMV, Herpes	+	-	-	-	-
VIROLOGY/SEROLOGY							
62	HIV	HIV 1 & 2 antibodies Rapid	+	+	+	+	-
		HIV 1 & 2 antibodies/antigens ELISA	+	+	-	-	-
		CD4+/CD8 Flow-cytometry	+	+	-	-	-
		Viral load PCR	+	-	-	-	-
63	Hepatitis B	HBsAg Rapid	+	+	+	+	-
		HBsAg ELISA	+	+	-	-	-
		HBeAb	+	-	-	-	-
		HB core Ab, IgM and IgG	+	-	-	-	-
		Hepatitis viral load PCR	+	-	-	-	-

STANDARD MICROBIOLOGY TEST AT DIFFERENT LEVELS

Sl. No	Procedure/Specimen/Test	Disease/organism	NRH	RRH	DH	BHU-I	BHU-II
64	Hepatitis C	HCV Rapid	+	+	+	+	-
		HCV antibodies/antigens ELISA	+	+	-	-	-
		HCV core Ab, IgM and IgG	+	-	-	-	-
		HCV viral load PCR	+	-	-		
Others							
65	Direct antigen detection	RSV, Rota virus, Influenzae A	+	-	-	-	-
66	Immunofluorescence Assay	Respiratory Viruses	+	-	-	-	-
67	(ELISA/Latex/ICT)	Herpes, CMV, etc	+	-	-	-	-
Molecular Lab							
68	PCR / Nucleic acid probe hybridization	Molecular diagnosis of potential pathogens	+	-	-	-	-
		Mycobacterium tuberculosis	+	-	-	-	-
		Slow growing microorganisms	+	-	-	-	-
		Resistant genes	+	-	-	-	-
		Typing of microorganisms	+	-	-	-	-
69	Bacterial Phage typing	To detect the common source of infection	+	-	-	-	-

BLOOD BANK STANDARD TESTS AT DIFFERENT LEVELS

Sl. No.	Procedure/Specimen/Test	NRH	RRH	DH	BHU-I	BHU-II
Donor Section						
1	ABO grouping	+	+	+	+	+
2	Rh "D" typing	+	+	+	+	+
3	Rh phenotyping	+	+	-	-	-
4	Weak "D" test	+	+	+	+	-
Immunohaematology Section						
6	Antibody Screening	+	+	-	-	-
7	Antibody Identification	+	+	-	-	-
8	Antigen typing	+	+	-	-	-
9	Crossmatching	+	+	+	+	-
10	Unexpected Ab Titration tests	+	+	-	-	-
11	Direct Antiglobulin tests	+	+	+	+	-
Tests for resolving ABO discrepancies						
12	Adsorption and Elution tests	+	-	-	-	-
13	Auto adsorption tests	+	-	-	-	-
14	Secretor studies	+	-	-	-	-
Quality Management Section						
15	Ph test on Platelet concentrates	+	-	-	-	-
Blood Component services						
16	Packed cells (centrifugal method)	+	+	-	-	-
17	Packed cells (Sedimentation method)	+	+	+	+	-
18	Fresh Frozen Plasma	+	+	-	-	-
19	Liquid Plasma	+	+	+	-	-
20	Platelet concentrate	+	+	-	-	-
21	Cryoprecipitate	+	+	-	-	-
22	Apheresis	+	-	-	-	-

CLINICAL BIOCHEMISTRY STANDARD TESTS AT DIFFERENT LEVELS

Sl. No.	Procedure/Specimen/Test	NRH	RRH	DH	BHU-I	BHU-II
Clinical Chemistry						
1	Blood Sugar	+	+	+	+	-
2	HbA1C	+	+	-	-	-
3	Urea	+	+	+	+	-
4	BUN	+	+	+	+	-
5	Creatinine	+	+	+	+	-
6	Uric Acid	+	+	+	+	-
7	ALT (SGPT)	+	+	+	+	-
8	AST (SGOT)	+	+	+	+	-
9	Alk. Phosphatase	+	+	+	+	-
10	Bilirubin, Total	+	+	+	+	-
11	Bilirubin, Direct	+	+	+	+	-
12	Capillary Bilirubin for Neonates	+	+	-	-	-
13	Total protein	+	+	+	+	-
14	Albumin	+	+	+	+	-
15	Gamma GT	+	+	+	+	-
16	Cholesterol	+	+	+	-	-
17	Triglycerides	+	+	+	-	-
18	HDL	+	+	-	-	-
19	LDL	+	+	-	-	-
20	CPK	+	+	-	-	-
21	CK-MB	+	+	-	-	-
22	LDH	+	+	-	-	-
23	Sodium	+	+	+	-	-
24	Potassium	+	+	+	-	-
25	Chloride	+	+	+	-	-
26	Co2	+	+	-	-	-
27	Lithium	+	+	-	-	-
28	Calcium	+	+	+	-	-
29	Phosphorous	+	+	-	-	-
30	Acid phosphatase	+	+	-	-	-
31	Amylase	+	+	-	-	-

CLINICAL BIOCHEMISTRY STANDARD TESTS AT DIFFERENT LEVELS

Sl. No.	Procedure/Specimen/ Test	NRH	RRH	DH	BHU-I	BHU-II
32	Iron	+	+	-	-	-
33	Magnesium	+	+	-	-	-
34	RF, Quantitative	+	+	-	-	-
35	CRP, Quantitative	+	+	-	-	-
36	ASLO, Quantitative	+	+	-	-	-
37	Mono spot	+	+	-	-	-
38	SLE	+	+	-	-	-
39	T3	+	+	-	-	-
40	T4	+	+	-	-	-
41	TSH	+	+	-	-	-
42	Free T3	+	+	-	-	-
43	Free T4	+	+	-	-	-
44	Cortisol	+	+	-	-	-
45	LH	+	+	-	-	-
46	FSH	+	+	-	-	-
47	Prolactin	+	+	-	-	-
48	Progesterone	+	+	-	-	-
49	Estradiol	+	+	-	-	-
50	Testosterone	+	+	-	-	-
51	Ferritin	+	+	-	-	-
52	HCG	+	+	-	-	-
53	AFP	+	+	-	-	-
54	CEA	+	+	-	-	-
55	PSA-Total	+	+	-	-	-
56	PSA-Free	+	+	-	-	-
57	Glucose strip (Blood glucose)	+	+	+	+	-
58	Myoglobin	+	-	-	-	-
59	Cholinesterase	+	-	-	-	-
60	Microalbuminuria	+	+	-	-	-
61	Lipase	+	+	-	-	-
62	Troponin I	+	+	-	-	-

CLINICAL BIOCHEMISTRY STANDARD TESTS AT DIFFERENT LEVELS

Sl. No.	Procedure/Specimen/ Test	NRH	RRH	DH	BHU-I	BHU-II
63	Apolipo A1	+	+	-	-	-
64	Apolipo B	+	+	-	-	-
65	C3	+	-	-	-	-
66	C4	+	-	-	-	-
67	IgA	+	-	-	-	-
68	IgG	+	-	-	-	-
69	IgM	+	-	-	-	-
70	Carbamazepine	+	-	-	-	-
71	Cyclosporin	+	-	-	-	-
72	Phenytoin	+	-	-	-	-
73	Gentamycin	+	-	-	-	-
74	Digoxin	+	-	-	-	-
75	Insulin	+	+	-	-	-
76	CA 15 - 3	+	-	-	-	-
77	CA 19 - 9	+	-	-	-	-
78	CA 125	+	-	-	-	-
79	Anti - DNA	+	-	-	-	-
80	ANCA	+	-	-	-	-
81	Protein Electrophoresis	+	-	-	-	-
82	TIBC (Total Iron Binding Capacity)	+	+	-	-	-
83	UIBC (Unsaturated Iron Binding Capacity)	+	+	-	-	-
84	Serum Vitamin B12 Test	+	+	-	-	-
85	Serum folate	+	+	-	-	-
Urine						
86	Physical examination/ manual	+	+	+	+	-
87	Microscopy of deposits/ manual	+	+	+	+	-
88	Reaction (pH) /pH paper/ RS	+	+	+	+	-

CLINICAL BIOCHEMISTRY STANDARD TESTS AT DIFFERENT LEVELS

Sl. No.	Procedure/Specimen/ Test	NRH	RRH	DH	BHU-I	BHU-II
89	Specific gravity/Urino-meter/RS	+	+	+	+	-
90	Protein/Sulphosalicylic acid/RS	+	+	+	+	+
91	Sugar/Benedict's/RS	+	+	+	+	+
92	Ketones/ Rothera's/RS	+	+	+	+	-
93	Bile pigment /Fouchet's/ RS	+	+	+	+	-
94	Bile salt /Hay's	+	+	+	+	-
95	Urobilinogen /Ehrlich's/ RS	+	+	+	+	-
96	Blood/ RS	+	+	+	+	-
97	Beta – HCG / Pregnancy rapid test	+	+	+	+	+
98	Semen Analysis	+	+	+	+	-

CLINICAL HEMATOLOGY STANDARD TESTS AT DIFFERENT LEVELS

Sl. No.	Procedure/Specimen/Test	NRH	RRH	DH	BHU-I	BHU-II
Routine Hematology (CBC)						
1	WBC (TLC)	+	+	+	+	-
2	RBC (TRBC)	+	+	+	+	-
3	Hb (Hemoglobin)	+	+	+	+	+
4	Hct (Hemotocrit)	+	+	+	+	-
5	MCV (Mean Cell Volume)	+	+	+	-	-
6	MCH (Mean Cell Hemoglobin)	+	+	+	-	-
7	MCHC (Mean Cell Hemoglobin Concentration)	+	+	+	-	-
8	PLT (Platelet)	+	+	+	+	-
9	DLC (Differential Leukocyte Count)	+	+	+	+	-
10	ESR (Erythrocyte Sedimentation Rate)	+	+	+	+	-
Special Hematological Tests						
11	Reticulocyte count	+	+	+	+	-
12	G6PD Screening Test	+	+	-	-	-
13	BM (Bone Marrow) Examination	+	+	-	-	-
14	LE (Lupus Erythematosus) Cell	+	+	-	-	-
15	Peripheral Blood Examination	+	+	+	+	-
16	OFT (Osmotic Fragility Test)	+	+	-	-	-
17	Sickle Cell Test	+	+	-	-	-
18	AEC (Absolute Eosinophil Count)	+	+	+	+	-
Coagulation						
19	BT (Bleeding Time)	+	+	+	+	-
20	CT (Clotting Time)	+	+	+	+	-
21	Fibrinogen	+	+	-	-	-

CLINICAL HEMATOLOGY STANDARD TESTS AT DIFFERENT LEVELS

Sl. No.	Procedure/Specimen/Test	NRH	RRH	DH	BHU-I	BHU-II
22	Prothrombin Time (INR)	+	+	+	-	-
23	Partial Thromboplastin Time	+	+	+	-	-
24	Factor VIII	+	-	-	-	-
25	Serum/Plasma Fibrinogen Assay	+	-	-	-	-
26	Fibrin Degradation Products	+	-	-	-	-
Cytochemistry						
27	Leukocyte Alkaline Phosphatase (LAP)	+	+	-	-	-
28	Sudan Black B Stain	+	+	-	-	-
29	Iron Stain	+	+	-	-	-
30	Peroxidase Stain	+	+	-	-	-
31	Paroxysmal Nocturnal Hemoglobinuria	+	+	-	-	-
32	Body Fluids Analysis	+	+	+	+	-
33	Hemoglobin Electrophoresis	+	-	-	-	-
34	Free Hb (serum/urine)	+	+	+	-	-
Flowcytometry & Image Analysis						
35	CDs+ for hematological malignancies	+	-	-	-	-

SURGICAL PATHOLOGY & CYTOLOGY STANDARD TESTS AT DIFFERENT LEVELS

Sl. No	Procedure/Specimen/ Test	NRH	RRH	DH	BHU-I	BHU-II
1	Immunohistochemistry	+	+	-	-	-
2	H & E staining	+	+	-	-	-
3	Pap smear staining	+	+	+	-	-
4	Pap smear screening	+	+	+	-	-
5	Processing body fluids and sputum	+	+	+	-	-
6	Special Stains	+	+	-	-	-
7	Pap smear collection	+	+	+	+	+
8	Autopsy	+	+	-	-	-
9	Liquid based cytology	+	-	-	-	-
10	Frozen sections	+	+	-	-	-
11	Fine Needle Aspiration Cytology	+	+	-	-	-
12	Biopsy Processing and Reporting	+	+	-	-	-

CLINICAL BIOCHEMISTRY EQUIPMENTS STANDARDS

S/No	Particular Specification	NRH	RRH	DH	BHUI	BHUII
1	Urine Analyzer	+	+	-	-	-
2	Electrolyte Analyzer Na, K, Cl CLIA	+	+	+	-	-
3	Electrolyte Analyzer: Na, K, Cl, Li+, TCO ₂ CLIA	+	-	-	-	-
4	Chemistry Analyzer Throughput: 400 – 600 tests per hour	+	-	-	-	-
5	Chemistry Analyzer Throughput: 170 – 400 tests per hour	-	+	-	-	-
6	Photometer	+	+	+	+	-
7	Fullt Automated Random Access Analyzer: Throughput: 60 – 80 tests or more / hour	+	-	-	-	-
8	Fullt Automated Random Access Analyzer: Throughput: 20 – 40 tests or more / hour	-	+	-	-	-
9	Bilirubinometer	+	+	+	-	-
10	Osometer	+	+	-	-	-

BLOOD BANK EQUIPMENTS STANDARDS

S/No	Particular Specification	NRH	RRH	DH	BHUI	BHU II
1	Automatic Cell Washer	+	+	-	-	-
2	Automatic Blood Collection Monitor with Shaker:	+	+	+	-	-
3	Blood collection spring scale	+	+	+	+	-
4	Cool box to transport blood bags	+	+	+	-	-
5	Dielectric tube sealer	+	+	+	+	-
6	Donor Couche	+	+	-	-	-
7	Electronic Blood measuring scale	+	+	-	-	-
8	Hand tube stripper with roller and cutter	+	+	+	+	-
9	Blood Bank Bench top centrifuge	+	+	+	-	-
10	Refrigerated blood processing centrifuge	+	+	-	-	-
11	Plasma thawing device	+	+	-	-	-
12	Column Agglutination Test system	+	-	-	-	-
13	Sterile connecting device	+	-	-	-	-
14	Apheresis machine	+	-	-	-	-
15	Manual Plasma expresser	+	+	+	+	-
16	Platelet agitator and incubator	+	+	-	-	-
17	Plasma Storage freezer:	+	+	-	-	-
18	Ice-lined Blood Bank Refrigerator	+	+	+	-	-
11	Standard blood bank refrigerator	+	+	+	-	-

GENERAL LABORATORY EQUIPMENTS STANDARDS

Sl/No	Particular Specification	NRH	RRH	DH	BHUI	BHU II
1	Balance: 0.01g Readability	+	+	+	+	-
2	Bench top Centrifuge	+	+	+	+	-
3	Deep Freezer. Temperature Range: - 25 to -40°C.	+	+	-	-	-
4	Distillation plant (double distiller)	+	-	-	-	-
5	Distillation plant: (mono distiller)	+	+	+	+	-
6	Fume Hood	+	+	-	-	-
7	Haematocrit Centrifuge.	+	+	+	-	-
8	Ice lined refrigerator	+	+	+	-	-
9	Microlitre Pipette, Adjustable, Volume range: 100-1000ul	+	+	+	+	-
10	Microlitre Pipette, Adjustable, Volume range: 20-200ul-	+	+	+	+	-
11	Microlitre Pipette, Adjustable, Volume range: 5-50 ul-	+	+	+	+	-
12	Microlitre Pipette, adjustable. Vol.range 1000 - 5000ul-	+	+	+	+	-
13	Microscope, binocular: For routine works	+	+	+	+	+
14	Microscope, binocular. For specialized works	+	+	+	+	-
15	Microscope: Multi head with CCTV system and LCD monitor	+	-	-	-	-
16	Microwave oven: Power: 220V, 50/60Hz	+	+	-	-	-
17	pH Meter	+	+	-	-	-
18	Refrigerator with glass door: Capacity: >1000 liters	+	+	+	-	-
19	Refrigerator with glass door: Capacity: >250 to 350 liters	+	+	+	+	-
20	Shaker, Programable	+	+	+	+	-
21	Vortex mixer	+	+	+	+	-
22	Water bath	+	+	+	+	-
23	Barcode printer	+	+	-	-	-

HAEMATOLOGY EQUIPMENTS STANDARDS

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
1	Automated Blood Coagulation Analyzer:	+	+	+	-	-
2	Automated ESR Analyzer	+	-	-	-	-
3	Compact Automation for Haematology	+	-	-	-	-
4	Digital Blood Cell Counter for Differential Leukocyte Count	+	+	-	-	-
5	Gel Electrophoresis Chamber Set	+	-	-	-	-
6	Haematology Analyzer, 5-part Diff	+	-	+	-	-
7	Haematology Analyzer 3-part differential	-	-	+	-	-
8	Thomazeiss Haemocytometer with improved Neubauer rulings	-	-	+	+	-
9	Automated Slide Preparation Unit	+	+	-	-	-
10	Swing Roll Mixer: Speed - 0 to 60, Capacity - 1 to 20 tubes	+	+	+	-	-
11	Flow Cytometer for diagnosis of Haematological malignancies	+	-	-	-	-

HISTOPATHOLOGY & CYTOLOGY EQUIPMENTS STANDARDS

S/No	Particular Specification	NRH	RRH	DH	BHUI	BHUII
Cytology						
1	Cyto Centrifuge	+	+	-	-	-
Histology						
2	Automatic Tissue Processor	+	+	-	-	-
3	Gross Work Station	+	+	-	-	-
4	Rotatory Microtome	+	+	-	-	-
5	Tissue Floating bath (Thermostatic)	+	+	-	-	-
6	Slide Warmer,	+	+	-	-	-
7	Microwave Tissue Processor	+	+	-	-	-
8	Tissue Embedding Station with wax Dispenser:	+	+	-	-	-
9	Tissue Block cabinet to store atleast 20,000 paraffin blocks	+	+	-	-	-
Histology + Cytology						
10	Automatic Slide Stainer	+	+	-	-	-
11	Slide Cabinet	+	+	+	-	-

CLINICAL MICROBIOLOGY EQUIPMENTS STANDARDS

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
1	Anaerobic chamber	+	-	-	-	-
2	Anaerobic jar	+	+	+	-	-
3	Antibiotic susceptibility reader	+	-	-	-	-
4	API strip reader	+	+	-	-	-
5	Auto-steam sterilizer. Capacity 50 - 60 liters	+	+	+	+	-
6	Auto-steam strilizer. Capacity 80 - 100 liters.	+	+	-	-	-
7	Balance: 0.0001g	+	+	-	-	-
8	Biosafety level-II type II A1	+	+	+	+	-
9	Biosafety level-type II B1 cabinet:	+	-	-	-	-
10	Blood culture system	+	+	-	-	-
11	Bunsen burner: 3 mode system	+	+	+	+	-
12	Centrifuge, refrigerated, multipurpose	+	+	-	-	-
13	Dispenser:	+	-	-	-	-
14	Electrophoresis power supply:	+	-	-	-	-
15	Filter unit: pore size 0.45 μm .	+	+	-	-	-
16	Flow Cytometry,	+	+	-	-	-
17	Freezer: Temperature Range: - 60 to - 85°C.	+	+	-	-	-
18	Gel photo documentation	+	-	-	-	-
19	High performance liquid chromatography (HPLC)	+	-	-	-	-
20	Homogenizer:	+	+	-	-	-
21	Hot air oven: Capacity: 50 - 100 liters.	+	+	+	+	-
22	Hot plate & magnetic stirrer:	+	+	+	+	-
23	Ice maker:	+	-	-	-	-
24	Incubator (Shaking)	+	-	-	-	-
25	Incubator Co2:	+	+	-	-	-
26	Incubator: Capacity: 100 - 300 liters.	+	+	-	-	-
27	Incubator:Capacity: 50 - 100 liters.	+	+	+	+	+
28	Inspissator:	+	+	-	-	-

CLINICAL MICROBIOLOGY EQUIPMENTS STANDARDS

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
29	Laminar flow cabinet:	+	+	-	-	-
30	Micro-centrifuge	+	-	-	-	-
31	Micropipette: adjustable, volume range: 0.1 - 2.5 μ l	+	-	-	-	-
32	Micropipette: adjustable, volume range: 0.5 - 10 μ l	+	-	-	-	-
33	Micropipette: adjustable, volume range: 2 - 20 μ l	+	-	-	-	-
34	Microplate reader	+	+	-	-	-
35	Microplate washer	+	+	-	-	-
36	Microscope, binocular, fluorescent	+	+	-	-	-
37	Microscope, binocular: phase contrast, darkfield & bright field	+	+	-	-	-
38	Pipette filler, digital	+	+	+	-	-
39	Serological analyzer (Infectious diseases)	+	+	-	-	-
40	Shaker: (Rotary mixer),	+	+	-	-	-
41	TB culture system	+	-	-	-	-
42	Thermal cycler: (Real Time with silver block).	+	-	-	-	-
43	Turbidometer	+	+	+	-	-
44	Twin Incubator. For incubation & hybridization	+	-	-	-	-
45	Vacuum pump:	+	-	-	-	-

CLINICAL BIOCHEMISTRY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHUI	BHUII
Reagents for Chemistry Analyzer H 911 & 912						
1	Acid phosphatase for H 911 & 912	+	-	-	-	-
2	Albumin for H 911 & 912	+	-	-	-	-
3	Alkaline Phosphatase for H 911 & 912	+	-	-	-	-
4	Alpha Amylase for H 911 & 912	+	-	-	-	-
5	ALT (GTP) for H 911 & 912	+	-	-	-	-
6	ASO (Quantitative test) for H 911 & 912	+	-	-	-	-
7	AST(GOT) for H 911 & 912	+	-	-	-	-
8	Bilirubin (Direct) for H 911 & 912	+	-	-	-	-
9	Bilirubin (Total) for H 911 & 912	+	-	-	-	-
10	Calcium for H 911 & 912	+	-	-	-	-
11	CFAS CK-MB for H 911 & 912	+	-	-	-	-
12	Cholesterol for H 911 & 912	+	-	-	-	-
13	CK-MB for H 911 & 912	+	-	-	-	-
14	CK-NAC for H 911 & 912	+	-	-	-	-
15	Creatinine for H 911 & 912	+	-	-	-	-
16	CRP (Quantitative test) for H 911 & 912	+	-	-	-	-
17	Gamma-GT for H 911 & 912	+	-	-	-	-
18	Glucose for H 911 & 912	+	-	-	-	-
19	Haemolysing HBA1C for H 911 & 912	+	-	-	-	-
20	HBA1C for H 911 & 912	+	-	-	-	-
21	HDL-Cholesterol for H 911 & 912	+	-	-	-	-
22	Hitergent 33 for H 911 & 912	+	-	-	-	-
23	Iron for H 911 & 912	+	-	-	-	-
24	LDH for H 911 & 912	+	-	-	-	-
25	LDL -C for H 911 & 912	+	-	-	-	-
26	Magnesium for H 911 & 912	+	-	-	-	-
27	Multiclean for H 911 & 912	+	-	-	-	-
28	Phosphorus for H 911 & 912	+	-	-	-	-
29	Precinorm CK-MB for H 911 & 912	+	-	-	-	-

CLINICAL BIOCHEMISTRY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHUI	BHUII
30	Precinorm HBA1C for H 911 & 912	+	-	-	-	-
31	Precipath CK-MB for H 911 & 912	+	-	-	-	-
32	Precipath HBA1C for H 911 & 912	+	-	-	-	-
33	Refill Resin for H 911 & 912	+	-	-	-	-
34	RF (Quantitative test) for H 911 & 912	+	-	-	-	-
35	Sample cup for H - 911& 912	+	-	-	-	-
36	Total iron binding capacity (TIBC) for H 911 & 912	+	-	-	-	-
37	Total Protein for H 911 & 912	+	-	-	-	-
38	Triglycerides for H 911 & 912	+	-	-	-	-
39	Trucal ASO for H 911 & 912	+	-	-	-	-
40	Trucal CRP for H 911 & 912	+	-	-	-	-
41	TruCal HDL/LDL for H 911 & 912	+	-	-	-	-
42	Trucal RF for H 911 & 912	+	-	-	-	-
43	TruCal U for H 911 & 912	+	-	-	-	-
44	TruLab L for H 911 & 912	+	-	-	-	-
45	TruLab N for H 911 & 912	+	-	-	-	-
46	TruLab Protein Level 1 for H 911 & 912	+	-	-	-	-
47	TruLab Protein Level 2 for H 911 & 912	+	-	-	-	-
48	Unsaturated Iron Binding capacity (UIBC) for H 911 & 912	+	-	-	-	-
49	Urea /Bun for H 911 & 912	+	-	-	-	-
50	Uric Acid for H 911 & 912	+	-	-	-	-
Spare Parts for H 911 & 912						
51	Covettes set 24 pcs. For H-911	+	-	-	-	-
52	FD drive for H 911	+	-	-	-	-
53	FD drive for H 912	+	-	-	-	-
54	Fuse 0.5A 250VJ8 21588 for 911 & 912	+	-	-	-	-
55	Fuse 10A 250V J8 21596 for 911 & 912	+	-	-	-	-
56	Fuse 3A 250V J8 21592 for 911 & 912	+	-	-	-	-

CLINICAL BIOCHEMISTRY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
57	Fuse 5A 250V J8 21594 for 911 & 912	+	-	-	-	-
58	Halogen Lamp for 911 & 912	+	-	-	-	-
59	O.Ring NBRP 9 L 456006 for 911 & 912	+	-	-	-	-
60	Packing 15L 441011 for 911 & 912	+	-	-	-	-
61	Packing L 443085 for 911 & 912	+	-	-	-	-
62	Pipettor Assy for 911	+	-	-	-	-
63	Pipettor Assy for 912	+	-	-	-	-
64	PipettorAssy sensor for H 911 & 912	+	-	-	-	-
65	Reaction cells 18 pcs, for H-912	+	-	-	-	-
66	Reagent probe for H 911 & 912	+	-	-	-	-
67	Sample probe for H 911 & 912	+	-	-	-	-
68	Sensor for reagent probe for H 911 & 912	+	-	-	-	-
69	Sensor for sample probe for H 911 & 912	+	-	-	-	-
70	Silast Tube 1 ID 30d G153170 for 911 & 912	+	-	-	-	-
71	Silicon Tube 2*4Mts for 911 & 912	+	-	-	-	-
72	Tygon T-3.17*6.35*2M for 911 & 912	+	-	-	-	-
73	Micro Fuse 3.2A 4X for H-911	+	-	-	-	-
74	Micro Fuse 0.5 4Z for H-911	+	-	-	-	-
75	Stirrer for H-911	+	-	-	-	-
Reagent & Consumables for ELECSYS 1010						
76	AFP calset for ELECSYS 1010	+	-	-	-	-
77	AFP for ELECSYS 1010	+	-	-	-	-
78	Assay Cup for ELECSYS 1010	+	-	-	-	-
79	CEA calset for ELECSYS 1010	+	-	-	-	-
80	Clean cell for ELECSYS 1010	+	-	-	-	-
81	Cortisol calset for ELECSYS 1010	+	-	-	-	-
82	Cortisol for ELECSYS 1010	+	-	-	-	-
83	DHEA -S Calset for ELECSYS 1010	+	-	-	-	-

CLINICAL BIOCHEMISTRY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
84	Edisonite for ELECSYS 1010	+	-	-	-	-
85	Estradiol calset for ELECSYS 1010	+	-	-	-	-
86	Estradiol for ELECSYS 1010	+	-	-	-	-
87	Ferritin Calset for ELECSYS 1010	+	-	-	-	-
88	Ferritin for ELECSYS 1010	+	-	-	-	-
89	Free PSA II calset for ELECSYS 1010	+	-	-	-	-
90	Free PSA II for ELECSYS 1010	+	-	-	-	-
91	FSH calset for ELECSYS 1010	+	-	-	-	-
92	FSH for ELECSYS 1010	+	-	-	-	-
93	HCG + Beta calset for ELECSYS 1010	+	-	-	-	-
94	HCG + Beta for ELECSYS 1010	+	-	-	-	-
95	LH calset for ELECSYS 1010	+	-	-	-	-
96	LH for ELECSYS 1010	+	-	-	-	-
97	Maintenance kit for ELECSYS 1010	+	-	-	-	-
98	Preci control - U for ELECSYS 1010	+	-	-	-	-
99	Procell for ELECSYS 1010	+	-	-	-	-
100	Progesterone calset for ELECSYS 1010	+	-	-	-	-
101	Progesterone for ELECSYS 1010	+	-	-	-	-
102	Prolactin calset for ELECSYS 1010	+	-	-	-	-
103	Prolactin for ELECSYS 1010	+	-	-	-	-
104	PSA II calset for ELECSYS 1010	+	-	-	-	-
105	Serum CEA for ELECSYS 1010	+	-	-	-	-
106	Serum DHEA - S for ELECSYS 1010	+	-	-	-	-
107	SYS clean for ELECSYS 1010	+	-	-	-	-
108	SYS Wash for ELECSYS 1010	+	-	-	-	-
109	T3 calset for ELECSYS 1010	+	-	-	-	-
110	T3 for ELECSYS 1010	+	-	-	-	-
111	T4 calset for ELECSYS 1010	+	-	-	-	-
112	T4 for ELECSYS 1010	+	-	-	-	-
113	Testosterone calset for ELECSYS 1010	+	-	-	-	-
114	Testosterone for ELECSYS 1010	+	-	-	-	-

CLINICAL BIOCHEMISTRY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
115	Thermol printer paper for ELECSYS 1010	+	-	-	-	-
116	Total PSA II for ELECSYS 1010	+	-	-	-	-
117	TSH calset for ELECSYS 1010	+	-	-	-	-
118	TSH for ELECSYS 1010	+	-	-	-	-
119	Vit B 12 calset for ELECSYS 1010	+	-	-	-	-
120	Vitamin B12 for ELECSYS 1010	+	-	-	-	-
Reagent & Consumables for Easylyte, Na,K,Cl						
121	Chloride Electrode for Easylyte	+	+	+	-	-
122	Daily cleaning solution for Easylyte	+	+	+	-	-
123	Internal filling solution for Easylyte	+	+	+	-	-
124	Membrane Assembly for Easylyte	+	+	+	-	-
125	Na/K/Cl for Easylyte	+	+	+	-	-
126	Potassium Electrode for Easylyte	+	+	+	-	-
127	Reference Electrde for Easylyte	+	+	+	-	-
128	Sample detector for Easylyte	+	+	+	-	-
129	Sample probe for Easylyte	+	+	+	-	-
130	Sodium Electrode for Easylyte	+	+	+	-	-
131	Solution Valve for Easylyte	+	+	+	-	-
132	Tubing Kit for Easylyte	+	+	+	-	-
133	Wash solution for Easylyte	+	+	+	-	-
Reagent for DT 60 (Dry Chemistry)						
134	Alkaline Phosphatase for DT 60 (Dry Chemistry)	+	-	-	-	-
135	Amylase for DT 60 (Dry Chemistry)	+	-	-	-	-
136	Bilirubin Direct for DT 60 (Dry Chemistry)	+	-	-	-	-
137	Bilirubin Total for DT 60 (Dry Chemistry)	+	-	-	-	-
138	Calcium for DT 60 (Dry Chemistry)	+	-	-	-	-
139	Ck-MB for DT 60 (Dry Chemistry)	+	-	-	-	-
140	CPK for DT 60 (Dry Chemistry)	+	-	-	-	-

CLINICAL BIOCHEMISTRY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
141	DT control - I & II for DT 60 (Dry Chemistry)	+	-	-	-	-
142	DT Plus Calibrator for DT 60 (Dry Chemistry)	+	-	-	-	-
143	DT Specialty cal kit for DT 60 (Dry Chemistry)	+	-	-	-	-
144	LDH for DT 60 (Dry Chemistry)	+	-	-	-	-
145	NBIL for DT 60 (Dry Chemistry)	+	-	-	-	-
146	SGOT for DT 60 (Dry Chemistry)	+	-	-	-	-
147	SGPT for DT 60 (Dry Chemistry)	+	-	-	-	-
148	Troponin I for DT 60 (Dry Chemistry)	+	-	-	-	-
Reagent & Consumables for Immunology Analyzer (ECiQ)						
149	AFP calibrator for ECiQ	+	+	-	-	-
150	AFP for ECiQ	+	+	-	-	-
151	Anaemia Control for ECiQ	+	+	-	-	-
152	B12 for ECiQ	+	+	-	-	-
153	B12 / Folate Pack 2 for ECiQ	+	+	-	-	-
154	B12 calibrator for ECiQ	+	+	-	-	-
155	CA 125 calibrator for ECiQ	+	+	-	-	-
156	CA 125 for ECiQ	+	+	-	-	-
157	CA 15-3 calibrator for ECiQ	+	+	-	-	-
158	CA 15-3 for ECiQ	+	+	-	-	-
159	CA 19 -9 calibrator for ECiQ	+	+	-	-	-
160	CA 19 -9 for ECiQ	+	+	-	-	-
161	CEA for ECiQ	+	+	-	-	-
162	CEA calibrator for ECiQ	+	+	-	-	-
163	CK - MB Control for ECiQ	+	+	-	-	-
164	CKMB calibrator for ECiQ	+	+	-	-	-
165	CK-MB for ECiQ	+	+	-	-	-
166	Cortisol calibrator for ECiQ	+	+	-	-	-
167	Cortisol for ECiQ	+	+	-	-	-
168	Diluent A for ECiQ	+	+	-	-	-

CLINICAL BIOCHEMISTRY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
169	Diluent B (Buffered) Reag Pack for ECiQ	+	+	-	-	-
170	Diluent B for ECiQ	+	+	-	-	-
171	Eci VAPOR ADSORPTION CA for ECiQ	+	+	-	-	-
172	Estradiol calibrator for ECiQ	+	+	-	-	-
173	Estradiol for ECiQ	+	+	-	-	-
174	Ferritin calibrator for ECiQ	+	+	-	-	-
175	Ferritin for ECiQ	+	+	-	-	-
176	Folate calibrator for ECiQ	+	+	-	-	-
177	Folate for ECiQ	+	+	-	-	-
178	Free BHCG Control for ECiQ	+	+	-	-	-
179	Free B-HCG for ECiQ	+	+	-	-	-
180	Free Thyroid control for ECiQ	+	+	-	-	-
181	Free β -HCG calibrator for ECiQ	+	+	-	-	-
182	FSH calibrator for ECiQ	+	+	-	-	-
183	FSH for ECiQ	+	+	-	-	-
184	FT3 calibrator for ECiQ	+	+	-	-	-
185	FT3 for ECiQ	+	+	-	-	-
186	FT4 calibrator for ECiQ	+	+	-	-	-
187	FT4 for ECiQ	+	+	-	-	-
188	LH calibrator for ECiQ	+	+	-	-	-
189	LH for ECiQ	+	+	-	-	-
190	Maintenance pack for ECiQ	+	+	-	-	-
191	Metabolism Control for ECiQ	+	+	-	-	-
192	NT PRO BNP for ECiQ	+	+	-	-	-
193	NTX calibrator for ECiQ	+	+	-	-	-
194	NTX Control for ECiQ	+	+	-	-	-
195	NTX for ECiQ	+	+	-	-	-
196	Oncology Control for ECiQ	+	+	-	-	-
197	Progesterone calibrator for ECiQ	+	+	-	-	-
198	Progesterone for ECiQ	+	+	-	-	-

CLINICAL BIOCHEMISTRY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHUI	BHU II
199	Prolactin calibrator for ECiQ	+	+	-	-	-
200	Prolactin for ECiQ	+	+	-	-	-
201	PSA calibrator for ECiQ	+	+	-	-	-
202	PSA for ECiQ	+	+	-	-	-
203	RE Control for ECiQ	+	+	-	-	-
204	Signal for ECiQ	+	+	-	-	-
205	Solid waste container liner for ECiQ	+	+	-	-	-
206	T3U calibrator for ECiQ	+	+	-	-	-
207	T3U for ECiQ	+	+	-	-	-
208	Testosterone calibrator for ECiQ	+	+	-	-	-
209	Testosterone Control for ECiQ	+	+	-	-	-
210	Testosterone for ECiQ	+	+	-	-	-
211	Thyroid control for ECiQ	+	+	-	-	-
212	Total β -HCG II for ECiQ	+	+	-	-	-
213	Troponin (I) ES for ECiQ	+	+	-	-	-
214	Troponin calibrator for ECiQ	+	+	-	-	-
215	TSH calibrator for ECiQ	+	+	-	-	-
216	TSH for ECiQ	+	+	-	-	-
217	TT3 calibrator for ECiQ	+	+	-	-	-
218	TT3 for ECiQ	+	+	-	-	-
219	TT4 calibrator for ECiQ	+	+	-	-	-
220	TT4 for ECiQ	+	+	-	-	-
221	Universal Wash for ECiQ	+	+	-	-	-
222	Versa Tips for ECiQ	+	+	-	-	-
223	β -HCG II for ECiQ	+	+	-	-	-
224	β -HCG II calibrator for ECiQ	+	+	-	-	-
Reagent & Consumables for Beckman Coulter Cx-5						
225	*R* CX/LX DAT OP300 LOW URINE CAL 5ml for Beckman Coulter CX-Pro 5	+	+	-	-	-
226	*R* CX/LX Drug CAL 2 (DIG/ACTM) 6X2mL for Beckman Coulter CX-Pro 5	+	+	-	-	-

CLINICAL BIOCHEMISTRY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHUI	BHU II
227	*RI* CX/LX DAT OP300 HIGH URINE CAL. 5ml for Beckman Coulter CX-Pro 5	+	+	-	-	-
228	*RI* CX/LX ALCOHOL CALIBRA-TOR 2x1X5ml for Beckman Coulter CX-Pro 5	+	+	-	-	-
229	A360 Urine Control for Beckman Coulter CX-Pro 5	+	+	-	-	-
230	Acid phosphatase Phosphatase Dri-STAT for Beckman Coulter CX-Pro 5	+	+	-	-	-
231	Alanine Aminotransferase for Beckman Coulter CX-Pro 5	+	+	-	-	-
232	Albumin for Beckman Coulter CX-Pro 5	+	+	-	-	-
233	Alcohol for Beckman Coulter CX-Pro 5	+	+	-	-	-
234	Alkaline Phosphatase for Beckman Coulter CX-Pro 5	+	+	-	-	-
235	Ammonia for Beckman Coulter CX-Pro 5	+	+	-	-	-
236	Amphetamines for Beckman Coulter CX-Pro 5	+	+	-	-	-
237	Amylase for Beckman Coulter CX-Pro 5	+	+	-	-	-
238	Amylase Pancreatic for Beckman Coulter CX-Pro 5	+	+	-	-	-
239	Apolipo A1 for Beckman Coulter CX-Pro 5	+	+	-	-	-
240	Apolipo B for Beckman Coulter CX-Pro 5	+	+	-	-	-
241	ASO Calibrator for Beckman Coulter CX-Pro 5	+	+	-	-	-
242	ASO for Beckman Coulter CX-Pro 5	+	+	-	-	-

CLINICAL BIOCHEMISTRY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
243	Aspartate Aminotransferase for Beckman Coulter CX-Pro 5	+	+	-	-	-
244	AST IFCC for Beckman Coulter CX-Pro 5	+	+	-	-	-
245	Barbiturates for Beckman Coulter CX-Pro 5	+	+	-	-	-
246	Benzadiazepine for Beckman Coulter CX-Pro 5	+	+	-	-	-
247	Bilirubin Calibrator Kit ver 2.1/4.3 for Beckman Coulter CX-Pro 5	+	+	-	-	-
248	BUN for Beckman Coulter CX-Pro 5	+	+	-	-	-
249	Calcium for Beckman Coulter CX-Pro 5	+	+	-	-	-
250	Cannabinoid - 100ng for Beckman Coulter CX-Pro 5	+	+	-	-	-
251	Cannabinoid - 20ng for Beckman Coulter CX-Pro 5	+	+	-	-	-
252	Cannabinoid - 50ng for Beckman Coulter CX-Pro 5	+	+	-	-	-
253	Carbamazepine for Beckman Coulter CX-Pro 5	+	+	-	-	-
254	Cholesterol for Beckman Coulter CX-Pro 5	+	+	-	-	-
255	Cholinesterase (DGKC) for Beckman Coulter CX-Pro 5	+	+	-	-	-
256	CK - IFCC for Beckman Coulter CX-Pro 5	+	+	-	-	-
257	CO2 Acid for Beckman Coulter CX-Pro 5	+	+	-	-	-
258	CO2 Alkaline Buffer for Beckman Coulter CX-Pro 5	+	+	-	-	-
259	Cocaine for Beckman Coulter CX-Pro 5	+	+	-	-	-
260	Creatine Kinase - MB Reagent	+	+	-	-	-

CLINICAL BIOCHEMISTRY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHUI	BHU II
261	Creatine Kinase for Beckman Coulter CX-Pro 5	+	+	-	-	-
262	Creatinine for Beckman Coulter CX-Pro 5	+	+	-	-	-
263	CRP Calibrator 5 Levels for Beckman Coulter CX-Pro 5	+	+	-	-	-
264	CRP for Beckman Coulter CX-Pro 5	+	+	-	-	-
265	CX100 NG/ML THC Urine Cal for Beckman Coulter CX-Pro 5	+	+	-	-	-
266	CX200 NG/ML THC Urine Cal for Beckman Coulter CX-Pro 5	+	+	-	-	-
267	CX50 NG/ML THC Urine Cal for Beckman Coulter CX-Pro 5	+	+	-	-	-
268	CXDAT Negative Urine Cal for Beckman Coulter CX-Pro 5	+	+	-	-	-
269	CXDelta Calibrator-1 for Beckman Coulter CX-Pro 5	+	+	-	-	-
270	CXDelta Calibrator-2 for Beckman Coulter CX-Pro 5	+	+	-	-	-
271	CXDelta Calibrator-3 for Beckman Coulter CX-Pro 5	+	+	-	-	-
272	CXMicroalbumin Cal. for Beckman Coulter CX-Pro 5	+	+	-	-	-
273	CX-4/5 Antifoam for Beckman Coulter CX-Pro 5	+	+	-	-	-
274	CX-4/5 Wash Concentrate for Beckman Coulter CX-Pro 5	+	+	-	-	-
275	CX5 Microalbumin for Beckman Coulter CX-Pro 5	+	+	-	-	-
276	CX-Multi Calibrator for Beckman Coulter CX-Pro 5	+	+	-	-	-
277	DBIL Kit for Beckman Coulter CX-Pro 5	+	+	-	-	-

CLINICAL BIOCHEMISTRY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHUI	BHU II
278	D-HDL Cholesterol kit - System Pack version 5.0 for Beckman Coulter CX-Pro 5	+	+	-	-	-
279	Digoxin for Beckman Coulter CX-Pro 5	+	+	-	-	-
280	Direct LDL for Beckman Coulter CX-Pro 5	+	+	-	-	-
281	Drug Cal. 1 (Car, Phe, Phy, The, Vpa) (6x2mL) for Beckman Coulter CX-Pro 5	+	+	-	-	-
282	Drug Cal. 2 (DIGN, Acetaminophen) (6 levels, 1x2) for Beckman Coulter CX-Pro 5	+	+	-	-	-
283	Drug Cal. 3 plus (Gen, TOB) (6x2 mL) for Beckman Coulter CX-Pro 5	+	+	-	-	-
284	Electrolyte Buffer, ver. 4.7 for Beckman Coulter CX-Pro 5	+	+	-	-	-
285	Electrolyte Reference, ver 4.6 for Beckman Coulter CX-Pro 5	+	+	-	-	-
286	Enzyme Validator for IFCC kits-ALT, AST,CK for Beckman Coulter CX-Pro 5	+	+	-	-	-
287	Gamma Glutamyltransferase for Beckman Coulter CX-Pro 5	+	+	-	-	-
288	Gentamicin for Beckman Coulter CX-Pro 5	+	+	-	-	-
289	Glucose for Beckman Coulter CX-Pro 5	+	+	-	-	-
290	HBA1C Control Abnormal for Beckman Coulter CX-Pro 5	+	+	-	-	-
291	HBA1C Control Normal for Beckman Coulter CX-Pro 5	+	+	-	-	-
292	HBA1C for Beckman Coulter CX-Pro 5	+	+	-	-	-
293	Hemolysing for Beckman Coulter CX-Pro 5	+	+	-	-	-

CLINICAL BIOCHEMISTRY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
294	Hydroxybutyrate Dehydrogenase for Beckman Coulter CX-Pro 5	+	+	-	-	-
295	Immuno Protein Calibrator for Beckman Coulter CX-Pro 5	+	+	-	-	-
296	Immuno Protein Sample Diluent for Beckman Coulter CX-Pro 5	+	+	-	-	-
297	Insulin Calset for Beckman Coulter CX-Pro 5	+	+	-	-	-
298	Insulin for Beckman Coulter CX-Pro 5	+	+	-	-	-
299	Iron (Fe) for Beckman Coulter CX-Pro 5	+	+	-	-	-
300	Iron/TIBC Calibrator for Beckman Coulter CX-Pro 5	+	+	-	-	-
301	Lactate Dehydrogenase (LD-L) for Beckman Coulter CX-Pro 5	+	+	-	-	-
302	Lactate Dehydrogenase (LD-P) for Beckman Coulter CX-Pro 5	+	+	-	-	-
303	Lactate Kit for Beckman Coulter CX-Pro 5	+	+	-	-	-
304	Leucine Arylamidase for Beckman Coulter CX-Pro 5	+	+	-	-	-
305	IgA for Beckman Coulter CX-Pro 5	+	+	-	-	-
306	IgG for Beckman Coulter CX-Pro 5	+	+	-	-	-
307	IgM for Beckman Coulter CX-Pro 5	+	+	-	-	-
308	Lipase for Beckman Coulter CX-Pro 5	+	+	-	-	-
309	Lipid Calibrator for D-HDL for Beckman Coulter CX-Pro 5	+	+	-	-	-
310	Magnesium for Beckman Coulter CX-Pro 5	+	+	-	-	-
311	Methadone for Beckman Coulter CX-Pro 5	+	+	-	-	-
312	Methaqualone for Beckman Coulter CX-Pro 5	+	+	-	-	-

CLINICAL BIOCHEMISTRY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHUI	BHUII
313	Microprotein Calibrator for Beckman Coulter CX-Pro 5	+	+	-	-	-
314	Microprotein Kit for Beckman Coulter CX-Pro 5	+	+	-	-	-
315	Opiate for Beckman Coulter CX-Pro 5	+	+	-	-	-
316	Phencyclidine for Beckman Coulter CX-Pro 5	+	+	-	-	-
317	Phenobarbital for Beckman Coulter CX-Pro 5	+	+	-	-	-
318	Phenytoin for Beckman Coulter CX-Pro 5	+	+	-	-	-
319	Phosphorus for Beckman Coulter CX-Pro 5	+	+	-	-	-
320	Probe Rinse for Beckman Coulter CX-Pro 5	+	+	-	-	-
321	Propoxyphene for Beckman Coulter CX-Pro 5	+	+	-	-	-
322	RF Calibrator for Beckman Coulter CX-Pro 5	+	+	-	-	-
323	RF for Beckman Coulter CX-Pro 5	+	+	-	-	-
324	Salicylate for Beckman Coulter CX-Pro 5	+	+	-	-	-
325	Synchron Multilevel for Beckman Coulter CX-Pro 5	+	+	-	-	-
326	THC(20NG/ML) Urine Cal for Beckman Coulter CX-Pro 5	+	+	-	-	-
327	Theophylline for Beckman Coulter CX-Pro 5	+	+	-	-	-
328	Tobramycin for Beckman Coulter CX-Pro 5	+	+	-	-	-
329	Total Bilirubin for Beckman Coulter CX-Pro 5	+	+	-	-	-

CLINICAL BIOCHEMISTRY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
330	Total Iron Binding Capacity (IBCT) for Beckman Coulter CX-Pro 5	+	+	-	-	-
331	Total Protein Calibrator-for CX3 for Beckman Coulter CX-Pro 5	+	+	-	-	-
332	Total Protein for Beckman Coulter CX-Pro 5	+	+	-	-	-
333	Trace Klean for Beckman Coulter CX-Pro 5	+	+	-	-	-
334	Transferrin for Beckman Coulter CX-Pro 5	+	+	-	-	-
335	Triglyceride for Beckman Coulter CX-Pro 5	+	+	-	-	-
336	Urea for Beckman Coulter CX-Pro 5	+	+	-	-	-
337	Uric Acid for Beckman Coulter CX-Pro 5	+	+	-	-	-
338	Valproic Acid for Beckman Coulter CX-Pro 5	+	+	-	-	-
339	Wash Concentrate for Beckman Coulter CX-Pro 5	+	+	-	-	-
Reagent & Consumables for Electrolyte Analyzer (CRT 4 Nova)						
340	Chloride sensor, 4/bx for CRT 4 Nova	+	-	-	-	-
341	Cleaning solution for CRT 4 Nova	+	-	-	-	-
342	Hct Sensor for CRT 4 Nova	+	-	-	-	-
343	Level 1,2,3,4: Complete set (All tests: 5ampx4lvls) for CRT 4 Nova	+	-	-	-	-
344	Lithium sensor, 3/bx for CRT 4 Nova	+	-	-	-	-
345	Potassium electrode for CRT 4 Nova	+	-	-	-	-
346	Reagent Pack for CRT 4 Nova	+	-	-	-	-
347	Referance electrode for CRT 4 Nova	+	-	-	-	-
348	Sample probe for CRT 4 Nova	+	-	-	-	-
349	S-line Tubing kit (6/pkg) for CRT 4 Nova	+	-	-	-	-

CLINICAL BIOCHEMISTRY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHUI	BHU II
350	Sodium conditioning solution for CRT 4 Nova	+	-	-	-	-
351	Sodium electrode for CRT 4 Nova	+	-	-	-	-
352	TCO2 internal filling solution for CRT 4 Nova	+	-	-	-	-
353	TCO2 membrane kit, 6/bx for CRT 4 Nova	+	-	-	-	-
354	TCO2 mixer for CRT 4 Nova	+	-	-	-	-
355	TCO2 sensor for CRT 4 Nova	+	-	-	-	-
356	Tubing harness without dilutor for CRT 4 Nova	+	-	-	-	-
357	W/H/R tubing CRT4 for CRT 4 Nova	+	-	-	-	-
Reagent for Photometer						
358	Albumin for Photometer	+	+	+	+	-
359	Alkaline Phosphatase for Photometer	+	+	+	+	-
360	ALT (SGPT) for Photometer	+	+	+	+	-
361	AST (SGOT) for Photometer	+	+	+	+	-
362	Bilirubin Total & Direct for Photometer	+	+	+	+	-
363	Cholesterol for Photometer	+	+	+	-	-
364	Creatinine for Photometer	+	+	+	+	-
365	Gamma GTP for Photometer	+	+	+	+	-
366	Glucose for Photometer	+	+	+	+	-
367	Total protein for Photometer	+	+	+	+	-
368	Triglycerides for Photometer	+	+	+		-
369	Urea for Photometer	+	+	+	+	-
370	Uric Acid for Photometer	+	+	+	+	-
371	Thermal paper roll for Photometer	+	+	+	+	-
372	Halogen lamp 20W 12V for Photometer	+	+	+	+	-
Clinical Microscopy						
373	Acetic acid glacial	+	+	+	+	-
374	Ammonium sulphate	+	+	+	+	-
375	Barrium chloride	+	+	+	+	-

CLINICAL BIOCHEMISTRY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
376	Benedicts reagent (Qualitative)	+	+	+	+	-
377	Ehrlichs Aldehyde reagent	+	+	+	+	-
378	Fouchet reagent	+	+	+	+	-
379	Liquid Ammonia solution specific gravity 0.91	+	+	+	+	-
380	Pregnancy test kit, Indirect	+	+	+	+	-
381	Sodium nitroprusside	+	+	+	+	-
382	Sulphosalicylic acid, Crystal	+	+	+	+	-
383	Sulphur powder	+	+	+	+	-
384	Urinary strip 10 parameters	+	+	-	-	-
385	Urinary strip 5 parameters	-	-	+	+	+
386	LE slide test (SLE)	+	+	-	-	-
Vacuttainer Tubes						
387	Vacurette tube with glycolytic inhibition - Plastic	+	+	+	-	-
388	Vacurette tube with gel, 10ml capacity - Plastic	+	-	-	-	-
389	Vacurette tube with serum clot activator 5ml capacity - Plastic	+	+	+	-	-

BLOOD BANK STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
1	Combi-pack of pre-diluted monoclonal Anti - D, IgG antibody reagent and red cell preserving solution	+	+	+	-	-
2	Alsevers Solution for preservation of red blood cell antigenicity.	+	+	+		
3	Anti - A, Monoclonal IgM antibody for slide and tube method.	+	+	+	+	+
4	Anti - A1, lectin, monoclonal IgM antibody for tube method	+	+	-	-	-
5	Anti - AB, Monoclonal IgM antibody for slide and tube method	+	+	+	+	+
6	Anti - B, Monoclonal IgM antibody for slide and tube method	+	+	+	+	+
7	Anti - C, Monoclonal IgM antibody for tube method	+	+	-		-
8	Anti - c, Monoclonal IgM antibody for tube method	+	+	-	-	-
9	Anti - D, IgG only, antibody only for tube method	+	+	-	-	-
10	Anti - D, IgM and IgG combination, Monoclonal IgM and IgG antibodies for slide and tube method	+	+	+	+	+
11	Anti - E, Monoclonal IgM antibody for tube method	+	+	-	-	-
12	Anti - e, monoclonal IgM antibody for tube method	+	+	-	-	-
13	Anti - Fya antibody	+	-	-	-	-
14	Anti - Fyb antibody	+	-	-	-	-
15	Anti - H lectin, monoclonal IgM antibody for tube method	+	+			-

BLOOD BANK STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
16	Anti - Human Globulin (Green), polyspecific anti - IgG and anti C3d	+	+	+	+	-
17	Anti - Jka, monoclonal IgM antibody for tube method	+	-	-	-	-
18	Anti - Jkb, monoclonal IgM antibody for tube method	+	-	-	-	-
19	Anti - K, monoclonal IgM antibody for tube method	+	-	-	-	-
20	Anti - Lea monoclonal IgM antibody for tube method	+	-	-	-	-
21	Anti - Leb monoclonal IgM antibody for tube method	+	-	-	-	-
22	Anti - Lutheran a	+	-	-	-	-
23	Anti - Lutheran b	+	-	-	-	-
24	Anti - M, monoclonal IgM antibody for tube method	+	-	-	-	-
25	Anti - Mia, antibody for tube method	+	-	-	-	-
26	Anti - N, monoclonal IgM antibody for tube method	+	-	-	-	-
27	Anti - P1, antibody for tube method	+	-	-	-	-
28	Anti - S, antibody for tube method	+	-	-	-	-
29	Anti - s, antibody for tube method	+	-	-	-	-
30	Antibody panel cells for antibody identification for conventional tube method (a set of 11 cells of 3% suspension)	+	-	-	-	-
31	Antibody screening cells	+	+	-	-	-

BLOOD BANK STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
32	Blood Administration set (adults), vein needle 18gauge, delivers approximately 15drops per ml with Spike needle packet of 200	+	+	+	+	-
33	Blood bag - Single, CPDA1 as anticoagulant, 350ml capacity	+	+	+	+	-
34	Blood bag - Double, CPDA1 as anticoagulant, 450ml capacity	+	+	+	-	-
35	Blood bag - Triple, CPDA1 as anticoagulant, 450ml capacity	+	+	-	-	-
36	Blood bag - Quadruple, top and bottom for OPTIPRESS MACHINE, 450ml capacity with additive solution	+	-	-	-	-
37	Bovine serum Albumin 22% solution for serological applications	+	+	+	+	
38	Column Agglutination Technology ID cards or cassettes for ABO, Rh and DAT test for NEWBORNS	+	-	-	-	-
39	Column Agglutination Technology ID cards or cassettes for Coombs Crossmatch or LISS/ COOMBS with polyspecific AHG	+	-	-	-	-
40	Column Agglutination Technology ID cards for Antibodu screening	-	-	-	-	-
41	Hemocue micro cuvettes for determination of B-Hb and Hb 201 in whole blood, 50cuvette per container	+	+	+	-	-

BLOOD BANK STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
42	Plasma Over wrap	+		-	-	-
43	Platelet administration set	+	+	-	-	-
44	Printed sticker for Blood group - A positive in yellow	+	+	-	-	-
45	Printed sticker for Blood group - AB positive in black	+	+	-	-	-
46	Printed sticker for Blood group - B positive in pink	+	+	-	-	-
47	Printed sticker for Blood group - O positive blue	+	+	-		-
48	Rh Control	+	+	+	+	-
49	Transfer bag, Capacity 300ml	+	+			-
50	Volumetric Blood administration set for Pediatric, equipped with a calibrated volumetric chamber, graduated to 100ml, with 1ml increment	+	+	-	-	-
51	Temperature recorder chart and pen for Blood Bank Refrigerator, Revco	+	+	-	-	-
52	Temperature recorder chart and pen for Blood Bank Refrigerator, Dometic	+	+	+	-	-
53	Temperature Recorder chart and pen for Terumo Penpol Blood Bank Refrigerator Model Number BBR-AG-1-0-300L, and Platelet incubator	-	-	-	-	-

GENERAL LABORATORY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
General Chemical						
1	Calcium chloride dihydrate	+	+	+	-	-
2	Dimethyl formamide	+	+	+	-	-
3	di-Potassium oxalate purified	+	+	+	+	-
4	Glycerine	+	+	-	-	-
5	Hydrochloric acid	+	+	+	+	-
6	Immersion Oil	+	+	+	+	-
7	Lugol's Iodine Solution	+	+	-	-	-
8	Methylene Blue	+	+	+	+	-
9	P. Dimethylamino Benzaldehyde	+	+	+	-	-
10	Potassium hydroxide pellets purified	+	+	+	+	-
11	Potassium Iodide powder	+	+	-	-	-
12	Potassium Permanganate powder	+	+	-	-	-
13	Safranin O powder	+	+	-	-	-
14	Sodium chloride GR	+	+	+	+	-
15	Sodium fluoride pure	+	+	+	+	-
16	Sodium hydroxide pellets	+	+	+	+	-
17	Sodium hypochlorite solution GPR	+	+	+	+	-
18	Sulphuric acid	+	+	+	+	-
19	Super Premium Micro-side single frost (1mm thick, size 75x25mm)	+	+	+	+	+
20	Trichloroacetic acid	+	+	+	-	-
21	Zinc Sulphate	+	+	+	+	-
Glass Wares						
22	Blood Lancet	+	+	+	+	+
23	Bottle reagent (250ml)	+	+	+	+	-
24	Bottle reagent (500ml)	+	+	+	+	+
25	Bottle tissue culture (110ml)	+	+	+	-	-
26	Bottle wash (500ml)	+	+	+	+	+

BLOOD BANK STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
27	Capillary Tube	+	+	+	+	-
28	Cover glass 22mmx22mm	+	+	+	+	+
29	Cylinder - graduated (1000ml)	+	+	+	+	-
30	Cylinder - graduated (100ml)	+	+	+	+	-
31	Cylinder - graduated (500ml)	+	+	+	+	+
32	Diamond pen	+	+	+	+	+
33	Drop bottle (150ml)	+	+	+	+	+
34	Face mask (N95)	+	+	+	+	+
35	Filter paper qualitative 11cm	+	+	+	+	-
36	Filter paper sheet 46cmx57cm	+	+	+	+	-
37	Flask conical (250ml) with screw cap	+	+	+	+	-
38	Flask conical (500ml) with screw cap	+	+	+	+	-
39	Flask conical (1000ml) with screw cap	+	+	+	+	-
40	Flask conical (2000ml) with screw cap	+	+	+	+	-
41	Glass beads, 3mm diameter	+	+	+	-	-
42	Glass beads, 5mm diameter	+	+	+	+	-
43	Lens cleaning paper	+	+	+	+	+
44	Microslide	+	+	+	+	+
45	Spirit lamp	+	+	+	+	+
46	Tes tube without rim (10x75)	+	+	+	+	-
47	Test tube brush	+	+	+	+	+
48	Test tube holder brass	+	+	+	+	+
49	Test tube without rim (12x100)	+	+	+	+	-
50	Test tube without rim (12x75)	+	+	+	+	-
51	Test tube without rim (15x125)	+	+	+	+	-
52	Test tube without rim (15x150)	+	+	+	+	+
53	Volumetric flask 50ml	+	-	-	-	-
54	Volumetric flask 100ml	+	-	-	-	-

BLOOD BANK STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
55	Volumetric flask 500ml	+	-	-	-	-
56	Volumetric flask 1000ml	+	-	-	-	-
57	Volumetric Glass pipette 1ml	+	+	-	-	-
58	Volumetric Glass pipette 2ml	+	+	-	-	-
59	Volumetric Glass pipette 5ml	+	+	-	-	-
60	Volumetric Glass pipette 10ml	+	+	-	-	-
Plastic Wares						
61	Beaker plastic 1000ml	+	+	+	+	+
62	Bio-hazard bag - red (autoclavable)	+	+	+	+	-
63	Bio-hazard bag-green	+	+	+	+	-
64	Blood Tourniquet	+	+	+	+	-
65	Centrifuge tubes, polypropylene seal with capacity 3.5 - 10ml	+	+	+	+	-
66	Face shield	+	+	+	+	-
67	Gloves, disposable without powder	+	+	-	-	-
68	Parafilm, roll	+	+	+	+	-
69	Pasteur pipette, disposable 3ml	+	+	+	+	+
70	Respirator	+	+	+	+	-
71	Safety goggles	+	+	+	+	-
72	Stop watch, table top	+	+	+	+	-
73	Stop watch/Clock, digital with battery & neck cord	+	+	+	+	-
74	Test tube basket - small	+	+	+	+	-
75	Test tube basket - large	+	+	+	+	+
76	Test tube rack, 16mm diameter (12holes x 5 rows)	+	+	+	+	+
77	Test tube rack, 13mm diameter (15 holes x 6 rows)	+	+	+	+	-
78	Barcode (Thermal) paper: Size: 2" x 1"	+	+	-	-	-

HAEMATOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHUI	BHU II
Beckman Coulter						
1	4C - ES Cell Control (Low, Normal & High)	+	+	+	-	-
2	ACT Rinse Diluent f	+	+	+	-	-
3	Diff - ACT PAK	+	+	+	-	-
4	ACT PAK	+	-	+	-	-
Coagulation Analyzer						
5	Cacl2, 0.02mol/L	+	+	+	-	-
6	Cuvettes and stirrer for P-Time, APTT, Fibronogen	+	+	-	-	-
7	Fibroquant	+	+	-	-	-
8	Liquicelin-E/Precision, combipack (APTT)	+	+	-	-	-
9	Liquiplastin/Precision, combipack (P-Time)	+	+	+	-	-
10	Plasmatrol H-I	+	+	+	-	-
11	Plasmatrol H-II	+	+	+	-	-
BD FACS Count System						
12	BD FACS Count Control	+	+	-	-	-
13	BD FACS Count Reagent	+	+	-	-	-
14	BD FACS Flow Solution	+	+	-	-	-
15	Thermal paper roll for BD FACS Count System	+	+	-	-	-
MSN9 5 - diff Analyzer						
16	Acti - diff	+	+	-	-	-
17	Cal-Chex H (calibrator)	+	+	-	-	-
18	Cal-Chex X (calibrator)	+	+	-	-	-
19	Clot Filter	+	+	-	-	-
20	Eo-Diff	+	+	-	-	-
21	Hemoref	+	+	-	-	-
22	Isoflux	+	+	-	-	-
23	Para 5x (Tri-Level, 5-part control)	+	+	-	-	-

HAEMATOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
24	Transflux	+	+	-	-	-
MS4 Blood cell counter						
25	Isoflux for MS4 Blood cell counter	-	-	+	-	-
26	Transflux for MS4 Blood cell counter	-	-	+	-	-
27	Actidiff for MS4 Blood cell counter	-	-	+	-	-
Sysmex KX - 21 Analyzer						
28	Cell Clean	-	+	+	-	-
29	Cell Pack	-	+	+	-	-
30	Eight Check, 3WP, Low, Normal and High Control	-	+	+	-	-
31	Printer paper roll	-	+	+	-	-
32	Stromatolyzer - WH	-	+	+	-	-
General Consumables/ Reagents						
33	Blood Collection Set 0.5x20mmx127mm (25Gx0.75INx5IN)	+	-	-	-	-
34	Brilliant Cresyl Blue	+	+	+	+	-
35	Coagulation capillary tube (Her- parnised)	+	+	+	+	-
36	Coagulation capillary tube (Non-Her- parnised)	+	+	+	+	-
37	di-Sodium hydrogen phosphate anhy- drous	+	+	+		-
38	Drabkin haemoglobin sol. With std.	+	+	+	+	-
39	EDTA Dipotassium salt	+	+	+	+	-
40	Esrite pipettes	+	+	+	+	-
41	Esrite vials with cap (Sample filling)	+	+	+	+	-
42	G6PD Kit	+	-	-	-	-
43	Giemsa stain	+	+	+	+	-
44	Glass beads	+	+	+	-	-
45	Haemocytometer	+	+	+	+	-
46	Haemocytometer cover glass	+	+	+	+	-

HAEMATOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
47	Leishman stain powder	+	+	+	+	-
48	Methanol GR	+	+	+	+	-
49	New Escribe kits with 5 Escribe pipettes	+	+	+	+	-
50	Periodic Acid-Schiff (PAS)	+	-	-	-	-
51	Peroxidase (Myeloperoxidase), Leukocyte kit	+	-	-	-	-
52	Potassium Cyanide	-	-	-	-	-
53	Potassium ferrocyanide	+	+	-	-	-
54	Sahli Hemoglobinometer Rectangular type	+	+	+	+	+
55	Simplex II-R with dual retractable blades	+	+	+	+	-
56	Sodium Metabisulphate	+	-	-	-	-
57	Sudan Black B staining system	+	-	-	-	-
58	Tri-sodium citrate	+	+	+	+	-
59	Vacutainer Brand Precisionglide needle 21Gx1"	+	+	+	-	-
60	Vacutainer needle holder	+	+	+	-	-
61	Vacutainer Tubes, coated K2 EDTA 5.4mg 3ml	+	+	+	-	-
62	Wintrobe Tube	+	+		-	-
63	Differential leukocyte counter	-	-	+	+	-

HAEMATOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
General CONSUMMABLES						
1	Cover glass 22mmx40mm	+	+	+	-	-
2	Cover glass 22mmx50mm	+	+	+	-	-
3	DPX Mountant	+	+	+	-	-
4	Ethanol Alcohol (99 - 100%) 500ml	-	-	+	+	+
5	Ethanol Alcohol (99 - 100%) 2.5lts	+	+	-	-	-
6	Haematoxylin Powder	+	+	-	-	-
7	Slide mailer (5 Slides)	+	+	+	+	+
8	Slide staining rack, SS. (wxdxh) 100x100x25mm, use with staining trough (accepts 76x26mm microscope slides)	+	+	+	-	-
9	Slide staining trough (wxdxh) 112x112x50mm	+	+	+	+	-
10	Slide tray of 20 slides	+	+	+	+	-
11	Sodium bi carbonate	+	+	+	+	-
12	Xylene (500ml)	-	-	+	+	-
13	Xylene (2.5lts)	+	+	-	-	-
CYTO CONSUMMABLES						
14	Disposable Filter Paper, 1ml for Cyto-centrifuge	+	+	-	-	-
15	EA - 36 or 50 (Papanicolaous solution) polychromatic solution	+	+	+	-	-
16	Harris Haematoxylin Papanicolaous solution 1a	+	+	+	-	-
17	Orange Green-6, Papanicolaous solution, 2b Orange II Solution (contains methanol)	+	+	+	-	-
18	Polyethylene glycol 200	+	+	+	-	-
19	Specimen Chamber (1ml) for Cyto-centrifuge	+	+	-	-	-
20	Specimen Chamber cap (1ml) for Cyto-centrifuge	+	+	-	-	-

HAEMATOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
21	Specimen Chamber holder (1ml) for Cytocentrifuge	+	+	-	-	-
HISTO CONSUMMABLES						
22	Alcian blue powder	+	+	-	-	-
23	Aluminium Chloride Crystal	+	+	-	-	-
24	Aluminium Potassium Sulphate	+	+	-	-	-
25	Ammonical silver powder	+	+	-	-	-
26	Aniline blue powder	+	+	-	-	-
27	Base mold SS, (reuseable), Size - 25Wx32Dx6Hmm	+	+	-	-	-
28	Base mold SS, (reuseable), Size - 25Wx38Dx6Hmm	+	+	-	-	-
29	Base mold SS, (reuseable), Size - 25Wx32Dx13Hmm	+	+	-	-	-
30	Base mold SS, (reuseable), Size - 25Wx38Dx13Hmm	+	+	-	-	-
31	Borax powder	+	+	-	-	-
32	Carmin Powder	+	+	-	-	-
33	Chromic acid powder	+	+	-	-	-
34	Citric acid	+	+	-	-	-
35	Concentrated Nitric acid	+	+	-	-	-
36	Congo red powder	+	+	-	-	-
37	Di Sodium Hydrogen Orthophosphate	+	+	-	-	-
38	Sodium Di-hydrogenorthophosphate	+	+	-	-	-
39	Embedding Ring	+	+	-	-	-
40	Eosin Yellow Powder (water soluble)	+	+	-	-	-
41	Ferric Chloride crystal	+	+	-	-	-
42	Ferrocynide powder	+	+	-	-	-
43	Formaldehyde Solution 37-40%	+	+	+	-	-
44	Gold Chloride powder	+	+	-	-	-
45	Gold Nitrate powder	+	+	-	-	-
46	Iron alum powder	+	+	-	-	-

HAEMATOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
47	Light green powder	+	+	-	-	-
48	Liquid Paraffin	+	+	-	-	-
49	Lithium Carbonate powder	+	+	-	-	-
50	Magnesium Sulphate	+	+	+	-	-
51	Metanil yellow powder	+	+	-	-	-
52	Methenamine powder	+	+	-	-	-
53	Methyl violet	+	+	-	-	-
54	Microtome Blade S35, SS.	+	+	-	-	-
55	Naphthol powder	+	+	-	-	-
56	N-N-dimethyl formamide solution	+	+	-	-	-
57	N-N-dimethyl, m-phenylenediamine powder	+	+	-	-	-
58	N-N-dimethyl, p-phenylenediamine powder	+	+	-	-	-
59	Oxalic acid powder	+	+	-	-	-
60	Paraffin wax with Ceresin (Congealing or melting point 58 to 60degree C)	+	+	-	-	-
61	Pararosaniline (dye)	+	+	-	-	-
62	Periodic acid powder	+	+	-	-	-
63	Perspex box (museum Jar)	+	+	-	-	-
64	Phloxine powder	+	+	-	-	-
65	Phospho Tungstic acid Powder	+	+	-	-	-
66	Picric acid powder	+	+	-	-	-
67	Sample pack for tissue specimen	+	+	-	-	-
68	Schiff's reagent	+	+	-	-	-
69	Sodium barbital powder	+	+	-	-	-
70	Sodium Iodate	+	+	-	-	-
71	Sodium metabisulphite powder	+	+	-	-	-
72	Sudan IV powder (Black)	+	+	-	-	-
73	Tissue cassette	+	+	-	-	-
74	Tissue grossing knife (Razor)	+	+	-	-	-

HAEMATOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
75	Toludine blue powder	+	+	-	-	-
IMMUNOCHEMISTRY CONSUMMABLES						
76	Anti - bcl-2 (Oncoprot), Ready to use	+	+	-	-	-
77	Anti - Calretinin (Polyconal), Ready to use	+	+	-	-	-
78	Anti - CD 30 (ki -1Ag), Ready to use	+	+	-	-	-
79	Anti - CD20 (B cell), Ready to use	+	+	-	-	-
80	Anti - CD3 (T-Cell), Ready to use	+	+	-	-	-
81	Anti - CD34, Ready to use	+	+	-	-	-
82	Anti - CD45, cocktail, Ready to use	+	+	-	-	-
83	Anti - CEA (CEA 88), Ready to use	+	+	-	-	-
84	Anti - Chromogranin (LK2H10), Ready to use	+	+	-	-	-
85	Anti - Cytokeratin 20 (K 20.8), Ready to use	+	+	-	-	-
86	Anti - CytoKeratin, Pan (C11), Ready to use	+	+	-	-	-
87	Anti - Cytokrratin 7, (OV-TL12?30), Ready to use	+	+	-	-	-
88	Anti - EMA (E29), Ready to use	+	+	-	-	-
89	Anti - Melanoma (HMB45), Ready to use	+	+	-	-	-
90	Anti - PSA (Polyconal), Ready to use	+	+	-	-	-
91	Anti - S-100 Proten (15E2E2), Ready to use	+	+	-	-	-
92	Anti - TTF-1 (BGX-397A), Ready to use	+	+	-	-	-
93	Anti - Vimentin (Vg), Ready to use	+	+	-	-	-
94	InSite™ ER Antibody, Ready to use	+	+	-	-	-
95	InSite™ PR Antibody (PR88), Ready to use	+	+	-	-	-
96	Liquid Blocker super Pap pen	+	+	-	-	-

HAEMATOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
97	Poly-L-lysine (Slide coating)	+	+	-	-	-
98	Polymer HRP (DAB) Code no.QD400-60k sets	+	+	-	-	-
99	Special positively charged glass with frosted end	+	+	-	-	-

CLINICAL MICROBIOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
Culture Media						
1	Agarose	+	-	-	-	-
2	Alkaline peptone water	+	+	+	-	-
3	Bile esculin agar	+	+	+	-	-
4	Bismuth sulphate agar	+	+	+	-	-
5	Bolton broth	+	-	-	-	-
6	Brain heart infusion agar	+	+	-	-	-
7	Brain heart infusion broth	+	+	+	-	-
8	Cary-blair medium	+	+	+	-	-
9	Columbia blood agar base	+	+	+	-	-
10	Cooked meat medium	+	+	+	-	-
11	Corn meal agar	+	+	-	-	-
12	Dnase test agar with toluidine blue	+	+	-	-	-
13	Fluid thioglycollate medium	+	+	+	-	-
14	Fluorescence Denitrification agar	+	+	-	-	-
15	Gc agar base	+	+	+	-	-
16	Hippurate hydrolysis broth	+	+	+	-	-
17	Khons II tube medium No. 2	+	+	+	-	-
18	LB broth	+	-	-	-	-
19	Lowistein-Jensen medium	+	+	-	-	-
20	Lysin decarboxylase broth	+	+	+	-	-

CLINICAL MICROBIOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
21	MacConkey agar with CV & Bile salt	+	+	+	-	-
22	Malonate broth	+	+	+	-	-
23	Modified CCDA agar (500g)	+	-	-	-	-
24	MR-VP medium	+	+	+	-	-
25	Mueller hinton agar	+	+	+	-	-
26	Nitrate broth	+	+	+	-	-
27	Nutrient agar	+	+	+	-	-
28	Nutrient gelatin	+	+	+	-	-
29	OF Basal medium	+	+	-	-	-
30	Ornithine decarboxylase broth	+	+	+	-	-
31	Potato dextrose agar	+	+	-	-	-
32	Rice extract agar	+	+	-	-	-
33	Sabrouad dextrose agar	+	+	-	-	-
34	Selenite broth	+	+	+	-	-
35	SIM medium	+	+	+	-	-
36	Simmons citrate agar	+	+	+	-	-
37	Soyabean casein digest medium with sps	+	+	+	-	-
38	TCBS cholera medium	+	+	+	-	-
39	Triple sugar iron agar	+	+	+	-	-
40	Urea broth base	+	+	+	-	-
41	XLD agar	+	+	+	-	-
Growth Supplements						
42	Haemoglobin powder	+	+	+	-	-
43	Urea 40% solution	+	+	+	-	-
44	VCNT supplement	+	+	+	-	-
45	Vitamino growth supplement	+	+	+	-	-
46	Tween-20	+	+	-	-	-
47	Tween-80	+	+	-	-	-
Antibiotics Disc						
	Agumentin	+	+	+	-	-

CLINICAL MICROBIOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
48	Amikacin, (30mcg)	+	+	+	-	-
	Ampicillin, (10mcg)	+	+	+		
49	Amoxycillin, (10mcg)	+	+	+	-	-
50	Aztreonam (30 mcg)	+	+	+	-	-
51	Carbenicillin 100mcg	+	+	+	-	-
52	Cefoparazone (30 mcg)	+	+	+	-	-
53	Cefazolin 30mcg	+	+	+	-	-
54	Cefepime (30mcg)	+	+	+	-	-
55	Cefixime (5mcg)	+	+	+	-	-
56	Cefotaxime/Calvunalic acid (30/10 mcg)	+	+	+	-	-
57	Cefoxitin disc (10mcg)	+	+	+	-	-
58	Cefpirome (30 mcg)	+	+	+	-	-
59	Cefpodoxime - (30mcg)	+	+	+	-	-
60	Ceftazidime 30mcg	+	+	+	-	-
61	Ceftazidime/Calvunalic acid (30/10 mcg)	+	+	+	-	-
62	Ceftriaxone, 30mcg	+	+	+	-	-
63	Cefuroxime (30mcg)	+	+	+	-	-
64	Cephalexin, 30mcg	+	+	+	-	-
65	Cephotaxime, 30mcg	+	+	+	-	-
66	Chloramphenicol, 30mcg	+	+	+	-	-
67	Ciprofloxacin, 5mcg	+	+	+	-	-
68	Clarithromycin 15mcg	+	+	+	-	-
69	Cloxacillin, 5mcg	+	+	+	-	-
70	Cotri-moxazole, 25mcg	+	+	+	-	-
71	Doxycycline Hcl, 30mcg	+	+	+	-	-
72	Erythromycin, 15mcg	+	+	+	-	-
73	E-test Amikacin (NCCLS)	+	-	-	-	-
74	E-test Cefotaxime (NCCLS)	+	-	-	-	-
75	E-test Ceftriaxone (NCCLS)	+	-	-	-	-
76	E-test Ciprofloxacin (NCCLS)	+	-	-	-	-

CLINICAL MICROBIOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
77	E-test Erythromycin (NCCLS)	+	-	-	-	-
78	E-test Gentamicin (NCCLS)	+	-	-	-	-
79	E-test Norfloxacin (NCCLS)	+	-	-	-	-
80	E-test Penicillin (NCCLS)	+	-	-	-	-
81	E-test Polymixin B 50mcg	+	-	-	-	-
82	Gentamicin, 10mcg	+	+	+	-	-
83	Imipenem (30mcg)	+	+	+	-	-
84	Methicillin, 5mcg	+	+	+	-	-
85	Nalidixic acid, 10mcg	+	+	+	-	-
86	Nitrofurantion, 300mcg	+	+	+	-	-
87	Norfloxacin, 10mcg	+	+	+	-	-
88	Novobiocin Disc (5mcg)	+	+	+	-	-
89	Ofloxacin 5mcg	+	+	+	-	-
90						
91	Penicillin G, 10units	+	+	+	-	-
92	Pipracillin, 100mcg	+	+	+	-	-
93	Polymixin B 50mcg	+	+	+	-	-
94	Spectinomycin 10mcg	+	+	+	-	-
95	Tetracycline, 30mcg	+	+	+	-	-
96	Tobramycin, 10mcg	+	+	+	-	-
97	Vancomycin, 30mcg	+	+	+	-	-
Antibiotic Powder						
98	Amikacin	+	-	-	-	-
99	Amoxicillin	+	-	-	-	-
100	Ampicillin	+	-	-	-	-
101	Ceftazidime	+	-	-	-	-
102	Ceftriaxone	+	-	-	-	-
103	Ciprofloxacin	+	-	-	-	-
104	Gentamicin	+	-	-	-	-
105	Imipenem	+	-	-	-	-
106	Vancomycin	+	-	-	-	-

CLINICAL MICROBIOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
107	Di-hydro Streptomycin sulphate	+	-	-	-	-
108	Ethambutol	+	-	-	-	-
109	Isonicotinic acid (Isoniazid)	+	-	-	-	-
110	Pyrazinamide	+	-	-	-	-
111	Rifampin	+	-	-	-	-
Identification disc						
112	Bacitracin disc	+	+	+	-	-
113	Optochin disc	+	+	+	-	-
114	Oxidase disc	+	+	+	-	-
115	Touch stick beta - lactamase	+	+	+	-	-
116	V Factor disc	+	+	+	-	-
117	X factor disc	+	+	+	-	-
118	X+V Factor disc	+	+	+	-	-
Stains & Chemicals						
119	Acetone, ExcelsaR	+	+	+	+	-
120	Aerosept	+	+	+	-	-
121	Alberts stain A	+	+	+	-	-
122	Alberts stain B	+	+	+	-	-
123	Alonox alcohol hand rub	+	+	+	-	-
124	Amy alcohol	+	+	+	-	-
125	Anaerobic gas generating kit	+	-	-	-	-
126	Anaerobic indicator	+	-	-	-	-
127	Aniline	+	+	-	-	-
128	Asparagin	+	+	-	-	-
129	Auramine	+	+	-	-	-
130	Basic fuchsin	+	+	-	-	-
131	Crystal violet	+	+	+	+	-
132	Cynogen bromide	+	-	-	-	-
133	Di-sodium phosphate	+	+	-	-	-
134	Ethidium Bromide	+	-	-	-	-
135	Glycerol (reagent grade)	+	+	-	-	-

CLINICAL MICROBIOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
136	Grams crystal violet solution	+	+	+	+	-
137	Grams iodine solution	+	+	+	+	-
	Iodine crystal	+	+	+	+	-
138	Di-hydro Streptomycin sulphate	+	-	-	-	-
139	Ethambutol	+	-	-	-	-
140	Isonicotinic acid (Isoniazid)	+	-	-	-	-
141	Labsafe for decontaminating labwares	+	+	+	+	-
142	Lactophenol cotton blue	+	+	-	-	-
143	Melachite green	+	+	-	-	-
144	Methylene blue powder	+	+	+	+	-
145	Microlyse	+	+	-	-	-
146	Monopotassium phosphate	+	+	-	-	-
147	N-Acetyl-l-cysteine	+	+	-	-	-
148	N-naphthylethylenediamine dihydrochloride	+	+	-	-	-
149	Phenol	+	+	+	+	-
150	Potassium Iodate	+	+	+	+	-
151	Potassium permanganate	+	+	-	-	-
152	Potassium tellurite, extra pure	+	+	-	-	-
153	Safranin powder	+	+	+	+	-
154	Safranin, 0.5% solution	+	+	+	+	-
155	Sodium Nitrate	+	+	-	-	-
156	Spore strips	+	+	+	-	-
157	Sulfanilamide	+	+	-	-	-
Plastic wares/ Other						
158	Magnetic follower set	+	+	-	-	-
159	Gas Regulator for Co ₂	+	+	-	-	-
160	Gas Regulator for mix Gas cylinder	+	-	-	-	-
161	Antibiotic Zone Scale TM-C	+	+	+	-	-
162	Test tube caps 12/13mm - blue	+	+	+	-	-

CLINICAL MICROBIOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
163	Test tube caps 12/13mm - silver	+	+	+	-	-
164	Test tube caps 12/13mm - red	+	+	+	-	-
165	Test tube caps 15/16mm - silver	+	+	+	-	-
166	Bottle w/pouring ring & screw cap (Max. temp. 140°C) 1000ml	+	+	-	-	-
167	Bottle w/pouring ring & screw cap (Max. temp. 140°C) 500ml	+	+	-	-	-
168	Conical Tubes (Falcon), 15ml	+	+	-	-	-
169	Conical Tubes (Falcon), 50ml	+	+	-	-	-
170	Cryovials (2ml)	+	+	-	-	-
171	McCartney vial w/alluminium caps w/black rubber seals 14 ml	+	+	-	-	-
172	Membrane filter 0.45µm pore size	+	+	-	-	-
173	Meta loop TM. CH, changeable	+	+	+	+	
174	Micropipette tips: 0.1 - 10 µl, 34 mm	+	-	-	-	-
175	Micropipette tips: 0.1 - 20 µl, 40 mm	+	-	-	-	-
176	Micropipette tips: 0.5 - 20 µl, 46 mm	+	-	-	-	-
177	Nichrome loop-D-4	+	+	+	+	
178	Petri plates sterile 90mm diameter divided	+	+	-	-	-
179	Petri plates sterile 90mm diameter.	+	+	+	-	-
180	Staining boxes, polypropylene/polymethylpentene with cover. Temperature resistance from -70°C - +70°C with good chemical resistance to acids	+	-	-	-	-
181	Stand for test tubes 13mm	+	+	-	-	-
182	Stand for test tubes 16mm	+	+	-	-	-

CLINICAL MICROBIOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
183	Sterile disposable pipette, 5ml	+	+	-	-	-
184	Sterile swab, general purpose with screw cap	+	+	+	+	-
185	Sterile swab with wooden stick	+	+	+	-	-
186	Sterile, clinicol	+	+	+	+	-
187	Sterile, single use filter unit 0.20 μ m	+	-	-	-	-
188	Sterile, uricol	+	+	+	+	+
189	Tips rack, reusable & autoclavable for tips 0.1 - 10 μ l, 34 mm	+	-	-	-	-
190	Tips rack, reusable & autoclavable for tips: 0.1 - 20 μ l, 40 mm	+	-	-	-	-
191	Tips rack, reusable & autoclavable for tips: 0.5 - 20 μ l, 46 mm	+	-	-	-	-
192	Tube racks, 24 place capacity for 0.5 ml	+	-	-	-	-
193	Tube racks, 24 place capacity for 1.5/2.0 ml	+	-	-	-	-
194	Tube, safe lock for PCR, 0.5 ml	+	-	-	-	-
195	Tube, safe lock for PCR, 1.5 ml	+	-	-	-	-
196	Tube, safe lock for PCR, 2.0 ml	+	-	-	-	-
197	Transparent autoclavable plastic bag (1 ltr)	+	-	-	-	-
198	Transparent autoclavable plastic bag (5 ltr)					
Glasswares						
199	Aspirator bottle, Polythene bottle with tubulation, Capacity: 20litres	+	+	+	+	-
200	Burner, Bunsen (ordinary) for LPG	+	+	+	+	-
201	Gel Electrophoresis Chamber Set	+				-
202	Glass slide with single cavity	+	+	+	+	-

CLINICAL MICROBIOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
203	Mix gas (5 % oxygen 15% Co2 85% Nitrogen) with regulator	+	-	-	-	-
204	PCR Gel casting & running tray, with combs	+	-	-	-	-
205	Petri plate Rack	+	+	+	-	-
206	Slide, slope-rack	+	+	+	-	-
207	Slope rack	+	+	+	-	-
208	Test tube with screw cap (13x100mm)	+	+	-	-	-
209	Test tube with screw cap (16x125mm)	+	+	-	-	-
210	UV face shield	+	-	-	-	-
211	UV transparent Gel scoops for 10 x 7cm	+	-	-	-	-
212	UV transparent Gel scoops for 13 x 13cm	+	-	-	-	-
Test kit						
213	API 20 C	+	-	-	-	-
214	API 20 strept	+	+	-	-	-
215	API 20A	+	-	-	-	-
216	API 20E	+	+	-	-	-
217	API 20E reagent kit	+	+	-	-	-
218	API BCP	+	-	-	-	-
219	API Campy	+	-	-	-	-
220	API Coryne	+	+	-	-	-
221	API Rapid ID 32 E	+	+	-	-	-
222	API Rapid ID 32 Strep	+	+	-	-	-
223	API Rapid ID 32 A	+	+	-	-	-
224	API Rapid ID 32 C	+	+	-	-	-
225	API ID 32 GN	+	+	-	-	-
226	API HER	+	-	-	-	-
227	API NH	+	+	-	-	-

CLINICAL MICROBIOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
228	API Xylene	+	-	-	-	-
229	Bacterial antigen kit	+	+	+	-	-
230	Helicobacter pylori kit	+	-	-	-	-
231	Mineral oil	+	+	+	-	-
232	Molecular genetic assay kit for identification of clinical relevant mycobacterium species from cultured material .	+	-	-	-	-
233	Molecular genetic assay kit for identification of Mycobacterium tuberculosis complex and 4 clinical relevant mycobacterium species from patients specimens.	+	-	-	-	-
234	Molecular genetic assay kit for identification of resistance to Rifampicin/Isoniazid of Mycobacterium tuberculosis.	+	-	-	-	-
235	NIN	+	-	-	-	-
236	PYZ	+	-	-	-	-
237	Rota-Virus, latex test kit	+	-	-	-	-
238	Streptex	+	+	+	-	-
239	VP A	+	-	-	-	-
240	VP B	+	-	-	-	-
241	ZYM A	+	+	-	-	-
242	ZYM B	+	+	-	-	-
243	DNA extraction kit (bacterial & Yeast)	+	-	-	-	-
244	dNTP	+	-	-	-	-
245	Magnesium Chloride	+	-	-	-	-
246	PCR primer sequence - 1 (Reverse & Forward)	+	-	-	-	-
247	PCR primer sequence - 2 (Reverse & Forward)	+	-	-	-	-

CLINICAL MICROBIOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
248	PCR primer sequence - 3 (Reverse & Forward)	+	-	-	-	-
249	RNA extraction kit	+	-	-	-	-
250	Plasmid extraction kit	+	-	-	-	-
251	TAE buffer (10x)	+	-	-	-	-
252	Taq buffer	+	-	-	-	-
253	Taq polymerase	+	-	-	-	-
254	TBE buffer (10x)	+	-	-	-	-
Anti Sera						
255	Escherichia coli Agglutinating Sera poly 2	+	-	-	-	-
256	Escherichia coli Agglutinating Sera poly 2 - 3	+	-	-	-	-
257	Escherichia coli Agglutinating Sera poly 2 - 4	+	-	-	-	-
258	Escherichia coli type 0111:K58(B4)	+	-	-	-	-
259	Escherichia coli type 0112:K66(B11)	+	-	-	-	-
260	Escherichia coli type 0114:K90(B)	+	-	-	-	-
261	Escherichia coli type 0119:K69(B14)	+	-	-	-	-
262	Escherichia coli type 0124:K72(B17)	+	-	-	-	-
263	Escherichia coli type 0125:K70(B15)	+	-	-	-	-
264	Escherichia coli type 0126:K71(B16)	+	-	-	-	-
265	Escherichia coli type 0127:K63(B8)	+	-	-	-	-
266	Escherichia coli type 0128:K67(B12)	+	-	-	-	-

CLINICAL MICROBIOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
267	Escherichia coli type 0142:K86(B)	+	-	-	-	-
268	Escherichia coli type 018C:K77(B21)	+	-	-	-	-
269	Escherichia coli type 026:K60(B6)	+	-	-	-	-
270	Escherichia coli type 044:K74(L)	+	-	-	-	-
271	Escherichia coli type 055:K59(B5)	+	-	-	-	-
272	Escherichia coli type 086:K61(B7)	+	-	-	-	-
273	Salmonella Agglutinating Sera phase 2	+	+	-	-	-
274	Salmonella Agglutinating Sera polyvalent H, phase 1 & 2	+	+	-	-	-
275	Salmonella Agglutinating Sera (1,2 - H)	+	+	-	-	-
276	Salmonella Agglutinating Sera (1,5 - H)	+	+	-	-	-
277	Salmonella Agglutinating Sera (1,7 - H)	+	+	-	-	-
278	Salmonella Agglutinating Sera (a - H)	+	+	-	-	-
279	Salmonella Agglutinating Sera (b - H)	+	+	-	-	-
280	Salmonella Agglutinating Sera (c - H)	+	+	-	-	-
281	Salmonella Agglutinating Sera (d - H)	+	+	-	-	-
282	Salmonella Agglutinating Sera (e, n, z 15 - H)	+	+	-	-	-
283	Salmonella Agglutinating Sera (eh - H)	+	+	-	-	-

CLINICAL MICROBIOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
284	Salmonella Agglutinating Sera (fg - H)	+	+	-	-	-
285	Salmonella Agglutinating Sera (gm - H)	+	+	-	-	-
286	Salmonella Agglutinating Sera (i - H)	+	+	-	-	-
287	Salmonella Agglutinating Sera (iv - H)	+	+	-	-	-
288	Salmonella Agglutinating Sera (k - H)	+	+	-	-	-
289	Salmonella Agglutinating Sera (mt - H)	+	+	-	-	-
290	Salmonella Agglutinating Sera (r - H)	+	+	-	-	-
291	Salmonella Agglutinating Sera polyvalent O, Groups A - G	+	+	-	-	-
292	Salmonella Agglutinating Sera (2-0)	+	+	-	-	-
293	Salmonella Agglutinating Sera (4-0)	+	+	-	-	-
294	Salmonella Agglutinating Sera (6, 7-0)	+	+	-	-	-
295	Salmonella Agglutinating Sera (8-0)	+	+	-	-	-
296	Salmonella Agglutinating Sera (9-0)	+	+	-	-	-
297	Salmonella Agglutinating Sera polyvalent O (Vi)	+	+	-	-	-
298	Shigella Flexneri polyvalent 1 - 6, X & Y	+	+	-	-	-
299	Shigella Sonnei phases 1 & 2	+	+	-	-	-
300	Shigella Agglutinating Sera dys- entry Polyvalent 1-10	+	+	-	-	-

CLINICAL MICROBIOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
301	Shigella Boydii polyvalent 1 (1 - 6)	+	+	-	-	-
302	Shigella Boydii polyvalent 2 (7-11)	+	+	-	-	-
303	Shigella Boydii polyvalent 3 (12-15)	+	+	-	-	-
304	Vibrio cholera polyvalent O-1	+	+	-	-	-
305	Vibrio cholera polyvalent Inaba	+	+	-	-	-
306	Vibrio cholera polyvalent Ogawa	+	+	-	-	-
Equipment specific Reagents						
307	FA (Fan Aerobic) for Bact/Alert 3D	+	-	-	-	-
308	PF (Pediatric Fan) for Bact/Alert 3D	+	-	-	-	-
309	FA (Fan Aerobic) for BD 9050	-	+	-	-	-
310	PF (Pediatric Fan) for BD 9050	-	+	-	-	-
311	Reflectance Standards for Bact/Alert system (A & B)	+	-	-	-	-
Control strains						
312	Enterobacter aerogenes	+	-	-	-	-
313	Enterococcus faecalis	+	-	-	-	-
314	Enterococcus faecium	+	-	-	-	-
315	Escherichia coli	+	+	+	-	-
316	Haemophilus influenzae	+	-	-	-	-
317	Haemophilus parainfluenzae	+	-	-	-	-
318	M.fortutum	+	+	-	-	-
319	Mycobacterium HR37	+	-	-	-	-
320	Mycobacterium HR37	+	-	-	-	-
321	Neisseria gonorrhoeae	+	+	-	-	-
322	Pseudomonas aeruginosa	+	+	+	-	-
323	Shigella boydii	+	-	-	-	-
324	Shigella dysenteriae	+	-	-	-	-

CLINICAL MICROBIOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
325	Shigella flexneri	+	-	-	-	-
326	Shigella sonnei	+	-	-	-	-
327	Staphylococcus aureus	+	+	+	-	-
Equipment Specific						
328	Ethambutol (EMB) for BD-MGIT 960	+	-	-	-	-
329	Ethambutol 7.5 Kit for BD-MGIT 960	+	-	-	-	-
330	Isoniazid (INH) for BD-MGIT 960	+	-	-	-	-
331	Isoniazid 0.4 Kit for BD-MGIT 960	+	-	-	-	-
332	NALC-NaOH (for digestion/decontamination) for BD-MGIT 960	+	-	-	-	-
333	Pyrazinamide (PZA) for BD-MGIT 960	+	-	-	-	-
334	Pyrazinamide (PZA) kit for BD-MGIT 960	+	-	-	-	-
335	Pyrazinamide (PZA) medium for BD-MGIT 960	+	-	-	-	-
336	Rifampin (RIF) for BD-MGIT 960	+	-	-	-	-
337	SIRE Kit for BD-MGIT 960	+	-	-	-	-
338	Streptomycin (STR) for BD-MGIT 960	+	-	-	-	-
339	Streptomycin 4.0 Kit for BD-MGIT 960	+	-	-	-	-
340	Supplement Kit for BD-MGIT 960	+	-	-	-	-
Infectious Disease Serology Reagent						
341	Anti-HBc for Vitrous ECIQ System	+	-	-	-	-

CLINICAL MICROBIOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
342	Anti-HBs for Vitrous ECIQ System	+	-	-	-	-
343	Anti-HCV for Vitrous ECIQ System	+	-	-	-	-
344	Anti-HIV for Vitrous ECIQ System	+	-	-	-	-
345	CMV IgG for Vitrous ECIQ System	+	-	-	-	-
346	CMV IgM for Vitrous ECIQ System	+	-	-	-	-
347	HBeAg for Vitrous ECIQ System	+	-	-	-	-
348	HBsAg for Vitrous ECIQ System	+	-	-	-	-
349	Rubella IgG for Vitrous ECIQ System	+	-	-	-	-
350	Rubella IgM	+	-	-	-	-
351	Toxo IgM	+	-	-	-	-
352	Toxo Plasma IgG	+	-	-	-	-
353	Anti HBC	+	-	-	-	-
354	Anti HBs calibrator	+	-	-	-	-
355	Anti HIV calibrator	+	-	-	-	-
356	CMV IgG	+	-	-	-	-
357	CMV IgM	+	-	-	-	-
358	HBe IgM calibrator	+	-	-	-	-
359	HBe calibrator	+	-	-	-	-
360	HBeAg calibrator	+	-	-	-	-
361	HBsAg calibrator	+	-	-	-	-
362	HCV calibrator	+	-	-	-	-
363	Rubella IgG	+	-	-	-	-
364	Rubella IgM	+	-	-	-	-
365	Toxo IgM	+	-	-	-	-
366	Toxo Plasma IgG	+	-	-	-	-
367	Anti - HBC IgM Controls	+	-	-	-	-

CLINICAL MICROBIOLOGY STANDARDS: CONSUMMABLES

S/No	Particular Specification	NRH	RRH	DH	BHU I	BHU II
368	Anti HBe Controls	+	-	-	-	-
369	Anti HBs Controls	+	-	-	-	-
370	Anti HIV Controls	+	-	-	-	-
371	HBsAg Controls	+	-	-	-	-
372	HCV Controls	+	-	-	-	-
373	HBc IgM	+	-	-	-	-
374	HBe	+	-	-	-	-
Rapid test						
375	HBsAg Rapid Test Kit	+	+	+	+	-
376	HCV Rapid Test Kit	+	+	+	+	-
377	HIV Rapid Test Kit	+	+	+	+	-
378	RPR Rapid Test Kit	+	+	+	+	-
379	TPHA Rapid Test Kit	+	+	+	+	-
380	HIV, ELISA	+	+	-	-	-
381	HBsAg ELISA	+	+	-	-	-
382	HCV ELISA	+	+	-	-	-
383	RF (Rapid Test)	+	+	+	+	-
384	CRP (Rapid Test)	+	+	+	+	-
385	ASO (Rapid Test)	+	+	+	+	-
386	Rapid malaria test (ICT)	+	+	+	+	-
387	Infectious mononucleosis 50test	+	+	-	-	-
388	Typhokit (widal slide test)	+	+	+	+	-
389	Tuberculin PPD (dil) 5TU/0.1ml	+	+	+	+	-
390	Flash Disc Bact Alert Blood culture system	+	-	-	-	-
391	CPU Board for Bact Alert Blood culture system	+	-	-	-	-

HUMAN RESOURCE REQUIREMENT FOR CLINICAL LABORATORY SERVICES

Sl. No	Post	PCS Level	Existing	Reqd.	Additional required	Qualifications
JIGME DORJI WANGCHHUK NATIONAL REFERRAL HOSPITAL, THIMPHU						
DEPARTMENT OF PATHOLOGY AND LABORATORY MEDICINE, JDW/NRH						
1	Head of Department		1	1	0	Masters in Pathology & Microbiology + 5 yrs experience in CLS
2	Laboratory Supervisor		0	1	1	Graduate/Diploma in any CLS + 5 years of experience in CLS
3	Teaching Coordinator		0	1	1	Graduate/Diploma in any CLS + 3 years of experience in MLT teaching
4	Laboratory Quality Manager		0	1	1	Graduate/Diploma in CLS + 5 yrs experience in CLS
5	Laboratory Information System Manager		0	1	1	Diploma in CLS with knowledge in LIS/statistics
6	Lab Supplies coordinator		0	1	1	Graduate/Diploma in CLS + 5 yrs experience in lab supplies
	<i>Comment:</i> The above positions will be held by existing officials as additional responsibility in addition to their technical responsibility.					
1. CLINICAL CHEMISTRY						
1	Biochemist		0	1	1	Master in Clinical Chemistry

HUMAN RESOURCE REQUIREMENT FOR CLINICAL LABORATORY SERVICES

Sl. No	Post	PCS Level	Existing	Reqd.	Additional required	Qualifications
2	Medical Technologist, Biochemistry		1	2	1	B. Sc MLT/ PG diploma in Clinical chemistry
3	MLT, Biochemistry		1	2	1	Diploma in Clinical chemistry
4	MLT		5	10	5	RIHS graduates with/without certificates in clinical chemistry
			7	15	8	
2. IMMUNOLOGY						
1	Immunologist		0	1	1	Masters in Immunology
2	Medical Technologist, Immunology		0	1	1	B.Sc MLT/PG diploma in immunology
3	MLT, Immunology		0	1	1	Diploma in immunology
4	MLT		1	2	1	RIHS graduates with/without cert in immunology
			1	5	4	
3. CLINICAL MICROBIOLOGY						
1	Microbiologist		1	2	1	Masters in Microbiology
2	Medical Technologist, Microbiology		0	2	2	B.Sc MLT /PG diploma in Microbiology

HUMAN RESOURCE REQUIREMENT FOR CLINICAL LABORATORY SERVICES

Sl. No	Post	PCS Level	Existing	Reqd.	Additional required	Qualifications
3	Infection Control Officer		0	1	1	PG/ Diploma in Infectious diseases
4	MLT, Mycology		0	1	1	Diploma in Mycology
5	MLT, Parasitology		0	1	1	Diploma in Parasitology
6	MLT, Virology		0	1	1	Diploma in Virology
7	MLT, Serology		0	1	1	Diploma in Serology/imunology
8	MLT, Bacteriology		1	1	0	Diploma in Bacteriology
9	Microbiologist, Molecular lab		1	1	0	M.Sc Microbiology
10	MLT, Mycobacteriology		0	1	1	Diploma in Mycobacteriology
11	MLT		5	10	5	RIHS Graduates with/without certificates in microbiology
			8	22	14	
4. CLINICAL HAEMATOLOGY						
1	Haematopathologist		0	1	1	Pathologist with 1 yr fellowship in hematopathology
2	Medical Technologist		0	1	1	B.Sc MLT/ PG Diploma in haematology
3	MLT, Haematology		1	2	1	Diploma in Clinical Haematology

HUMAN RESOURCE REQUIREMENT FOR CLINICAL LABORATORY SERVICES

Sl. No	Post	PCS Level	Existing	Reqd.	Additional required	Qualifications
4	MLT		4	6	2	RIHS Graduate with cert in flow-cytometry, hematotechniques
			5	10	5	
5. ANATOMIC PATHOLOGY						
	a. HISTOPATHOLOGY					
	Pathologist		1	2	1	Masters in Pathology and Microbiology
1	Onco-pathologist		0	1	1	Pathologist with fellowship in oncopathology (one of the above pathologists)
2	Medical Technologist, Histology		0	1	1	B.Sc MLT/PG Diploma in Histo-technology
3	MLT, Histo-technology		0	2	2	Diploma in histo-technology
4	Pathology Museum Curators		0	1	1	Class XII, trained in museum curatorship
5	MLT		2	3	1	RIHS Graduate with cert in histo-technology & immunochemistry
			2	8	6	

HUMAN RESOURCE REQUIREMENT FOR CLINICAL LABORATORY SERVICES

Sl. No	Post	PCS Level	Existing	Reqd.	Additional required	Qualifications
	b. CYTOPATHOLOGY					
1	Cytopathologist		1	1	0	Pathologist with fellowship in cytopathology
2	Cyto Technologist		0	2	2	CMIAC/CFIAC/ PG Diploma in Diagnostic Cytology
3	MLT, Cyto-technicians		4	4	0	Diploma in cytology
4	MLT		0	2	2	RIHS Graduate with/without cert in immunocytochemistry
			5	9	4	
6. BLOOD BANK						
1	Blood Bank Officer		1	2	1	MD/ Diploma in Ttransfusion Medicine
2	Medical Technologist, Blood Bank		0	1	1	B. Sc, MLT
3	MLT, Blood Bank		1	2	1	Diploma in Blood Banking
4	MLT		5	10	5	RIHS Graduate with/without cert in blood banking
5	Donor recruitment Personnel		0	1	1	Certificate in donor management
			7	16	9	

HUMAN RESOURCE REQUIREMENT FOR CLINICAL LABORATORY SERVICES

Sl. No	Post	PCS Level	Existing	Reqd.	Additional required	Qualifications
	Note: JD-WNRH Lab requires a total of 84 Technical staff as against the existing 38					
GENERAL SUPPORT STAFF REQUIRED AT NRH						
1	Lab Assistant		4	19	15	Class X
2	Sweepers		2	4	2	
3	Receptionist (Donor registration)		0	2	2	Class X
4	Receptionist (Sample collection and report despatch)		1	3	2	
5	Lab statistician		0	1	1	
6	Peon		0	1	1	
7						
			7	30	23	
HRD REQUIREMENT FOR REGIONAL REFERRAL HOSPITAL (MONGAR & GELEPHU)						
1	Pathologist		1	2	1	Masters in Pathology & Microbiology

**HUMAN RESOURCE REQUIREMENT FOR CLINICAL
LABORATORY SERVICES**

Sl. No	Post	PCS Level	Existing	Reqd.	Additional required	Qualifications
2	Blood bank officer		0	2	0	MD Transfusion Medicine /Diploma Transfusion Medicine
3	Biochemist		0	2	0	Masters in Clinical Chemistry/PG Diploma in Clinical chemistry
4	Microbiologist		0	2	0	Masters/PG Diploma in Microbiology
5	Lab Technologist		2	4	2	B. Sc MLT
6	MLT Microbiology		2	4	2	Diploma Microbiology
7	MLT Blood Banking		0	2	2	Diploma in blood banking
8	Cytotechnician		2	4	2	Diploma in diagnostic cytology
9	Haematology Technician		0	2	2	Diploma in haematology
10	MLT Biochemistry		0	2	2	Diploma Biochemistry
11	Cytotechnologist		0	2	2	CFIAC/CMIAC/PG Diploma
	Histopathology		0	2	2	Diploma in histotechnology
12	General Lab Technician		17	30	13	RIHS recruit with/without additional cert level trainings
			24	60	30	

**HUMAN RESOURCE REQUIREMENT FOR CLINICAL
LABORATORY SERVICES**

Sl. No	Post	PCS Level	Existing	Reqd.	Additional required	Qualifications
	Support Staff for 2 RRHs					
13	Lab Assistant		2	10	8	Class XII
14	Sweepers		0	4	4	
15	Office secretary		0	2	2	
			2	16	14	
DISTRICT HOSPITALS (40 - 60 Bedded) Paro, P/Ling, Samtse, Punakha, Damphu, Yebilaptsa, T/gang, S/Jongkhar						
Sl	Post		Existing	Reqd.	Additional	Qualifications
1	Lab Technologist		0	8	8	B. Sc MLT/PG Diploma
2	MLT Microbiology		0	8	8	Diploma/certificate in Microbiology
3	MLT Blood Banking		0	8	8	Diploma/certificate in blood banking
4	Cytotechnician		5	8	3	Diploma/certificate in diagnostic cytology
5	Haematology Technician		0	8	8	Diploma/certificate in haematology
6	MLT Biochemistry		0	8	8	Diploma/certificate Biochemistry
7	General Lab Technician		22	32	10	RIHS graduates

HUMAN RESOURCE REQUIREMENT FOR CLINICAL LABORATORY SERVICES

Sl. No	Post	PCS Level	Existing	Reqd.	Additional required	Qualifications
			27	80	53	
	Support Staff					
12	Lab Assistant		0	8	8	Class XII
13	Sweepers		0	8	8	
			0	16	16	
9. DISTRICT HOSPITAL (20 bedded)						
Sl	Post		Existing	Reqd.	Additional required	Qualifications
1	Lab Technologist		0	19	19	BSc MLT/PG Diploma/Sr MLT
2	General Lab Technician		22	38	16	RIHS graduates
			22	57	35	
	BHU-I (10 Bedded)					
Sl	Post		Existing	Reqd.	Additional required	Qualifications
1	General Lab Technician		18	36	18	RIHS graduates
National Health Laboratory Services, MoH (Formation proposal at MoH)						

HUMAN RESOURCE REQUIREMENT FOR CLINICAL LABORATORY SERVICES

Sl. No	Post	PCS Level	Existing	Reqd.	Additional required	Qualifications
1	Chief Program Officer			1		Masters/Graduate in any clinical laboratory science (CLS)
2	Laboratory Quality Assurance Coordinator			1		Graduate in any CLS
3	Lab Supplies coordinator			1		Diploma in any CLS
4	Teaching and Training coordinator			1		Graduate in any CLS
5	Support staffs			6		Office assistants, sweepers, receptionists, drivers

OVERALL HR PROJECTION

1	Total Technical staff required	316
2	Total Existing	128
3	Additional required	188

Abbreviations

AFB	Acid fast bacilli
TB	Tuberculosis
CSF	Cerebrospinal fluid
ELISA	Enzyme linked immunosorbent assay
ASO	Antistreptolysin O
RF	Rheumatic factor
CRP	C-reactive protein
KOH	Potassium hydroxide
HIV	Human Immunodeficiency virus
HBsAg	Hepatitis B surface antigen
HCV	Hepatitis C virus
RT-PCR reaction	Real time/Reverse transcriptase - Polymerase Chain
CD	Cluster of differentiation
HCV	Hepatitis C virus
ICT	Immuno-chromatography
CMV	Cytomegalo virus
R/S	Reagent strip
C/I	Culture & identification
TORCH	Toxoplasma, Rubella, and cytomegalovirus
RPR	Rapid plasma reagin
TPHA	Treponema pallidum haemagglutination
HbA1C	Haemoglobin A1C
BUN	Blood urea nitrogen
ALT (SGPT)	Alanine aminotransferase
AST (SGOT)	Aspartate aminotransferase
GGT	(gamma) Glutamyl transpeptidase
HDL	High density lipoprotein
LDL	Low density lipoprotein
CPK	Creatinine phospho kinase
CK-MB	Creatinine kinase MB
LDH	Lactate dehydrogenase
Co2	Carbon-dioxide
SLE	Systemic Lupus erythematosus
T3	Tri-iodothyronine
T4	Thyroxine
TSH	Thyroid stimulating hormone
LH	Luteinizing hormone

FSH	Follicle stimulating hormone
HCG	Human chorionic gonadotropin
AFP	Alpha-feto protein
CEA	Carcinoembryonic antigen
PSA	Prostate specific antigen
C3	Complement-3
C4	Complement-4
CA 15 – 3	Cancer antigen 15 - 3
CA 19 – 9	Cancer antigen 19 - 9
CA 125	Cancer antigen 125
ANCA	Anti-neutrophil cytoplasmic antibodies
TIBC	Total iron binding Capacity
UIBC	Unsaturated iron binding Capacity
WBC (TLC)	White blood cell (Total leucocyte count)
RBC (TRBC)	Red blood cell (Total red blood cell)
LE	Lupus erythematosus
G6PD	Glucose 6-phosphate dehydrogenase
H & E	Hematoxilin & eosin