

Prepared by: **Dr. Maverick Adzaho**

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Approved by:

Signature:

Date of Approval:

Elizabeth-Irene Baitie
(Laboratory Director)

.....EIB.....

01-04-2025

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1.0 INTRODUCTION

1.1 General

Patholab Solutions (GH) Ltd. is a well-equipped modern diagnostics facility in Accra with a friendly, well-trained, and dedicated team of medical laboratory scientists. We offer high quality laboratory services in the categories of Clinical Chemistry, Haematology, Hormonal Assays, Microbiology, Tumor (cancer) Markers, Drugs Abuse, Immunology, Serology, (DNA Paternity Testing) and Corporate Wellness Screening.

Table 1.0: Patholab Solutions Ghana Limited (Branches)

FACILITY	LOCATION	WORKING HOURS
Patholab Solutions Gh LTD.	C368/2 Watson Ave, Adabraka, Accra Ghana. Info@patholab.com.gh , (+233) 0506767725, (+233) 030225232.	7:00am to 7:00pm (weekdays)& 7:00am to 3:00pm Saturdays
Patholab Solutions Gh LTD.	Kasoa branch: Beside Kasoa Polyclinic, 1 st floor of the former Commercial Bank building Mobile:(+233) 0501436712	7:00am to 7:00pm (weekdays) & 7am to 3pm (Saturdays)
Patholab Solutions Gh LTD.	Kwabinya branch	7:00am to 7:00pm (weekdays)& 7:00am - 3:00pm (Saturdays)

The facility is run by highly trained personnel made up of Medical Laboratory Scientists, Technicians and Support Services personnel.

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Together, we provide a comprehensive analytical, diagnostic and advisory services in Clinical Chemistry, Haematology, Medical Microbiology, Immunology and DNA Paternity testing.

The Medical Lab Scientists, with the assistance of Medical Laboratory Technicians, provide expert analytical services in all departments of the laboratory.

Investigations of an urgent nature, outside of the working hours of the facility, must always be made known to the Head of Laboratory prior to or when the sample is brought to the laboratory.

1.2 VISION

To be recognized as a leader in the promotion of corporate health awareness in Ghana and the rest of the West African sub-region.

1.3 MISSION

To promote optimum health in our clients through the delivery of timely, accurate medical laboratory services and customized preventive healthcare programs in Ghana.

1.4 QUALITY OBJECTIVES

- a. **Objective 1:** Achieve accreditation to ISO 15189:2022 for at least one (1) method in 2 departments of the laboratory by December 2025.
- b. **Objective 2:** Maintain at least 80% overall client satisfaction (patients, users & personnel) rating each year.
- c. **Objective 3:** Ensure staff score an average of 70% in post-test evaluations.
- d. **Objective 4:** Establish an Interlaboratory Comparison (ILC) program and maintain a performance rating of above 80% for at least 4 events each year.
- e. **Objective 5:** Meet a target performance rating of at least 80% for each selected quality indicator monitored in the laboratory.

1.5 TELEPHONE NUMBERS

For all telephone enquiries, please contact:

Table 2.0: Contacts of Patholab Solutions Ghana LTD

FACILITY	CONTACT:
Patholab Solutions Ghana (Adabraka, Main):	0302252932/0506767725
Patholab Solutions Ghana (Kasoa):	0501436712

2.0 EXAMINATIONS OFFERED BY THE LABORATORY

Table 3.0: Units of Laboratory and Examinations Offered

	Laboratory Unit				
	Hematology	Clinical Chemistry	DNA	Microbiology	Immunology / Serology
Tests Offered	Full Blood Count (FBC)	Liver Function Test	Paternity Testing	Blood Culture and Sensitivity (C/S)	CD3 ⁺ /CD4 ⁺ and CD8 ⁺ Lymphocyte counts
	Blood Film (BF) for Malaria	Kidney Function Test	Single Profiling	Pleural and other Body fluids C/S	Urine Pregnancy Test and serum pregnancy test
	Blood Film Comment	Lipid Profile		Urine C/S	Widal Screening

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Laboratory Unit				
Hematology	Clinical Chemistry	DNA	Microbiology	Immunology / Serology
Sickling Test	Fasting / Random Blood Sugar		Urine RE	Venereal Disease Research Laboratory (VDRL) screening
Haemoglobin Electrophoresis	Glycated Haemoglobin		Sputum AFB	Hepatitis B & C Screening
Glucose-6-Phosphate - Dehydrogenase	2-Hours Postprandial glucose Test		Sputum C/S	Blood grouping
Erythrocyte Sedimentation Rate	Uric Acid		Gene Xpert	Blood cross matching
Erythrocyte Sedimentation Rate	Serum Bilirubin		Wound swab C/S	HIV 1 & 2
PT/INR	Serum Bilirubin		Wound swab C/S	HIV 1 & 2
Clotting Profile	Cardiac Enzymes		Throat swab C/S	Toxo IgG/igM
Bleeding Time	Creatinine Kinase		High Vaginal swab	Rubella IgG/IgM
Le Cells	PSA		Urethral swab	H pylori Ag

Laboratory Unit				
Hematology	Clinical Chemistry	DNA	Microbiology	Immunology / Serology
Blood film for filaria	OGTT		Ear swab	H. pylori Ab
Reticulocytes Count			Nasal swab	Typhoid IgG/ IgM
Malaria Antigen			Ocular swab	Rheumatoid factor
Clotting Time			Pus and exudates	Tb IgG/ IgM
CRP			Fungal scraping	Occult Blood
			Semen Analysis	
			Semen C/S	
			Stool C/S	
			Skin Snip	
			CSF C/S	

All tests not captured in this table are outsourced

2.1 SPECIMEN COLLECTION

Persons responsible for collecting specimens must ensure that all specified collection conditions are met particularly in relation to timing, fasting conditions and drug given.

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Major sources of analytical variation can be introduced by failing to adhere to recommended collection conditions. Such analytical variation may often not be apparent to the laboratory and can generate misleading results.

It is in the interest of all concerned to ensure that specimens are taken appropriately and delivered promptly to the laboratory; in particular, attention is drawn to the following to obtain valid results:

- i. Always avoid prolonged stasis when taking blood.
- ii. Always avoid contamination of the sample with IV fluids.
- iii. Never mix blood from one specimen container with another.
- iv. Always keep timed urine collections cool during the collection period.
- v. Always fill in the sample collection details on the request form.
- vi. Always, use birth dates to distinguish between patients with similar names.
- vii. Always send samples to the specimen collection point of the laboratory without delay.
- viii. Always send samples to the laboratory in individual biohazard bags if available, with the request form in the separate compartment in the bag.
- ix. **Request forms** accompanying samples of external origin should be filled with **Patient name, Age, Gender, clinical information, clinicians name and contact number.**
- x. Never send a sample to the laboratory in a syringe and needle or in a syringe only unless otherwise specified

2.1.1 Properly Labeled Specimen

All samples being brought to the laboratory must be identified with the following information:

- Patient Name
- Age

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- Sample number- *By the laboratory* scientists
- Test (s)
- Date and Time of collection
- Authorized requester
- Initial of person taking sample

Any specimen that is unlabeled, mislabeled, improperly or incompletely labeled, may be rejected.

The laboratory may run the test on the specimen at his/her discretion but will note on the patient report the state of the sample received

DO NOT LABEL ON THE LID OF THE SPECIMEN CONTAINER. WRITE ON THE SIDE.

2.2 CLINICAL CHEMISTRY UNIT

- PLAIN BOTTLE WITH GEL (GOLD/YELLOW TOP) is required for MOST ROUTINE ASSAYS carried out by this section of the lab.
- BLOOD GLUCOSE TEST requires FLUORIDE OXALATE TUBE (GRAY TOP).
- BLOOD for GLYCATED HAEMOGLOBIN(HBA1C) requires an EDTA TUBE(PURPLE TOP)

If a different tube is introduced; our clients will be appropriately communicated to.

2.2.1 OGTT

This test is a provocation test to examine the efficiency of the body to metabolize glucose.

2.2.1.1 Preparation of the Patient

- At least three days of unrestricted, carbohydrate rich diet (≥ 150 g of carbohydrates daily)
- Unrestricted physical activity prior to day of test.

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- As much as possible, there should be no medication on the day of the test. If medication cannot be avoided, then it must be recorded.
- 10-12 hours overnight fast prior to the test, during which water may be drunk.
- No smoking is allowed prior to and during the test.

NOTE: The OGTT is affected by metabolic stress from several clinical conditions. These include

- Major surgery
- Myocardial infarction, stroke, infections etc.

Other factors affecting OGTT are;

- Rate of absorption for e.g. Malabsorption
- Rate at which glucose is cleared from the blood
- Drugs (steroids, thiazides, phenytoin, estrogens, thyroxine)
- Stress e.g. (patient on admission)
- Nausea
- Caffeine, smoking

2.2.2 SERUM BILIRUBIN

- Blood for analyzing SB (Serum Bilirubin) should be wrapped with tissue paper or kept in the sample bag to reduce exposure to light and sent immediately to the lab.

2.2.3 24-HOUR URINE COLLECTION PROCEDURE

The first urine passed in the morning is discarded. All subsequent urine for the next 24 hours is collected into the receptacle. On rising the next morning, the patient empties the bladder again, 24 hours after the first specimen, and this final specimen is added to the

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bottle. Collection from 08:00 is recommended and the bottle should preferably be kept cool (refrigerated if possible).

The laboratory provides urine containers for 24- hour urine test.

2.3 HAEMATOLOGY UNIT

TEST	TUBE	SAMPLE VOLUME
Full Blood Count (FBC/CBC),	E. D. T.A (purple Top)	≥ 2ml
Blood Film for Malaria parasites & Comments	E. D. T.A (purple Top)	≥ 1 ml
G-6PD tests.	E. D. T.A (purple Top)	≥ 3 ml
Hb ELECTROPHORESIS	E. D. T.A (purple Top)	≥ 1 ml
Hb,	E. D. T.A (purple Top)	≥ 2 ml
SICKLING	E. D. T.A (purple Top)	≥ 1 ml
ESR	E. D. T.A (purple Top)	≥ 2 ml
Coagulation Test / INR	Sodium Citrate (Blue Top)	1.8 ml/ 4 ml

2.4 MICROBIOLOGY

2.4.1 PARASITOLOGY UNIT

BLOOD is required in an EDTA TUBE (PURPLE TOP) for TROPHOZOITE COUNT.

2.4.1.1 URINE

Receptacles (containers) for Routine Examination and special tests are obtained directly from the sample collection point at all hours in the lab. Urine required should be 10 mL in volume. Urine specimen should reach the lab within an hour of collection.

2.4.1.2 STOOL

Containers for routine examination can be obtained directly from the sample collection unit at all hours in the lab. A spatula full of stool is required for the tests. Stool specimen should reach the lab within an hour of collection

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2.4.1.3 STOOL FOR OCCULT BLOOD

Please adhere to the following instructions;

- Ladies who are menstruating should observe a 3-day interval from the end of their flow before taking the sample.

2.4.1.4 SWAB STICKS

Sterile swabs can be obtained from the sample collection unit. Dry swabs will not be accepted.

2.4.1.5 SKIN SNIP

Patient should present them to the laboratory on the day of testing. No preliminary preparation is required.

2.4.2 BACTERIOLOGY UNIT

BLOOD for CULTURE AND SENSITIVITY (C/S) should be put into

- I. Paedic Plus Bottle (Pink Top) For Patients/Clients 12 Years And Below;
- II. Aerobic and Anaerobic Bottles (Ash and Orange Tops) For Patients/Clients above 12 Years.
- III. For clients with Any Suspicion of Immunosuppression, blood should be put in the Aerobic, Anaerobic and Mycotic Bottles (Ash, Orange, and Lime green tops) respectively.

2.4.2.1 URINE

Receptacles for culture and sensitivity tests can be obtained from the reception of the lab. Midstream specimen is required. Where supra-pubic tap is used to obtain urine, it should be stated clearly on the reagent form.

The urine specimen should reach the lab within an hour of collection.

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2.4.2.2 *STOOL*

Containers for culture and sensitivity tests can be obtained directly from the reception at all hours in the lab. A Spatula full of stool is required for the tests. Stool specimen should reach the lab within an hour of collection.

2.4.2.3 *SKIN SCRAPPING*

Patients would be directed from the reception to the appropriate lab for an appointment and instructions regarding the test.

2.4.2.4 *OTHER FLUIDS*

Sterile universal containers of appropriate size are available at the laboratory reception for aspirates and fluids which require culture and sensitivity tests.

2.4.2.5 *CEREBROSPINAL FLUID (CSF)*

Sterile Universal Containers of an appropriate size are preferred and available at the laboratory reception for the collection of CSF for cell count and or culture and sensitivity test

2.4.2.6 *SPUTUM*

Sterile containers are available at the laboratory reception. Sputum is required and not saliva.

2.5 IMMUNOLOGY UNIT

I. PLAIN BOTTLE WITH GEL (GOLD/ YELLOW TOP) is required for MOST ROUTINE ASSAYS carried out by this section of the lab

II. CD4 COUNT, HIV VIRAL LOAD requires EDTA TUBE (PURPLE TOP).

In the event that a different tube is introduced; our clients will be appropriately communicated to.

2.5.1 SEMEN for ANALYSIS

Samples are received at the lab between the hours of 8am and 12 noon. Samples should be received within one hour of sample production. Patient should have abstained from sex for at least 3 - 5 days prior to producing specimen. During the period of abstinence, patient should neither drink alcohol nor smoke. Masturbation is the recommended method for producing the specimen.

2.5.2 DNA TESTS FOR PATERNITY TESTING

2.6.2.1 REQUESTING FOR THE DNA TEST

A request for a DNA test can be made in two main ways, namely:

- I. Legally through a written request from a legal practitioner, the court of law, or a practicing medical officer or medical laboratory scientist.
- II. By a walk-in (Here the client must be willing to sign the consent form; however, the result may not be presented in the court of law)

2.5.2.2 APPOINTMENTS

Once a request is received, an appointment is given to the client for sampling. This appointment is confirmed by the laboratory.

On the day of sampling the following items are required.

- Each person to be tested must provide one recent passport-size photos showing your full face and wearing (no hat and dark glasses covering your face or head)
- Each person tested must provide a copy of a valid ID (accepted ones include Passport, Driver's License, Voter's ID, National ID, NHIS card) that can be checked to confirm identity when sampling.
- A copy of birth certificate or weighing card is accepted for children without valid ID.

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2.5.2.3 WHAT IS EXPECTED ON THE DAY OF SAMPLING

On the sampling day, the Medical officer & Medical Laboratory Scientist in charge of the DNA unit sits to consult with the clients. For Cases from the court, there is the need for representative from the court (usually the bailiff) to be present with the parties and he / she functions as the witness. Both parties are requested to sign a consent form before samples are drawn.

2.5.2.4 PAYMENT FOR TESTS

Clients are expected to make the Full payment before sampling is done on the appointed day.

2.5.2.5 SAMPLE USED

Blood is required for the DNA tests

2.5.2.6 RESULTS

As a result of batched testing, results are given out within a 10-working day period to the requesting client. Depending on the peculiar situation, results are either delivered through mail or picked up by clients.

2.6 ORDER- OF-DRAW FOR MULTIPLE BLOOD COLLECTION

The following order-of-draw, which is recommended when drawing several specimens during a single venipuncture, is based on pragmatism. Its purpose is to avoid possible test result error due to cross contamination from tube additives. This procedure should be followed for both evacuated tubes, and syringe transfer of blood to multiple tubes.

- A. BLOOD CULTURE OR BLOOD CULTURE BOTTLE (rotate tube 8-10 times)
- B. COAGULATION TUBE (BLUE TOP) (rotate tube 3-4 times)
- C. Other Additive and non-additive tubes:

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- GEL SEPARATOR or CLOT ACTIVATOR TUBE (GOLD / YELLOW TOP WITH GEL) (rotate tube 8-10 times)
- HEPARIN TUBE (GREEN TOP) (rotate tube 8-10 times)
- EDTA TUBE (PURPLE TOP) (rotate tube 8-10 times)
- FLUORIDE-OXALATE TUBE (GRAY TOP)(rotate tube 8-10 times)

D. For syringe draws, the order of draw is the same, except the Blood Culture bottle or tube is always sampled first, and if two syringes are used in the draw, the Coagulation bottle (blue top) must be sampled from the 2nd syringe.

2.8.1 DISCLAIMER

The lab reserves the right to discard any specimen incorrectly collected. The lab does not provide specimen containers to be used for tests by other labs. Where request forms are incorrectly or illegibly completed, the laboratory reserves the right to reject such requests. Unlabeled or mislabeled samples will not be accepted.

2.9 REQUESTS FOR EXAMINATIONS

2.9.1 EXAMINATION REQUEST FORMS and CLINICAL INFORMATION

The request form must be correctly and legibly completed with patient **NAME, AGE, GENDER, CLINICAL DETAILS and REQUESTER'S NAME, SIGNATURE and DATE.**

Tests required should be clearly indicated and where any test is not listed it should be clearly written on the request form. The Requesters **CONTACT** should be quoted.

Where all information is provided appropriately the speed of processing of request, and the results of the tests are influenced positively, leading to a more rapid turnaround of report. Also, it will allow the department to correctly interpret results and provide follow-up tests where appropriate.

2.9.3 PHLEBOTOMY SERVICE

Phlebotomy services are available at the laboratory department of all Patholab Solutions Ghana facilities during the facilities working hours and off working hours on a pre-arranged basis.

2.9.4 PAYMENTS

All tests requested for (non - insured) must be paid for at the cashier and receipts presented at the laboratory reception before sample taking. Costs of tests can be obtained at the laboratory reception.

2.9.5 DISCLAIMER

The Laboratory does NOT BEAR ANY RESPONSIBILITY for payments not made at the designated cash points by out-patients and in-patients/clients WHO WALK INTO the lab.

2.10 SUBMISSION OF SAMPLES

Samples are to be submitted at the laboratory reception of all Patholab's facilities. At no point should samples be sent to the main laboratory without passing through the reception first.

2.11 CRITERIA FOR SAMPLE REJECTION

Samples received at the laboratory reception will be rejected if they fall into the following criteria

1. Generally, for all samples with **LABELLING ERRORS** as follows:

- Unlabeled specimen
- Labeling on specimen and requisition do not tally

2. Generally, for **ALL UNSATISFACTORY SAMPLES** as follows:

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- Urine specimen Longer than two-hour lapse before refrigerating or culturing
- Blood specimen of insufficient volume for ESR test(<2mls)
- Semen samples older than one hour
- Whole blood specimens containing clots
- Blood specimens older than 24 hours for hematology tests
- Saliva received instead of sputum
- Obvious mouth wash or food contamination in sputum
- Blood for G-6PD test in tube other than Heparin tube or E.D.T.A (Green Top/ purple top)
- Blood for Coagulation tests in tube other than Sodium Citrate tube (Blue Top)
- Blood volume more than 1.8mls/ 4.5 mls for coagulation test.
- Samples for culture and sensitivity testing in non-sterile containers
- Unfasting blood samples for fasting tests
- Grossly haemolysed samples
- "Blood exposed to light for more than 2 hours for the estimation of bilirubin" ("Our Services & Patient Information - Korle-Bu Teaching Hospital")
- Lipaemic samples as it affects enzymes, electrolytes (Na⁺) total protein and bilirubin estimation

3. Generally, for **ALL REQUISITION INADEQUACIES** as follows:

- Time of collection not noted on requisition
- Improperly filled or incompletely filled requisition

4. Generally, for **ALL SAMPLES WITH HAZARDOUS HANDLING CONDITIONS** as follows;

- Any liquid specimen exhibiting container contamination/spillage
- Specimen in syringe only or both syringe and needle

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- Specimens submitted in cracked or leaking containers with external contamination of blood/body fluids.

When specimens are rejected, a sample rejection note which indicates the reason for the rejection will be sent to the requesting clinician and a new specimen would be required. When mislabeled or unlabeled irreplaceable specimens such as CSF and certain microbiological specimen are received, the requesting clinician or other approved personnel would have to come to the laboratory to positively identify the specimen, affix the proper label, and complete an unlabeled / mislabeled specimen documentation form. Also, when a requester requires that a procedure be performed on unsatisfactory specimen, she/he will be required to do so in writing. The condition of the specimen will also be noted in the report he will be given. Please refer to the appendix for a sample of the laboratory rejection form and mislabeled/unlabeled specimen documentation form.

2.12 REPORT COLLECTION

Examination Reports can be collected at the laboratory reception by presentation of patient hospital card or report collection form. Days and times for collecting reports are communicated to the client when the samples are received.

2.13 LABORATORY PHLEBOTOMISTS

Their duties include the sample taking, dispatch of samples and requests from the facility to the laboratory and results/reports from the laboratories to the health facilities. Their assistance may be sought when needed.

2.14 TURN AROUND TIMES (TAT)

This indicates how long it will take the lab to run tests and release results.

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All tests not captured in the tables below are outsourced and the TATs depend on the TAT of the reference Laboratories. If a combination of the tests is required, the TAT depends on the test with the longest TAT.

Hematology Unit tests	Turn Around Time	Emergency TAT
Full Blood Count (FBC)	1 hr	30 min
Blood Film (BF) for Malaria	1 hr 30 min	45 min
Blood Film Comment	24 hrs weekdays/ 48 hrs weekends	N/A
Sickling Test	2 hrs	N/A
Haemoglobin Electrophoresis	24 hrs	2 hrs
Glucose-6-Phosphate Dehydrogenase –	24 hrs	N/A
Erythrocyte Sedimentation Rate	2 hrs	N/A
PT/INR	1 hr	N/A
Clotting Profile	24 hrs	N/A

Clinical Chemistry tests	Turn Around Time	Emergency TAT
Liver Function Test	24 hrs	2 hrs
Kidney Function Test	24 hrs	2 hrs
Lipid Profile	24 hrs	2 hrs
Fasting / Random Blood Sugar	30 min	15 min
Glycated Haemoglobin	24 hrs	2 hrs
2-Hours Postprandial glucose Test	4 hrs	N/A
Uric Acid	24 hrs	2 hrs

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Clinical Chemistry tests	Turn Around Time	Emergency TAT
Serum Bilirubin	24 hrs	2 hrs
Cardiac Enzymes	24 hrs	2 hrs
Creatinine Kinase	24 hrs	2 hrs
PSA	24 hrs	2 hrs

Microbiology tests	Turn Around Time
Blood Culture and Sensitivity (C/S)	5 days
Pleural and other Body fluids C/S	72 hrs
Urine C/S	24 hrs preliminary/ 72 hrs
Urine RE	2 hrs
Sputum AFB	24 hrs
Sputum C/S	72 hrs
Gene Xpert	24 hrs
Wound swab C/S	72 hrs
Throat swab C/S	72 hrs
High Vaginal swab	72 hrs
Urethral swab	72 hrs
Ear swab	72 hrs
Nasal swab	72 hrs
Ocular swab	72 hrs
Pus and exudates	72 hrs
Fungal scraping	72 hrs
Semen Analysis	24 hrs
Semen C/S	72 hrs

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Microbiology tests	Turn Around Time
Stool C/S	72 hrs
Skin Snip	2 hrs
CSF C/S	72 hrs

Immunology / Serology tests	Turn Around Time
Urine Pregnancy Test	2 hrs
Widal Screening	2 hrs
Venereal Disease Research Laboratory (VDRL) screening	2 hrs
Hepatitis B & C Screening	2 hrs
Blood grouping	2 hrs
Blood cross matching	2 hrs
HIV 1 & 2	2 hrs
Toxo IgG/IgM	2 hrs
Rubella IgG/IgM	2 hrs
H pylori Ag	2 hrs
H. pylori Ab	2 hrs
Typhoid IgG/ IgM	2 hrs
Rheumatoid factor	2 hrs
Tb IgG/ IgM	2 hrs

DNA tests	Turn Around Time
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Paternity Testing	10 working days
Single Profiling	10 Working days

Note: Turn Around Time for tests that are outsourced will be communicated by the Front Desk Officer.

2.15 ADVISORY SERVICES

- For information on tests or preparation for tests please contact **0302252932**
- For interpretation of test reports or explanations please contact **0506767725**
- For any complaints or suggestions for improvement please fill this form [Complaint & Feedback Form](#) or contact **0243741155**

DISCLAIMER: Patholab Solutions (GH) Ltd. offers only testing services to clients. All interpretations offered are based solely on the clinical information available on the client's test reports.

Clients are advised to receive clinical diagnosis from their medical doctor/primary care physician based on the clinical history available to them.

3.0 REFERENCES

1. Handbook for GHANA HEALTH SERVICE HOSPITAL LABORATORIES - GHS, November 2022. -CL/CS/0711.1
2. Eastern Region health directorate for Laboratory service laboratory Handbook.
3. GHS Laboratory Manual.