



Blood Testing Training Manual

F:214-853-5460



IMPERIUM

EMPOWERING PERSONALIZED MEDICINE

- Blood Chemistry screen is a blood test that measures the levels of several substances in the blood, such as:
 - Blood glucose
 - Cholesterol
 - Electrolytes
- Tells your doctor about your general health status
 - Can be used as preventative healthcare
 - To screen for a wide range of problems, including kidney, liver, heart, adrenal, gastrointestinal, endocrine, and neuromuscular disorders
 - Monitor people with hypertension and hypokalemia
- Can be as part of a routine physical examination or before a major medical procedure



- Three different specimens:
 - Whole blood
 - Plasma
 - Serum
- Specimen collection is dependent on the type of test requested
- Serum is the most common specimen collected



- Liquid portion of blood obtained after a serum sample tube as been allowed to clot
- Serum Separator Tubes (SST) do not have an anticoagulant but do contain a gel substance which will form an interface between the clot and the serum when the blood specimen is centrifuged. These tubes are referred to as “Tiger Tops.”
- Samples should be spun 30-60 minutes at room temperature to give time to clot prior to centrifugation at 4000 rpm (revolutions/minute) for 5 minutes.



- Plasma is the liquid component of blood. It is made up of:
 - 92% water
 - 7% protein
 - 1% inorganic electrolytes
- It is collected in a lavender top collection tube
- Gently invert the sample five times immediately after collection.



- Obtained when blood is drawn into a tube containing an anti-coagulant
- It is not centrifuged.
- Gently invert sample 5 times immediately after collection.
- A whole blood sample is always used for a CBC test.



How to Collect the Specimen



Gather supplies needed for blood collection.



Wrap a tourniquet around the arm to cut off the supply of blood.



Clean the needle site with alcohol.



Feel for the vein.



Put the needle into the vein.



Attach a collection tube to the needle and fill with amount needed.



Apply a gauze pad over the needle site while removing needle.

How to Collect the Specimen



Remove
tourniquet from
arm.



Dispose of needle
in sharps
container.



Apply a
bandaid to site
of collection.



After collection,
place specimen in
biohazard bag.



Place test
requisition
form in sleeve
of bag.



Place biohazard
bag in FedEx
Clinical Pak.



Place
Clinical Pak
into FedEx
Clinical box.



Place shipping
label and red dot
sticker onto box
and send to lab.

- **Basic Metabolic Panel (BMP)**- Frequently ordered panel of 8 tests. Typically ordered as part of a routine health exam to check the status of a patient's kidneys, electrolyte and acid/base balance, as well as their blood glucose levels.
 - Tests in panel include: Glucose, Calcium, Sodium, Potassium, CO₂, Chloride, BUN, Creatinine
- **Comprehensive Metabolic Panel (CMP)**- frequently ordered panel of 14 tests utilized to give a healthcare provider a better picture of patient's health status. Used to monitor kidneys and liver, electrolyte and acid/base balance as well as levels of blood glucose and blood proteins.
 - Tests in panel include: Glucose, Calcium, Albumin, Total Protein, Sodium, Potassium, CO₂, Chloride, BUN, Creatinine, ALP, ALT, AST, Bilirubin
- **Liver Panel:** Used to screen for or diagnose liver disease.
 - Tests in panel include: ALP, ALT, AST, GGT, LDH, Bilirubin, Total Protein, Prothrombin time (PT)



- **Renal Panel-** may be used to evaluate kidney function, to help diagnose kidney-related disorders, to screen those who may be at risk of developing kidney disease or to monitor someone who has been diagnosed with kidney disease.
 - Tests in panel include: Sodium, Potassium, Chloride, CO₂, Phosphorus, Calcium, Albumin, BUN, Creatinine, Glucose. Calculated Values- BUN/Creatinine ratio, eGFR, Anion Gap.
- **Lipid Panel-** Used to assess a patient's risk of developing Cardiovascular Disease.
 - Tests in panel include: Total Cholesterol, HDL-C, LDL-C, Triglycerides. Calculated values- VLDL-C, Non-HDL-C, Cholesterol/HDL ratio
- **Thyroid Panel-** may be used to evaluate thyroid function and/or help diagnose hypothyroidism and hyperthyroidism due to various thyroid disorders.
 - Tests in panel typically include: TSH, Free T₄, total or free T₃)
- **Diabetes Panel-** ordered to help manage a patient with diabetes.
 - Tests in panel include: HBA1C, Glucose, Insulin, C-Peptide



- **Iron Panel-** used to help detect deficiencies and diagnose the cause of certain anemias
 - Tests in panel include: Vitamin B12, Ferritin, Folate
- **Bone Panel-** used to measure the proteins, minerals and enzymes present in bone to indicate increased bone resorption that occurs in certain diseases.
 - Tests in Panel include: Calcium, Phosphorus, Vitamin D, PTH, ALP, Osteocalcin
- **Inflammation Panel-** used to detect cardiovascular disease
 - Tests in panel include: CRP, Homocysteine
- **Hormone Panel-** used to evaluate hormone levels in men and women
 - Male Hormone Panel includes: DHEA, Estradiol, SHBG, TSH, Cortisol, HGH, Progesterone, Prolactin, and Total Testosterone
 - Female Hormone Panel includes: DHEA, Estradiol, SHBG, TSH, Cortisol, HGH, Progesterone, Prolactin, FSH, and LH



- Who will be collecting the specimen?
- What is volume expectation?
- Do they have a refrigerator for specimens?
- Do they have a sharps container?
- Do they have a centrifuge?

*A phlebotomy chair is not needed to draw blood.





NEW CLIENT REGISTRATION

STEP ONE:

If you have not done so already, please print the appropriate registration forms that require a signature and have each Physician sign them. You do not need a signature to register your Doctor for PGx testing. It is up to you whether you want to complete the paper form or not however, we do require that you complete the online registration form below and UPLOAD the "wet" signature forms for our records of acknowledgement.

STEP TWO:

Please complete the online form and upload your signed registration form(s) below if needed. You will be able to order supplies from this form as well. You MUST upload a signed registration form for each Physician that will be sending in samples for Toxicology and Genetic Carrier Screening. (Notes: if the practice is not interested in doing the carrier screen then you do not need to upload that form).

Supply Orders

All supply orders placed by 2:00pm CST will be shipped over night express for next day delivery. All orders submitted after 2:00pm CST will be shipped out the next business day. Please NOTE supplies will be shipped to arrive at anytime the day after shipped between 9:00am and 3:00pm.

[CLICK HERE](#) if you do not have the toxicology signature forms that you need to upload.

[CLICK HERE](#) to print the Carrier Screen Registration form that requires a wet signature then upload it below.

NOTE: The individual who directed you to this registration form should have provided you with their "Distribution Group" code. If you did not receive this please find out the appropriate code to help us organize our groups.

Distribution Group *

Please Select

- ARC-PPC-303
- ARC-PPC-305
- ARC-PPC-308
- ARC-PPC-310
- ARC-PPC-312
- ARC-PPC-314
- ARC-PPC-316
- ARC-PPC-318
- ARC-PPC-320
- ARC-PPC-322
- ARC-PPC-324
- ARC-PPC-326
- ARC-PPC-328
- ARC-PPC-330
- ARC-PPC-332
- ARC-PPC-334
- ARC-PPC-336
- ARC-PPC-338
- ARC-PPC-340
- ARC-PPC-342
- ARC-PPC-344
- ARC-PPC-346
- ARC-PPC-348
- ARC-PPC-350
- ARC-PPC-352
- ARC-PPC-354
- ARC-PPC-356
- ARC-PPC-358
- ARC-PPC-360
- ARC-PPC-362
- ARC-PPC-364
- ARC-PPC-366
- ARC-PPC-368
- ARC-PPC-370
- ARC-PPC-372
- ARC-PPC-374
- ARC-PPC-376
- ARC-PPC-378
- ARC-PPC-380
- ARC-PPC-382
- ARC-PPC-384
- ARC-PPC-386
- ARC-PPC-388
- ARC-PPC-390
- ARC-PPC-392
- ARC-PPC-394
- ARC-PPC-396
- ARC-PPC-398
- ARC-PPC-400

Your Group *

You should have a distributor code that was given to you by the marketing group directly contracted with IMPERIUM. If you do not know the correct code please contact the person who gave you access to the registration form.

Who you work for: _____

Account MGR Phone *

Area Code: _____ Phone Number: _____

Account MGR e-mail *

_____@example.com

Supplies are being requested.

Pharmacogenomics *	Blood *	Carrier Screen *	Toxicology (Saliva) *
<input type="radio"/> YES	<input type="radio"/> YES	<input type="radio"/> YES	<input type="radio"/> YES
<input type="radio"/> NO	<input type="radio"/> NO	<input type="radio"/> NO	<input type="radio"/> NO

Name of Practice: _____

Physician Name: *

First Name: _____ Last Name: _____

E-mail *

ex: myname@example.com

Phone Number *

Area Code: _____ Phone Number: _____

FAX

Area Code: _____ Phone Number: _____

NPI Number: *

License #

Optional: _____

Patient Volume:

Monthly Volume: ex: 300

Type of facility? *

- Private Practice
- Rehabilitation Center
- Nursing Home
- Home Health Care

If a location has not signed up for any testing services with IHR before, you will need to complete the New Client Registration Form for them.

- Distribution Group & Account Manager Information
- Practice Name, Address, Phone, Fax, and Facility Type
- Office Contact's Full Name & E-mail
- Ordering Physician(s) with NPI Numbers.
- FedEx Pick-Up Days & Times
- Practitioner Acknowledgement





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EMPOWERING PERSONALIZED MEDICINE

All orders will be shipped within 24 to 48 hours.

Toxicology (Urine) *	Toxicology (Saliva) *	Pharmacogenomics *
<input type="radio"/> Yes	<input type="radio"/> Yes	<input type="radio"/> Yes
<input type="radio"/> No	<input checked="" type="radio"/> No	<input type="radio"/> No

Carrier Screen *	Blood *
<input type="radio"/> Yes	<input type="radio"/> Yes
<input type="radio"/> No	<input type="radio"/> No

Physician's Name: *

Recipient Name: *

Recipient Email: *
We will send a confirmation to this email

Phone: *

Do you want the supplies shipped to the Doctor or to the Account Manager? *

Doctor

Account Manager

Shipping Address: *

<input type="text" value="First and Last Name"/>	
<input type="text" value="Street Address"/>	
<input type="text" value="City"/>	<input type="text" value="State"/>
<input type="text" value="Zip Code"/>	



- The lab will provide the following supplies based off the practice's projected tests per month:
 - Needles
 - Collection Tubes
 - Vacutainers
 - Tourniquets
 - Cohesive bandages
 - Spot bandaids
 - 2X2 Gauze
 - Alcohol Swabs
 - Shipping Supplies
- For new or existing accounts fill out the form accordingly and fax to iMPERiUM's customer service at support@ihresources.com



TECH CHECKLIST

Please make sure the following gets signed and collected:

Make sure to check the boxes when you are done, and send in with all of the forms with clients and tests.

- 1. Check supplies and patient documents
- 2. Patient signature on order and consent form
- 3. Package specimens and forms in provided specimen bag.
- 4. Technician signature on order and consent form.

List quantity of each corresponding tube(s) that was completed:

BLACK			BLUE			LAVANDER			RED/BLACK			ROYAL BLUE			YELLOW		
BLACK			BLUE			L			SST			RBL			UC		
1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
3	5	6	3	5	6	3	5	6	3	5	6	3	5	6	3	5	6

(Circle corresponding numbers above)



Print Tech's Name



Tech's Signature



Date

Please enclose this document with other forms



IMPERIUM HEALTH RESOURCES
3101 Churchill Dr., Ste 115
Flower Mound, TX. 75022

F: 214-853-5460
ihresources.com.com | support@ihresources.com

- Each sample must bear *three* unique patient identifiers.
- Tiger-top tube samples must be centrifuged after 30 to 60 minutes of collection.
- Sample should be sent to lab **within 24 hours of draw or will need to be refrigerated.**
- CBC **HAS** to be processed within 24 hours of collection.
- We will hold the sample at the lab for 7 days after the screen.
- We ask that two tiger tops and one lavender top (if CBS is ordered) is sent to the lab per patient.



Test Requisition Form



3101 Churchill Dr., Ste 115, Flower Mound, TX. 75022
 F: 214-853-5460 CLIA# 45D2094568 resources.com * support@resources.com

FACILITY INFORMATION	PATIENT INFORMATION	DIAGNOSIS CODES
Southwest Rehabilitation Center of Arlington 930 Masquerade Drive Midlothian, Tx 76065	LAST NAME: _____ FIRST NAME: _____ MI: _____ GENDER: _____ DATE OF BIRTH: ____/____/____ SSN: ____-____-____ PHONE: (____) ____-____-____ ADDRESS: _____ CITY: _____ ST: _____ ZIP: _____ INSURANCE COMPANY (PLEASE ATTACH COPY OF CARD) POLICY NUMBER: _____ CROCID NUMBER: _____	_____ _____ _____

REQUESTING PHYSICIAN	SPECIMEN INFORMATION
Name: David Slater MD NPI: 1477526994 Phone: (817) 461-6374	DATE COLLECTED: ____/____/____ TIME COLLECTED: ____:____:____ <input type="checkbox"/> AM <input type="checkbox"/> PM <input type="checkbox"/> Fasting <input type="checkbox"/> Non-Fasting Certification of Specimen Handler REQUIRED: I certify that the specimen was drawn by me and belongs to the patient above. Signature: _____

PAYMENT OPTIONS: Medicare Medicaid Tricare Commercial HSA Worker's Compensation (include state form)

WELLNESS ORDER

<input type="checkbox"/> Comprehensive Wellness Panel <input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Electrolyte Panel Carbon Dioxide Sodium Chloride Potassium Anion Gap	<input type="checkbox"/> Iron Panel Iron Ferritin TIBC (Total Iron Binding Capacity) % SAT	<input type="checkbox"/> Cardio-Metabolic Panel Homocysteine hs-CRP Ferritin Iron	<input type="checkbox"/> Comprehensive Allergy Panel ...A. Sensitive ...Almond ...Alfalfa ...Barley ...Beef ...Bermuda Grass ...Buckwheat ...Casein ...Cashew ...Cat Dander ...Cedar ...Chicken ...Chicken Meat ...Clam ...Cod ...Cockroach ...Coffin ...Corn (Meal) ...Cottonseed ...Cow Milk ...Crab ...Egg ...Egg White ...Egg Yolk ...Einkorn ...Feline Epithelium ...Hazelnut ...Johnson Grass ...Lobster ...Melon ...Milkweed ...Mustard ...Mushroom ...Nutmeg ...Oat ...Oat Pollen ...Olive Tree ...Peanut ...Peanut Oil ...Peanut Shell ...Pineapple ...Pork ...Rice ...Rye Food ...Scale ...Salmon ...Sesame ...Shrimp ...Soybean ...Soybean Meal ...Timothy Grass ...Tuna ...Turkey Meat ...Walnut ...Wheat ...Wheat Free
<input type="checkbox"/> Comprehensive Metabolic Panel Carbon Dioxide Sodium Potassium Chloride Creatinine BUN BUN/Creatinine Ratio GFR Glucose Calcium Uric Acid Albumin Total Protein Albumin/Globulin Ratio Total Bilirubin Direct Bilirubin Indirect Bilirubin Alkaline Phosphatase AST/SGOT ALT/SGPT Anion Gap	<input type="checkbox"/> Basic Metabolic Panel Carbon Dioxide Sodium Potassium Chloride Creatinine BUN BUN/Creatinine Ratio GFR Glucose Calcium Uric Acid Anion Gap	<input type="checkbox"/> Metabolic Panel Insulin Level C-Peptide HbA1c	<input type="checkbox"/> Adrenal Panel Cortisol Total Testosterone DHEAS	<input type="checkbox"/> Pituitary Panel Prolactin TSH LH FSH
<input type="checkbox"/> Liver Panel AST/SGOT ALT/SGPT Albumin Total Protein Albumin/Globulin Ratio Alkaline Phosphatase GGT Total Bilirubin Direct Bilirubin Indirect Bilirubin	<input type="checkbox"/> Lipid Panel Total Cholesterol HDL LDL VLDL Triglycerides Cholesterol/HDL Ratio	<input type="checkbox"/> Vitamins Vitamin D (25-hydroxy) Vitamin B12 Folate	<input type="checkbox"/> Thyroid Panel TSH Total T4 Total T3 Free T4 Free T3 T3-Uptake Free Thyroid Index	<input type="checkbox"/> Reproductive Panel - Female Progesterone FSH Estradiol Enhanced Progesterone
<input type="checkbox"/> Celiac Panel Gliadin IgA Gliadin IgG TG-A	<input type="checkbox"/> Thyroid Antibody Panel Anti-TPO Anti-TG	<input type="checkbox"/> Reproductive Panel - Male Total Testosterone DHEAS LH FSH Estradiol Enhanced	<input type="checkbox"/> Alternative Test Codes _____ _____ _____	

Other Individual Tests
 PSA Sex Hormone Binding Globulin Intact Parathyroid Hormone APO-Lipoprotein B

PATIENT AUTHORIZATION
 Consent/Insurance Release: I, voluntarily consent to the collection and testing of my specimen identified on this form is my own; It is fresh and has not been adulterated in any manner. I certify that the information provided on this form and on the specimen bottle is accurate. I further authorize the laboratory to release the result of this testing to the ordering facility and/or my insurance company. Furthermore, I authorize my insurance benefits directly to any affiliate lab for the services I receive. I acknowledge that the Lab and Clinic may be an out-of-network facility with my insurance. I am also aware that in some circumstances my insurance will send the payment directly to me for the services provided. Under law, I agree to endorse the insurance check and forward it to the Lab within 30 days of receipt. By checking "Self-Pay", I agree to be financially responsible for these tests.

PHYSICIAN SIGNATURE
 The provider is responsible for determining the medical necessity of laboratory tests and for assigning and providing specific ICD10 code(s) to support the medical necessity of all clinical laboratory tests.

Patient Signature: _____ Date: _____

Physician Signature: _____ Date: _____

- For every sample submitted, an individual requisition form must be included.
- The patient demographics and insurance information must also be submitted with the requisition form to begin the blood screening process.
- If we are missing any necessary information, our lab will make 3 attempts to contact the physician's office. If we cannot obtain this information, the sales rep will be contacted as a last resort to obtain it before the sample is rejected.



TEST		RESULT	OUT OF RANGE	UNITS	REFERENCE RANGE
CHEMISTRY					
ALBUMIN	3.5		g/dL	3.5-5.5	
SGOT (AST)	10		IU/L	1-40	
SGPT (ALT)	15		IU/L	5-45	
BILIRUBIN, TOTAL	0.5		mg/dL	0.1-1.4	
BILIRUBIN, DIRECT	0.1		mg/dL	0.0-0.3	
BILIRUBIN, INDIR. (Calc.)	0.4		mg/dL	0.2-1.1	
CALCIUM	8.5		mg/dL	8.3-10.5	
INORGANIC PHOSPHORUS	4.5		mg/dL	2.0-4.9	
CHLORIDE	97		mEq/L	96-110	
CO2	16		mEq/L	15-35	
SODIUM	136		mEq/L	135-155	
POTASSIUM	4.5		mEq/L	3.5-5.5	
ANION GAP (Calc.)	23			0-25	
MAGNESIUM	2.0		mg/dL	1.5-2.6	
BUN	7		mg/dL	6-25	
CREATININE	0.6		mg/dL	0.5-1.3	
BUN/CREATININE (Calc.)	12		Ratio	7-30	
AMYLASE	50		U/L	29-103	
CARDIAC RISK STUDIES					
CHOLESTEROL	136		mg/dL	135-200	
HDL CHOLESTEROL	45		mg/dL	>40	
CHOL/HDL RISK RATIO (Calc.)	3.0				
Reference Ranges for Chol/HDL Risk Ratio:					
Male: 4.0-6.0					
Female: 3.7-5.7					
LDL (Calc.)	71		mg/dL	<100	
Values for "Calculated LDL" are invalid for Triglycerides over 400 mg/dL					
VLDL (Calc.)	20		mg/dL	0-40	
TRIGLYCERIDES	100		mg/dL	<150	
APOLIPOPROT. A-1	120		mg/dL	115-220	
APOLIPOPROT. B	55		mg/dL	50-155	
LIPOPROTEIN (a)	25		mg/dL	<30	
SERUM PROTEIN ELECTROPHORESIS					
TOTAL PROTEIN	6.5		g/dL	6.0-8.3	





BILLING INFORMATION

Your provider has chosen [redacted] for their diagnostic testing services. At the request of your physician, we ran a comprehensive test that will assist them in providing you the most effective treatment plan possible.

The information below will help you understand what to expect from your insurance carrier and RML with respect to your medical claim and potential financial responsibility.

- [redacted] will perform the tests ordered by your physician.
- [redacted] will send the appropriate lab report to your physician.
- [redacted] will send a claim to your insurance company.
- Your insurance carrier may send you one or more Explanation of Benefits (EOB) during the claim settlement process. **The EOB is not a bill.** The EOB is a statement that shows medical tests, services and costs to the insurance company. **You should NOT pay [redacted] for the EOB received, even if the insurance company indicates you do or may owe an amount.** You should wait until you have received a bill from RML before considering payment.
- You may receive a letter or other information from your insurance company indicating the services are not covered or indicating additional information is required from our physician before the claim can be settled. [redacted] would also have received that letter and we will work directly with your physician to obtain any required information. You do not have to do anything.
- If your insurance company covered the services performed and left you with an out of pocket coinsurance or deductible, you may receive a bill from [redacted]
- If you receive a bill from [redacted], please contact our billing department directly to discuss your options, which could include discount and/or payment arrangements.

In the event you receive a check from your insurance company for the services provided please follow one of the three steps below.

- Deposit the check and mail a personal check to RML
- Deposit the check and contact RML to provide credit card information
- Endorse the back of the insurance check and mail it to RML

For questions or assistance with your EOB or bill, please contact DRS (our third party billing company) before calling your physician. You may also contact DRS with any additional questions you may have about the billing process.

- Our third party billing company can answer any questions a patient/physician may have regarding an EOB or bill.
- These patient handout cards will be included within the shipment.
- It is our goal for the implementation of diagnostic testing to be as seamless as possible. Our third party billing company can answer all questions to ensure that it does not interrupt the work flow of the office



Q: What are the most common Blood Chemistry Panels?

A: *Basic Metabolic Panel (BMP)*- contains 8 tests of which are found in the Comprehensive Metabolic Panel. It provides information about the current status of a person's kidneys and respiratory system as well as electrolyte and acid/base balance and level of blood glucose

Comprehensive Metabolic Panel (CMP)- includes 14 tests includes the same information as BMP, but with additional information on the function of the liver and important blood proteins

Lipid Panel- used to evaluate a person's risk for developing cardiovascular disease

Renal Panel- used to evaluate kidney function

Thyroid Function Panel- used to measure Thyroid function and diagnose Thyroid disorders

Q: Can the physician order additional tests?

A: As of today we can only run the comprehensive wellness panel along with the other panels found on the REQ Form.

Q: Do you provide allergy testing?

A: We are not set up to any allergy tests at the moment but we will make it available soon.

Q: Will a patient need to fast before a blood screen?

A: Fasting is dependent on the specific panel being tested.

Q: How old should the specimen be?

A: Must be within one week from date of collection. Tiger top tubes should be centrifuged 30-60 minutes after collection. If sample cannot be shipped to lab within 24 hours of collection, it **must** be refrigerated. CBC must be processed within 24 hours.



Q: Can the office use the centrifuge they currently have?

A: Yes, the office may use the centrifuge they have.

Q: When will results be available?

A: Results will be available 72 hours after we receive the sample.

Q: Does my client have to pay for shipping and handling?

A: No. We will always provide all necessary shipping supplies and packaging.

Q: How long does IHR keep the blood samples?

A: IHR keeps each sample for 7 days after processing.



If you have any questions, please contact support:

support@ihresources.com