

Wexford General Hospital: Pathology			
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Laboratory User Manual			

Laboratory User Manual Wexford General Hospital

REVISION	006
EFFECTIVE DATE	19/12/2024
REVIEW INTERVAL	2 Year
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NO. OF COPIES	4
LOCATION OF COPIES	<ol style="list-style-type: none"> 1. Master Copy – Q-Pulse 2. Quality Office (Room 1/PTH/8) 3. Available to all staff via the shortcut named ‘Lab Web Enquiry’ 4. via the shortcut named ‘WGH Published Information’ on all WGH PC desktops

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1.0 Abbreviations List

AMR	Annual Management Review
APH	Ante Partum Haemorrhage
CMV	Cytomegalovirus
DAT	Direct Antiglobulin Test
DOB	Date of Birth
EBTS	Electronic Blood Track System
G&H	Group and Hold
Rh	Rhesus
IBTS	Irish Blood Transfusion Service
QMM	Quality Management Meeting
TCM	Transfusion Committee Meeting
UHW	University Hospital Waterford
WGH	Wexford General Hospital

2.0 INTRODUCTION

2.1 Mission Statement

The Pathology Laboratory is committed to providing a pathology service of the highest quality to all its users, by the use of examination procedures and methods which will ensure the highest quality of all tests performed and will report results in ways which are timely, accurate, confidential and clinically useful taking into consideration the needs and requirements of users.

Laboratory activities shall be undertaken impartially and free from any conflicts of interest'

All samples received in laboratory are free from discrimination and not separated based on age, ethnicity, sexual orientation, religious beliefs etc.

Please note this manual is intended as a reference guide to give an overall view of the services available in the Pathology Laboratory in Wexford Hospital.

- The Master copy is held on Q-Pulse with an electronic read only copy available to all staff via the shortcut named '[Lab Web Enquiry](#)' and via the shortcut named '[WGH Published Information](#)' on all WGH PC desktops
- When the Laboratory User Manual is revised or changed the Laboratory will notify all WGH users that a new issue exists on the Lab Web Enquiry page available on all desktops.

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- Please ensure that any uncontrolled printed copies are current as the Laboratory cannot be responsible for information contained in uncontrolled obsolete or inactive documents.

2.2 Description of Service

Pathology is a clinical service, which carries out investigations on specimens from patients as an aid to the diagnosis, management and treatment of disease. The service is at the heart of the development of modern scientific medicine, as the practice of pathology has become steadily more diverse and complex.

The Pathology Laboratory in Wexford General Hospital provides a multidiscipline service to Wexford General Hospital Inpatients, Ely which is under legal entity of WGH and outpatient/GP on request and is divided into four main departments Biochemistry, Haematology, Blood Transfusion and Point of Care. WGH also provides a service for incubation of blood cultures and urine microscopy for neonates as well as providing a referral service for testing not completed in house. The regional services for Biochemistry, Haematology, Blood Transfusion, Microbiology and Histology are based in University Hospital Waterford and all relevant samples are sent directly there. The laboratory in WGH acts only as a collection point for the transport of all UHW samples. No log is kept in WGH of samples transported to UHW.

The Pathology Laboratory of Wexford General Hospital provides Haematology, Biochemistry, Blood Transfusion and incubation of blood cultures and urine microscopy for neonates services 24 hours a day, 7 days a week for:

- 280 acute beds in Wexford General Hospital.

The department processes approximately 1 million tests annually in Haematology & Biochemistry and 5,909 Blood Transfusion samples with a staff of 12.2 WTE medical scientists, comprising of 1 Chief , 1 Quality Officer, 3 Senior's, 1 Senior Point of Care Co-ordinator and 6.2 Basic grade medical scientists. Haemovigilance Department has Haemovigilance Officer and Deputy

Laboratory management are committed to:

- Staff recruitment and retention at all levels to provide a full and effective service to its users.

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- To provide employees with the knowledge and training necessary for completion of accurate and timely work.
- To provide a quality management system to integrate the organisation, procedures, processes and resources.
- To ensure all personnel are familiar with the Quality Manual and all procedures relevant to their work.
- The proper procurement and maintenance of equipment and other resources as are needed for the provision of the service.
- The collection, transport and handling of all samples in such a way as to ensure the correct performance of laboratory examinations.
- Provide an effective service to its users.
- Uphold professional values and conduct
- Provide safe and suitable conditions for staff and visitors to the laboratory
- Provide examinations that are fit for intended use.
- The use of examination procedures and methods that will ensure the highest achievable quality of all tests performed.
- Reporting of results of examinations in ways which are timely, confidential, accurate and clinically useful.
- The assessment of user satisfaction, in addition to internal audit and external quality assessment, in order to produce continual quality improvement.

A hospital blood transfusion committee meets 4 times per year and its remit is to promote the highest standard of care in Wexford General Hospital for patients at risk of transfusion. The committee also monitors that the requirements of the EU Blood Directive 2002/98/EC including articles 14 and 15 in relation to traceability and Haemovigilance are implemented. Representatives of users of the blood transfusion laboratory service are essential and welcome on the committee. It provides a forum for users to feedback to laboratory their requirements and exchange of information. The committee is chaired by Laboratory Director.

2.3 Laboratory Accreditation

The Blood Transfusion Laboratory is currently accredited to the ISO 15189 standard by the Irish National Accreditation Board (INAB). The registration number for accreditation is 217MT and full details of our current accreditation status can be viewed on line at www.inab.ie. The laboratory continues to actively engage in the accreditation process to ensure compliance with ISO15189:2022 and EU Blood Directive 2002/98/EC and other relevant legislation and works closely with Haemovigilance personnel to ensure all aspects of best transfusion practice including collection,

testing, processing, storage and distribution of human blood and blood components and that Haemovigilance and Traceability requirements are maintained.

The following tests are included in scope of laboratory accreditation

- Blood Grouping (ABO & Rh) and antibody screening
- Blood Grouping (ABO & Rh) cord and neonatal
- Provision of Crossmatched blood Serological and Electronic
- Direct Antiglobulin Test (DAT)
- Phenotyping (Rh and K Typing)
- Antibody Identification (Rh and K identification ISO 15189 accredited for WGH, all other specificities referred to IBTS).
- Group confirmation of donor red cells

Any changes to the status of the Laboratory Accreditation and scope will be notified to all users of the service.

2.4 Laboratory Contact Details

Postal address

Pathology Laboratory, Wexford General Hospital, Newtown Rd. Wexford. Y35Y17D

Telephone Numbers

Note *Please use the ward enquiry facility for all Laboratory results
Insert (053) 915 before extension number for direct access from outside the hospital

	Contact Name	Phone/ Bleep
Director of Laboratory & Consultant Haematologist	Laboratory Management Team: Dr. Kumar Senthil Prof. Suhail Khan Ms. Linda O'Leary Ms. Carmel Kinsella	Contact switch UHW for Dr Kumar and WGH for all others
Laboratory Chief	Ms. Carmel Kinsella	53253
Blood Transfusion Department	Medical Scientist	53259
Haemovigilance CNS	Aileen Kehoe	14666 or 087-6354757
Haematology Department	Medical Scientist	53257
Biochemistry Department	Medical Scientist	53258
Point of Care	Ms. Noeleen Gahan	14608

		(053-9114608 from outside)
Specimen Reception/ Dispatch	Lab Aide	53252
Laboratory Secretary	Laboratory Secretary	53225
Pathology Department Fax Number		053-9153255
Quality Manager	Maura Foley	53256
Medical Scientist Emergency On-Call	Rotational	Bleep 239

- **Please use the ward enquiry facility for all Laboratory results**
- For all direct enquiries contact Laboratory secretary at 53225
- Blood Transfusion enquiries contact 53259.

We regret we are unable to deal with result enquiries externally after 17.00hrs.

Referral Laboratory Contact Details

Laboratory	Telephone	Website Address
Biomnis Laboratories	(01)2958545	www.biominis.ie
Irish Blood Transfusion Service (IBTS)	(01)4322800	www.giveblood.ie
National Centre for Medical Genetics	(01)4096840 (087)4037149 online	www.genetics.ie
National Centre for Hereditary Coagulation Disorders (NCHCD), St. James Hospital	(01)4162956 (01)4162141 online M-F 8:30-5:00	www.stjames.ie
St James Hospital (SJH) Haematology	(01)4162048 (01)4162559 online	www.stjames.ie
National Virus Reference Laboratory (NVRL)	(01)7161323 (01)7164401 online	www.nvrl.ucd.ie
Children's Health Ireland at Temple St	(01)8784200	www.cuh.ie
Children's Health Ireland at Crumlin	(01)4096100	www.olchc.e

2.5 Location of Laboratory

Department	Location
Blood Transfusion Haematology Biochemistry Point of Care Specimen Reception	Laboratory is on level 1 opposite pharmacy (before Cardiac Diagnostics)
External delivery of samples to the Laboratory	External tests must be delivered to the laboratory or placed in the specimen reception box in the hospitals main reception

Access to the Laboratory is strictly controlled and all samples should be left at the Laboratory reception.

2.6 Laboratory Opening Hours

Pathology Laboratory	Opening Hours
Routine Laboratory Diagnostic Service	
All Departments	Monday to Friday 09:00 – 17:00
Note: Cut of Times for Routine Specimens	
Haematology / Biochemistry	16:00
Blood Transfusion including samples for next day elective pre op	15:00
Emergency On Call service*	
Monday to Thursday	17:00-09:00
Friday	17:00-08:00
Saturday / Sunday + Public Holidays	24hr

2.7 Emergency On Call service

* **Emergency On Call service Contact Bleep 239 / Switchboard**

- Only emergency samples should be sent to the laboratory out of hours
- Contact Medical Scientist on **Bleep 239** or through **Switchboard**
- Please contact the Medical Scientist on call out of hours regarding clinically urgent bloods especially during the night.

Tests available on call:

Only Emergency / urgent samples will be processed on call

Department / Test 'On Call'	Comments
Blood Transfusion	On-call testing in the transfusion laboratory is performed on emergency/clinically urgent samples only On call Medical Scientist must be bleeped on 239 or contacted via switch
Group and Screen (Type and Screen)	On-call requests for blood transfusion. On call Medical Scientist must be bleeped on 239 or contacted via switch
Crossmatch	In accordance with MSBOS
Emergency Issue of Blood	On call Medical Scientist must be bleeped on 239 or contacted via switch
DAT	Available when bilirubin is raised and result is required for blood or product issue
Cord Blood	Group result for Cord Bloods received between 17:00 Friday and 17:00 Sunday/Bank Holiday -may not be available until work has been checked by a second medical scientist

Elective Procedures

Work for elective procedures must be sent during routine hours on the last working day prior to theatre. Testing of these samples will not be performed during call hours

Biochemistry	Only where clinical need requires
All Biochemistry samples done in WGH are available on call where clinically required. BHCG on call requesting Consultant must bleep Medical Scientist on call. BNP is not provided on call.	
Haematology	
FBC	
Coagulation Screen	
D-Dimers	
Microbiology	
Urines	Limited Microscopy neonates where clinically required On call Medical Scientist must be bleeped on 239 or contacted via switch
Blood Cultures	Incubated in WGH. Positives sent via taxi to UHW

2.8 Advisory Services

Advisory services are available at consultant level for Blood Transfusion & Haematology 24 hours a day, seven days a week via consultants through telephone support by contacting switch at UHW (speed dial 61601)

Advisory Services include:

- Advising on Individual Clinical Cases
- Professional Judgements on interpretation of Examinations
- Promoting the effective utilization of laboratory examinations
- Advice on use of Specialised Blood Products
- Advice on Coagulation disorders & specialised testing.

Specialist advice for specific cases such as haemaglobinopathy, specialist coagulation and paediatrics should be sought from the appropriate specialist centre.

In order to effectively utilise laboratory services certain examinations/blood product requests require consultant authorisation these include

- Request of more than 1 pool of platelets for patient (exception is activation of major transfusion protocol)
- Requests for coagulation products
- Referral of Blood Transfusion samples to IBTS 'out of hours' for processing when patient sample requires further investigation.

Contact Details Consultant Haematologists, Laboratory and Haemovigilance

Name	Position	Telephone	E-mail
Dr. S. Kumar	Consultant Haematologist Based at University Hospital Waterford	051-842556/ Contact UHW switch 61601 out of hours	Senthil.kumar@hse.ie
Dr. B Hennessy	Consultant Haematologist/Deputising for Dr Kumar	051-842556/ Contact UHW switch 61601 out of hours	Brian.hennessy@hse.ie
Dr Bannaga	Consultant Haematologist/Deputising for Dr Kumar	051-842556/ Contact UHW switch 61601 out of hours	Ahmed.bannaga@hse.ie
Dr El Hassidi	Consultant Haematologist/Deputising for Dr Kumar	051-842556/ Contact UHW	Ezzat.ElHassadi@hse.ie

		switch 61601 out of hours	
Carmel Kinsella	Chief Medical Scientist	Ext 53253	Carmel.kinsella@hse.ie
Maura Foley	Quality Manager	Ext 53256	Maurai.foley@hse.ie
Anne O' Riordan	Senior Blood Transfusion	Ext 53259	Anneb.power@hse.ie
Martin Farrell	Senior Haematology	Ext 53257	Martin.farrell2@hse.ie
Serena Sinnott	Senior Biochemistry	Ext 53258	serenasinnott@hse.ie
Noeleen Gahan	Senior Point of Care	Ext 14608	Noeleen.gahan@hse.ie
Aileen Kehoe	Haemovigilance Officer	Ext 14666 Mobile 0862543910	Aileen.kehoe1@hse.ie

2.9 Emergency Laboratory Contingency Plans

Pathology department has a procedure in place to ensure that essential services are available during emergency situations or other conditions when the laboratory services are limited or unavailable e.g. Laboratory Information Management System unavailable.

Note: Only clinically urgent blood transfusion requests will be processed during period of LIMIS downtime.

Major Emergency is any event either internal or external that causes serious disruption of essential services or damage to property, the environment or infrastructure beyond the normal capabilities of the hospital laboratory.

3.0 Guide to Using this Manual

A controlled up to date electronic version of this manual is available on the [Lab Web Enquiry](http://puhwgenilab01.healthirl.net/apex/) website <http://puhwgenilab01.healthirl.net/apex/>
Any printed copies are uncontrolled documents.

Using the "Table of Contents" for Navigation

One can navigate to any part of this document by holding down the CTRL key while also left clicking with the mouse in the appropriate area of the table of contents at pages 2-3 of this document.

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4.0 Laboratory Complaints/Feedback

The aim of the Pathology Department is to ensure that our users receive accurate, reliable, clinically appropriate and timely laboratory results. The complaints procedure is an integral part of the laboratory quality management system. All service users have the right to make a complaint if they believe that standards of care, treatment or practice are not deemed to be acceptable.

Complaints can be made as follows:

The Pathology Department has a documented procedure Feedback procedure including complaints and compliments WGH-PATH-LP-045 for the management of complaints or feedback received from clinicians, healthcare providers, patients, laboratory staff or other parties.

This is available to all users via the shortcut named '[WGH Published Information](#)' Laboratory Folder as shortcut on all PC desktops.

This procedure describes the process for receiving, substantiating and investigating the complaint, including the actions undertaken to resolve it and ensuring appropriate action is taken

Patients can access Wexford General Hospital website and part of the website helps patient on how to give feedback, make a comment or complaint about services used.

HSE policy and procedures for 'The Management of Consumer Feedback to include Comments, Compliments and Complaints in the Health Service Executive' can be accessed through the HSE website or by clicking on the following link: [The Complaints Process - HSE.ie](#)

Users can also make complaints via [Wexford General Hospital - HSE.ie](#) Any feedback including complaints received by Complaints Officer from Wexford General in relation to laboratory service are forward to Chief Medical Scientist who investigates complaint through 'Feedback procedure including compliments and complaints' WGH-PATH-LP-045.

Complaints can also be made directly to the laboratory refer to 2.8 for relevant contact details

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Users of service are encouraged at Transfusion Committee Meetings to contact laboratory with any complaints, compliments or suggestions.

All complaints are recorded on Q-Pulse and complaint fully investigated through the laboratory's documented complaints procedure.

Monitoring user satisfaction via user survey which is conducted yearly and asks users for any comments as to how quality of service can be improved, ensures that the service provided by the laboratory meets needs and requirements of the users.

Regular communication with service users e.g. transfusion committee meetings, perioperative meetings, Haemovigilance education sessions provide a useful mechanism for monitoring satisfaction of laboratory service.

4.1 User Survey/Patient Blood Transfusion User Survey

User survey is conducted annually, refer to WGH-PATH-LF-350. All users of the service are encouraged to contact Haemovigilance or Quality Officer for any suggestions they would have to be included in user survey.

User survey is discussed at Annual Management Review and outcomes distributed to applicable personnel.

Patient Blood Transfusion Survey WGH-PATH-LF-351 is also conducted annually allowing patients to give feedback on the service they have received.

User survey and patient user survey is discussed at Quality Management Meetings, Transfusion Committee Meetings and Annual Management Review.

5.0 Patient Confidentiality and Impartiality

Pathology Department is committed to protecting the privacy of personal information of its service users and patients.

In the course of their work Laboratory and Haemovigilance staff are required to collect and use certain types of information including personal data. All laboratory personnel are legally required under the Data Protection Act 2018 to ensure the security and confidentiality of all personal data they collect and process on behalf of service users and employees. Data protection rights apply whether the personal data is held in electronic format or in a manual or paper based form.

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Pathology Department Wexford General Hospital policy on patient confidentiality is as per Wexford General Hospital Confidentiality Policy and HSE Data Protection, which is available on '[WGH published information](#)'

All laboratory activities are undertaken impartially and it is the responsibility of staff to declare any relationships that would threaten impartiality.

All laboratory and Haemovigilance personnel as part of staff induction sign The following:

Pathology Department WGH: Confidentiality and impartiality statement

Pathology Department WGH: Data protection statement

Pathology Department WGH: ICT User declaration

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6.0 Collecting Primary Samples

6.1 Health & Safety

Each department has a site specific safety statement available, this policy should be adhered to at all times.

General Safety Guidelines

- Always use approved specimen collection containers and ensure lids are securely closed.
- Observe standard precautions when taking patient specimens. Refer to HSE SE policy for [Standard precautions](#) & [Personal Protective Equipment/Clothing](#) (PPE).
- Always dispose of sharps appropriately and according to the HSE SE policy for the safe Use, handling and disposal of sharps and sharps containers.
- Specimens must be placed in approved biohazard bag with request form placed separately in the sleeve provided.
- Do not place specimen and form together in the same pouch of the biohazard bag.
- Always supply clinical information including known infection risk with each request.

Specific instructions on specimen transport are outlined in 7.5-7.8 of this document.

Model rules to ensure staff safety during specimen transport are outlined in 6.9

Any spills must be dealt with in accordance with local Health and Safety policy.

6.2 Laboratory Supplies

Supplies of specimen containers, request forms and specimen bags are available from **Ardcavan Central Stores**.

The **only** consumables supplied directly by the Laboratory are:

- Viral swabs
- Chlamydia and gonorrhoea swabs
- Whooping cough swabs
- Measles swabs
- Mumps swabs
- Dermapak for skin scrapings and nail clippings
- EMU container for urinary ZN/ TB culture
- Quantiferon test kits
- Cytology Fixative for FNA's

- Cytolyte Solution fluids
- Acidified 24hr urine containers
- Covid/ Flu /RSV swabs
- Aprotinin tubes
- Thromboexact Tubes
- RPMI medium for cytogenetics

Please ensure that all supplies are requested during routine hours only and send a porter to collect. All supplies for GPs are sent via the Laboratory Supplies Department in University Hospital Waterford, apart from WGH request forms, which are available from **Ardcavan Central Stores**

Types of specimen containers

Adult Vacutainer Specimen Bottles		
Cap Colour	Anticoagulant	Test
Yellow	Clotted (No Anticoagulant)	All serum tests, NT-proBNP, bHCG
Grey	Fluoride Oxalate	Blood Glucose
Purple	E.D.T.A	FBC
Green	Lithium Heparin	Plasma tests
Blue	Sodium Citrate	Coagulation tests/ Platelet clumping investigation
Pink	K3 E.D.T.A	Blood Transfusion tests

Paediatric Specimen Bottles		
Cap Colour	Anticoagulant	Test
Red	E.D.T.A	FBC
Yellow	Fluoride Oxalate	Blood Glucose
Orange	Lithium Heparin	Plasma tests
Green	Sodium Citrate	Coagulation tests
Pink (Adult Size)	K3 E.D.T.A	Blood Transfusion Tests
Clear	Clotted (No Anticoagulant)	All serum tests

Other Specimen Containers available from Ardcavan Central stores	
Container	Test
Heparinised Syringe	Blood Gases
24 Hour Urine Container	24 Hour Urine
Aerobic, anaerobic and paediatric blood culture bottles	Blood cultures

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6.3 Positive Patient Identification

Positively identify the patient by requesting verbal confirmation of surname, forename and date of birth.

Ref Standard Operating Procedure for Pre-transfusion sampling and requesting of Blood Components/Blood products WGH-HV-HP-009 (available [WGH Publisher Haemovigilance](#))

Verify that the details provided match that indicated on the patient's hospital ID band. Details for labelling should be taken from the patient's wristband if worn. This applies for all specimens taken. Where ever possible, all samples should be taken and labelled using Blood Track PDAs and printed labels.

In the event of IPMS downtime (which takes place on scheduled basis once every three months) patient is assigned a pre assigned Chart number, name, date of birth or gender are specified. As soon as IPMS is restored patients detailed are assigned to this chart number and records merged.

When dealing with Unconscious/ Unidentified patients, the minimum information necessary on the sample tube and request for is a unique identification number, name assigned John Doe/Jane Doe approx. date of birth (assigned by IPMS) and patient gender. Sample must also be also be dated, timed and signed by person who took the blood sample. As soon as patient is positively identified, patients detailed are assigned to this chart number by IPMS and records merged.

Multiple unknown patients who may be admitted to Emergency Department should be identified as per [Health Service Executive South East Area Major Emergency Plan](#)

Outpatients without hospital identification bracelets in situ must verbally confirm the following before a sample can be taken- first name, surname, date of birth and address. Clinical staff must verify these details are identical on the patients request form and on the patient's medical records. Verify that the patient meets pre-examination requirements e.g. fasting status, medication status (time of last dose, cessation), sample collection at predetermined time etc.

6.4 Phlebotomy

The Phlebotomy service provided in Wexford General Hospital is not located in the Pathology Laboratory.

The Phlebotomy service is managed by the Director of Nursing and is not under remit of Pathology Department

The Phlebotomy department provides a service for GPs based in Ely hospital and for paediatrics in Paediatric outpatients department WGH

6.5 Patient Consent

Explain procedure to the patient and ask for consent. Wexford General Hospital follows the HSE national consent policy [HSE National Consent Policy - Corporate](#)

For most routine laboratory procedures consent can be inferred when the patient willingly submits to the collection.

For administration of blood/blood products patient is provided with 'Patient Information Leaflet', consent is sought and documented on patients Prescription and Administration record. WGH-HV-HF-003 as outlined in Standard Operating Procedure for Prescription and Administration of Blood' WGH-HV-HP-008 available [WGH Publisher](#)

Consent is not possible in emergency situations when dealing with unconscious patients the laboratory may carry out necessary procedures provided they are in the patient's best interests as requested by patient's medical team.

For genetic testing documented consent must be obtained by the requesting clinician. The request form for these referred tests provides space for the recording of such consent.

6.6 Selection of Primary sample container/ volume/requirements

For details on primary samples required for all examinations performed in WGH laboratory refer to each department section:

Blood Transfusion	Section 11
Haematology	Section 12
Biochemistry	Section 13
Blood Cultures	Section 14
Point of care	Section 15

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For all other examinations that are available refer to UHW user manual which is available on the [Lab Web Enquiry](#) icon on all desktops. It is also available on the UHW website. Under 'Departments' Click on Laboratory Services then in the test library search all tests from A-Z by name for all required information.

For examinations that are not offered by UHW refer to the lab at WGH or to Biomnis website: <http://www.biomnis.ie>
Select Test Information then Test Guide, select the department and then the actual examination that you require for all required information on sample collection.

6.7 Primary Sample Collection

To avoid compromising sample integrity, which in turn can effect examination results:

- a) Verify that the patient meets pre examination requirements e.g. confirm that the patient is fasting if a fasting sample is required. Certain dynamic function tests require timed collections and each blood bottle must be clearly labelled with the time of sampling in such cases. The timing of certain tests such as therapeutic drug monitoring will be dependent on the medication status of the patient.
- b) Collection tubes and containers shall be stored according to manufactures instructions;
- c) Check the expiry dates on the sample tubes. Do not use sample tubes that are past their expiry date
- d) Use of small-bore needles can cause haemolysis and should be avoided;
- e) The appropriate puncture site shall be chosen;
Do not draw blood from an arm with an infusion in progress. When infusions are in place on both arms ask staff if one can be switched off for 3 minutes minimum to allow venepuncture to take place. Advise staff when procedure has been completed.
- f) Correct sample volume shall be specified and collected;
- g) Correct volume for acceptable sample to additive ratio shall be collected;
- h) Correct container or additives (e.g. stabilising agents/preservatives) shall be used
- i) Samples should be taken in order of draw refer to 6.9
- j) Traumatic or repeated attempts at venepuncture should be avoided;
- k) Sample tubes shall be adequately mixed immediately following collection. Do not shake bottles. All tubes must be completely

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inverted 8 times after filling, except coagulation tubes which are inverted 4 times. Excessive mixing if sample should be avoided;

6.8 Procedure for Venepuncture

Consult the patient as to any preferences in site and problems that may have been experienced on previous venepuncture.

Prepare the patient by:

- Obtain informed verbal consent for the procedure.
- Performing hand hygiene as per [Hand Hygiene Policy](#)
- Open the equipment carefully by peeling back packaging and ensuring that all key parts remain uncontaminated and covered until use
- Apply the tourniquet (5-6cms above the chosen site) and tighten slowly. Do not leave on longer than 1 minute to avoid restriction of arterial flow.
- Ask the patient to open/close their fist or place arm below heart level to encourage venous filling.
- Palpate the site to check for rebound elasticity – press lightly with two fingers and release.
- Choose the appropriate vein.
- Release the tourniquet, leaving in position ready to apply later.
- Perform hand hygiene as per [Hand Hygiene Policy](#)
- Don non-sterile well-fitting gloves. Additional personal protective equipment i.e. apron and / or goggles may be required following risk assessment of an increased exposure to blood.
- Disinfect the site for at least 30 seconds using 70% impregnated alcohol wipes or 2% Chlorhexidine in 70% alcohol. Use back and forth strokes with friction on an area of 4-5cms around the chosen vein and allow to dry.
- Dispose of the skin disinfectant wipe appropriately.
- Do not touch or re-palpate the site. If re-palpation is required, hand hygiene and skin disinfection must be performed again. (***This is especially significant where taking Blood Culture Samples***)
- Reapply the tourniquet (ensure a rest period of 2 minutes has elapsed).

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Collection of Sample/s:

- Use your non-dominant hand to achieve skin traction below the puncture site and stabilise the vein.
- Hold the blood collection set between your thumb and index finger
- Position the needle-facing bevel up.
- Insert the needle directly above the vein, through the skin (angle 10-30 degrees depending on the depth of the vein).
- Observe for flashback in the chamber when the needle punctures the vein.
- Decrease the angle between the needle and the skin.
- When successful, the bottle should be filled where possible with the amount that has been specified on it.
- When multiple blood samples are required, ensure they are taken in the recommended order of draw.
- Release the tourniquet while supporting the device in situ.
- Sample tubes shall be adequately mixed immediately following collection. Do not shake bottles. All tubes must be completely inverted 8 times after filling, except coagulation tubes which are inverted 4 times. Excessive mixing of sample should be avoided;
- Apply sterile gauze over the puncture site. Do not apply pressure before you remove the needle.
- Remove the needle activating the needle safety device, as per manufacturer's instructions.
- Place the used blood collection set in the sharps container.
- Maintain gentle digital pressure on the puncture site to prevent blood leakage.
- The adult arm can be elevated while applying pressure to prevent haematoma formation but do not bend the arm.
- Discard the blood contaminated gauze in the clinical waste bag.
- Apply a sterile dressing or band aid over the puncture site.
- Remove disposable sheet, gloves and disposable eye – protection (if applicable) and dispose of appropriately.
- If no sample can be obtained, remove the blood bottle, remove the tourniquet, withdraw the needle and locate to another site. Only two attempts should be made at the venepuncture procedure. If unsuccessful refer to another practitioner.
- Post sample collection perform hand hygiene as per Hand Hygiene Policy moment 3 "After Body Fluid Exposure".

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Post Sample Collection

- Dispose of the needle safely as per sharps policy.
- Bring used clinical tray and equipment to the designated utility area
- Dispose of healthcare risk and non-risk waste appropriately.
- Decontaminate the clinical tray / dispose of if single use.
- All materials used in sample collection should be treated as potentially hazardous and discarded using sharps containers and other appropriate colour coded bins/ bags.
- Remove gloves and apron and carry out appropriate Hand Hygiene as per Hand Hygiene Policy (WGH 2015).
- Ensure blood bottles and requisition forms are correctly labelled and signed at patient's bedside.
- Place all blood collection bottles and forms into the correct bag and leave in the designated area for transport to the laboratory.
- Ensure samples are not in view of public
- Arrange for blood samples to be transported to the laboratory as quickly as possible at ambient temperature
- Samples can be transported by pneumatic chute or there is a designated blood orderly with a 'blood phone' and radio who can be contacted for delivery to laboratory












Risk of infection

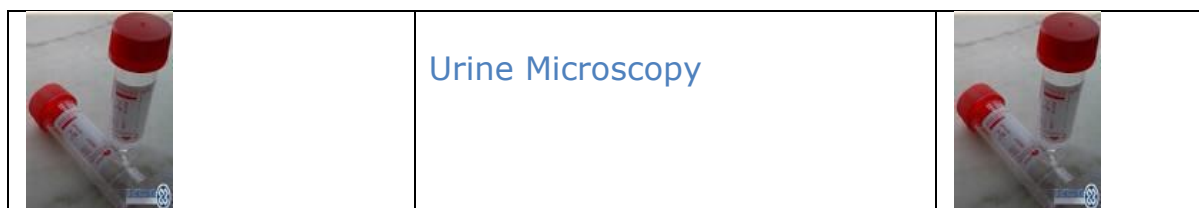
- If using a separate biohazard bag, do not place sample and form together in the same pouch of biohazard bag.
- Always supply clinical information, including known risk infection risk with each request.
- Ensure that samples which pose a risk of infection to staff (e.g. HIV, Hepatitis or TB etc.) are clearly identified with a yellow/red biohazard sticker attached to the request form and all sample bottles.
- Sample containers, request forms or plastic transport bags which are contaminated will not be accepted for processing by the laboratory.

6.9 Order of Draw



Blood Cultures for Microbiology should be taken before any blood samples.

Adult Sample Type	Test	Paediatric Sample Type
	Coag, INR, APTT PT, D-Dimers, Fibrinogen	
 AE/AMAU/Onc/ICU  All Others	UE, LFT, BP, MG, PO4, AST, ALT, Alk Phos, Bilirubin (total and direct), CRP, CPK, Calcium, Amylase, Acetaminophen (Paracetamol), BHCG (Serum only), NT-proBNP (Serum only), Na, K, Urea, Creatinine	 Serum – Clear top paediatric container
	Full Blood Count	
	Crossmatch DCT Group & Save Transfusion Reaction Investigation Phonotype Antibody investigation	
	Glucose	



6.10 Factors that may affect the performance of the examination or interpretation of Results:

Request form problems that will cause sample rejection or delay

- Illegible patient demographics, illegible name of ordering clinician or incorrect ward/location
- Absent or incorrect patient identifiers refer to 7.1-7.3
- Absent or incorrect time and date of request
- Unclear or totally absent marking of test request boxes
- Type of specimen not identified
- Form contaminated by specimen

Specimen problems that will cause sample rejection.

- Addressograph labels on blood transfusion samples
- Incorrect labelling of specimen refer to 7.1-7.3
- Incorrect volume of specimen.
- Sample collected into an incorrect preservative/ anticoagulant
- If insufficient sample is received for blood transfusion and crossmatch is requested a second sample may be requested by Medical Scientist
- Order of draw as per 6.9 not followed
- Specimen clotted inappropriately.
- Haemolysed samples
- Lipaemic/ icteric samples.
- Leaking containers (rejected because of infection risk)
- Mixing blood and tube additives. (All tubes must be completely inverted 8 times after filling, except coagulation tubes which are inverted 4 times) and, in accordance with order of draw. Do not shake bottles.
- If sample tubes are not adequately mixed immediately following collection. All tubes must be completely inverted 8 times after filling, except coagulation tubes which are inverted 4 times. Do not shake bottles. Excessive mixing of sample should be avoided;
- Specimens received too old for analysis
- Incorrect lab request form used

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- If collection from a horizontal catheter is unavoidable, avoid contaminating the sample with remains of infusion solution.
- **Samples should never be poured from one tube into another tube**, even if the tubes have the same anticoagulant.

Even a slight haemolysis can cause increased serum/plasma values e.g. Potassium, Bilirubin, LDH, AST, ALT, Mg, Urea. The following errors lead to haemolysis and should be avoided in any case;

- Tourniquet applied too tightly.
- Failure to release tourniquet
- Needles with too small diameter being used.
- Aspiration of tissue fluid after puncturing vein.
- Transfer of blood into other containers with a syringe.
- Shaking the sample instead of mixing.
- Delayed separation of cells from serum/plasma >3 hours.
- Using an improperly attached needle and syringe so that frothing occurs
- Forcing blood into collecting tube
- Failure to allow alcohol to dry
- Very slow flow into collection tube
- Drawing blood from indwelling line
- Drawing blood from a bruised area.

7.0 Labelling, Storage, & Transport of Specimens

7.1 Labelling the Primary Specimen

It is essential that all specimens are labelled at patient's bedside using process of positive patient identification with a minimum of three identifiers for Blood Transfusion, and two identifiers for other departments.

Always use sample collection tubes that are in date. Blood taken into expired collection tubes may render the specimen unsuitable. Specimen tubes must **not** be pre-labelled.

The following identifiers should be placed on the specimen, mandatory identifiers are highlighted:

Specimens for Blood Sciences must be:

- Labelled with addressograph or Electronic Blood Track Label [EBTL]
- Where no addressograph labels are available clear handwritten labelling is accepted.

Haematology/Biochemistry/ Blood culture Specimen
Patients FULL name
D.O.B and/or hospital number
D.O.B and/or hospital number
Destination for report
Date and time of specimen collection
Identity of specimen collector.
Collection time.

Specimens for Blood Transfusion must be:

- Labelled with Electronic Blood Track Printed Label [EBTL] OR
- Handwritten
- **Addressograph labels must never be used on Blood Transfusion samples and doing so will result in sample rejection**
- There can be no time difference on time sample taken that is documented on the patient's blood transfusion request form and time documented on sample bottle. **Time on EBTS collect label on patient's blood transfusion collect form must be identical to time on EBTS label on patient's sample.** Any discrepancy will result in sample rejection
- Electronic Blood Track System (EBTS) should be used when taking all Blood Transfusion Samples. In the event that EBTS is not used e.g. samples handwritten and if patient does not have historical group on file the Medical Scientist will request a second transfusion sample

(Refer to Appendix 1. Procedural Flow Chart)

<p>Blood Transfusion Specimen Details on specimens must be: Labelled with Blood Track Printed Label /handwritten Addressograph labels are not accepted. Details on the sample MUST include:</p>
Patient's FULL name
D.O.B
Hospital Number
Signature of phlebotomist (electronic if using Blood Track)
Date and time of specimen collection

Specimens will be rejected if the essential requirements are missing from the primary specimen.

Urgent Specimen from an Unidentified/Unconscious Patient

In the event of an urgent specimen from a "moribund" patient, where identity cannot be confirmed the minimum identifiers for request form and sample bottle:

- Unique chart number
- Name: John Doe/ Jane Doe
- D.O.B (approximate as assigned by IPMS)
- Gender
- Date time and signature

This essential information provided must be identical on request form, specimen and patients WGH ID band

The Unique hospital number is obtained from IPMS system and is essential on their identification arm band for positive patient identification.

As soon as patient is positively identified, patient's details are assigned to this chart number by IPMS and records merged.

7.2 Available Request Forms

WGH	Form
Blood Transfusion	Transfusion Request Form (WGH-BT-LF-100)
Biochemistry & Haematology	Wexford Pathology Request Form
Biochemistry & Haematology Clinically Urgent Specimens	WGH Pathology Department Clinically Urgent Requests Only form (Red Form)
Specialised external tests which require special handling such as freezing etc. prior to dispatch Hand to lab staff directly & inform of need for freezing.	<u>Must</u> be sent on Wexford General Hospital Referral Request Form (Orange Form)
UHW Referral	Form
UHW Haematology and Biochemistry	Green UHW Blood Sciences Request Form WRH-PATH-LF-299
UHW Antenatal Blood Transfusion	White UHW Blood Transfusion Laboratory Request Form WRH-BT-LF-115
Microbiology	Yellow UHW Microbiology request form FM009
Immunology	Blue UHW Immunology Request Form WRH-HIS-LF-408
Serology	Pink UHW Virology/ Serology Request Form FM010

7.3 Completion of Request Forms

For accurate identification of patients and specimens, it is essential that all sections of request forms are completed fully, legibly and accurately. Discrepancies or omission of essential information may result in the specimen not being analysed, issuing of report to incorrect location or inability to contact the doctor in case of urgent or unexpected results.

Up to date Addressograph labels are acceptable on laboratory request forms.

During routine hours for urgent blood sciences requests please use clinically urgent forms and the request will be prioritised. For urgent Blood Transfusion requests please contact Blood Transfusion department directly at Ext 53259

If results are extremely urgent please contact the laboratory to discuss your requirement.

Out of hours bleep 239 Medical Scientist on call

Pathology Request Form

Pathology Request Form (mandatory information highlighted)
Patient's FULL name D.O.B. Hospital number
Patient's Gender
Patient address
Patient location
Patient Consultant or GP/ GP code
Hospital & Ward or GP Address
Date & Time of Specimen collection
Type of Specimen / Site of origin where relevant
Tests Requested
Specific Clinical Information
Name and bleep number of requesting doctor

Blood Transfusion Request Form

Blood Transfusion Request Form (mandatory information highlighted)
Patient's FULL name D.O.B. Hospital number
Patient's Gender
EBTS Collect Label or handwritten Time and date of specimen and signature of phlebotomist
Signature & Contact No. of the person requesting the test
Specific transfusion requirements for individual patients. If modified blood components are required e.g. CMV negative and/or Irradiated, this should be indicated on request form
Patient address
Patient Location
Patient Consultant or GP/ GP code
Hospital & Ward or GP Address
Tests requested
Specific Clinical Information
Number of units of blood, platelets or plasma including date and time required.
Volume, concentration and quantity of anti-D, factor concentration or albumin required as applicable including date and time required.
If blood is required, the reason for transfusion must be written on the request
Transfusion history/history of administration of Anti-D/Antenatal history etc. is also relevant

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A clear indication as to whether the tests/services requested are urgent or routine. Note: All urgent or emergency requests should be phoned to the laboratory in routine hours or bleep the medical scientist on call out of hours.

7.4 High Risk Specimens

It is the policy of the laboratory department to treat all samples as potentially infectious or high risk. Therefore it is advisable to take universal precautions in the collection, packaging, and the delivery of samples being sent to the laboratory for analysis.

Sample containers, request forms or plastic transport bags which are contaminated will not be accepted for processing by the laboratory.

It is the responsibility of the requesting clinician to ensure that samples which pose a risk of infection to staff (e.g. HIV, Hepatitis or TB etc.) are clearly identified with a yellow/red biohazard sticker attached to the request form and all sample bottles.

It is a requirement that laboratory specimens from patients who have known or suspected Risk Group 3 infections be labelled in such a manner that this knowledge be conveyed to the laboratory. Specimens from these patients should be labelled Biohazard or Danger of Infection.

The specimen container should be labelled on the outside and clearly visible. The accompanying paperwork should be appropriately labelled.

It is good practice for those requesting tests to provide as much information as is relevant, consistent with maintaining patient confidentiality, with any request for a laboratory investigation.

7.5 Packaging of Specimens for Transport to Laboratory

Samples should be placed in specimen transport bags with biohazard signage as soon as the sample has been taken.

The sample/s should be placed in the sealable pocket of the transport bag and this should then be closed properly.

Wexford General Hospital Blood Sciences and Blood Transfusion request forms have the sample bag attached

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The request form/s should be placed in the open compartment so that in the event of leakage the request forms are not contaminated and the leakage is contained.

Large specimens such as some histology specimens or 24-hour urines should be put in large specimen bags with request form.

Internal transport boxes/laboratory specimen's bulk transport bags are available for the safe carriage of bloods to the Laboratory.

7.6 Transport of Internal Specimens to the Laboratory

All samples shall be transported to the laboratory in sealed Wexford General Hospital Laboratory Specimens Bulk Transport Bags

It is not permitted for orderlies to transport specimens to the laboratory by hand or in their pocket.

To ensure time between collection and receipt in the laboratory is appropriate for the requested examinations there is a pneumatic chute system in operation in WGH. The chute stations are located in the emergency department, lift lobby 1, lift lobby 2, lift lobby 3, the laboratory and the front door. Specimens may be placed into a pod and sent directly to the laboratory from any of the stations as per instructions on the system. A list of items not transmitted in the chute system is available at each station these include:

- Respiratory specimens
- Specimens collected in glass anaerobic transport tubes
- Cytology and histology specimens with formaldehyde
- Specimens in syringes /capillary tubes
- Specimens with needles
- All body fluid specimens including CSF
- Stool specimens
- Any irreplaceable specimen or this not easily recollected

All Blood Transfusion Specimens must be transported to laboratory as soon as possible.

Samples received in the Laboratory exceeding these limits cannot be processed and a repeat specimen will be required.

Please Note: This will impact in particular specimens taken on Friday; they will be unsuitable for analysis on the following Monday (or Tuesday in the case of a Bank Holiday)

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Haematology/ Blood Sciences samples are transported at ambient temperature (18-25°C) in a timely manner and should arrive within a suitable time frame for required analysis ref to Section 12 and 13.

Samples for referral laboratories specific temperature requirements may be required. Please contact specimen reception for information

In Wexford General Hospital a dedicated orderly transports the specimens to the laboratory. Specimens are collected from designated collection points on each ward wards as per the orderly schedule from 08.30 to 14.30 hrs. Use the orderly mobile phone 61767 for urgent blood collections during routine hours.

Urgent samples during routine day and on call requiring collection should be notified to orderly control and sent to the lab immediately.

There is a procedure in place available on WGH Published [Operation & Management of Pneumatic Tube System](#) PPG No: CLIN 000 268 for dealing with blockages, leakages and decontamination in the pneumatic chute system.

Note: The Laboratory is not responsible for the transport of samples, or delays in transport, either in the pneumatic tube system, or via porters, to the Laboratory. Transport of samples to laboratory are audited via Internal Vertical Specimen Audits which are scheduled every 4 months and any non-compliance will be raised as non-conformances.

All samples for processing in Wexford General Laboratory are time and date stamped when they are received by the laboratory staff in the laboratory, and turnaround times are calculated from the time the sample is received by the Laboratory. Also, during on-call hours, it is the responsibility of the person requesting the test, and not the porter, to contact the Medical Scientist via 239 or the switchboard to inform them of any urgent samples being sent to the Laboratory.

7.7 Transport of External Specimens to and from WGH Laboratory

The requirements stated below apply to all samples directed to the laboratory. These will be required to be packed and transported in accordance with the European Agreement concerning the International Carriage of Dangerous Goods by Road (UNADR).

It is the responsibility of the sender to ensure that specimens are transported in accordance with ADR. ADR compliant packaging should always be used. This also applies to specimens sent by post.

The Laboratory is equipped with packaging materials and containers, which comply with the requirements of ADR.

The sender should ensure to avoid extreme ambient transport temperatures, as this could be detrimental to sample quality.

7.8 Dispatch Times to University Hospital Waterford and other External Sites

Collection Point	Collection Time	Comments
Wexford Area		
Pathology Laboratory Wexford Hospital	<ul style="list-style-type: none"> Monday to Friday 08:00 and 12:30 - All samples. Saturday 08:00 - All samples with exception of histology specimens Sunday/Bank Holiday Monday 8.00am- Urgent samples only. All urgent samples for dispatch to UHW outside of these times must be communicated to the Laboratory in Wexford. 	<p>Monday-Friday</p> <p>Transported to UHW by courier.</p> <p>Samples dispatched to all other external sites at 12:30 daily (Monday to Friday), with next day delivery guaranteed.</p> <p>Same day delivery to external hospitals must be communicated to the lab.</p> <p>Samples to overseas destinations are sent by courier with next day/ 48 hr delivery options as required.</p>

7.9 Transport of High Risk Samples

Specimen containers that are contaminated externally must not be sent to the laboratory.

High risk specimens should be identified.

Samples which are suspected or known to contain certain risk group 3 or 4 pathogens are classified as infectious.

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7.10 Model Rules for transport of Specimens

This policy applies to all orderlies and clinical staff who deliver specimens to the laboratory.

Some of the work carried out by blood / hospital orderlies and clinical staff in the hospital may involve accidental contact with material that could be infectious. However, wherever they might be working they should observe the following guidelines:

Cover any cuts or grazes on your hands with a waterproof dressing.

Carry all specimens in the boxes and bags provided, not in your hands or pockets.

Touch specimen containers as little as possible. If you do touch them, wash your hands as soon as practicable afterwards.

Always wash your hands before meal breaks and at the end of duty.

If a specimen leaks into a box or bag it is returned to the clinical area from where it was sent from.

If you drop and break a specimen, do not touch it or try to clear up the specimen. Stay with the specimen to prevent other people touching it and send someone to the laboratory for help. Report the accident to your supervisor as soon as possible.

If the integrity of the sample has been compromised and there is a health risk, the head of orderlies shall be notified immediately and action taken to reduce the risk and to prevent reoccurrence

Handle specimen containers gently at all times.

8.0 Laboratory Specimen Reception

All samples received in the laboratory for processing in WGH have the date & time of receipt recorded on the request form.

Samples are not separated based on age, ethnicity, sexual orientation, religious beliefs and all samples are treated with due care and respect.

Blood Transfusion samples received in laboratory are stamped with date and time of receipt and processed as they are received, unless it is clinically indicated on request form or Medical Scientist receives a phone call that processing is required urgently.

Blood Sciences samples received on 'red' clinically urgent forms or if Medical Scientist receives phone call requesting urgent processing are given priority.

All other samples received on 'green' forms are processed as they arrive within established cut off times for routine sample testing refer to Sections 11, 12 and 13.

All routine samples received after established cut off times and not processed until next routine day are stored in accordance with test requested for sample received.

This document is issued by the Pathology Laboratory WGH

It is the responsibility of the user to ensure they are utilising the current issue of this document

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There is a Specimen Audit Trail on APEX for Blood Transfusion and Blood Sciences samples from time of sample receipt to final report.

Trained Laboratory personnel will evaluate the specimens to ensure that they meet the relevant acceptance criteria, see Laboratory Policy on Mislabeled Forms/ Samples below.

Sample is rejected if essential criteria are not present or correct.

When specimens are being sorted and numbered all discrepancies are documented on the request form.

Laboratory staff are not permitted to amend details on specimens or request forms.

Addressograph labels will be accepted on specimens **except** for Blood Transfusion specimens.

Electronic Blood Track System (EBTS) printed labels will be accepted on all specimens including blood transfusion.

Identification criteria for crossmatch specimens and request forms are as laid down by the Hospital Transfusion committee.

Users will be informed if a decision is made to reject a specimen.

All samples will be held in the laboratory for at least 48 hours

All specimens are then labelled with a unique laboratory accession number, they are then recorded in the LIS linking the unique laboratory accession number to the patient's details provided on the request form.

Upon receipt of a sample whose integrity was compromised or which could have jeopardised the safety of the carrier or the general public the laboratory informs the sender of the primary sample immediately. The sender will be informed about measures to be taken to prevent reoccurrence. Refer to 8.2 Laboratory policy on sample rejection and 8.3 Definition of replaceable or irreplaceable sample.

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8.1 Urgent Sample Receipt

If samples are received in specimen reception marked as urgent, they are labelled using designated red labels.

These samples are then transferred to the appropriate area of the laboratory as soon as possible & processed.

All urgent blood transfusion requests must be phoned to the transfusion department during routine hours or bleep the medical scientist on call out of hours.

8.2 Laboratory Policy on Sample Rejection

The laboratory makes every effort to ensure that samples are processed as requested. However samples must be appropriate for the requested investigation and there must be no ambiguity as to the identification of the patient.

Refer to 6.10 Factors that may affect the performance of the examination or interpretation of Results

The criteria for sample acceptance are strictly adhered to in the interest of patient safety. Failure to meet required requirements shall lead to rejection of the specimen and request form.

The laboratory staff will inform the ward/phlebotomist if a sample is inadequately or incorrectly labelled and request a new sample. No changes or additions may be made to specimen labelling after receipt in the laboratory. Blood Transfusion samples can have no time difference on sample time taken as documented on patient's blood transfusion request form and that on sample bottle. Any time discrepancy on samples received handwritten or labelled with EBTS collect label and time documented on blood transfusion request form or EBTS collect label on blood transfusion request form are rejected as unsuitable.

The laboratory staff will inform the ward/phlebotomist if a sample is unsuitable for analysis and request a new sample if required.

Laboratory staff are acting correctly in refusing to accept a request for testing when either the request form or the sample is inadequately/incorrectly labelled.

The laboratory will not be responsible should any problems arise due to delays caused by unsuitable/incorrect labelling of samples or forms. All rejected samples are logged in the Laboratory Information System and the reason for the rejection documented.

If a repeat sample is requested it is the responsibility of the requestor to risk assess the impact to patient outcome.

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8.3 Definition of replaceable and irreplaceable samples

Replaceable samples

Can be re obtained without any significant risk to the patient and whose results are not likely to be different from those obtained initially because of any therapeutic intervention.

- Among blood and urine samples, all but a few types are considered replaceable. Samples from patients with difficult or inconvenient venous access are considered replaceable unless they meet one of the criteria listed below in irreplaceable samples.

All blood samples sent to the Blood Bank for purposes of obtaining material for transfusion are automatically viewed as replaceable.

Clinically critical/ Irreplaceable samples:

Some samples are considered Clinically Critical /irreplaceable and may be processed provided the unique identity of the sample can be determined and documented. Examples of irreplaceable samples include:

- a. Samples obtained by invasive procedures such as surgery biopsies, fluid aspirates, foetal amniotic sampling, and CSF samples.
- b. Samples obtained before an intervention that might alter the result (e.g. a sample sent for blood culture where antibiotic therapy was administered before a repeat sample could be obtained).
- c. Umbilical cord blood, blood samples from neonates or from infants less than 6 months of age for whom the total blood volume is problematic.
- d. Arterial blood gas.

Where there is **uncertainty in the identification** or the **validity** of the primary sample or **stability** of the analytes and the primary sample is irreplaceable or critical then such specimens may be accepted but only if the originator has obtained prior approval from their consultant and documents this on Disclaimer Form WGH-PATH-LF-807 (only available in laboratory). Disclaimer Form WGH-PATH-LF-807 is attached to the patients request form. The final report records the reason for breach of mandatory acceptance criteria and also indicates the name of the Consultant who accepts responsibility for the sample.

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8.4 Sample Storage Facilities

The laboratory has appropriate facilities for storage of samples to avoid deterioration, loss, or damage during pre-examination, examination and post-examination activities.

Non urgent samples that are received after the cut off times (Refer to Sections 11, 12 and 13) and not processed the same day are stored appropriately until processed.

All other samples are processed on the day of receipt, post processing the following retention times for samples are in place:

- Blood Transfusion sample is held in the laboratory at 2 to 8°C for 14 days. Should crossmatching be required sample only suitable for 72 hours from time of phlebotomy.
- Haematology and coagulation specimens are usually kept for 48 hours after final report has been issued. Blood Films are kept for 3 months after final report has been issued.
- Biochemistry specimens are kept for 48 hours after final report has been issued.

All laboratory waste is segregated and disposed of in accordance with the Wexford General Hospital Waste Management available [WGH Publisher](#)

8.5 Additional Examination Requests

Repeat Examination due to Analytical Failure

It is the policy of the laboratory in the event of an analytical failure to:

- Repeat the test using a back-up instrument/ method
- or**
- Store the specimens in appropriate conditions until the cause of the analytical failure is identified and corrected and then repeat the test. The urgency of the outstanding specimens is reviewed by the Consultant Haematologist or nominee.

Further Examination of the Primary Specimen

When further testing is relevant to the investigation or diagnosis of the condition or symptoms which gave rise to the original test request, it is the policy of the laboratory to pursue a diagnosis by performance of additional tests, if available, using the primary specimen. In some cases further samples are required and this requirement is communicated to the ward/clinician by the laboratory.

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Requesting Additional Examinations (Verbal Requests)

Users of the laboratory service may request additional examinations on specimens already sent to the laboratory provided specimen has been stored appropriately, laboratory has sufficient specimen remaining to perform the additional tests, and that the specimen is still of optimal quality to allow the reporting of accurate and meaningful results.

Additional requests may be made verbally over the phone. The medical scientist receiving the call will if necessary consult with senior staff before accepting the request to determine the suitability of the sample for the required test. Verbal requests should be followed up with a written request form, indicating that this is an add on request.

The result will not be made available until the written confirmation of the order has been received in the laboratory

In blood transfusion all telephoned requests for products are documented on the laboratory form WGH-BT-LF-100. Verbal requests should be followed up with a written request form, signed by a medical doctor, indicating the product required. Products will not be issued without receipt of the written, signed request form. The only exception is in emergency situations e.g. MTP activation where the form requesting the products may come down retrospective to the issue

8.6 Department Guidelines for Requesting Additional Examinations

Department	Policy
Blood Transfusion	<p>Please contact the laboratory for all additional requests such as crossmatching etc. During routine day phone the Blood Transfusion laboratory at EXT 53259. Out of hours Mon-Fri, weekends and bank holidays bleep 239.</p> <p>Once a request has been placed for a blood component or product to be issued, the medical scientist will ensure that a suitable sample is available in the laboratory.</p> <p>It may be necessary to take a repeat sample from the patient depending on pregnancy or previous transfusion history of the patient.</p> <p>If suitable sample is available the Medical Scientist will request a written confirmation of the order on a Blood Transfusion Request Form WGH-BT-LF-100, signed by the requesting medical officer, to be sent to the laboratory. The request will not be made available until the written confirmation of the order has been received in the laboratory.</p>
Haematology	<p>Haematology and coagulation specimens are usually kept for 48 hours after final report has been issued. Requests for additional testing are dependent on the test being requested. APTT & D Dimer requests are very time sensitive and are not suitable for analysis more than 8 hours after being taken.</p> <p>If a suitable sample is available the Medical Scientist will request a written confirmation of the order on Wexford General Hospital Pathology Request Form signed by the requesting medical officer, to be sent to the laboratory. The result will not be made available until the written confirmation of the order has been received in the laboratory</p> <p>For other requests e.g. Infectious Mono, ESR, blood film etc. see the individual tests in haematology section 12.0.</p>
General Biochemistry	<p>Routine specimens are retained in the Biochemistry laboratory at 2-8°C for 48 hours after final report has been issued. Analysis of additional tests are subject to specimen integrity and analyte stability. Add on facility only available for routine biochemistry samples up to 24 hrs from sample draw and only if the plasma/ serum has been separated from cells and the sample appropriately stored.</p> <p>If suitable sample is available, the Medical Scientist will request a written confirmation of the order Wexford General Hospital Pathology Request Form signed by the requesting medical officer, to be sent to the laboratory. The result will not be made available until the written confirmation of the order has been received in the laboratory.</p>

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9.0 Information Technology

Laboratory results are stored on the Laboratory Information System (LIMS) current system is APEX. All hospital medical, nursing and relevant clerical staff are granted access to lab web enquiry for reviewing laboratory reports by emailing LabsystemWGH@hse.ie

The applicant is responsible for the proper use of access to laboratory results:

- Usernames and passwords must not be shared
- Any patient specific information gained through work or on receiving reports from laboratory is strictly confidential and must not be relayed or discussed with any third party unless they are specifically authorized to receive this information.
- Never access any patient data that is not relevant to your work
- Computers holding patient identifiable information must be password protected.
- All printed or written records with personal data should be shredded as soon as they are no longer needed.
- Each employee is responsible for the security and confidentiality of all types of paper and electronic information which they come in contact with during the course of their work.

10.0 Reporting of Results

Laboratory results are reported accurately, clearly and unambiguously. Laboratory reports from Wexford General Hospital are issued by computer and reference ranges for different analytes are printed with the test results. No information is made available by laboratory directly to patient. If information is requested by healthcare provider acting on behalf of patients they are directed to the patient's consultant. If there is an expected delay to results due to analyser/IT issues an email is sent to all users informing them of the delay and potential impact to patient

10.1 Electronic Reports

For GDPR and data security all in patient reports for all clinical areas are electronic only. Once results from blood sciences are authorised they are available electronically to all clinical areas using the Lab Web Enquiry system. Results of tests referred to UHW are viewed on 'lab web enquiry' once they have been authorised. Any problem with the ward printer should be logged with IT in the first instance.

The requesting clinician is responsible for ensuring that the result is accessed and viewed using the "[Lab Web Enquiry](#)" icon available on all

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desk tops. Once the clinician accesses results electronically using his/her unique log on, this is equivalent to an electronic signature.

Blood science reports viewed on the "Lab Web Enquiry" are considered final reports and are issued as electronic only reports for all in patient WGH locations.

Blood Transfusion reports including those from referral laboratories UHW and IBTS are viewed on the "Lab Web Enquiry" and "Ward Inquiry" (WARQ) and are considered final reports and are issued as electronic reports for all in patient WGH locations.

Electronic reporting of GP results is in place regionally for GP's who have Healthlink.

10.2 Back up for Lab Web Enquiry

In the event that the Lab Web Enquiry is down, users may contact laboratory and hard copy of report will be generated only for critically urgent samples where results may impact patient care

10.3 Hard Copy Reports

Hard copy of the lab enquiry screen can be printed off if required but do not need to be filed in the patients chart. All printed records with personal data should be disposed of in 'confidential waste' as soon as they are no longer required.

Blood Transfusion reports are sent in hard copy format to the requesting clinical area or consultant if OPD.

Histology results are only available to ward staff that have been given specific access to histology results. Histology reports are printed in the Laboratory in Wexford daily and distributed to the appropriate consultant. Wexford Laboratory Medical Scientists and Secretary do not have access to histology results.

For Histology Ward Enquiry Access, contact Consultant Histopathologist UHW

10.4 GP Reports: Healthlink

GPs may access their patient results through Healthlink. Healthlink provides a web-based messaging service, which facilitates the secure transmission of clinical patient information between Hospitals, Health Care Agencies and

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General Practitioners. Message types include radiology reports, cancer referrals, lab reports & co-op messaging. See <http://www.healthlink.ie/>

10.5 Telephoned Reports

The laboratory will phone to inform of availability of result when:

- The results fall within established alert or critical intervals, as defined by procedure.
- The result deviates significantly from previous results.
- Urgent action by clinical staff is required.
- It is necessary to notify the requester that testing will be delayed, where it may compromise patient care.
- Unsuitable samples
- Amended reports
- Product availability for transfusion

The scientist on call is unable to handle telephone calls from GP practices after hours. All GP results can be accessed by electronic link if the surgery has been set up for HealthLink access.

A record is maintained on APEX of actions taken to phone results, this must include;

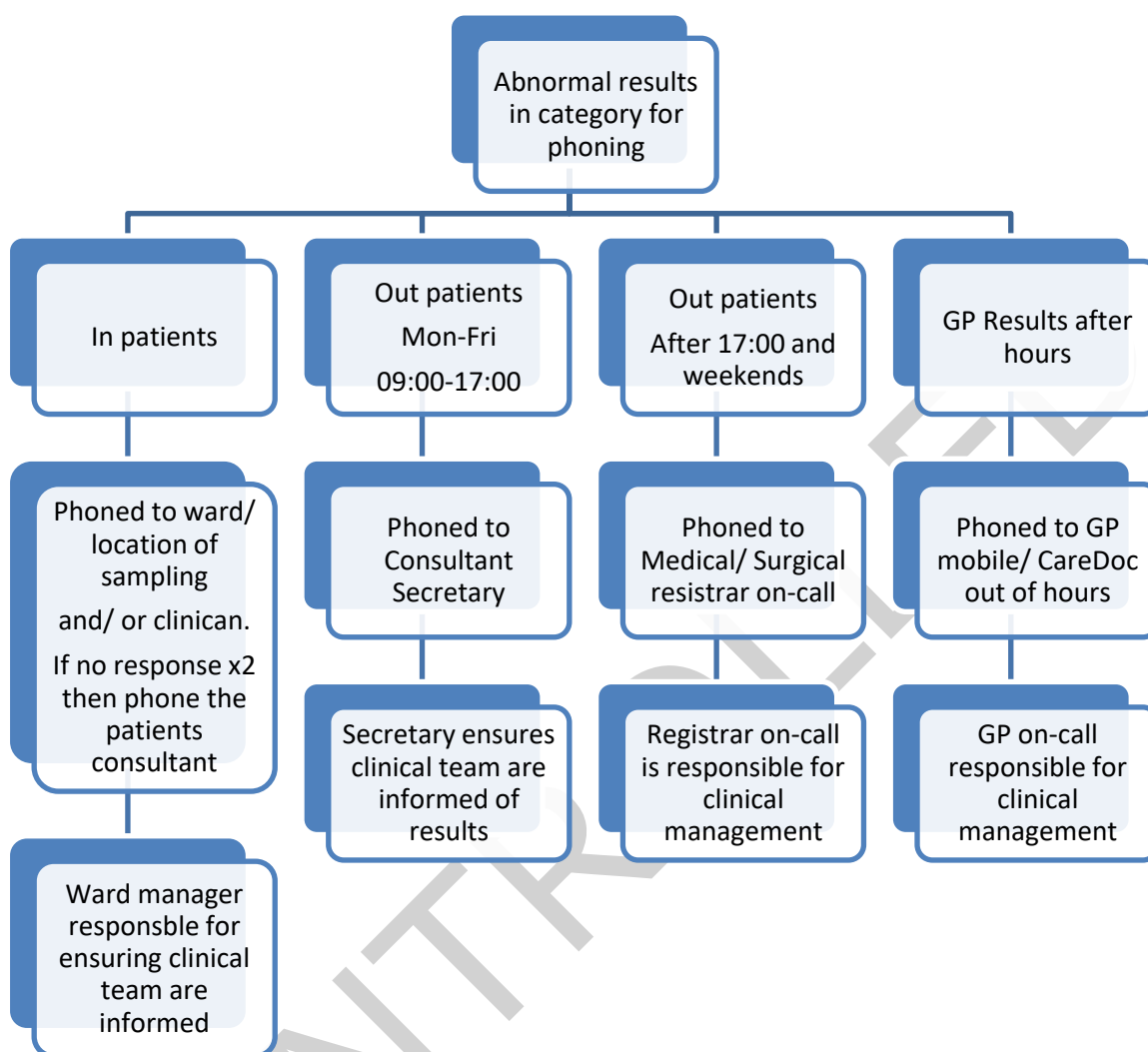
- The date & time phoned
- The responsible staff member
- The ward notified

Any difficulties in reporting encountered are recorded on the phone log in LIMS

Laboratory Protocol for Phoning Critical Results and escalation of same

Critical results are phoned as soon as available. This indicates potential; immediate danger to the patient and intervention maybe required on clinical review. Results should be reviewed in a timely manner

Critical results from external hospitals are transferred to requesting clinician for reporting. Consultant will be contacted if medical team cannot be contacted



10.6 Requests from external source for Release of Results

If a request for results of patient who has attended Emergency Department is received from an external requestor they can only be sent via secure 'Healthmail'. The following process must be followed to ensure results reach only authorised recipients.

- Request clinician's 'Healthmail' address
- The patient demographics
- The patients consultant
- Results required

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Print a hard copy of the results from APEX and email via Healthmail to the requesting clinician. Results cannot be sent to unsecure addresses e.g. Gmail/Hotmail etc.

*Note: We regret we are unable to deal with result enquiries externally after 17.00hrs.

If a Blood Transfusion report is requested by an external hospital, it can be faxed only if report has been authorised and the requesting hospital has sent headed letter confirming identity of requesting hospital. When report has been faxed, attach the confirmation of faxed report along with the fax received from the requesting hospital confirming their identity to patients transfusion request form.

10.7 Amended Reports

Where it is discovered that the original report issued is incorrect or contains false information a revised or amended report is issued.

The incorrect results are de-authorized as soon as the error has been identified. The ward/ GP are notified immediately and all telephone communications are recorded on the LIS.

The hard copy of report is retrieved if possible or request ward/ GP to destroy any relevant printed reports.

The revised report is retained on APEX with a comment indicating that it is an amended report and that it is a deviation from the original.

All amended reports are documented as a non-conformance in the QMS (Procedure for Amending Patient Results & Reports WGH-PATH-LP-070).

10.8 Reports from Referral Laboratories

The most frequent external tests referred to Eurofins are booked in and reported electronically via an interface with Eurofins. The report clearly identifies that test was processed externally.

All other requests for blood sciences referred by the lab in WGH are documented as a generic WPOST request on the LIS

The nature of the request and the referral lab are noted under specimen comment.

When the results are returned to the lab, the original hard copy is sent to the requesting clinician.

The WPOST request is authorised with a comment "Result Received" and a copy of the referral result is scanned into the laboratory document management software in the event it needs to be retrieved.

Requests for Blood Transfusion to referral laboratory IBTS, UHW or IBGRL are registered on LIS. When the results are returned to the Laboratory, they are registered in patient's record on LIS, the original hard copy is sent to the requesting clinician.

10.9 Delayed Results

In the event where a delay in examination results could compromise patient care each individual department will communicate this to the clinical area. This should be done by telephoning the clinical area and recording the call on LIS. If the delay is more general, it can be communicated to clinical areas by email/ memo.

Where the issue affects a number of clinical areas/ patients a non-conformance should be raised in the QMS. The call should be recorded as part of the immediate action.

10.10 Measurement Uncertainty

Certain tests give results as a numerical value. Within this reported value there is an inherent uncertainty, or variability, in the data generated. Data obtained from these tests enable an assessment of this measurement uncertainty (MU). There is a documented procedure Measurement Uncertainty for Blood Transfusion Tests WGH-BT-LP-108 for establishing and monitoring measurement uncertainty. Measurement uncertainty for blood transfusion is performed for 'REES' temperature storage monitoring for all blood products and reagents involved in sample processing and for all blood transfusion tests performed. Measurement uncertainty is reviewed annually. Measurement uncertainty is available to all users upon request.

11.0 Blood Transfusion

11.1 Blood Transfusion Tests

Test/Profile	Container Type(Vol)	Turnaround Times from time of specimen receipt in laboratory	Special Requirements All specimens must be labelled with Blood Track Label or if handwritten specimen labelling must include Hospital Number, patient name, date of birth, dated and signed.	Accreditation Status
Routine Group and Screen	EDTA 6ml	Samples received before 11:00 Reports Available 15:00	Samples must be received in laboratory within 48hrs of phlebotomy	Accredited

Test/Profile	Container Type(Vol)	Turnaround Times from time of specimen receipt in laboratory	Special Requirements All specimens must be labelled with Blood Track Label or if handwritten specimen labelling must include Hospital Number, patient name, date of birth, dated and signed.	Accreditation Status
		<p>Samples received between 11:00 and 15:00 Reports Available 17:00</p> <p>Samples after 15:00 processed next routine working day</p>		
Urgent Group and Screen	EDTA 6ml	Sample processed within 1 hr and report available when checked by 2 nd Medical Scientist	Routine day phone Blood Transfusion Laboratory Ext 53259 On Call Medical Scientist must be bleeped on 239 or contacted via switch	Accredited
Direct Antibody Test (DAT)	EDTA 6ml	<p>Samples received before 11:00 Reports Available 15:00</p> <p>Samples received between 11:00 and 15:00 Reports Available 17:00</p> <p>Samples after 15:00 processed next routine working day</p>	Samples must be received in laboratory within 48hrs of phlebotomy	Accredited

Test/Profile	Container Type(Vol)	Turnaround Times from time of specimen receipt in laboratory	Special Requirements All specimens must be labelled with Blood Track Label or if handwritten specimen labelling must include Hospital Number, patient name, date of birth, dated and signed.	Accreditation Status
Routine Crossmatch	EDTA 6ml	<p>Samples/requests for blood received before 11:00 blood available 15:00</p> <p>Samples/requests for blood received between 11:00 and 15:00 Blood Available 17:00</p> <p>Samples/requests for blood received after 15:00 processed next routine working day</p>	<p>Please ensure that all routine crossmatch requests arrive in the Laboratory before the daily cut off time of 15:00.</p> <p>The suitability of the sample for additional requests will be determined at the time of the request.</p> <p>Provide antibody status, if known. Presence of antibodies may lead to difficulty in provision of compatible blood.</p>	Accredited
Urgent Crossmatch	EDTA 6ml	<p>Samples/requests for blood will be available in 60 minutes providing all serological compatibility tests are negative.</p>	<p>Routine day phone Blood Transfusion Laboratory Ext 53259</p> <p>On Call Medical Scientist must be bleeped on 239 or contacted via switch</p> <p>The suitability of the sample for additional requests will be determined at the time of the request.</p> <p>Provide antibody status, if known. Presence of antibodies may lead to difficulty in provision of compatible blood.</p>	Accredited
Emergency Crossmatch	EDTA 6ml	As soon as possible	Refer to Section 11.9 below	Accredited

Test/Profile	Container Type(Vol)	Turnaround Times from time of specimen receipt in laboratory	Special Requirements All specimens must be labelled with Blood Track Label or if handwritten specimen labelling must include Hospital Number, patient name, date of birth, dated and signed.	Accreditation Status
Neonatal Group <4months old (incl. Cord Blood)	EDTA 6ml	*Samples received before 11:00 Reports Available 15:00 *Samples received between 11:00 and 15:00 Reports Available 17:00 * Samples after 15:00 processed next routine working day *Friday 15:00 to Sunday 17:00 sample processed and report available when checked by 2 nd Medical Scientist.		Accredited
Neonatal Crossmatch	EDTA 6ml sample from Infant and Mother	Up to 3 hrs (depending on arrival from IBTS)	Provide maternal antibody status, if known. Presence of antibodies may lead to difficulty in provision of compatible blood. Crossmatched against maternal specimen.	Accredited
Transfusion Reaction Investigation	EDTA 6ml	Preliminary 2 hrs Final 7 days	Refer to Section 11.13 below	Accredited
Antibody Identification	EDTA 6ml	2-5 Days** (depending on complexity)		Accredited
Phenotype Rh and Kell only	EDTA 6ml	Samples received before 11:00 blood available 15:00	Samples must be received in laboratory within 48hrs of phlebotomy	Accredited

This document is issued by the Pathology Laboratory WGH

It is the responsibility of the user to ensure they are utilising the current issue of this document

Test/Profile	Container Type(Vol)	Turnaround Times from time of specimen receipt in laboratory	Special Requirements All specimens must be labelled with Blood Track Label or if handwritten specimen labelling must include Hospital Number, patient name, date of birth, dated and signed.	Accreditation Status
		<p>Samples/requests for blood received between 11:00 and 15:00 Blood Available 17:00</p> <p>Samples/requests for blood received after 15:00 processed next routine working day</p>		

*** If delays are unavoidable, e.g. Antibodies present, the medical scientist dealing with the request will inform the team concerned with the patient, and a repeat sample may be requested to either re-test locally or send to IBTS Dublin.**

****Antibody Identification/ extended Phenotype turnaround time is 72 hours for full authorisation; however the investigation is normally completed sooner bearing in mind the clinical requirements. Authorisation is usually performed by a senior scientist/nominee when next on duty**

***** Timing of the sample collection is relevant if repeat samples are required for further investigation these samples must be collected prior to administration of blood/blood products**

Occasionally it may be necessary for logistical reasons such as staff shortages etc. to defer testing samples from OPD, Pre Assessment Unit etc., until the following day, once it is clear that the patient is not for surgery the next day

Turnaround times for blood transfusion products:

- Albumin and coagulation factors are issued as requested.
- Anti-D is issued as soon as the sample processing has been completed during routine hours. Out of hours Saturday and up to 16:00 on Sunday. Bank Holiday weekends Saturday, Sunday and up to 16:00 on Bank Holiday.
- Octaplas and platelets are issued as soon as the sample has been processed and the product is available. In emergency situations products are issued in accordance with the Massive Transfusion Protocol.

All specimens where examinations are completed in Blood Transfusion Laboratory WGH are stored at 2-8°C for a minimum of 14 days if required for repetition of examinations

11.2 Blood Transfusion Referral Tests

Test/ Profile	Container Type(Vol)	Turnaround Times	Special Requirements All specimens must be labelled using Electronic Blood Track System. Only in exceptional circumstances should specimens be handwritten and must include Hospital Number, patient full name and date of Birth, sample must be dated, timed and signed	Referral Laboratory
Extended RBC Phenotyping	6ml EDTA	1 working day	Fy ^a or Fy ^b only if the DAT is negative.	UHW
Extended RBC Phenotyping	6ml EDTA	5 working days	Fy ^a or Fy ^b if the DAT is positive	IBTS
Anti D/ Anti-c Quantitation	6ml EDTA x2	Result phoned within 5 working days. Final report 7 working days	Please provide EDD when requesting Anti-D/-c quantitation.	IBTS
Antibody Titration	6ml EDTA	5 working days		IBTS
Antibody Titration	6ml EDTA	5 working days	If initially performed in UHW (other than Anti-D and Anti-c which are sent to IBTS RCI).	UHW
Antibody Investigation	6ml EDTA x2	5 working days		IBTS
Blood Group and Compatibility testing patients with red cell antibodies	6ml EDTA x2	2-6hrs depending on complexity of antibodies		IBTS
Elution	6ml EDTA	2 working days		IBTS
Blood Grouping Anomalies	6ml EDTA	5 Working days		IBTS
Foetal RHD Screen	6 ml x2 EDTA	**14 working days	Sample must be transported at ambient temperature If the mother has produced immune anti-D, samples are sent to the International Blood Group Reference Laboratory, 500 North Bristol Park, Northway, Filton, Bristol, BS34 7QH. The form required is FRM4674 available from	IBTS IBGRL

			https://www.nhsbt.nhs.uk/ibqrl/services/molecular-diagnostics/fetal-genotyping-diagnostic/	
Weak D Genotyping	6ml EDTA	14 working days (48 hours for emergency requests)	Weak D Genotype patient 1 st presentation and patients who have been reported historically as weak D but no evidence exists on LIS of sample are sent to IBTS for confirmation.	IBTS
Platelet Alloantibodies	10ml Serum	7-14 working days (unspecified)		IBTS
NAITP	<u>Mother:</u> 10ml EDTA 20ml Serum <u>Father:</u> 20ml EDTA <u>Neonate:</u> Discuss with IBTS	5 working days (Report issued by NHSBT H&I laboratory, Bristol – may require 21 working days)	Clinical Details Essential	IBTS

*IBTS/RCI/CM/0001 Defines Turnaround time as: the time from sample reception at the IBTS to the time results/ products are available for issue. Please allow 5 working days for hard copy receipt and subsequent reporting in WGH.

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11.3 Reference Ranges and Critical Alert Ranges

- The results are abnormal or unexpected
- The result deviates significantly from previous results.
- Grouping discordance
- Anti-D/ anti-c quantitation results phoned to Obs/Gynae Doctor
- Positive DAT and Cord Blood Testing

11.4 Cord Blood Testing

Cord Blood samples are required for testing on all Rh D Negative women following delivery. Based on the blood group result of the infant, prophylactic Anti-D immunoglobulin may need to be given to the mother. Cord bloods may also be required where irregular antibodies have been identified in maternal plasma.

A cord blood sample should be labelled using Electronic blood track. In the event where blood track is unavailable, hand written is acceptable. Handwritten cord blood sample must be labelled baby's details (baby's surname, baby's forename (normally in the format Mothers name 'S' boy/girl, mothers surname, chart number, DOB, signed, timed and dated) and accompanied with a request form indicating that the sample is cord blood.

A maternal sample and request form for Group & Hold must also be received within 24hrs pre delivery or 72 hrs post-delivery.

A Blood Group is performed on the baby's cord blood sample. Additional testing on a cord blood may be required in cases where the mother has developed clinically significant red cell antibodies.

11.5 Crossmatch Request

In Addition to the information required in section 7.3, please supply the following information:

- Relevant clinical information, antenatal history, transplant history, blood transfusion history, transfusion reaction etc., patient diagnosis (special conditions require special blood example sickle cell disease requires special antigen negative blood).
- If specific blood components/ products are required e.g. CMV negative, irradiated, this should be requested.
- The specific surgery or reason for a transfusion request should be documented on the transfusion form.
- A clear indication as to whether the tests/ components/ products requested are **urgent** or **routine**. All urgent requests must be made

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by contacting the Blood Transfusion department during routine hours or the medical scientist 'on call' at all other times.

Where transfusion of the patient has taken place and additional units are required current sample must be less than 72hrs from time of sampling. If sample is greater than 72hrs from time of sampling a new sample must be sent for processing this is to detect any antibody formation.

Crossmatched blood is issued to a patient and held in the Blood Transfusion Issue fridge for 24 hours from the time the blood is required. The laboratory must be notified if there is a clinical need for blood to be held for longer than 24 hours.

11.6 Maximum Surgical Blood Ordering Schedule

A maximum Surgical Blood Ordering Schedule (MSBOS) is a mechanism to maximise usage of blood and minimise wastage in elective surgery. A MSBOS can reduce the workload of unnecessary crossmatching and issuing of blood and optimise stock management. The MSBOS only applies to elective surgery and requires samples being in the BT laboratory at least 24 hours prior to surgery.

For operations / procedures requiring a "Group & Screen" Only the following applies:

- In patients with a negative antibody screen blood can be available within 60 minutes if it is required urgently.
- If a patient has a positive antibody screen detected pre-op there may not be suitable blood available in WGH blood bank and consideration should be given to request a crossmatch allowing laboratory time to obtain suitable blood from IBTS Dublin.

For operations requiring crossmatched blood:

- The designated number of units is reserved for the patient for 24 hours from the proposed date of surgery.
- The blood will automatically be returned after 24 hours unless otherwise requested by the clinical team. If surgery is re-scheduled it is the **responsibility of the team** to notify the BT lab of the new date for surgery.

In all cases should blood be required urgently then 4 units of emergency O Rh D Negative blood are available in the issue fridge at all times.

The current MSBOS has been constructed by the Blood Transfusion Department in consultation with the Departments of Surgery/Anaesthetics/ and Obstetrics/ Gynaecology and issued via the Hospital Transfusion Committee.

Maximum Surgical Blood Ordering Schedule (MSBOS)
Recommended transfusion requirements for **elective surgery** only.

Surgical Procedure	Group & Hold (G&H)	Cross-match No. of Units
Laparotomy	G&H	*Unless Consultant/Registrar requests otherwise*
Thyroidectomy	G&H	
Nissans Fundoplication	G&H	
Splenectomy	G&H	
Mastectomy	G&H	
ERCP	G&H	
Colostomy Closure		2 units
Liver Biopsy	G&H	
Laparoscopic Cholecystectomy	G&H	
Hemicolectomy		2 units
Gastrectomy		2 units
Total Colectomy		2 units
Anterior Resection		2 units
Abdo-perineal Resection		2 units
Gynae. Procedure		
Anterior/Posterior Repair	G&H	
Frozen Pelvis	G&H	
Hydatiform Mole (D&C)		*1-2 units unless Consultant/Registrar requests otherwise*
Laparoscopy / Laparotomy	G&H	
Oophorectomy	G&H	
Total Abdominal Hysterectomy and/or Bilateral Salpingo-Oophorectomy	G&H	
Vaginal Hysterectomy	G&H	
Relative Anaemia	G&H	
Specific Request (Gynaecologist /Anaesthetist)	G&H	
Myomectomy		2 units
Obstetric Procedure		
Caesarean Section Routine	G&H	
Difficult C/S, eg. > 2 previous C/S		2 units
Associated Anaemia		2 units
Specific request (Obstetrician/ Anaesthetist)		2 units
Placenta previa		*2 units unless Consultant/ Registrar requests otherwise*
Obstetrical Emergency		
Ante Partum Haemorrhage (APH)		4 units
Placental Abruption		4 units
Post-Partum Haemorrhage (Major)		4 units
D.I.C.		4 units

11.7 Blood Product Information

Product	General Description	Volume	Storage Temp	Shelf life	Storage outside of controlled environment/after preparation	Compatibility testing requirement
Red Cells Leucocyte depleted	Red cell suspension obtained from whole blood	231-355 ml	2 - 6°C	35 days	4 hours to complete transfusion	Should be compatible with recipient ABO & RhD type
Platelet concentrate Pooled or Apheresis. Note: If >1 unit required for any patient authorisation must be obtained from the Haematologist in UHW	Platelet preparation from pooling of 5 single donor units or single apheresis donor	271-378 ml per pooled unit >160ml per apheresis prep.	22±2°C	7 days under gentle agitation	Immediate use if not agitated	Preferably ABO identical with recipient group, but other suitable groups may be issued. This is dependent on availability of product from IBTS.
Human Pooled Plasma	LG Octaplas pooled plasma produced in Austria or Sweden	200ml	≤ 18°C	3 years -frozen	Immediate use preferable, must be used within 5 days	Preferably ABO identical with recipient group
Cryoprecipitate (only available by special request)	FVIIIIC >70iu/unit Fibrinogen >140mg/unit vWF >100iu/unit	30-40 ml	≤-25°C	12 months - (frozen)	immediate use preferable, must be used within 6 hours	Preferably ABO identical with recipient group. (only group A & O available)
Human Albumin	Pooled donor plasma	5% (50g/L) 250ml 20% (200g/L) 100ml	2-25°C	Do not use after expiry date	Discard any remaining product after use	None
Anti-D Immunoglobulin	Freeze-dried concentrate of anti-D Ig produced from human plasma	1500 IU (300µg) per IM injection	2-8°C	Do not use after expiry date	Solution to be used immediately after preparation	Ante-natal Patients Sample <72hrs old from time of sampling Post-natal Patients Sample <24hr old pre delivery Sample <72hrs old from time of delivery
Clotting Factor Concentrates	Freeze-dried human or recombinant factor concentrates	Contact the Haematology team UHW for advice before ordering.	2-8°C	Do not use after expiry date	Immediate use preferable – Refer to product insert for reconstitution	None
Points to Note: Administration	Record details of each blood component infusion in the patient's case record. Follow local procedures or protocols for ordering and administering blood components. For special blood product requirements e.g. irradiated, washed, reconstituted or split products, the shelf life may be shortened. Contact the laboratory for further information § Consultant Haematologist approval required prior to use					

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11.8 Specialised Blood / Blood Products

These recommendations aim to ensure that specialised products, which are a limited resource, are available to the patients who derive most benefit from them.

Cytomegalovirus (CMV)

Cytomegalovirus is a significant cause of mortality and morbidity in immunocompromised patients

- Pregnant women i.e. the foetus
- The Neonate especially children with immune deficiencies
- Immunosuppressed patients

Bone Marrow / Stem cell transplant (SCT) recipients

Solid organ recipients

HIV positive patients

Indications for CMV Negative Blood Products in WGH

- All Pregnant Women
- All Children <6 months
- All children with malignancies or immunodeficiency's having shared care with CHI, Crumlin
- CMV negative patients in the following categories are at risk of CMV disease but remember where CMV status is unknown assume the patient is CMV negative:
 - Bone Marrow / Stem cell transplant (SCT) recipients.
 - Solid Organ recipients
 - Kidney transplant patients from the time of transplant if negative
 - Liver transplant patients from the time of transplant if negative

N.B All "pedi-pack" blood is CMV-negative and also plasma-reduced blood for exchange transfusion is CMV negative.

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Irradiated Blood Products

Graft Versus Host Disease is prevented by irradiation of cellular blood products. Irradiation prevents donor lymphocyte proliferation thus preventing TA-GVHD.

Indication of Irradiated Blood Products at WGH

- Paediatrics
 - Congenital immunodeficiency states
 - All children with malignancies or immunodeficiency's having shared care with CHI, Crumlin.
 - Intrauterine transfusions and recipients thereof during the neonatal period (including red cells or platelets given after IUT for 6 months after the expected delivery date).
 - Exchange transfusions provided it does not cause undue delay.

- Haematological Malignancies
 - Hodgkin's Disease
 - Patients who have received Purine analogues or anti-T cell monoclonal antibody therapies e.g. Fludarabine, Cladribine, Deoxycoformicin, Campath, Anti-lymphocyte globulin
 - All platelets now issued from IBTS are routinely irradiated whether required for the individual patient or not.

- HLA Matched Platelets
 - Used in cases of platelet refractoriness – additional testing required for provision of HLA matched platelets.

- **Stem cell transplant (SCT) recipients:**
 - Allogeneic transplants for 6 months after transplant or longer if ongoing GVHD
 - Autologous transplants from 1 week pre harvest to 3 months post or 6 months if had TBI (Total Body Irradiation)

11.9 Urgent /Emergency Issue of Blood/ Blood Component

Urgent and Emergency sample processing in Blood Transfusion must be accompanied by a telephone call to the laboratory during routine hours **ext. 53259** or out of hours bleep the medical scientist **on call bleep 239 or via switch** explaining the urgency of the situation.

There are four units of O Rh D Negative - uncrossmatched blood (RCC) in the Blood Bank Issue Fridge for use in emergencies and one pool of emergency platelets.

There is a fresh <5 days old CPDA O RhD Negative RCC unit available in Blood Bank Issue Fridge for use in emergency **for neonates**.

These can be issued by the medical scientist in an emergency situation.

When a patient blood group becomes available, group specific blood will be issued.

Note *The emergency neonatal unit is not suitable for transfusion to a neonate where maternal Anti-c is present.

In emergency situation personnel in the Blood Transfusion laboratory have 3 options depending on the urgency of the situation

1. Issue units of O Rh negative blood immediately (Uncross-matched and doctor's decision to transfuse).
2. Perform a quick ABO and Rh type on the patient specimen. Laboratory will then issue ABO Rh compatible blood. (approx.10-15 mins) (Uncross-matched and doctor's decision to transfuse).
3. Perform complete pre-transfusion cross-matching testing which will take approximately 60 minutes.

The necessary traceability records must be created retrospectively. The traceability label must be completed and signed at administration and returned to the laboratory as proof of transfusion. This is a mandatory legal requirement; alternatively use Blood Track for recording administration.

It is a Medical Decision to Transfuse Uncrossmatched Red Cells.

11.10 Storage of Blood / Blood Components for Collection

Blood/Blood Component	Storage Area
Red Cells & Plasma	Blood Bank Issue Fridge
Albumin	Blood Bank Issue Fridge
Platelets	Platelet Agitator in the Laboratory
Fibrinogen/ Coagulation Factors	Blood Bank Issue Fridge
Anti-D	Blood Bank Issue Fridge

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Blood component/products should only be collected from the Transfusion Laboratory by trained staff. Access to the issue fridge in the Blood Transfusion Department is controlled by means of the staff electronic swipe card.

11.11 Collection of Blood / Blood Components from the Laboratory

Refer to "Collection of Blood Components & Blood Products in WGH" (WGH-HV-HP-004)

- Only trained persons may collect blood and blood products from the Pathology Laboratory.
- Prior to collection of any blood product the collector must be in possession of the pink blood collection slip containing patient details and the blood product required, 'Blood Collection & Traceability' WGH-HV-HF-002.
- All red cells and platelets must be scanned out using the Electronic Blood Track System kiosk beside the Blood Bank Issue fridge and signed out in the Blood Bank compatibility form, WGH-BT-LF-050A in the black sign out folder which is beside the Blood Bank Issue fridge before being taken to the ward. All batch products are signed out using the Blood Bank compatibility form, WGH-BT-LF-050A in the black sign out folder which is beside the Blood Bank Issue fridge. The Pink blood collection slip 'Blood Collection & Traceability', WGH-HV-HF-002 form must also be signed and returned to the ward with the blood component/product.
- Blood products must be transported, without delay, to the transfusion site as transfusion should be initiated within 30 minutes of blood leaving the issue fridge. The blood & form must be handed directly to nursing staff, who must then sign for the receipt of the blood component/product.
- Purple bags labelled "Blood in Transit" are provided for transport of blood units.
- Only in exceptional circumstances should more than one unit of red cells be signed out of the issue fridge at any one time.

When >1 unit of red cells is required by Theatre/ICU/A&E, medical scientist must be contacted and where time permits, blood will be packed in TransControl 4°C Transport Box if specifically requested to do so. If red cells or any blood product have to be returned to the fridge, the laboratory must be contacted both during routine and on-call hours. The product must be signed back into the issue fridge including the date and time (in 24 hr.

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format) and placed in the appropriate box on the top shelf of the issue fridge.

11.12 Transfusion Reaction Investigation

Refer to *Haemovigilance SOP & Form 'Haemovigilance Management & Reporting of SARs/SAEs (WGH-HV-HP-101)* and *'Prescription & Administration Record for Blood Components/Products' (WGH-HV-HF-003)*.

On discovery of a suspected transfusion reaction:

- Stop transfusion of blood product immediately.
- Verify patient ID & ABO group of patient and donor unit.
- Medical advice should be sought immediately from the patient's team and/or the haematology team.
- Complete required documentation and reserve blood and urine specimens required for laboratory investigation (see below).
- Send documentation and specimens to the laboratory.
- Notify the medical scientist in the blood transfusion laboratory during routine/on-call hours so that investigation can be instigated immediately.
- Contact the Haemovigilance Officer during routine hours.

Laboratory Investigation

When a transfusion reaction is suspected it must be reported by completing WGH-HV-HF-004, "Report form for Suspected Adverse Transfusion Reaction/ Event". This outlines sample requirements and patient transfusion details required for the investigation to be carried out in the laboratory, these include:

Transfusion Reaction Investigation Test/Profiles	Container (Vol)	Special Requirements Take all samples post suspected Transfusion reaction.	Accreditation Status
Type/Screen	6ml EDTA	Specimens must be labelled with Electronic Blood Track Labels [EBTS] or handwritten with hospital number, full patient name and date of birth. Sample dated, timed and signed by phlebotomist.	Accredited
FBC	EDTA 3ml		Not Accredited
Reticulocytes	EDTA 3ml		Referred to UHW
UE, LFT's, LDH	3.5ml Clotted/ 4ml Lithium Heparin.		Not Accredited
IgA levels	4ml Clotted	If requested by Doctor	Referred to UHW
Haptoglobin	4ml Clotted		Referred to UHW
MSU (Urobilinogen)	MSU Jar	1 st voided urine	Referred to UHW
Haptoglobin			Referred to UHW
Blood Cultures- Adult	aerobic and anaerobic		Load onto BacTec and Referred to UHW if positive
Blood Cultures- paediatric	Paeds bottle		Load onto BacTec and Referred to UHW if positive
Blood cultures from implicated pack	Aerobic and anaerobic		Load onto BacTec and Referred to UHW if positive
All Blood Packs including giving sets (used and unused)			

All suspected reactions reported will be fully investigated by the Haemovigilance CNS and reviewed by Consultant Haematologist. It is a mandatory requirement (EU Directive 2002/98/EC) for all Serious Adverse Reactions (SAR) and Serious Adverse Events (SAE) which fit criteria to be reported to the National Haemovigilance Office (NHO).

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11.13 Traceability

Article 14 of the Blood Directive 2002/98/EC mandates full traceability of all blood components.

Collection and Traceability forms must be used when collecting any blood component or product from the laboratory.

WGH have introduced phase 3 of Electronic Blood Track System [EBTS]. This allows for the electronic recording of red cell and platelet transfusions. This is the preferred method of recording blood transfusions. If using Blood Track, it can record the start and end of transfusion and the fate of the unit is automatically updated to the laboratory LIS. The requirement to return the traceability label is removed for red cells and platelets only if EBTS is used.

For manual documentation of transfusion when EBTS not available or for plasma, anti-D, albumin and coagulation factor products, the following applies. When pre-transfusion checking procedure is completed and the component/product is connected to the patient, the peelable section of the Traceability label containing the donor number is removed from the product and placed in the observation section of the prescription. The detachable section of the traceability label is removed from the pack, signed dated and timed by the person commencing/witnessing the transfusion. Completed traceability label form is then placed in the red Collection and Traceability post box on the clinical area.

These procedures are described fully in the Haemovigilance Documents available on [WGH Publisher](#).

12.0 Haematology

12.1 Haematology Tests

Test/Profile	Adult: Cap Additive (Vol)	Paediatric: Cap Additive (Vol)	Frequency Of Testing \ Turnaround Times	Special Requirements	Accreditation Status
Full Blood Count	EDTA 3ml	EDTA 1.3ml	Urgent 2 Hours Routine 4 Hours	FBC should be less than 24 hrs old at time of testing	Not Accredited
Blood Film	EDTA 3ml	EDTA 1.3ml	Urgent Contact Lab to Arrange Routine Subject to workload.	Blood film should be made from fresh FBC sample by the lab staff.	Not Accredited
Coagulation (Do not take samples from heparin containing IV lines)					
Coagulation Screen (PT,INR,APTT)	Sodium Citrate 3.0ml	Sodium Citrate 1.3ml	Urgent 2 Hours Routine 4 Hours	Specimens are: Tested on day of collection. Must be in lab before 16:00 hrs. Non-urgent samples stored overnight. APTT must be tested within <8hrs	Not Accredited
Fibrinogen	3ml Sodium Citrate		Urgent Contact Lab to Arrange	Clauss Fibrinogen is available in UHW if derived fibrinogen is <2 or specifically requested by Consultant haematologist.	Not Accredited
D-Dimers	3ml Sodium Citrate		Urgent 2 Hours Routine 4 Hours	Suitable for testing up to 8 hrs	Not Accredited

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This section provides details pertaining to specimen type, specific requirements (if necessary), frequency of analysis and turnaround times for each test performed in the laboratory. Phone alert limits are defined where relevant in Section 12.4. The user should contact the laboratory if additional tests are requested on the sample and send on an additional request form. The lab will advise if the sample is suitable to analyse the additional test request.

Results are available on LabWebEnquiry as is the User Manual for UHW

12.2 Special Coagulation

Special coagulation assays are dispatched frozen to the special coagulation Laboratory in St. James Hospital, Dublin or UHW (thrombophilia screen only) as appropriate.

If required urgently in a particular clinical case please discuss with the laboratory and/or Consultant Haematologist or Coagulation Consultant Haematologist St James's Hospital Dublin who will advise on guidelines for testing etc.

It is essential that all tubes be filled accurately to the marked line on the bottle.

Please contact the laboratory for advice if any other clotting assay is required which is not listed above.

12.3-WGH Blood Film Review

All blood films are reviewed in WGH

Urgent films requiring Consultant review can be sent by taxi following arrangement with UHW.

12.4 Critical Alert Ranges

Critical results are phoned as soon as available. This indicates potential; immediate danger to the patient and intervention maybe required on clinical review. Results should be reviewed in a timely manner

Below is the critical phone limits for contacting medical practitioners and wards with critical results. These limits are based on the first abnormal set of results or repeat results that have shown a markedly significant change for an individual patient.

Parameter	Critical Phone Limits
Haemoglobin	<8.0 g/dl
Haematocrit	>0.60 L/L
WCC	>30 x10 ⁹ /L
Neutrophils	<0.5 x 10 ⁹ /L >50 x10 ⁹ /L
Lymphocytes	>75 x10 ⁹ /L (new cases only)
Platelets	<30 x 10 ⁹ /L >1000 x 10 ⁹ /L
INR	> 4.5 patient on Warfarin
APTT	>70 secs patient on Heparin
D Dimer	>4.4 mg/L FEU
Derived Fibrinogen	Derived Fibrinogen low on screen test See Note
Blood Film	If advised to contact Consultant Haematologist

Note: A derived fibrinogen is performed whenever a PT is performed. If the derived fibrinogen result is low then the following comment is added to the coagulation report:

Derived fibrinogen test probable low, advise request for Clauss Fibrinogen assay if clinically indicated as advised by Consultant Haematologist if patient is actively bleeding a Clauss Fibrinogen should be done.

If a Clauss Fibrinogen test is requested the following comments may appear on the coagulation report:

Fibrinogen low on screen test. A quantitative assay (Clauss) will follow.

Fibrinogen normal on screen test

Fibrinogen high on screen test

13.0 Biochemistry

13.1 Biochemistry Tests

All tests for routine biochemistry should be written on **one** request form

Test/Profile	Adult: Cap Additive	Paediatric : Cap Additive (Vol)	Comments.	Frequency of Assay
Acetaminophen (Paracetamol)	4ml Clotted/ Lithium Heparin	Heparin 1.3ml	Sample should be tested at least 4 hours post ingestion.	On Demand
Alanine Amino Transferase (ALT)	4ml Clotted/ Lithium Heparin	Heparin 1.3ml	Part of LFT	Continuous – however routine specimen should be received before 16:00 hrs.
Albumin	4ml Clotted/ Lithium Heparin	Heparin 1.3ml	Part of LFT and BP.	Continuous – however routine specimen should be received before 16:00 hrs.
Alkaline Phosphatase	4ml Clotted/ Lithium Heparin	Heparin 1.3ml	Part of LFT and BP	Continuous – however routine specimen should be received before 16:00 hrs.
Amylase	4ml Clotted/ Lithium Heparin	Heparin 1.3ml		Continuous – however routine specimen should be received before 16:00 hrs.
Aspartate amino-transferase (AST)	4ml Clotted/ Lithium Heparin	Heparin 1.3ml	Must be requested specifically.	Continuous – however routine specimen should be received before 16:00 hrs.
bHCG	4 ml Clotted	N/A	Must be requested specifically.	Routine specimen should be received before 16:00 hrs. Out of hours processing is by consultant request only who must contact the medical scientist on call.
Bilirubin	4ml Clotted /Lithium Heparin	Heparin 1.3ml	Part of LFT.	Continuous – however routine specimen should be received before 16:00 hrs.
Bone Profile Calcium Phosphate Alkaline Phosphate Albumin	4ml Clotted /Lithium Heparin	Heparin 1.3ml		Continuous – however routine specimen should be received before 16:00 hrs.

Test/Profile	Adult: Cap Additive	Paediatric : Cap Additive (Vol)	Comments.	Frequency of Assay
NT-proBNP	4ml clotted	N/A	Separate sample required	Specimen must be received in laboratory before 16:00 Mon-Fri
Calcium	4ml Clotted/ Lithium Heparin.	Heparin 1.3ml	Part of Bone Profile	Continuous – however routine specimen should be received before 16:00 hrs.
Chloride	N/A	N/A		Test not available
CPK	4ml Clotted/ Lithium Heparin	Heparin 1.3ml		Continuous – however routine specimen should be received before 16:00 hrs.
Creatinine EGFR – calculated on all creatinine results for patients >18yrs	4ml Clotted/ Lithium Heparin	Heparin 1.3ml	Part of renal profile	Continuous – however routine specimen should be received before 16:00 hrs.
CRP	4ml Clotted or Li Heparin sample	Heparin 1.3ml		Continuous – however routine specimen should be received before 16:00 hrs
Direct Bilirubin	1ml Li Heparin /Clotted	Heparin 1.3ml	Must be requested specifically	Continuous – however routine specimen should be received before 16:00 hrs.
Fructosamine	1ml Clotted	N/A		Performed weekly
Glucose	Fluoride oxalate plasma.	Fluoride oxalate plasma.		Continuous – however routine specimen should be received before 16:00 hrs.
Liver profile ALT Bilirubin (total) ALP Total Protein Albumin GGT	4ml Clotted/ Lithium Heparin	Heparin 1.3ml		Continuous – however routine specimen should be received before 16.00 hrs.
Magnesium	4ml Clotted/ Lithium Heparin	Heparin 1.3ml		Continuous – however routine specimen should be received before 16:00 hrs.
Phosphate	4ml Clotted/ Lithium Heparin	Heparin 1.3ml	Part of BP	Continuous – however routine specimen should be received before 16.00 hrs.

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Test/Profile	Adult: Cap Additive	Paediatric : Cap Additive (Vol)	Comments.	Frequency of Assay
Potassium	4ml Clotted/ Lithium Heparin	Heparin 1.3ml	Sample must be received in lab within 4 hours of collection	Continuous – however routine specimen should be received before 16:00 hrs.
Sodium	4ml Clotted/ Lithium Heparin	Heparin 1.3ml	Bring to laboratory as soon as possible – within four hours . Elevated levels of electrolytes can occur if separation of serum from red cells is delayed.	Continuous – however routine specimen should be received before 16:00 hrs.
Renal profile Urea Sodium Potassium Creatinine	4ml Clotted/ Lithium Heparin	Heparin 1.3ml	Bring to laboratory as soon as possible – within four hours . Altered levels of electrolytes can occur if separation is delayed.	Continuous – however routine specimen should be received before 16:00 hrs.
Urea/ Electrolytes	4ml Clotted/ Lithium Heparin	Heparin 1.3ml	See renal profile	Continuous – however routine specimen should be received before 16.00 hrs.

This section provides details pertaining to specimen type, specific requirements (if necessary), frequency of analysis and turnaround times for each test performed in the laboratory. Phone alert limits are defined where relevant in Section 13.4 The user should contact the laboratory if additional tests are requested on the sample and send on an additional request form. The lab will advise if the sample is suitable to analyse the additional test request.

Results are available on Lab Web Enquiry as is the User Manual for UHW

13.2 Turnaround Times

Status / Location	TAT
Routine in-house biochemistry	4 Hours
AMAU/A&E/Oncology/ICU biochemistry	2 Hours
Critically urgent samples	Phone call to 53258 or bleep 239 for out of hours requests

13.3 Urgent Specimens

Samples sent on Clinically Urgent Request forms/marked clinically urgent are given priority.

If there is an emergency request form, the laboratory should be telephoned and the specimen request form clearly marked as **urgent** so that it can be easily identified.

Outside normal working hours, on call staff must be contacted via **Bleep 239** or the switchboard.

13.4 Critical Alert Ranges

Critical results are phoned as soon as available. This indicates potential and immediate danger to the patient and intervention may be required on clinical review. Results should be reviewed in a timely manner.

Below is critical phone list for contacting medical practitioners and wards with critical results. These limits are based on the first abnormal set of results or repeat results that have shown a markedly significant change for an individual patient.

Action Limits			
Analyte (Serum/Plasma)	Unit	Less Than	Greater Than
Sodium	mmol/L	<120 <130 if <16yrs	>160
Potassium	mmol/L	<2.5	>6.5
Urea	mmol/L		>30 ≥10 if <16yrs
Creatinine	umol/L		>354 ≥200 if <16yrs
Glucose	mmol/L	<2.5	>25 ≥15 if <16yrs
Calcium	mmol/L	<1.8	>3.0
Magnesium	mmol/L	<0.4	
Phosphate	mmol/L	<0.3	
AST	U/L		>800
ALT	U/L		>800
CPK	U/L		>5000
Amylase	U/L		>500
CRP	mg/L		>300

13.5 Referral Specimens

Tests for UHW Biochemistry

For primary sample requirements on examinations that are referred to UHW check the UHW user manual: Lab Web Enquiry available on all PC's Under Departments Click on Laboratory Services then in the test library search all tests from A-Z by name for all required information.

Dispatch Times to UHW	Comments
Monday-Friday 08:00 and 12:30	All routine Samples
Saturday 08:00	
After Routine Dispatch times	For Urgent Samples contact Lab to arrange
Sundays 8am	Urgent Samples contact Lab to arrange

Therapeutic drug levels/ urgent samples MUST be received in UHW by 12:00hr at the weekend.

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If samples need to be processed after these times, the requesting clinician must first contact the Laboratory in UHW to advise.

Tests not done in WGH/ UHW

Many tests are referred to Eurofins/ Biomnis Laboratories or other public labs if testing is centralised nationally, such as genetics etc.

For primary sample requirements on examinations sent refer to Eurofins/ Biomnis website: <https://www.eurofins.ie/biomnis>

Select Test Information then Test Guide, select the department and then the actual examination that you require for all required information on sample collection.

Note: Xanthochromia: Consultant request only

CSF is taken at least 12 hrs post suspected sub arachnoid haemorrhage. 1ml sample required, sample <1ml cannot be processed for technical reasons.

Time of SAH must be recorded on the request form and also phone number of requesting clinician as positive results will be phoned to the requesting clinician.

There is a record of all samples referred out by the lab in Wexford General Hospital on APEX which records details of the test requested and where it was sent.

Due to the expense of some external tests, it may be necessary to restrict ordering of such tests to a Consultant only.

Please note

- If the test requested is not processed in-house but is sent to UHW, please send a separate sample and request form.
- **It is essential that any specialised test requiring special handling e.g. freezing prior to dispatch is sent on a Wexford Laboratory request form/Wexford Referral form and the lab is informed that the sample is being taken. Please ensure that the sample is then handed directly to laboratory staff.**
- Failure to do so may result in the sample being missed and therefore unsuitable.

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13.6 Hypoglycaemic Workup Request Forms

All samples sent for Hypoglycaemic work up must be accompanied by either Wexford Laboratory request form/ Wexford Referral form. Hypoglycaemic pack available from laboratory gives details of samples requirement and includes space for essential clinical details.

Samples are referred to Eurofins/ Biomnis and will not be processed by referral lab without clinical details attached.

14.0 Urine Microscopy

Urine microscopy is only performed in WGH on patients <6 months old

15.0 Blood Culture

15.1 Blood Culture Tests

All tests for Blood cultures should be written on UHW microbiology request form

Note: Ensure that barcodes on the blood culture bottles are not covered by addressograph/ EBTS labels. Ensure specimen is dated and timed. If endocarditis is expected, 2 sets of blood cultures should be taken from separate venepuncture sites.

Test/Profile	Specimen container	Paediatric Specimen Container	Comments.	Frequency of Assay
Blood culture	Aerobic/ Anaerobic Blood culture bottle (8-10 ml)	Paediatric blood culture bottle (1-3ml)	Blood cultures must be received and incubated within 4 hours for maximum recovery of organisms. In suspected endocarditis, two sets of blood cultures should be taken from separate venepuncture sites.	The optimal time for collection is before antimicrobial therapy and as soon as possible after a spike of fever. Blood cultures should be transported to the laboratory within 4 hours of collection, for loading to the blood culture system. Where there is a delay in transport to the laboratory or loading onto the blood culture system, blood cultures MUST NOT be refrigerated.

15.2 Turnaround Times

Blood Cultures	TAT
Positive blood culture	All positive blood cultures are transported to UHW. Gram stains are reported by UHW within 2 hours of turning positive on the BacTec.
Negative blood culture	Negative reports available after 36hrs incubation for paediatric and 48hrs for adults.
Ongoing culture	Ongoing culture for 5 days (7 days for suspected Bacterial endocarditis (BE), Infective Endocarditis (IE), Subacute bacterial endocarditis (SBE), cardiac vegetation, prosthetic valves in situ & Brucella cases) with further reports if positive after initial 36/48hrs.
Identification and susceptibility	Within 2 days of growth.

15.3 Critical Alert

14.3.1 Critical All positive gram stains/isolates are phoned to the requesting clinicians by UHW. Gram stains phoned within 2 hours of turning positive on the BacTec.

16.0 Point of Care (PoC)

Instrument	Test/Profile	Adult: Cap Additive (Vol)	Paediatric: Cap Additive (Vol)	Special Requirements	Accreditation Status
i-STAT	B-Type Natriuretic peptide (BNP)	EDTA 3ml	EDTA 1.3ml	<ul style="list-style-type: none"> Remix sample thoroughly before filling the cartridge Grossly haemolysed sample may result in decreased detection of BNP Partially clotted samples may result in falsely elevated BNP readings 	Not Accredited
	Cardiac Troponin I (cTnI)	Li Heparin 4ml	Li heparin 1.3ml	<ul style="list-style-type: none"> Please ensure sample is filled to 	Not Accredited

Instrument	Test/Profile	Adult: Cap Additive (Vol)	Paediatric: Cap Additive (Vol)	Special Requirements	Accreditation Status
				<p>manufactures recommendation and analysed within 30 min of collection</p> <ul style="list-style-type: none"> • Under-filled sample may result in falsely elevated cTnI results • Remix sample thoroughly before filling the cartridge • Grossly haemolysed sample may result in decreased detection of cTnI • Partially clotted samples may result in falsely elevated BNP readings 	
	CG4+ : pH, Oxygen Partial Pressure (PO ₂) Carbon dioxide Partial Pressure (PCO ₂), Lactate	Li Heparin balanced blood gas syringe	Li Heparin balanced blood gas syringe	<ul style="list-style-type: none"> • Sample volume required: 95 µl arterial, venous or capillary whole blood • Anaerobic conditions must be maintained • Cartridges must be at room temperature for analysis • Remix thoroughly before filling the cartridge • Must be <u>run immediately</u> following sample collection for an accurate lactate result 	Not Accredited
	CG6+ : Sodium (NA), Potassium (K), Haematocrit (Hct), pH, Oxygen Partial Pressure (PO ₂) Carbon	Li-Heparin balanced blood gas syringe	Li-Heparin balanced blood gas syringe	<ul style="list-style-type: none"> • Sample volume required: 95 µl arterial, venous or capillary whole blood • Anaerobic conditions must be maintained 	Not Accredited

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Instrument	Test/Profile	Adult: Cap Additive (Vol)	Paediatric: Cap Additive (Vol)	Special Requirements	Accreditation Status
	dioxide Partial Pressure (PCO ₂)			<ul style="list-style-type: none"> Cartridges must be at room temperature for analysis Remix thoroughly before filling the cartridge Must be ran with <u>10 minutes</u> of sample collection 	
GEM 5000 (ED, ICU, Labour ward)	Blood gas analysis: pH, Oxygen Partial Pressure (PO ₂), Carbon dioxide Partial Pressure (PCO ₂), Sodium (Na ⁺), Potassium (K ⁺), Chloride (Cl ⁻), Ionised calcium (CA ⁺⁺), Haematocrit (Hct), Glucose (Glu), Lactate (Lac) CO-Oximetry: Total Haemoglobin (tHb), Carboxyhaemoglobin (COHb), Methaemoglobin (MetHb), Oxyhaemoglobin (O ₂ Hb), Deoxyhaemoglobin (HHb), and Oxygen saturation (sO ₂)	Li-Heparin balanced blood gas syringe/ balanced Lithium Heparin capillary tube (for blood gas only)	Li-Heparin balanced blood gas syringe / balanced Lithium heparin capillary tube (for blood gas only)	<ul style="list-style-type: none"> Sample Volume: 150µL for blood gas and Co-oximetry. 65µL for capillary only blood gas analysis Syringe samples must be analysed within 15 minutes of collection Capillary samples should be ran within 10 minutes of collection. All air bubbles must be expelled from sample prior to analysis Mix sample thoroughly before analysis Haemolysis can significantly alter potassium results Collection devices should be filled to the required volume specifications to ensure proper heparin concentrations 	Not Accredited
NOVA Meter	Glucose β - Ketone	Fresh Capillary	Fresh Capillary	<ul style="list-style-type: none"> Samples must be ran immediately 	Not Accredited

Instrument	Test/Profile	Adult: Cap Additive (Vol)	Paediatric: Cap Additive (Vol)	Special Requirements	Accreditation Status
				<ul style="list-style-type: none"> • Sample volume glucose: 1.2µL • Sample volume β-Ketones: 0.8 µL • Statstrip ketone strips measure Beta ketones (not acetoacetate) 	

17.0 Revision and Audit

Compliance with this procedure will be audited annually as per audit schedule.

This procedure will be reviewed within two years of the effective date.

18.0 Storage of Documents

User manual post 2021 is stored on Q Pulse
 User manual and related documents, pre-2021 are retained on the hospital computer network WGH Lab on 'wxfs1(G:) in files with controlled access. All historical documents are archived in Kefron File Stores, 53 Park West Road, Dublin 12, D12 F8RK.

19.0 References/Bibliography

HSE SE policy for the safe Use, handling and disposal of sharps and sharps containers.

HSE SE policy for Personal Protective Equipment/ Clothing (PPE)

bjh Guidelines for pre-transfusion compatibility procedures in blood transfusion laboratories 2012

bjh Guidelines for the Management of Urgent Red Cell Transfusion and Situations when Serological Compatibility cannot be Assured 2015

bjh Guidelines on the administration of blood components

bjh Guidelines for the use of prophylactic Anti-D Replacing lee et al 1999

bjh Guidelines for blood grouping and antibody testing in pregnancy

bjh Guidelines on the administration of blood components 2009

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bjh Guidelines on transfusion for foetuses, neonates and older children 2016

bjh Guidelines on the use of irradiated blood components 2001

bjh Guidelines on the management of massive blood loss 2006

bjh for the clinical use of red cell transfusions 2001

bjh Guidelines for the use of platelet transfusions 2003

IBTS Reference material:

Blood group genetics laboratory [Blood Group Genetics - IBTS - Research, Learning and Development](#)

National Histocompatibility and Immunogenetics reference laboratory (NHIRL) [National Histocompatibility and Immunogenetics Reference Laboratory - IBTS - Research, Learning and Development](#)

Rcell immunology laboratory, [Red Cell Immunohaematology & Diagnostics - IBTS - Research, Learning and Development](#)

All blood products supplied by the IBTS have their specifications outlined in product specification files available at [Our Products & Components - IBTS - Research, Learning and Development](#)

Medical Laboratories-Requirements for quality and competence ISO15189:2022

20.0 Appendices

Appendix 1 Blood Transfusion Procedural Process Map

Appendix 2 Packaging Instruction P650

This document is issued by the Pathology Laboratory WGH

It is the responsibility of the user to ensure they are utilising the current issue of this document

Appendix 1: Blood Transfusion Procedural Process Map

Blood Transfusion Procedural Process Map

↓

Inpatient Sampling and Labeling of Pre-Transfusion Blood Specimens
Electronic Blood Track [EBTS] should always be used when reserving Blood Transfusion samples

↓

The Doctor must complete the Blood Grouping and Request Form fully, using the patients' Medical Notes and at the Patient's bedside

↓

Confirm with the Patients Medical notes that the Patient does not require any special Transfusion requirements.

↓

Verify Positive Patient Identification asking the Patient to **state their full name and date of birth**

↓

Confirm that the details given by the patient are identical on:
 Patients Hospital Identification Band
 The Completed Request Form
 Patients Medical Notes

↓

Proceed only when positive Patient Identification is verified

↓

Reserve sample into the specimen tube

↓

If reserving other samples, the sampling order should be as follows:
 Blood Culture
 Sodium Citrate - Coagulation
 Serum
 Heparin
 EDTA - FBC (purple top) /Blood Transfusion (pink top)
 Fluoride/Oxalate - Glucose

↓

Reconfirm Patient identification, handwrite and sign the sample tube immediately before leaving the Patient's side

↓

Dispose of materials used in the collection in accordance to 'Department of Health guidelines for the disposal of clinical waste'

http://www.dohc.ie/publications/segregation_packaging.html

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Samples to be placed in designated specimen box in each clinical area for collection as **soon as possible** to the Laboratory.
If outside collection times please contact portering staff.

All Blood transfusion Specimens must be received in the Laboratory within 48hrs of phlebotomy and must be transported at ambient temperature. Samples received in the Laboratory exceeding these limits cannot be processed and a repeat specimen will be required



If it is an emergency situation the doctor must contact the transfusion Laboratory and inform the medical scientist of the Urgency of the request

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Appendix 2: Packaging Instruction P650

This packing instruction applies to UN No. 3373 (Diagnostic Specimens)

1. The packaging shall be of good quality, strong enough to withstand the shocks and loadings normally encountered during carriage, including transshipment between vehicles or containers and between vehicles or containers and warehouse as any removal from a pallet or over pack for subsequent manual or mechanical handling. Packaging shall be constructed and closed to prevent any loss of contents that might be caused under normal conditions of carriage by vibration or by changes in temperature, humidity or pressure.
2. The packaging shall consist of three components
 - a) a primary receptacle;
 - b) a secondary packaging; and
 - c) An outer packing.
3. Primary receptacles shall be packed in secondary packaging in such a way that, under normal conditions of carriage, they cannot break, be punctured or leak their contents into the secondary packaging. Secondary packaging shall be secured in outer packaging with suitable cushioning material. Any leakage of the contents shall not compromise the integrity of the cushioning material or of the outer packaging.
4. For carriage, the mark illustrated below shall be displayed on the external surface of the outer packaging on a background of a contrasting colour and shall be clearly visible and legible. The width of the line shall be at least 2mm; the letters and numbers shall be at least 6mm high.
5. The completed package shall be capable of successfully passing the drop test in 6.3.2.5. as specified in 6.3.2.3. and 6.3.2.4. except that the height of the drop shall not be less than 1.2m. The smallest external dimension of outer packaging shall be not less than 100mm. (See note).

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(Note: This condition has been removed in a corrigendum issued by the UN dated, December 2004).

6. For liquid substance:

- a) The primary receptacle(s) shall be leak proof;
- b) The secondary packaging shall be leak proof;
- c) If multiple fragile primary receptacles are placed in a single secondary packaging, they shall be either individually wrapped or separated to prevent contact between them;
- d) Absorbent material shall be placed between the primary receptacles(s) and the secondary packaging. The absorbent material shall be in quantity sufficient to absorb the entire contents of the primary receptacle(s) so that any release of the liquid substance will not compromise the integrity of the cushioning material or of the outer packaging;
- e) The primary receptacle or the secondary packaging shall be capable of withstanding, without leakage, and internal pressure of 95 kPa (0.95 bar).

7. For solid substances:

- a) The primary receptacle(s) shall be sift proof;
- b) The secondary packaging shall be sift proof;
- c) If multiple fragile primary receptacles are placed in a single secondary packaging, they shall be either individually wrapped or separated to prevent contact between them.

8. Refrigerated or frozen specimens: Ice, dry ice and liquid nitrogen

- a) When dry ice or liquid nitrogen is used to keep specimens cold, all applicable requirements of ADR shall be met. When used, ice or dry ice shall be placed outside the secondary packaging or in the outer packaging or an over pack. Interior supports shall be provided to secure the secondary packaging in the original position after the ice or dry ice has dissipated. If ice is used, the outside packaging or over pack shall be leak proof. If carbon dioxide, solid (dry ice) is used, the packaging shall be designed and constructed to permit the release of carbon dioxide gas to prevent a build-up of pressure that could rupture the packaging and the package (the outer packaging or the over pack) shall be marked "Carbon dioxide, solid" or "Dry ice".
- b) The primary receptacle and the secondary packaging shall maintain their integrity at the temperature of the refrigerant

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used as well as the temperatures and the pressures, which could result if refrigeration were lost.

9. Infectious substances assigned to UN No. 3373 which are packed and packages which are marked in accordance with this packing instruction are not subject to any other requirement in ADR.
10. Clear instructions on filling and closing such packages shall be provided by packaging manufacturers and subsequent distribution to the consignor or to the person who prepares the package (e.g. patient) to enable the package to be correctly prepared for carriage.
11. If any substance has leaked and has been spilled in a vehicle or container, it may not be reused until after it has been thoroughly cleaned and, if necessary, disinfected or decontaminated. Any other goods and articles carried in the same vehicle or container shall be examined for possible contamination



UN 3373