Introduction

What are haematologists?

Haematologists are pathologists who study blood and bone marrow. Haematologists also measure how well the blood clots, and treat clotting problems.

The main constituents of blood are:

- red blood cells – carry oxygen around the body
- white blood cells – help fight infection
- platelets – involved in blood clotting.

Haematologists also diagnose and treat patients with anaemia (a lower than normal number of red blood cells) and help patients with haemophilia, leukaemia and lymphoma.

Some haematologists are involved in transfusion medicine, ensuring that adequate stocks of safe blood are available when needed for blood transfusions. For example, if you had lost a lot of blood following childbirth or an accident, or have a blood disease, you would need new blood from a donor. Blood transfusions can be life saving in these situations. Pathologists ensure blood transfusions are safe. They confirm donated blood is the right match for the patient’s blood group. This is important because, if you receive blood from a different blood group from your own, your body will reject the new blood, which can prove fatal.

Haematologists also undertake research into diseases, like leukaemia. By gaining understanding of diseases they can also research therapies to help improve survival rates of patients.

Quoted from What is pathology? page 5. The Royal College of Pathologists, (Pathology: the science behind the cure) www.rcpath.org (accessed January 2015)
The purpose of this document

This document serves as a guideline to registrars joining the Department of Haematology and Cell Biology and provides details of what will be required from you during your four-year stay in the department. It outlines the structure of your four year residency as well as the day-to-day programme. The following are important websites.

For an overview of the Department please visit our website http://health.ufs.ac.za.

For an overview of the NHLS please visit www.nhls.ac.za.

Please regularly check the website of the Colleges of Medicine of South Africa (www.collegemedsa.ac.za) and the website of the HPCSA (www.hpcsa.co.za).

This is a living document and will be updated as necessary.

Contents

Personnel ........................................................................................................................................ 4

1.1.1. Consultant Haematology Pathologists: ........................................................................... 4

1.1.2. Consultant Clinical Haematologists: ............................................................................. 4

1.1.3. Current Haematology Registrars (Pathology): ................................................................. 4

1.1.4. Secretary ......................................................................................................................... 4

Location ....................................................................................................................................... 4

Working Hours ............................................................................................................................. 4

Leave ........................................................................................................................................... 5

2. Applying for a registrar appointment ....................................................................................... 5

3. Critical information to be able to register as a pathologist (haematological) ....................... 5

4. Critical information about your NHLS appointment ................................................................. 6

5. Reporting structures .................................................................................................................. 6

6. Managing difficulties in your job or studies ............................................................................ 7

7. The activities of the Department can broadly be divided into three sections: ....................... 7

  7.1.1. Service Delivery ............................................................................................................... 7

  7.1.2. Teaching ............................................................................................................................ 9

8. Registrar postgraduate training and academic programme .................................................... 10
Formal training sessions: .................................................................................................................. 11

Rotations: ........................................................................................................................................ 12

8.1.1. Year One: Pre-Primary Phase. ............................................................................................... 13

8.1.2. Year Two: Post Primary Phase. ............................................................................................. 14

8.1.3. Year Three: Post Primary Phase and Pre-Final Phase. ....................................................... 15

8.1.4. Year Four: Pre-Final Phase and Final Phase. ....................................................................... 16

8.1.5. Weekly Programme. Formal Training Sessions In Bold. ................................................... 17

Curriculum ....................................................................................................................................... 18

8.1.6. Laboratory aspects of haematology. ....................................................................................... 18

8.1.7. Specialist clinical haematology including the diagnosis and management of: ............... 18

8.1.8. Specialist areas of haematology........................................................................................... 18

8.1.9. Quality assurance and management issues in haematology. .......................................... 18

Reading .......................................................................................................................................... 19

Research: ......................................................................................................................................... 20

Your first week as a registrar .......................................................................................................... 21

Timeline (“Milestones”): .................................................................................................................. 23

General Rules and Recommendations for Registrars ................................................................... 23

Acknowledgements .......................................................................................................................... 24

Registrar commitment ....................................................................................................................... 25
Personnel

1.1.1. Consultant Haematology Pathologists:

Prof MJ Coetzee  Head of Department (HOD)
Dr J Joubert  Pathologist
Dr R Van Der Linde  Pathologist
Dr R Weyers  Pathologist (Affiliated, 5/8 post Pelonomi)
Dr L Pretorius  Pathologist (Affiliated, Ampath, Bloemfontein)

1.1.2. Consultant Clinical Haematologists:

Dr MJ Webb  Acting Head: Division of Clinical Haematology, Department of Internal Medicine
Dr J Malherbe  Clinical Haematologist

1.1.3. Current Haematology Registrars (Pathology):

The Department has six HPCSA registrar numbers, but appointments are dictated by NHLS budgets.

- Dr N Rossum (Senior)
- Dr L Haupt (Senior)
- Dr A Van Marle (Junior)
- Vacant

1.1.4. Secretary

Ms Portia Chidi, Tel (051) 405 3043, chidibp@ufs.ac.za, Fax (051) 405 2923

Location

The Department functions from the NHLS Universitas Academic Laboratories, and Department of Haematology and Cell Biology, University of the Free State.

Working Hours

The working hours of the department are from 08:00 – 17:00, Monday to Friday. Registrars are entitled to a one-hour lunch break, which may be taken off-site. A tea room and kitchen with a microwave oven and refrigerator is also available.

The core laboratory is open 24 hours a day, seven days a week. After hours, the laboratory is manned by a medical technologist but there is always a registrar as well as a consultant on call.
Leave
All leave (sick leave, annual leave, family responsibility leave etc.) is governed by the rules of the NHLS. Registrars apply for leave online. In addition, annual leave will only be granted to registrars by the HOD if the following three criteria are met:

1. Registrars must make arrangements with their colleagues to cover their sections for them whilst on leave
2. They must obtain permission from their registrar colleagues to take leave
3. Only one registrar may take leave at a time.

2. Applying for a registrar appointment
   • Contact a consultant or the HOD and spend (shadow) two full days in the Department. This will allow you to see what a haematologist does and if you actually like it. If you spend this time we can also answer any questions. Medical students do not have much exposure to laboratory medicine of haematology.
   • Send your CV to the HOD so that we are aware of you and can contact you as soon as new posts become available.
   • Posts are advertised early in the year for the July intake, and early in the second semester for the January intake. The NHLS has official advertisements which the Department can also distribute.
   • Submit you applications to the Academic Affairs, Research and Quality Assurance (AARQA) HR of the NHLS by email. Please include an official academic transcript of your marks as an undergraduate medical student.
   • From AARQA the applications are distributed to the relevant Departments. Here the applicants are shortlisted and invited to formal interviews.
   • The interviews are standardised and include broad questions about laboratory work and the haematology. If you have spent time shadowing in haematology these ought not to be difficult.
   • If you are successful you will be offered a contract.

3. Critical information to be able to register as a pathologist (haematological)
   1. If you have decided to become a specialist, you have decided make yourself into a specialist. The NHLS and UFS are there to assist you and give you opportunities, not to spoon-feed you.
   
   When you are a pathologist you have to take significant responsibility for many medical and other decisions, as well as your own professional development. Make a point of preparing yourself so that you will be able to transition into that role easily.

   Learn as many generic skills as possible, e.g. IT. This makes you marketable

   Hone your own time management and study methods.

   2. In order to register with the HPCSA you need:
      a. Proof that you have been registered as a registrar in a designated HPCSA training post for four years. In order to obtain this registration you need to be registered for the MMed(Haem).
      b. That you have satisfied all the academic requirements:
         i. Passed the National Exit Exam (FCPath(SA) Haem)
ii. Completed your research project

iii. Undergone continual training and assessment

3. In order to receive any training in the Department you need to be registered for the MMed(Haem) degree at the UFS, every year.

4. The contract with the NHLS is a temporary appointment for a maximum of five years. If you do not qualify yourself as a pathologist in five years you have to get employment elsewhere. There may be extenuating circumstances that need to be approved by both the University and the NHLS.

5. Familiarise yourself with all the rules and regulations of the HPCSA, NHLS and the UFS, and check for updates continually. Adhere to them.

6. Join us in having fun doing haematology

4. **Critical information about your NHLS appointment**

1. The contract with the NHLS is a temporary appointment for a maximum of five years. If you do not qualify yourself as a pathologist in five years you have to get employment elsewhere. There may be extenuating circumstances that need to be approved by both the University and the NHLS.

2. At present you need to pay back an amount of a few million Rand if you waste your time and do not progress academically in the five years. If you decide to leave after failing the primary exam this does not count. Please check you offer of appointment to see if any regulation has changed.

3. If you qualify within four years, you can become a pathologist sooner.

4. The NHLS needs to provide a country-wide pathology service. At present, the NHLS requires newly qualified pathologists to work back for two years as a pathologist in a post that the pathologist and NHLS negotiate about. Should you decide to leave the NHLS without completing the two-year retention time work-back period after qualifying, you may be liable for the sum of R2-3 million. Please check you offer of appointment to see if any regulation has changed.

5. The NHLS and UFS are in discussion about registrars regularly.

6. After you have passed your Part I, you can be promoted to a Senior Registrar, with a commensurate increase in remuneration.

7. Read you NHLS email regularly. There is often important information about salaries, tax, and important NHLS announcements.

8. You are allowed 20 days of paid study leave per two years. You will not be granted more than these days if you have to repeat an exam.

9. No private work allowed

5. **Reporting structures**

We expect professional behaviour at all times.

Registrars report to the consultants and HOD.

The HOD reports to the Pathology Representative (Academic NHLS) and to the Head of the School of Medicine (UFS).

Registrars do not report to Laboratory Managers (Operational NHLS). Respect them however. We work together with our professional colleagues, the medical laboratory technologists. They have a University
degree and are registered with the HPCSA. In a sense our relationship with them is similar to that between a clinical doctor and nursing staff. They cannot work without each other.

If a clinical doctor has an issue with you, involve one of the consultants immediately.

If someone has a complaint about a registrar the consultant or the HOD should be involved. We “praise in public and scold in private”.

In the same way we ask you to channel any complaints via the consultants or HOD. Please do not jump the gun! In this way problems are solved at the lowest level possible. If the HOD does not want to assist you, you are then welcome to escalate an issue.

- Email tips
  - Email etiquette: if you copy the whole world when you send work-related emails, the implication to the primary recipient is that you place the recipient under pressure, or want to shame or disgrace the recipient. Carefully consider who you copy with every email.
  - Never delete any email related to work

6. Managing difficulties in your job or studies
We are here to help you. Remember that we take responsibility for the Department. You get the quickest and easiest solution to any difficulty when you report it to your consultant or HOD immediately. Even the worst surprise is much easier to manage while it is still “fresh”. It is also better for the HOD to hear it first hand from you. Honesty is the best policy.

If you have any problem with studies, ask for help immediately. It is our duty to help you. Do not leave unresolved issues until just before exam. In this situation the options to help you are usually very limited and the consequences dire.

7. The activities of the Department can broadly be divided into three sections:
   - Service Delivery
   - Teaching
   - Research

7.1.1. Service Delivery
The Department of Haematology and Cell Biology renders tertiary laboratory and clinical services to the Universitas Academic Hospital, National District Hospital, and Pelonomi Tertiary Hospital in Bloemfontein, as well as to all NHLS laboratories and hospitals in the Free State and Northern Cape provinces. Clinical services are organised under the umbrella of the Division of Clinical Haematology of the Department of Internal Medicine and also the Division of Paediatric Oncology, Department of Paediatrics while laboratory services fall within the ambit of the Universitas Academic Laboratories of the NHLS.
7.1.1.1. **Core Laboratory**

All tests with a rapid turnaround time (TAT) which have an immediate impact on patient management are performed at this site. In haematology, these consist mainly of full blood counts and coagulation profiles. Registrars from the Department are always available in the core laboratory both to assist with the interpretation of results and to provide advice to clinicians regarding the work-up of patients with haematological disease.

Registrars must familiarise themselves with the principles underlying all instrumentation, as well as their mode of operation. They must also understand the scientific basis and the standard operating procedure of all tests performed. The core laboratory provides the ideal environment for gaining insight into aspects such as quality assurance, laboratory design and inventory control.

7.1.1.2. **Special haematology**

More specialised tests are also performed at this site and at the Special Haemostasis Unit of the Department. These include bone marrow aspirates and trephine biopsies, haemoglobin (Hb) electrophoresis, platelet aggregometry, PFA-100, TEG, TGA, blood grouping, Coombs tests, antibody identification and titre, flow cytometry with immunophenotyping, FISH and other molecular assays, as well as a wide range of other specialised haematological examinations.

The laboratory participates in the quality assurance programmes of the NHLS, Royal College of Pathologists of Australasia (RCPA) and UK NEQAS (UK National External Quality Assurance Scheme). The laboratory maintained its SANAS accreditation in 2014 following the yearly surveillance inspection.

A warfarin dosage service is provided by means of a point-of-care INR-testing facility at the Universitas haematology clinic, for outpatients from the surrounding areas.

Registrars are expected to participate in all the activities mentioned above.

7.1.1.3. **The Tissue Typing Laboratory**

Many PCR tests, and FISH investigations, are done here. This is also the HLA cross matching laboratory for central South Africa. It also does paternity testing.

7.1.1.4. **Clinical Services**

The adult haematology outpatient clinic at Universitas Academic Hospital provides the mainstay of registrars’ clinical haematology exposure. It also serves as an important vehicle for the teaching of undergraduate medical students as well as internal medicine registrars. Haematology (pathology) registrars are expected to see and manage patients in this outpatient clinic on Monday and Wednesday mornings.

Members of the department also provide valuable input into the Paediatric Haematology Clinic, but do not generally attend this clinic. Registrars are also expected to perform bone marrow aspiration and trephine biopsies in the clinics and on the wards, when consulted. In general, all paediatric bone marrows are performed by the Department of Paediatrics. Registrars are however expected to rotate at Paediatric Oncology for a period of two weeks during their training, to familiarise themselves with paediatric oncology haematology practice.

7.1.1.5. **Bleeding Disorder Clinic**

The Universitas Haematology Clinic is also houses a Haemophilia Treatment Centre that is recognised by the World federation of Hemophilia (WFH). It is called the Bleeding Disorder Clinic because it offers a specialised clinic to all persons with bleeding disorders on the first and last Thursday morning of every month. Registrars are expected to see and manage patients in this clinic.

7.1.1.6. **Ward rounds**

Although registrars are expected to be familiar with the haematology patients currently admitted to the adult and paediatric wards, they are not expected to participate in routine ward rounds or other aspects of the in-patient management of these patients, at present. The registrar and consultant on call are however
expected to attend the Academic Grand Ward Round in the adult haematology wards on Tuesday mornings, for teaching purposes.

7.1.1.7. Outreach clinics
The department operates two outpatient Outreach Haematology Clinics, run by registrars, on Wednesday mornings. Dihlabeng Hospital in Bethlehem and Kimberley Hospital in Kimberley, are each visited once a month, using an NHLS vehicle. Registrars are expected to divide the clinics up amongst themselves.

7.1.1.8. After-hours duties

7.1.1.8.1. The management of calls
- It is the duty of the registrars to provide a call roster to the Departmental Secretary a week before the end of each calendar month. Calls usually last one week from Monday morning 08:00.
- If for a valid reason calls have to be exchanged, notify the: consultant on call, the Service Laboratory, and the UAH switchboard.
- Registrars on call must make certain that they can be contacted by telephone at all times. Therefore they must have reception and airtime, and not have their cell phones on voicemail.
- Manage phone calls professionally
- They must be able to reach the laboratory within 20 minutes
- The registrar does “first call” and the consultant “second call”
- Remember that as a medical practitioner you remain fully responsible for your actions. If you have any doubt, contact the consultant on call. The consultant then takes responsibility for the medical decision.
- Being on call adds value to the service we render.

7.1.1.8.2. Duties while on call
The registrar on call is responsible for managing clinical and laboratory queries after hours. This would include:
- Telephonic consultations and microscopic review of certain urgent peripheral blood smears or other tests.
- Registrars may be consulted about patient management. It is not their duty to accept or decline patients for referral, or to see patients after-hours. This falls within the scope of the Division of Clinical Haematology.
- The registrar on call is also responsible for management of the routine laboratory workload on weekends, which usually involves being present in the laboratory most of Saturday and Sunday morning.
- It is not necessary for registrars to remain on-site once the routine work is finished, but they should remain available to return to the laboratory should the need arise.

7.1.2. Teaching
- If you participate in undergraduate teaching, you may claim discount on your UFS registration fees by completing a form

The Department is responsible for the training of undergraduate medical, BSc and optometry students, as well as post-graduate BMedSc(Honours), Masters and Doctoral students and registrars. Registrars also contribute towards undergraduate training, which currently entitles them to a 50% rebate on their university class fees.
7.1.2.1. Undergraduate teaching
The Rule Book Faculty of Health Sciences contains the latest programme information. Curricula and module codes may be updated.

7.1.2.1.1. MJR214 for MBChB I
This module is presented by the Department of Medical Microbiology and primarily focuses on infections and antimicrobial drugs. The Department of Haematology and Cell Biology presents basic introductory lectures on immunology during this module, which are then expanded on in MEQ264. Registrars may be expected to participate in some of the interactive workbook sessions.

7.1.2.1.2. MEQ264 for MBChB II
This module is the medical students’ first contact with haematology and consists of 16 sessions, comprising lectures, group work, interactive workbook sessions and case studies. The lectures cover topics such as haematopoiesis, clinical and laboratory assessment of haematological disease, nutritional and haemolytic anaemias, bone marrow failure, haematological and lymphoid malignancy, disorders of haemostasis, thrombosis, basic haematology physiology, immunology, blood transfusion, and molecular haematology, and are presented over the course of one semester. Registrars are expected to facilitate all the workbook sessions of this module.

7.1.2.1.3. GKV264 for MBChB II
This is a multidisciplinary practical module during which time students are taught how to take a history from patients and examine them, including patients with haematological conditions. They are also taught how to perform the complete laboratory work-up for malignancy, including bone marrow aspiration and biopsy. Registrars may be expected to participate in some of these sessions.

7.1.2.1.4. CPT222 for B.Optom
This module is presented over one semester by the department to undergraduate optometry students in the School of Allied Health Professions and covers introductory haematology and immunology as applicable to the eye. Registrars may be expected to participate in this module.

7.1.2.1.5. Undergraduate BSc programme
Members of the Department are also involved in the undergraduate BSc training programme for Human Molecular Genetics. Registrars may be expected to participate in some components of this programme.

7.1.2.1.6. Small-Group Tutorials for MBChB V
Final year medical students are taken for two small-group tutorials during their rotation in the department as part of their Internal Medicine rotation. These tutorials are the registrars’ responsibility. The first tutorial covers the approach to a patient with thrombophilia, while the second tutorial is a microscope session, covering basic peripheral blood morphology. They are taught how to request and interpret haematology tests and how to best use the laboratory rationally.

7.1.2.2. Postgraduate Teaching
Registrars and consultants take part in Internal Medicine and other postgraduate programme ad hoc.

8. Registrar postgraduate training and academic programme
A comprehensive practical and theoretical teaching programme has been put in place for registrars in haematology which seeks to cover the whole syllabus over a four year period, based on the FCPATH(SA) (Haem) Regulations and FCPATH(SA) (Haem) Examination Blueprint (attached as Appendix 1 and 2 respectively).

- Please consult the website of the Colleges of Medicine of South Africa (CMSA) website regularly (www.collegemedsa.ac.za) as regulations may change from time to time. Haematology falls under the College of Pathologists.

- A lot of the information and training is done electronically. It important that you keep up to date with developments in IT.
Teaching of registrars takes place daily in the laboratories and clinics mentioned above. Registrars report on bone marrow aspirates and trephine biopsies independently but comments are always formulated in conjunction with a consultant who will authorize the final report, after joint review around the teaching microscope.

Special attention has been given to aspects of theoretical haematology, quality assurance and management and these are addressed in weekly lectures prepared for the department by consultants and registrars. These lectures are designed to stimulate registrars to read about theoretical aspects of haematology in preparation for the final examination.

Registrars also receive informal training in the haematology clinic and are encouraged to interact with their clinical colleagues in providing interpretation of laboratory tests and by participating in the management of patients with haematological disease.

Registrars in haematology are expected to attend and pass a course in research methodology (NAM702) and health care practice (GPV703) within the first 24 months of registering for the MMed(Haem) programme.

Within the first 18 months of appointment, registrars are expected to complete the following primary (FCPath(SA) Haem Part I) examination:

**FCPath(SA) (Haem) Part I (Molecular pathology, immunology, blood transfusion and physiology)**

Please consult the CMSA website for the dates of the exams, as you need to register six months ahead of the exam. The Part I exam consists of two written papers that are written in Bloemfontein.

Registrars will receive weekly tutorials aimed at preparing them for the Part I exam.

- Attend the honours molecular biology courses that are offered by Microbiology or Haematology.
- We encourage the registrars to do the annual Immunology Course at Wits. This is run over two weeks. It provides you with most of the immunology tools you need as a haematologist, and is wonderful preparation for the Part I. It is usually in March and April. It is for the registrar’s own cost, even though special leave is granted.
- We encourage the registrars to do the annual DNA Course at UCT. This is run over three days. It provides you with much of the molecular genetics tools you need as a haematologist, and is wonderful preparation for the Part I. It is usually in September. It is for the registrar’s own cost, even though special leave is granted.

**Formal training sessions:**
The following formal training sessions are scheduled in the registrar programme:

- **Clinic meeting:** Here all patients seen in the clinic are briefly presented and discussed, so that everyone can have the opportunity to learn from all the cases seen that day in the clinic.
- **Science lecture:** presented by scientists in the department, with scientific laboratory content, aimed at registrars, PhD, Masters and Honours students.
- **Morphology prep session:** facilitated by a consultant affiliated with the department. Discussion of morphology of cases to be presented at clinico-pathological meeting.
- **WHO discussion group:** weekly discussion of WHO classification system. Aim is to have all registrars cover the classification system at least twice by the time they sit for the final exam.
- **Clinico-pathological conferences:** weekly presentation of interesting morphology cases to clinicians for discussion. Known colloquially as “Show & Tell”.
• **Flow Case of the Week**: weekly discussion of most interesting flow case. To be commenced in 2015.

• **Clinical Haematology and Haematology Pathology Academic Programme**: consists of weekly lectures presented by consultants and registrars of the department and the Division of Clinical Haematology on a broad range of topical and current subjects in haematology.

• **Quality control and quality assurance training**: included in weekly QA meeting.

• **Journal discussion**: discussion of selected recent articles in haematology journals, by consultants and registrars in the department. During this session separate tutorials are also held for registrars preparing for their primary exams.

**Rotations:**

In order to facilitate both training and service delivery, registrars are required to rotate through the different sub-disciplines of haematology. While rotating through a specific section, registrars are responsible for all the routine work done in that section. Certain specialised rotations are also arranged off-site. The formal training programme and routine work programme is summarised in the tables below.
8.1.1. **Year One: Pre-Primary Phase.**

Abbreviations: COAG Coagulation, FLOW Flow cytometry, IMM Immunology, MORPH Morphology.

<table>
<thead>
<tr>
<th>PRE-PRIMARY PHASE</th>
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<tbody>
<tr>
<td>Focus: Call readiness</td>
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<tr>
<td><strong>Month</strong></td>
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<tr>
<td>Standard activities and rotations:</td>
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<tr>
<td>Orientation (one week). Morphology + Mini (one day) rotations</td>
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<tr>
<td>Supplementary rotations or activities</td>
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<tr>
<td>Molecular and cytogenetics (one week)</td>
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*Plan this date as soon as your begin as a registrar!
8.1.2. **Year Two: Post Primary Phase.**

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<th>Month</th>
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<tbody>
<tr>
<td>Standard activities and rotations:</td>
<td>IMM</td>
<td>MORPH</td>
<td>MORPH</td>
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<td>COAG</td>
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<td>MORPH</td>
<td>COAG</td>
<td>IMM</td>
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<td>Supplementary rotations or activities</td>
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<td>Deadline for completion of primary exam*</td>
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</table>

*Plan this date as soon as your begin as a registrar!
### 8.1.3. Year Three: Post Primary Phase and Pre-Final Phase.

<table>
<thead>
<tr>
<th>POST-PRIMARY PHASE</th>
<th>PRE-FINAL PHASE</th>
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<tbody>
<tr>
<td><strong>Focus:</strong></td>
<td>Research Project</td>
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<tr>
<td><strong>Month</strong></td>
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<td>Standard activities and rotations:</td>
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<tr>
<td>Supplementary rotations or activities</td>
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*Deadline for completion of Research Project*

*Plan this date as soon as your begin as a registrar!*
### 8.1.4. Year Four: Pre-Final Phase and Final Phase.

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<th>Month</th>
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<tbody>
<tr>
<td><strong>PRE-FINAL PHASE</strong></td>
<td>COAG</td>
<td>IMM</td>
<td>FLOW</td>
<td>MOR</td>
<td>MOR</td>
<td>ROTATIONS AS REQUIRED FOR EXAM PREPARATION</td>
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<tr>
<td><strong>Focus:</strong></td>
<td>Preparation for final exam</td>
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<tr>
<td><strong>FINAL PHASE</strong></td>
<td>Preparation for final exam</td>
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<tr>
<td><strong>Supplementary rotations or activities</strong></td>
<td>SANBS Rotation (2-4 weeks as required, off-site)</td>
<td>Molecular and cytogenetics (2-4 weeks as required, off-site)</td>
<td>Special haemostasis (one week)</td>
<td>Special flowcytometry and special haematology (one week, off-site)</td>
<td>Ward residency for clinical exam preparation (1-2 weeks)</td>
<td>Pediatric haematology/oncology residency (two weeks)</td>
<td>Exam prep at examination venue (one week, possibly off-site)</td>
<td>Additional supplementary rotations as required.</td>
<td>Calls end (service delivery permitting)</td>
<td>As required</td>
<td>As required</td>
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</table>

*Plan this date as soon as your begin as a registrar!*
8.1.5. **Weekly Programme. Formal Training Sessions In Bold.**

Attending every one of these sessions builds academic stamina and depth!

Meal times tend to be fitted into the schedule flexibly

No registrar or consultant leaves until all the routine diagnostic work for the day is complete

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
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<tbody>
<tr>
<td>08:00</td>
<td></td>
<td>Science Academic programme</td>
<td>Clinicopathologic conference</td>
<td>Academic Programme</td>
<td>QA meeting</td>
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<td></td>
<td>Haematology Clinic</td>
<td>Registrar on call Academic Ward Round</td>
<td>Registrar on call Routine Lab Work</td>
<td>WHO chapter discussion</td>
<td>Review of logbooks</td>
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<td></td>
<td></td>
<td>Registrar on call: Routine Lab work</td>
<td>Other registrars: Haematology Clinic</td>
<td>Reg-on-call: Lab Work</td>
<td>Flow case of the week</td>
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<td></td>
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<td>Registrar on call: Present a clinical case to Clin Haem</td>
<td>Other registrars: Clinicopathologic conference</td>
<td>Others: Bleeding Disorders Clinic</td>
<td>Journal Discussion</td>
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<td>10:00</td>
<td></td>
<td>Clinic Meeting</td>
<td>Lab Work</td>
<td>Clinic Meeting</td>
<td>Lab Work</td>
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<tr>
<td>11:00</td>
<td>Clinic Meeting</td>
<td>Lab Work</td>
<td>Clinic Meeting</td>
<td>Clinic Meeting</td>
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<td>12:00</td>
<td>Lab Work</td>
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<td>13:00</td>
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<td>Lab Work</td>
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</table>
Curriculum

Please look at the CMSA website to regularly to check for any updates.

- The curriculum and HPCS A rules under which your commenced your training usually stay valid until you have qualified. This is usually despite any changes in rules during your training. If you do not qualify within five years, a complicated situation may arise, with lots of red tape. It is much easier to work hard and qualify on time.

The curriculum is based on the syllabus of the College of Pathologists of South Africa, which is available online. There are four main areas of subject matter included within the curriculum of haematology. These are summarised below:

8.1.6. **Laboratory aspects of haematology.**

8.1.7. **Specialist clinical haematology including the diagnosis and management of:**

- Anaemia
- Benign white cell disorders
- Thrombocytopenia and platelet function defects
- Acute leukaemia
- Chronic leukaemia
- Myeloma and lymphoma
- Haemophilia & related disorders
- Thrombophilia & thrombosis
- Acquired bleeding disorders
- Haemoglobinopathies
- Bone marrow failure syndromes
- Myelodysplasia
- Myeloproliferative disorders

8.1.8. **Specialist areas of haematology.**
The trainees will acquire a basic knowledge of transfusion medicine, paediatric haematology, haemostasis and thrombosis, haematology of pregnancy and marrow transplantation.

8.1.9. **Quality assurance and management issues in haematology.**
The final examination (FCPath(SA) Haem Part II) is taken after four years and usually extends over a period of five days. It consists of two written papers as well as practical examinations in morphology, coagulation, blood transfusion, cytogenetics, immunophenotyping, special haematology and molecular haematology. It also involves clinical cases. An oral examination will conclude the evaluation process.

Every registrar must also keep a logbook, recording all meetings, seminars and discussions attended as well as all competencies acquired. This logbook must be available for inspection on request by consultants, external examiners and accreditation personnel. This logbook is based on the Colleges of Medicine of South Africa (CMSA) Portfolio of Learning and is available from the CMSA website.

At the end of four years of training, registrars should be fully conversant with:

- All aspects of theoretical haematology
- The full range of laboratory tests available and their interpretation
- Quality assurance procedures
- Health & Safety
- Management and layout of a haematology laboratory
- Current transfusion practice

**Reading**

Most journals are available electronically at the UFS Library website. Registrars are expected to be familiar with the latest editions of standard haematology texts:

- Williams – *Hematology*
- Wintrobe – *Clinical Hematology*
- Hoffbrand – *Postgraduate haematology*
- Dacie & Lewis – *Practical haematology*
- WHO – *Classification of Tumours of the haemopoietic and Lymphoid Tissues*
- Bain – *Bone Marrow Pathology*
- Bain – *Blood Cells*
- Rossi – *Principles of Transfusion Medicine*

The following journals should also be read regularly, concentrating especially on reviews and guidelines:

- *Blood*
- *British Journal of Haematology*
- *Thrombosis and Haemostasis*
Research:
Every registrar is required to devise and execute an independent research project based on a subject of his or her choice, depending on local expertise and opportunity.

Be familiar with the Rule Book for the MMed(Haem) concerning the research project. It is submitted for external evaluation.

Remember that the object of the exercise is to prove that you can initiate and complete are small research project, in the time available to you.

- Remember that there are often administrative and practical delays. The earlier you start, the easier it is to complete the project

An initial protocol should be written with the assistance of a supervisor (usually one of the consultants in the department) and this must be submitted to the UFS Faculty of Health Sciences Ethics Committee for approval, in collaboration with a biostatistician. This protocol should also incorporate a literature search and review. Approval must also be obtained from the Department of Health and the relevant hospital’s clinical manager.

Following these formalities, the student must gather and analyse data in order to formulate a scientific conclusion based on the statement of an initial hypothesis or question.

Funding, if required, can be obtained from various sources:

- NHLS – K funding and NHLS Trust
- MRC
- NRF
- Discovery Foundation

As a condition for attendance at a “Pathology Congress” (the annual FSASP Congress) (Federation of South African Societies of Pathology), a registrar will be required to present a poster or a paper at such a congress. It is highly recommended that registrars present their research project at the UFS Faculty of Health Sciences Forum as well as at a national congress.

It is recommended that each registrar present at least two poster or paper presentations at the UFS Forum and a local congress, within their four year residency period.
Try to publish the results of your research project as soon as possible, possibly even before you submit your dissertation for evaluation. In that way, your research will have been peer-reviewed even before it is marked by the evaluators.

**Your first week as a registrar**
You will be shown round the Department and introduced to everyone. With time all the venues and routine will be explained.

You will be given time to do the following. You will need to have many forms signed by the HOD.

- Remember that you might not have had much laboratory exposure, and that you will undergo a steep learning curve

- **UFS obligations**
  - Register with the UFS for the MMed(Haem) and get a student number
  - Obtain your student card
    - Use it to register for access to the campus
    - Use it to register at the Library
  - Obtain an access tag to the Department and necessary buildings
  - Gain access to you UFS email and internet
  - Register on Blackboard (where some teaching material is kept online)
  - Make certain that you are officially registered as a registrar with the HPCSA
  - Familiarise yourself with the UFS website (www.ufs.ac.za)

- **NHLS obligations**
  - With the help of HR obtain
    - A salary number
    - Register your bank account details with the NHLS
  - With the IT Department
    - Access to the NHLS email and internet
    - Access to the Laboratory Information System
  - With the Laboratory Manager/HOD
    - Access to the laboratories
    - Obtaining white coats and other personal protective equipment
- Start a “personnel file” with copies of all your registrations and qualifications, as well as certified copies of your ID
- Complete all the health and safety questionnaires.
- Check your hepatitis B immunisation is up to date. The NHLS will provide vaccine and do the necessary blood tests.
  o With the secretary
    - Get your office keys
    - Learn where the fax machines and scanner are
    - Obtain a telephone list
  o With UAH telephone exchange
    - Obtain access to the Hospital Information System
    - Be registered on the telephone system
    - Obtain a personal speed dial number
Timeline (“Milestones”):
Good time management is crucial in a course with a learning curve as steep as is found in haematology. Important “Milestones” that need to be achieved, can be summarised as follows:

- First six days: spent on orientation, induction paperwork, introductions, general laboratory familiarization, etc.
- First six weeks: spent on obtaining “call-readiness” which involves training in basic morphology, the recognition of morphological haematological emergencies, basic coagulation etc.
- First six months: spent on obtaining the skills and abilities necessary to function on a day-to-day basis in the department, focusing on bone marrow morphology, coagulation, flow cytometry, immunology and clinical skills.
- During the next six months, the focus shifts towards preparation for the College Primary exam (FCPath(SA) Haem Part I). The aim should be to have successfully passed the Primary by 12-18 months after starting the course.
- During the next 6-12 months, the focus shifts towards completing the MMed research project. The aim should be to have completed the research project by 2-2½ years after starting the course.
- During the next 12-18 months the focus shifts toward preparation for the final exam (FCPath(SA) Haem Part II).

General Rules and Recommendations for Registrars

1. All registrars are expected to be on duty between 08:00 and 17:00.
2. At all times (including clinic days), one registrar must be on duty in the core lab to consult with clinicians and to deal with problems which may arise.
3. There is no objection to registrars studying or working on research projects during working hours with the proviso that service delivery always comes first and that all outstanding work must be completed as quickly as possible.
4. It is critically important for registrars to be “hands-on” in both the clinic and the laboratory. This involves active participation in seeing and managing haematology patients, as well as practical work on the bench in the laboratory. Hours and hours of studying, without practical bench-side and bedside exposure, is pointless. Registrars should aim to present at least six clinical cases per year to the Clinical Haematologists, under exam conditions, in order to be familiar with proper presentation and exam technique. Registrars should aim to personally perform as many of the tests in the laboratory as possible, in order to be familiar with their principles. Registrars should also aim to personally perform as many bone marrow aspirations and trephine procedures as possible, as this is also a CMSA logbook requirement.
5. Registrars largely "drive" the activities of our department and are responsible for the image we project to the broader medical community. We depend on your loyalty and dedication to enhance our profile and maintain the positive perception which outsiders have of us. Haematology is a close-knit fraternity in South Africa and cordial relations with your senior and junior colleagues are also important.

6. Although numerous formal training sessions are offered, registrars must realise that postgraduate students need to be self-motivated, and that it is ultimately each student’s own responsibility to equip himself/herself to be able to function independently one day as a specialist.

7. Registrars are required to maintain their HPCSA registration annually. Make certain what your HPCSA training post number is and that you are registered as a registrar with that number. Your HPCSA registration number is also important.

The NHLS requires that you maintain HPCSA registration as a condition of service. It collects proof that you are registered annually. You receive a stipend to help cover your annual registration early in every year.

8. Registrars have to register for the MMed(Haem) annually. You cannot receive any training from the Department unless you are registered as a student.

9. It is highly recommended that registrars obtain membership of a medical indemnity organisation such as MPS, for state work. Fortunately this is not too expensive. Registrars work in clinical areas in the hospital and are partially covered as NHLS employees, but should note that in case of a medical negligence claim against the province or NHLS, due to the alleged negligence of a registrar, there will be a secondary respondent, namely the registrar involved. Please do not rely on legal help from the NHLS, as in some cases the NHLS or Province may be laying a case against a registrar.

10. Please remember that consultants are always willing to assist with problems and to add value to your theoretical knowledge based on their insight and experience in haematology. They enjoy teaching and chose to work in a teaching environment because of this.

We trust you will find your time in the department pleasant and fulfilling. You are about to embark on one of the most challenging but rewarding journeys of your entire professional life – specialization. We will do our utmost to make it a thoroughly enjoyable and worthwhile experience.

Acknowledgements
This is based on the Registrar Guide of the Department of Haematology, University of Pretoria, with kind permission of Prof Roger Pool
Prof MJ Coetzee

Head: Department of haematology and Cell Biology

Registrars commitment

- Each of these milestones need to be signed and dated by the HOD and registrar

Registrar’s name: ___________________

Registrar’s signature: ___________________

Date of starting as a registrar: _________________

Date of end of NHLS registrar contract: _________________

Planned date for sitting Part I exam _________________

Date of passing Part I exam _________________

Planned date for start of research project _________________

Planned date for completion of research project _________________

Planned date for sitting Part II exam _________________

Date of passing Part II exam _________________

Date of registration as a pathologist (haematological) _________________

Revised: January 2015