Clinical Haematology Ward and Service Orientation

Junior Doctors
July 2020
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1. **Introduction**

Welcome to Clinical Haematology. The purpose of this document is to ensure you are supported in your role whilst working with us. We aim to refresh your knowledge and skills in key areas to ensure you maintain your compliance with OUH Trust protocols, ward standards and patient safety. We will also orientate you to Clinical Haematology ward specific processes which will ensure a smooth coordinated approach to care.

You will receive a separate document prior to your starting Haematology outlining the induction timetable specific to your start date.

The induction is *compulsory* for you to attend and is supported by your SpR and Consultant colleagues who will provide ward cover during this session.

**Electronic patient record & EPMA prescribing modules:** We have been advised by the Trust that you have been notified and requested to complete these modules by e-learning prior to commencement. This is *essential*.

2. **Message from the Consultants**

“We appreciate that Haematology is a busy job and it can be emotionally very tiring. Please do feel able to talk with seniors in your team at any point if you feel you’re struggling. We would much rather know sooner rather than later.

You are invaluable part of the team so please do look after yourselves! Please do take your lunch breaks and your annual leave although we would ask that you coordinate your leave so that AT LEAST 2 junior doctors (preferably 3) are on the ward at any one time.

We are aware that 2 days of the week we ask you to start at 08.30 (Monday and Thursday). We would therefore expect you to leave half an hour early on those days, or a different day. Again you may want to stagger this, so please do arrange it among yourselves.”
3. **Post-graduate education and clinical timetable**

<table>
<thead>
<tr>
<th>Day/Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td><strong>Monday</strong></td>
<td></td>
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<tr>
<td>0830</td>
<td>Consultant ward round</td>
<td>Ward</td>
</tr>
<tr>
<td>1200</td>
<td>BMT MDT, 2nd &amp; 4th weeks</td>
<td>Seminar Rm</td>
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<tr>
<td>1330</td>
<td>Ward MDT</td>
<td>Seminar Rm</td>
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<tr>
<td><strong>Tuesday</strong></td>
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<tr>
<td>0900</td>
<td>SpR &amp; SHO –led ward round</td>
<td>Ward</td>
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<tr>
<td>0900</td>
<td>Myeloma chemotherapy clinic</td>
<td>Lev 0</td>
</tr>
<tr>
<td>1500</td>
<td>Service Operational and Governance meeting 1st Tuesday of the month</td>
<td>Meeting Rm 3, Lev 2</td>
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<tr>
<td>1345</td>
<td>O/P clinic: General Haematology. <strong>Attendance essential</strong></td>
<td>Lev 0</td>
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<tr>
<td><strong>Wednesday</strong></td>
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<tr>
<td>0900</td>
<td>SpR &amp; SHO –led ward round</td>
<td>Ward</td>
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<tr>
<td>0900</td>
<td>O/P clinic: BMT</td>
<td>Lev 0</td>
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<tr>
<td>1300</td>
<td>Lymphoma MDT</td>
<td>Path seminar room, JR</td>
</tr>
<tr>
<td>1330</td>
<td>O/P clinic: Myeloma</td>
<td>Lev 0</td>
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<tr>
<td><strong>Thursday</strong></td>
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<tr>
<td>0830</td>
<td>Consultant ward round</td>
<td>Ward</td>
</tr>
<tr>
<td>1100</td>
<td>Myeloma MDT or Myeloid MDT (alter week)</td>
<td>Meeting Rm 2, Lev 2</td>
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<tr>
<td>1100</td>
<td>Trephine meeting</td>
<td>Haem lab, Lev 4, JR</td>
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<tr>
<td>1330</td>
<td>O/P clinics: Lymphoma/CLL AND Myeloid</td>
<td>Lev 0</td>
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<tr>
<td>1330</td>
<td>O/P clinic:</td>
<td>Lev 0</td>
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<tr>
<td><strong>Friday</strong></td>
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<tr>
<td>0830</td>
<td>Haem/Onc/Sobell teaching (weekly email updates)</td>
<td>Variable</td>
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<tr>
<td>0900</td>
<td>SpR &amp; SHO –led ward round</td>
<td>Ward</td>
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<tr>
<td>0930</td>
<td>O/P clinic: Haemoglobinopathy or ITP, alternate week</td>
<td>Lev 0</td>
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<tr>
<td>1300</td>
<td>O/P clinic: Myeloma clinic</td>
<td>Lev 0</td>
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<tr>
<td>1330</td>
<td>New patient clinic and BMT follow up</td>
<td>Lev 0</td>
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**Meetings**

- Hospital Grand Round (during term) 13.00, Thursday afternoon.
- Service Operational and Governance Meeting: see Sandy Hayes or Dr Robert Danby. Your attendance at this meeting is encouraged and is a great learning opportunity.

**Outpatient Clinics (OP)**

These are **very important** for your learning.

- One person **every week must** attend Haematology new patient Tuesday afternoon clinic (1345) as patients are booked in to be seen by you. Please coordinate this between you.
- One person should attend the Lymphoma clinic on Thursday afternoon each week.
- You should attend either the Wednesday or Friday afternoon myeloma clinic or the Thursday afternoon myeloid clinic at least once during your time in Haematology.
- You should also attend at least one Haemoglobinopathy clinic on a Friday morning.
4. **Educational targets and syllabus**

1. Anaemia; investigation and treatment  
2. Management of fever in an immunocompromised person  
3. Safe blood transfusion  
4. Haemophilia care and the DVT service  
5. Lymphadenopathy; causes and investigation  
6. Anticoagulation  
7. Leukaemia; different types and treatments  
8. Lymphoma; different types and treatments

**General**  
i. Investigation and management of anaemia (Microcytic, hypochromic / Normocytic, normochromic / Macrocytic)  
ii. Examination of the abdomen  
iii. Differential diagnosis and investigation of lymphadenopathy  
iv. Examination of cervical lymphadenopathy  
v. Differential diagnosis and investigation of hepato-splenomegaly  
vi. Communication with patients with malignant disease

**Coagulation**  
i. Coagulation screening tests  
ii. Anti-coagulant therapy  
iii. Acquired bleeding disorders  
iv. Inherited bleeding disorders  
v. Thrombosis

**Common haematological malignant disease**  
i. Myeloma  
ii. CLL  
iii. Other

**Haemolytic anaemia**  
i. Auto-immune  
ii. Haemoglobinopathy

**Blood transfusion**  
i. Risks of blood transfusion  
ii. Administration of blood products  
iii. Compatibility testing

**Programme feedback**

We are always trying to improve this programme. Please feedback any suggestions to Dr Danby
5. Clinical teams

The consultant attending cycle is 1 month

<table>
<thead>
<tr>
<th>Lymphoid team attending Consultants</th>
<th>Myeloid team attending Consultants</th>
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<tbody>
<tr>
<td>Dr Graham Collins</td>
<td>Dr Andy Peniket</td>
</tr>
<tr>
<td>Dr Jaimal Kothari</td>
<td>Dr Robert Danby</td>
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<tr>
<td>Dr Karthik Ramasamy</td>
<td>Prof. Paresh Vyas</td>
</tr>
<tr>
<td>Dr Toby Eyre</td>
<td>Dr Katalin Balassa</td>
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<td>Dr Murali Kesavan</td>
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<thead>
<tr>
<th>Registrar cover</th>
<th>Registrar cover</th>
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<tr>
<td>1 Ward SpR</td>
<td>1 Ward SpR</td>
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<tr>
<td>1 DTU SpR</td>
<td>1 DTU SpR</td>
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<td>1 Research SpR</td>
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<tr>
<td>1 Myeloma SpR</td>
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<table>
<thead>
<tr>
<th>Patient groups</th>
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<td>AML/APML</td>
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<td>CLL</td>
<td>MDS</td>
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<tr>
<td>Autologous transplants</td>
<td>ALL</td>
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<td>Myeloma</td>
<td>Myelofibrosis</td>
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<td>Haemoglobinopathy</td>
<td>Allogeneic transplants</td>
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<td>Clotting</td>
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<tr>
<td>Autoimmune Haematology (ITP, AIHA etc)</td>
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<td>TTP</td>
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<td>Haemophilia (covered by Haemostasis SpR)</td>
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<table>
<thead>
<tr>
<th>Nurse practitioners</th>
<th>Nurse practitioners</th>
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<tbody>
<tr>
<td>Lymphoma: Tracy Mitchell Floyd, Anya Aspinall</td>
<td>Myeloid: Caroline Allman, Kirsty Crozier</td>
</tr>
<tr>
<td>CLL: Lianne Palmer/Josephine Daley</td>
<td>Allograft coordinators: Daja Barton, Olivia Hildson</td>
</tr>
<tr>
<td>Myeloma: Lisa Fergusson, Pam Roberts</td>
<td>Allograft NP: Lara Rowley, Francesca Toselli</td>
</tr>
<tr>
<td>Haematology CNS: Julia Ford</td>
<td>Administrator for BMT NP’s: Shirley Hudson</td>
</tr>
<tr>
<td>Haemoglobinopathy: Sandy Hayes Autograft Coordinators: Sue Moore, Kirsten Rendall</td>
<td>CNS Admin support: Melanie Jones</td>
</tr>
<tr>
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<td>Macmillan Support worker: Donna Foster</td>
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To balance continuity of care & learning opportunity it is recommended that SHOs spend time working with the same team for the first half of their placement then swapping over for the second half.

Access to patient list: please arrange for FULL access to haematology patient list before, or as soon as you start. Current member of staff who has access to the list (usually your registrar) needs to e-mail imandtservicedesk@ouh.nhs.uk and request you to have access to O drive/Wards/Clinical Haematology.
6. **Service departments**

**Haematology Day Treatment Unit (DTU).** Located on level 0. This service is open Monday to Saturday, and sees patients requiring supportive care such as: transfusion, antibiotics, electrolyte replacement, bisphosphonate therapy; and chemotherapy. There is a SpR for each team based here.

**Clinical Haematology Ward (CHW).** This 25 bed inpatient ward, has 15 single rooms, 10 with positive pressure and hepa filtration (for allogeneic transplantation) and 5 twin bed bays; all rooms are en-suite. There is a patient prioritisation system for acute and planned admissions.

**Oncology ward and outlying patients.** Haematology patients are outlied to Oncology ward as a first preference. All outliers, are cared for by the specific clinical team and should be reviewed on a daily basis and included on the patient sheet. Excellent communication with the nursing teams on the outlying ward is imperative, especially if you have prescribed new drugs/fluids etc. Also remember that as these teams are not familiar with Haematology care, so please educate them and if you need something done for the patient please ask directly, don’t assume.

If patients on the outlier wards have lines then **specifically asking the nursing team** to take evening line bloods is very useful come the ward round!

**Outpatients department,** located on level 0. This outpatient area is used by Oncology, Haematology and Surgery. Appointments are booked via the ward clerk or team secretary.

**Haematology secretariat,** located on level 2. All consultants, NP’s, and secretaries are housed in the same area on level 2 admin.

7. **Service documents and websites**

All documents produced for use/reference within the Clinical Haematology department are subject to a quality control system. All documents are available on the NSSG website and we advise you to ensure you have a short cut to this your desktop.

Here is the link: [http://nssg.oxford-haematology.org.uk/](http://nssg.oxford-haematology.org.uk/)

The departments’ external website is [http://www.ouh.nhs.uk/haematology/](http://www.ouh.nhs.uk/haematology/)

8. **Departmental meetings**

You will receive agenda and are very welcome to attend the following meeting.

Service Operational and Governance meeting: 1st Tuesday of the month (Meeting Rm 3), this is an operational meeting and a place to bring any ideas that may benefit the service, and/or issues you have not been able to resolve; audit, safety, Datix, Morbidity and Mortality reviews are discussed
9. **Blood test requesting**

All patients with central access (PICC line, central line, Hickman line) have bloods requested for 22:00 **daily**, in order for them to be reviewed and actioned on the morning ward round.

If a patient is peripherally bled, request blood as “Planned” at 06:00 the following day.

The nursing staff is very vigilant & will look out for gross abnormalities overnight & request a review if needed e.g. severe electrolyte abnormalities needing IV replacement overnight. However please handover **expected** abnormalities in blood test (e.g. tumour lysis blood) to the night team.

Blood requesting is a time-consuming daily process! As a general rule, request (pro-tip: mark these as favourites on EPR):

- Daily FBC/U&Es/CRP/Bone profile/Mg/LFTs
- Twice weekly clotting & group+save – Sun/Mon + Wed/Thurs
- Tumour lysis risk: 12hourly U&E/Mg/PO4/Urate/LDH
- Any new Acute Leukaemia/Lymphoma/Myeloma: Check NSSG website for blood tests required
- Allograft patients
  - Twice weekly ciclosporin level (if on ciclosporin) **SUN/WED pre evening dose**
  - **Ciclosporin levels: Getting it right**
    - Samples must go across promptly to meet the JR deadline of 10am
    - Lab will process ciclosporin levels Monday-Friday at approx. 11am, and Sundays on request (bleep duty biochemist 1718)
    - If ciclosporin being given IV, samples should be taken from the red lumen, and ciclosporin given down the white lumen
    - If the line is in use, the on call SHO needs to be bleeped to take the blood peripherally
  - EBV/CMV PCR levels **SUN/WED**
  - Weekly monitoring of other viruses PCR if previously +ve e.g. Adenovirus PCR

**What is a poochie?**

You may hear the term poochie used. This is the word staff on the ward use for point of care FBC analyser which the ward has on the triage unit. This is useful when checking for platelet and Hb increments post transfusion, or rapid assessment of neutrophil count in order to triage high risk neutropenic patients. You need an EDTA (purple top) bottle & a printed label – speak to the one of the triage nurses.
10. Endorsing results in EPR

Result endorsement is an important daily function – aim to endorse all blood results by 14:00 as per trust guideline. There are 3 simple ways to view and endorse results on EPR:

**Inbox:**
- If you have requested bloods or other tests, the results will appear in your EPR message centre inbox for you to review and endorse from there by clicking on Endorse. Just viewing results does not endorse them. The same results will also appear in the lead clinician’s inbox. Once endorsed they disappear from all inboxes.
- You can forward results to other clinicians to endorse or if you won’t be on duty to see the results, set up proxies or pools so others can view them. (See Hitch Hikers Guide to EPR – link below)

**Flowsheet:**
- In the patient’s record, click on Flowsheet for latest results – change your date range if you prefer to view more than just 48hrs, then use the EXIT button to save before going to the next patient.
- Once you have reviewed the results scroll to the bottom to find the Endorse Results button and click to endorse. If the button is greyed out, there may be a result containing some text eg. Microbiology or Blood Type results. Open these results and close again, then the Endorse Results button will allow you to click it.

**Endorse results icon:**
- When reviewing results in the patient record, click the Endorse Results icon on the toolbar to bring up results that need endorsing
- If the Endorse Results icon isn’t visible on your toolbar, you can bring it into view by right clicking on the toolbar, selecting “customise” and dragging the button to a position of choice on your toolbar. It may be in a drop-down menu at the right of the toolbar – click on small arrow to find it. After making any changes save by using the EXIT button rather than the X to close

See this guide for endorsing results:

Or for more details on results and endorsing, go to the hitch hikers guide to EPR – section 6, page 19:
11. **Blood product prescribing: Reducing delays to transfusion**

In order to help reduce delays, please consider the following:

**Target Thresholds**

Please note this would still be on case to case basis & should be in discussion with the seniors, but generally:

- **Platelets**
  - ≥ 10 in stable patients with no active bleeding
  - > 20 in pyrexial/septic target platelets
  - > 50 pre procedure (lymph node biopsy, bone marrow biopsy, lumbar puncture)** please check with clinician performing the procedure
  - If active bleeding discuss with senior as thresholds are different depending on site of bleeding
- **Hb >80 in stable haematology inpatients**

- Order routine cross-match for all patients on admission, and as section 13. thereafter
- Chase blood results & order blood products early in day (ideally prior to ward round)
- Prior to requesting blood product, check Blood Tracker to ensure valid cross-match
- If no valid cross-match, this will need requesting on EPR and a cross-match collected using the SafeTx system (either bleed patient peripherally yourself or (if early!) try asking phlebotomists. If patient has a line, nursing staff will do if asked nicely!)
- Update Nurse In Charge after ward round & specifically mention who requires transfusion (& whether urgent vs routine)
- Nurses are able to request Group & Screens too
- To be aware: Blood product requests can only be processed under separate order numbers, which means that if you want to request a G&S, platelets and red cells, you must **not** do so simultaneously on the same order – i.e. if 2 units of RBCs are required, then 2 separate EPR orders of 1 unit each is required.

12. **Transfusion Laboratory: Frequently asked questions (Haematology) [H.91, V.1.0]**

**How do I contact the JR Transfusion Laboratory?**
- During routine hours (08.30-17.00 M-F) phone 20339 or 20340
- Outside these times bleep 1719

**How do I contact the Horton Transfusion Laboratory?** Phone **29236** at any time

**How should I label a transfusion sample?**
- Transfusion samples MUST only be labelled using the BloodTrack system at the patient’s bedside
- Samples not labelled in this way WILL be discarded
- The BloodTrack system uses **dedicated printers (labelled) and scanners**, and during the process the patient’s wrist band must be scanned, as well as the badge of the individual taking the blood.
• The individual taking the blood does not have to be the individual who ordered the G&S sample.

How long does a group and save sample last?
• For patients who have received blood products within the last 3 months, a group and save sample is only valid for 72 hours.
• For patients not transfused in the last 3 months, group and save samples are valid for a maximum of 3 months. If the patient is transfused within those 3 months the validity then reverts to 72 hours from the start of the transfusion.
• It is good practice of regularly group and save all Haematology inpatients. If samples are taken on Monday and Thursday mornings then patients will maintain a valid sample except for on Sundays.

How do I know if my patient has a valid group and save?
• The quickest way to check if a patient has a valid sample is to use BloodTrack ward enquiry which is available on all virtual desktops.
• The results of all transfusion samples are also visible on the patient flowchart in EPR – this will allow you to check when the last group and save was sent. If this is not within the last 72 hours then for haematology patients is it unlikely that they have a valid sample.

How do I place a transfusion request?
• All transfusion requests (except for requests for emergency stock) must be placed on EPR.
• During EPR downtime it is acceptable to use paper request cards.

How long does it take to do a group and save?
• A routine group and save usually takes between 1 and 4 hours to complete after the laboratory have received the sample. The time is variable and depends on time of day, staffing levels, what else the laboratory is already processing.
• If you require a group and save processed urgently, phone the laboratory to alert them to this so that we can prioritise it. Please don’t ask for all your group and saves to be treated as urgent because it is not possible for us to prioritise every sample we receive.

What is the difference between a group and save and a crossmatch?
• A group and save is the sample processing.
• It consists of a blood group and an antibody screen to determine the patients group and whether or not they have atypical red cell antibodies in their blood. If atypical antibodies are present the laboratory will do additional work to identify them.
• A crossmatch is when the laboratory actually provides red cells products for the patient. It is not possible for the laboratory to provide crossmatched blood without having processed a group and save sample first.

How do I get a sample to the transfusion lab?
• Routine working hours – either pod or use a porter to take the sample to laboratory medicine at the Churchill. From there the sample will go on one of the routine hourly transport runs to the JR for processing.
Outside routine hours, either pod or use a porter to take the sample to the porters’ lodge. There is an hourly routine transport run from the porters’ lodge.

Urgent samples should always be transported directly to the JR laboratory using the CitySprint urgent transport runs. Instructions are available on every ward.

How quickly can blood be made available?

- The answer to this question is complex and depends on a number of factors.
- Emergency stock is always available for patients – at the Churchill this is either from the Theatre fridge or the porters lodge. Emergency stock should be used to ensure no patients life is put at risk because of a lack of blood. It should not however be used as a substitute for cross matched blood in routine situations as it is not without risk.
- The critical factors as to how long it will take to provide red cells are
  i. Does the patient have a valid group and save sample?
  ii. Does the patient have any red cell antibodies?

For a patient with no red cells antibodies, who has a valid group and save sample:

Red cells are routinely issued within 15 mins for the request being received in the lab. Urgent requests can be prioritised and you should alert the laboratory if your request is urgent.

For a patient with no history of red cells antibodies but for whom there is no valid sample:

i. Take a sample for group and save from the patient
ii. Ensure the sample is quickly sent to the laboratory
iii. Once in the laboratory, the sample is processed on an analysers, approximately 1 hour
iv. If the antibody screen is negative , the lab can then almost immediately issue red cells
v. If the antibody screen is positive – see information on patients with red cells antibodies
vi. Don’t assume that a patient will be able to have red cells within 1 hour of sending a sample – it does depend on the results of the testing

For patients with an history of atypical antibodies:

i. Ensure the laboratory has a valid sample
ii. Request blood as SOON as you suspect it may be needed – this will allow the laboratory time to order red cells is required
iii. Note patients with historical red cell antibodies are at risk of developing new antibodies with every transfusion and so need samples as per patients with no antibodies
iv. the lab will need to undertake additional work to identify the antibody. It is impossible to guarantee how long this may take as it varies with the complexity of the antibody(ies). We may need to ask for additional samples and refer the sample to a reference laboratory.
v. Once the lab has identified the antibody(ies), we may not have suitable red cells in stock and may need to order these from NHSBT, this may take considerable time to arrive.
vi. If a patient develops an antibodies and blood is required urgently, it may be necessary to give products before work is completed, however this should not be done without discussion with a Haematology SpR or consultant as there may be considerable risk to the patient.

How quickly can platelets be made available?

- The laboratories endeavour to keep a stock of platelets although there may be times when they are awaiting additional supplies due to recent demand.
Routine requests are usually issued within 1 hour of the request being received by the laboratory.

Platelets for patients who require group identical or apheresis platelets may not be available from stock and may need to be specifically ordered from NHSBT.

All the platelets ordered into the Trust are irradiated, this is also help with stock management.

**How quickly can FFP be made available?**
- The laboratory at the JR site keeps 1 adult dose of FFP which is suitable for 80% of patients.
- Thawed in the laboratory, for suitable patients this can be made available within 10 mins of a request being made to the lab.
- For other patients, the FFP will be thawed upon receipt of request, approximately 30 mins.

**I want HLA matched platelets for my patient – what do I do?**
- Ensure HLA matched platelets are appropriate for your patient.
- Ensure that a sample has been sent to NHSBT for an HLA type and antibody screen.
- Medical staff directly order HLA matched platelets from NHSBT in Filton.
- Note: because the Churchill laboratory is not open out of routine hours, HLA matched platelets are always delivered to the JR site for issue and labelling by the laboratory before being transported to Churchill.

**How do I know if my patient requires irradiated blood products?**
- The O drive which is accessible from the ward and DTU-H has a patient list which is updated weekly showing which patients are currently receiving irradiated products.
- Remember if you prescribe a new purine analogue or other drug which means the patient requires irradiated blood – it is essential that you inform the laboratory of this new requirement.

### Irradiated products at a glance
- Autologous transplant patients need irradiated blood at least a week pre transplant and up to 3 months post transplant.
- Allogenic transplant patients require irradiated blood at least a week pre transplant and lifelong post transplant.
- Hodgkin Lymphoma patients require irradiated blood lifelong.
- Patients who have been treated with purine analogues (fludarabine, bendamustine etc.) require irradiated blood lifelong.
- This is not an extensive list of all the indications (see link above).

**Cheat code:** Check in the EPR bar for ***FLAG*** and normally the lab specifies “irradiated blood product.” If in doubt, error on the side of caution and speak to your registrar.

### 13. Management of febrile neutropenia

H.39
V.7.0
Authorised by: Dr Robert Danby
Febrile neutropenia or neutropenic sepsis is a Haematological emergency and must be managed promptly. National guidance requires that antibiotics are prescribed and given within an hour of the patient spiking (new temperature not on antibiotics) on the ward or arriving in the ward (including outliers) or Triage service. The hospital policy is available on the NSSG website or the pharmacy page of the Trust website.

Key points to note: Patients who have received chemotherapy (including those on high dose steroids) or are severely immune compromised because of their disease, may not always develop a normal immune response and therefore may not present febrile. Monitoring patient hydration, urine output and vital signs are imperative. Notify a senior early if the patient is unwell.

14. Electrolyte replacement:

In most of our patients, electrolyte levels can change very quickly & in need of prompt replacements, as they are undergoing chemotherapy or treatments (foscarinet, pentamidine, etc.) that can directly cause imbalance. Important considerations when prescribing replacements:

PO vs IV supplementation
Apart from level of deficiency (see trust guides re: threshold), please consider common issues during chemotherapy like mucositis (sandoK, PO4sandoz & Mg aspartate are fizzy & can be very unpleasant), diarrhoea (PO Mg & PO4 can worsen this) & patient preference (eg. Kay-Cee-El as opposed to sandoK can be acquired by our pharmacist upon request)

High concentration IV supplementation
As most patients will have central access, use of high concentration IV supplementation is possible & quite routine in Haematology Ward. This can be very useful especially in limiting fluid load e.g. 20mmol K+ in 50ml syringe via PICC.

Please see Department, Trust guidance & NSSG website for the comprehensive guides for each electrolyte.

15. Central lines

These are generally inserted electively by Vascular Access team. Typically a PICC line is the central access of choice. Request is via EPR form “Refer to Vascular Access Nurses” under “Requests & Prescribing”.

Management of central lines is largely a nursing responsibility. However, you may be asked to contribute to solving any line-related issue. Example of a common issue is a blocked line. Agent of choice is alteplase 2mg line lock (default pre-filled on EPR). It is also everyone’s responsibility to monitor for signs of infection, routinely during ward round or whenever is clinically indicated.

Vascular Access Specialist Nurses are also contactable via extension 21653 or bleeps 1530/1749

16. Chemotherapy and stem cell infusion
Chemotherapy is prescribed by SpR’s/Consultants on the ARIA electronic system. It is important that supportive treatment, such as antiemetic’s and IV fluids, are prescribed in EPR. All protocols are available on the NSSG website for your information.

BMT patients will have a copy of the conditioning regimen in the patient notes (usually stapled behind the front cover).

Chemotherapy and stem cell infusions are managed by the nursing staff.

Intrathecal chemotherapy is given only by trained SpR’s.

17. Infection control

**Hand hygiene**: All patients on Haematology ward are vulnerable to infection therefore scrupulous hand hygiene is essential. Hands are to be cleaned by everyone entering and leaving a patient space, regardless of whether you intend to or have touched the patient. Hand hygiene audits are a regular practice on the ward.

**Specific infection control measures**: Allograft patients should be examined wearing an apron. Where there are specific patient issues (e.g. airborne viruses needing surgical mask), there will be a sign on the door.

**ANTT**: To be practiced on all occasions procedures and specifically where cannula are inserted or blood taken. All possible line related bacteraemia are fully investigated, including any MRSA/MSSA.

**C-diff**: Most haematology patients will have received multiple broad spectrum antibiotics during the course of their treatments, putting them particularly at risk for C. Diff. If C-diff is suspected then the patient should be isolated and treatment commenced, as per Trust policy.

Gemma Pill is the infection control nurse and can be contacted via bleep for advice.

Below is the protective environment protocol, it is important that you are very familiar with this in order to protect yourself and the patients.

**Protocol for the management of protective environment for Haematology and Bone Marrow Transplant patients (B.6, V5.0, Oct 2014)**

**Notes:**

**Negative pressure**: (Room 10, 11) should not be used unless directed by BMT consultant, Infection Control consultant or ward sister. Room air pressurisation stickers should also be used and completed on each shift. Patients with identified transmissible infection (e.g. MRSA, C. Diff, VRE, CPE) should have room pressurisation switched to neutral as positive pressure (which blows room air into the corridor) would pose a significant risk to the other immunocompromised patients on
the ward. G4S are responsible for the maintenance of the pressure system and should be contacted on Ex 35353 in case of any problems.

**Room sharing:** When transplant patients are temporarily housed in a 2 bedded bay please consider which other patient they are sharing with, e.g. those coughing, and arrange bed moves if necessary.

### Environment for patients

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Standard ALLO, MUD</th>
<th>RIC ALLO/ MUD</th>
<th>Autograft incl. TBI auto</th>
<th>Aplastic Anaemia</th>
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<tbody>
<tr>
<td><strong>Room Allocation</strong></td>
<td>Filtered side room, ideally from admission</td>
<td>Filtered side room ideally from admission but from Day 0 as minimum</td>
<td>Single room or 2 bedded bay</td>
<td>Filtered side room</td>
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<tr>
<td><strong>Room Pressure Requirements</strong></td>
<td>Positive pressure Day 0 until discharge</td>
<td>Positive pressure Day 0 until discharge</td>
<td>N/A</td>
<td>Duration of treatment</td>
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<tr>
<td><strong>Windows and Doors</strong></td>
<td>Closed from Day 0</td>
<td>Closed from Day 0</td>
<td>No restrictions</td>
<td>Closed</td>
</tr>
<tr>
<td><strong>Able to come out of room</strong></td>
<td>Yes at quiet times for exercise</td>
<td>Yes at quiet times for exercise</td>
<td>Yes</td>
<td>Yes at quiet times and exercise</td>
</tr>
<tr>
<td><strong>Infection Control e.g. D&amp;V, MRSA, C. diff, VRE, CPE</strong></td>
<td>Positive pressure to neutral</td>
<td>Positive pressure to neutral</td>
<td>Isolate to side room if infection identified</td>
<td>Positive pressure to neutral</td>
</tr>
<tr>
<td><strong>Zoster RSV Influenza</strong></td>
<td>Positive pressure to negative (Room 10, 11)</td>
<td>Positive pressure to negative</td>
<td>Positive pressure to negative</td>
<td>Positive pressure to negative</td>
</tr>
</tbody>
</table>
18. **Oxford Cancer and Haematology Triage Assessment Service**

**Hours of Operation:** Monday – Friday 8am-8pm, Monday – Wednesday 8pm – 8am, Saturday and Sunday 8am-8pm

**Team:** Advanced Nurse Practitioners, Specialist Nurse Practitioners, Triage nurses, Clerical Officer

**Location:**
Located on Level 1 of the Cancer & Haematology Centre, Churchill Hospital. Consists of 5 bed spaces (1 side room), giving a maximum capacity of 4-5 patients according to patient acuity and dependency. The Triage side room provides an opportunity to isolate patients with suspected infections or those patients who are facing end of life issues.

**Role:**
- Provides a designated area/service that tends to all emergency calls and admissions within Cancer services (Oncology, Haematology and Radiotherapy). This service is carried out by a specialist nursing and medical team skilled and competent in Haematology and Oncology Triage
- Provides telephone triage to patients who are currently receiving oral/intravenous chemotherapy, anti-cancer biological agents, radiotherapy or those waiting to start treatment following diagnosis
- Provides telephone triage to those patients on supportive treatment and those patients with a non-malignant haematological disease including sickle cell anaemia and thrombocytopenia
- Provides an area to assess and monitor patients prior to the decision of allocating an Oncology/Haematology bed. Allows for the efficient use of beds in combination with patients being appropriately placed according to their clinical need

**Common source of referral:**
1) Patient contacts the Cancer and Haematology Triage assessment helpline and assessed using the UKONS assessment tool. There are various outcomes:
   a) Advice and direction given to patient with toxicities that do not require hospital assessment. Patients may be referred to their GP or Macmillan service. Patients may be invited back for earlier outpatient review
   b) Patient discussed with Specialist Registrar or Consultant and patient accepted for assessment in the Cancer and Haematology Centre or their local hospital
   c) Patient advised to contact 999 for emergency assessment with further discussion with the Cancer and Haematology Triage assessment team

2) Patient referred to Specialist Registrar by local specialist team or GP within community. Patient accepted for assessment on the Cancer and Haematology Triage assessment area

3) Patient becomes unwell within our Day treatment, Outpatient or Radiotherapy areas and referred to the Cancer and Haematology Triage assessment team

**Team responsibilities:**
Following the patient’s arrival within the Cancer and Haematology Triage assessment area:

- Patients will receive an initial vital sign assessment, cannulation, phlebotomy and any appropriate investigations such as ECGs, urinalysis and sepsis screens
- Responsible junior doctor will be contacted and asked to review patient within a clinically appropriate timeframe. Patients with suspected neutropenic sepsis will require urgent assessment and treatment
- Following assessment, the junior doctor will present their findings and plan to the appropriate SpR. Further decisions regarding treatment and admission/discharge can then take place
- Triage assessment team will continue to monitor, treat and care for patient until they are discharged or transferred to an inpatient bed

Common presentations:
- Suspected Neutropenic sepsis
- Suspected Metastatic Spinal cord compression
- Chemotherapy and Radiotherapy induced emesis, diarrhoea and dehydration
- Acute pain issues due to disease and associated treatment
- Suspected pulmonary embolism or upper limb DVTs
- General deterioration due to treatment or consequence of cancer

Any patients with suspected cardiac problems, acute cerebral neurological problems or those patients deemed to require immediate resuscitation or theatre within 2 hours will be referred directly to the nearest Emergency Department.

Out of hours telephone Triage management:

- The telephone triage service is currently covered by the inpatient nursing team during the Out of hours period (8pm-8am Monday- Friday and 6pm-8am Saturday & Sunday)
- All calls will be discussed with the On-call registrar and Junior doctors will be notified if any emergency admissions are expected on the Churchill site
- Please discuss all emergency admissions with the on-call registrar once you have completed your assessment and treatment plan

If you have any queries or concerns regarding the Cancer and Haematology Triage assessment service, please discuss with the Triage team or the Oncology and Haematology Matron

19. ICU referral

The referral pathway for patients needing ICU admission is ‘Consultant to Consultant’. Please escalate all serious clinical concerns to the team SpR, if they are not available for whatever reason, please bleep or phone your team consultant.

20. Discharge summary and TTOs

Discharge Summary
Most of our patients are complex with multiple recurrent admissions under regular follow ups – therefore it is important to highlight the specific issues of that particular admission. Most people have their own style of writing on eDLs, but key points to include:

- Primary haematological condition & treatments so far
- Presenting issue or if elective, the chemotherapy/transplant protocol:
- **Date** of chemotherapy/ D0 of transplant
- All inpatient complications/issues
- Summary of investigations
- Highlight **outstanding investigation** results needs chasing in clinic
- Follow ups (protip: Specialist Nurses are extremely helpful in coordinating these & it is worth emailing them ahead of discharge to acquire the dates & times)
- GP/District nurses follow ups
- Day Unit (DTU)/Ambulatory Care – most patients need regular blood products support & PICC dressings change via DTU, please liaise with DTU nurses/specialist nurses
- Haematology OPA

TTOs
Our Haematology Ward Pharmacist is excellent at navigating the different protocols & its supplementary medications – most discrepancies on TTOs will be highlighted to you. However, as general rule please consult each protocol’s guide on NSSG to ensure all discharge medications related to the regimen are prescribed. Common ones are prophylactic antimicrobials (penicillin V, antifungals, antivirals) – please note some are not started upon discharge but still supplied on discharged (eg co-trimoxazole in post transplant patients are included in TTOs, even when it is not started until after follow up clinic when their neutrophils have regenerated & stabilised).

21. **Death-related Documentation**

It is the responsibility of the SHO ensure the initial documentation related to inpatient deaths is completed promptly to enable further process i.e. mortality review to take place. The documents that need completing by the respective team’s SHO include:

1. **Death verification on EPR** (sometimes done by on call/covering doctor depending on circumstances)
2. **Certificate of cause of death & cremation.** The bereavement officer will leave this in the doctor’s office and upon completion they will collect it from there also. Discuss with the attending consultant or registrar on the ward
3. **Coroner’s referral on EPR** (if needed, please confirm with team)
4. **Death Notification Summary.** This is a powernote on EPR which should serve as a summary (alternative to “discharge summary” so the GP will be notified appropriately once this is completed) Most details like time & date of death will be auto-populated. Will need causes of death so ideally should be done by the same person that completed death certificate

22. **Clinical Coding in Haematology**
Clinical Coding is the translation of medical terminology describing the reason for a patient's encounter; such as a patient's presenting complaint, problem, diagnosis, treatment or other reason for medical attention; into statistical codes to support both statistical and clinical uses.

Clinical coders depend on clear, concise accurate clinical documentation in order to capture a true reflection of the patient’s episode of care. Clinical Coding is directly related to your directorate’s income via Payment by Results so by helping the Coding Department achieve thorough and accurate coding you are also helping to maximise income within the ‘Haematology CSU’.

Key Points
Coders are able to extract the following clinical documentation recorded within the medical records:

- Working Diagnosis, Treat As, Presumed, Probable
- It is critical that clinicians clearly document one of the above terms to ensure an accurate diagnosis is assigned. E.g.: Patient presents with fever. ? Sepsis ? Neutropenia ? Specified site. Clinically documented as: Treat as ‘Lower Respiratory Tract Infection’ (LRTI) – Primary diagnosis will be assigned to LRTI.
- Patients administered antibiotics for presenting symptoms of ‘neutropenic fever’ - source of infection not identified - must be documented within the Medical Records, Discharge Summary and Triage Log Sheet as ‘treat as neutropenic sepsis’.
- Clinical documentation of ‘diarrhoea’ must be documented within the medical records as ‘non infective diarrhoea’ ‘toxic diarrhoea’ or ‘diarrhoea due to chemotherapy or antibiotics’ Clinical documentation of ‘diarrhoea’ will be coded as ‘infective diarrhoea’ adhering to Clinical Coding National Guidelines.
- Clinical staff must ensure all relevant co-morbidities are clearly documented within the medical records. These can make a difference to the HRG/Tariff and will improve the depth of co-morbidities within the ‘Haematology Directorate’ for the purpose of Hospital Standardised Mortality Ratio (HSMR) & Dr Foster.
- Follicular Lymphomas must be clinical documented according to their ‘grades’
- Chemotherapy Trials must be clinical documented relating to: Early vs Late
- Clinical documentation of ‘lymphomas’ must be consistent and clear stating that there is a ‘transformation’ of the disease.
- Discharge Summaries must be completed with an accurate ‘Diagnosis’ and reflect a true review of the patient’s episode of care.

23. On-call/out of hours

*Evening on call (17:00-21:00) Bleep 5160*

- Primarily this is Haematology only cover. Historically we also cover Sobell house (now covered by Renal SHO) but new arrangements in 2020 COVID19 era is to cover Gastroenterology Ward (previously Early Phase Clinical Trials Unit) on alternate days with Oncology SHOs
- If Sobell house cover is re-instated, however, it is worth noting that internal door to Sobell is locked, but you can get the code from Sobell by phoning or garden to the front door – call ahead on 25873 to get them to open the internal door for you!
- Handover at 21:00 in the Doctors Mess (see handover section) – it is helpful to print 2 copies of each leukaemia/lymphoma ward lists for the night SHO & SpR to bring to the handover.
Night cover (21:00-09:00) Bleep 5160 & 5134

- Starts from handover in the Doctors Mess.
- We cover Haematology, Oncology & Gastroenterology/Sobell, as well as their outliers. Other SHOs overnight will be the Renal/Transplant SHO & Surgical/Urology SHO who are also expected to attend the evening handover.
- There will be a Hospital @ Night SpR on site with you (of varying specialties) as a general medical cover. However, there will be one SpR of each specialty (Haem/Onc/Sobell/Gastro) on call as a non-resident, contactable via switchboard. Other than consulting the H@N SpR for immediate advice & review, it is worth contacting the non-resident SpRs as they will be interested to know of any issues with their patients overnight.

Weekend cover (09:00-21:00) Bleep 5160

- This will be a Haematology only cover (with alternating Gastro cover in COVID19 era) with 2 Haematology SpRs. Between the 2 SpRs all the Haematology patients will be seen during the weekend ward round & you are responsible for the tasks afterwards.
- There will also be patients admitted via triage (should be discussed by Triage Nurse with the on call SpR) & you may sometimes be required to clerk them in.
- There will also be the attending consultant to review the unwell patients on the ward or review patients in ITU.

24. SHO Handover Guidelines (H.41a,V.1.0)

Handover is a clinical governance issue. Good quality handovers are essential to good patient care. Please ensure you are aware of how to dispose of your printed handover sheets.

Weekday Handover

- It is the responsibility of the on call SHOs to contact the ward teams to ensure adequate handover takes place. This should include handover of patients of concern and expected/“to come in” patients. Equally, the ward junior doctors should also see it as their responsibility to contact the on call doctor if there is concern about a particular patient, and whenever possible, treatment plans should be clearly documented in the notes for patients identified to be at risk in case they become more unwell overnight. Patients of concern that may need to be seen by the hospital at night team should be handed over to the hospital at night team during their scheduled handover meeting at 9pm - venue is Doctors Mess next to the canteen.
- The day teams on the ward should ensure that there are brief problem lists in the notes, updated on every consultant ward-round, to make patient reviews that occur out of hours easier.
- If there is a concern that a particular patient may need intensive care input overnight, then the day team Consultant/registrar has to ensure that ICU is informed during daytime working hours and a plan for overnight management is put in the notes.

Weekend Handover
Every Haematology patient who is an inpatient on either the JR site or the Churchill site has to be formally handed over by the ward teams to the weekend on call team. The ward teams must ensure that an up to date ward list is available for the on call registrar.

Clear weekend summaries for every patient should be documented in the patient notes on the Friday morning ward-round to facilitate care over the weekend.

If there is a concern that a particular patient may need intensive care input over the weekend, the responsible team (usually led by the consultant) should take appropriate steps to alert the ICU team before the weekend so that a management plan can be agreed upon.

Admissions expected over the weekend and their management plans should be discussed. This requires a review of “to come in” patients listed on the board and in the ward diary.

Wherever possible, the ward teams must aim to have completed discharge documentation and put in place follow-up arrangements for patients expected to be discharged over the weekend. It is generally not possible to arrange DTU follow-up over the weekend, so this has to be done “in hours”.

**Handing patients back**

- The outgoing on call junior doctor must ensure that patients with new or active problems over night are handed back over to the day/weekend teams.

### 25. Annual, study & sick leave

At the beginning of your block, consider which 2 SHOs are on which team, and go through the rota to:

1. Ensure teams are covered with minimum 1 SHO despite nights/ annual leave
2. Divide up clinics equally
3. Put teaching/study leave on the rota
4. Highlight days in advance on which cross-cover across teams may be require

Please note your rota is organised by medical staffing but will require discussion on the above

**Annual & study leave** can be requested on the electronic rota system then please email suon.medicalstaffing@ouh.nhs.uk to notify them for approval. Any swaps should also be emailed to them for approval.

**Sick leave** should be reported to FirstCare Their number is: 0333 321 8086. When opening an absence that will commence at the beginning of your shift, the phone call to FirstCare to open the absence should be no later than 1 hour before your shift is due to start (if you are calling in sick for a night shift please try to open the absence between our office hours of 8am-4pm). **Please also email medical staffing and the attending consultants.** It is also customary that you contact your fellow ward SHOs & SpRs colleagues so they can re-arrange the ward workforce for the day accordingly.

**Feedback:**

If you have any suggestions on how this information package or the orientation morning could be improved, please speak to Dr Robert Danby
## Review

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<th>Date</th>
<th>Version</th>
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