

Communication of abnormal results in BSL Haematology

Definitions of terminology:

Critical tests are a clinically selected list of tests performed within Synnovis Haematology and Haemostasis at Hub or Essential Service Laboratories that may have associated critical results. Selection is confirmed via both as recommendation from RCPATH (2017) and local agreement as per KCH and GSTT Haematology Clinical Lead advice as well as Synnovis Strategic Clinical Lead for Haematology approval.

Critical results (or limits) are test result that is clinically significantly outside the normal range (lower or upper), and may represent serious morbidity or life-threatening values, which requires immediate communication of results. Listed in red coloured text under the first presentation action column in table 1.

Significantly abnormal / Urgent result: a test result that is not life threatening but that requires a timely medical attention and follow-up action within a specified time-scale. Immediate telephoning to GP/NHS 111 but not to Haematology SpR/Consultant. Listed in gold coloured text under the first presentation action column in table 1.

Abnormal results / Routine result: a test result that is not life threatening and requires routine telephoning to GP/NHS 111. Listed in black coloured text under the first presentation action column in table 1.

'First' presentation are critical results which are first for Synnovis Haematology or Haemostasis laboratory at Hub and ESLs that always need to be communicated immediately. 'First' presentation also applies to significantly abnormal (non-critical) result if first presentation to the laboratory and triggers the limits for the telephone communication after 9am next working day.

Repeatedly critical results are results which repeatedly triggers the critical alert limits and Table 1 below defines the Synnovis Haematology policy for dealing with repeatedly critical results.

Immediate telephone required, priority of communication action for duty BMS (HCPC registered and competent) so the clinician or associated ward are informed of all critical results immediately; for GPs critical results after surgery is closed 111 services are informed immediately.

Overview for communicating critical and other abnormal results:

Full blood count, blood film morphology findings and malaria results outlined in Table 1 are for telephoning to requesting clinicians and/or Haematology SpR depending on the abnormality. These alert limits are applicable to hospitals inpatient, outpatients and GPs including community outpatient locations unless any exception indicated in the action column.

Results are to be acted as first-time presentation or significant change since previous. Check results history as well as clinical details of known or working diagnosis. Refer to BSL-HUB-HAEM-SOP-6 for further details.

Perform all appropriate pre- and post-analytical checks to ensure technical validity of results, prior to communicating and final reporting (e.g., sample ID, sample integrity, scattergram interpretation, re-analysis, film review, etc). **Therefore, perform review of blood film review BEFORE immediate telephoning to the clinical team. In doing so, provide the required full picture to Clinician/Haem SpR/Consultant, including information gathered after CVQ and blood slide review.**

For critical GP results during out of hours when requesting clinician, nurse or GP practice clerical team may not be contactable then NHS 111 services must be informed immediately. In the exceptional case if unable to contact 111 then Haematology registrar at respective ESL site must be informed of the results immediately. If patient contact details available to the reporting BMS then this detail should be shared with Haem SpR for appropriate clinical follow up directly with the patient.

IMPORTANT NOTE: The laboratory must not contact patient directly at any circumstances.

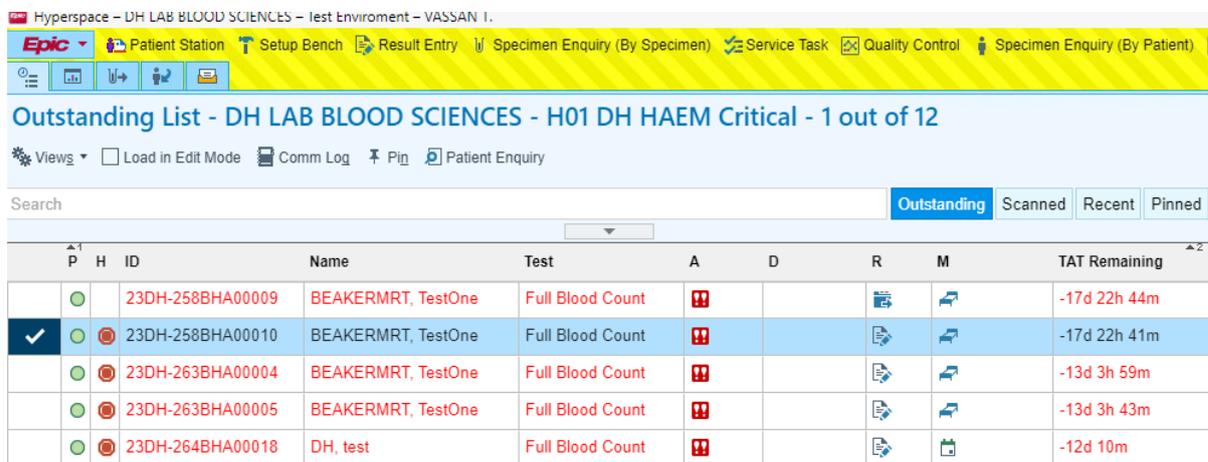
BMS must follow the appropriate referral priority pathway - **Critical, Urgent, or Routine and instructions described in table 1**, based on the lab SOP BSL-HUB-SOP9 (*Communication of critical results*) and the instruction form BSL-ALL-HAEM-INST3 (*Synnovis Haematology Criteria for Blood Film Review and Referral to Haematology Registrar*).

Communicating a critical result using Epic Beaker

Go to the Appropriate Outstanding List (OL) View.

Click on the result line of the test you wish to communicate.

Click on **Comm Log** at the top left of the page:



The screenshot shows the Epic Beaker interface for an Outstanding List. The title is "Outstanding List - DH LAB BLOOD SCIENCES - H01 DH HAEM Critical - 1 out of 12". Below the title are options for "Views", "Load in Edit Mode", "Comm Log", "Pin", and "Patient Enquiry". There is a search bar and tabs for "Outstanding", "Scanned", "Recent", and "Pinned". The main table has columns for Patient ID, Name, Test, and TAT Remaining. The second row is selected, showing patient ID 23DH-258BHA00010, name BEAKERMRT, TestOne, and a Full Blood Count test with a TAT remaining of -17d 22h 41m.

P	H	ID	Name	Test	A	D	R	M	TAT Remaining
		23DH-258BHA00009	BEAKERMRT, TestOne	Full Blood Count					-17d 22h 44m
✓		23DH-258BHA00010	BEAKERMRT, TestOne	Full Blood Count					-17d 22h 41m
		23DH-263BHA00004	BEAKERMRT, TestOne	Full Blood Count					-13d 3h 59m
		23DH-263BHA00005	BEAKERMRT, TestOne	Full Blood Count					-13d 3h 43m
		23DH-264BHA00018	DH, test	Full Blood Count					-12d 10m

This opens up the comm log:

'Communicated' is the default selection when the Comm Log is opened. The contact details are pre-filled based on the requesting clinician and location.

If these need to be changed you can search for a different contact by clicking  Other next to the contact field.

You can also change the contact telephone number by overwriting the phone number or

entering it using the calculator  symbol. Entering a # in front of the number allows you to enter shorter numbers, e.g. internal extension numbers or bleep numbers. When this is done the Comm Log then removes the #, for example:

Once the result has been successfully communicated, add the name of the contact the result was left with in the white box as highlighted in red below.

The following critical results were read back and acknowledged.
 HAEMOGLOBIN: 15 g/L Low Critical (Ref. Range: 130-165)
 Results telephoned to Prof Arya.

Then click . The date, time and your Beaker username will be added to the Comm Log record in Beaker. The result can then be final verified and will disappear from the critical Outstand List (OL).

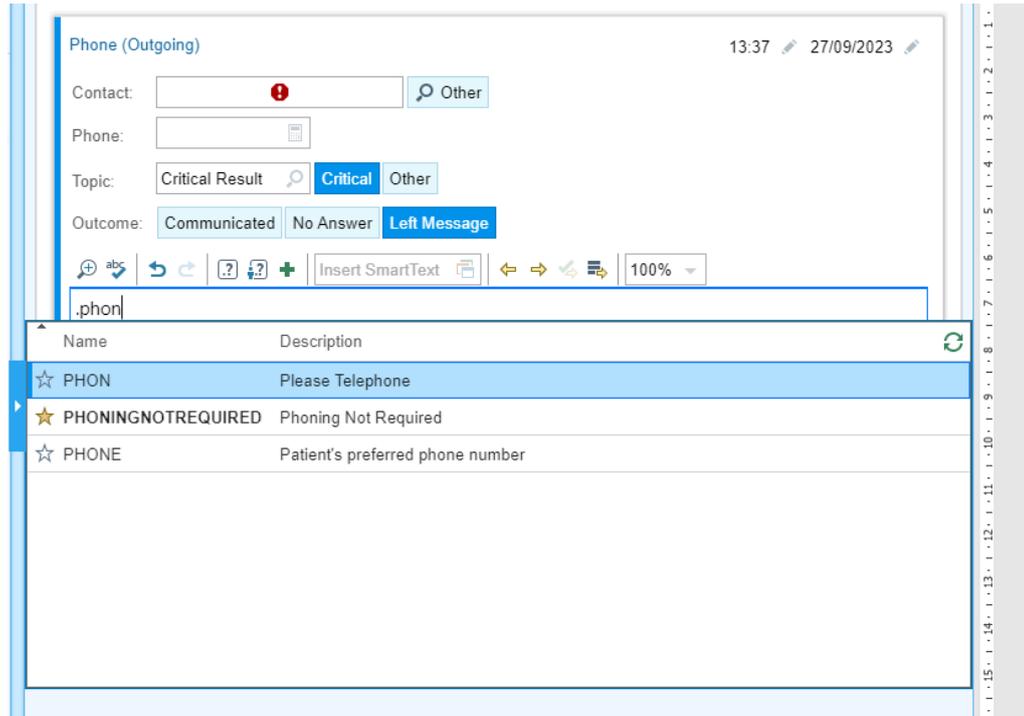
Result does not need to be communicated

If a result does not need to be communicated, e.g., it has previously been telephoned 2 days prior, or the repeatedly critical policy suggest repeat communication is not indicated then follow the below steps.

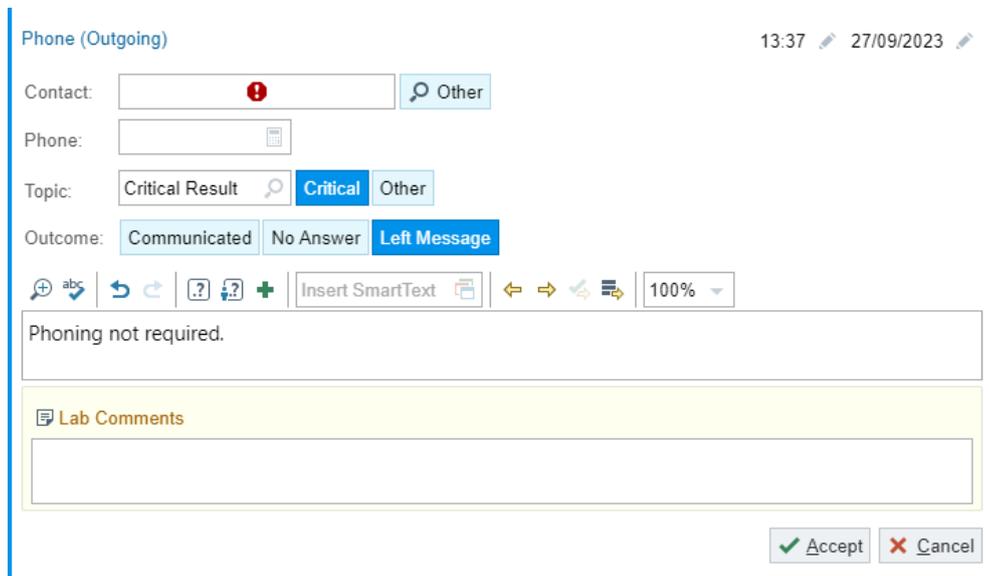
Click on Comm Log at the top left of the page.

From the outcomes select 'Left Message'.

Remove the 'Left message' text in the white space and start typing .phoning (note must include the **(dot)** before). This then brings up some smart comments as below:



Select 'Phoning not required' by double clicking on it. Then click 'Accept'.



The date, time and your Beaker username will be added to the comm log record in Beaker. The result can then be final verified and will disappear from the critical OL.

Communicating multiple results on a patient

It is possible that there will be more than one result on a sample that will need to be communicated (or not communicated), as Beaker lists the critical results individually by orderable. Ordering by ID will group results on the same specimen ID e.g. FBC specimen ID will reflex on the FILM and it is possible that FBC and FILM report results require

communicating. Or In the case of COAG screen both APTT and PT require telephoning action.

Both results can be communicated (or logged as failed/not required) at the same time by selecting both rows in the OL and opening up the comm log.

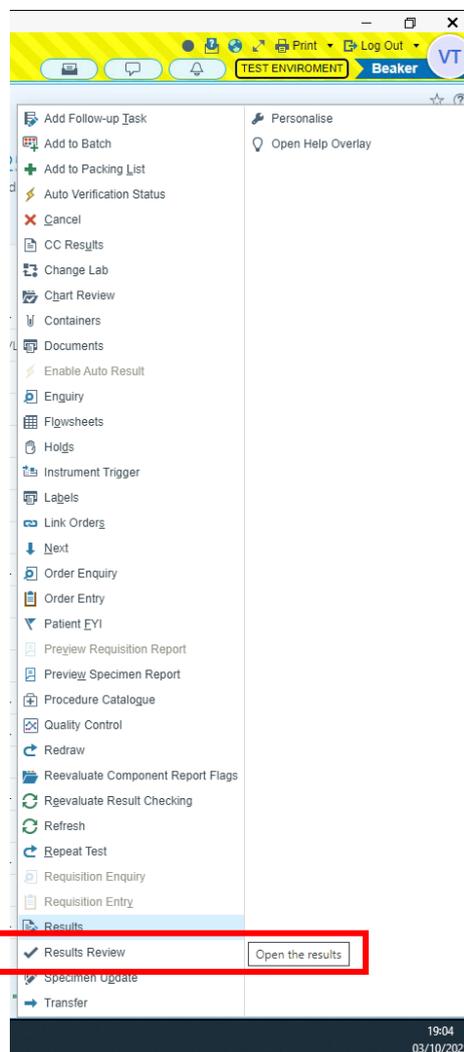
You will notice that as multiple results have been selected the Comm Log has not prefilled these in the white text box as it has done previously, but instead added a 

These can be deleted and overwritten with free text listing the critical tests which you are phoning about e.g.:

1.1.1 Hemoglobin and Platelets critical results telephoned by Vassan T on 05/10/2023 04:00. You can then communicate / select no answer or left message as appropriate (see above) and verify the results together.

Finding previous results and Comm Logs on a patient

To find out if a result was previously communicated, highlight the result in the critical OL and from the menu options  choose Results Review (or Chart Review).



This then lists the results from newest on the right scrolling to oldest on the left. Comm logs are indicated by the comment symbol in the chart:



Clicking on the comment symbol opens up specimen enquiry for that lab number and the comm log (if entered) can be seen from the tracking.

Scrolling down the page you can find the comm log under Specimen Follow Ups.

Clicking on the [Completed](#) link on the right of the page takes you to the comm log audit page, where the comm log status (e.g., successfully communicated etc) can be seen.

Note the comm log will only appear in the specimen tracking (above) if 'Communicated' was selected as the outcome. Anything with 'Left Message' or 'No answer' will not appear in the tracking and you will have to scroll down the page to find the specimen follow ups which will show as comm log [Open](#).

Clicking that Open link will show you why the result was not successfully communicated:

1.2 Table 1: Haematology abnormal results alert limits for telephoning after blood film review.

Lab test	Results (limits) /Units	'First' Presentation	Repeatedly Critical	Reference
		Action	Action	
White Cell Count	$\geq 100 \times 10^9/L$ All ages/legal sex	<p>Critical pathway for Haem SpR/Consultant referral:</p> <ul style="list-style-type: none"> Contact requesting clinician or NHS 111 if Out of Hours immediately after film review. Contact Haematology SpR/Consultant immediately after film review. <p>Urgent pathway for Haematology SpR/Consultant referral: If morphology suggestive of CLL in the absence of any cytopenias. <u>Do not phone</u> Haematology SpR/Consultant. Phone requesting clinician / NHS111 OOH only.</p>	<p>Contact the requesting Clinician immediately if new results show +40% increment or when WBC is ≥ 140.</p> <p>Telephone action not required if repeat critical results shows <40% increment and confirmation that previous critical results telephoned within 2 days prior.</p>	RCPATH (2017) and local agreement as per Haematology Clinical Leads at KCH and GSTT.
Haemoglobin	≤ 70 g/L All ages/legal sex	<ul style="list-style-type: none"> Contact requesting clinician or NHS 111 if OOH immediately after film review. 	<p>Contact the requesting Clinician immediately for all Hb repeatedly ≤ 70 (g/L) For GP patient types after 2 days from previous telephoning.</p> <p>Telephone action not required if repeat Hb results is (≤ 70) and within 2 days from previous and confirmation that previous critical results already actioned within 2 days.</p>	RCPATH (2017) and local agreement as per Haematology Clinical Leads at KCH and GSTT.
	≤ 60 g/L All ages/legal sex	<p>Critical pathway for Haem SpR/Consultant referral (except trauma/, bleeding/Clear iron deficiency anaemia confirmed by blood film morphology and/or iron indices)</p> <ul style="list-style-type: none"> Contact Haematology SpR/Consultant immediately after film review. 	<p>Telephone action not required if repeat Hb results is (≤ 70) and within 2 days from previous and confirmation that previous critical results already actioned within 2 days.</p>	
	≥ 190 g/L All ages/legal sex	<ul style="list-style-type: none"> Contact requesting clinician or NHS 111 if OOH. 	N/A	
Haematocrit	≥ 0.550 L/L All ages/legal sex	<ul style="list-style-type: none"> Contact requesting clinician or NHS 111 if OOH. <p>Urgent pathway for Haematology SpR/Cons referral Review film before phoning GP/111 only, if Hct ≥ 0.600.</p>	N/A	

Lab test	Results (limits) /Units	'First' Presentation	Repeatedly Critical	Reference
		Action	Action	
Platelet count	$\leq 30 \times 10^9/L$ All ages/ legal sex	Urgent pathway for Haematology SpR/Consultant referral: Contact requesting clinician or NHS 111 if OOH immediately after film review. <u>Do not phone</u> Haematology SpR/Consultant.	Contact the requesting Clinician immediately if new results show +66% drop or when Plt is ≤ 10 .	RCPATH (2017) and local agreement as per Haematology Clinical Leads at KCH and GSTT
	$\leq 20 \times 10^9/L$ All ages/ legal sex	Critical pathway for Haem SpR/Consultant referral: <ul style="list-style-type: none"> • Contact requesting clinician or NHS 111 if OOH immediately after film review. • Contact Haematology SpR/Consultant immediately after film review. 	Repeat telephone action <u>not</u> required if repeat platelet count shows <66% drop and confirmation previous critical results already telephoned within 10 days prior.	
	$\geq 1000 \times 10^9/L$ All ages/ legal sex	Critical pathway for Haem SpR/Consultant referral: <ul style="list-style-type: none"> • Contact requesting clinician or NHS 111 if OOH immediately after film review. • Contact Haematology SpR/Consultant immediately after film review. 	Contact the requesting Clinician immediately if new results show +30% increase within 10 days of previous call. Repeat telephone not required if repeat count ≥ 1000 but increment is <30% since previous results and previous critical results telephone within 10 days prior.	

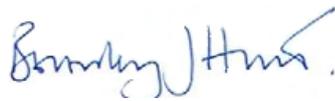
Lab test	Results (limits) /Units	'First' Presentation	Repeatedly Critical	Reference
		Action	Action	
Neutrophils	$\leq 0.5 \times 10^9/L$	<p>Critical pathway for Haem SpR/Consultant referral:</p> <ul style="list-style-type: none"> Contact requesting clinician or NHS 111 if OOH immediately after film review. Contact Haematology SpR/Consultant immediately after film review. 	<p>Contact the requesting Clinician immediately if Neutrophils ≤ 0.5 after 7 days from previously reported.</p> <p>Telephone action not required if repeat Neutrophils results ≤ 0.5 is within 7 days from previous.</p>	RCPATH (2017) and local agreement as per Haematology Clinical Leads at KCH and GSTT.
Monocytes	$\geq 3.0 \times 10^9/L$ In presence of blasts	<p>Critical pathway for Haem SpR/Consultant referral:</p> <ul style="list-style-type: none"> Contact requesting clinician or NHS 111 if OOH immediately after film review. Contact Haematology SpR/Consultant immediately after film review. 	<p>Contact the requesting Clinician immediately if Monocytes ≥ 3.0 in presence of blasts after 7 days from previously reported.</p> <p>Telephone action not required if repeat Monocytes results ≥ 3.0 in presence of blasts is within 7 days from previous.</p>	RCPATH (2017) and local agreement as per Haematology Clinical Leads at KCH and GSTT.
Eosinophils	$\geq 10.0 \times 10^9/L$ $\geq 5.0 - \leq 10.0 \times 10^9/L$	<p>Critical pathway for Haem SpR/Consultant referral:</p> <ul style="list-style-type: none"> Contact requesting clinician or NHS 111 if OOH immediately after film review. Contact Haematology SpR/Consultant immediately after film review. <p>Urgent pathway for Haematology SpR/Consultant referral:</p> <p>Contact requesting clinician or NHS 111 if OOH immediately after film review. <u>Do not phone Haematology SpR/Consultant.</u></p>	<p>Contact the requesting Clinician immediately if Eosinophils ≥ 10.0 after 7 days from previously reported.</p> <p>Telephone action not required if repeat Eosinophils results ≥ 10.0 is within 7 days from previous.</p>	RCPATH (2017) and local agreement as per Haematology Clinical Leads at KCH and GSTT.

Lab test	Results (limits) /Units	'First' Presentation	Repeatedly Critical	Reference
		Action	Action	
Basophils	$\geq 5.0 \times 10^9/L$	<p>Critical pathway for Haem SpR/Consultant referral:</p> <ul style="list-style-type: none"> • Contact requesting clinician or NHS 111 if OOH immediately after film review. • Contact Haematology SpR/Consultant immediately after film review. 	<p>Contact the requesting Clinician immediately if Basophils ≥ 5.0 after 7 days from previously reported.</p> <p>Telephone action not required if repeat Basophils results ≥ 5.0 is within 7 days from previous.</p>	RCPATH (2017) and local agreement as per Haematology Clinical Leads at KCH and GSTT.
# NRBCs	$\geq 5.0 \times 10^9/L$	<p>Critical pathway for Haem SpR/Consultant referral:</p> <ul style="list-style-type: none"> • Contact requesting clinician or NHS 111 if OOH immediately after film review. • Contact Haematology SpR/Consultant immediately after film review. 	<p>Contact the requesting Clinician immediately if #NRBCs ≥ 5.0 after 7 days from previously reported.</p> <p>Telephone action not required if repeat NRBCs results ≥ 5.0 is within 7 days from previous</p>	RCPATH (2017) and local agreement as per Haematology Clinical Leads at KCH and GSTT.
ESR	≥ 100 mm/Hr	<ul style="list-style-type: none"> • Contact requesting clinician or NHS 111 if OOH. 	N/A	Local agreement as per Haematology Clinical Leads at KCH and GSTT.

Critical test	Critical results (limits) /Units	Action/ Comment	Additional Comments	Reference
Malaria Screen/ Confirm	First presentation Positive Plasmodium Malarial species or other malarial parasites	<p>Critical pathway for Haem SpR/Consultant referral:</p> <ul style="list-style-type: none"> Contact requesting clinician or NHS 111 if OOH immediately after film review. Contact Haematology SpR/Consultant immediately after film review. <p>& Inform KCH Infectious Diseases Consultants via group email.</p>	NOTE: Malaria screen/confirm test must be reflexed and performed immediately if not requested already.	RCPATH (2017) and local agreement as per Haematology and Infectious Diseases Consultant advise
Blood Film Morphology	Presence of Blasts or diagnosis suggestive of AML or ALL	<p>Critical pathway for Haem SpR/Consultant referral:</p> <ul style="list-style-type: none"> Contact requesting clinician or NHS 111 if OOH immediately after film review. Contact Haematology SpR/Consultant immediately after film review. 	Refer blood film to Haematology SpR/Consultant in first instance and then discuss phoning the ward/GP.	RCPATH (2017) and local agreement as per Haematology Clinical Lead advise
	Thrombocytopenia with presence of RBC fragments i.e., new TTP/MAHA			
	Presence of Spherocytosis			
	Leucoerythroblastic picture			

References

1.2.1 RCPATH - The communication of critical and unexpected pathology results October 2017 Author: Dr Bernie Croal, Aberdeen Royal Infirmary.

Clinical Approver:	Prof Beverley Hunt (Synnovis Strategic Clinical Lead for Haematology)
Signature:	
Date:	13/05/2024