

### SHOT sample testing for exercise 23R5 / 23R5P

#### General Section

**This learning exercise has been developed collaboratively with Serious Hazards of Transfusion (SHOT) and UK Transfusion Laboratory Collaborative (UKTLC) following laboratory errors relating to transfusion reported to SHOT. This exercise will not be scored, it is for educational purposes only.**

**This exercise is open to all participants, but only one report will be written, based on the results submitted by UK and RoI participants.**

**A summary of the questions in this questionnaire can be found [here](#) (please note, not all questions will apply, some will be bypassed, based on your answers)**

**A copy of the exercise instructions can be found [here](#)**

**A copy of the request form can be found [here](#)**

\* 1. Please enter your laboratory's participant reference number (PRN)

\* 2. Where is your laboratory located?

- |  |   |
|--|---|
| <input type="radio"/> UK - England           | <input type="radio"/> UK Crown Dependency or Overseas Territory |
| <input type="radio"/> UK - Scotland          | <input type="radio"/> Italy                                     |
| <input type="radio"/> UK - Wales             | <input type="radio"/> Portugal                                  |
| <input type="radio"/> UK - Northern Ireland  | <input type="radio"/> Denmark                                   |
| <input type="radio"/> Republic of Ireland    |   |
| <input type="radio"/> Other (please specify) |   |

3. What type of laboratory do you work in?

- Hospital Transfusion Laboratory
- Immunohaematology Reference Laboratory
- Other (please specify)

\* 4. Did you test the sample for Lucas Skywalker (male aged 28)

- Yes
- No

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### Blood Grouping Results

\* 5. Please enter your results

	Reaction grade
Anti-A	<input type="text"/>
Anti-B	<input type="text"/>
Anti-A,B	<input type="text"/>
Anti-D (1)	<input type="text"/>
Anti-D (2)	<input type="text"/>
Auto / control	<input type="text"/>
A cells	<input type="text"/>
B cells	<input type="text"/>
O cells	<input type="text"/>

\* 6. How would you report this ABO group if this was the first sample received from the patient?

- A
- B
- O
- AB
- UI (unable to interpret)

\* 7. How would you report the D group on this sample if it was the first sample received from the patient?

- D positive
- D negative
- D variant
- UI (unable to interpret)

8. What technology did you use to perform the primary ABO and D group?

- Bio-Rad Gel Cards
- Ortho BioVue Cassettes
- Grifols Gel Cards
- Across Gel Cards
- Tube
- Liquid Phase Microplate
- Other (please specify)

\* 9. If you received a second sample from the patient and obtained the same results on this sample, would this change your interpretation of the group?

- Yes
- No

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## Second sample blood group reporting

\* 10. How would you report this ABO group after testing the second sample?

- A
- B
- O
- AB
- UI (unable to interpret)

\* 11. How would you report the D group after testing the second sample?

- D positive
- D negative
- D variant
- UI (unable to interpret)

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#### Selection of blood components

\* 12. What would be your first choice for group of red cells if issuing blood after testing only one sample?

- |                                    |                                     |
|------------------------------------|-------------------------------------|
| <input type="radio"/> O D positive | <input type="radio"/> B D positive  |
| <input type="radio"/> O D negative | <input type="radio"/> B D negative  |
| <input type="radio"/> A D positive | <input type="radio"/> AB D positive |
| <input type="radio"/> A D negative | <input type="radio"/> AB D negative |

\* 13. What would be your first choice for ABO group of Fresh Frozen Plasma (FFP) if issuing after testing only one sample? Assume all are negative for high titre ABO antibodies (HT neg).

- O
- A
- B
- AB

\* 14. What would be your first choice of platelets if issuing after testing only one sample? Assume all are negative for high titre ABO antibodies (HT neg).

- |                                    |                                     |
|------------------------------------|-------------------------------------|
| <input type="radio"/> O D positive | <input type="radio"/> B D positive  |
| <input type="radio"/> O D negative | <input type="radio"/> B D negative  |
| <input type="radio"/> A D positive | <input type="radio"/> AB D positive |
| <input type="radio"/> A D negative | <input type="radio"/> AB D negative |

\* 15. If you received a second sample from the patient and obtained the same results, would this change the group of components issued?

- Yes
- No

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#### Selection of components for issue after second sample tested (and identical results obtained)

\* 16. What would be your first choice for group of red cells if issuing blood after testing the second sample?

- |                                    |                                     |
|------------------------------------|-------------------------------------|
| <input type="radio"/> O D positive | <input type="radio"/> B D positive  |
| <input type="radio"/> O D negative | <input type="radio"/> B D negative  |
| <input type="radio"/> A D positive | <input type="radio"/> AB D positive |
| <input type="radio"/> A D negative | <input type="radio"/> AB D negative |

17. What would be your first choice for ABO group of Fresh Frozen Plasma (FFP) if issuing after testing the second sample? Assume all are negative for high titre ABO antibodies (HT neg).

- O
- A
- B
- AB

18. What would be your first choice of platelets if issuing after testing the second sample? Assume all are negative for high titre ABO antibodies (HT neg).

- |                                    |                                     |
|------------------------------------|-------------------------------------|
| <input type="radio"/> O D positive | <input type="radio"/> B D positive  |
| <input type="radio"/> O D negative | <input type="radio"/> B D negative  |
| <input type="radio"/> A D positive | <input type="radio"/> AB D positive |
| <input type="radio"/> A D negative | <input type="radio"/> AB D negative |

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Further information provided by Medic

\* 19. If you had been told by an air ambulance medic that the patient had been transfused 6 units of group O D positive red cells, would it change the group interpretation you would make?

- Yes
- No - we would have made a group interpretation in the first place
- No - we would need more evidence before making an interpretation

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Further information provided by medic - blood group interpretation

\* 20. What would your ABO group interpretation be with this knowledge?

- A
- B
- O
- AB
- UI (unable to interpret)

\* 21. What would your D group interpretation be with this knowledge?

- D positive
- D negative
- D variant
- UI (unable to interpret)



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Further information provided by medic - selection of components

\* 22. If you had been told by an air ambulance medic that the patient had been transfused 6 units of group O D positive red cells, would it change the group of blood / components you would issue?

Yes

No

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Further information provided by medic - selection of components

\* 23. What would be the first choice group of red cells would you select for issue?

- |                                    |                                     |
|------------------------------------|-------------------------------------|
| <input type="radio"/> O D positive | <input type="radio"/> B D positive  |
| <input type="radio"/> O D negative | <input type="radio"/> B D negative  |
| <input type="radio"/> A D positive | <input type="radio"/> AB D positive |
| <input type="radio"/> A D negative | <input type="radio"/> AB D negative |

24. What would be the first choice ABO group of Fresh Frozen Plasma (FFP) you would select for issue? Assume all are negative for high titre ABO antibodies (HT neg).

- O
- A
- B
- AB

25. What would be the first choice group of platelets you would select for issue? Assume all are negative for high titre ABO antibodies (HT neg).

- |                                    |                                     |
|------------------------------------|-------------------------------------|
| <input type="radio"/> O D positive | <input type="radio"/> B D positive  |
| <input type="radio"/> O D negative | <input type="radio"/> B D negative  |
| <input type="radio"/> A D positive | <input type="radio"/> AB D positive |
| <input type="radio"/> A D negative | <input type="radio"/> AB D negative |

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Further information and report provided by Biomedical Scientist (BMS)

\* 26. If you had been told by a Biomedical Scientist from the transferring hospital and received a paper/printable report stating that the patient was historically A D positive and transfused 6 units of O D positive red cells, would it change the group interpretation you would make?

- Yes
- No - we would have made a group interpretation in the first place
- No - we would need more evidence before making an interpretation

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Further information and report provided by Biomedical Scientist- reporting group

\* 27. What would your ABO group interpretation be with this knowledge?

- A
- B
- O
- AB
- UI (unable to interpret)

\* 28. What would your D group interpretation be with this knowledge?

- D positive
- D negative
- D variant
- UI (unable to interpret)

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Further information and report provided by Biomedical Scientist - selection of components

\* 29. If you had been told by a Biomedical Scientist from the transferring hospital and received a paper/printable report stating that the patient was historically A D positive and transfused 6 units of O D positive red cells, would it change the blood components you would issue?

Yes

No

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Further information and report provided by Biomedical Scientist - selection of components

\* 30. What would be the first choice group of red cells would you select for issue?

- |                                    |                                     |
|------------------------------------|-------------------------------------|
| <input type="radio"/> O D positive | <input type="radio"/> B D positive  |
| <input type="radio"/> O D negative | <input type="radio"/> B D negative  |
| <input type="radio"/> A D positive | <input type="radio"/> AB D positive |
| <input type="radio"/> A D negative | <input type="radio"/> AB D negative |

31. What would be the first choice ABO group of Fresh Frozen Plasma (FFP) you would select for issue? Assume all are negative for high titre ABO antibodies (HT neg).

- O
- A
- B
- AB

32. What would be the first choice group of platelets you would select for issue? Assume all are negative for high titre ABO antibodies (HT neg).

- |                                    |                                     |
|------------------------------------|-------------------------------------|
| <input type="radio"/> O D positive | <input type="radio"/> B D positive  |
| <input type="radio"/> O D negative | <input type="radio"/> B D negative  |
| <input type="radio"/> A D positive | <input type="radio"/> AB D positive |
| <input type="radio"/> A D negative | <input type="radio"/> AB D negative |

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## Testing

\* 33. Did you perform your testing on an analyser?

- Yes
- No - tested manually

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### Analyser details

\* 34. What analyser do you use?

- |   |  |
|---|--|
| <input type="radio"/> Ortho AutoVue Ultra           | <input type="radio"/> Grifols Erytra Eflexis |
| <input type="radio"/> Ortho AutoVue Innova          | <input type="radio"/> Grifols WADiana        |
| <input type="radio"/> Ortho Vision Ortho Vision Max | <input type="radio"/> Immucor NEO            |
| <input type="radio"/> Ortho Vision Swift            | <input type="radio"/> Immucor NEO IRIS       |
| <input type="radio"/> Bio-Rad ID Gelstation         | <input type="radio"/> Immucor Echo           |
| <input type="radio"/> Bio-Rad IH-1000               | <input type="radio"/> Immucor Echo Lumena    |
| <input type="radio"/> Bio-Rad IH-500                | <input type="radio"/> Immucor Galileo        |
| <input type="radio"/> Grifols Erytra                |  |
| <input type="radio"/> Other (please specify)        |  |

\* 35. Do you have an interface from your analyser to the Laboratory Information Management System (LIMS)?

- Yes - bidirectional
- Yes - unidirectional
- No



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#### Transfer of data

\* 36. Does the interface transfer the following information from the analyser to the LIMS?

Tick all that apply.

- Reaction grades
- Blood Group interpretation
- Comments
- Analyser flags
- Reaction edits

\* 37. Do you edit reactions and / or the blood group interpretation if the group cannot be automatically interpreted? Tick all that apply

- We edit the reactions on the analyser
- We edit the interpretation on the analyser
- We edit the reactions on our LIMS
- We edit the interpretation on our LIMS
- Other (please specify)

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## Laboratory Information Management System (LIMS)

\* 38. Do you use a LIMS?

- Yes
- No

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### Laboratory Information Management System (LIMS)

\* 39. Which of the following IT suppliers provides the LIMS currently in use?

- |  |                                       |
|--|---------------------------------------|
| <input type="radio"/> Clinisys               | <input type="radio"/> MAK systems     |
| <input type="radio"/> DXC/CSC/iSoft          | <input type="radio"/> Bank Manager    |
| <input type="radio"/> Meditech               | <input type="radio"/> BSO             |
| <input type="radio"/> Cerner                 | <input type="radio"/> In-house system |
| <input type="radio"/> Other (please specify) |                                       |

40. What is the name of your LIMS?

41. What is the current version number of your LIMS?

\* 42. Does your LIMS allow you to enter an unresolved blood group (e.g. UI / UI D positive / No group) as a blood group interpretation?

- Yes
- No

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### LIMS Unable to record unresolved blood group

\* 43. If your LIMS is unable to record an unresolved blood group, is this because?

- The LIMS is not capable of doing this
- The LIMS is not currently configured to do this - there are plans to implement this at some point
- The LIMS is not currently configured to do this - this functionality is not on the current horizon

\* 44. How do you report the blood group so that red cells can be reserved?

- We enter a safe blood group (e.g. O D negative) to ensure only group O red cells can be issued
- We enter the most likely interpretation based on the results we have obtained
- We can issue red cells without a group being present
- Other (please specify)

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LIMS Issuing blood with no valid group on record

\* 45. Does your LIMS allow you to issue red cells if there is no group on record?

- Yes
- No

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### Unable to issue with no group

46. How do you issue red cells when no interpretable group is present

- We enter a safe blood group (e.g. O D negative or O D positive) to allow issue
- We enter a safe blood group (e.g. O D negative or O D positive) and add a comment to allow issue
- We enter the most likely interpretation based on the results we obtained
- Other (please specify)

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## LIMS - Comments on results

\* 47. Does your LIMS allow you to enter an additional comment that there is an anomaly with the blood group result for that sample?

Yes

No

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LIMS - no comments added

48. Why would a comment not be added to an anomalous result? Tick all that apply

- A comment would already come over from the analyser
- The LIMS is not capable of this
- It is not our policy to do this
- Other (please specify)



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## Electronic Issue

\* 49. Does your LIMS allow electronic issue (computer crossmatch) if blood group results have been edited on the analyser?

- Yes
- No
- We do not use electronic issue

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### Edited Results and Electronic Issue

50. If your LIMS does not prevent electronic issue on edited samples, is this because?

- The LIMS only allows issue of group O red cells under these circumstances
- The LIMS is not capable of preventing this
- We add the patient to an exclusion list on the LIMS
- This functionality has not been implemented - it is planned for the future
- This functionality has not been implemented - this is not on the horizon

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Electronic results system / Electronic Patient Record (EPR)

\* 51. Are your blood group results transmitted electronically to a results system / EPR?

Yes

No

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## Electronic results system / EPR

\* 52. If there was anything unusual about a blood group result, would this appear on the results system / EPR

- Yes, it would be always be flagged and visible
- Yes, it would be flagged and the comment visible if the result was examined
- Yes, if we specifically added a comment
- No

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No comments from LIMS

53. If unusual results are not flagged on the results system / EPR, is this because?

- Your LIMS is not capable of doing this
- Your results system / EPR is not capable of doing this
- Your policy is not to do this

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## Interim results

\* 54. Does your LIMS and results system / EPR allow **interim** results to be released?

- Yes
- No

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### Interim result released

55. How are final / amended results then notified to the clinical team? Tick all that apply

- Phone call to the clinical area
- Results system / EPR has a flag that is visible prior to being viewed
- Results system / EPR has a pop up message whenever **NEW** amended results are available
- Results system / EPR has a pop up message whenever **ANY** amended results are available
- Amended results are tagged as such when viewing the results
- Other (please specify)

56. Which of the following results require authorisation on the LIMS prior to release to a results system / EPR? Tick all that apply

- All results
- First time results (no historical group)
- Positive antibody screens
- Anomalous blood groups
- Blood group mismatch vs. historical group
- Any result that has required intervention on the analyser
- None of the above, everything goes straight from the LIMS to the results system / EPR without intervention

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## Policy

\* 57. Does your laboratory have a policy for investigating discrepant blood groups?

Yes

No



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### Policy for investigating discrepant blood groups

\* 58. Does your policy for managing discrepant blood groups cover the following scenarios? Tick all that apply

- Unknown cause of a blood group discrepancy
- Antenatal patients with blood group discrepancies
- Post BMT/PBSCT patients with blood group discrepancies
- Organ donors with blood group discrepancies

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## Organ Donor policy

\* 59. Do you have a policy which covers what to do if you are contacted by an organ donor liaison team for blood group results?

Yes

No

\* 60. Do you have a policy which covers what to do if you are contacted by an organ donor liaison team for pre-transfusion blood samples?

Yes

No

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#### Policy for responsibilities

\* 61. Which transfusion staff do you allow to add comments to the patient's transfusion record? Tick all that apply

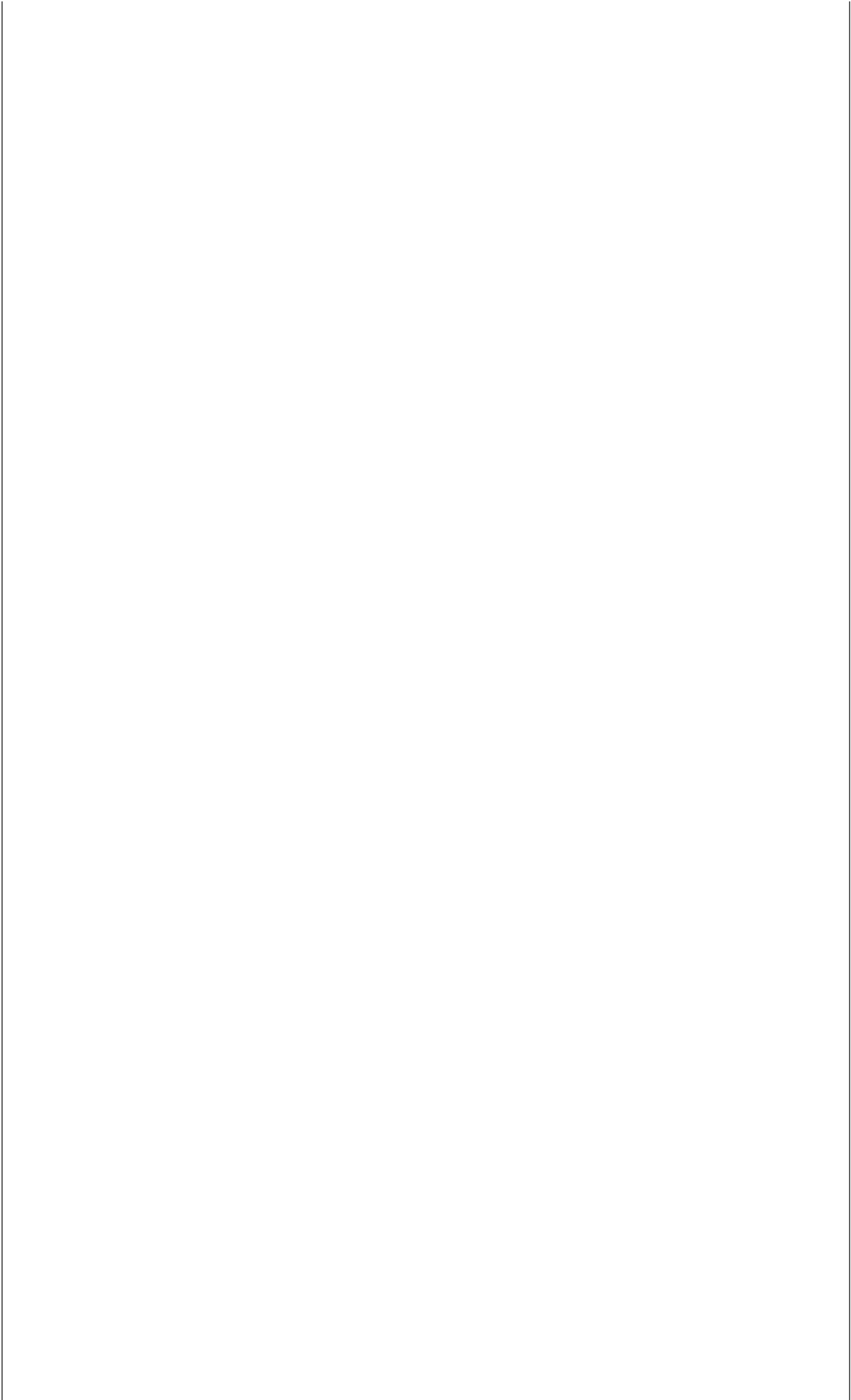
- Support Staff
- Trainee Biomedical Scientists
- Registered Biomedical Scientist
- Senior Biomedical Scientists
- Senior Transfusion Specialist Biomedical Scientists
- Lab Manager
- Other (please specify)

\* 62. Which transfusion staff do you allow to delete comments from the patient's transfusion record? Tick all that apply

- Support Staff
- Trainee Biomedical Scientists
- Registered Biomedical Scientist
- Senior Biomedical Scientists
- Senior Transfusion Specialist Biomedical Scientists
- Lab Manager
- Other (please specify)

\* 63. Which transfusion staff do you allow to amend / overwrite historical blood groups? Tick all that apply

- Support Staff
- Trainee Biomedical Scientists
- Registered Biomedical Scientist
- Senior Biomedical Scientists
- Senior Transfusion Specialist Biomedical Scientists
- Lab Manager
- Other (please specify)



# UK NEQAS

Haematology and Transfusion

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End of questionnaire

**Thank you for taking time to complete our questionnaire. Your answers will provide useful information to SHOT, UKTLC and UK NEQAS.**

\* 64. Please re-enter your laboratory's participant registration number (PRN)

65. If you have anything else you'd like to let us know about this, please enter it here.