Witness Name: Susan Elizabeth Robinson

Statement No.: WITN70390001

Exhibits: WITN7039002-WITN7039150

Dated: 19 May 2022

INFECTED BLOOD INQUIRY

FINAL WRITTEN STATEMENT OF SUSAN ELIZABETH ROBINSON ON BEHALF OF GUY'S AND ST THOMAS' NHS FOUNDATION TRUST

I provide this statement in response to a request under Rule 9 of the Inquiry Rules 2006 dated 16 December 2021.

I, Susan Elizabeth Robinson, will say as follows: -

Section 1: Introduction

1. Please set out your name, address, date of birth and professional qualifications.

1. In response to questions 1-4 of the Rule 9 request.

2. My name is Susan Elizabeth Robinson.

3. My date of birth is GRO-C 1975.

4. My qualifications are MBBS, MSc FRCP FRCPath MDRes. I qualified from King's College London School of Medicine and Dentistry in 1999. I completed

junior doctor posts prior to being appointed to a Registrar training programme in 2003. From 2003 – 2010, I completed training within the GSTT rotation and research, including 9 months' maternity leave in 2006.

2. Please set out your current role at Guy's and St Thomas' NHS Foundation Trust and your responsibilities within that role.

5. I am employed by Guy's and St Thomas' NHS Foundation Trust ("GSTT") as the clinical lead for blood transfusion, obstetric haematology with the haematology department at GSTT.

6. I am also the Clinical Director for Haematology, Haemostasis, Cellular Pathology, Oncology and Haematology Clinical Trials and Clinical Lead Pathology at GSTT. References made to Guy's and St Thomas' NHS Foundation Trust and/or GSTT refer to the hospitals which formed part of GSTT before it merged with Royal Brompton and Harefield NHS Foundation Trust on 1 February 2021.

7. I am not able to comment on the position at the Royal Brompton and Harefield NHS FT (as was) either historically or now.

3. Please explain how you came to be appointed to the role.

8. I was appointed to a consultant post at GSTT in 2010. My role at the time included transfusion, apheresis, general haematology and obstetric haematology. I exhibit to this statement my job description at the time [WITN70390002].

4. Please set out your employment history including the various roles and responsibilities that you have held throughout your career, as well as the dates.

9. Since my appointment, I have held the following roles at GSTT:
    a. January 2012: Chair of the GSTT Immunoglobulin and Albumin Panel
    b. January 2013: Clinical lead – transfusion
    c. January 2017: Clinical lead for the KHP Blood Transfusion Integration Project. Working towards the alignment of services to deliver care across King's College Hospital and GSTT.
    d. January 2019: Clinical Director Haematology, Haemostasis, Cellular Pathology, Oncology and Haematology Clinical Trials.
    e. October 2019: GSTT Clinical lead for the sustainability and transformation Partnership Southern London (STP SEL) Pathology Programme.

10. I have held the following transfusion related roles:
    a. 2014 – 2016: NICE Guideline Development Group: transfusion guideline and quality standards.
    b. 2015 – date: National Commissioning Group for Blood Department of Health: reviewing NHSBT blood pricing and service provision.
    c. 2015-16: NICE Diagnostic Guidance Committee: high throughput non invasive prenatal testing for foetal RHD genotype.
    d. 2015 – date: Member, prior chair and secretary BSH transfusion Task Force: guiding the development and production of BSH Transfusion guidelines, good practice and position papers.
    e. 2015 – date: National Blood Transfusion Guidelines, good practice and position papers.
    f. 2016 – date: National Blood Transfusion Committee: emergency planning working group which provides hospitals with guidance for transfusion and emergency preparedness and response to major incidents and mass casualty events in consultation with a range of stakeholders.

g. 2018 – date: BSH representative International Committee Transfusion Medicine Group: a global network developing systematic reviews and guidelines to improve outcomes for patients worldwide.
h. 2018 – date: Serious Hazards of Transfusion working group expert and steering committee member.
i. 2019 – date: Standard Advisory Committee on Blood Components member for Joint United Kingdom Blood Transfusion and Tissue Transplantation Services Professional Advisory Committee: contributing to the development of specifications of novel blood components.

Section 2: Hospital Transfusion Committee history, structure & relationships

5. The Inquiry understands that the establishment of HTCs was being recommended as early as 1983, according to the proposal of Dr F. A. Ala [NHBT0016083_003]. Please provide details of the following:

a. When the HTCs at the Hospitals were established;

b. Who established the HTCs and who the first Chair was;

c. Why the HTCs were established;

d. What the initial aims of the HTCs were when they were established; and

e. Before the establishment of the HTCs, how the Hospitals monitored transfusion practice.

11. It has not been possible to retrieve the minutes of the HTC prior to the 7th HTC which took place on 9 May 2000 [WITN7039003]. I understand that the HTC meetings at this time were quarterly. I therefore estimate that the HTC was established in 1998/1999. The HTC met quarterly until January 2014. At that time, it was agreed that the HTC would be three times a year. This is documented in the minutes of the meeting in January 2014 (58th meeting) [WITN7039004].

12. I have not been able to identify the chair for the first HTC. However, according to the HTC minutes of the meeting on 9 May 2000 (the 7th HTC) [WITN7039003], the Chair was Dr David Hunter, Consultant Anaesthetist. At that meeting, the minutes note that Dr Hunter was to step down as chairman and, in his place, Dr David Sprackman, Consultant Anaesthetist was proposed by Dr Hunter. This proposal was accepted by the members present at the meeting. At the same meeting, Dr Gerald Smith, Consultant Haematologist and Deputy Chair, informed those present that he would be shortly retiring from GSTT and consequently would be stepping down from the committee. Dr Beverley Hunt, Consultant Haematologist, agreed to act as Deputy Chair until a replacement could be found.

13. The HTC was established following the Better Blood Transfusion Circular dated 1998, exhibited to this statement [WITN7039005]. The Circular set out the actions required of NHS Trusts and clinicians to improve transfusion practice. This included establishing an HTC in every NHS Trust where blood is transfused. The aim of the HTC was to (as a minimum):
    a. Promote best practice through local protocols based on national guidelines;
    b. Lead multi-professional audit of the use of blood components within the NHS Trust, focusing on specialities where demand is high, eg haemato-oncology and certain surgical specialities;
    c. Maintain a database that allows feedback on performance to all hospital staff involved in blood transfusion;
    d. Have the authority to modify existing blood transfusion protocols and to introduce appropriate changes to practice;
    e. Report regularly to local, and through them to national, blood user group;
    f. Consult with local patient representative groups where appropriate;
    g. Contribute to the development of clinical governance.

14. These aims are reflected in the minutes of GSTT's HTC meetings.

15. I have been asked how hospitals monitored transfusion practice prior to the establishment of HTCs. Neither I nor my predecessors in transfusion medicine have knowledge of this. I have asked the GSTT Governance team if there was a central governance meeting which includes transfusion pre-dating the HTC. The search has not identified any documents or resulted in the provision of further material. Consequently, I am unable to answer this question.

6. Please explain the composition of the HTCs at the Hospitals including staff, positions and areas of specialty. Please explain if the composition has changed since the HTCs were established. You may wish to refer to [AHCH0000014], specifically the recommended membership.

16. According to the first available minutes [WITN7039003], the composition of the HTC was: two consultant anaesthetists, three consultant haematologists, one consultant paediatrician, three Medical Laboratory Scientific Officers ("MLSO") for Blood Transfusion, of which two were chiefs. At the most recent meeting (the 81st meeting dated 20 September 2021 [WITN7039006], the composition of the membership was: six consultant anaesthetists, two consultant haematologists, two members of the blood transfusion management team, one Senior Biomedical Scientist ("BMS"), four blood transfusion practitioners, three junior doctors, eleven consultants (of varying specialisms), eight members of the nursing staff and seven members of management / governance.

17. The expansion of the membership of the HTC has been, in large part, due to the increased need, for example, in respect of microbiology / infection control and pharmacy. As the clinical lead for transfusion, I have working relationships with colleagues in these roles and would co-opt according to need and / or update the committee in respect of joint working. This increase in membership would also

be a reflection of, for example, the response to the Pre-surgical assessment vCJD letter to Chief Executives in respect of infection control and the development of joint guidelines with pharmacists.

18. As a result of the expansion of this membership, for example, we have been able to develop the following specific guidelines:
    a. Infection Prevention & Control Policy Chapter 33: Management of patients with (or at risk of) Transmissible Spongiform Encephalopathies (TSEs) [WITN7039007];
    b. Management of Patients Refusing Blood Transfusion Including Jehovah's Witness Patients [WITN7039008];
    c. Use of erythropoietin (EPO) therapy in adult Jehovah's Witness patients (and other patients who cannot be transfused) to prevent post-operative anaemia and treat symptomatic anaemia [WITN7039009];
    d. Blood Transfusion Manual: Tranexamic acid use to reduce surgical blood loss [WITN7039010].

7. Please explain the nature of the relationship between the HTCs and the various departments in the Hospitals that administered blood transfusions. Has this changed over time? What oversight did the HTCs have over the decisions made by the different departments utilising transfusions? How did any such oversight operate? What was the aim of the HTCs' oversight? What were the challenges that arose in the relationship between the HTCs and the Hospital departments?

19. The HTC Terms of Reference (ToR) are exhibited to this statement as follows:
    a. 2002: WITN7039011
    b. 2008: WITN7039012
    c. 2014: WITN7039013

d. 2021: WITN7039014

20. The HTC ToR are regularly reviewed and updated. They are also included within the GSTT Blood Transfusion Policy which is reviewed every three years. The scope includes:
    a. Awareness of national guidelines for the promotion of good transfusion practices;
    b. Development of local hospital guidelines;
    c. Transfusion policy induction procedure for new staff;
    d. Review of nursing procedures for administration of blood products;
    e. Promotion of new information regarding transfusion matters, such as availability of alternative treatments;
    f. Ensuring patients are adequately informed of transfusion matters, such as availability of alternative treatments;
    g. Blood transfusion record keeping and documentation;
    h. Review and notification of post transfusion complications (including adverse reactions and transfusion associated infections);
    i. Assessment of transfusion practices in light of product usage; and
    j. Consent for blood transfusion.

8. An Irish discussion document on Blood Safety and Self-Sufficiency: An agenda for the European Community from 1996 [DHSC0001926] notes 'The hospital transfusion committee can provide an ongoing assessment of the use of blood and blood products as well as introducing recommendations in order to promote the highest standards of patient care. The responsibilities of these hospital transfusion committees, where they exist are unclear and to whom they report'. Was this also the position at the Hospitals? Do you think this is a fair assessment of the HTCs? Please explain your answer.

21. I have been asked to comment on an Irish discussion document on Blood Safety and Self-Sufficiency: An agenda for the European Community from 1996

[DHSC0001926]. I have been specifically asked about the responsibilities of the HTCs and to whom they report. I am only able to speak to the HTC at GSTT which was not in existence in 1996. However, from the date of its inception, the ToR (as identified above and exhibited to this report) set out clear reporting lines.

9. In a Penrose Inquiry Submission by NHS Scotland [STHB0000864, page 13], It is noted that 'Hospital transfusion committees were formed to create an interface between the laboratory as provider and the clinicians as users of blood and blood products. Their success was limited due mainly to the lack of clinician input. This problem, to a greater or lesser extent, remains today'. Was this also the position at the Hospitals? Do you think this is a fair assessment of the HTCs? Please explain your answer.

22. I have been asked to comment on the Penrose Inquiry Submission by NHS Scotland [STHB0000864, page 13] in which it is noted that HTCs were "*formed to create an interface between the laboratory as provider and the clinicians as users of blood and blood products. Their success was limited due mainly to the lack of clinician input. This problem, to a greater or lesser extent, remains today.*" I am not able to comment in relation to other hospitals and can only comment in respect of GSTT. However, my opinion is that the GSTT HTC has achieved a broad membership (please see paragraph 16, above). My opinion is that the absence of multi disciplinary clinical input in the HTC would have meant that the HTC at GSTT would not have been as successful as it has been

10. The Inquiry understands that it was recommended by certain Regional Transfusion Centres that HTCs should meet quarterly. Please confirm how often the HTCs met and if this changed over time. You may wish to refer to [NHBT0016084_001].

23. Please refer to question 5a.

11. The Inquiry understands that there was concern within the medical field about the level of education and training undertaken by those administering blood and blood products to patients. This was announced in the Better Blood Transfer Conference of 1998 [DHSC0004588_007], in which Mike Murphy (Blood Transfusion Consultant from the National Blood Service) stated 'The survey found that in general there was poor provision of training particularly for medical staff and for portering staff'. You may also wish to refer to [NHBT0010270_003] page 5. Please outline:

a. If the HTCs were aware of this concern;

b. Any discussions the HTCs had as a result of the concerns;

c. Whether as a result of discussion, what, if any, training was implemented. If so, when it was and at what level the training was implemented. If it was not, why it was not?

d. The nature of the training, for example, if training was voluntary or compulsory, and whether this changed over time; and

e. A brief overview of what the training included.

24. I have been asked to comment on the level of education and training undertaken by those administering blood and blood products to patients. It is national guidance and local policy that all staff involved in any aspects of the transfusion process are trained and competency assessed. In 2006, the National Patient Safety Association (NPSA), in conjunction with the National Blood Transfusion Committee (NBTC) and Serious Hazards of Transfusion (SHOT) issued a Safer Practice Notice [SPN14]: "Right Patient, Right Blood" [WITN7039015]. This document detailed actions to be taken by all NHS and independent sector organisations to improve the safety of blood transfusions. Actions required were to implement a programme of training and observational competency assessment for all staff involved in the transfusion process.

25. The NPSA was abolished in 2012. Therefore a NBTC working group was formed to review the competencies and develop guidance to replace the former NPSA

document. The working group's guidance was provided in collaboration with the Transfusion Practitioners across the country and was supported by NHS England. The guidance encompassed how staff involved in the transfusion process should be trained and assessed.

26. GSTT formulated training in accordance with national guidance at the time, encompassing the NPSA SPN in 2006 and NBTC requirements in 2012.

27. The GSTT Blood Transfusion Policy (2005) provides detail of the training in place at the time and provides for all staff involved in the process of transfusion to attend annual mandatory safe transfusion practice training. A copy of the Blood Transfusion Policy (2005) is exhibited to this statement [WITN7039016]. The Blood Transfusion Policy reiterates that it was a legal requirement (The Blood Safety and Quality Regulations 2005 Statutory Instrument No50 and Quality (Amendment) (No 2) Regulations 2005) that blood components may only be collected by staff that have been trained to do so.

28. Currently, all staff involved in the administering of blood components or taking a sample for blood transfusions are trained at induction into GSTT and are then required to complete updated training every three years. The training and frequency of training for all grades of staff are outlined in the GSTT Blood Transfusion Policy (at Appendices A and B) which is reviewed every three years. The current version (version 7) is exhibited to this statement [WITN7039017].

29. The importance of training is also regularly discussed at the HTC meetings and is minuted [WITN7039018]. This includes, but is not limited to ensuring mandatory training for all members of staff who have "any part to play in the administration, collection, or delivery of blood or blood products" [WITN7039019], and a discussion of the impact and implications of the EU blood Directive Article 9 and 10: training [WITN7039020].

12. Please explain the nature of the relationship between the HTCs and the various departments in the Hospitals that administered blood transfusions. Has this changed over time? What oversight did the HTCs have over the decisions made by the different departments utilising transfusions? How did any such oversight operate? What was the aim of the HTCs' oversight? What were the challenges that arose in the relationship between the HTCs and the Hospital departments?

30. I have been asked to explain the nature of the relationship between the HTCs and the various departments within GSTT. My experience is that the HTC and the representatives of the departments has grown since the HTC was established (please see paragraph 16, above). The minutes of the HTC meetings reflect a multidisciplinary approach with clinical, nursing and governance / management staff from all departments represented at the HTC.

31. I exhibit to this statement the guidelines in place – and available on the GSTT intranet – from 2003 onwards. These guidelines would have been available to all clinical areas utilising transfusion.

    a. Clinical Guidance Summary Sheet: Policy for the acceptance of patients for pre-operative deposit autologous donation (PAD) [WITN7039021];
    b. Clinical Guidance Summary Sheet: Clinical guidelines for the use of CMV negative blood components [WITN7039022];
    c. Clinical Guidance Summary Sheet: Clinical guidelines for the use of FFP and cryoprecipitate [WITN7039023];
    d. Clinical Guidance Summary Sheet: Clinical guidelines for the use of irradiated blood products [WITN7039024];
    e. Clinical Guidance Summary Sheet: Guidelines for the management of care for Jehovah's Witness undergoing elective surgery [WITN7039025];

f. Clinical Guidance Summary Sheet: Clinical Guidelines for Massive Blood Loss [WITN7039026];
g. Clinical Guidance Summary Sheet: Maximum Surgical Blood Ordering Schedule (MSBOS) [WITN7039027];
h. Clinical Guidance Summary Sheet: Platelet transfusion clinical guideline [WITN7039028];
i. Clinical Guidance Summary Sheet: Clinical Guidelines for the Management of Acute Transfusion Reaction [WITN7039029]
j. Clinical Guidance Summary Sheet: Clinical Guidelines for Red Cell Transfusion [WITN7039030];
k. Clinical Guidance Summary Sheet: Guidelines for sample labelling requirements for Blood Transfusion samples [WITN7039031]

32. These guidelines provide support for the clinical teams and include the threshold for transfusion and potential contraindications.

33. In 2005, further guidelines were provided. Again, these guidelines were available on the GSTT intranet. The guidelines were also provided in hard copy by way of a printed manual provided to each clinical area. I exhibit to this statement WITN7039032 a list of the clinical areas provided with a manual. Following on from 2005 the guidelines are reviewed and updated according to review date or at an earlier date if required. As and when a new guideline is required this is added to the transfusion manual of guidelines now available via the intranet.

34. The 2005 guidelines are as follows:
a. Administration of Blood Components – checking the prescription and informed consent [WITN7039033];
b. Blood Transfusion Policy [WITN7039016];
c. Use of Irradiated Blood Components [WITN7039034];
d. Use of Cytomegalovirus (CMV) negative blood components [WITN7039035];

e. Red Cell Transfusion [WITN7039036];
f. Platelet Transfusion Clinical Guidelines [WITN7039037];
g. Blood Transfusion for Children and Neonates [WITN7039038];
h. Maximum Surgical Blood Ordering Schedule (MSBOS) [WITN7039039];
i. Clinical Guideline for Massive Blood Loss [WITN7039040];
j. Management of Jehovah's Witness patients (or others who are not able to receive blood transfusion) undergoing elective surgery [WITN7039041];
k. Management of Acute Transfusion Reaction [WITN7039042];
l. Use of Fresh Frozen Plasma and Cryoprecipitate [[WITN7039043];
m. Crash Blood Alert Request [WITN7039044];
n. Blood Transfusion Sample Labelling Requirements [WITN7039045];
o. Anti-D Prophylaxis Guideline [WITN7039046]

35. In addition to the guidelines, the Transfusion Team has led local and national audits in response to national comparative audits. These audits date back to 2002.

36. The audits from 2007 – 2022 were also discussed in the respective HTC meetings and are exhibited to this statement as [WITN7039018].

13. Please describe the nature of the HTCs' relationship with the Regional Transfusion Committee (and the relevant prior bodies including the Regional Transfusion Centre). In particular, please explain:

a. Who, if anyone, from the HTCs primarily interacted with the Regional Transfusion Centre, and subsequently the Regional Transfusion Committee;

b. The topics covered by the interactions;

c. How policy and guidance was cascaded from the Region to the Hospital Transfusion Committees;

d. What oversight the Region had over the Hospital Transfusion Committees;

e. Whether it was standard practice to have someone from the Regional Transfusion Centre sit on the HTCs;

f. The input, if any, that the Region provided to the HTCs in relation to updating and promoting transfusion practice; and

g. How the relationship changed over time.

You may wish to refer to [BSHA0000061_029].

37. I have been asked to describe the relationship between the GSTT HTC and the Regional Transfusion Committee ("RTC"). The members of the hospital transfusion team, HTC and hospital colleagues would have been able to attend the RTC meeting and educational event. Thereafter, those individuals would report back to the GSTT HTC and provide an update. The HTC minutes show frequent reported updates in respect of the RTC including that regional blood groups were being established under the aegis of the regional haematological committee [WITN7039047]; that a letter would be sent to all blood transfusion committees to ask for a nominated 1-2 members to join the RTC; that the south RTC had been established and an executive group elected [WITN7039048]. Thereafter, the HTC minutes [WITN7039018] refer to regular updates from the RTC.

38. The interactions/ topics minuted at the HTC regarding the RTC included the following:

    a. Platelet usage and wastage
    b. Blood collection centre being moved from Brentwood to Colindale
    c. Sample labelling video
    d. New booklet Haemolytic Disease of the Foetus and Neonate("HDFN")
    e. Platelet supply project
    f. "What is anaemia" leaflet

g. Fresh Frozen Plasma and Cryoprecipitate leaflet
h. "Choosing wisely" campaign
i. Educational days / training
j. O RhD took kit
k. "Save one a week" campaign
l. Transfusion Associated Circulatory Overload ("TACO") audit
m. NBTC codes App
n. Translated leaflets no longer to be made available
o. SHOT update
p. Patient Blood Management
q. London Platelet action group
r. Platelet champion days
s. Trauma
t. Technical and Diagnostics Group ("TADG") meetings

39. It would be standard practice for someone from the RTC to sit on the HTC. This may include an NBS Consultant, NHSBT Liaison Transfusion Practitioner / Nurse, NBS Liaison Manager, NHSBT Patient Blood Management Practitioner. The minutes of the HTC meetings reflect the presence of RTC members at the meetings.

40. I have reviewed the document provided [BSHA0000061_29] which dates back to 2000. This document describes the proposed establishment of the national and regional transfusion committees to support the work of the HTCs. Within GSTT, this has always, to my knowledge, been a bidirectional relationship with the RTC. I am not aware if this relationship has changed.

14. Please describe the HTCs' working relationship with the National Blood Transfusion Service ("NBTS"), and the relevant prior bodies including the National Blood Authority. In particular please explain:

a. The input, if any, that the NBTS provided to the HTCs in relation to

updating and promoting transfusion practice;

b. How the relationship changed over time; and

c. With particular regard to [NHBT0000649], was it standard practice to have a member of the National Blood Service as a member of the HTCs?

41. I have been asked to describe the HTC's working relationship with NBTS and the relevant prior bodies. My experience is that the relationship with these bodies has always been bidirectional. I do not know whether this relationship has changed over time. The minutes of the HTC meetings [WITN7039018] describe an open working relationship with these bodies. Following the establishment of the HTC, the minutes suggest that a representative of these bodies would be present.

15. Please describe the relationship between the HTCs and the Hospital Transfusion Laboratory ("HTL"), with particular regard to what effect this relationship had on the HTCs' work.

42. I have been asked to describe the relationship between the HTCs and the Hospital Transfusion Laboratory ("HTL"), in particular in respect of the effect that this relationship had on the HTC's work. The 2010 Blood Transfusion Policy (v3) documents the framework, structure, terms of reference, membership and meeting format of the hospital transfusion team from 2008. The HTL as members of the HTT have worked as a team throughout my time since 2010. From 2003 when I was a registrar in the department I recall the lab and practitioners have met regularly and worked as one team. The HTT members attend the HTC as such the Blood Transfusion Laboratory Manager, Governance and operational lead would have been in attendance at the HTC. I exhibit to this statement a copy of the 2010 Blood Transfusion Policy [WITN7039049].

16. What do you understand to be the main obstacles faced by the HTCs from the date established until the early 2000s? Did these obstacles change over time?

43. I have been asked what I understand to be the main obstacles faced by the HTC from the date of establishment until the early 2000s. I have no knowledge of any obstacles faced by the HTC at this time.

Section 3: Policy and Standard Practice

17. Please outline the HTCs' knowledge as to the types of blood and blood products that were most commonly transfused to patients during the 1970s to the 2000s, the circumstances in which they were used, and how this may have changed over time.

44. The GSTT HTC was established in 1998/1999. Consequently, I am not able to comment on the most commonly transfused products to patients during the 1970s – 2000s.

45. GSTT used a Maximum Surgical Blood Ordering Schedule (MSBOS) in elective surgery. An adult MSBOS was introduced in 2005 and a paediatric MSBOS was introduced in 2006.

18. The Inquiry understands that many hospitals used a Maximum Blood Schedule or Blood Ordering Schedule in Elective Surgery. Was such a schedule used by the Hospital? If so, please explain:

a. When these were introduced;

b. What the purpose of these schedules were and how they operated; and

c. Whether the type of blood component and/or the suggested unit amount for each surgical intervention changed over time; If so, please

outline how and why.

Additionally, please provide copies of all available schedules.

46. The MSBOS aims to reduce the cross-matching workload of the blood transfusion laboratory to reduce unnecessary wastage and to aid with blood stock management.

47. The MSBOS has been reviewed and audits of crossmatch to transfusion ratio have been performed alongside engagement with relevant stakeholders from each area, including surgeons and anaesthetists. I exhibit this statement at the Adult and Paediatric MSBOSs for GSTT [WITN7039050].

19. An audit of transfusion practice across the United Kingdom by the Royal College of Physicians in 1998 [NHBT0042247] noted six controversial areas of transfusion practice:

a. The nature and frequency of patient observations

b. Who wrote local policies

c. The need for two signatures to confirm adequacy of the checking procedure

d. The use of wristbands for patient identification

e. The need for a doctor to be present during transfusion

f. The action to be taken in the event of a transfusion reaction.

How did the HTCs at the Hospitals operate to standardise or enable the above practices? If the HTCs did not, why not?

48. I have been asked to consider the six controversial areas of transfusion practice as noted by the Royal College of Physicians in 1998 [NHBT0042247].

49. The 2005 Blood Transfusion Policy [WITN7039016] underpins the way that GSTT addressed these areas of practice and details the responsibilities and training / competency requirements. In addition to training, the surveillance of practice would have been through national comparative audit of transfusion. The policies themselves would have been written by the transfusion practitioners and consultants.

50. Insofar as the points raised in question 19 a,c,d, and f are concerned, all these points are specifically addressed within the 2005 Blood Transfusion Policy. With regard to question 19 e, all transfusions would take place within the hospital setting which would include access to clinical support. I do not know of any specific policy which provides that a doctor should be present during a transfusion. In addition, in respect of question 19 f, I exhibit to this statement the Acute Transfusion Reaction Policy 2005 [WITN7039042].

20. Did the HTCs provide any specific guidance to the departments within the Hospital and to clinicians administering blood transfusions in relation to the following medical situations:

- ***a. Obstetrics;***
- ***b. Trauma and emergency care;***
- ***c. Surgery;***
- ***d. Haematological malignancies;***
- ***e. Thalassaemia; and***
- ***f. Sickle Cell Anaemia.***

If so, please provide details of these policies and documentation if you are able.

51. I have been asked about specific departmental guidance which was provided by GSTT. These are referred to above at paragraph 34 and not repeated here. In addition, I exhibit to this statement the additional guidelines:
    a. Blood Component and Product Support for Haemato-Oncology Patients (2008) [WITN7039051];
    b. Paediatric Thalassaemia Guidelines (2022) [WITN7039052];
    c. Non transfusion dependent Thalassaemia (NTDT) Guidelines on diagnosis and management (2022) [WITN7039053];
    d. Sickle Cell Disease Adult Guidelines (2022) [WITN7039054]

21. Were the HTCs responsible for dealing with failure to comply with transfusion policies and practices? If so, how was this dealt with? If not, how did the Hospital deal with such failures?

52. On a day to day basis, any blood component ordered outside of guidelines was referred to the duty haematologist for a clinical discussion recognising that individual clinical circumstances do sometimes necessitate practice outside of guidelines. Audits were regularly conducted against compliance with policies and the results of audits were shared at the HTC and within relevant departments. Errors in practice are also investigated via the GSTT incident reporting processes, logged and investigated.

22. A report by Dr Fiona Regan and Dr Clare Taylor on the Recent Advances of Blood Transfusion Medicine [NHBT0000668_001] concerning unnecessary transfusion states that, 'Implementing these plans requires effective teamwork and a clear understanding of the rationale for reducing unnecessary transfusion. However there are currently inadequate resources, in terms of funding, personnel and time, to facilitate this.' Please comment on this with regard to the situation in the Hospitals relating to unnecessary transfusion.

53. I have been asked to comment on the resources available to facilitate a clear understanding for the rationale for reducing unnecessary transfusion. I am not able to comment on resources, personnel or funding prior to my appointment in 2010. However, I have discussed this question with colleagues and have been advised that the Trust had dedicated consultant time and transfusion practitioners in post from 2001. Wider facilities, such as mechanisms for mandatory training were not always available.

23. Please consider 'Better Blood Transfusion' Health Service Circular 1998/999, issued on 11 December by Dr Graham Winyard, NHS Executive (NHBT0083701_002). Please outline:

a. Any discussions the HTCs had about the Circular in relation to:

i. Obstetrics; trauma and emergency care; surgery; haematological malignancies; thalassaemia; and sickle cell anaemia; and

ii. Use of red blood cells, platelets and Fresh Frozen Plasma ("FFP")

iii. Autologous transfusion

iv. Single-unit transfusion

v. Fresh-warm blood transfusion

vi. Knowledge of risk of transfusion related infections

b. Any actions taken by the Hospitals as a result of any of the discussions above or as a direct result of the circular.

54. With regard to the "Better Blood Transfusion" Health Service Circular 1998/1999, I have not been able to locate any HTC meeting minutes prior to 2000. However, from those minutes available to me after this date, I confirm that the minutes / actions reflect what was set out to be required by the circular. The minutes of the HTC meetings are exhibited to this statement at WITN7039018 which set out the discussions and actions taken. However, for ease I set out the following examples:

a. Obstetrics, trauma and emergency care; surgery; haematological malignancies; thalassaemia; and sickle cell anaemia
    i. Meeting: 22.8.2000: Massive Blood Loss Guideline, recommendation regarding fibrinogen unlicensed to be removed [WITN7039055];
    ii. 3 September 2001: Massive transfusion awareness blood transfusion team – plan to use a request form (rather than verbal requests); surgeons to be written to with regard to stopping the practice of stopping aspirin [WITN7039056];
    iii. 3 December 2001: case report presented in respect of the use of Novoseven for a massive haemorrhage. This was to be discussed with the drugs and therapeutic committee and any use of this product to be approved by a consultant haematologist, only; following an audit, formal transfusion triggers in the cardiac surgery setting have been agreed and implemented [WITN7039057];
b. Use of red blood cells, platelets and Fresh Frozen Plasma
    i. 9 May 2000: audit minute refers to the usage of platelet concentrates and transfusion in cardiac patients; documented query from a laboratory manager as to whether there was a policy regarding a trigger haemoglobin level for transfusion surgical patients. [WITN7039003];
    ii. 21 November 2000: the outcome of a platelet audit resulted in an action where the haematology registrars were vetting requirements for more than one pool of platelets [WITN7039047];
    iii. 13 February 2001: there is a reference to Fresh Frozen Plasma (FFP) being defrosted in the operating theatre. It is minuted that "FFP product licence does not extend to defrosting in theatre, it is agreed that this practice should stop".[WITN7039058];

c. Autologous transfusion: there are references in several meeting minutes 9 May 2000, 22 August 2000, 21 November 2000 setting out a business plan for a cell saver [exhibits: WITN7039003, WITN7039055, WITN7039047]. At the meeting on 5 June 2001 it is minuted that two cell savers had been placed in the operating theatres.

d. Single unit transfusions: the minutes of the meeting on 21 November 2000 [WITN7039047] confirm that the platelet audit resulted in an action where the haematology registrar was vetting requirements for more than one pool of patients.

e. Fresh warm blood transfusion: I am not aware of fresh warm blood transfusions taking place within GSTT and have found no minutes of any HTC meetings.

f. Knowledge of risk of transfusion related infections:

   i. 13 February 2001: in respect of traceability albumin- "currently all albumin was released from transfusion except to the paediatric ITU and the renal unit." It was noted that "it may be important in the future to note the traceability of 4.5% albumin in order to look back at the effects of new variant CJD." [WITN7039058];

   ii. 5 June 2001: in respect of traceability albumin – details of albumin solution administration are being recorded in Paediatric ICU [WITN7039059];

   iii. 3 September 2001: it is noted that, in view of the need to import plasma from the USA to reduce the risk of CJD transmission, the cost of FFP may be rising from £20 to £120 [WITN7039056].

24. At a BTSAG meeting on 17 February 2004 [NHBT0060995], it was noted in a discussion about appropriate use of blood that 'Feedback from Hospital Transfusion Committee Chairs is that they have very limited ability to influence as Chief Executive Officers are not listening to their proposals.' To the best of

your knowledge, were there occasions where HTC proposals were not being actioned? If so, please provide details.

55. I have been asked whether there were, to my knowledge, occasions whereby HTC proposals were not being actioned. I have no direct knowledge prior to commencing my consultant post in 2010. I was advised by my predecessors that mechanisms for achieving mandatory training were a challenge, but that high use specialties (eg. anaesthetics, cardiovascular surgery, Accident and Emergency, obstetrics, haematology, oncology and paediatrics) had individual training.

Haemoglobin level

25. A Scottish Working Group on Blood and Blood Products in 1992 [SCGV0000004_007] noted that patients with a haemoglobin count of <10 g/d would require a blood transfusion. However, in the SHOT annual report 2005 [SHOT0000013] it states that, 'In general, the published data indicates that in adults, red cell transfusions will usually be required when the haemoglobin level is <6 g/dl, and will rarely be required when it is >10 g/dl. Comparative studies in adults with haemoglobin levels within the range of 6 - 10 g/dl have not shown red cell transfusions to improve outcome in surgical and intensive-care-unit (ICU) patients'. What did the HTCs understand to be the level at which a patient required transfusion and how did this change over time? Was guidance provided to clinicians at the time, and updated guidance once the HTCs became aware of any clinical change?

56. With regard to the thresholds for patients requiring transfusion, this is set out in the 2005 Red Cell Transfusion guidelines [WITN7039036]. The minutes of the HTC meeting on 4 March 2002 also identify intensivist agreement to the proposed thresholds in 2001. The threshold changed from 10g/l to 8g/l in 2009 in

relation to myocardial infarction. I exhibit to this statement the later Red Cell Transfusion Guidelines:

a. 2009 [WITN7039060]
b. 2014 [WITN7039061]
c. 2015 [WITN7039062]
d. 2018 [WITN7039063]
e. 2020 [WITN7039064]

26. The enclosed article 'Reducing red blood cell transfusion in elective surgical patients: the role of audit and practice guidelines' by Mallet et al published in Anaesthesia (2000) reports on a study that found that 'haemoglobin was measured infrequently prior to transfusion and the main 'trigger' for transfusion was an estimated blood loss of 500 ml' [NHBT0086594_003] (p1). The article adds that 'many clinicians continue routinely to transfuse to haemoglobin levels >10 g/dl despite little scientific evidence to support this practice' (p2). Please address the following:

a. Did the HTCs hold any discussions about the frequency of monitoring haemoglobin levels? If so, please provide details and outcomes of any discussions.

b. To the best of your knowledge, were the HTCs aware of excessive or unnecessary transfusion within the Hospitals? If so, please provide details, including any guidance provided to clinicians.

57. With regard to the document [NHBT008694_003] (question 26), the guidelines which would have been agreed by the HTC include detail of thresholds in the red cell guidelines from 2003 and frequency of blood tests and transfusion triggers in the Massive Blood Loss guideline 2003. In addition to the change in threshold from 10g/l to 8g/l associated with myocardial infarction in 2009, a threshold of 7g/l was documented for ICU patients in the 2009 guidelines. The guidelines documented to reassess after each unit. The minutes of the HTC are available to

review discussions. The 2015 Red Cell guidelines included in the single unit policy the need to assess clinically and recheck haemoglobin levels.

58. The HTC monitored blood use by auditing, for example, FFP. Any requests for blood and blood components outside of accepted guidance was flagged to duty haematologist for appropriate discussion since whether a transfusion is excessive or unnecessary requires individual consideration. If a patient was felt to have excess transfusion an incident report might have been completed and investigated. Cardiac anaesthetists were provided with individual reports highlighting variation in practice.

27. Were the HTCs provided with guidance from the Department of Health, National or Regional Transfusion Committee concerning haemoglobin levels and transfusion? If so, what was this guidance?

Autologous transfusion

28. The Inquiry understands that autologous transfusion was considered suitable for some patients and that it avoided 'infections which may be transmitted by a blood transfusion', as per the guidelines for autologous transfusion, written by the British Society for Haematology and the British Blood Transfusion Society [BWCT0000088]. Please explain:

a. What discussions the HTCs had about the use of autologous transfusions; and

b. Any considerations given to the perceived risks, benefits, suitability and cost implications of autologous transfusion.

59. In respect of autologous transfusions, the HTC put in place several mechanisms for autologous transfusions: pre-deposit, acute normovolaemic haemodilution, cell salvage and post operative recycling. The cost of autologous transfusions was not a consideration (as can be seen by the HTC Minutes), but the risks and

benefits of autologous transfusion, as well as the infrastructure, were regularly discussed. In addition, the minutes refer to auditing cell salvage use in elective surgery and actions taken thereafter.

29. In 'Guidelines for autologous transfusion. Pre-operative autologous donation', written by the British Committee for Standards in Haematology Blood Transfusion Task Force [BSHA0000017_021], the guidelines support predeposit autologous transfusion services within hospitals. In light of this, did the HTCs provide policy guidance to clinicians and hospital staff concerning autologous transfusions? If so, what was this guidance? If guidance was not provided, please explain why.

30. Were the HTCs provided with guidance from the Department of Health, National or Regional Transfusion Committee concerning the use of autologous transfusion? If so, what was this guidance?

60. In response to questions 29 and 30 of the Rule 9 request.

61. The HTCs provided policy guidance to clinicians and hospital staff in respect of autologous transfusions. Exhibited to this statement are the "Policy for the acceptance of patients for pre-operative deposit autologous donation (PAD)" dated 2003 [WITN7039065] and the patient information leaflet "Giving your own blood for your operation" [WITN70390656].

62. The Health Service Circular "Better Blood Transfusion" dated 2002 asked the Chief executives of NHS Trusts working with clinicians and HTC and Teams to review and explore the use of effective alternatives to donor blood and the appropriate use of autologous blood by April 2003. This programme of work commenced in 2003, pre-autologous donated (PAD) transfusion however ceased in 2005 due to the EU directive and NBTC and NBS positions. Cell salvage continued.

'Massive Transfusion'

31. What is the HTCs understanding of massive transfusion, including number of units and type of blood components? In what circumstances would massive transfusion be provided to patients?

63. GSTT has had guidance in respect of "massive transfusion" "massive haemorrhage" issued in 2003 [WITN7039026] and 2005 [WITN7039040]. The current guidelines are exhibited at WITN7039066: Blood Transfusion Manual – Major Bleeding Policy (2021). As stated above, this guidance was available to all clinicians on the intranet and (from 2005) on the wards as a hard copy.

32. What discussions did the HTCs have in relation to incidents requiring massive transfusion? What process was followed after such an incident to assess the need for massive transfusion?

64. A log / audit of all major haemorrhages and blood response times is reported to the HTC. Any incident reported in relation to massive haemorrhage is also investigated by the transfusion team in conjunction with the clinical team in accordance with Trust governance and external reporting requirements. There were massive haemorrhage audits local and national. The national comparative audit 2018 is exhibited to this statement at WITN70390668.

33. Did the HTCs provide policy guidance to clinicians and hospital staff concerning massive transfusions? If so, what was this guidance? If guidance was not provided, please explain why.

34. Were the HTCs provided with guidance from the Department of Health, National or Regional Transfusion Committee concerning the use of massive transfusion? If so, what was this guidance?

65. In addition, the HTC was provided with the NPSA Rapid Response Report regarding emergency transfusion and supporting information. I exhibit to this statement a copy of the NPSA Rapid Response Report: Transfusion of blood and blood components in an emergency dated October 2010 [WITN7039069], and supporting information [WITN7039070] and the subsequent GSTT Guideline: Massive Blood Loss and the Use of Recombinant Factor VIIa (NovoSeven) dated 2011 [WITN7039071].

Fresh Frozen Plasma ("FFP")

35. What discussions did the HTCs have about the use of FFP transfusions?

36. Please outline any considerations given to the perceived risks, benefits and cost implications of FFP transfusions.

37. Did the HTCs provide policy guidance to clinicians and hospital staff concerning the use of FFP transfusions? If so, what was this guidance? If guidance was not provided, please explain why.

38. Were the HTCs provided with guidance from the Department of Health, National or Regional Transfusion Committee concerning the use of FFP transfusions? If so, what was this guidance?

66. In response to questions 35 to 38 of the Rule 9 request.

67. In respect of FFP transfusions, there were local and national FFP audits which would have been reviewed at the HTC meetings and discussed. The minutes of the meetings are exhibited at WITN7039013. I exhibit to this statement a copy of the National Comparative Audit of the Use of Fresh Frozen Plasma dated

February 2009 [WITN7039072] and the National Comparative Audit of Blood Transfusion: 2018 – Audit of the use of Fresh Frozen Plasma, Cryoprecipitate and of Transfusions for bleeding in neonates and children [WITN7039073]. The minutes of the HTC meetings demonstrate that the risks and benefits of FFP were considered as well as being considered in the guidelines. The cost of the use of FFP was not a factor in the use or otherwise of FFP.

68. Guidance with regard to the use of FFP has been provided to the clinicians. Please see the exhibit WITN7039043, the 2005 guidance. In addition, the HTC was provided with guidance from the Department of Health and RTC in the form of the Better Blood Transfusion guidance. In addition, GSTT noted the SHOT reports suggesting that FFP transfusion was associated with risks, for example of Transfusion Related Acute Lung Injury ("TRALI").

Platelets

39. What discussions did the HTCs have about the use of platelet transfusions?

40. Please outline any considerations given to the perceived risks, benefits and cost implications of platelet transfusions.

69. In response to questions 39 and 40 of the Rule 9 request.

70. In respect of platelet transfusions, these were monitored using local and national audits. I exhibit to this statement the 2010 Re-audit of the Use of Platelets in Haematology dated April 2011 [WITN7039074]. Requests for platelets that were deemed to be potentially inappropriate were referred by the laboratory to a duty haematology clinician. The risks and benefits of platelet transfusions are referred to in the 2005 guidelines [WITN7039043]. The cost of the use of platelets was not a factor in the use or otherwise of platelets. In addition to the guidelines

provided, cardiac anaesthetists (who were noted to be high users of platelets) were provided with individual peer comparative data and audits were further conducted in haematology as a further high user of platelets.

41. Did the HTCs provide policy guidance to clinicians and hospital staff concerning the use of platelet transfusions? If so, what was this guidance? If guidance was not provided, please explain why.

42. Were the HTCs provided with guidance from the Department of Health, National or Regional Transfusion Committee concerning the use of platelet transfusions? If so, what was this guidance?

71. In response to questions 41 and 42 of the Rule 9 request.

72. Guidance in relation to platelet transfusions was referred to in the Better Blood Transfusion documents and in the SHOT reports. Furthermore, the RTC had a platelet working group to discuss the use of platelet transfusions.

Single-unit transfusion

Please consider the enclosed documents [DHSC0035471] and [DHSC0025270] on the use of single-unit transfusions of blood in the UK.

43. What discussions did the HTCs have about the use of single-unit transfusions?

44. Please outline any considerations given to the perceived risks, benefits and cost implications of single-unit transfusions.

73. In response to questions 43 and 44 of the Rule 9 request.

74. Insofar as single unit transfusions are concerned, the red cell guidelines include a section relating to single unit transfusions. These guidelines were prepared with consideration by the HTC. Furthermore, the policy was rolled out in 2015 which was supported by the HTC. The risks and benefits of single use transfusions were discussed by the HTC and can be viewed in the minutes of the HTC meetings. The cost of the use of single unit transfusion was not a factor in the use or otherwise of single unit transfusion.

45. Did the HTCs provide policy guidance to clinicians and hospital staff concerning the use of single-unit transfusions? If so, what was this guidance? If guidance was not provided, please explain why.

75. The HTC has provided guidelines to the clinicians in respect of single use transfusions. These have been exhibited to this statement as WITN7039036, WITN7039063, WITN7039064, and WITN7039065.

46. Are you aware of any instances or periods of time in which the HTCs became aware of concerns about unnecessary or excessive single-unit blood transfusions? If so, please explain in as much detail as you are able to recall, including how and why unnecessary transfusions were provided?

76. To my knowledge, there have been no specific instances or periods when there was an unnecessary or excessive single unit transfusion. There have been occasions when patients have had excessively high haemoglobin levels after a transfusion which have been investigated internally. However, I do not recall an instance when there was an unnecessary or excessive single unit transfusion.

47. Single-unit transfusions are described in [DHSC0025270] as a 'waste of resources' (p3). To the best of your knowledge, did the HTCs have specific views on the use of single-unit transfusion in relation to potential waste and did this change over time? Please explain your answer.

48. Were the HTCs provided with guidance from the Department of Health, National or Regional Transfusion Committee concerning the use of single-unit transfusions and/or two-unit transfusions? If so, what was this guidance?

77. In response to questions 47 and 48 of the Rule 9 request.

78. I understand that single use transfusions have been described as being a "waste of resources". This is not the GSTT's experience. In 2015, the HTC supported a single unit transfusion policy with a campaign, which included a reminder in respect of single platelet transfusions. The HTC was provided with guidance from the Department of Health and RTC concerning the use of single unit / two unit transfusions. This guidance is referred to in the HTC meeting minutes [WITN7039018].

49. A report on the 'Audit of Medical Input in the Blood Transfusion Services' produced by Scottish National Blood Transfusion Service on 27 June 1990 [SBTS0000685_088] states that a 'special emphasis' was placed on the review of single-unit transfusions. Were audits conducted about the practice of single-unit transfusions by, or under the auspices of, the HTCs? If so, please describe the nature of them and any conclusions drawn. If possible, please provide copies of the audit reports.

79. I have been asked whether there were audits in or around 1990 about single unit transfusions. I am unable to comment on audits in 1990. Audit of single use transfusion would have been included in red cell and platelet audits.

Red blood cell concentrates

50. What discussions did the HTCs have about the use of red blood cell concentrate in transfusions, specifically in relation to use of red cell concentrates in place of whole blood or other blood components?

51. Please outline any considerations given to the perceived risks, benefits and cost implications of red blood cell concentrate transfusions.

52. Did the HTCs provide policy guidance to clinicians and hospital staff concerning the use of red blood cell concentrate transfusions? If so, what was this guidance? If guidance was not provided, please explain why.

80. In response to questions 50 to 52 of the Rule 9 request.

81. The minutes of the HTC meetings [WITN7039018] refer to the use of red blood cell concentrates in transfusions both generally and specifically in respect of the use of red blood cell concentrates in place of whole blood or other blood components. These discussions included the risks and benefits of red blood cell concentrate transfusions. The cost of the use of red blood cell transfusion was not a factor in the use or otherwise of red blood cell transfusion.

53. Were the HTCs provided with guidance from the Department of Health, National or Regional Transfusion Committee concerning the use of red cell concentrates? If so, what was this guidance?

54. To the best of your knowledge, were there any specialty uses of red cell concentrate, platelets and/or FFP that lead to an adverse reaction that required investigation? Please provide details. You may want to refer to [NHBT0090084] for assistance.

82. In response to questions 53 and 54 of the Rule 9 request.

83. Guidance was provided to clinical staff and has been exhibited to this statement. The HTC was provided with guidance from the Department of Health and RTC concerning the use of red blood cell concentrates. This guidance is referred to in the HTC meeting minutes [WITN7039018].

84. To my knowledge, all adverse incidents were investigated, discussed in the HTC meetings as appropriate and actioned accordingly.

55. In relation to red blood cell concentrates:

a. Were attempts made to persuade clinicians to increase their usage of red blood cell concentrates in transfusions during the 1970s and 1980s?

b. To the best of your knowledge, did the Hospitals come under pressure during the 1970s and 1980s to increase usage of red blood cell concentrates? If so, where did this pressure come from?

c. According to [HSOC0020283], British clinicians had a "traditional preference" for the use of whole blood in comparison with other countries. Is this an accurate representation of the position? Were the HTCs aware of why whole blood transfusions were preferred over red blood cell concentrates during the 1970s and 1980s?

85. I have been asked about attempts to persuade clinicians to increase the use of red blood cell concentrates in transfusions in the 1970s – 1980s, whether the hospital came under pressure during the 1970s / 1980s to increase the usage of red blood cell concentrate and whether the HTCs were aware of why whole blood transfusions were preferred over red blood cell concentrate at this time. The GSTT HTC was not established until the late 1990s. I am unable to comment, and have been unable to find any documentation, in respect of any pressure on either clinicians or the hospital during the 1970s – 1980s.

Fresh Warm Blood

The Inquiry has received evidence that on some occasions when a blood transfusion was needed urgently, fresh warm blood donated by hospital staff or other local authorities was administered to patients. Please address the following:

56. What discussions did the HTCs have about the use of fresh warm blood in transfusions?

57. Please outline any considerations given to the perceived risks, benefits and cost implications of fresh warm blood transfusions.

58. Did the HTCs provide policy guidance to clinicians and hospital staff concerning the use of fresh warm blood transfusions? If so, what was this guidance? If guidance was not provided, please explain why.

59. Were the HTCs provided with guidance from the Department of Health, National or Regional Transfusion Committee concerning the use of fresh warm blood transfusions? If so, what was this guidance?

86. In response to questions 56 to 59 of the Rule 9 request.

87. I have been asked about the use of fresh warm blood donated by hospital staff. To my knowledge, fresh whole blood transfusions were not used at GSTT. Consequently, I am not aware of any guidance in respect of fresh warm blood either within GSTT or provided by the Department of Health or other agencies.

Section 4: Knowledge of risk

60. Please outline any discussions held during the course of the HTCs meetings regarding the knowledge of risks of viral infection associated with

blood transfusion. What were the sources of this knowledge and how did this knowledge and understanding develop over time?

61. What, if any, enquiries and/or investigations did the HTCs carry out, or cause to be carried out, in respect of the risks of the transmission of viral infections through blood transfusion? If applicable, what information was obtained as a result?

88. In response to questions 60 and 61 of the Rule 9 request.

89. Risks associated with transfusion were a regular topic of discussion at HTC meetings. The minutes [WITN7039018] provide a record of these discussions. The sources of the information which also provided a point of discussion at the meetings came from varieties of information, including the scientific press, national health circulars, Better Blood Transfusion circulars and SHOT reports.

62. What decisions and actions were taken by the HTCs to minimise or reduce exposure of your patients to viral infection from blood transfusions?

90. The Terms of Reference of the HTC included the safe and appropriate use of blood and blood products. Patients who developed signs of viral infection following a transfusion would have been investigated and treated – any relevant learning would have been discussed within GSTT and within the HTC meetings. The HTC put in place the guidelines, audits, education and assessment of incidents (please see the minutes of HTC meetings at WITN7039018).

63. Did the HTCs provide policy guidance to clinicians and hospital staff concerning the transmission of viral infections through blood transfusion? If so, what was this guidance? If guidance was not provided, please explain why.

64. Do you consider that the HTCs' decisions and actions, and the steps taken at the Hospitals, in response to any known or suspected risks of infection were adequate and appropriate? If so, why? If not, please explain what could or should have been done differently.

65. Please outline any discussions by the HTCs concerning particular blood components or transfusion methods that carried a higher risk of viral infection. If applicable, what action was taken or guidance implemented as a result?

91. In response to questions 63 to 65 of the Rule 9 request.

92. Guidance specifically dedicated to risk of viral infections was not provided. However all guidance was aimed at reducing inappropriate and excessive transfusion. Information concerning risks of viral infection was provided in policies and in presentations concerning the successive SHOT reports which documented this for the UK. I cannot comment on all decisions made and/or action taken by the HTC. However, I understand that all decisions and the basis for making those decisions are included in the HTC meeting minutes. The HTC discussed the annual SHOT Reports and data relating to the risk of specific components and recommendations from SHOT reports were assessed against local practice which would then be modified as required. The minutes of the HCT meetings of exhibit WITN7039018 record the discussions had in this regard.

Section 5: Reporting and audits

66. Did the Hospitals have any procedures in place to ensure patients reported any adverse reactions or symptoms following a blood transfusion? If so, please explain:

a. What procedure did the Hospitals have in place?

b. Did this procedure extend to a time after a patient had been discharged from Hospitals?

c. Were patients asked to report any adverse reactions or symptoms within a certain timeframe?

d. If clinicians were informed and/or became aware of a patient having suffered any adverse reactions or symptoms, who were they required to report this to?

e. Was there any mechanism for the Hospitals to report any adverse reactions or symptoms to the Regional Transfusion Centre?

f. In the event of a patient's death after receiving a blood transfusion, what process was followed? Specifically, please address the position in relation to the registration of the death and/or any consideration of what was recorded on the death certificate.

93. GSTT had a procedure in place which formed part of the consent process, referred to at paragraph 106 below, to ensure that patients reported any adverse reactions or symptoms following a blood transfusion. This also formed part of the discharge summary and patients were asked to report any adverse reactions or symptoms up to 14 days following the transfusion.

94. If an adverse reaction or symptom was reported, a clinical incident would be reported and the laboratory, haematology registrar, consultant or transfusion team would be informed. In the event of a bacterial contamination, TRALI (transfusion related acute lung injury) or a potential post transfusion transmitted infection, there would be a discussion with the NHSBT consultant on call and the necessary recall paperwork and return of any products or testing would be followed. This would be followed by a letter of response from NHSBT. The actions to be taken would follow the exhibited data sheet [WITN7039075].

95. Unfortunately, many patients die having received a blood transfusion. However, if the blood transfusion was regarded as the cause of death and/or if there is a

failure to provide timely blood to a patient with a life threatening need, this would be noted through the hospital's governance/duty of candour process and discussed with the Coroner as required. There was not a specific policy for blood transfusion in this regard.

67. Please explain whether and how the HTCs reported suspected transfusion-transmitted infections to their supplying blood centre prior to SHOT being established.

68. What impact did the launch of SHOT have on the process of reporting? How did the HTCs ensure that (a) all reportable events were reported to the HTCs and (b) all reportable events were reported to SHOT?

96. In response to questions 67 and 68 of the Rule 9 request.

97. I cannot comment on how and when the HTC would have reported suspected transfusion transmitted infections to the supplying blood centre prior to SHOT being established. This is because the national SHOT initiative was already in place prior to myself and my predecessors being established in post. However, the process for reporting to SHOT when it has been established is as follows.

69. In light of the Recommendations on the Hospital's and Clinician's Role in the Optimal Use of Blood and Blood Products, by the European Health Committee [NHBT0001504], did the process of reporting adverse reactions change over time?

98. The Trust transfusion policy states that any near misses or errors at any stage of the transfusion process are reported via the Trust's incident reporting mechanisms so that lessons are learnt. In addition, all incidents, near misses and serious reactions should be discussed immediately with the transfusion team including the laboratory if they have been implicated. Following investigation,

serious adverse events and serious adverse reactions are reported by the transfusion practitioner team to SHOT and the MHRA (Medicines and Healthcare products Regulatory Agency) via the online SABRE (Serious Adverse Blood Reactions and Events) reporting system (reporting to the MHRA is a legal requirement). Root cause analysis is carried out for all serious incidents reportable to SHOT or the MHRA. Incident discussions are a standing agenda item on the Hospital Transfusion Team (HTT) meetings held once a month and a trend review of transfusion related incidents is presented at the Hospital Transfusion Committee (HTC) held quarterly which feeds directly to the Trust Risk and Quality Committee (TRAC).

70. How was transfusion practice, blood usage and blood wastage audited by the HTCs? Did this change over time?

99. Transfusion practice, blood usage and blood wastage was audited by the HTC through a local and national comparative audit. As would be expected, practice did fluctuate over time. For example, as a Trust, GSTT was an outlier for the use of O negative blood as a result of the very high number of sickle cell anaemia patients treated in our units. These patients on regular exchange blood transfusions are regularly assessed.

71. Under what circumstances were external and internal audits conducted? How often were internal and external audits conducted by the HTCs from the date the HTCs were established?

100. Please refer to my answer to question 70.

72. Did the HTCs record any information regarding the volume or number of transfusions that occurred in the Hospitals on an annual or cumulative basis? If so, please explain what information this consisted of and how it was recorded.

73. If the HTCs did record any information on the volume or number of transfusions as described in your answer to question 72 above, was this information ever reported or disseminated to any other institution or body? If so, please explain the reporting process involved.

74. Were audits specifically conducted in relation to the use of:

- ***a. FFP;***
- ***b. red blood cell concentrate;***
- ***c. platelets;***
- ***d. massive transfusions; and/or***
- ***e. autologous transfusion.***

If audits were not conducted, why not? [NHBT0090084] may be of assistance.

75. Did the HTCs ever have to take corrective action as a result of an audit relating to blood transfusion practice? If so, what was the process for corrective action and what was the result? Please provide details.

101. In response to questions 72 to 75 of the Rule 9 request.

102. The Blood Transfusion Policy 2012 outlines the monitoring and assurance of the Transfusion policy [WITN7039076]. Furthermore, a demand management report including all blood wastage and usage and can be broken down per directorate for all transfusions would have been provided to at each HTC meeting. In addition, audits were conducted (and have been exhibited to this statement) in respect of the number of transfusions generally, and more specifically in respect of FFP, red blood cell concentrate, platelets, massive transfusions and autologous transfusions. Where appropriate, corrective action in terms of dissemination of audit results, putting in place measures within the laboratory to question apparently inappropriate requests and then clinical

referral. In addition, cardiac anaesthetists were also provided with individual peer ranked reports.

103. Please also refer to my answer to question 70.

Section 6: Treatment of patients

Provision of information to patients

76. What discussions, if any, did the HTCs have about providing patients at the Hospitals with information about the risks of infection in consequence of treatment with blood?

77. What discussions, if any, did the HTCs have about providing patients at the Hospitals with information about the risks of infection in consequence of treatment with blood?

78. An audit of transfusion practice across the United Kingdom by the Royal College of Physicians in 1998 [NHBT0042247] indicated that none of the participating 47 hospitals required informed consent for blood transfusions. In light of this, were the HTCs aware if patients under the care of the Hospitals were treated with blood transfusions without their express or informed consent? If so, how and why did this occur?

79. Did the HTCs issue guidance to clinicians and hospital staff on informed consent for blood transfusions? If so, please explain when this guidance was introduced, what this guidance was and whether this changed over time.

104. In response to questions 76 to 79 of the Rule 9 request

105. The HTC meeting minutes note the discussions had about providing patients at GSTT with information about the risks of infection following treatment with blood [WITN7039018]. These discussions would have been had by clinicians as part of the usual consenting process (and documented accordingly). In addition, there were patient information leaflets to be given before the transfusion or, where patients were unable to consent (for example due to being unconscious in an emergency situation, leaflets would have been provided in retrospect.

106. I cannot comment as to whether HTCs were aware if patients were treated with blood transfusions without express or informed consent. However, I can confirm that guidance with regard to consent specifically in respect of the use of blood and blood products has been issued to clinicians and is contained within the 2005 Blood Transfusion Policy (exhibited to this statement at SR11). In 2012 the Guidelines were updated in line with the Advisory committee on the safety of blood tissue and organs ("SABTO") recommendations.

Section 7: vCJD

80. When and in what circumstances did the HTCs become aware of the risks of transmission of vCJD associated with the use of blood transfusions? Please outline any discussions held by the HTCs and explain how the HTCs' knowledge developed over time. You may be assisted by [BART0000554] and [DHSC0041442_171].

107. I cannot comment as to when and in what circumstances the HTCs became aware of the risks of transmission of vCJD associated with the use of blood transfusions. I understand that the risks became known before 2000 and, as I have indicated at paragraph 11, above, no formal HTC documentation is available prior to May 2000. To my knowledge, however, the awareness of the specific risk of transmission of vCJD would have been through standard communication rather than any other route. In terms of minimising the risk of

vCJD transmission, the HTC supported the avoidance of transfusion where possible and, where not possible, the transfusion would have been minimised to that which was medical appropriate.

81. Please outline the extent to which the HTCs were involved in assessing and managing the risk of vCJD transmission by blood transfusion.

108. The HTC was updated with regards to risk reduction measures related to the GSTT site Trust blood banks and transfusion for vCJD. The changes, policies and guidance related to the Trust blood banks and transfusion have been implemented. The risk reduction measures included:

    a. Use of leucodepleted blood components provided by NHSBT
    b. For those born after 1995 use of plasma imported from those countries where the risk was lower, and for some indications, the use of single donor ('apheresis') platelets.

109. Since 2004, plasma for transfusion to those born on or after 1st January 1996 was obtained from outside of the UK.

82. Please confirm if policies, guidance, standards, or protocols were formulated at the HTCs at the Hospitals with regard to the transfusion of vCJD. If so, please describe what these were. You may be assisted by [NHBT0001719].

110. The minutes of the meeting on 17 November 2003 include notification from the National Blood Service: "*From January 2004 the NBS will not be issuing British FFP for patients born after 1st January 1996. The plasma will be imported from the USA and will be group specific. This may have storage implications for this Trust.*" [WITN7039077].

111. The guideline exhibited as WITN7039043 includes the following statement: "*FFP is indicated for the replacement of clotting factors when no virally inactivated or recombinant factor is available. This is a human blood component, which is screened for transmissible agents but is not virally inactivated, with the exception of FFP for patients up to the age of 16 years which is Methylene Blue treated (viral inactivation) and sourced from the USA.*"

112. In addition, the change from MB-FFP to Octaplas (SD-Plasma) in 2010 was minuted in the HTC minutes of the meeting dated 14 June 2010 [WITN7039078]. I also exhibit to this statement the Standard Operating Procedure (SOP) for Safe Transfusion Practice dated March 2012 [WITN7039079], and the related change control form [WITN7039080].

113. Since 2005, provision of platelets collected from a single donor by apheresis for transfusion for children under 16; extended in 2013, to those born on or after 1st January 1996. The minutes of the HTC meeting on 6 June 2005 document the extension of MB-plasma to all children under the age of 16 [WITN7039081]. Previously this had been for patients born after 1996 only. The minutes also include that for the same group of patients the use of single donor derived platelets is suggested.

83. Did the HTCs have involvement in decisions as to what information should or would be provided to patients about vCJD? If so, please answer the following:

a. What steps were taken/put in place by the HTCs for informing patients about the risks of or possible exposure to vCJD before transfusion?

b. What steps were taken/put in place by the HTCs for informing patients about the risks of or possible exposure to vCJD after transfusion (for example emergency situations)?

You may be assisted by BART0002418, NHBT0001123_002, HCDO0000643

114. In respect of informing patients of the risk of vCJD, patients would have been provided by nationally approved patient information leaflets providing information about the risks of blood transfusions to include reference to vCJD.

Section 8: Look back

84. Were the HTCs ever involved in establishing the policy or procedure to be followed in any lookback exercise relating to blood transfusions? If so, please set out or provide a copy of the relevant policy or procedure.

85. What actions or decisions were taken by the HTCs at the Hospitals as part of the HCV 'look back' programme that commenced in 1995 to trace those infected with HCV through the use of blood transfusions?

86. What were the major obstacles that the Hospitals faced when attempting to undertake the HCV lookback?

115. In response to questions 84 to 86 of the Rule 9 request.

116. To my knowledge, the HTC was not involved in a "look back" exercise. If the HTC had been asked to complete a "look back" exercise, this would have been done. The minutes to the HTC meetings are exhibited to this statement as WITN7039018. I am therefore unable to comment on any actions / decisions taken by the HTC as part of the lookback programme in 1995 (noting that the GSTT HTC was not established in 1995) and/or any major obstacles faced by the hospital / HTC in this regard.

Section 9: Other

87. Please provide any further comment that you wish to provide about matters of relevance to the Inquiry's Terms of Reference.

88. In addition to any documents exhibited in support of your statement, the Inquiry would be grateful to receive copies of any potentially relevant documents you possess relating to the issues addressed in this letter.

117. In response to questions 87 and 88 of the Rule 9 request.

118. I have no further comments to make and believe that I have provided the inquiry with all relevant documentation.

Statement of Truth

I believe that the facts stated in this witness statement are true.

Signed GRO-C

Dated 19/5/22

Table of exhibits:

Date	Notes/ Description	Exhibit number
2010	Job Description: Consultant post	WITN7039002
9 May 2000	07th HTC meeting 09.05.00	WITN7039003
7 January 2014	GSTT 2- 58th HTC Meeting Minutes (final) 07.01.14	WITN7039004
11 December	Health Service Circular : Better Blood	WITN7039005

1998	Transfusion	
20 September 2021	81st HTC meeting minutes	WITN7039006
November 2018	Infection Prevention & Control Policy Chapter 33: Management of patients with (or at risk of) Transmissible Spongiform Encephalopathies (v4.0)	WITN7039007
November 2020	Management of Patients Refusing Blood Transfusion Including Jehovah's Witness Patients (v7)	WITN7039008
30 October 2018	Use of erythropoietin (EPO) therapy in adult Jehovah's Witness patients (and other patients who cannot be transfused) to prevent post-operative anaemia and treat symptomatic anaemia (v4.0)	WITN7039009
22 August 2019	Blood Transfusion Manual: Tranexamic acid use to reduce surgical blood loss (v2.0)	WITN7039010
2002	HTC Terms of Reference	WITN7039011
2008	HTC Terms of Reference	WITN7039012
June 2014	HTC Terms of Reference	WITN7039013
2021	HTC Terms of Reference	WITN7039014
09 November 2006	'Right Patient, Right Blood' from SHOT	WITN7039015
November 2005	Blood Transfusion Policy	WITN7039016
November 2020	Blood Transfusion Policy	WITN7039017

Undated	Schedule of HTC Meeting Minutes (2000-2021)	WITN7039018
16 September 2001	15th HTC meeting minutes	WITN7039019
7 March 2005	25th HTC meeting minutes	WITN7039020
January 2003	Clinical Guidance Summary Sheet: Policy for the acceptance of patients for pre-operative deposit autologous donation (PAD)	WITN7039021
2002	Clinical Guidance Summary Sheet: Clinical guidelines for the use of CMV negative blood components	WITN7039022
2002	Clinical Guidance Summary Sheet: Clinical guidelines for the use of FFP and cryoprecipitate	WITN7039023
2002	Clinical Guidance Summary Sheet: Clinical guidelines for the use of irradiated blood products	WITN7039024
2003	Clinical Guidance Summary Sheet: Guidelines for the management of care for Jehovah's Witness undergoing elective surgery	WITN7039025
2003	Clinical Guidance Summary Sheet: Clinical Guidelines for Massive Blood Loss	WITN7039026
2002	Clinical Guidance Summary Sheet: Maximum Surgical Blood Ordering Schedule	WITN7039027
2002	Clinical Guidance Summary Sheet: Platelet transfusion clinical guideline	WITN7039028
2003	Clinical Guidance Summary Sheet: Clinical Guidelines for the Management of Acute	WITN7039029

	Transfusion Reaction	
August 2003	Clinical Guidance Summary Sheet: Clinical Guidelines for Red Cell Transfusion	WITN7039030
August 2003	Clinical Guidance Summary Sheet: Guidelines for sample labelling requirements for Blood Transfusion samples	WITN7039031
2005	GSTT Clinical Areas	WITN7039032
November 2005	Administration of Blood Components – checking the prescription and informed consent	WITN7039033
September 2005	Use of Irradiated Blood Components	WITN7039034
September 2005	Use of Cytomegalovirus negative blood components	WITN7039035
September 2005	Red Cell Transfusion: Indications for Transfusion	WITN7039036
September 2005	Platelet Transfusion Clinical Guidelines	WITN7039037
September 2005	Blood Transfusion for Children and Neonates	WITN7039038
November 2005	Maximum Surgical Blood Ordering Schedule	WITN7039039
October 2005	Clinical Guideline for Massive Blood Loss	WITN7039040
September 2005	Management of Jehovah's Witness patients (or others who are not able to receive blood transfusion) undergoing elective surgery	WITN7039041
September 2005	Management of Acute Transfusion Reaction	WITN7039042
September 2005	Use of Fresh Frozen Plasma and Cryoprecipitate	WITN7039043
July 2005	Crash Blood Alert Request	WITN7039044

September 2005	Blood Transfusion Sample Labelling Requirements	WITN7039045
June 2006	Anti-D Prophylaxis Guideline	WITN7039046
21 November 2000	9th HTC meeting minutes	WITN7039047
4 March 2002	14th HTC meeting minutes	WITN7039048
July 2009	Blood Transfusion Policy	WITN7039049
November 2005	Adult and Paediatric Maximum Surgical Blood Order Schedules	WITN7039050
October 2006	Blood Component and Product Support for Haemato-indicators Patients (2008)	WITN7039051
February 2019	Paediatric Thalassaemia Guidelines	WITN7039052
February 2019	Non transfusion dependent Thalassaemia (NTDT) Guidelines on diagnosis and management	WITN7039053
January 2019	Sickle Cell Disease Adult Guidelines	WITN7039054
22 August 2000	8th HTC meeting minutes	WITN7039055
3 September 2001	12th HTC meeting minutes	WITN7039056
3 December 2001	13th HTC meeting minutes	WITN7039057
13 February 2001	10th HTC meeting minutes	WITN7039058
5 June 2001	11th HTC meeting minutes	WITN7039059

August 2009	Red Cell Transfusion Guideline	WITN7039060
August 2014	Red Cell Transfusion Guideline	WITN7039061
May 2015	Red Cell Transfusion Guideline	WITN7039062
May 2018	Red Cell Transfusion Guideline	WITN7039063
November 2020	Red Cell Transfusion Guideline	WITN7039064
January 2003	Policy for the acceptance of patients for pre-operative deposit autologous donation (PAD)	WITN7039065
2001	"Giving your own blood for your operation": Patient Information Leaflet	WITN7039066
1 May 2021	Blood Transfusion Manual – Major Bleeding Policy	WITN7039067
2018	National Comparative Audit of Blood Transfusion: 2018 Audit of the Management of Major Haemorrhage	WITN7039068
October 2010	NPSA Rapid Response Report: Transfusion of blood and blood components in an emergency	WITN7039069
October 2010	NPSA Rapid Response Report: Transfusion of blood and blood components in an emergency (Supporting information)	WITN7039070
September 2011	Guideline: Massive Blood Loss and the Use of Recombinant Factor VIIa (NovoSeven)	WITN7039071
February 2009	Audit of the use of Fresh Frozen Plasma	WITN7039072
2018	National Comparative Audit of Blood Transfusion: 2018 – Audit of the use of Fresh Frozen Plasma,	WITN7039073

	Cryoprecipitate and of Transfusions for bleeding in neonates and children	
April 2011	Re-Audit of the use of Platelets in Haematology	WITN7039074
2012	Datasheet: Recall Reason Information for Hospitals	WITN7039075
August 2012	Blood Transfusion Policy	WITN7039076
17 November 2003	20th HTC meeting minutes	WITN7039077
14 June 2010	46th HTC meeting minutes	WITN7039078
March 2012	SOP for Safe Transfusion Practice	WITN7039079
9 August 2010	SOP for Safe Transfusion Practice: Change Control Form	WITN7039080
6 June 2005	26th HTC meeting minutes	WITN7039081
16 December 2002	16th HTC meeting minutes	WITN7039082
28 April 2003	17th HTC meeting minutes	WITN7039083
11 August 2003	18th HTC meeting minutes	WITN7039084
11 August 2003	19th HTC minutes (duplicate)	WITN7039085
9 February 2004	21st HTC meeting minutes	WITN7039086
10 May 2004	22nd HTC meeting minutes	WITN7039087
13 September 2004	23rd HTC meeting minutes	WITN7039088
13 December	24th HTC meeting minutes	WITN7039089

2004		
12 October 2005	27th HTC meeting minutes	WITN7039090
19 December 2005	28th HTC meeting minutes	WITN7039091
27 March 2006	29th HTC meeting minutes	WITN7039092
3 July 2006	30th HTC meeting minutes	WITN7039093
18 September 2006	31st HTC meeting minutes	WITN7039094
4 December 2006	32nd HTC meeting minutes	WITN7039095
5 March 2007	33rd HTC meeting minutes	WITN7039096
11 June 2007	34th HTC meeting minutes	WITN7039097
10 September 2007	35th HTC meeting minutes	WITN7039098
4 December 2007	36th HTC meeting minutes	WITN7039099
9 June 2008	38th HTC meeting minutes	WITN7039100
4 September 2008	39th HTC meeting minutes	WITN7039101
8 December 2008	40th HTC meeting minutes	WITN7039102
19 March 2009	41st HTC meeting minutes	WITN7039103
23 July 2009	42nd HTC meeting minutes	WITN7039104

14 September 2009	43rd HTC meeting minutes	WITN7039105
18 December 2009	44th HTC meeting minutes	WITN7039106
22 September 2010	47th HTC meeting minutes	WITN7039107
13 December 2009	48th HTC meeting minutes	WITN7039108
21 March 2010	49th HTC meeting minutes	WITN7039109
24 March 2010	45th HTC meeting minutes	WITN7039110
27 June 2011	50th HTC meeting minutes	WITN7039111
10 October 2011	51st HTC meeting minutes	WITN7039112
11 January 2012	52nd HTC meeting minutes	WITN7039113
May 2012	SR41e - Adult Maximum Surgical Blood Order Schedule	WITN7039114
May 2012	SR41f - Paediatric Maximum Surgical Blood Order Schedule	WITN7039115
3 October 2012	54th HTC meeting minutes	WITN7039116
14 May 2012	53rd HTC meeting minutes	WITN7039117
12 March 2013	55th HTC meeting minutes	WITN7039118
5 June 2013	56th HTC meeting minutes	WITN7039119
4 September 2013	57th HTC meeting minutes	WITN7039120

15 May 2014	59th HTC meeting minutes	WITN7039121
August 2014	SR41g - Maximum Surgical Blood Ordering Schedule	WITN7039122
August 2014	SR41h - Paediatric Surgical Blood Ordering Schedule	WITN7039123
2 October 2014	60th HTC meeting minutes	WITN7039124
22 January 2015	61st HTC meeting minutes	WITN7039125
21 May 2015	62nd HTC meeting minutes	WITN7039126
1 October 2015	63rd HTC meeting minutes	WITN7039127
19 January 2016	67th HTC meeting minutes	WITN7039128
4 February 2016	64th HTC meeting minutes	WITN7039129
9 June 2016	65th HTC meeting minutes	WITN7039130
15 September 2016	66th HTC meeting minutes	WITN7039131
18 May 2017	68th HTC meeting minutes	WITN7039132
28 September 2017	69th HTC meeting minutes	WITN7039133
18 January 2018	70th HTC minutes	WITN7039134
May 2017	SR41i - Adult Maximum Surgical Blood Order	WITN7039135
17 May 2018	71st HTC minutes	WITN7039136
July 2018	SR41j - Paediatric Maximum Surgical Blood Order	WITN7039137

27 September 2018	72nd HTC minutes	WITN7039138
24 January 2019	73rd HTC minutes	WITN7039139
6 June 2019	74th HTC minutes	WITN7039140
19 September 2019	75th HTC minutes	WITN7039141
23 January 2020	76th HTC minutes	WITN7039142
11 May 2020	77th HTC minutes	WITN7039143
28 September 2020	78th HTC minutes	WITN7039144
10 May 2021	80th HTC minutes	WITN7039145
February 2022	SR41k - Adult Maximum Surgical Blood Order	WITN7039146
Undated	SR41a - Paediatric MSBOS	WITN7039147
Undated	SR41b - Maximum Surgical Blood Ordering Schedule	WITN7039148
Undated	SR41c - Paediatric Surgical Blood Ordering Schedule	WITN7039149
Undated	SR41d - Maximum Surgical Blood Ordering Schedule	WITN7039150