Chronological Presentation on the Domestic Supply of Blood Products in England and Wales

Appendix 7

Statistics on Red Cell Concentrate Collections

Introduction

1. This Appendix provides statistics on the collection of red cell concentrates (RCCs) in the 1970s and early 1980s.

2. As is discussed in the main presentation, encouraging clinicians to use a greater proportion of red cell concentrates (RCCs) when giving blood transfusions was one of the strategies implemented to increase plasma supply to meet growing demand for Factor VIII concentrates. Clinicians had traditionally used whole blood to replace red cells and restore blood volume in patients.[1] However, it was possible to transfuse blood from which a proportion of plasma had been removed, otherwise known as RCCs, where blood loss did not exceed 20-30% of total blood volume.[2] By using RCCs, the plasma otherwise transfused would be available for fractionation into Factor VIII concentrates. However, some clinicians were reluctant to use RCCs because the units had greater viscosity, were slower to transfuse, and often had to be pre-diluted with saline.[3]

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[1] "Notes on Transfusion", issued by the DHSS, SHHD and Welsh Office, 1973, **HCDO0000861**

[2] Health Trends, "Trends in blood transfusion practice in England and Wales," H. H. Gunson, 1986, **NHBT0017097**

[3] See, for example, "Clinical Trials of Crystalloid Suspended human Red Cells for Transfusion, Edinburgh and South-East Scotland RTC", Dr Boulton and Dr McClelland, June 1982, **SBTS0000231_024**, pg.2, and **NHBT0017097**, pg.3

Figures of usage in England & Wales and Scotland

3. It is difficult to find comprehensive data on the collection of RCCs in the UK. The following graph and table show the percentage of blood issued as RCCs across the relevant time period using the data available. Unless otherwise indicated with a reference in the table, the figures for England and Wales were extracted from a graph created by Dr Gunson and published in "Health Trends" in 1986.[4] The data was extracted using the software WebPlotDigitizer, which allows users to extract numerical data from images of graphs.[5] As such, these should be regarded as rough approximations rather than exact numbers.

4. Caution must also be exercised when interpreting the data because increased usage of RCCs may not perfectly correlate with the availability of plasma for fractionation. During this period, concerns were raised that over-insistence on the use of RCCs would lead to clinicians to use Plasma Protein Fraction (PPF) in addition to RCCs, thus limiting the amount of additional plasma for fractionation.[6] In a 1981 paper, Dr Lane and Dr Gunson noted that high clinical usage of RCCs could provoke the "undesirable cyclical effect" of increasing use of PPF, which risked making high collection rates of fresh frozen plasma "economically self-defeating".[7]

5. The volume of plasma which RCC usage freed for use in fractionation also varied, both regionally and over time. The documents show debate surrounding how much plasma could be removed from each donation.[8] In

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[4] Health Trends, "Trends in blood transfusion practice in England and Wales," H. H. Gunson, 1986, **NHBT0017097**

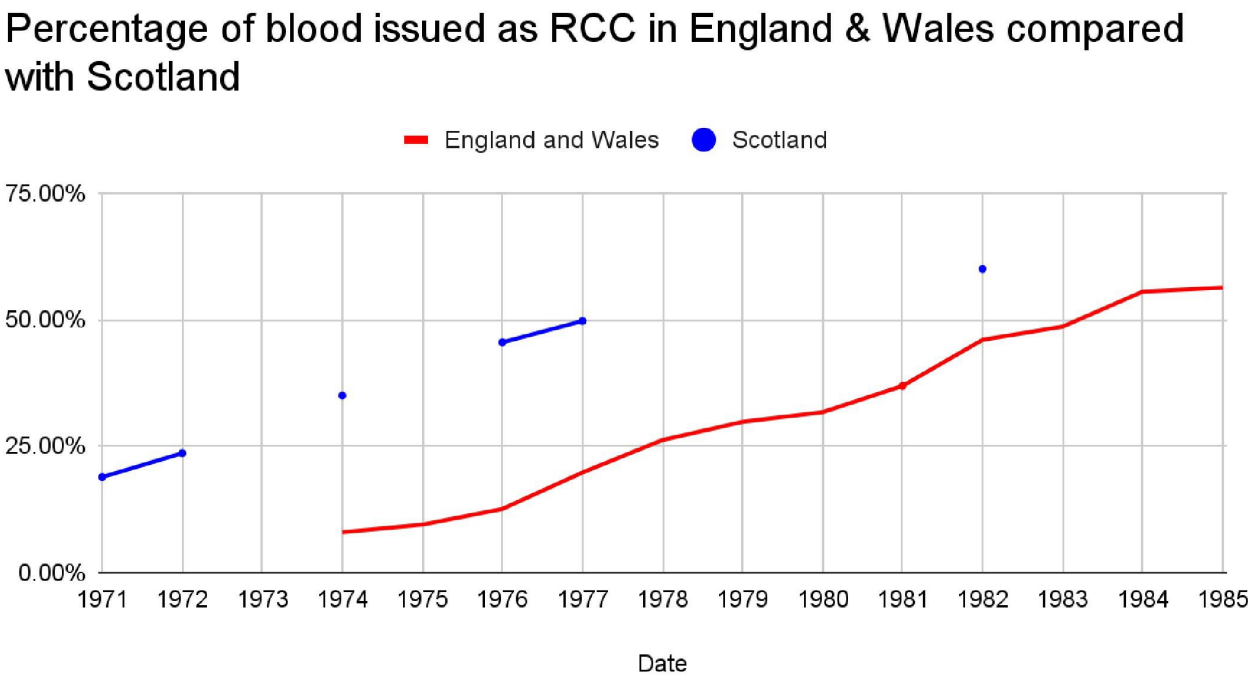
[5] WebPlotDigitizer available at: https://apps.automeris.io/wpd/

[6] Minutes of a Meeting of the Directors of the SNBTS, 11 June 1975, **PRSE0003812**, pg.3; Letter from John Wallace, Glasgow and West of Scotland RTC to Dr Brodie Lewis, Regional Director, 6 May 1974, **SBTS0000289_116**, pg.3

[7] Plasma supply for self-sufficiency in Blood Products, a discussion document by R. S. Lane and H. H. Gunson for the Ad Hoc Working Party on Trends in Blood Transfusion, 1981, **CBLA0002451**

[8] Letter from Dr Darnborough to Dr Maycock, 28 February 1975, **DHSC0100006_020**; Letter from Dr Maycock to Dr Stratton, 9 July 1975, **CBLA0000286**; Letter from Dr Maycock to Dr Wallace, Regional Director Glasgow and West of Scotland RTC, 23 July 1975, **CBLA0000291**; Minutes of the 160th Meeting of RTDs, 17 March 1976, **NHBT0016478**, pg.3

1975, English RTDs agreed that removing 180ml of plasma from each donation yielded a clinically acceptable product.[9] In Scotland it appears that around 190-200ml of plasma was usually removed at that time.[10] By 1982, Scottish donations were processed into RCCs by removing 220ml plasma.[11]



[9] Minutes of the 158th RTDs meeting, 8 October 1975, **DHSC0105496_024**, pg.10
[10] Letter from Dr Wallace to Dr Maycock, 30 July 1975, **CBLA0000292**
[11] Clinical Trials of Crystalloid Suspended Human Red Cells for Transfusion, Edinburgh and South-East Scotland RTC, Dr Boulton and Dr McClelland, June 1982, **SBTS0000231_024**

Date	Percentage of donations issued in England and Wales as RCCs[12]	Percentage of donations issued in Scotland as RCCs[13]	Other figures, including regional figures and alternative figures
1971		18.9%[14]	
1972		23.6%[15]	UK-wide - 8.6%[16]
1973			Glasgow and the West of Scotland - 40%[17]
1974	8%[18]	30-40%[19]	Oxford - 33% Bristol - 25% Cambridge - 10% Wessex - 7% Tooting - 0%[20] Glasgow and the

[12] Where calculations have been done by the Inquiry legal team, these have been done to establish the proportion of RCC issued as a percentage of the total amount of whole blood and RCC issued by the relevant body.
[13] Where calculations have been used to provide these figures, these have been done to establish the proportion of RCC issued as a percentage of the total amount of whole blood and RCC issued by the relevant body.
[14] Scottish National Blood Transfusion Association Annual Report of the Medical Secretary for the Year Ending 31 March 1972, **SCGV0000064_046**, pg.3 (when calculated as a percentage of the total of RCC and whole blood issued)
[15] Scottish National Blood Transfusion Association Annual Report of the Medical Secretary for the Year Ending 31 March 1972, **SCGV0000064_046**, pg.3 (when calculated as a percentage of the total of RCC and whole blood issued)
[16] European Public Health Committee, Sub-Committee of Specialists on Blood Problems, 16th Session, Strasbourg, 18-21 November 1975, Council of Europe, **SCGV0000075_042**, pg.12
[17] Minutes of the Joint Steering Committee on Blood Products Production Meeting, 20 June 1973, **PRSE0004359**, pg. 4 (§15)
[18] Minutes of the 153rd Regional Transfusion Directors' Meeting, 9 October 1974, **NHBT0016494**, pg.3
[19] Letter from Mr Gidden (DHSS) to Regional Administrators, 24 December 1974, **CBLA0000239**, pg.1 (§3)
[20] Minutes of the 152nd RTDs meeting, 3 July 1974, **NHBT0016495**, pg.6 (see also figures for other centres in this document)

			West of Scotland - 40.04% Dundee -18.90% Aberdeen - 21.68% Inverness -34.88%[21]
1975	9.5%		
1976	12.6%	45.46%[22]	Glasgow and the West of Scotland - 43.01% Edinburgh – 64.76% Dundee -20.22% Aberdeen - 26.31% Inverness -57.28%[23]
1977	19.8%	49.7%	
1978	26.2%		
1979	29.8%		
1980	31.7%		
1981	36.9%		Wessex - 33%[24] Manchester - 42%[25]
1982	46.0%	60%[26]	

[21] Appendix 1, Table II Annual Report of the SNBTS, 1 April 1975 - 31 March 1976, **PRSE0002133**, pg.29

[22] Appendix 1, Table II Annual Report of the SNBTS, 1 April 1975 - 31 March 1976, **PRSE0002133**, pg.29

[23] Appendix 1, Table II Annual Report of the SNBTS, 1 April 1975 - 31 March 1976, **PRSE0002133**, pg.29

[24] Summary of Costs of Blood Collection, Professing, Testing and Issuing at RTC Wessex, 1980/1981, **DHSC0002215_069**, pg. 2 (when calculated as a percentage of the total of RCC and whole blood issued)

[25] Report on the costs of blood collection, processing and issuing, by H. H. Gunson, August 1981, **DHSC0002211_019**, pg. 6 (when calculated as a percentage of the total of RCC and whole blood issued)

[26] Clinical Trials of Crystalloid Suspended human Red Cells for Transfusion, Edinburgh and South-East Scotland RTC, Dr Boulton and Dr McClelland, June 1982, **SBTS0000231_024**, pg.2 (§1.2)

1983	48.6%		Wessex - 62%[27]
1984	55.5%		Alternative figure for E & W ~40%, or 150,000l of plasma[28]
1985	56.3%		

Conclusion

6. Within the limited data available, it appears that usage of RCCs increased significantly from the period 1971 to 1985. In England and Wales, there was slow progress, and it took nearly a decade for the target of 40% of RCC usage, set in June 1975, to be achieved, by which time plasma supply targets had increased significantly.[29] From 1984, the introduction of SAG-M additive partially solved the problem of plasma supply in England and Wales by ensuring that a greater quantity of plasma could be removed from each donation and that the RCC's viscosity was more acceptable to clinicians which meant a greater proportion of donations could be fractionated. This is discussed further in **Appendix 6**.

7. In Scotland, the greater use of RCCs was a policy which was heavily supported from the early 1970s, and by 1982, 60% of blood donations were issued as RCCs.[30]

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[27] Letter from D.S. Smith (Medical Director, Wessex RTC) to Consultant Haematologists, 20 April 1983, **NHBT0111671**

[28] The Haemophilia Society Blood Products Sub-Committee Report, October 1984, **HSOC0020283**, pg.2 (§5)

[29] Paper NBTSCC(75)P6 "Factor VIII in the Treatment of Haemophilia", presented at the 1st Meeting of the CCNBTS, 19 June 1975, **DHSC0002359_038**

[30] Clinical Trials of Crystalloid Suspended Human Red Cells for Transfusion, Edinburgh and South-East Scotland RTC, Dr Boulton and Dr McClelland, June 1982, **SBTS0000231_024**, pg.2 (§1.2)

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