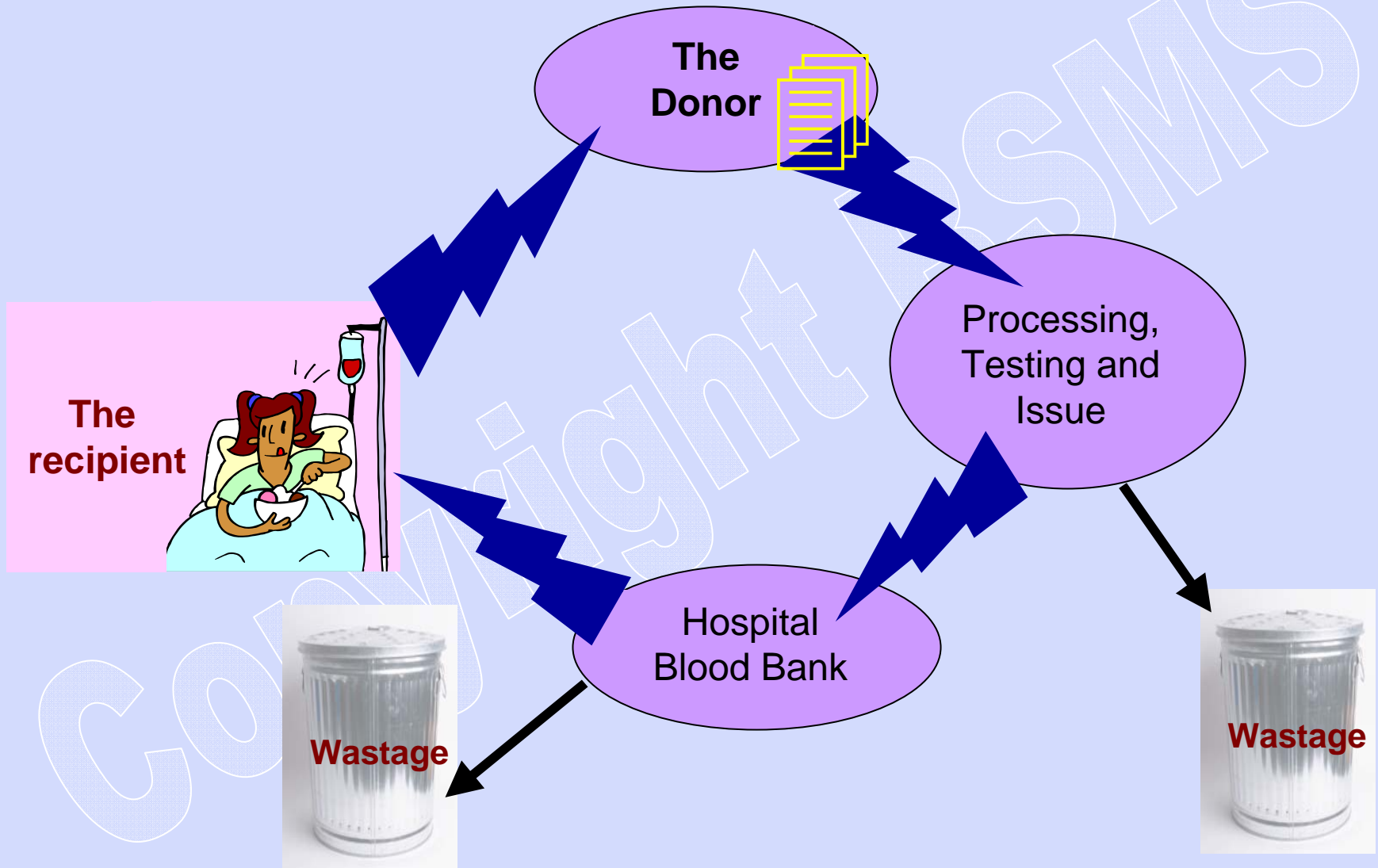


Using Web Technology for Effective Blood Stock Management

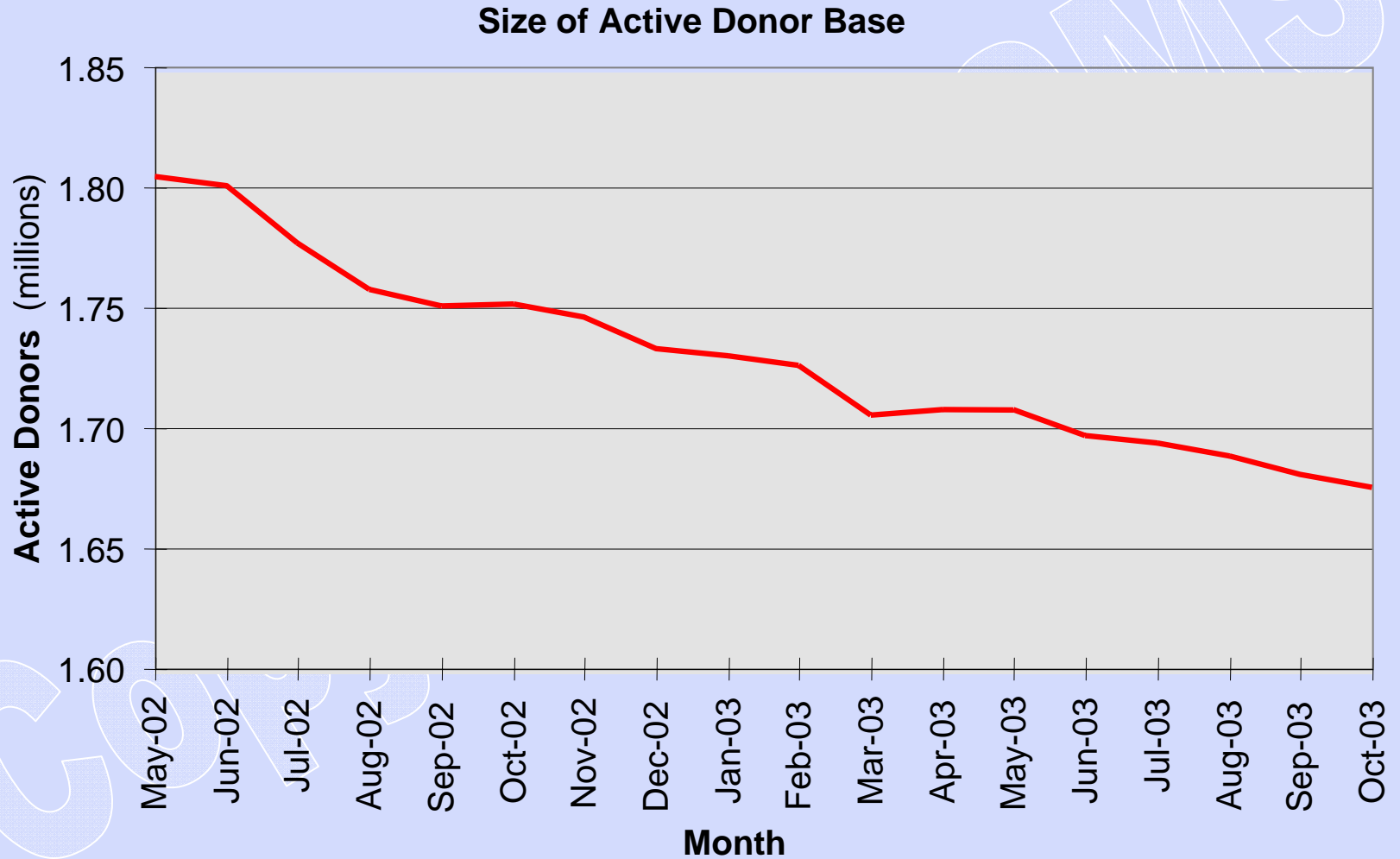
Judith Chapman

Blood Stocks Management Scheme, London

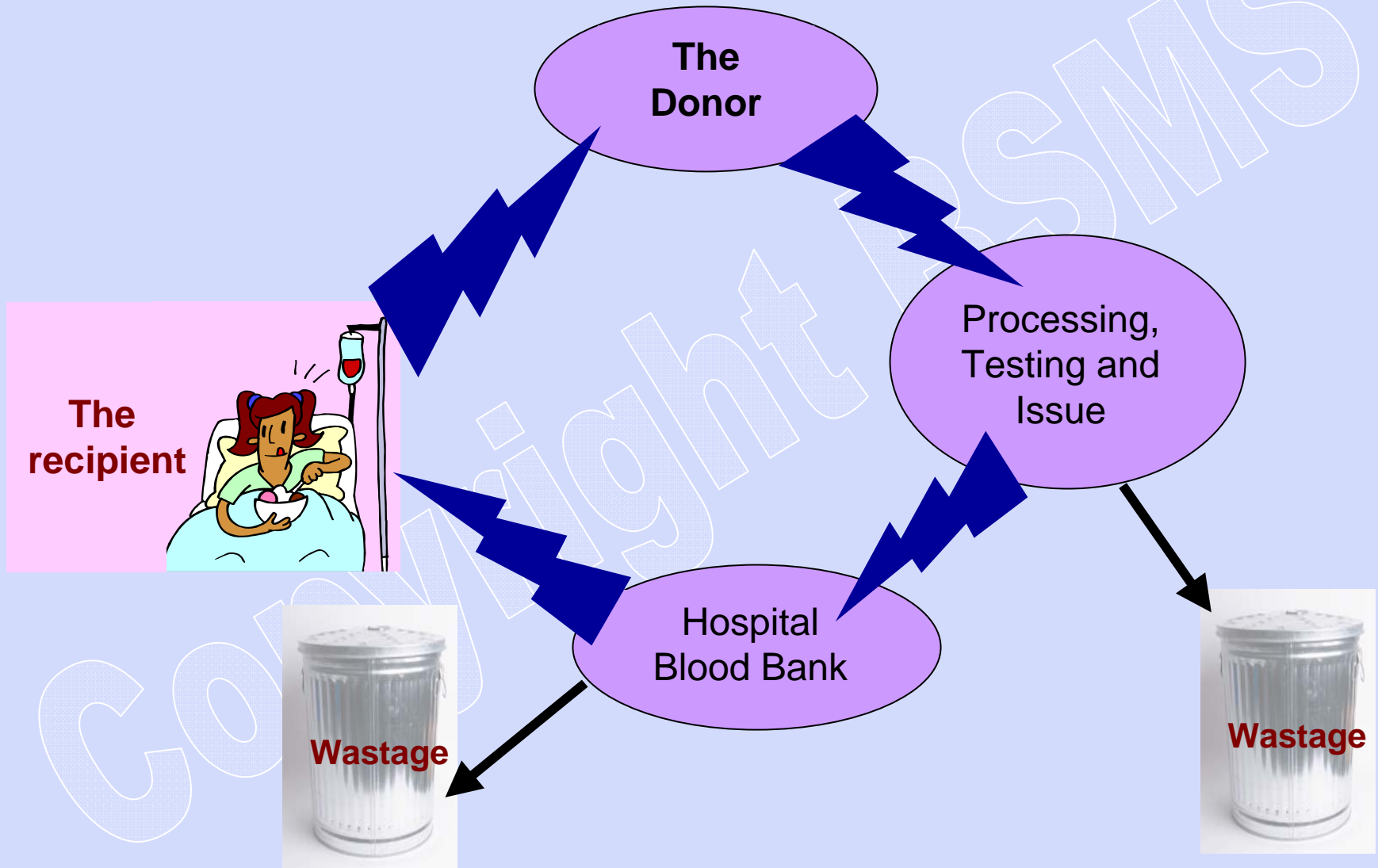
The Blood Supply Chain



The Donor Base in England and North Wales

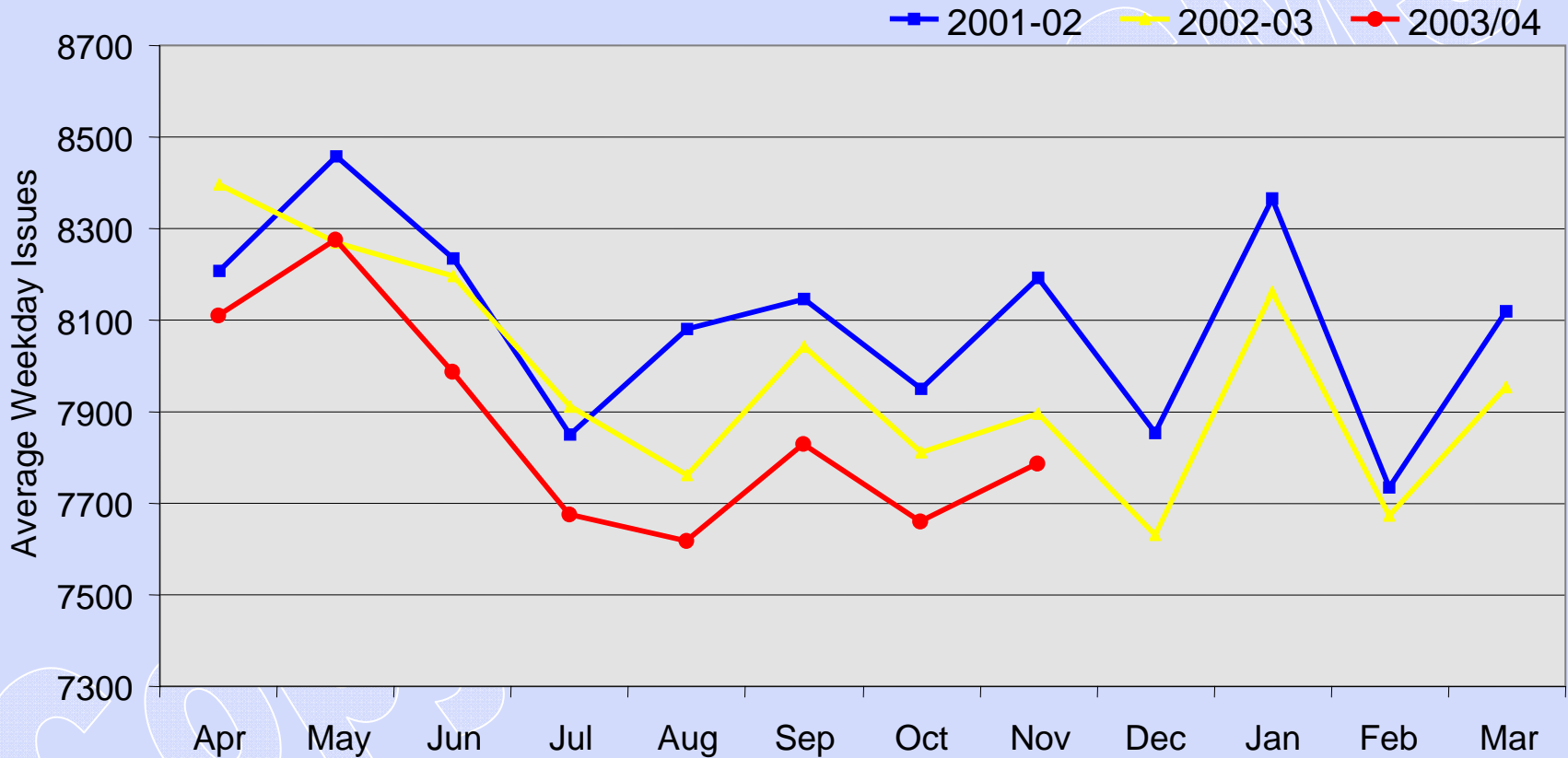


The Blood Supply Chain



Average Weekday Red Cell Issues by Month

April 2001 - October 2003

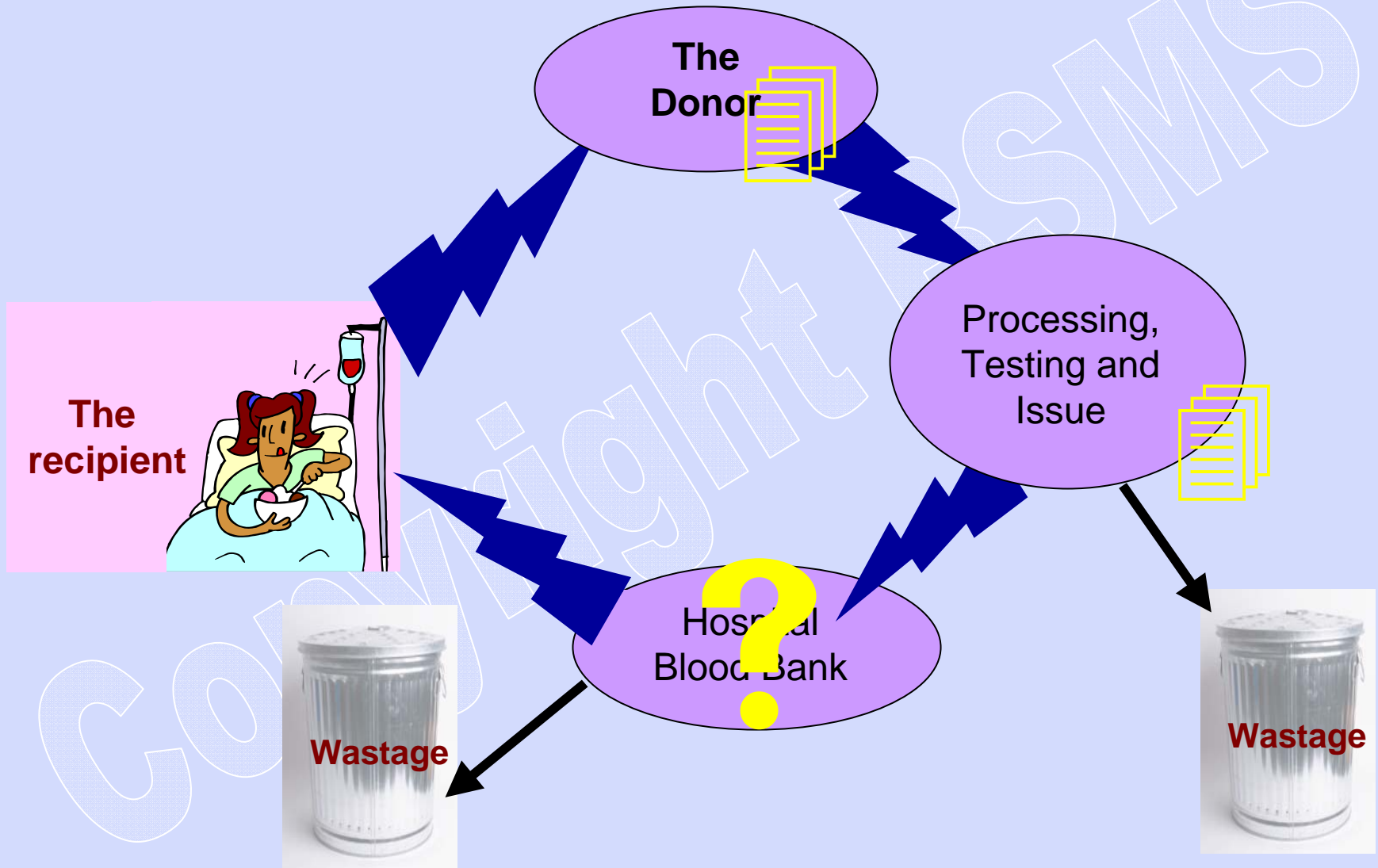


Red cell issues

2001/2 2.206M

2002/3 2.186M

The Blood Supply Chain



The Blood Stocks Management Scheme

Established as a partnership between hospitals and the National Blood Service (NBS) to:

- increase understanding of the blood supply chain
- improve the interface between supply and demand
- ensure proper monitoring of a freely given resource
- drive partnership between the NBS and hospitals

The Technology



A SQL database which stores data for red cells and platelets on:

- *issues to hospitals*
- *inventory*
- *wastage*
- *shelf life*

Hospital



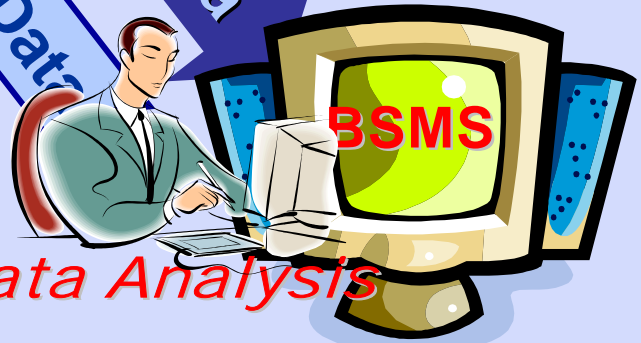
NBS

Regular reports



Regular reports

BSMS Data Management System



Data Analysis

Advantages of using a Web Based System

- Flexibility
- Multi-user access
- Data input either manually or by automatic download
- Data extraction to commercial analysis software
- Generation of reports in real time

Blood Stocks Management System

Hospital name: Cheltenham General Hospital [Assign](#)

Centre name: Manchester

Edit hospital data:

- Red cell stock
- Red cell wastage
- Red cell allocated stock
- Red cell movement
- Red cell transfused
- Platelet impact
- Platelet wastage
- Platelet movement

Edit centre data:

- Red cell impact
- Platelet impact

View hospital graph:

- Red cells
- Platelets

View centre graph:

- Red cells
- Platelets

View hospital data:

- Red cells
- Platelets

View centre data:

- Red cells
- Platelets

Messages

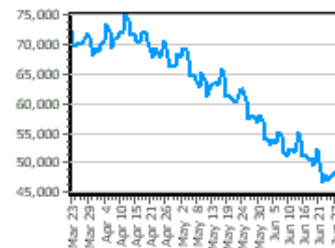
Welcome to VANESA
19 May 2003 10:07:00

NBS Stock Figures

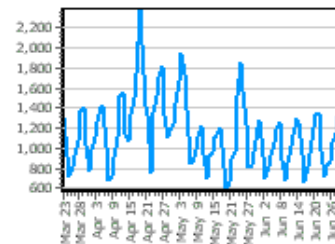
30 June 2003

	Red Cells	Platelets
O Pos	14882	347
O Neg	1452	109
A Pos	19910	351
A Neg	2452	68
B Pos	3571	19
B Neg	392	13
AB Pos	1568	1
AB Neg	247	0
Total	44474	908

Red Cells



Platelets



Red Cells : Edit daily stock

Hospital name	St James' University Hospital			PULSE code	C020
Date	11 November 2003			<input type="text" value="dd/mm/yyyy"/>	<input type="button" value="Set Date"/>
Blood Group	Ideal stock	Issuable stock	Impacts	Nominal stock	Issuable Stock Index
O Pos	80	<input type="text" value="109"/>	<input type="text" value="No impact"/>	23.11	4.72
O Neg	16	<input type="text" value="16"/>	<input type="text" value="No impact"/>	4.70	3.40
A Pos	80	<input type="text" value="103"/>	<input type="text" value="No impact"/>	18.39	5.60
A Neg	16	<input type="text" value="25"/>	<input type="text" value="No impact"/>	3.80	6.57
B Pos	12	<input type="text" value="10"/>	<input type="text" value="No impact"/>	5.72	1.75
B Neg	6	<input type="text" value="6"/>	<input type="text" value="No impact"/>	0.83	7.27
AB Pos	10	<input type="text" value="7"/>	<input type="text" value="No impact"/>	1.26	5.55
AB Neg	6	<input type="text" value="10"/>	<input type="text" value="No impact"/>	0.45	22.32

Comments

This page last updated on **11 Nov 2003 16:10:15** by **bsms0157**

December 2003

M	Tu	W	Th	F	Sa	Su
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

November 2003

M	Tu	W	Th	F	Sa	Su
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

October 2003

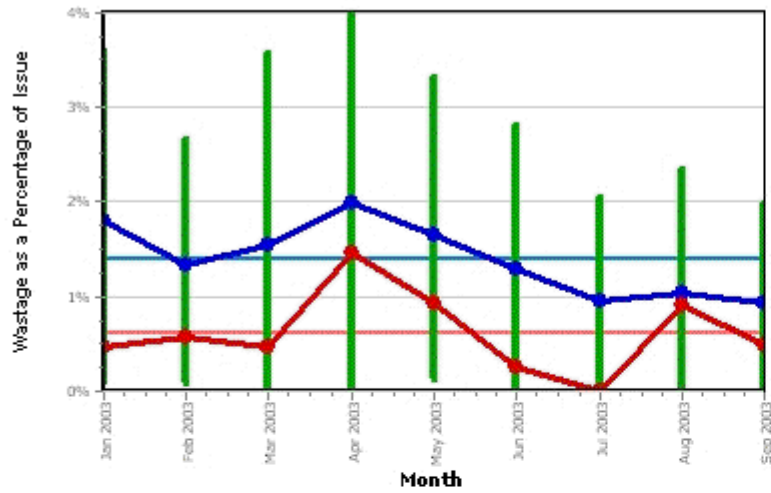
M	Tu	W	Th	F	Sa	Su
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Graphical display options

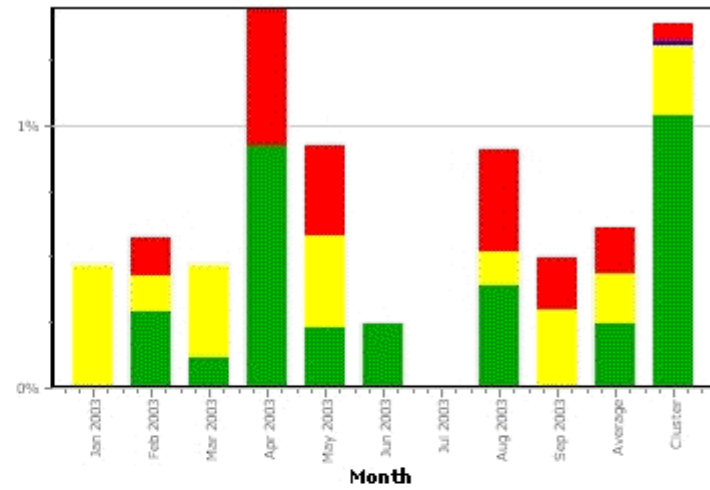
Red Cells : Graphical display

Hospital name	St James' University Hospital	PULSE code:	C020
Graph name	Wastage as a percentage of issue to the hospital	<input type="radio"/>	
	0 neg issues as a percentage of total issues	<input type="radio"/>	
	Issuable stock index	<input type="radio"/>	
	Total issues	<input type="radio"/>	
	Shelf life stocks	<input type="radio"/>	
	Cumulative shelf life stocks	<input type="radio"/>	
	Ratio of issuable stock to allocated stock	<input type="radio"/>	
Transfused as a percentage of issue	<input type="radio"/>		
Date range	From start of <input type="text" value="November 2003"/>	to end of <input type="text" value="November 2003"/>	
Available categories	<input type="text" value="Blood Usage - High"/> <input type="text" value="Teaching Hospital"/> <input type="text" value="Intensive Therapy/Care Unit test"/> <input type="text" value="Renal unit"/> <input type="text" value="Supply satellite hospital(s) - NHS or Private"/> <input type="text" value="Haemato-oncology"/> <input type="text" value="Oncology unit"/> <input type="text" value="Vascular surgery"/> <input type="text" value="Casualty"/> <input type="text" value="Obstetric Unit"/>	<input type="button" value=">"/> <input type="button" value=">>"/> <input type="button" value="<<"/> <input type="button" value="<"/>	Selected categories <input type="text"/>
Match	<input type="text" value="All selected categories"/>		
<input type="button" value="Submit"/> <input type="button" value="Reset"/> <input type="button" value="Cancel"/>			

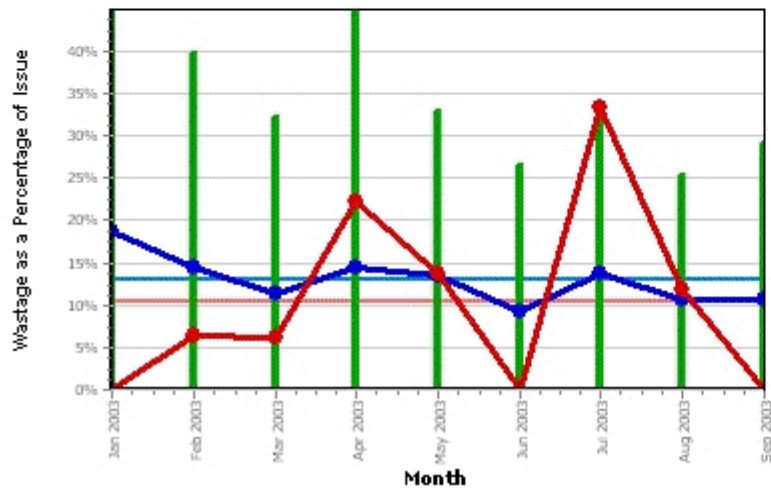
Groups A, B and O



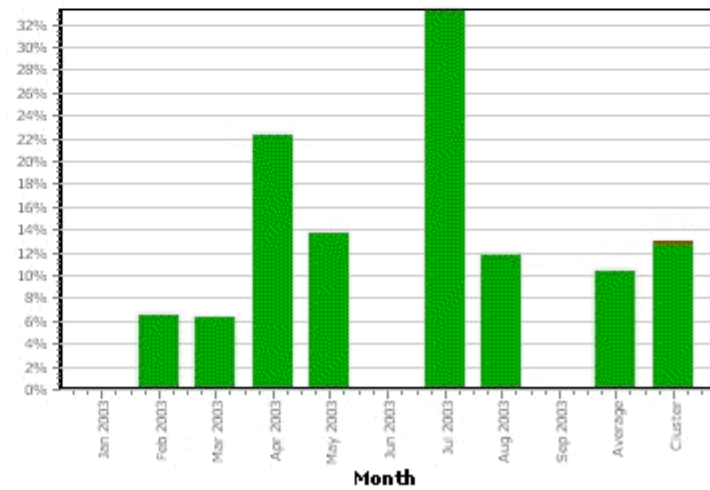
Wastage as a percentage of issue



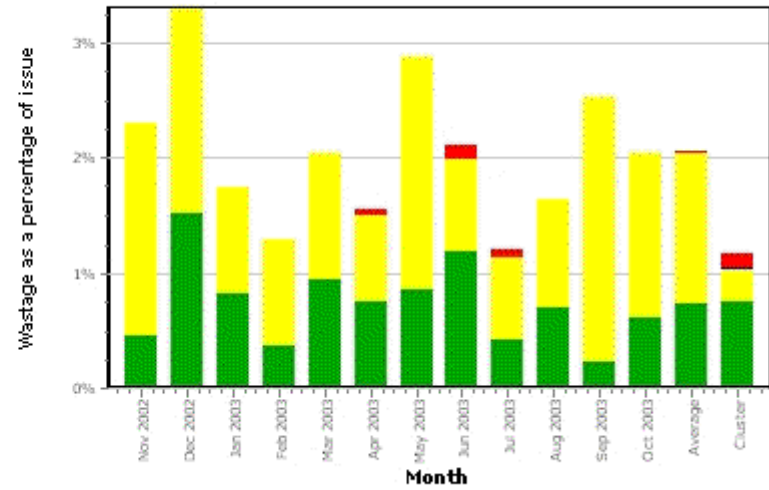
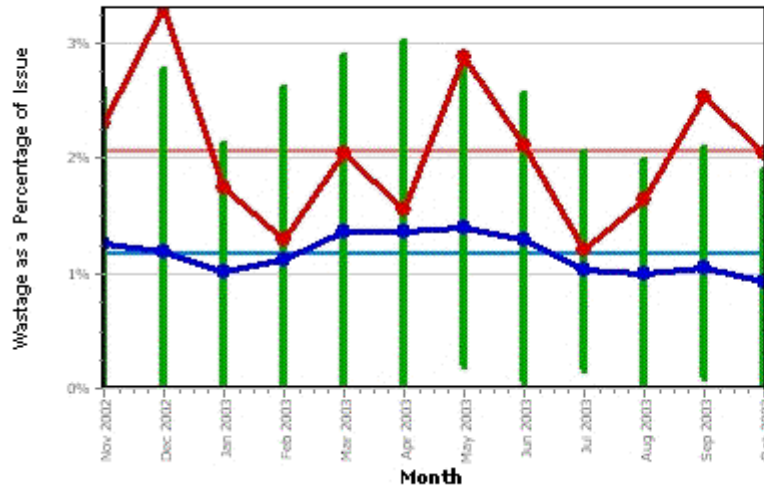
Group AB



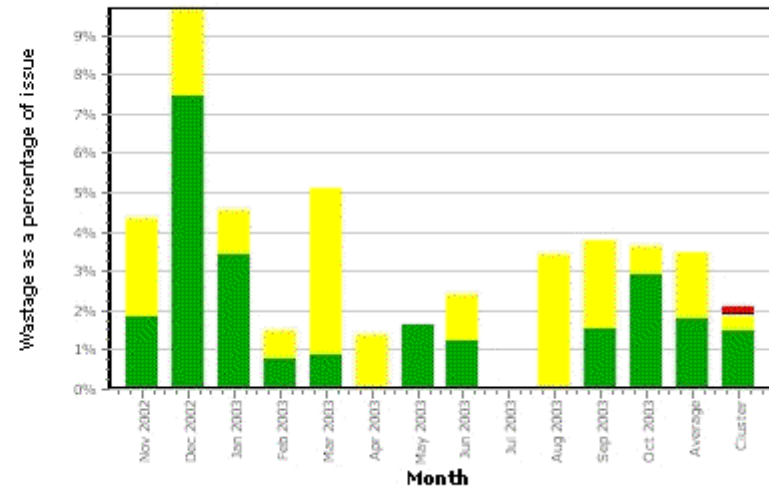
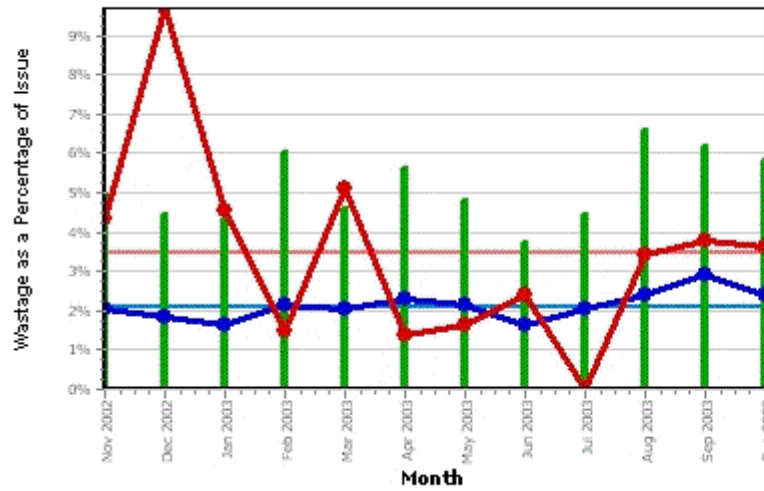
Wastage as a percentage of issue



Groups A, B and O



O Neg



Platelets : Data display

Hospital name	St James' University Hospital	PULSE code:	C020
Data set	Wastage	<input type="radio"/>	
	Gross issues to the hospital	<input checked="" type="radio"/>	
	Net issues to the hospital	<input type="radio"/>	
	Movement between hospitals	<input type="radio"/>	
Date range	From start of <input type="text" value="November 2002"/>	to end of <input type="text" value="October 2003"/>	
Detail	<input type="text" value="Month"/>		
<input type="button" value="Submit"/> <input type="button" value="Reset"/> <input type="button" value="Cancel"/>			

Total monthly gross issue data

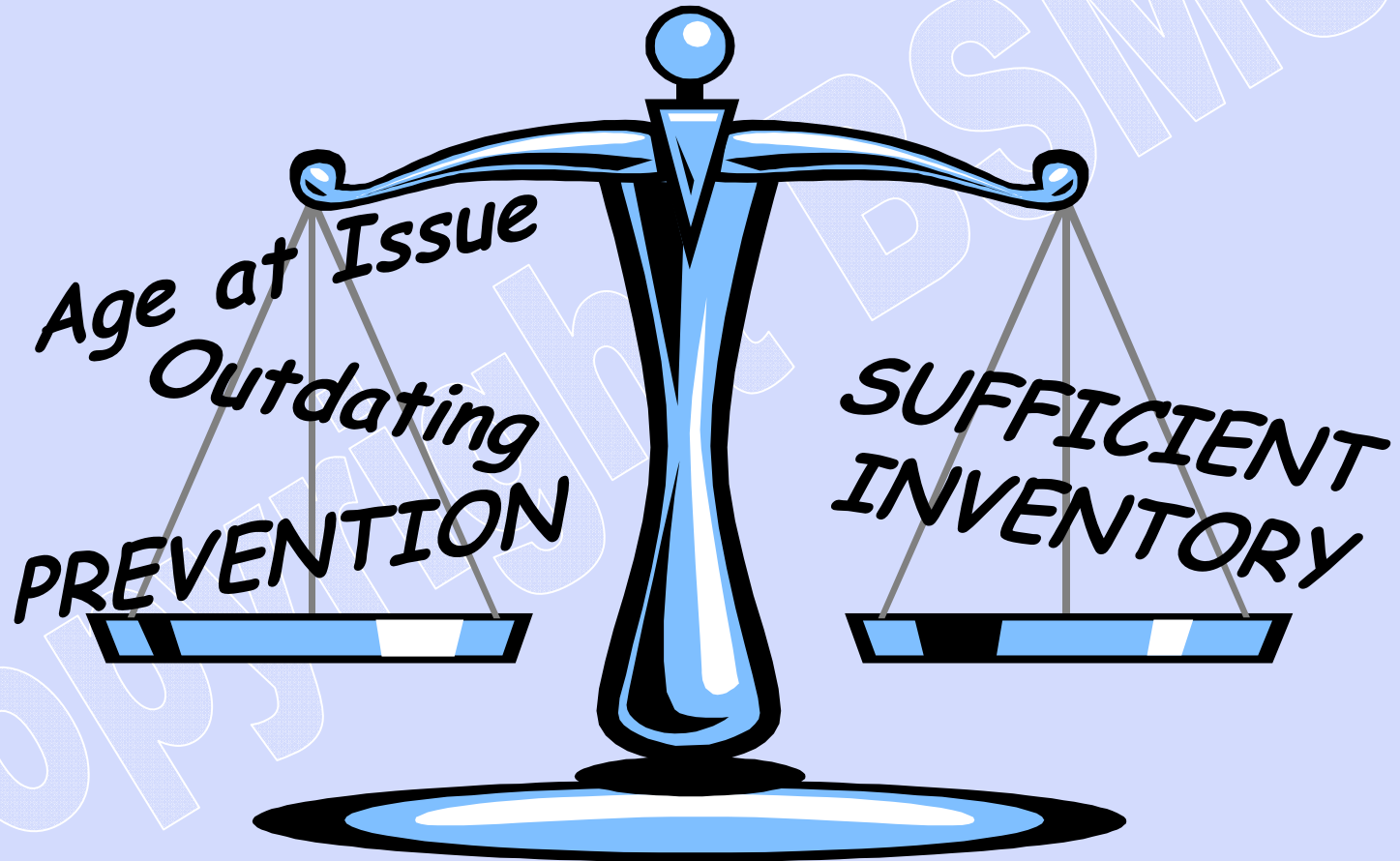
Date	O Pos	O Neg	A Pos	A Neg	B Pos	B Neg	AB Pos	AB Neg	Total	Last updated
October 2003	97	41	150	20	20	3	0	0	331	12 Nov 2003 06:22:06
September 2003	91	24	201	39	17	1	0	0	373	6 Nov 2003 05:44:40
August 2003	86	38	182	43	17	2	0	0	368	8 Oct 2003 05:50:31
July 2003	122	25	97	38	20	2	0	0	304	10 Sep 2003 14:34:44
June 2003	140	21	124	23	32	3	0	0	343	5 Sep 2003 18:02:23
May 2003	78	31	138	22	13	3	0	0	285	5 Sep 2003 17:46:13
April 2003	140	30	146	44	13	2	0	0	375	5 Sep 2003 17:30:22
March 2003	111	20	136	26	20	1	0	0	314	5 Sep 2003 16:41:11
February 2003	94	21	92	23	12	2	0	0	244	5 Sep 2003 16:23:00
January 2003	99	53	105	15	16	4	0	0	292	5 Sep 2003 16:00:46
December 2002	91	38	95	30	18	1	0	0	273	5 Sep 2003 15:27:09
November 2002	96	38	119	25	18	2	0	0	298	5 Sep 2003 15:09:13

Value of the Scheme

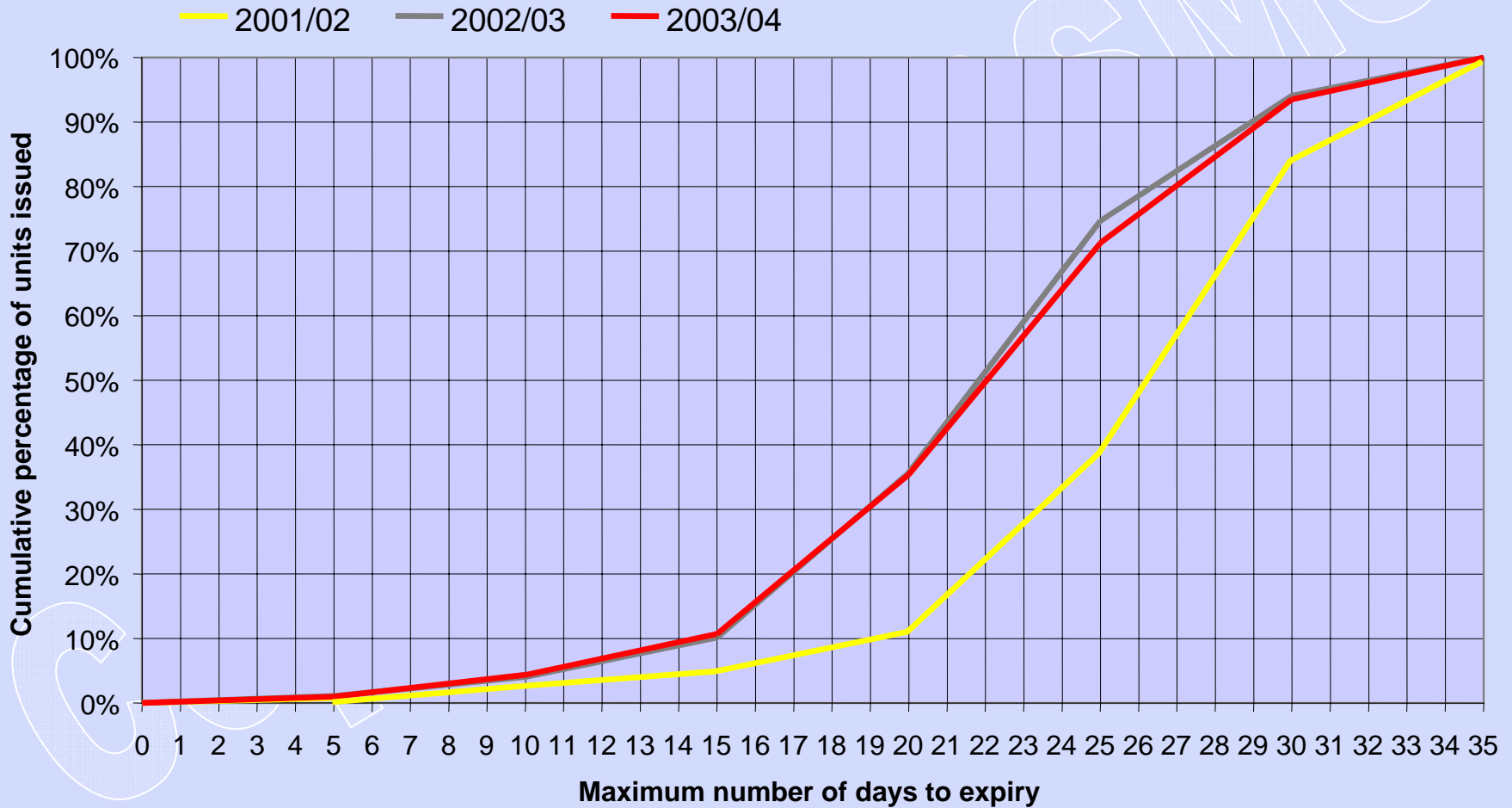
- Generation of information on:
 - ↓ hospital demand
 - ↓ NBS & hospital red cell and platelet inventories
 - ↓ NBS & hospital red cell and platelet wastage
- Valuable resource for
 - ↓ inventory monitoring
 - ↓ strategic planning
 - ↓ driving changes in practice

The strategic use of the data

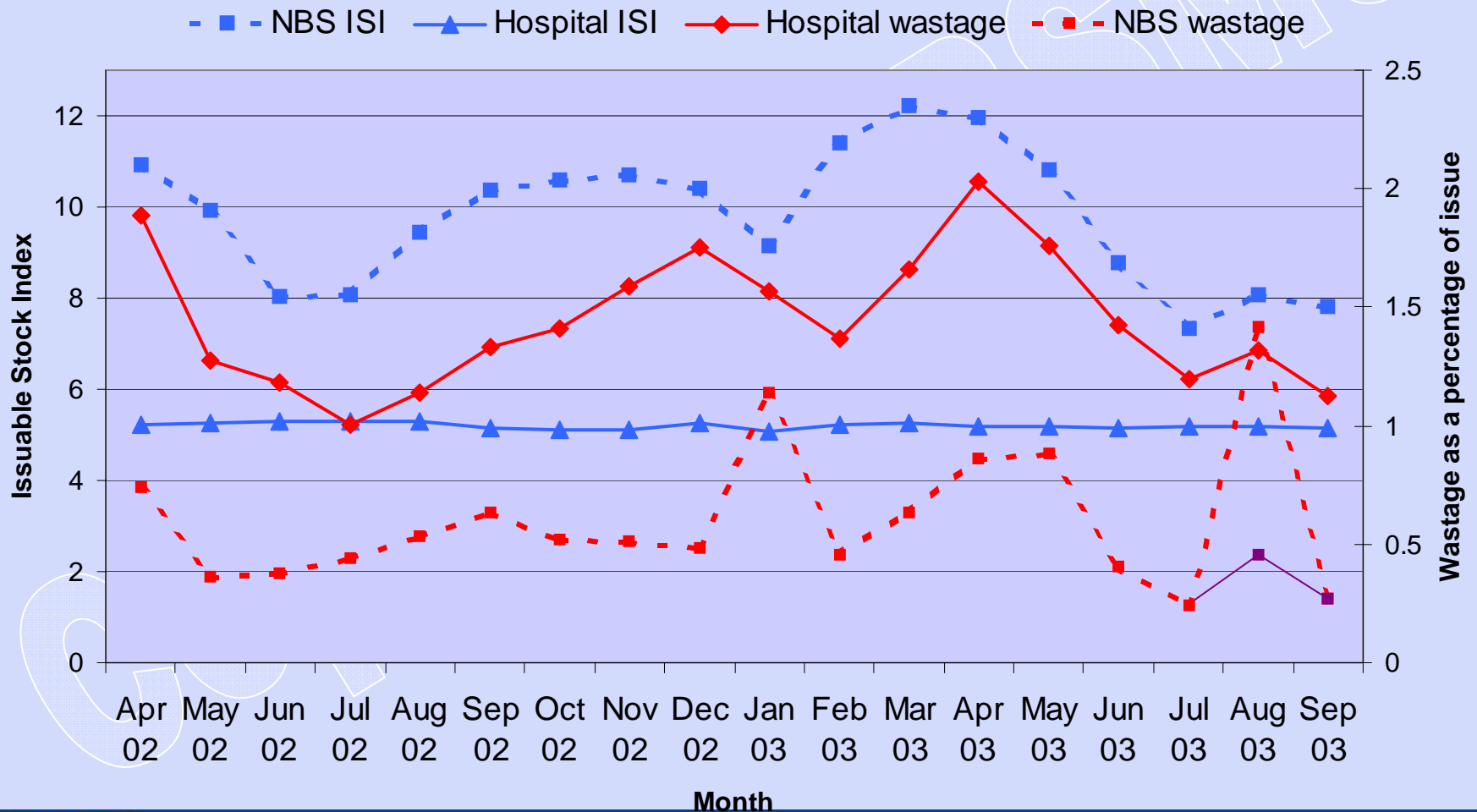
The Relationship between Inventory Level Age at Issue and Outdating



Age @ Issue profile for all blood groups All NBS Centres



The Blood Supply System - April 02 - September 03



Driving Changes in Practice

Hospitals

- Reducing inventory levels
- Improved management of satellite fridges
- Introduction of stock rotation
- Introduction of training in stock management

NBS

- Improved stock rotation
- Review of Issue policy
- Review of reporting stock cover

Acknowledgements



Rob Hick and Clive Hyam - Data analysts

Seena Shah - Data administration

**Richard Cook & Richard Astbury - NBS
software developers**

www.bloodstocks.co.uk

