Nova Scotia Annual Report

Nova Scotia Provincial Blood Coordinating Program

Red Blood Cell Report FY 2014/15

February 2016

PROMOTING EXCELLENCE IN TRANSFUSION MEDICINE
http://novascotia.ca/dhw/nspbcp

NOVA SCOTIA

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1 Executive Summary

In this report, the Nova Scotia Provincial Blood Coordinating Program (NSPBCP) provides an overview of the distribution and discards of red blood cells (RBC) in Nova Scotia during fiscal year 2014/15. National red blood cell distribution has decreased by approximately 3.8% in the 2014/15 fiscal year; this follows a 1.9% decrease in 2013/14. Red blood cell distribution for Nova Scotia, after exhibiting a declining trend in the growth rate for the last three fiscal years, has shown a rise in the growth rate by 3.8% in 2014/15.

Nova Scotia's red blood cell discard rate was 3% in 2014/15; this is an improvement from a 3.2% discard rate in 2013/14. The discard rates have remained steady, at approximately 3%, for the past four fiscal years. Region/facility specific information on the red blood cell distribution and discards is also presented in this report. These are meant to show the progress each region/facility has made in minimizing discards and provide an opportunity to track the trend in their red blood cell distribution and formulate strategies accordingly. Successful inventory management in the regions/facilities has resulted in minimizing discards of red blood cells. The regions have identified continuous education and training for ordering the inventory as a reason for a decline in the discard rates for Nova Scotia in 2013/14.

In the past, the appropriateness of the utilization of red blood cells was not well documented; data concerning red cell transfusions was not collected or analyzed. In order to formulate a strategy to optimize the future use of red blood cells, the indications given for transfused blood, as well as the number of units issued, should be categorized as appropriate or inappropriate. A working group of clinical experts across transfusion medicine was convened in 2013 and met several times to address these issues. A baseline audit was conducted to gain insight into how transfusions are currently occurring in the province. The group has endorsed, for use in Nova Scotia, the *AABB Clinical Practice Guideline on Red Cell Transfusion*; based on these guidelines the NSPBCP has developed a red blood cell transfusion algorithm for Nova Scotia. The NSPBCP has also developed a physician requisition form and standard operating procedure for ordering one RBC unit at a time in order to support the implementation of this strategy throughout Nova Scotia over the 2015/16 fiscal year.

In 2014/15, each region/facility was visited by the NSPBCP to discuss the potential of holding an inventory of 5 Days on Hand (DoH) for each blood group. The NSPBCP in collaboration with the regions/facilities in Nova Scotia reviewed their existing red cell inventory levels as well as the daily red cell use by red blood cell type. The NSPBCP also reviewed the substitution data, discard rates and Canadian Blood Services' (CBS) delivery schedules in order to develop a standardized approach to determine inventory needs of the hospitals within the province. Data was analyzed using a tool acquired from the province of Saskatchewan (SK tool). This was followed by the revision in the inventory levels at each site. Recommendations were made by the NSPBCP for all sites to stock 5 DoH for each blood group as determined by the SK tool. This tool estimated the 5 days inventory level as the product of an average daily utilization multiplied by 5. The answer is then rounded to the nearest whole number and adjusted for each blood group by the amount of substitutions occurring with the respective blood group. Further region/facility

specific adjustments to the inventory level were made based on the following needs of each region/facility: 1) utilization data; 2) substitution data; 3) distance of the region/facility in kilometers from the Canadian Blood Services Centre; 4) routine delivery days and times; 5) past experiences with delivery issues due to weather, road closures, etc.

The NSPBCP recommended that these changes be made only if the regions/facilities felt comfortable with them. The NSPBCP supported the final decisions and recommended the continuation of this project based on population changes and fluctuating inventory needs of the regions/facilities. This strategy decreased 162 units being stored on the shelves of Nova Scotia hospitals and a decrease in ASAP and STAT orders being placed to CBS. The results of this strategy will be evident in the next annual report.

In conclusion, although the use of red blood cells in Nova Scotia increased in 2014/15 by 3.8%, the total discard rates decreased. The outdate discard rates of type A/O and in-date discard rates decreased by 0.1% each in 2014/15 from what they were in 2013/14.

A new strategy to minimize discards is implemented in Nova Scotia. This is the discontinuation of stocking neonatal O negative red blood cells, CMV IgG seronegative, irradiated and less than 7 days old red blood cells in all sites of Nova Scotia except Cape Breton Regional Hospital and the IWK. This strategy of inventory management along with the implementation of the other utilization strategy of using one red cell unit at a time is expected to optimize the use of red blood cells in this province.

2 Introduction

The Nova Scotia Provincial Blood Coordinating Program (NSPBCP) supports excellence in transfusion medicine. A key area of focus is utilization management in order to optimize the appropriate use of blood and blood products and to minimize wastage. Nova Scotia has one of the highest distribution rates of red blood cells, per 1000 population in Canada; hence it is important to monitor the disposition of red blood cells in the province. The NSPBCP has been monitoring and reporting red blood cell discards since 2003. This report continues to describe Nova Scotia's current provincial discard rate as well as the regions/facilities red blood cell discards. The reporting period presented here is April 1, 2014 to March 31, 2015.

Prior to 2006, red blood cell discard rates in Nova Scotia were high (between 8 and 11%). Since then discard rates have steadily declined. The 2014/2015 discard rate of 3.0% is at par with rates achieved in the 2011/2012 and 2012/2013 fiscal years, which have been the lowest the province has ever achieved. It is a great achievement that the province has been able to maintain such low rates over the past four fiscal years.

Blood type O and A are the most common blood types in Canada. There are challenges in maintaining an adequate provincial and national supply of type O and A units. In order to overcome this challenge, Canadian Blood Services (CBS) has suggested the facilities maintain a small stock of type B and AB units to help avoid giving group *compatible* units to recipients who could have had group *specific* transfusions. This may mean that a small inventory of type B and AB units may go unused and ultimately expire, but the impact on the supply of type O and A units is reduced. This is particularly true of O negative units- the universal donor type in emergency situations. To reflect this strategy and to deemphasize B and AB discards that may occur as a result**, type B and AB units have been separated in many of the discard graphs in this report.** The current goal is to maintain non-B and non-AB discards below 2%. To this end, the NSPBCP has studied red cell usage by blood type in each region/facility and is encouraging the regions/facilities to stock appropriate quantities of type AB and B units so that type A and type O blood will be available for those patients when required, versus those who simply use it to avoid an outdate, with the result that the discard rates may increase slightly for non-A, non-O units.

It is important to note that the data contained in this report does not account for transfers between regions/facilities or organizations, though it is understood to be a common and positive practice.

Appendix A shows the formula used to calculate the discard rates presented in this report. A detailed description of the product and use types that are used in the formula can be found in Appendix B. Appendix C shows the new regional/facility grouping in Nova Scotia.

Included in this report is the number of units distributed to Nova Scotia hospitals by CBS, its trend over the past fiscal years as well as its comparison with the national figures. The

details of units distributed, annual variance in distribution and discards at the level of region/facility are also presented.

The NSPBCP acknowledges the contributions of the Transfusion Medicine Quality Specialists in providing disposition data to CBS and to CBS for supplying the NSPBCP with the distribution and disposition data.

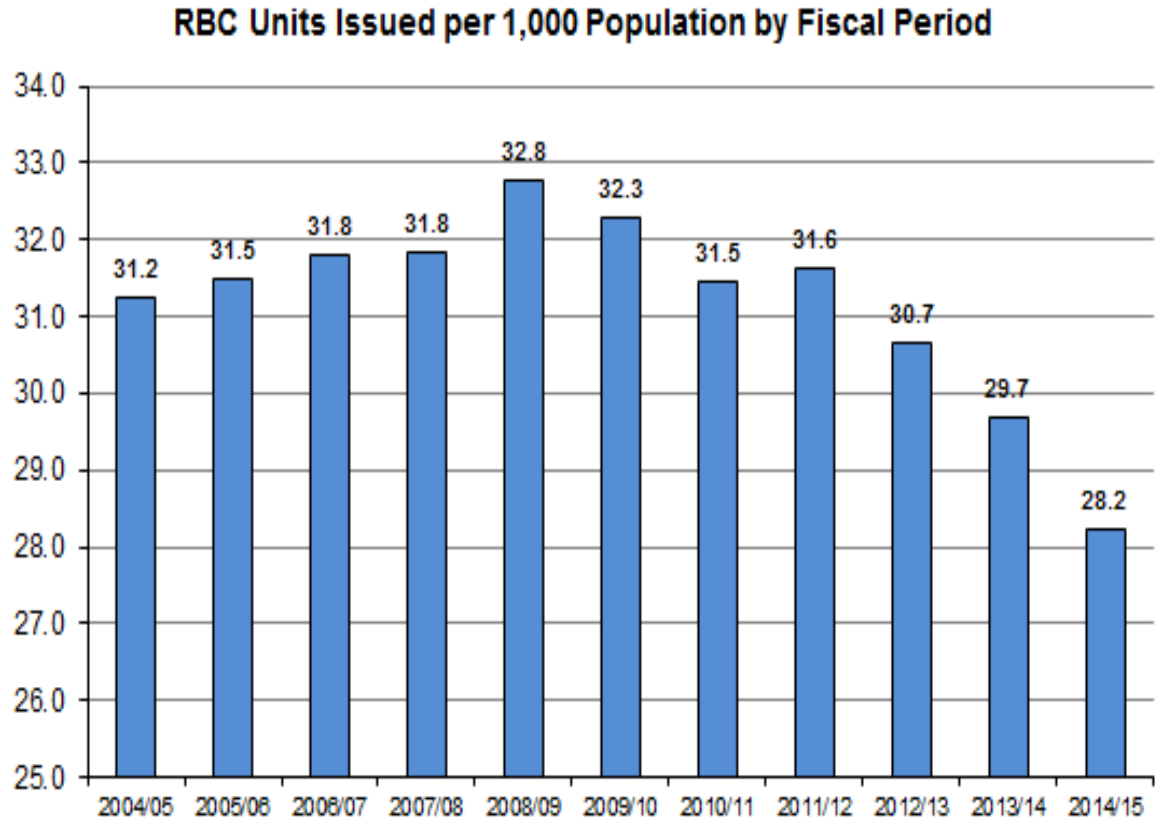
3 Distribution Data

3.1 The Canadian Perspective

National data and trends serve as a bench mark to compare provincial data and may be used for setting target goals. The following figures demonstrate the red blood cells that were issued or distributed and are used as a comparison of overall use.

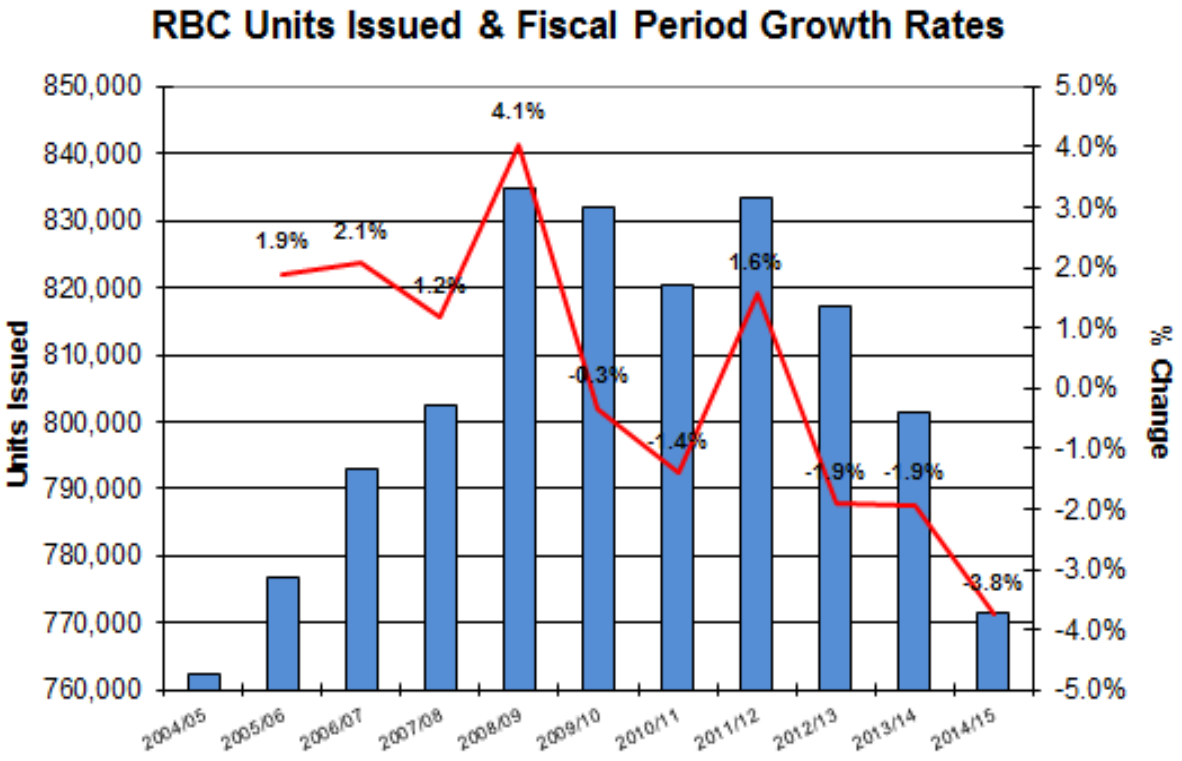
Figure 1 illustrates a comparison of national annual per capita distribution since 2004/05 by Canadian Blood Services. The red blood cells issued per 1,000 population has been decreasing since 2008/09 to a current rate of 28.2 per 1,000 population in the 2014/15 fiscal year. This equates to a decreased rate of 3.8% as demonstrated in Figure 2.

Figure 1:



Source: Canadian Blood Services

Figure 2:

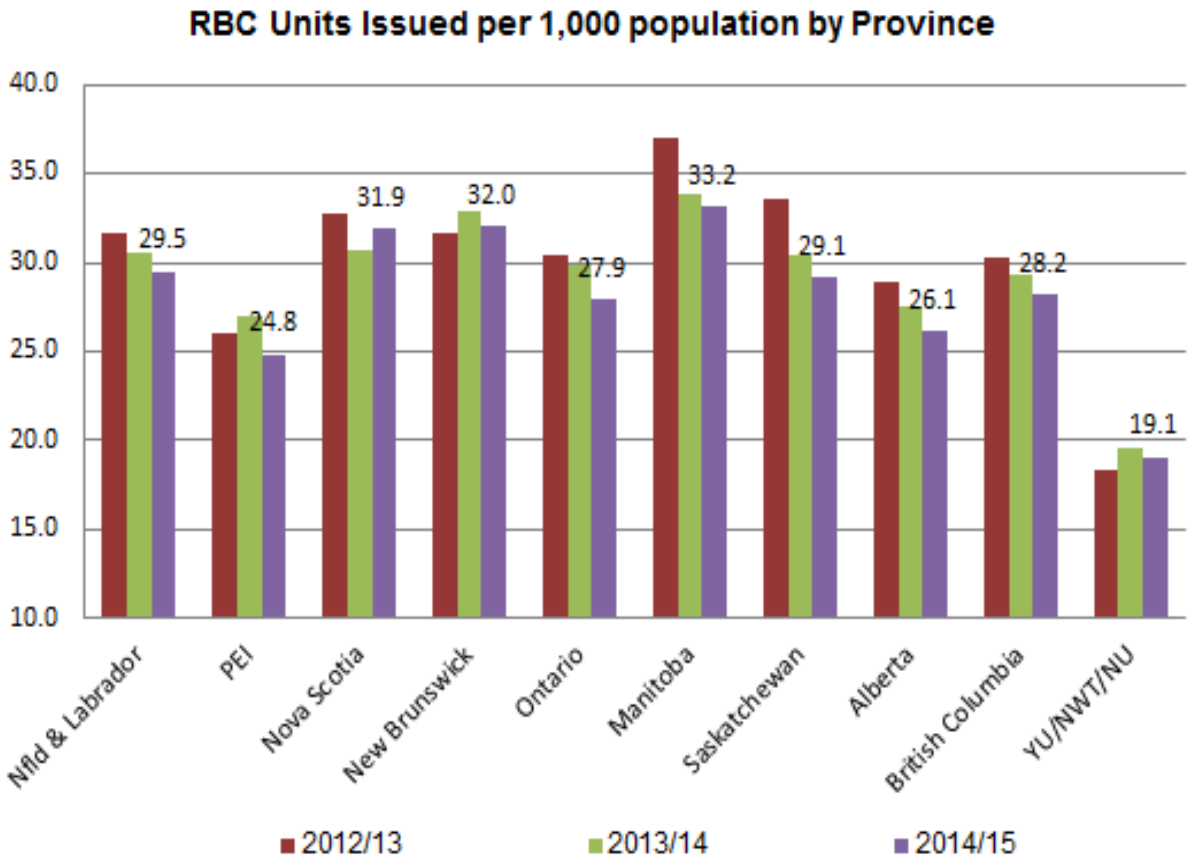


Source: Canadian Blood Service

3.2 Provincial Distribution

Canadian Blood Services supplies blood to all provinces in Canada except Quebec. Figure 3 displays the units of red blood cells per 1,000 population distributed to the provinces and territories in fiscal years 2012/13, 2013/14, and 2014/15. The number of RBC units distributed to Nova Scotia per 1,000 population have increased in 2014/15 to 31.9/1000 population after exhibiting a decline for the previous two years.

Figure 3:

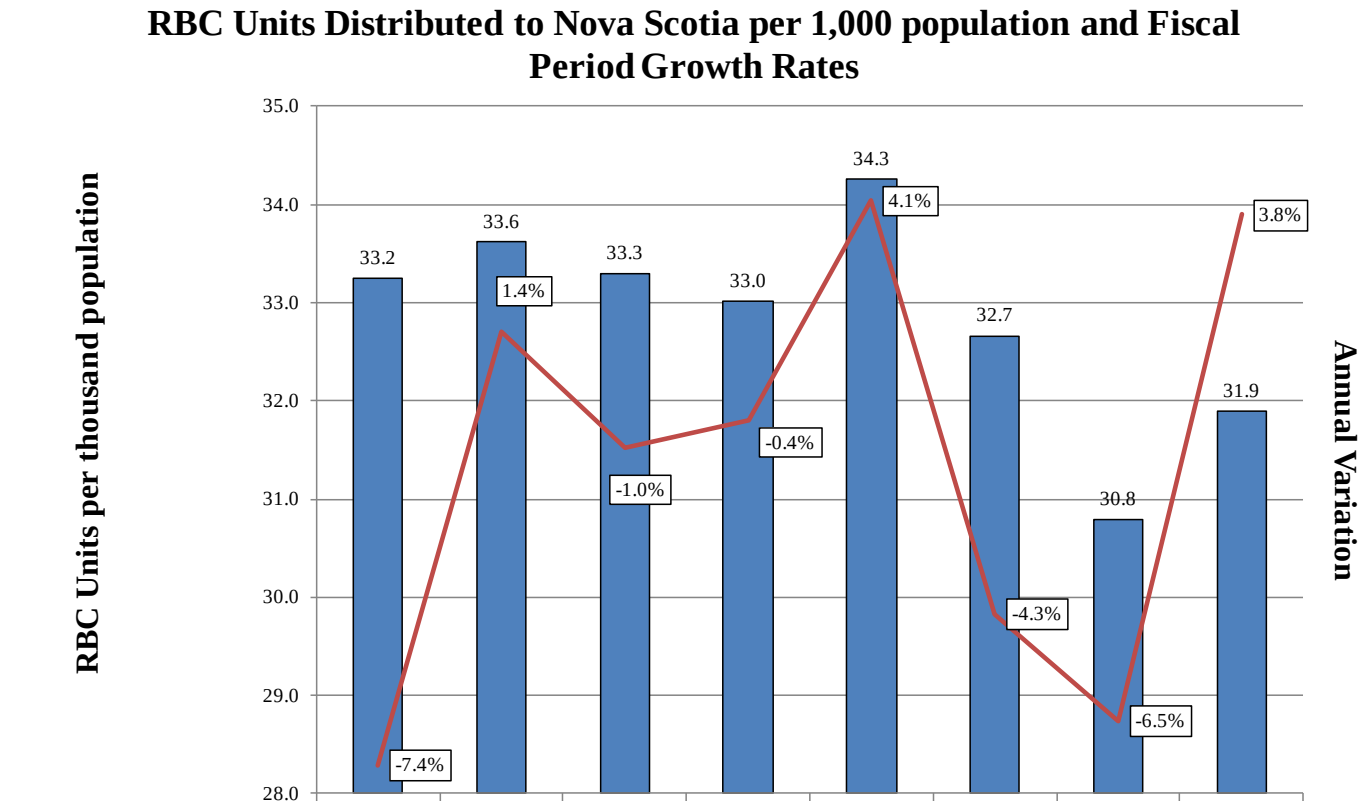


Source: Canadian Blood Services

3.3 Provincial Growth Rate

Figure 4 illustrates that the distribution of red blood cells in Nova Scotia for 2014/15 was 31.9/1000 population which is a 3.8% increase from the previous fiscal year after exhibiting a declining trend since 2011/12. The new rates of the distribution of red blood cells/1,000 population brings Nova Scotia to a level which is still better than 2012/13, but places Nova Scotia as the third highest user of red blood cells in the country. This figure also illustrates the variation in the annual percent growth in the distribution of units for Nova Scotia since 2007/08. Nova Scotia is in the process of implementing a policy of transfusing one red cell at a time in hospitalized stable patients. The new policy is expected to optimize the use of red blood cells in Nova Scotia.

Figure 4:



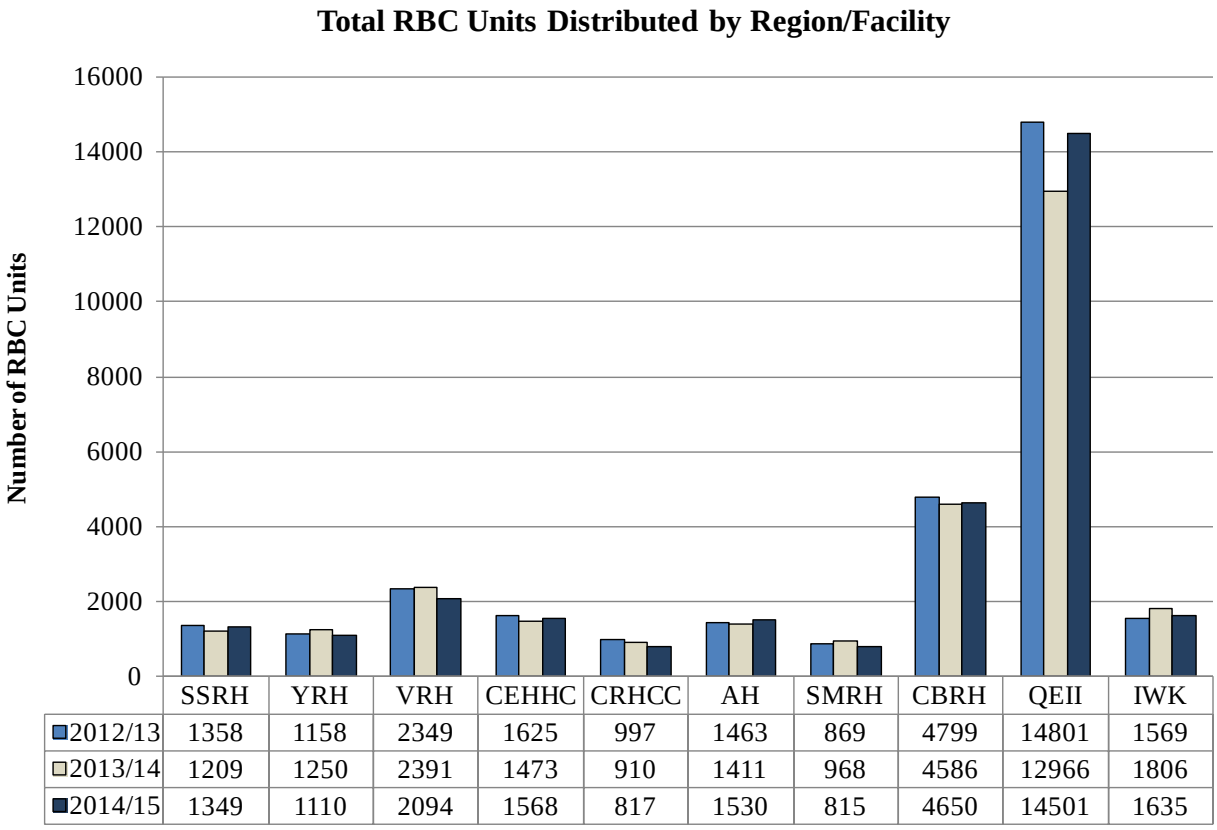
	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
RBC Units/1000 pop	33.2	33.6	33.3	33.0	34.3	32.7	30.8	31.9
RBC Units	31110	31544	31242	31120	32391	30988	28970	30069
Annual Variation (RBC Units)	-7.4%	1.4%	-1.0%	-0.4%	4.1%	-4.3%	-6.5%	3.8%

3.4 Distribution of Red Blood Cells to the Regions/Facilities

This section demonstrates the annual comparison of the total units distributed to the regions/facilities for the last three fiscal years. Figure 5 illustrates the total units distributed to regions/facilities for fiscal years 2012/13, 2013/14 and 2014/15. Five of the regions/facilities have shown a decrease in distribution for 2014/15 when compared to their own distribution in the previous fiscal year. The others have exhibited a rise this year.

The rise in the distributed number of units of red blood cells was attributed to an increase in the number of patients who were transfused blood components in 2014/15 as compared to 2013/14. Aging populations, bleeding patients in surgery/liver transplants, trauma cases and/or increased cancer care were recognized as the contributing factors for the rise.

Figure 5:



	SSRH	YRH	VRH	CEHHC	CRHCC	AH	SMRH	CBRH	QEII	IWK
2012/13	1358	1158	2349	1625	997	1463	869	4799	14801	1569
2013/14	1209	1250	2391	1473	910	1411	968	4586	12966	1806
2014/15	1349	1110	2094	1568	817	1530	815	4650	14501	1635

4 Red Blood Cell Data

4.1 Data Collection

The information presented in the remainder of this report is derived from data obtained by the NSPBCP from CBS. The following sections provide information regarding the data used to create the graphs and tables and should be considered in the interpretation of the utilization information in this report.

4.2 Percent Capture

Percent capture is used as a data quality indicator and assists in determining if the utilization data is representative of the overall utilization. Percent capture is calculated in the following manner:

$$\frac{\text{number of units reported as } \textit{utilized (transfused and discarded)}}{\text{total number of units } \textit{distributed}}$$

Table 1 demonstrates the percent capture of red blood cell utilization for the past three fiscal years in Nova Scotia.

Table 1:

Percent Capture of RBC Utilization in Nova Scotia

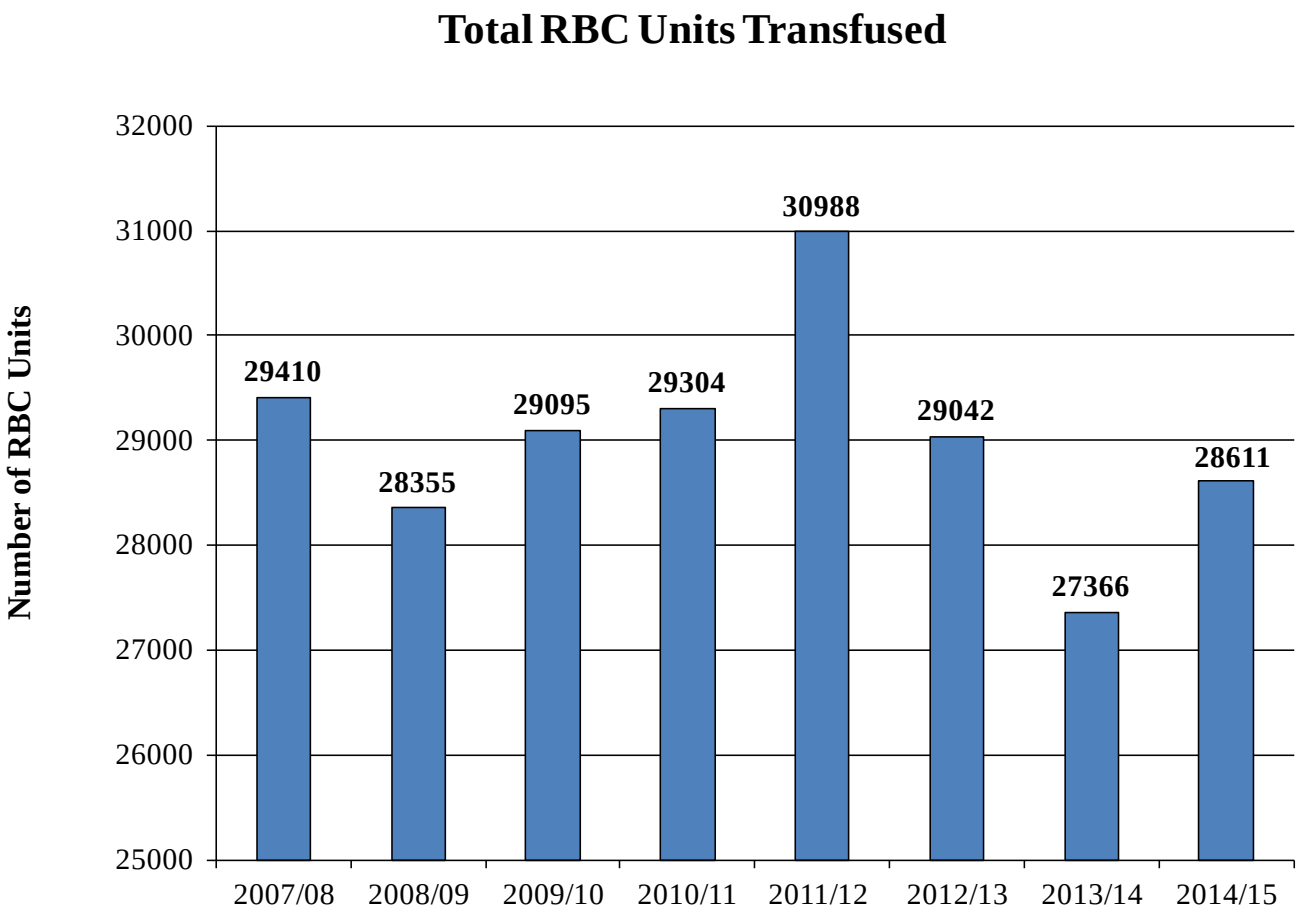
Fiscal Year	Total RBC Units Utilized *(transfused +discarded)*	Total RBC Units Distributed	Percent Capture
2012/2013	29,925	30,988	96.6%
2013/2014	28,276	28,970	97.6%
2014/2015	29,492	30,069	98.1%

5 Red Blood Cell Transfusion Data

The NSPBCP receives disposition data from Canadian Blood Services on a quarterly basis. Total units of red blood cells transfused are derived from this information and presented here.

Figure 6 illustrates the total annual transfused units in Nova Scotia reported to the NSPBCP, from 2007/08 to 2014/15. There was a gradual decrease in the total number of red blood cell transfusions in the fiscal years 2012/13 and 2013/14, followed by an increase in transfused units during 2014/15.

Figure 6:



6 Discard Rates of Red Blood Cell Units in Nova Scotia

Figure 7 illustrates the annual total discard rates in Nova Scotia for the last eight fiscal years. The discard rates in Nova Scotia have decreased to 3% in 2014/15 from 3.2% last year.

Figure 8 shows the discards in Nova Scotia broken down by in-date discards (product discarded prior to the expiry date), and outdate discards (product discarded because the expiry date was reached). Furthermore, outdate discards are further subdivided into B & AB outdates and A & O outdates. The target of the NSPBCP is to maintain the discard rate of type A and type O units to below 2%. This goal was met by Nova Scotia in 2014/15, as the rate of outdate discard for type A and type O was 0.7%, an improvement from last year's 0.8%. There are challenges in maintaining an adequate provincial and national supply of type O and A units, as these are the most common blood types in Canada. Therefore, the regions/facilities are being encouraged to stock appropriate quantities of type AB and B units to help avoid transfusing group compatible units to recipients who could have had group specific red blood cells. This strategy results in a small inventory of type B and AB red blood cell units going unused and ultimately expiring, hence discard rates are expected to increase slightly for non-A and non-O units. The B and AB outdate discards in Nova Scotia for 2014/15 was 1.0%. The indate discards have further declined to 1.3% in 2014/15 from 1.4% in 2013/14. The regions and facilities in Nova Scotia have attributed their success in maintaining a low discard rate in 2014/15 to an improved inventory management due to continuous education and training in inventory ordering.

Figure 7:

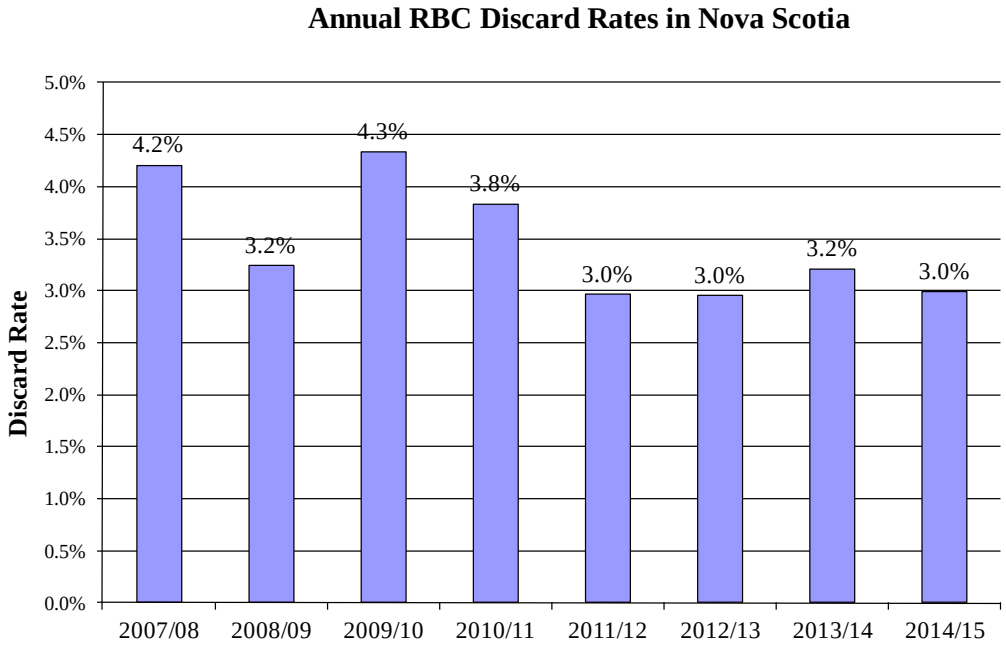
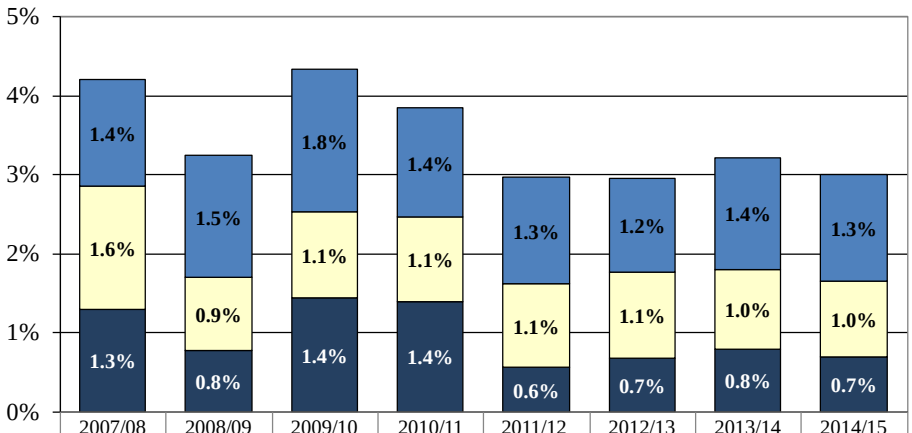


Figure 8:

Indate Discards Rate and Outdate Discards Rate by ABO in Nova Scotia



	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Indate Discards Rate	1.4%	1.5%	1.8%	1.4%	1.3%	1.2%	1.4%	1.3%
B & AB Outdate Discards Rate	1.6%	0.9%	1.1%	1.1%	1.1%	1.1%	1.0%	1.0%
A & O Outdate Discards Rate	1.3%	0.8%	1.4%	1.4%	0.6%	0.7%	0.8%	0.7%
Indate Discards	416	453	552	420	431	354	400	394
B & AB Outdate Discards	477	268	328	324	337	328	284	282
A & O Outdate Discards	398	228	438	425	178	201	224	205
Total Discard Rate	4.2%	3.2%	4.3%	3.8%	3.0%	3.0%	3.2%	3.0%

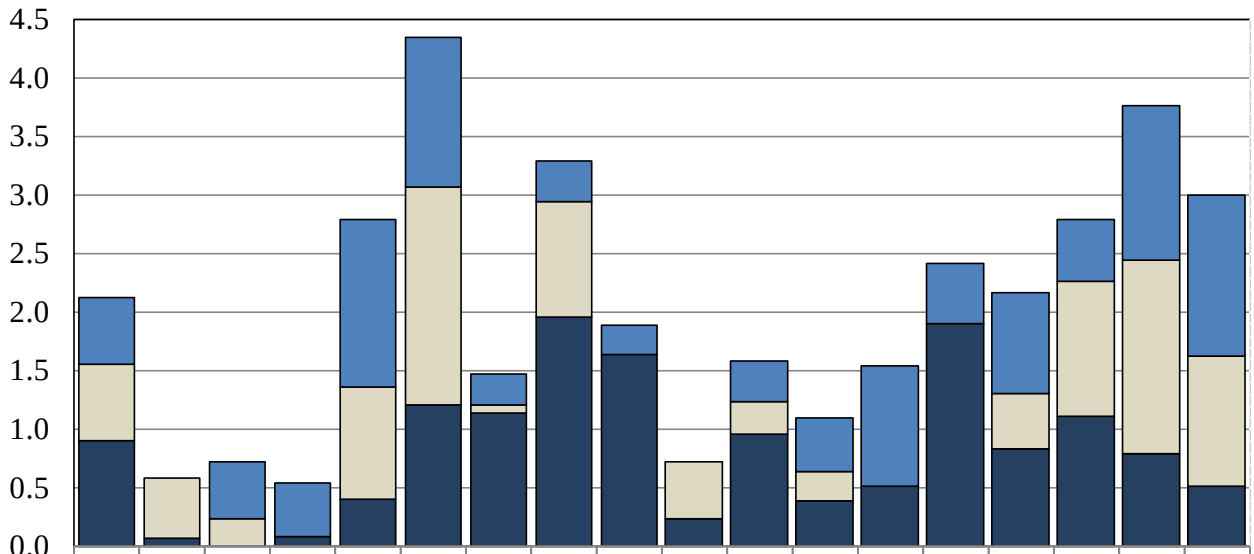
6.1 Nova Scotia Discard Rates at the Level of Regions/facilities

This section of the report illustrates the progress being made at the region/facility level regarding discard rates. This is to support accountability and transparency and to provide the regions/facilities with the opportunity to identify those that have demonstrated success in inventory management for the purpose of sharing best practices.

Figure 9a illustrates the discard rates of each region/facility over the last two fiscal years. The outdate discard rates are broken down by: B & AB outdates and A & O outdates. At a glance, it is preferable to keep the "dark blue" representing discard rate of A and O units, at less than 2%. Each region/facility kept their discards of A and O, at less than 2%.

Figure 9a:

Discard Rates and Proportion of Provincial Discards in Each Region/Facility



	SSRH 13/14	SSRH 14/15	YRH 13/14	YRH 14/15	VRH 13/14	VRH 14/15	CEHHC 13/14	CEHHC 14/15	CRHCC 13/14	CRHCC 14/15	AH 13/14	AH 14/15	SMRH 13/14	SMRH 14/15	CBRH 13/14	CBRH 14/15	QEII 13/14	QEII 14/15
Indate Rate (%)	0.6	0.0	0.5	0.5	1.4	1.3	0.3	0.4	0.3	0.0	0.3	0.5	1.0	0.5	0.9	0.5	1.3	1.4
B/AB Outdate Rate (%)	0.7	0.5	0.2	0.0	1.0	1.9	0.1	1.0	0.0	0.5	0.3	0.3	0.0	0.0	0.5	1.2	1.6	1.1
A/O Outdate Rate (%)	0.9	0.1	0.0	0.1	0.4	1.2	1.1	2.0	1.6	0.2	1.0	0.4	0.5	1.9	0.8	1.1	0.8	0.5
Indate (Units)	7	0	6	5	28	21	4	5	2	0	5	7	10	4	40	25	177	204
B/AB Outdate (Units)	8	7	3	0	19	31	1	14	0	4	4	4	0	0	22	55	222	165
A/O Outdate (Units)	11	1	0	1	8	20	17	28	13	2	14	6	5	15	39	53	107	77
Total Discard Rate (%)	2.1	0.6	0.7	0.5	2.8	4.3	1.5	3.3	1.9	0.7	1.6	1.1	1.5	2.4	2.2	2.8	3.8	3.0
% of NS Discard	2.9	0.9	1.0	0.7	6.1	8.2	2.4	5.3	1.7	0.7	2.5	1.9	1.7	2.2	11.1	15.1	55.7	50.6

The decline in the discards at the QEII was associated with the discontinuation of taking red blood cells from the IWK as a routine unless it was absolutely required. The use of Rh negative red cells to Rh positive patients when they were within 48 hours to outdate, and review and reduction of inventory at the Victoria General Hospital and Halifax Infirmary also contributed to this improvement. The review and revision of inventory was also conducted at the Dartmouth General Hospital and Hants Community Hospital during December 2015, therefore further improvement in discard rates is expected for fiscal year 2015/16.

The B/AB discards in Colchester East Hants Health Centre (CEHHC) increased from 1 unit in 2013/14 to 14 units in 2014/15 because they have recently started stocking B negative and AB positive units. This has resulted in a rise in outdates of the AB units whereas, the B negative units are utilized most of the time. This region has experienced a rise in the A/O outdates as well. The outdate discards of A/O units increased from 17 units in 2013/14 to 28 units in 2014/15. Seven of these A/O units had to be discarded in June as a unit broke in the Canadian Blood Services box and contaminated everything in the box.

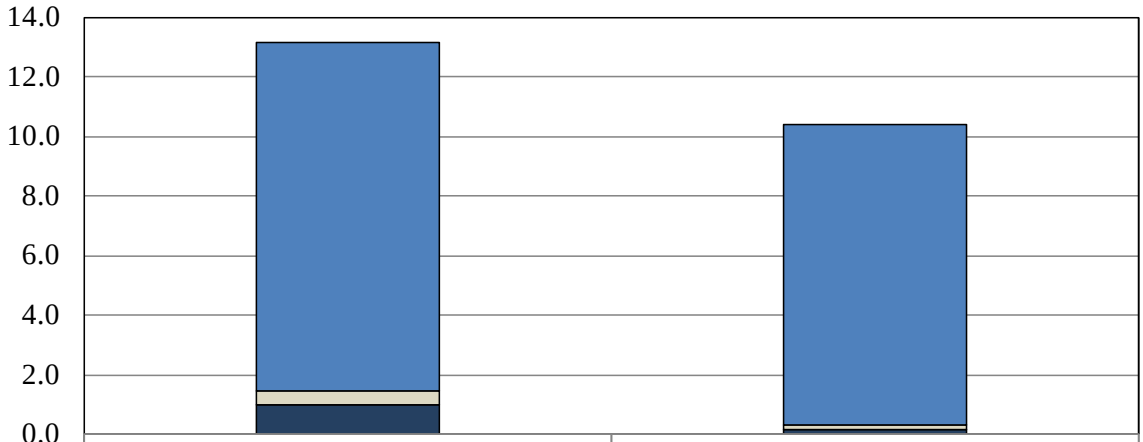
In Cape Breton Regional Hospital (CBRH), the rise in the B/AB outdate discards from 22 units in 2013/14 to 55 units in 2014/15 was associated with a rise in the inventory stock of more group B and AB units to give "group specific" red blood cells. This resulted in a rise in outdate discards. The rise in O/A discards in CBRH was associated with a rise in the inventory of O negative units to provide fresh O negative CMV-/Irradiated blood for their neonatal population.

In St. Martha's Regional Hospital (SMR), the rise in the outdated discards of A units in 2014/15 was due to 6 A red blood cell units expiring in one month during a 2-week period due to low transfusion rates for A blood group patients. Since then SMR has decreased the number of A units in the inventory stock from 8 to 6.

Figure 9b illustrates the same information for the IWK but is separated due to the difference in scale. The total discard rate at the IWK decreased to 10.4% in 2014/15. This was an improvement from a discard rate of 13.2% in 2013/14. The outdate discard rate at the IWK for B/AB as well as A /O were both as low as 0.2% in 2014/15.

Figure 9b

Discard Rates and Proportion of Provincial Discards in IWK



	IWK 13/14	IWK 14/15
Indate Rate (%)	11.7	10.1
B/AB Outdate Rate (%)	0.5	0.2
A/O Outdate Rate (%)	1.0	0.2
Indate (Units)	121	123
B/AB Outdate (Units)	5	2
A/O Outdate (Units)	10	2
Total Discard Rate (%)	13.2	10.4
% of NS Discard	15.0	14.4

6.2 Breakdown of Discards by Blood Type

Table 2 demonstrates a breakdown of the outdate discards by blood type for a one year period. A breakdown of the *indate* discards is *not* shown here as indate blood type counts are not reported.

Table 2:

Breakdown of Outdate Discards by Blood Type for April 2014 to March 2015

Region/Facility	AB -	AB +	A -	A +	B -	B +	O -	O +
SSRH	0	0	0	1	0	7	0	0
YRH	0	0	0	1	0	0	0	0
VRH	0	20	0	5	2	9	3	12
CEHHC	0	9	7	15	1	4	1	5
CRHCC	0	0	1	0	0	4	1	0
AH	0	0	0	6	3	1	0	0
SMRH	0	0	6	7	0	0	2	0
CBRH	13	31	13	29	1	10	5	6
QEII	62	54	47	7	44	5	23	0
IWK	0	0	0	1	0	2	1	0

The remainder of this section of the report is comprised of regions/facilities, annual RBC distribution and discards graphs. They are meant to illustrate the progress each region/facility has been making and also to identify those regions/facilities that still may require adjustments to their inventory management practices.

Note that distribution graphs for each region/facility is followed by its red blood cell discard graph over the same fiscal years.

7 Next Steps

The successful inventory management in the regions/facilities has resulted in minimizing discards of red blood cells over the last four years.

The Red Blood Cell Clinical Expert Working Group endorsed the implementation of clinical practice guidelines modeled on those created by AABB. This working group is comprised of a variety of clinical specialists from a variety of practices. The *AABB Clinical Practice Guidelines* recommend adhering to a restrictive transfusion strategy, whereby a hemoglobin trigger of 70-80 g/L should be reached before considering transfusing red blood cells. In addition, transfusing one unit at a time with repeated hemoglobin measures and clinical assessment to monitor response is recommended. With the use of guidelines that incorporate these two principles, and in combination with the RBC dashboard (a web based shared inventory monitoring system), we hope to implement a strategy that will optimize the use of red blood cells and improve monitoring of appropriate and inappropriate use based on indications.

Appendix A Calculation of Discard Rates

The equations below illustrate the methods used to calculate the discard rates in this report.

$$\text{Total Discard Rate} = \frac{\text{indate discarded units + outdate discarded units}}{\text{indate discarded units + outdate discarded units + transfused units}}$$

$$\text{Indate Discard Rate} = \frac{\text{indate discarded units}}{\text{indate discarded units + outdate discarded units + transfused units}}$$

$$\text{Outdate Discard Rate} = \frac{\text{outdate discardednits}}{\text{indate discarded units + outdate discarded units + transfused units}}$$

Appendix B Description of Fields for Red Blood Cell Discards

Appendix B provides a list of use types that are used when calculating discard rates for the figures and tables contained within this report. Product types included are allogeneic, autologous and Directed RBC.

Use Category	Use Type
Indate Discards	TOTAL_BROKEN
	TOTAL_FAILED_INSPECTION
	TOTAL_IMPROPER_STORAGE
	TOTAL_PATIENT_RELATED
	TOTAL_RETURNED
Outdate Discards	TOTAL_OUTDATED
Outdate Discards by ABO	A_NEG_OUTDATED
	A_POS_OUTDATED
	AB_NEG_OUTDATED
	AB_POS_OUTDATED
	B_NEG_OUTDATED
	B_POS_OUTDATED
	O_NEG_OUTDATED
	O_POS_OUTDATED
Transfused	TOTAL_TRANSFUSED_RBC

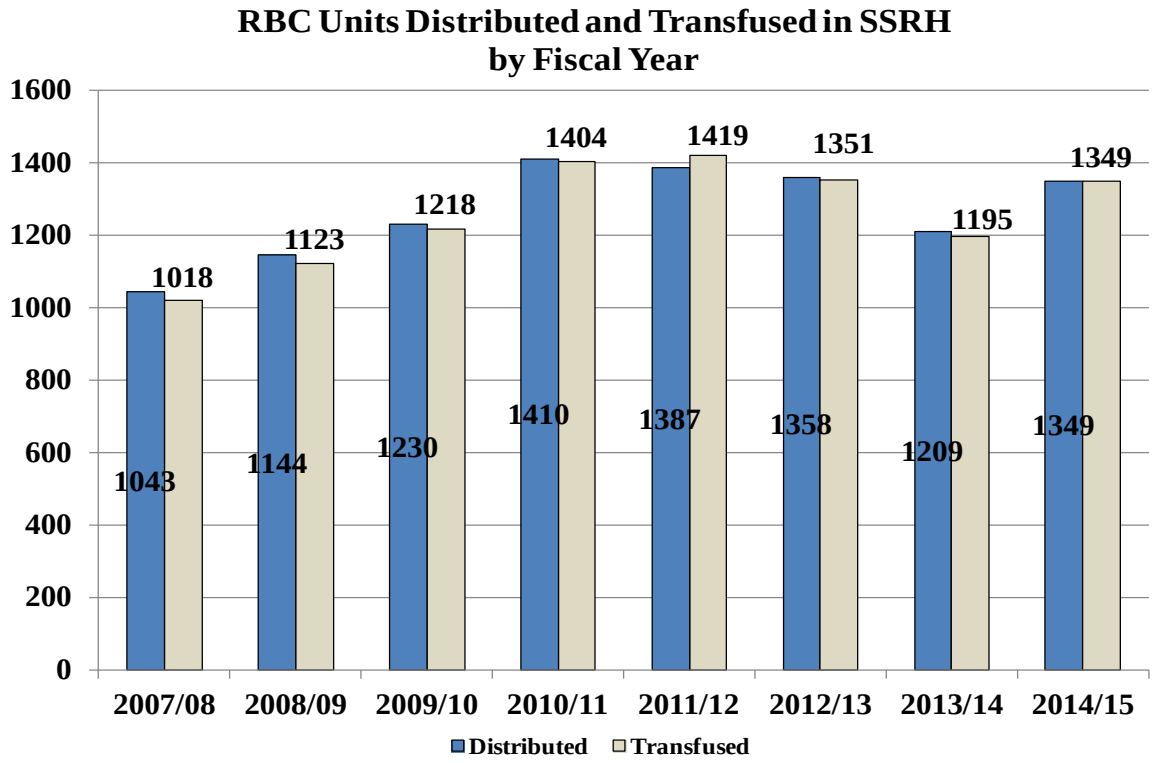
Appendix C New Region/Facility Grouping

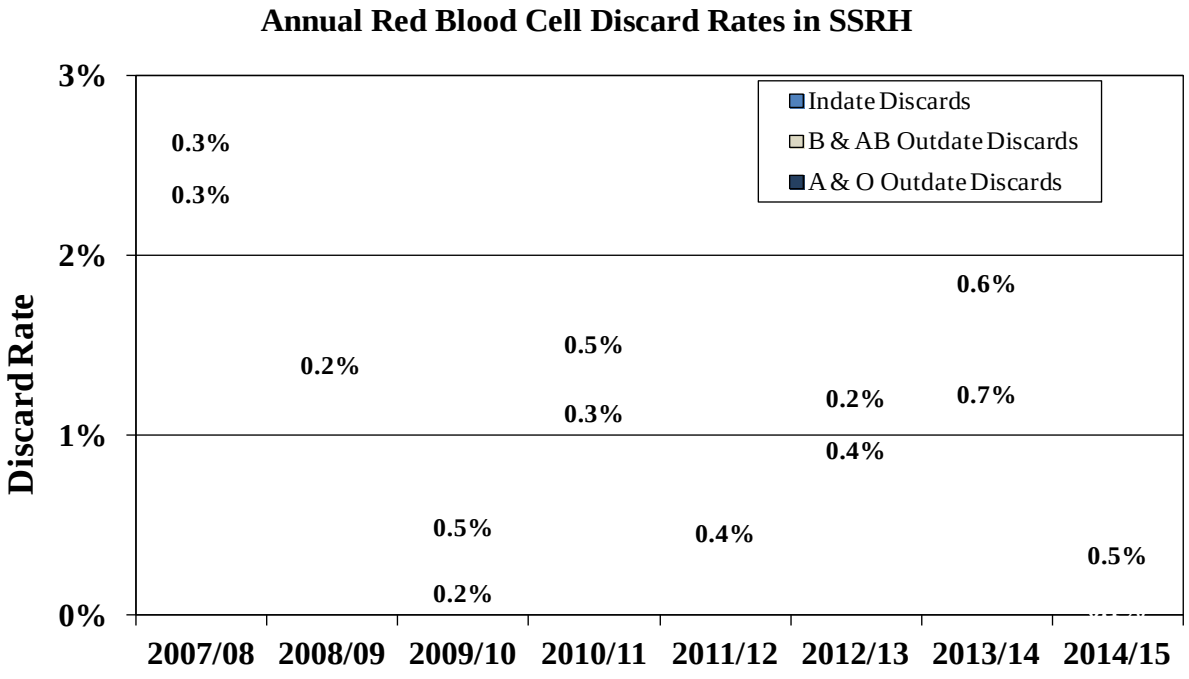
Full Facility Name	*Acronym*	*Formerly*
South Shore Regional Hospital	**SSRH**	**DHA 1**
Fisherman's Memorial Hospital		
Queens General Hospital		
Yarmouth Regional Hospital	**YRH**	**DHA 2**
Digby General Hospital		
Roseway Hospital		
Valley Regional Hospital	**VRH**	**DHA 3**
Annapolis Community Health Centre		
Eastern Kings Memorial Community Health Centre		
Soldiers Memorial Hospital		
Western Kings Memorial Health Centre		
Colchester East Hants Health Centre	**CEHHC**	**DHA 4**
Lillian Fraser Memorial Hospital		
Cumberland Regional Health Care Centre	**CRHCC**	**DHA 5**
North Cumberland Memorial Hospital		
South Cumberland Community Care Centre		
All Saints Springhill Hospital		
Bayview Memorial Health Centre		
Aberdeen Hospital	**AH**	**DHA 6**
Sutherland Harris Memorial Hospital		
St. Martha's Regional Hospital	**SMRH**	**DHA 7**
Eastern Memorial Hospital		
Guysborough Memorial Hospital		
St. Mary's Memorial Hospital		
Strait Richmond Hospital		
Cape Breton Regional Hospital	**CBRH**	**DHA 8**
Buchanan Memorial Community Health Centre		
Glace Bay Health Care Facility		
Harbourview Hospital		
Inverness Consolidated Memorial Hospital		
Northside General Hospital		
New Waterford Consolidated Hospital		
Sacred Heart Community Health Centre		
Victoria County Memorial Hospital		
QEII Health Sciences Centre	**QEII**	**DHA 9**
Cobequid Community Health Centre		
Dartmouth General Hospital		
Eastern Shore Memorial Hospital		
Hants Community Hospital		

Full Facility Name	***Acronym***	***Formerly***
The Nova Scotia Hospital		
Musquodoboit Valley Memorial Hospital		
Twin Oaks Memorial Hospital		
IWK Health Centre	**IWK**	**IWK**

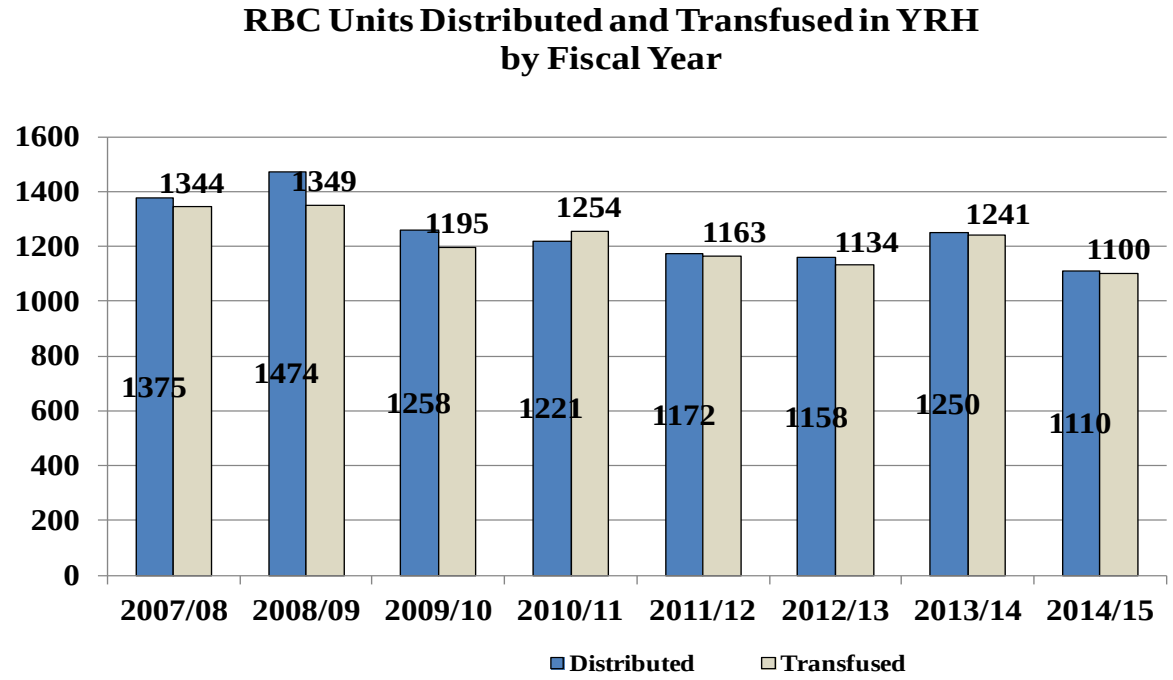
Appendix D Regional Data

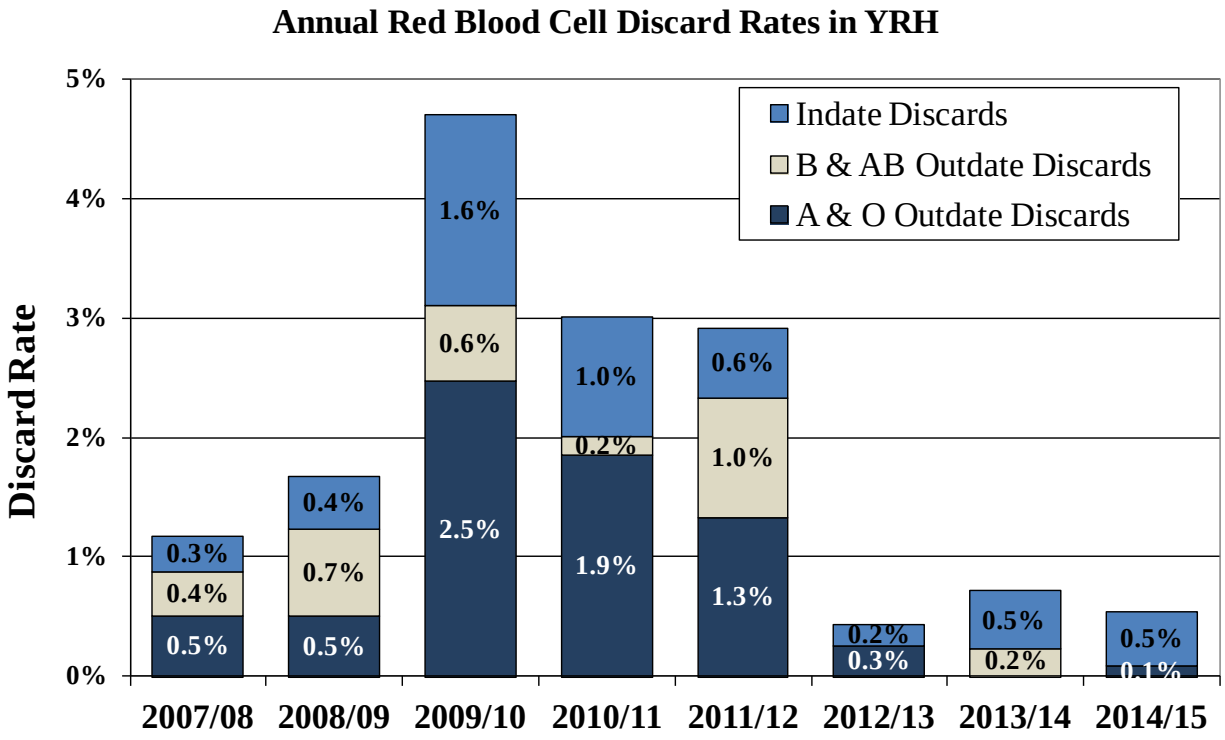
SSRH - South Shore Regional Hospital



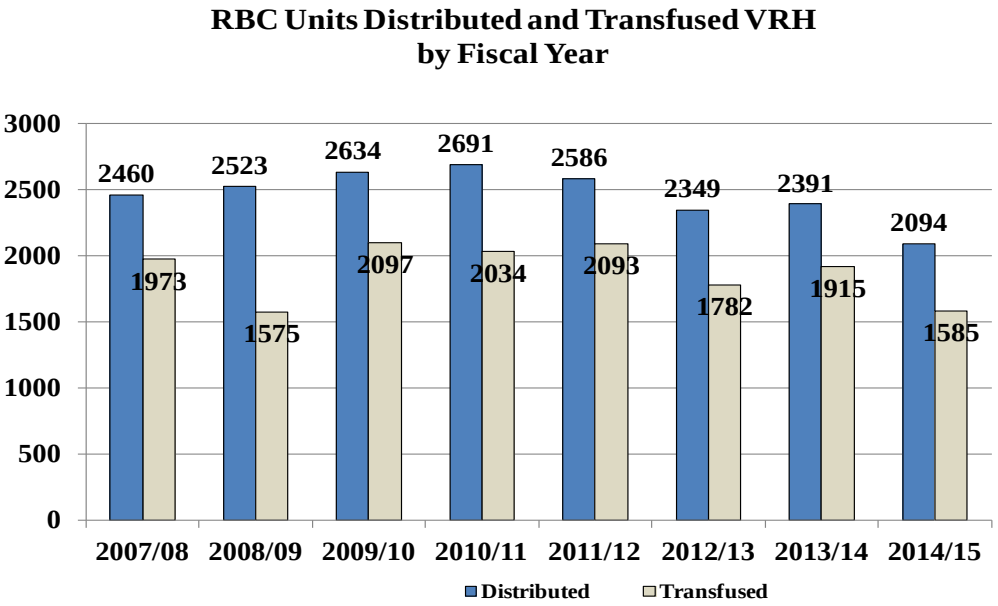


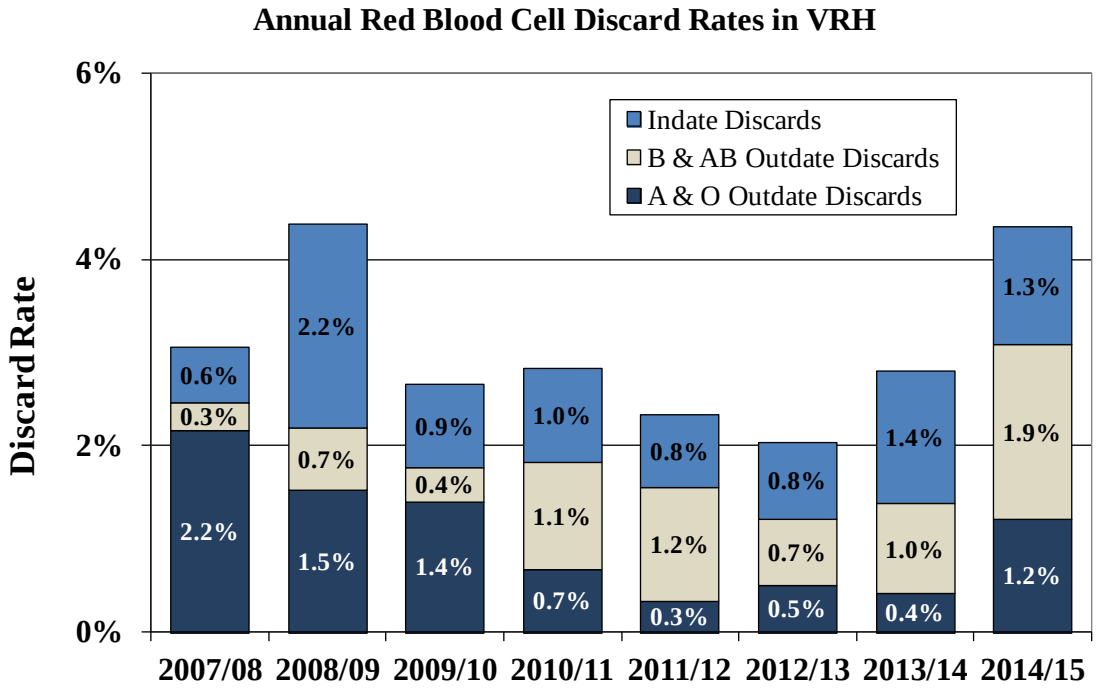
YRH – Yarmouth Regional Hospital





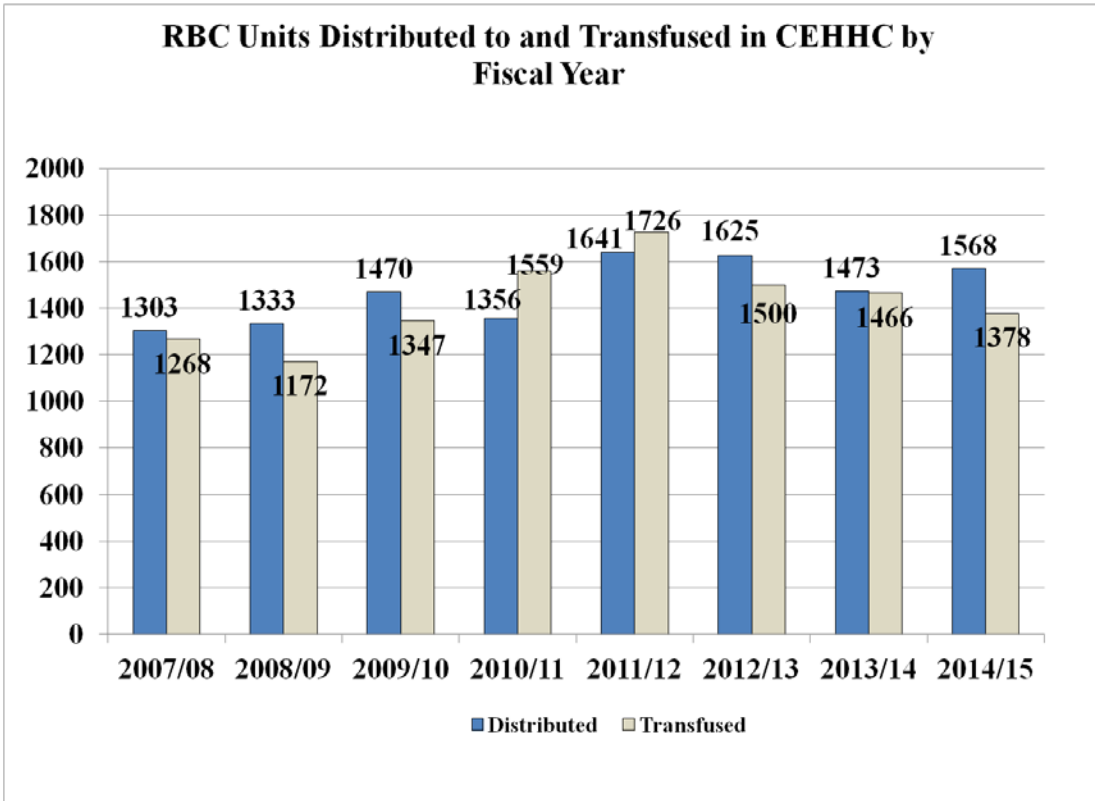
VRH – Valley Regional Hospital

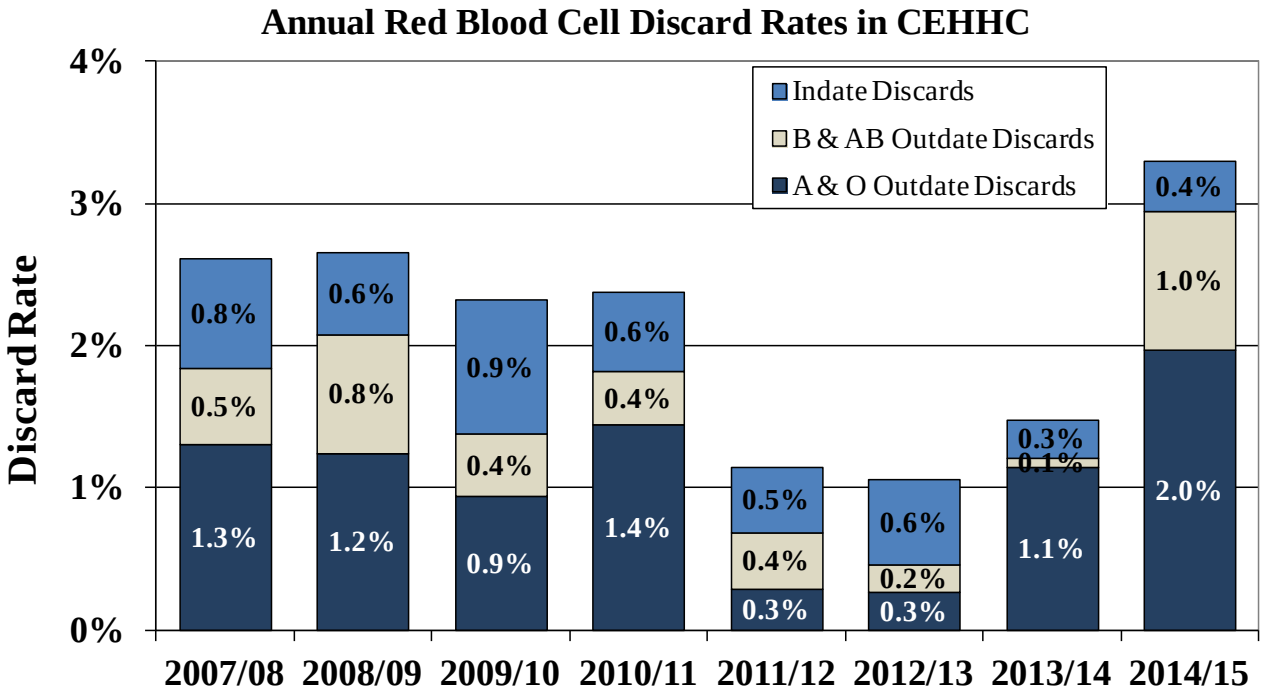




The indate discards decreased in VRH to 1.3% for 2014/15. The rise in the total discard rates is a result of an unusual occurrence of an outdate discards in A/O during 2014/15. This is because VRH received 10 units of O Positive and 2 units of A positive red blood cells from CBS in December and January with very early expiry dates due to an abundance of type O units at CBS.

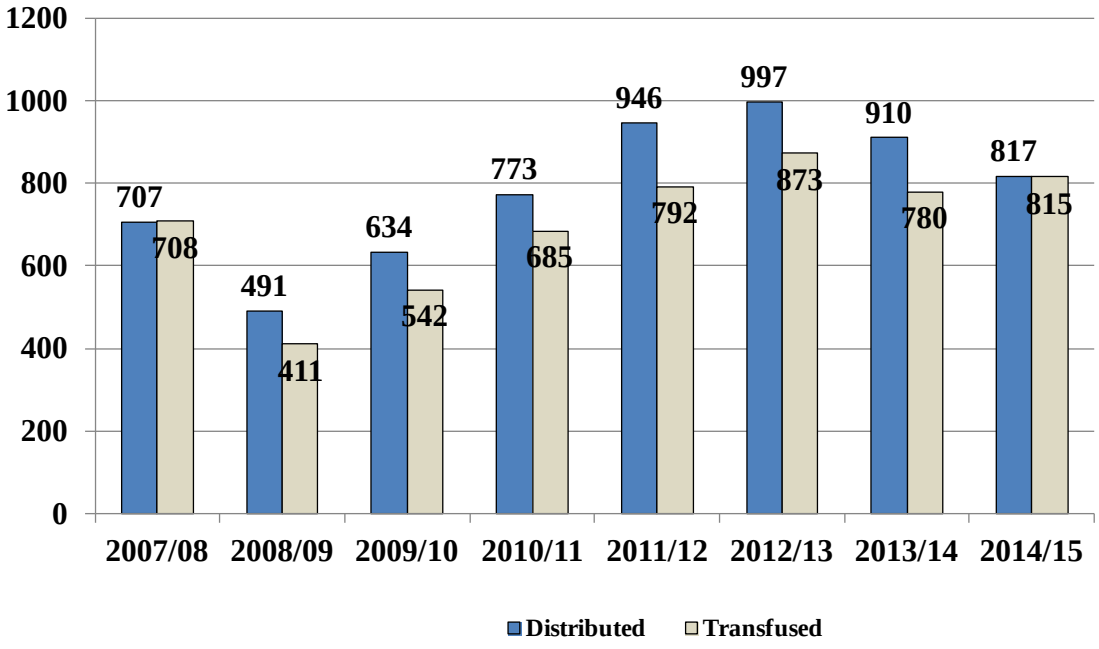
CEHHC - Colchester East Hants Health Centre



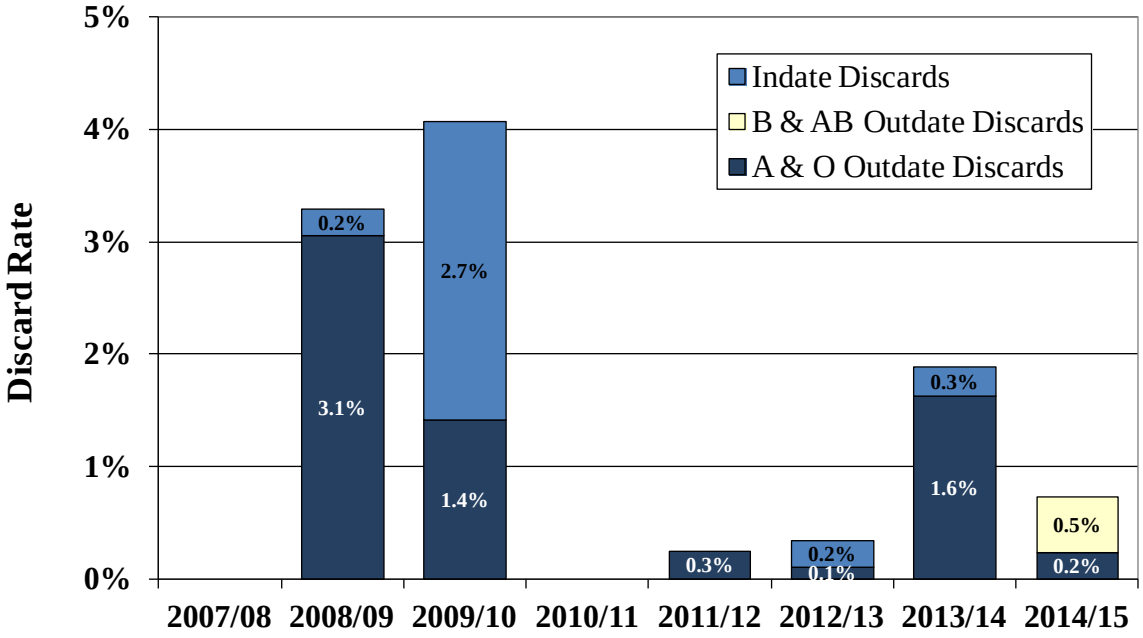


CRHCC - Cumberland Regional Health Care Centre

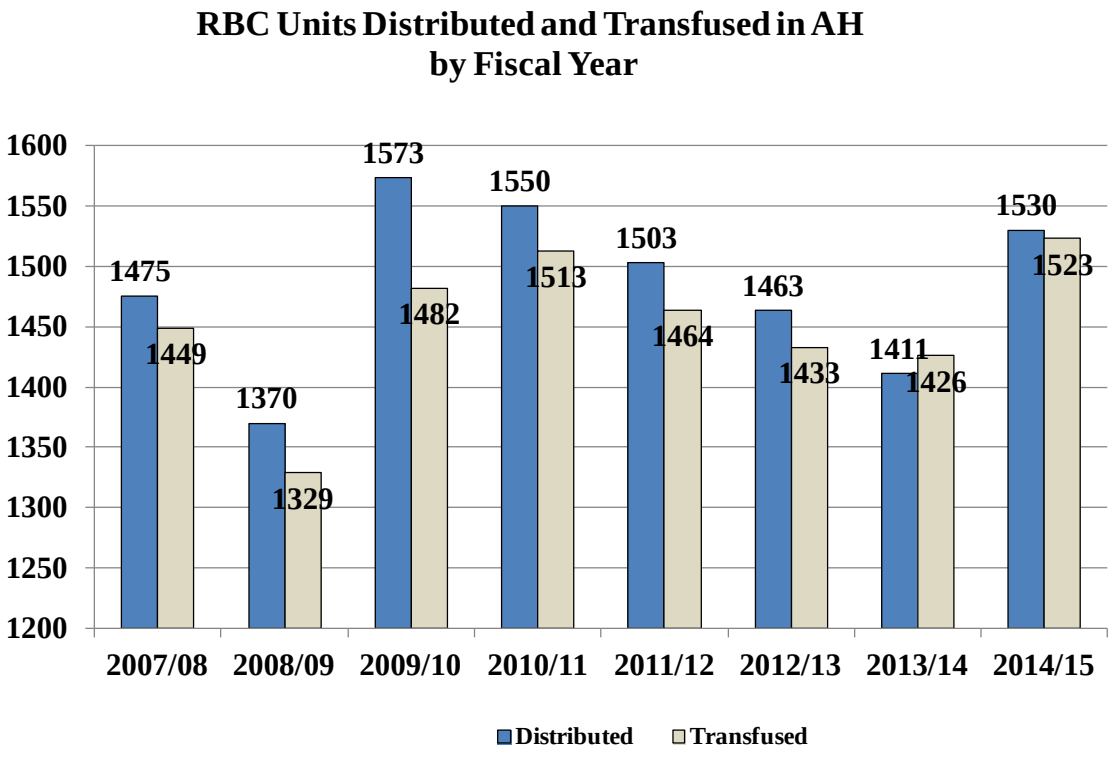
RBC Units Distributed and Transfused in CRHCC by Fiscal Year

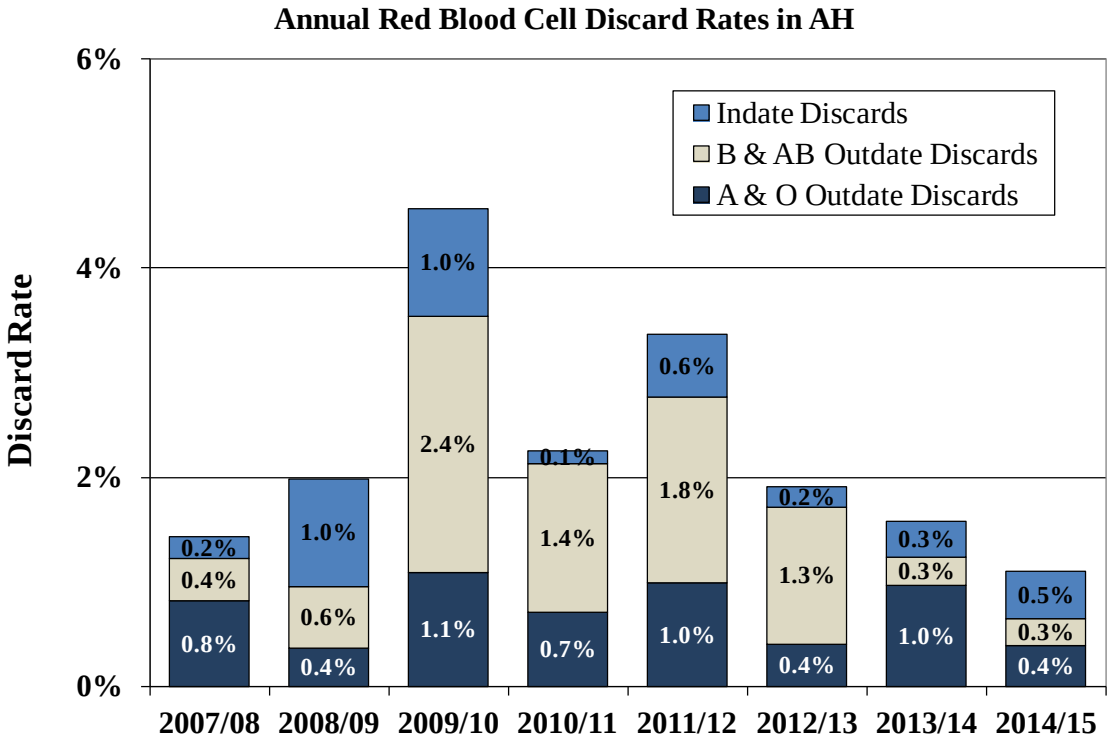


Annual Red Blood Cell Discard Rates in CRHCC

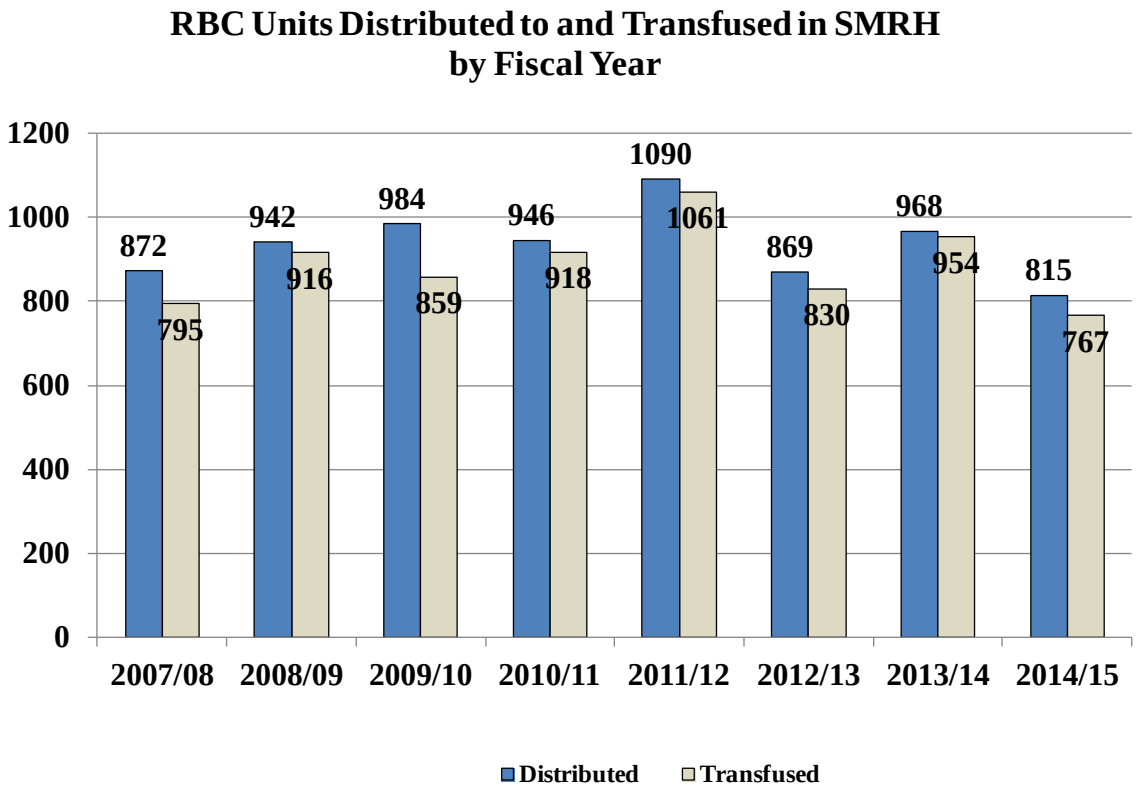


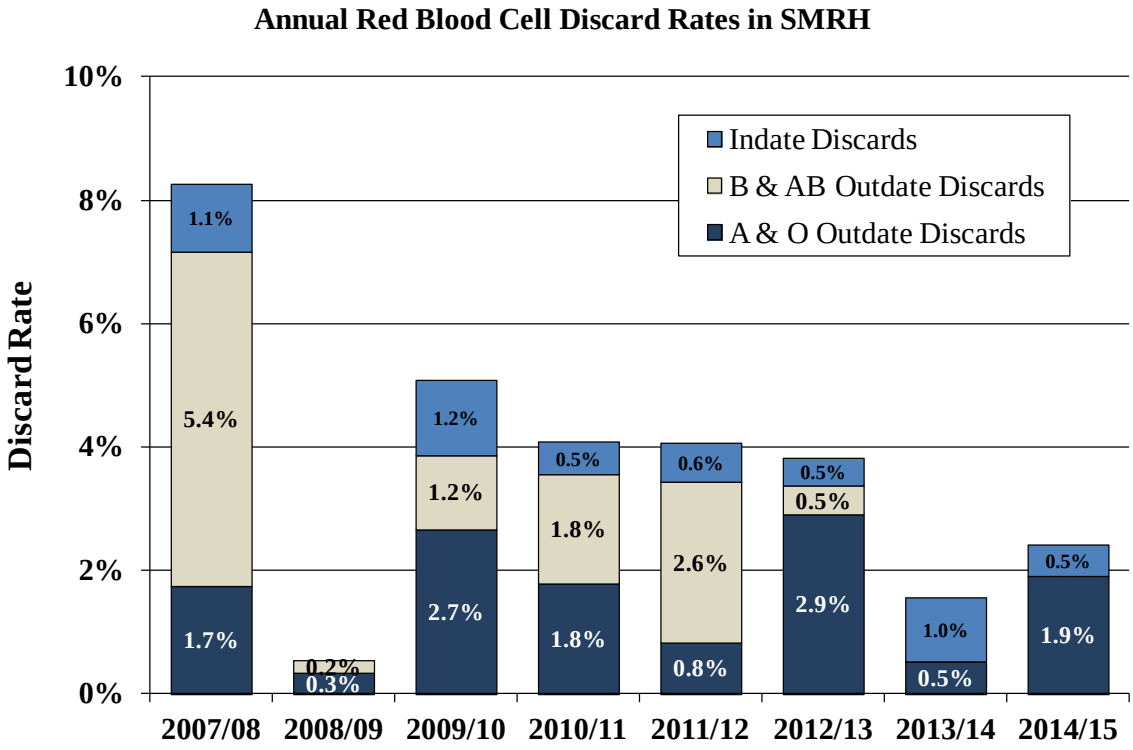
AH – Aberdeen Hospital



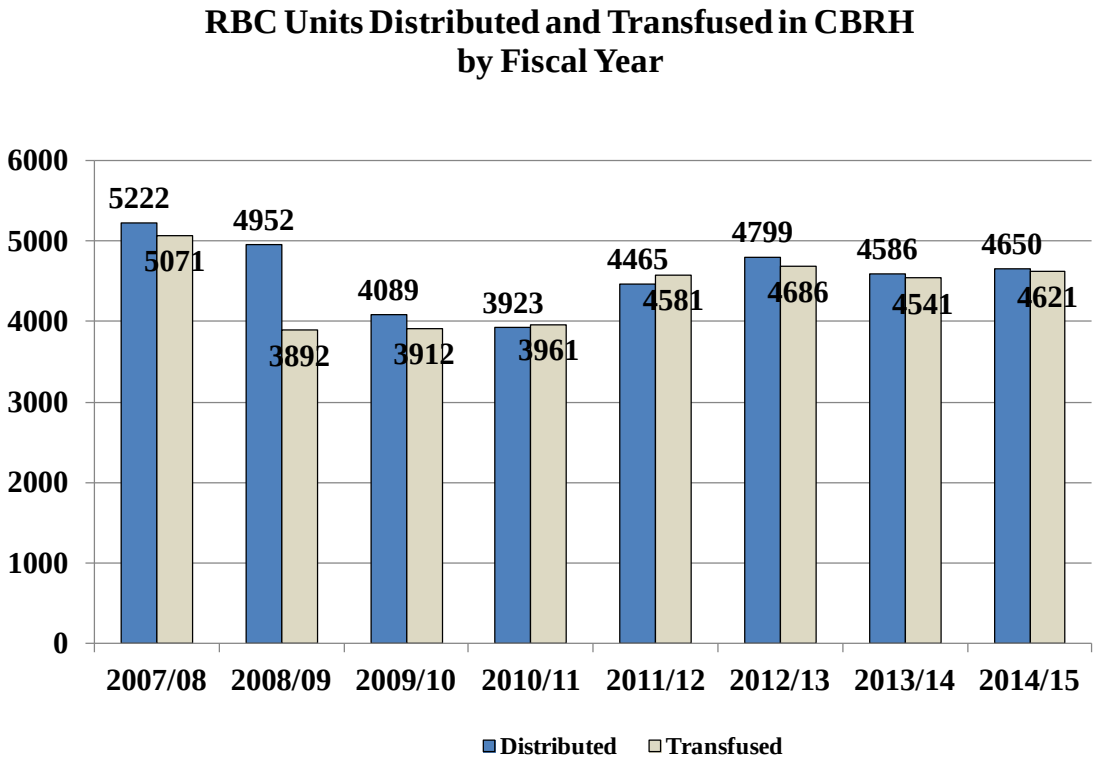


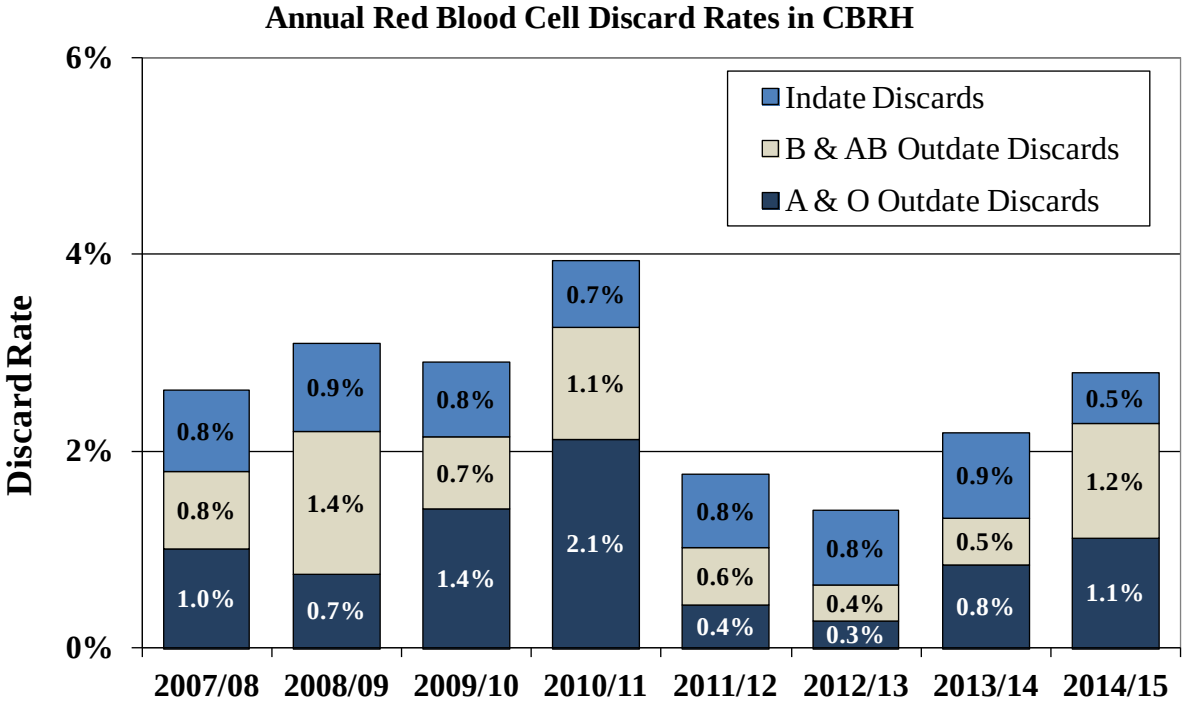
SMRH – St. Martha's Regional Hospital



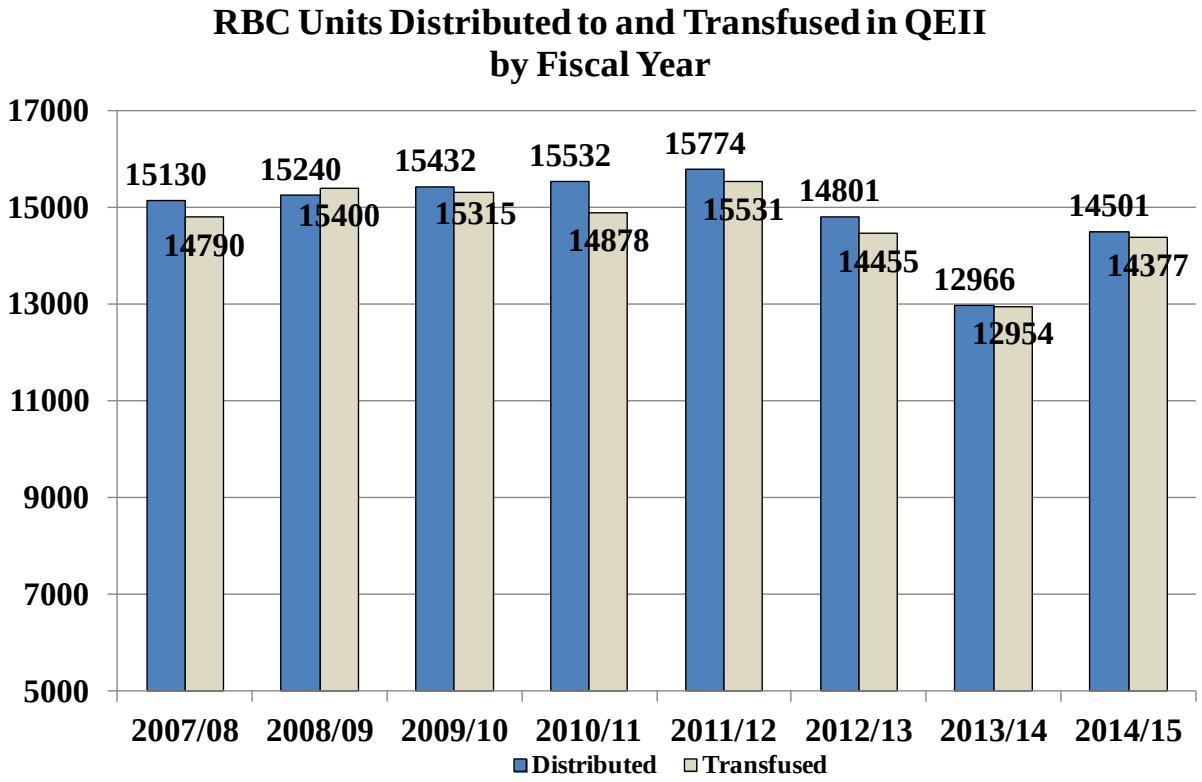


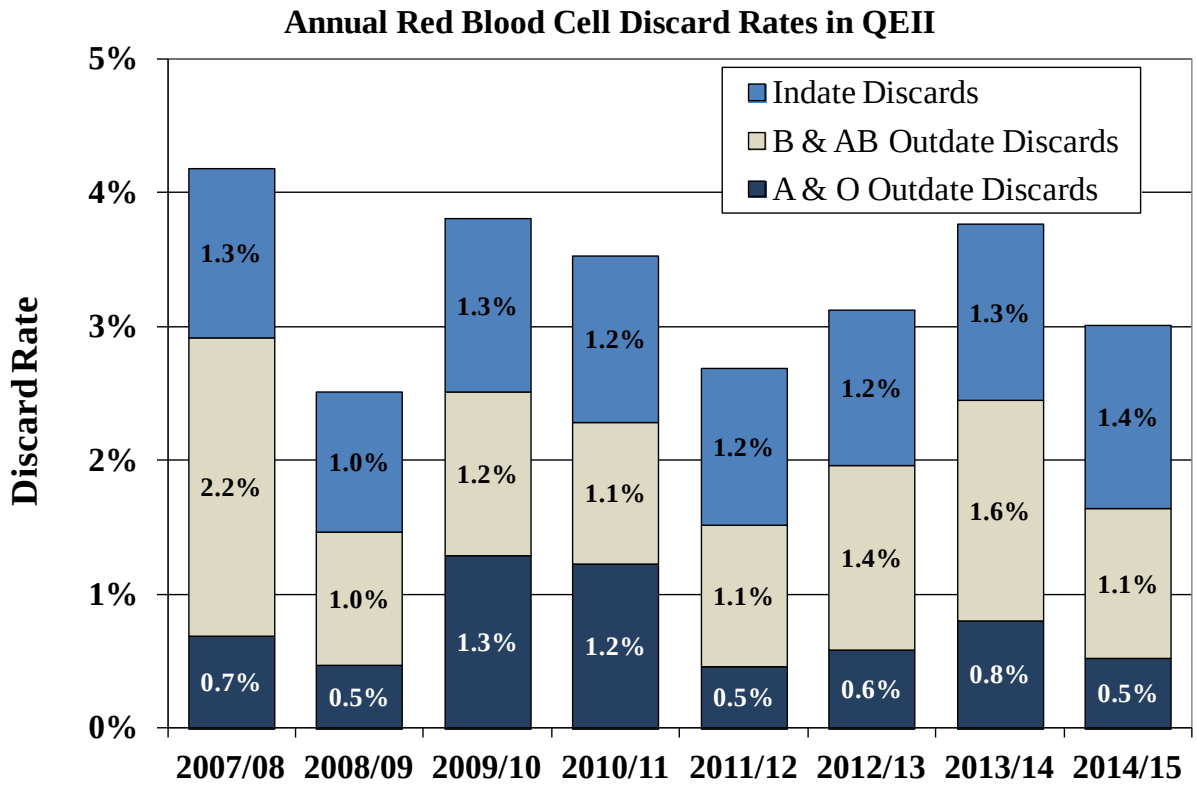
CBRH - Cape Breton Regional Hospital



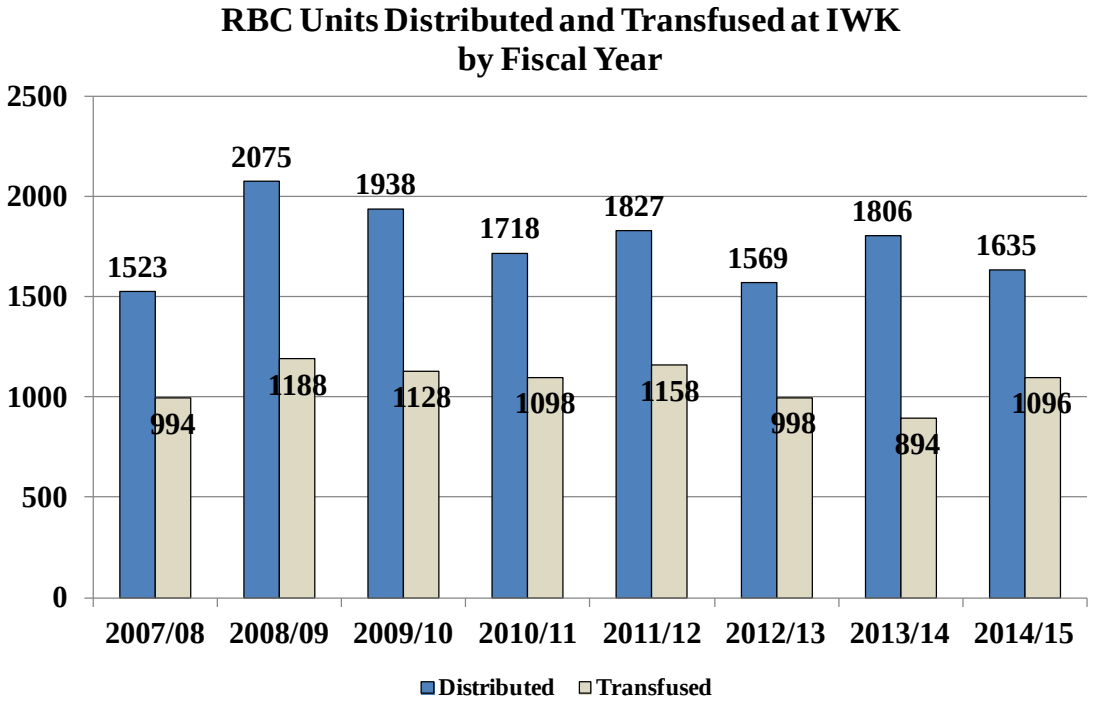


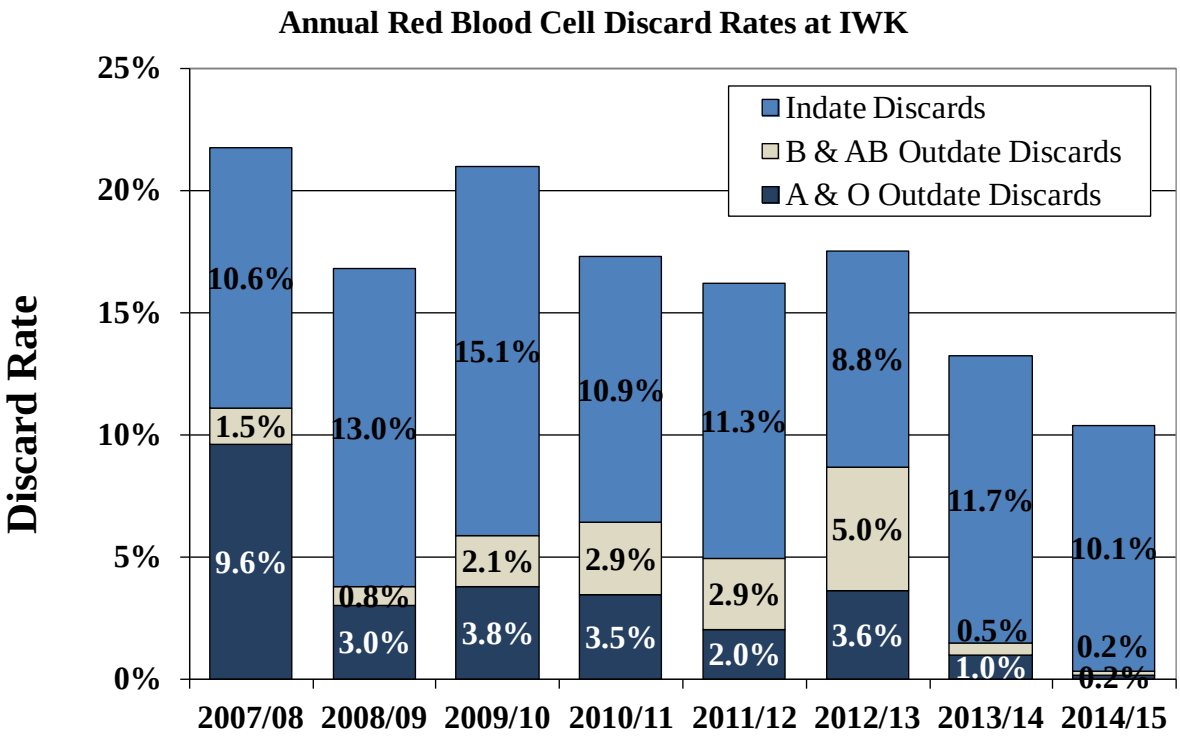
QEII: QEII Health Sciences Centre





IWK Health Centre





The above graph illustrates the IWK Health Centre has achieved a 1.6% decrease in their indate discards between 2013/14 and 2014/15. This brings the total discard rate to the lowest rate since 2007/08. Indate discards come primarily from two different sources: plasma-extracted RBC units and temperature requirements not being met for RBC units kept on hand in the operating room (OR). Based on published literature, cardiac surgeons and blood bank staff at the IWK have agreed plasma extracted red blood cell units are to be used for young patients (< 1 year) undergoing open heart surgeries where high volume transfusions may be required. To rectify the issues with temperature requirements in the OR, two temperature monitored blood storage fridges were placed in the OR and in the birth unit which has continued to contribute to the improved rates of indate discards.