



Blood Counts



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In This Issue

<i>Blood Matters 2014</i>	<i>1</i>
<i>Allocating Blood Components in a Red Phase Shortage</i>	<i>2</i>
<i>Why Two When One Will Do?</i>	<i>2</i>
<i>RBC Transfusion Pathway</i>	<i>3</i>
<i>Platelet Selection</i>	<i>4</i>

Upcoming Events

CSTM 2015 Winnipeg, MB May 21-24, 2015

AATB Annual Meeting 2015 Scottsdale, AZ
September 15-19, 2015

AABB Annual Meeting & CTTXPO 2015
Anaheim, CA October 24-27, 2015

**“Blood Matters” 5th Annual Transfusion
Medicine Conference** Halifax Marriott
Harbourfront Hotel Halifax, NS
November 6, 2015

Blood Matters 2014

The Nova Scotia Provincial Blood Coordinating Program (NSPBCP), and Canadian Blood Services (CBS) collaborated to host the 5th annual Blood Matters Conference on November 28, 2014 at the Halifax Marriott Harbourfront Hotel. A diverse group of 202 transfusion medicine professionals from across Canada participated in this educational event in person or via webcast. Webcasting of the conference was made possible in part due to funding support from Blood Technet, part of the CBS Center for Innovation. With the help of this award we were able to extend the invitation to health care professionals across the country free of charge.

The theme for the day was Partners in Excellence and the audience was engaged as nine speakers presented topics related to transfusion medicine such as sickle cell anemia, diagnosing TACO versus TRALI, managing massive transfusions, diagnosing anemia, ABO platelet match, Choosing Wisely Canada, and even the use of robots in transfusion medicine. Canadian Blood Services highlighted the success of wise management efforts. An interactive session allowed participants to work in groups to answer transfusion medicine related practice questions. We were especially fortunate to have the mother of a sickle cell anemia patient as a guest speaker. She reinforced to all of us the reason why we work to achieve transfusion medicine excellence. Participants received 5.50 continuing medical education hours approved by Dalhousie University.

A video recording of the conference can be requested by emailing nspbcpc@cdha.nshealth.ca.

Based on the evaluations we consider the day a great success and look forward to next year's Blood Matters Conference which will be held on November 6, 2015 at the Halifax Marriott Harbourfront Hotel. Further details will follow this summer.

Chris Lachner BScN, RN
Transfusion Practice Coordinator - Surveillance

In 2009, the National Advisory Committee on Blood and Blood Products (NAC) published the *National Plan for the Management of Shortages of Labile Blood Components* which provided a framework “to maximize the effectiveness of a national response to any crisis impacting the adequacy of the blood supply in Canada.”² This document was supplemented in 2012 with the *Emergency framework for rationing of blood for massively bleeding patients during a red phase of a blood shortage* providing guidance on the use of all blood components in massively bleeding patients during the Red Phase blood shortage.

A Red Phase blood shortage is present when there is “less than 48 hours worth of red blood cell (RBC) units available in Canada and there is no foreseeable ability to avert the shortage by increasing collections or by reducing elective surgical procedures further.”¹ Massive transfusion is “defined as expected blood loss of 1 blood volume over less than 24 hours; 0.5 blood volume in 3 hours; or 4 or more units of RBCs in 1 hour.”¹

A multidisciplinary triage team, responsible for the adherence of decisions, evaluation of patients in need of massive transfusions and documentation of the decisions, should be established in advance of a shortage. This team should not be directly involved in the patient’s care.

A triage tool/algorithm leads the triage team in a fair, ethical, and transparent way through the decision process to ensure standardized care in all jurisdictions may be available to those patients who would best benefit and likely survive from blood transfusions. If at any time a patient deviates from the inclusion criteria, the tool states ‘Do not transfuse.’ Continued periodic review of the triaged patient’s condition is required.

During a red phase blood shortage, collaboration and communication between the DHAs/IWK, Canadian Blood Services (CBS) and the Nova Scotia Provincial Blood Coordinating Program (NSPBCP) will be ongoing to ensure optimization of the resources.

The full NAC document can be viewed at <http://www.nacblood.ca/resources/shortages-plan/emergency-framework-final.pdf>

Sue Cairns BN, RN

Transfusion Practice Coordinator – Utilization

References:

1. National Advisory Committee on Blood and Blood Products (2012) *Emergency framework for rationing of blood for massively bleeding patients during a red phase of a blood shortage*
2. National Advisory Committee on Blood and Blood Products (2012) *National Plan for Management of Shortages of Labile Blood Components*

Approximately 30,000 red blood cell units are transfused annually in Nova Scotia. The dogma to “transfuse two units of red blood cells (RBC) or don’t transfuse at all” potentially exposes patients to unnecessary transfusion when one unit would be sufficient. In an attempt to optimize the use of RBCs in Nova Scotia and promote patient safety by preventing unnecessary transfusions, a Red Blood Cell Transfusion Pathway for the use of RBCs has been developed and is now being implemented throughout the province. The pathway recommends the following:

- The threshold for transfusion is a hemoglobin level of 80 g/L in stable in-patients excluding those with active cardiac ischemia, on-going dialysis, bleeding and neonates less than or equal to 4 months of age
- Of those eligible for transfusion according to the criteria above, the transfusion threshold for one unit of RBCs at a time is applicable to those between 60 and 80 g/L in all cases except pregnant women where the threshold is between 70 and 80 g/L.

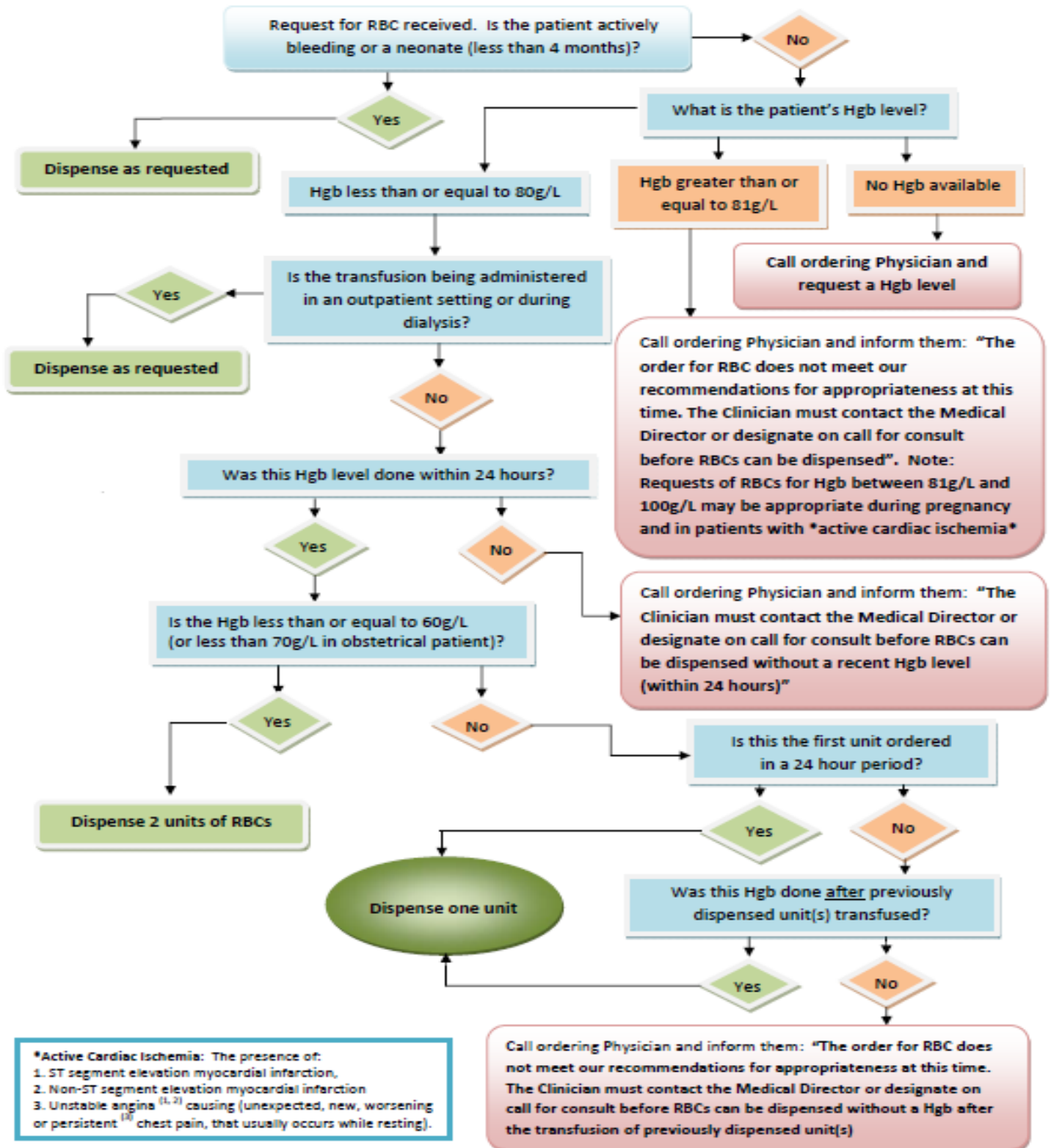
These recommendations are based on the Red Blood Cell Transfusion: A Clinical Practice Guideline from the American Association of Blood Banks (AABB) and has been approved for use by the Nova Scotia Red Blood Cell Clinical Experts Working Group. The recommendations are supported by a local RBC audit conducted by the NSPBCP in March 2014, which revealed that 17 units out of 108 (16%) were transfused for Hemoglobin greater than 80g/L. Thirteen patients received RBC transfusions for hemoglobin greater than 80g/L and 4 out of 13 patients received 2 units each.

Adherence to the Nova Scotia Red Blood Cell transfusion pathway has the potential to improve RBC utilization in the province and promote patient safety by preventing unnecessary transfusions.

Tabassum Ata Quraishi MBBS, MHA

Utilization Management Coordinator

Nova Scotia Red Blood Cell Transfusion Pathway



1. Zalenski, R. J., McCarren, M., Roberts, R., Rydman, R. J., Jovanovic, B., Das, K., ... & McDermott, M. (1997). An evaluation of a chest pain diagnostic protocol to exclude acute cardiac ischemia in the emergency department. *Archives of internal medicine*, 157(10), 1085-1091.
2. Selker, H. P., Zalenski, R. J., Antman, E. M., Aufderheide, T. P., Bernard, S. A., Bonow, R. O., ... & Weaver, W. D. (1997). An evaluation of technologies for identifying acute cardiac ischemia in the emergency department: executive summary of a National Heart Attack Alert Program Working Group Report. *Annals of emergency medicine*, 29(1), 1-12.
3. http://www.heart.org/HEARTORG/Conditions/HeartAttack/SymptomsDiagnosisofHeartAttack/Unstable-Angina_UCM_437513_Article.jsp

Platelet Selection

Platelets, also known as thrombocytes, are very small cellular components of blood that are made in the bone marrow and survive in the circulatory system for an average of 9 to 10 days. Considered a vital element of blood, platelets aid blood clotting by adhering to the lining of blood vessels, preventing possible day-to-day leakage as well as massive blood loss often associated with trauma. Platelets are used to treat thrombocytopenia as well as for patients undergoing treatment for leukemia, cancer, aplastic anemia and marrow transplants. Recently The American Association of Blood Banks (AABB) published *Platelet Transfusion: A Clinical Practice Guideline From the AABB*¹ which recommends the following:

Patient	Threshold
Hospitalized adult patients	10 x 10 ⁹ cells/L or less to reduce the risk of spontaneous bleeding
Patients having elective central venous catheter placement	20 x 10 ⁹ cells/L
Patients having elective diagnostic lumbar puncture	50 x 10 ⁹ cells/L

While the group compatibility of red blood cells is a necessity, group compatibility of platelets has not always been considered a requirement. Cooling et al (2008) identified the risk of hemolytic transfusion reactions occurring when group O platelets are given to non-group O patients, due to higher anti-A and anti-B titres in O platelets. Dr. Nadine Shehata's research indicates decreased survival of non-group compatible platelets (platelet increment is 4,600/ μ L higher with ABO identical platelet transfusions).³ As a result the Nova Scotia Provincial Blood Coordinating Program (NSPBCP) is developing a provincial guidance document regarding platelet group compatibility which includes the selection order shown below.

Selection Order for ABO Group for Platelets				
Recipient ABO	Platelet ABO Group			
	1 st Choice	2 nd Choice	3 rd Choice	4 th Choice
AB	AB	A*	B*	O*
A	A	AB	B*	O*
B	B	AB	A*	O*
O	O	A	B	AB
Undetermined	Consult Medical Director before Dispensing			

* Indicates incompatible plasma

The NSPBCP recognizes that there are times of need in which group compatible units are not available and time does not warrant delaying transfusion to get compatible product. In such cases, the transfusing physician should be aware of the incompatible product and the selection order above be followed. In cases where there is no harm to the patient in delaying the transfusion group compatible platelets should be ordered and issued.

Jennifer LeFrense BSc, MLT

Lab Standards Coordinator

References:

- The American Association of Blood Banks (2014) *Platelet Transfusion: A Clinical Practice Guidelines From the AABB*
- Cooling, L et al (2008). *Anti-A and anti-B titers in pooled group O platelets are comparable to apheresis platelets*. *Transfusion*;48:2106-2113
- Shehata, N et al (2014). *Utility of cross-matched platelet transfusions in patients with hypoproliferative thrombocytopenia: a systematic review*. *Transfusion*;54:1180-1191