Nova Scotia Health

Blood Counts

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IVIG Insufficient Information Cases: A Success Story

The Nova Scotia Provincial Blood Coordinating Program (NSPBCP) leads a collaborative initiative for optimizing the utilization of blood and blood products in the Atlantic Provinces. Since its inception in January 2003, IVIG has been a product of focus. Utilization management is based on assessing whether the appropriate product; most beneficial to the patients' condition is being used according to evidence-based recommendations and has been proven cost-effective.

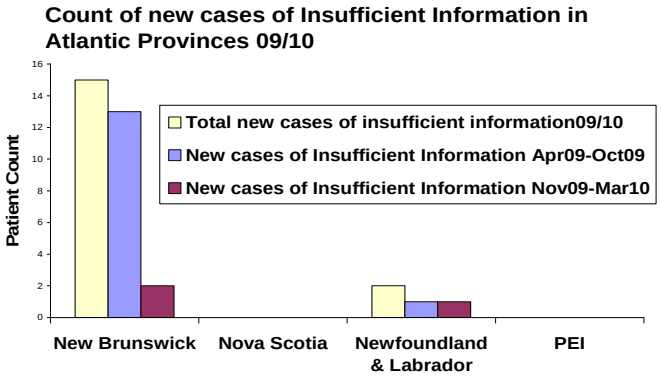
After IVIG utilization data is received by the NSPBCP, each indication is assigned an appropriateness category. If the names of the submitted indications are not specific enough for categorization (e.g. a symptom rather than a diagnosis or an admitting diagnosis not the indication for receipt of IVIG) they are assigned to the "insufficient information" category. In an attempt to present a true picture of the use of IVIG, effort is made to minimize the number of cases categorized as "insufficient information". In October 2009, all IVIG data submitters in the Atlantic Provinces were provided with a guide to help decrease the number of cases classified as "insufficient information". The guide provided a table of examples of indications that have been marked as "insufficient information" in order to demonstrate to data collectors the need to obtain additional details to support categorization of appropriateness.

The effort proved to be fruitful and the number of cases categorized as "insufficient information" declined from 39 in 08/09 to 33 in 09/10 in the Atlantic Provinces. This included 17 new cases and 16 patients that were carried through last year. The guideline was made available in October 2009 and a sharp decline in the new cases categorized as "insufficient information" followed it.

Figure 1 shows the distribution of new cases marked as "insufficient information" before and after the implementation of guidelines in October 2009. Only 3 out of 17 new cases were placed in this category after the guide was made available in October 2009.

Good job every one, keep up the great work.

Figure 1



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Upcoming Events

American Association of Tissue Banks (AATB)
15th Annual Spring Meeting
Austin, TX March 26 - 29, 2011

Canadian Society for Transfusion Medicine (CSTM) Conference
Toronto, ON May 12 - 15, 2011

National Congress of Medical Laboratory Science (LABCON) 2011
Halifax, NS June 10 - 13, 2011

Adverse Transfusion Reactions in Nova Scotia

Blood surveillance is an important and necessary aspect of blood safety in Canada. On November 25, 1997, Justice Horace Krever released his landmark report on how Canada's blood system managed the threat of HIV and Hepatitis C transmission from blood transfusion. In response to the Krever report, the federal government launched a series of initiatives to improve the safety of Canada's blood system. TTISS (Transfusion Transmitted Injuries Surveillance System) is a national surveillance system for the monitoring of adverse transfusion reactions, providing data for managing the risk of transfusion in Canada. Nova Scotia was one of the first provinces in Canada to participate in the initial pilot project and currently 100% of hospital sites in Nova Scotia are participating in TTISS.

Febrile non-hemolytic and minor allergic reactions are the most commonly occurring transfusion reactions in Nova Scotia. Table 1 identifies the incidence rates of adverse transfusion reactions for blood components seen in Nova Scotia in calendar year 2009.

Table 1: Incidence rates of Transfusion Reactions in Nova Scotia 2009*

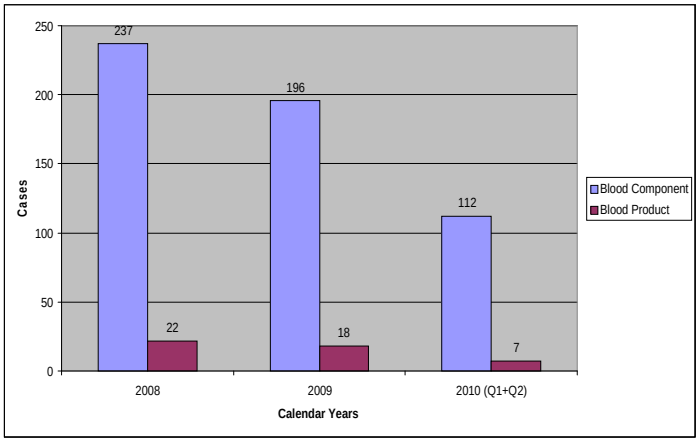
ATEs	Incidence Rate
Delayed Hemolytic Reaction	1 : 45047
Febrile Non-Hemolytic Reaction	1 : 469
Hypotensive Reaction	1 : 6435
Minor Allergic Reaction	1 : 653
TRALI / Possible TRALI	1 : 45047
Severe Anaphylactic/Anaphylactoid	1 : 15016
TACO	1 : 7508

Febrile non-hemolytic and allergic reactions are the most common reactions identified in CBS's Circular of Information (COI) as well, however Nova Scotia's incidence rates for all transfusion reactions are lower than what is published in the COI. While this can be viewed as a positive it is most likely that the low incidence rates in Nova Scotia are related to underreporting especially when combined with an overall decrease in the total numbers of adverse reactions. Increased awareness through educational initiatives and ongoing communication in identifying and classifying adverse transfusion reactions will play a significant role in increasing awareness and reporting.

The graph in Table 2 demonstrates the total number of definite, probable or possible transfusion reactions reported in Nova Scotia from calendar year 2008, 2009, and the first 2 quarters of 2010 (January 1, 2010 to June 30, 2010), noting a slight decrease in the total number in 2009. Table 2 also identifies the number of transfusion reactions related to blood components and compares to those related to blood products during this time frame in Nova Scotia.

** The incidence rates were calculated based on Canadian Blood Services (CBS) distribution data as transfused data was not available.*

Table 2:



The importance of identifying and recognizing signs and symptoms of adverse transfusion reactions and reporting the suspected reaction to the appropriate personnel is key. Why? Ensuring a standardized method of investigating adverse reactions such as the Provincial "Algorithm for Transfusion Reactions" and the "Investigation of Adverse Reactions"; provides evidence in the classification of these reactions and leads to optimal treatment of the patient. Appropriate classification and reporting allows trending of the types of adverse reactions occurring and assists in identifying emerging pathogens that may be a threat to the blood supply.

The healthcare professional represents the most important link in this process. Thanks to all healthcare professionals in their efforts for recognizing, identifying, reporting and investigating adverse transfusion reactions!!

For documents related to Surveillance such as the *"Algorithm for Transfusion Reactions"* and the *"Investigation of Adverse Transfusion Reactions"* please visit our website at: **http://gov.ns.ca/health/nspbcp/professionals.asp**

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Shall We Exercise?

Welcome 2011 and yes with a new year upon us, many resolve to incorporate exercise regimes into our lives, or improve upon what exists. Why? Because it has so many benefits!

Exercising doesn't stop at individual health benefits, performing exercises to test processes is the theme the NSPBCP, CBS Halifax-office and all N.S. Hospitals adopted as all embraced a Provincial Blood Shortage Simulation Exercise January 11, 2011!

Request to Exercise….was received from the Program Advisory Council (PAC) following the release of the N.S. Provincial Blood Contingency plan (April 2010). Other provinces (Ontario and NL) had tested their plans and the need to do so was highlighted by their findings. PEI participated as an observer and a CBS - Halifax customer.

Approval and support…to conduct an exercise was sought from various N.S. healthcare players. All teams were supportive of the exercise and the provincial approach; with the understanding that DHAs/IWK will determine their own exercise objectives and independently define the level of Blood Emergency Management Plans (BEMPs) activation.

Planning…began in the summer of 2010; the NSPBCP and CBS Halifax office collaborated to design the exercise. N.S. benefited from activities and lessons learned by other provincial blood offices. Ontario's provincial program shared their March 2010 simulation exercise documents and report; which provided ideas for templates and processes. A weakness identified by Ontario, enabled N.S. to close a gap by establishing a process to inform Emergency Health Services (EHS) and Life flight ; a big Thank You to Ontario for sharing! During shortages inventory levels are required to support decision making. To facilitate data collection the Inventory Management Tool (IMT) was modified to include DHA/IWK specific spreadsheets. The IMT is an electronic excel spreadsheet which serves to create a DHA/IWK summary of provincial inventory enabling BERT to recommend on inventory management as needed. Another tool to support blood shortage processes is the N.S. Blood Contingency Toolkit, it was created to support the N.S. Provincial Blood Contingency Plan actions and shared with the TMQSWG at the December 2010 meeting. Primarily the toolkit has phase alert sections with inventory management strategies to support users until BERT recommendations are communicated and several templates to standardize documentation and communication of the event. The templates are an excellent resource for event review.

Ready …Steady….Go…exercise day began with an early morning call from CBS, to the NSPBCP Clinical Advisor Dr. David Anderson, who is also the chair of NS's Blood Emergency Response Team (BERT). The call was to inform him of the simulated situation and the intent to provincially distribute a Simulated Amber phase alert. By 0900 hrs faxing was complete and the first teleconference, held by CBS, was scheduled for 1100 hrs. In the meantime DHAs and the IWK enacted plans to predetermined involvement level, including electronic submission of inventory to the NSPBCP! The Inventory Management Sub-Committee (IMSC), convened at 1100 hrs (including PEI); with 100% participation rates. DHAs and the IWK electronically submitted their individual IMT sheets by 1112 hrs; to the NSPBCP, provincial inventory results were collated, distributed then discussed during the afternoon BERT teleconference. Following the BERT teleconference communication testing continued with the distribution of a letter simulating the communication of BERT recommendations followed shortly after by an "Exercise is Complete" notice.

Hot Wash-Initial Thoughts and Findings…were shared during a debriefing teleconference held January 13, 2011. Representatives from the Department of Health, Emergency Health Services, CBS, BERT, IWK and DHAs (70%) participated in the call. A few common themes emerged:

- Communication :
    - Concerns expressed regarding one way communication by fax/email. Recommendations to include read receipt notification for emails and in absence of evidence of receipt within one hour to confirm receipt by telephone
    - It was noted challenges exist with dissemination of information especially to physicians, several DHAs recognized work to be done in this area such as the development of email distribution lists etc
    - Recommendation to explore using the LIS/HIS to display an alert message so that when users log on they are advised of a shortage

Generally speaking…

Participants were appreciative of the opportunity to participate. The exercise stimulated "*a lot of work, but the lessons were excellent, prompted discussions and identified areas to improve upon*".

Follow-up…

Report on findings and recommendations to be created and distributed to participants. Evaluation documents and comments will be considered as revisions to provincial documents occur.

Conclusion…

Exercising is a good thing!

Looking forward to an awesome 2011!

Congrats to all for a job well done!

Wendy Varrence MLT
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The Massively Bleeding Patient in Nova Scotia

During the development of the Nova Scotia Provincial Blood Contingency Plan, the working group identified the need for a massive transfusion guideline in order to provide guidance and standardization for the use of blood and blood components in patients who are massively bleeding.

The Nova Scotia Provincial Blood Program (NSPBCP) has developed a massive transfusion (MT) guideline based on the advice of an expert working group which included representation from the Nova Scotia Trauma Program, CBS, physicians from various specialties, medical laboratory technologists and nurses from around the province.

The ***Guideline for Massive Transfusion in Nova Scotia*** defines massive bleeding as bleeding with the anticipation of ongoing blood loss or requiring at least four units of RBCs (adults) or 40 ml per kg (children) in four hours.

Massive transfusion is not new …however the guideline, based on recent literature, documents the process and guides clinicians to:

- ✓ Give plasma earlier in the treatment
- ✓ Consider platelets earlier in the treatment*
- ✓ Optimize hemostasis "aids"
- ✓ Communicate and evaluate

*The guideline does not require changes in the stocking of platelets by district hospitals. It should not influence the treatment of the patient's underlying condition, aside from matters pertaining to transfusion.

Warming all transfusion fluids, employing cell salvage when available and appropriate, and providing direction for the use of blood and blood components such as prothrombin complex concentrates, rFVIIa, antifibrinolytics and other prohemostatic drugs in the massive bleeding patient are contained in the guideline.

When considering the administration of rFVIIa, the conclusion reached within the National Advisory Committee (NAC) on Blood and Blood Products article and supported by Nova Scotia's expert working group is that rFVIIa should only be considered on a case-by-case basis where other haemostatic measures have been taken first. NAC also recommends that requests for rFVIIa be incorporated into a framework that ensures other haemostatic measures have been used. Nova Scotia has incorporated rFVIIa into the MT protocol.

The NSPBCP has developed a data collection tool in order to capture and analyze the utilization of blood and blood components in the massively bleeding patient.

While the NSPBCP has distributed the guideline, algorithm posters and supporting toolkit to the district health authorities, each hospital should discuss their individual implementation plan with their respective Blood Transfusion Committee.

The package (guideline, algorithm and toolkit) is available online at http://www.gov.ns.ca/health/nspbcp/. Guidelines for the use of prothrombin complex concentrates (octaplex®) can also located in the NSPBCP website.

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