Transfusion Guidelines For Sault Area Hospital

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Background

- In April of 2014 Dr. Callum presented Grand Rounds, “Indications for Blood Components” as an introduction to the screening process
- Followed by a presentation at our September 2014 Transfusion Committee meeting on “Prospective Auditing of Blood Orders”.
- MAC approved policy of Appropriate Use of Blood Products and screening of orders for transfusion of blood, frozen plasma, platelets and cryoprecipitate
- Plan was to start April 2015
- Transfusion Services meetings to review the process including case studies
- Multiple announcements to communicate the process
  - Meetings with Clinical Educators on how to best spread the word
  - Clinical News Newsletter
  - emails to clinical managers, physicians and Clinical Educators with reference to the procedures on our Lab Nursing Manual and the Hospital policy
- Changes to the hospital policy resulted in a hold up in process
- Re-sent email multiple times to all medical staff involved
- July 27th ,2016 Transfusion Services began triaging blood product orders

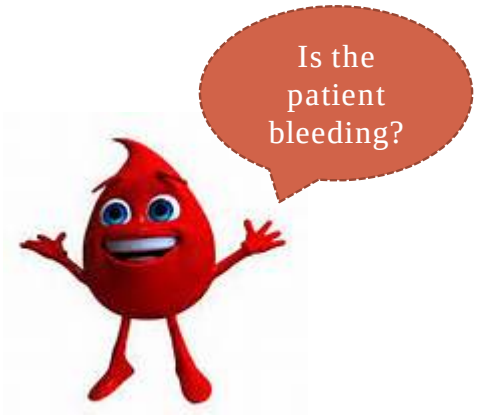
- Communication is huge in starting this process. The message has to get to the right people. When we went live we heard a lot of , " I didn't know anything about this process!"

We learned very quickly that you can't depend on people reading their email or hospital communications and you can't depend on management forwarding the process information to their staff. We had physicians asking us where this new process came from, some of the same physicians that are members of our MAC committee that approved the process.

I requested that our clinical team contact me with any questions and made myself available to go to the floors to answer questions in every communication that went out. I took a lack of response to mean that they were OK with the process and I was ready to move forward. (so not the case)

So, along with our TSO, I began going out to the units to give in-services on why the screening process is so important and giving the nurses time to ask questions.

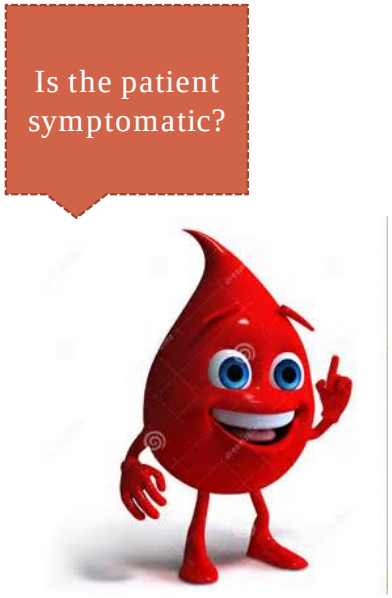
Dr. Callum drafted one further announcement to be sent out to all medical staff



Who gets screened:

Screening procedures only apply to **non-**bleeding adult inpatients and **non**-bleeding ER adult patients. Screening is **not** required for patients from the following areas:

- trauma room (ie MTP)
- operating room
- recovery room (PACU)
- out-patient areas including our Cancer Clinic and the Medical Daycare Unit.



Blood Transfusion Orders:

Patient Hgb	Recommendation	Guideline
60 g/L or less	Issue 1-2 units	Request repeat Hgb after infusion of 1-2 units
60 g/L to 70 g/L	Issue 1 unit	Request a Hgb before further transfusions
70 g/L to 90 g/L	Query if patient - is experiencing elevated heart rate, dizziness or fainting - is experiencing cardiac symptoms (chest pain) - has a history of cardiac disease	If "yes" issue the unit If "no" Inform the patient care area that the request is outside guidelines and refer case to transfusion medicine physician on call
Greater than 90 g/L	Request is outside of guidelines	Refer case to transfusion medicine physician on call
Patients <60 years of age, screen if possible (ie results available) for iron deficiency anemia • **Hgb ≤90 g/L** • **MCV 75 or less** • **Ferritin 30 or less (if available)**	- If patient has no serious symptoms and fits described criteria for iron deficiency anemia and Hgb is >50 -if patient has fainting or elevated heart rate or has a Hgb of <50	-do not issue and refer case to transfusion medicine physician on call (patients can often be managed with IV iron alone) - Issue 1-2 units as per above

Platelet Transfusion Orders:

Determine the patient's current platelet count. Current is defined as a sample drawn within 24 hours after the most recent platelet transfusion administered within that time. The platelet count can be obtained from Meditech.

Review each request for issue of platelets on an in-patient without significant hemorrhage to determine if it meets hospital guidelines for appropriateness.

Patient status	Lab Value	# Doses per issue
Not bleeding, not periprocedure	• Platelet count < 10 x 10^9/L • Platelet count < 30 x 10^9/L if on anticoagulants that can't be stopped	Maximum of 1 dose before reassessment (CBC)
Periprocedure	• Platelet count < 20 x 10^9/L for minor procedure (eg., paracentesis, thoracentesis, central line placement) • Platelet count < 50 x 10^9/L for major procedure (eg., laparotomy) • Platelet count < 100 x 10^9/L for ophthalmologic (excluding cataract) procedure	Maximum of 1 dose before reassessment (CBC)
Bleeding with normal platelet function	• Platelet count < 50 x 10^9/L (<100 x 10^9/L for spine or brain bleeding)	Maximum of 1 dose before reassessment (CBC)
Bleeding with impaired platelet function (see interpretation)	• Any platelet count (e.g., on antiplatelet agents such as ASA or clopidogrel (Plavix)	Maximum 1 dose before reassessment (clinical); if patient still bleeding after first dose a second dose may be issued

FP/FFP Transfusion Orders:

Determine the patient's current INR.

Guidelines for a bleeding patient or peri-procedural:

Note: These are guidelines suggesting proper dosage. Orders for bleeding patients are not to screened.

Non-bleeding Patient

Plasma transfusion is not recommended in non-bleeding, non-peri-procedural patient

Clinical Setting	Recommendation	Dose
Pre-emergency procedure or experiencing serious bleeding, along with vitamin K therapy.	Issue prothrombin complex concentrates (PCCs) if INR greater than 1.5 per Transfusion Services Octaplex Procedure-Products Manual- 5-15-1	
1) Diagnosis of liver disease **2) Dilutional coagulopathy -** **(ie a coagulopathy evoked by massive transfusion, resulting in factor V and VIII deficiency)** **3) DIC**	Issue plasma if INR greater than 1.8	May issue 3 to 5 units If order is outside these guidelines inform the patient care area that the request is outside guidelines and the case must be referred to the transfusion medicine physician on call
Massive transfusion (>4 units of RBC transfused per hour)		2-4 units of plasma per 4 units of RBCs

Transfusion Orders for Cryoprecipitate:

Transfuse on basis of both fibrinogen level and clinical status as per tables below.

Clinical Setting	Recommendation	Dose
Microvascular bleeding	Transfuse if fibrinogen less than 1.0 g per L	10 units
Hyperfibrinolysis secondary to acute promyelocytic leukemia	Transfuse if fibrinogen less than 1.5 g per L	10 units
Extreme life-threatening hemorrhage	Transfuse if fibrinogen less than 2.0 g per L or unable to wait for fibrinogen results	10 units
Pediatric/Neonatal dose		10-15 cc per kilogram

Some Screening Results so Far:

- First day of screening we had a patient with a Hgb of 75, a request to transfuse one further unit was screened. She had been transfused 1 unit the evening before. She was not symptomatic. We encouraged that a Hgb be checked before transfusing the second unit. Her Hgb post transfusing one unit was now 85. Agreed upon that the patient did not need that unit

- Patient going to the OR. INR=2.8. 1 unit of FP was requested. Patient had Vitamin K deficiency. Product of choice should have been Octaplex as patient was going to OR and was Vit k deficient. 1 Unit of FP would not help. A dose of FP is 3-4 units

- Patient in ER that MLT screened – HGB 77 – not bleeding (we were told by RN) – not symptomatic - patient did not meet guidelines for transfusion. Called our Medical Director who was told patient was actively bleeding. It is very important that in the initial screen the questions are listened to and answered accurately. This resulted in the ER MD getting very upset with the MLT and our Director.

- 48 year old female presented in our ER with a Hgb of 66, MCV 61. History showed that in Apr 2009 she had a Hgb of 89 and MCV of 64. No iron studies had ever been performed. ER ordered a 3 unit crossmatch with the intent to transfuse. We referred this case to our Director on call as the patient was obviously symptomatic, but a transfusion was not the answer for her. Our Director talked to our ER physician, who in turn referred this patient to an internist for further treatment. No transfusion took place.

- RN from floor called us to see what her next step would be. Patients Hgb is 80, she had order to transfuse. Pt not bleeding and not symptomatic. Repeated Hgb=90. Unit not transfused.

- We are starting to notice the floors adding comments to their crossmatch orders “screening – patient bleeding”. These are our best case scenarios – they don’t happen very often.

Obstacles in the Screening Process

(To name a few)

- **Getting the message across to the people who will actually be involved in the screening process**

Solution: **Communication gap between clinical managers and front line staff. Resending communications, educational blitzes, attending clinical managers meeting**

- **Convincing blood bank and nursing staff that this is a good idea!**

- **Physicians still ordering 2 units instead of one**

Solution:

- **Dr. Callum sent out communication stressing the importance of ordering and transfusing one unit instead of two. We are beginning to see more 1 unit orders**
- **Perform audit of crossmatch vs transfusion ratio for our physicians who transfuse the most to be able to identify those that over order. Statistics are taken to our Transfusion Committee meetings.**
- **We will soon be working with Dr. Lin to create an order set for transfusion that will definitely help improve our transfusion ratio**

- **In the beginning nursing staff felt they are getting caught in the middle waiting for the MD to call them back with the order for the repeat HgB.**

Potential Solution: Transfusion Committee discussed the possibility of creating a directive where the Hgb order could be lab initiated. But since then we are seeing a improvement in our MD's doing that Hgb check after the infusion of one unit.

- **MLT's had a particularly hard time and continue to have a hard time with screening inpatient oncology patient's. They felt that if these patients are not being screened in the cancer clinic, why are they being screened as inpatients?**

No Solution: We had to accept the fact that these patients are screened the same as any other patient. A lot of times we are not given the entire picture or history surrounding these patients. We are told they are not symptomatic when actually most of the time they are. So for the majority of the time they get at least one unit.

- **Support and guidance from our Medical Directors at UHN and Sunnybrook was crucial in getting this process started and is still critical as we continue forward. Hospitals need the support of their Medical Director's and transfusion committee chairs if this initiative is going to work.**

- **Too many phone calls. (Complaint of both transfusion staff and nursing staff)**

Solution: **In an attempt to alleviate some of the phone calls involved in our screening process we modified our transfusion voucher to include questions that would include, "Is the patient bleeding?" , and "Is the patient symptomatic?".**

SAULT AREA HOSPITAL

BLOOD/BLOOD PRODUCT ISSUE VOUCHER

Patient Location: _____

Product Requested: _____

UNIQUE PATIENT IDENTIFICATION NUMBER

PATIENT'S SURNAME	GIVEN NAME
ADDRESS	
D.O.B.	SEX / HOME PHONE
HEALTH CARD NUMBER	

Transfusion Band No.: _____

Is patient bleeding? ☐Yes ☐No

Is patient experiencing:

elevated heart rate, dizziness or fainting? ☐Yes ☐No

chest pain? ☐Yes ☐No

Does patient have history of cardiac disease? ☐Yes ☐No

No Blood/Blood Product will be issued without full patient identification. For crossmatched packed red cells, this voucher must show the patient's transfusion recipient bracelet/band number.

Time Sent to Unit: _____

Time Rec'd by Unit: _____ Rec'd by: _____

Return voucher to Blood Bank upon receipt of product.

Number of units ordered/transfused

- Our physician's are ordering more one unit crossmatches
- SAH was already doing well with our transfusion ratios before this initiative started after Dr. Callum's Grand Rounds presentation
- 2014 - TX 2745- we kept seeing a steady decrease in transfusions through 2014
- 2015 – TX 1889 units

It has been a long haul but I believe we have finally settled into the screening process. As our physician's progress I believe that we will see more orders for one unit crossmatches and even further reduction in our transfusion rates.