

Inventory Management at SickKids

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The move to Brampton by the Canadian Blood Services (CBS) required major revisions to the way our blood product inventory was being managed. Gone were the days when all it took was 15 minutes and a \$10.00 taxi to get what we required from the CBS on College Street.

The first order of business was to determine blood product usage (red cells and platelets only) over the last 3 months. FP was not included in the review due to its longer, 1 year storage period. We chose 3 months to get a more accurate picture of actual usage.

Our blood product orders were based on data gathered once we understood what we were using daily over the 3 month period. At the start, CBS was able to provide us daily delivery except Sundays and twice a day delivery 2 days out of the week. This allowed us to fall back on the afternoon delivery if we miscalculated our needs for the day. Platelets of course were the most difficult product to manage due to its short expiry date.

On a quarterly basis, our blood product usage is reviewed. This allows us to increase or decrease our daily requirements. In the first 9 months or so after CBS moved to Brampton, we found that we decreased our platelets orders by as much as 25% to alleviate the increase in discards that we were noticing.

It is quite important as well that the front line staff understand the purpose of what we are trying to accomplish. We met with staff regularly and emphasized the importance of good inventory control. We discussed the projected increase in our budget related to cab fares if we didn't take control of our inventory. We made use of the platelet WEB application and continue to do so today. We also started working with other hospitals in the GTA area to try and re-distribute red cells that are 2 weeks from expiration so that red cell units are not wasted.

Credit must go where credit is due. Our front line staff is very diligent in looking at our inventory multiple times daily. This gives us an accurate count of current blood product levels at all times and it enables us to make adjustments to our ordering process on a daily basis.

Here is what we were already doing routinely.

We do prospective screening of all blood orders from our clinicians. On receipt of a blood product order the Technologist reviews the type and volume of blood product ordered against the patient's weight, the relevant lab result, the diagnosis and a history check for the previous product issued. The relevant lab results used as delta checks are haemoglobin for red cell orders, platelet count for platelet orders, INR/PTT for FP orders and fibrinogen for Cryo orders. For example if red cells are ordered with the indication, "To maintain Hb Level > 70 g/L" and the current haemoglobin is 80, the order will be questioned. If 300 mL of red cells are ordered for a 2 kg baby when the expected order is 15 mL/kg, the order will be challenged. This prospective screening prevents wastage of some products and catches some incorrect orders.

Here is a summary of what we do now including some changes we had to make.

After the move to Brampton, the amount of stock held in the Blood Transfusion Lab was increased. This was a challenge as we had limited space for storage and could not keep the recommended volume of three days worth of product in-house. We monitored and increased the volume of our routine orders until it matched our daily needs to the point where there was no need to resort to panic ordering or utilizing ASAP or STAT orders due to running out of inventory.

We had to clarify with some of our staff that our routine daily order is based on our minimum inventory of blood products but it is not static and has to be adjusted depending what is already in the fridge. The daily ordered amount of a specific product or blood group can be less than the minimum inventory level when we already have some of that product in the fridge. The amount ordered could also bring stock over the minimum inventory levels depending on the projected usage of a certain blood group based on the OR list for the next day and communications from our MD users about increased usage for a specific patient or warnings from the OR that a certain case will bleed excessively.

ASAP or STAT ordering is only used when there is an unexpected demand for a large volume of a specific group of product due to a bleed, transplant or a trauma admission and our carefully planned inventory levels will not support the patient in need of transfusion. However, if there is an unexpected demand and there is sufficient of that blood group or the specific phenotype can be found already in the fridge, we will not order ASAP or STAT but will replace what was used with our next routine order. We will even use a designated phenotypically matched unit from a Sickle or Thalassemia patient, if they are not to be transfused that day, for the patient in urgent need of that phenotypically matched unit.

If we have had to order large amounts of a specific product or group for a patient in crisis and it was not used, we talk to our neighboring hospitals to see if they need any of that product, in order to take our inventory down to optimum levels. This is done as soon as possible and before the units are near their expiry date. We also post our platelets that we cannot use or those that will outdate the next day on ORBCoN's Platelet Inventory Exchange website making them available to any hospital in the area that needs them.

On a daily basis, the evening Technologist in the Blood Transfusion Lab reviews the inventory and sends the order to the CBS after they have reviewed the OR list and prepared the blood for the next days' surgeries. The night Technologist reviews the inventory and posts a note on the message board about products that will outdate the next day so they are used first for patients of the appropriate groups. The day Technologist triages platelet orders using what is available for those in most need until the CBS order arrives with more platelets between 8 and 10 am in the morning.

With everyone working together and excellent communication with our MD users we have managed to keep outdates low and limit ASAP and STAT orders to a minimum.