

Continuous Quality Improvement for Continuous Factor Infusion

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BACKGROUND

At the Adult Hemophilia Treatment Centre (HTC) in Toronto 13 surgeries were performed over the last 3 years using continuous infusion of clotting factor concentrates.

This method of administration of factor concentrate can be very effective in achieving stable factor levels and minimizing the risks for post-operative bleeding.

However because this is not done very often, careful attention to every step of the process is required.

OBJECTIVE

In an effort to continually improve care at our institution, nurses in the HTC and Transfusion Medicine Technologists are constantly evaluating the process.

The goal is to ensure that the practice of continuous factor infusions leads to the safest and most controlled factor coverage possible while optimizing the use and ensuring no wastage of this precious resource.

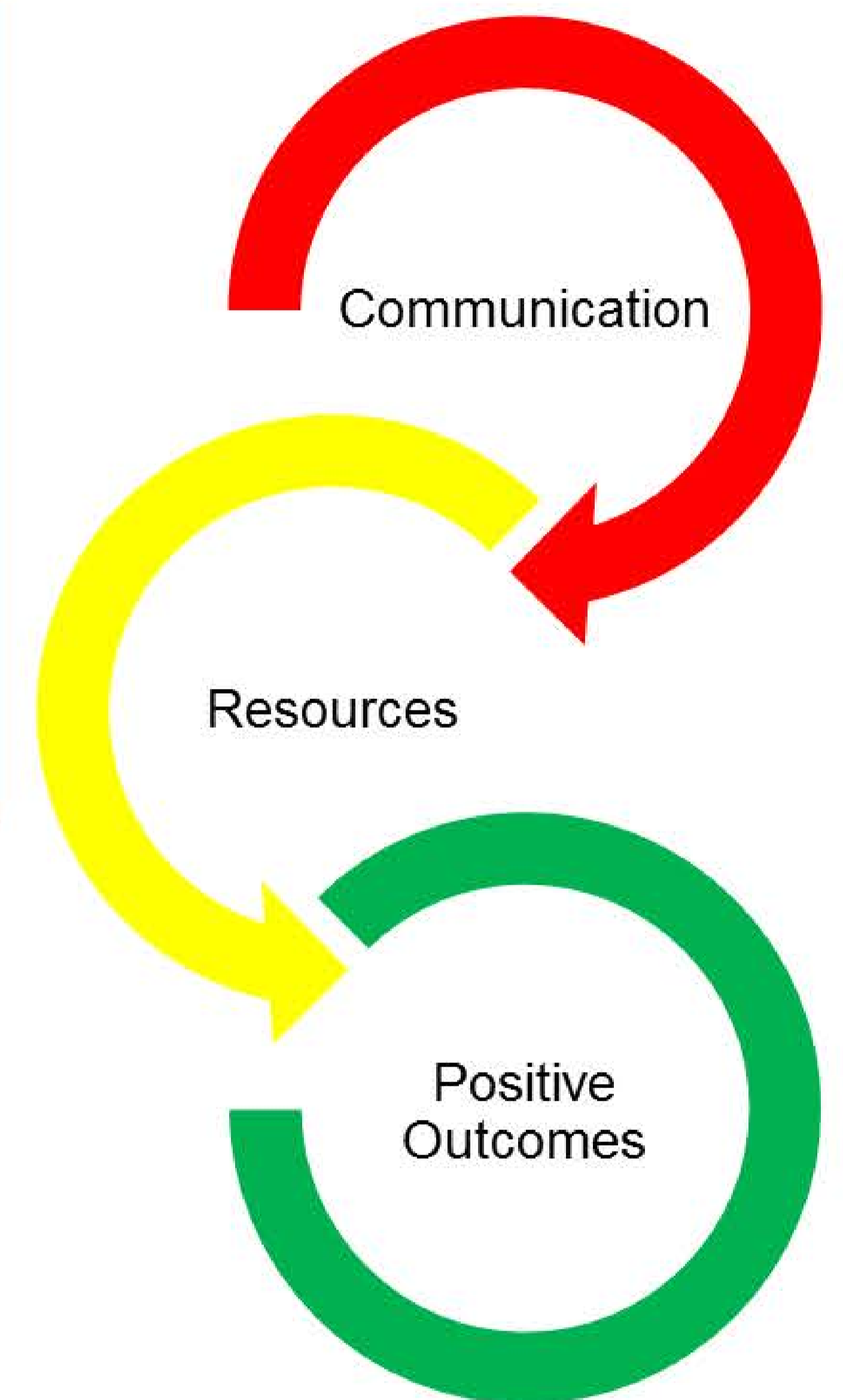
Given the number of nurses responsible for providing inpatient care to patients with hemophilia, our strategy focused on creating resources and a process that would limit the chance for errors.

PROCESS

The HTC nurses regularly meet with nurses on the inpatient floors when patients are receiving continuous factor infusions, checking to make sure the process is well understood and the care seamless.

In response to concerns raised, a number of resources were created to improve the knowledge and understanding of nurses responsible for infusing and maintaining the continuous factor infusion.

Current practice includes the use of special labels on the factor issued from Transfusion Medicine, an information sheet included with the issued factor and an education package created for each patient chart.

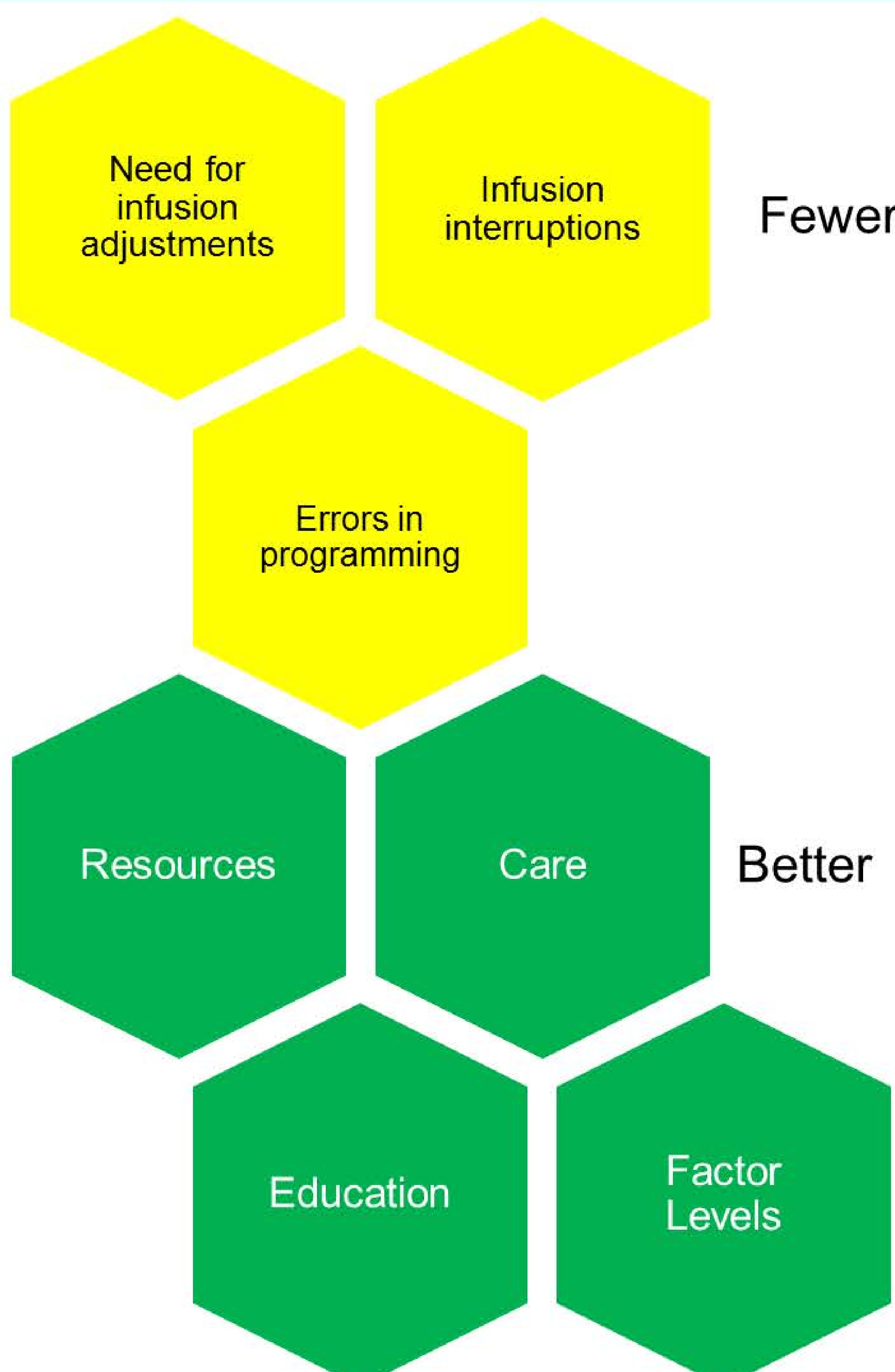


Department of Laboratory Medicine Division of Transfusion Medicine	St. Michael's Inspired Care. Inspiring Science.
FACTOR CONCENTRATE INFUSION ADMINISTRATION FORM	
Product Description	Factor VIII (single and factor IX) and other clotting factor concentrates prescribed for the treatment of hemophilia A (FVIII deficiency) and hemophilia B (factor IX deficiency).
Indication	Continuous factor infusions are recommended for patients with hemophilia A or B who have had a hemostatic challenge such as surgery or a bleed that requires continuous levels of factor in the blood.
Dosing	Continuous factor infusion dosing is determined based on laboratory measured factor levels. Dose will be indicated in units/hour.
Administration	1. A complete factor dose of factor is required to achieve therapeutic levels before initiating a continuous infusion. 2. Continuous factor infusions must be run with normal saline running at a rate able to keep the infusion patent. 3. The IV pump must be programmed using the units/hour setting. 4. The IV pump parameters must be completely reset according to the label on the bag of factor each time a new bag is hung. 5. DO NOT interrupt the infusion for any reason unless ordered by hematology. Do NOT mix with other medications or inject simultaneously with other IV fluids. No special vital sign monitoring required with factor administration. Intravenous site should be monitored frequently for minor patients. Monitor patient for signs of bleeding and watch hematology asap if concerned. Ordering new bags of factor concentrate must be done a minimum of one hour before the last bag is needed to allow for preparation time.
Mixing	
Ordering new bags of factor concentrate	

RESOURCES

CONTINUOUS INFUSION	
Factor _____ (VIII, IX, etc.)	(BRAND NAME)
Drug Amount: _____ IU, Total Volume: _____ ml	
1. Prior to hanging THIS bag, reset IV pump for all parameters:	
✓ Drug amount (units)	
✓ Diluent amount (mls)	
✓ Dose (units/hour)	
✓ Volume to be infused (mls)	
2. Notify TM (ext 5084) 1 hour prior to next dose	
Hemophilia RN	

Continuous factor VIII infusion	St. Michael's Inspired Care. Inspiring Science.
<input type="checkbox"/> ADVATE	
<input type="checkbox"/> KODIGATE FS	
<input type="checkbox"/> XYNTHA	
Please pool the following:	
___ vials of ___ units	
___ vials of ___ units	
___ vials of ___ units	
___ vials of ___ units	
TOTAL = ___ units	
VOLUME = ___ mls	
CONCENTRATION = ___ units/ml	
Date: _____ for _____ bags	
ORDERING PHYSICIAN: Dr. Jerry Teitel	
Dr. Michelle Shalberg	
NURSE REQUESTING: Georgina Floros	
Rachel He	
Joanne Solarski	
Signature: _____	



OUTCOMES

Since the implementation of a number of quality improvement resources, the process for continuous factor infusions at our institution has improved. There have been fewer interruptions to the infusion and errors in pump programming.

There have also been more stable levels and less need for adjustments to the infusion. This has resulted in an overall improvement in the management of post-operative patients with hemophilia.

CONCLUSIONS

Infusing factor concentrate by continuous infusion can be a great asset to patient care but requires carefully orchestrated team work.

Maintaining a practice that continually evaluates the quality of care provided at an institution should be forefront in our minds. Small changes to practice can have huge impact on patient care.

ACKNOWLEDGEMENTS

The patients, who play a vital role as their own advocate ensuring that the factor infusion remains continuous.

