

# A Provincial Redistribution Program for the optimal management of clotting factor concentrates prescribed by Hemophilia Treatment Centres

Sarah Crymble BA, Monique Anderson MLT, Antonette Travas MA, Georgina Floros RN, Jerome Teitel MD  
Department of Medicine, Laboratory Medicine, St. Michael's Hospital, and the University of Toronto;  
Ontario Ministry of Health; Toronto, Ontario, Canada

## OBJECTIVE

There are approximately 1,600 patients with hemophilia A or B or severe von Willebrands disease registered in nine Hemophilia Treatment Centres (HTC) in Ontario, Canada.



Clotting factor concentrates (CFC) for these patients are distributed through Transfusion Services located at the HTC or at one of the >150 community hospitals which maintains inventories for possible emergency use.

Since each of these hospital supplies CFC to a small number of congenital bleeding disorders patients, they are often unable to issue them before their expiry dates.

Our objective was to reduce wastage of CFC by redistributing them as necessary between hospitals.

## METHOD

The Redistribution Program required a coordinator with an estimated time commitment of only 4 hours a month. Therefore the total cost of the redistribution program including salary, office supplies and courier charges was only CDN\$3,500/year. The monthly process is shown in figure 1.

Figure 1. Redistribution Process



CFC nearing expiry was shipped to the largest HTC in Ontario, located at St. Michael's Hospital in Toronto. The high demand at this HTC makes it likely that short dated CFC will be used before its expiry.

## RESULTS

From 2007 to 2012 a total of 2,939,420 IU of CFC were transferred from 74 hospitals to one of the HTCs in Ontario, most of it to the HTC at St. Michael's hospital. Of this total 97% (2,850,342 IU) was administered to patients. The remaining 3% (89,018 IU) had to be discarded because of violation of shipping and handling standards.

The key results are shown in Table 1

Table 1. Annual amount of CFC redistributed

Year	IU Redistributed	IU Discarded
2007-2008	414,549	10,935
2008-2009	351,870	16,733
2009-2010	257,870	33,350
2010-2011	531,848	7,127
2011-2012	1,294,205	20,873
TOTAL	2,850,342	89,018

As the program gains more recognition within the province we are seeing additional savings. Although the CFC redistributed through this program account for only a small percentage of overall issues, this nevertheless represents a substantial saving in absolute units of CFC and in dollars.

Figure 2 shows the percentage of savings based on total provincial utilization.

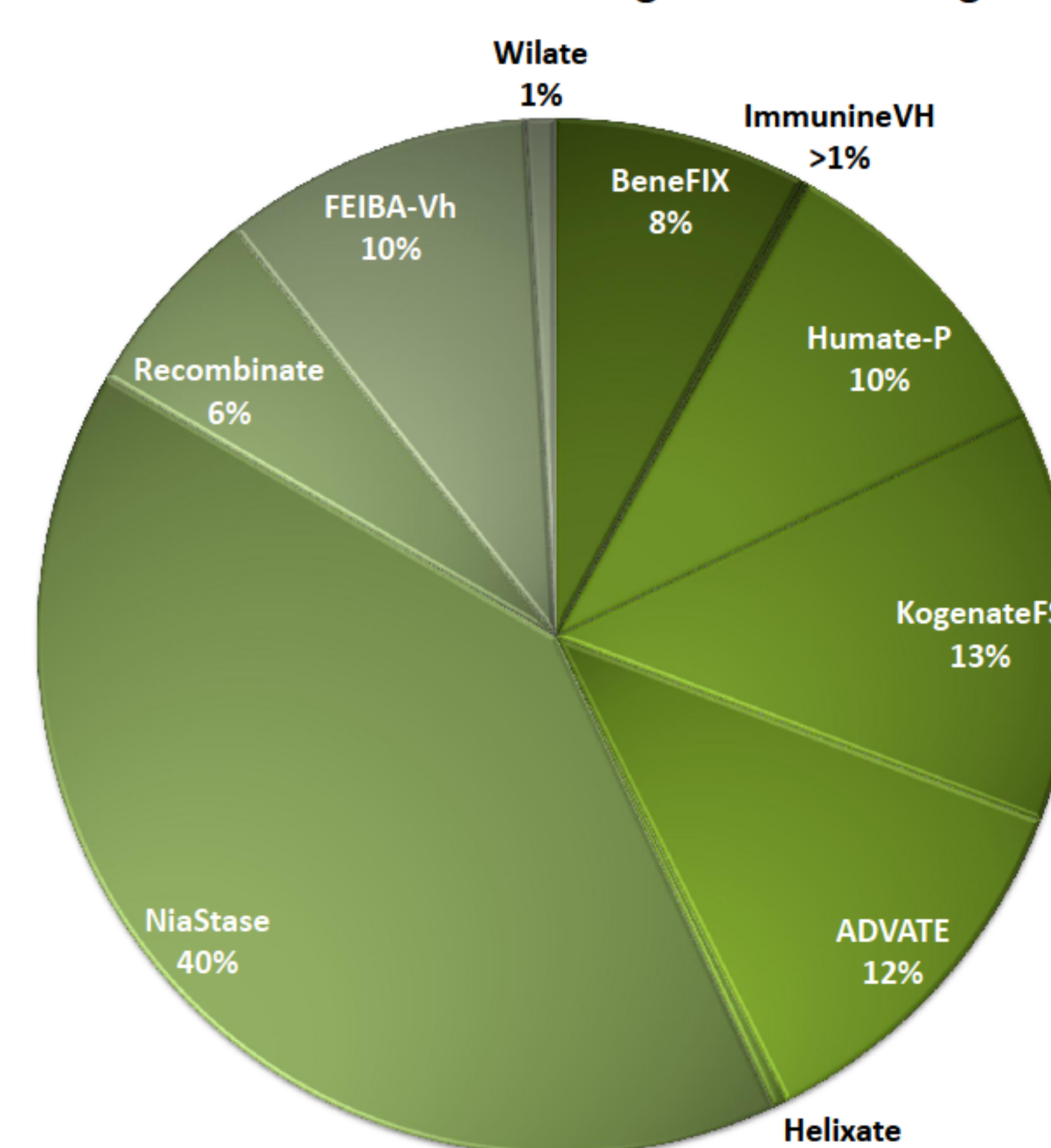
Figure 2. Percentage redistributed of the total issued in Ontario<sup>1</sup>



During the study period Advate (recombinant factor VIII, Baxter) was introduced in Canada as an alternative to the earlier generation product, Recombinate; and NiaStase RT (recombinant factor VIIa, Novo Nordisk) was introduced as a replacement for NiaStase. The Redistribution Program allowed some of the remaining inventories of Recombinate and NiaStase to be used before expiry.

The percentage of total saving accounted for by each CFC product are shown in Figure 3.

Figure 3. Percentage of total cost savings 2007-2012<sup>1</sup>



## CONCLUSION

In Canada, inventories of CFC for treatment of heredity bleeding disorders are maintained by the operators of the blood system and in patients' homes.

The success of the Redistribution Program depends upon the voluntary cooperation of the dedicated staff at Transfusion Services Staff across the province of Ontario, who check their inventories monthly and prepare CFC for redistribution out of a sense of professionalism and social responsibility.

In summary, in five years of operation the Redistribution Program has succeeded in preventing the wastage of more than 2.8 million IU of CFC, with a dollar value of approximately CDN\$2.9 million.



The annual operational cost of \$3,500 represents 0.7% of the value of CFC which would have potentially been wasted.

## ACKNOWLEDGEMENTS

We would like to acknowledge the Blood Programs Coordinating offices of Ontario for its ongoing support of the Redistribution Program; the efforts and support of transfusion services staff in all Ontario Hospitals; the nurses at all Ontario HTC; and Julia Sek, former Provincial Hemophilia Coordinator, for pioneering the development of this program for the province of Ontario.

## REFERENCES

1. Data source: Canadian Blood Services Warehouse, Provincial plasma product utilization report, 2011/2012

