

INAPPROPRIATE PLASMA TRANSFUSION AT ACADEMIC HOSPITALS: AN AUDIT AND QUALITATIVE STUDY

Irene Chen, MD(c) 2017, University of Toronto

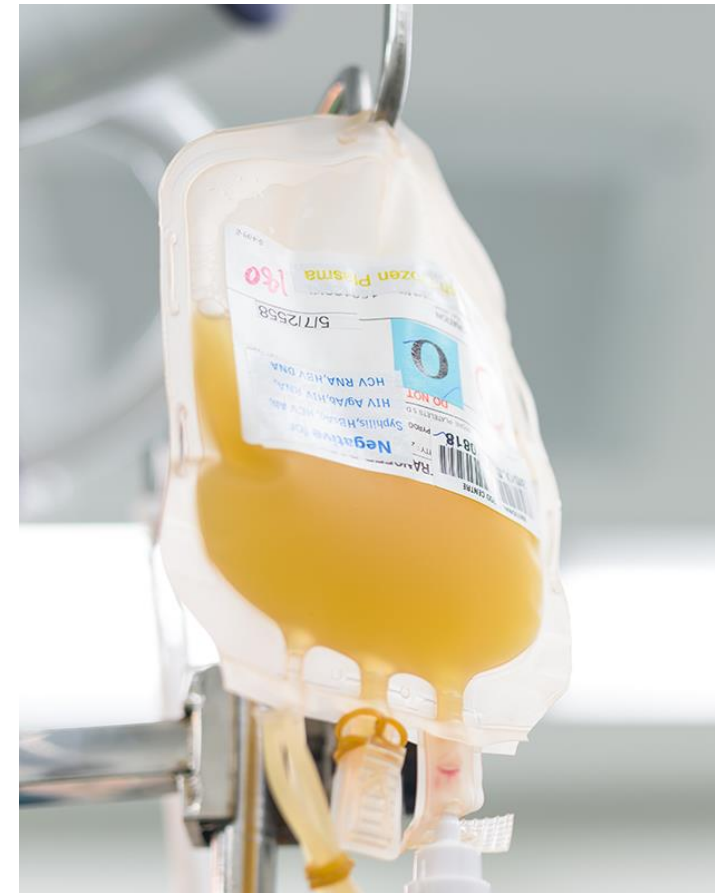
CSIM Annual Meeting - October 27, 2016

On behalf of Drs. Ilana Kopolovic, Chai Phua, James Kennedy,
Jacob Pendergrast, Nadine Shehata, Yulia Lin, Katerina Pavenski, Lisa Hicks



Background

- Previous plasma use audits completed by ORBCoN report 30 to 50% of plasma use is inappropriate in Ontario^{1,2}
- Did not analyze the level of training of physicians that ordered plasma



- (1) Tinmouth A et al. Utilization of frozen plasma in Ontario: a provincewide audit reveals a high rate of inappropriate transfusions. *Transfusion*, 2013; 53(10):2222-2229.
- (2) Shepherd L. The Frozen Plasma Audit - Then and Now, 2008 and 2013. Presented at: TC Symposium; 2014 Feb 24.



Objectives

- a) To characterize the appropriateness of plasma use at five teaching hospitals in Toronto
- b) To explore healthcare workers' perceptions on factors that contribute to inappropriate plasma transfusion and strategies to improve use



Methods: Audit

- Prospective cohort study in the summer of 2014
- 15-20 consecutive plasma orders were tracked from each of the five sites
- Charts were reviewed for demographics and indications for plasma
- Two adjudicators determined order appropriateness via the 2013 ORBCoN audit criteria³

(3) Ontario Regional Blood Conservation Network Plasma Audit Steering Committee. Provincial Frozen Plasma/Prothrombin Complex Concentrate Audit Report. 2013. [cited 2016 Oct 25]. Available from: <http://transfusionontario.org/en/cmdownloads/categories/frozen-plasma-audits/?parent=audits>



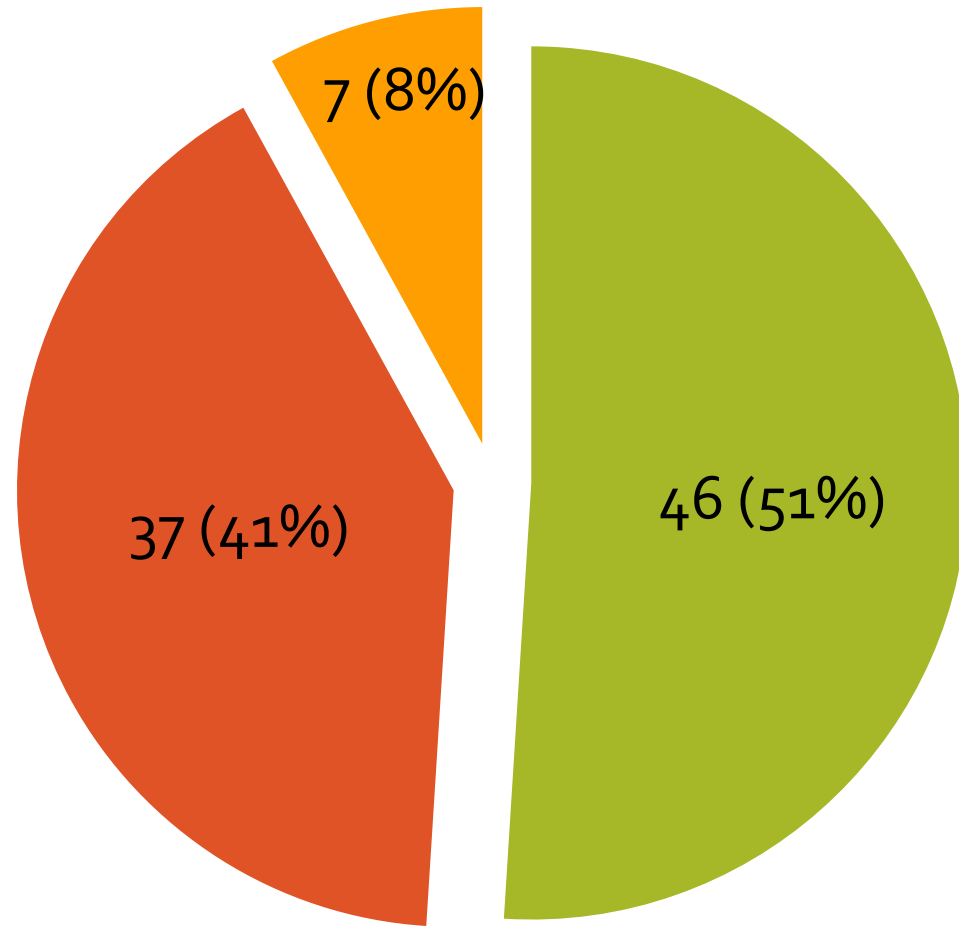
Methods: Interviews

- Semi-structured interviews conducted in Fall 2014 - Summer 2015
- Process mapping and typical case sampling identified key players in the transfusion process at each site
- Interviews were recorded, transcribed and anonymized
- Transcripts were coded and analyzed for themes



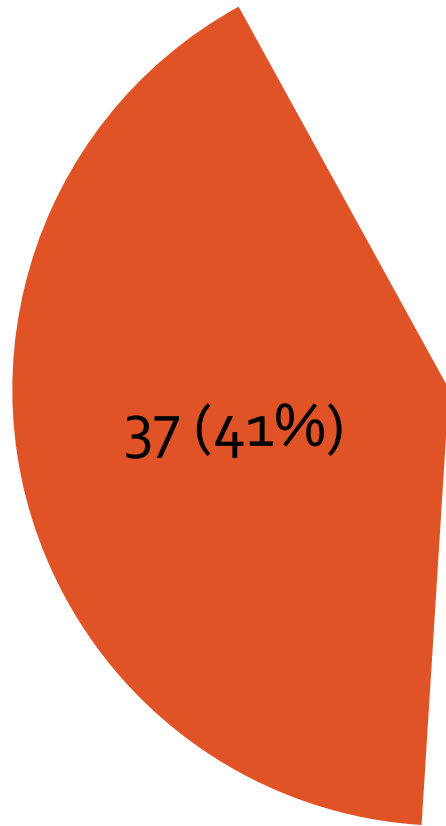
Results: Audit

N = 90



- Appropriate
- Inappropriate
- Indeterminate

Most Common Inappropriate Indications



INR < 1.5

No
contraindication
to PCC

Reversal of
heparin/DOACs

No bleeding or
urgent
procedure

Category of Orders		% Inappropriate Orders in Category
Setting		
To Intensive Care Unit		46%
To Operating Room		31%
Prescriber Discipline		
Anesthesiology		36%
Surgery		37%
Intensive Care		53%
General Internal Medicine		54%
Prescriber Level of Training		
Staff Physician		36%
Trainee		47%



Results: Interviews

25 participants:

- 8 staff physicians
- 6 resident physicians
- 2 nurses
- 9 transfusion medicine staff



Factors Contributing to Inappropriate Use

Knowledge gaps

- “It has to do with a lack of familiarity with the indications for plasma.”

Time pressures

- “There’s situations where there’s significant bleeding and people just don’t feel they have time to wait for coagulation tests.”

Action preferred to inaction

- “You get the sense that plasma is often used to help the physician feel better.”

Contributing Factors to Inappropriate Use

The middle-man phenomenon

- "...radiology will just refuse to do the procedure [you ordered]. So what ends up happening is we just give [plasma] with the understanding it's not going to lower [the INR]."

Barriers to interdisciplinary collaboration

- "Doctors don't like to be told they can't do what they want to do by someone who's not caring for the patient."

Plasma Use Improvement Strategies

Education

- “[People] haven’t seen [the transfusion institutional policy] at all or they’re not aware of things that are going on.”

Timely access to tests or consultations

- “This may end up influencing the decision to transfuse because you can reassure yourself faster, that you don’t need to transfuse plasma and so therefore not transfusing on spec.”

Plasma Use Improvement Strategies

Gatekeeping measures

- “I think it’s not unreasonable to say you’ve got to have consultation [to access plasma for unlisted indications].”

Reflective practice

- “I think if I knew my transfusion rates on my patients, I would be holding that up and saying, ‘I wonder what I’m doing with [plasma products].’”

Conclusions

- A large proportion of plasma use at participating academic hospitals in Toronto is inappropriate
- Setting, specialty and level of training do not impact appropriate plasma use
- Improving plasma transfusion practice likely needs a multidisciplinary, respectful, empowering approach that leverages transfusion laboratory expertise, order entry, feedback and other targeted interventions



Thank you!

irenewt.chen@mail.utoronto.ca

