

Tranexamic acid use in hip fracture surgery

September 18, 2020



Physician
Learning
Program



Problem Definition

- Bleeding associated with a hip fracture and subsequent surgery may contribute to postoperative morbidity and mortality
- Blood transfusion has been associated with poorer outcomes after surgery such as longer length of stay, increased infections and mortality¹
- TXA can reduce the likelihood of postoperative transfusion by:
 - **30%** (RR: 0.70 95%CI 0.52 – 0.94)²
 - while other meta-analyses report even greater reductions (OR 0.37; **95%** CI, 0.26-0.53; $p < 0.00001$)³
- TXA is widely used in general trauma and elective orthopedic procedures, yet it has not yet become the standard of care⁴

What were we looking to accomplish?

Goal:

- Reduce post-operative bleeding
 - Reduce transfusion rates
 - Increase utilization rates of TXA for hip fracture procedures and align dosing to recommendations

Proposed Intervention - Audit and Feedback:

- Provide baseline data
 - Personal data on TXA use and patient outcomes for hip fracture and arthroplasty procedures
- Provide an opportunity to discuss potential improvements with your colleagues
- Provide follow-up data

Potential Impact:

- Meta-analyses report TXA reduces total blood loss and transfusion requirements, with no increased risk of DVT or thromboembolic events.⁵
- Improve patient outcomes while simultaneously enhancing cost-effectiveness

Note: An Ontario patient blood management programs estimate that the cost per transfusion episode (including the cost of RBC unit, increased LOS and adverse events) is approx. \$1,400 CAD⁶

Background

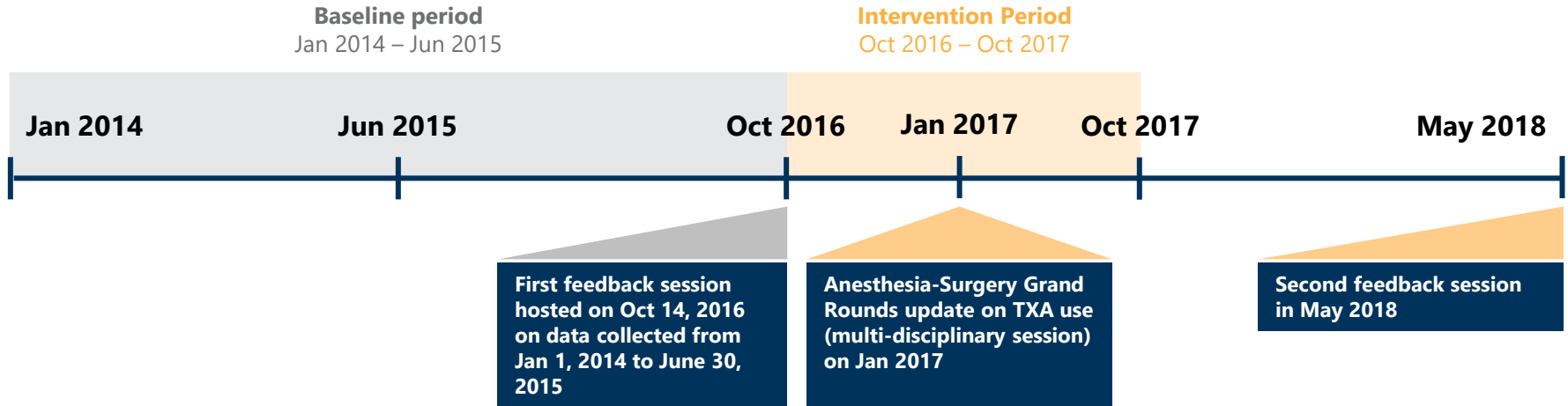
- Previous PLP project on TXA use in hip and knee arthroplasty at South Health Campus

Clinical Question:

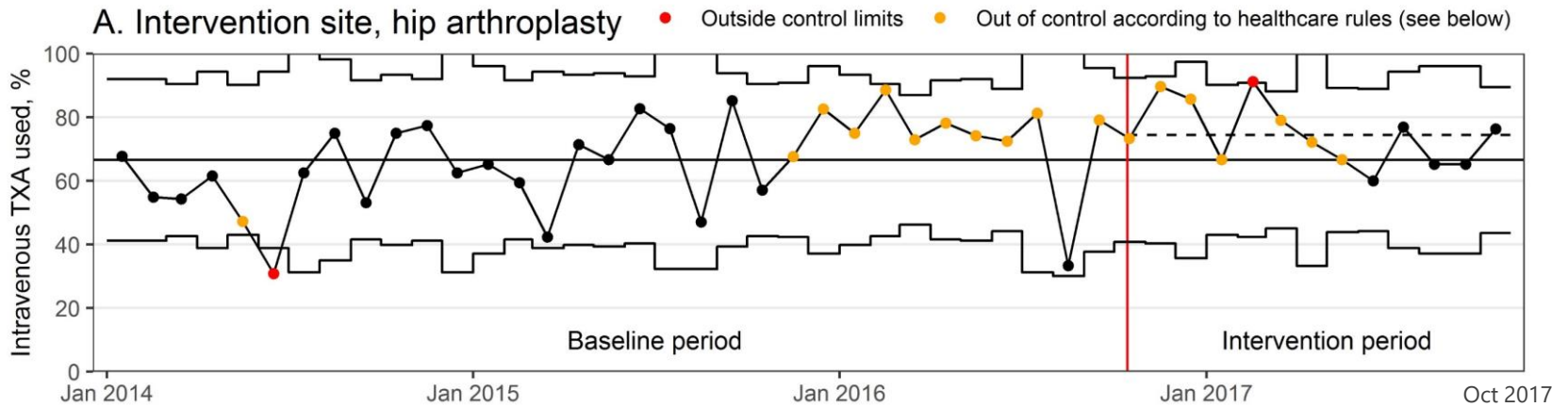
Does the use of IV TXA during total hip and knee replacement procedures affect blood transfusion rates in the 72 hours following surgery?

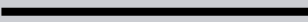
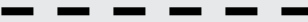

IV TXA Use				
	Pre-feedback (n=2298)	Post-feedback (n=722)	Absolute Change	Relative Change
Total Hip Arthroplasty	67%	74%	↑ 7%	↑ 10.4%
Total Knee Arthroplasty	62%	82%	↑ 20%	↑ 32.3%

Background timeline

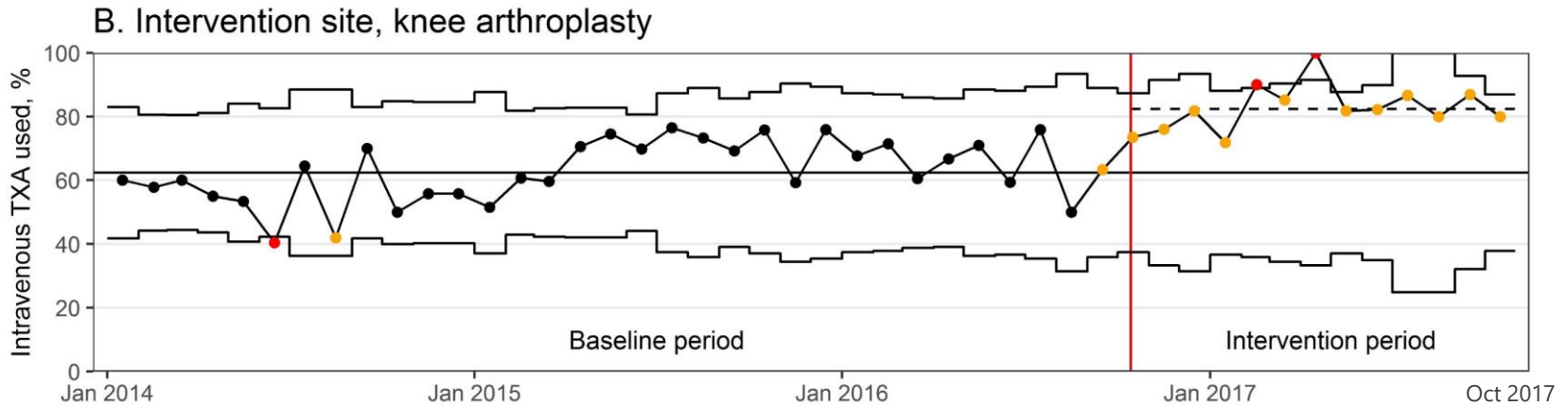



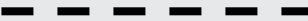

TXA use in hip arthroplasty



Solid black line		% use baseline period
Dashed black line		% use intervention period
Vertical red line		Intervention date (Oct. 14, 2016)

TXA use in knee arthroplasty



Solid black line		% use baseline period
Dashed black line		% use intervention period
Vertical red line		Intervention date (Oct. 14, 2016)

Blood transfusions

RBC transfusions within 72 hours after surgery

	Pre-feedback (n=2298)	Post-feedback (n=722)	Absolute Change	Relative Change
Total Hip Arthroplasty	5.2%	3.3%	↓ 1.9%	↓ 36.5%
Total Knee Arthroplasty	2.5%	0.6%	↓ 1.9%	↓ 76.0%