TXA USE AT BRONSON

Bronson Methodist Hospital Trauma Services

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TXA at BMH

- Not using TXA for traumas prior to 10/12
- Reviewed with pharmacy and Blood Management Service
  - Orthopedics using TXA
  - Readily available
  - Affordable
- Trauma Service reviewing TXA use for appropriate cases

Trauma Services & TXA

- October 10, 2012
- Trauma Grand Rounds Guest Lecturer
  Dr. Erwin Gross

  - Medical director of Transfusion Services and Patient Blood Management for Eastern Maine Medical Center
  - Management of Massive Hemorrhage in Trauma
  - Champions use of TXA and TEG in trauma

4 Hours After Presentation

- 10/10/12 1pm – Tier 1 Trauma Activation
- 23 y/o male, train vs. bicycle
  - GCS 6 at scene
  - P 147 BP 93/56 R 30
  - Large posterior scalp avulsion and complex left ear laceration
  - Complete amputation L foot and L forearm
  - R hip dislocation
  - Intubated
  - To BMH by West Michigan AirCare
  - 1 U PRBCs in flight, 1 U in ER, 1 U FFP

At BMH

- P 118 BP 77/59
- MTP initiated
- TXA administered, bolus and infusion
- Bleeding controlled, CT vertex to anus
- 3 U PRBCs + 1 FFP
- To OR in 90”: wound debridements, wound repairs, scalp Wound VAC, bilat chest tubes
- ISS 29
- D/C to rehab at MFB PID #49
- TXA feasible in our ER/Trauma protocols

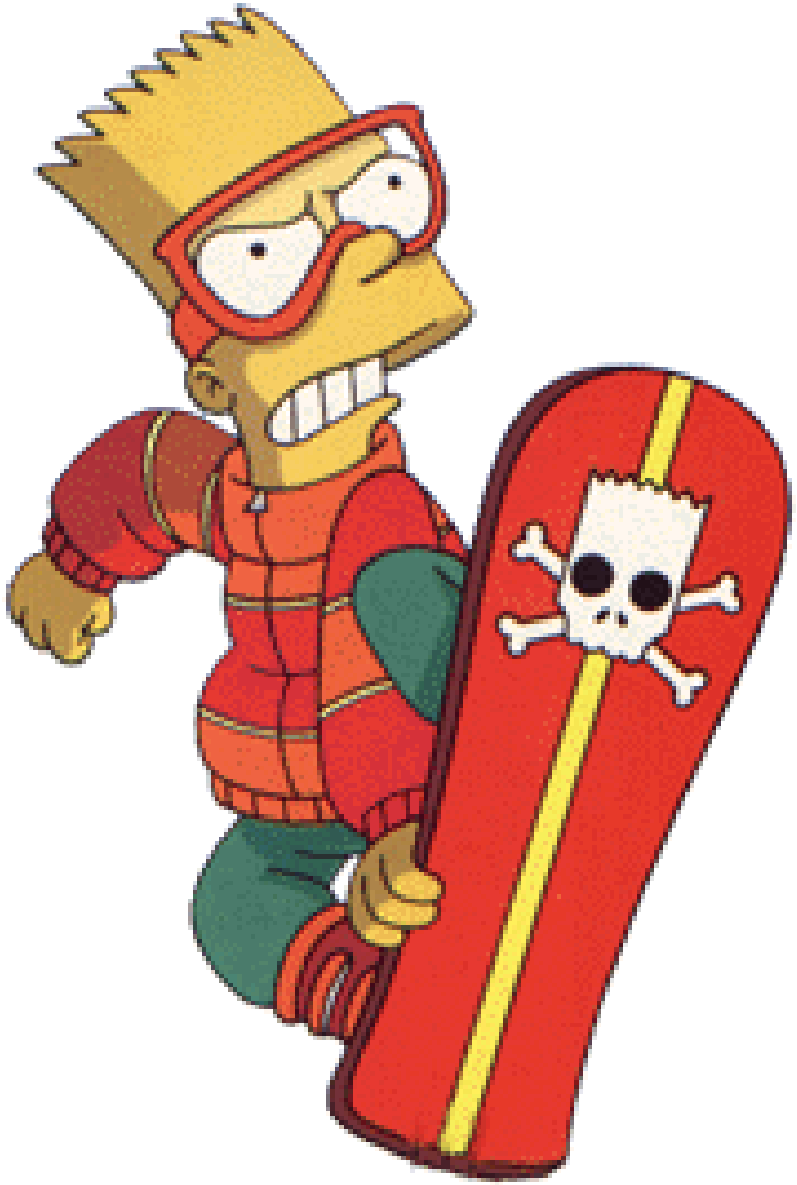
- Added TXA to trauma registry 11/1/12
- 2013 MTQIP PI Project
  - Increase use of TXA in appropriate MTP patient population

MTP at BMH

- Shock with Class 3 or 4 hemorrhage
- Uncontrolled peri- or intraoperative bleeding
- Severely hemorrhaging injuries
- Profound GI bleeding
- Ruptured AAA
- Trauma surgeon karma

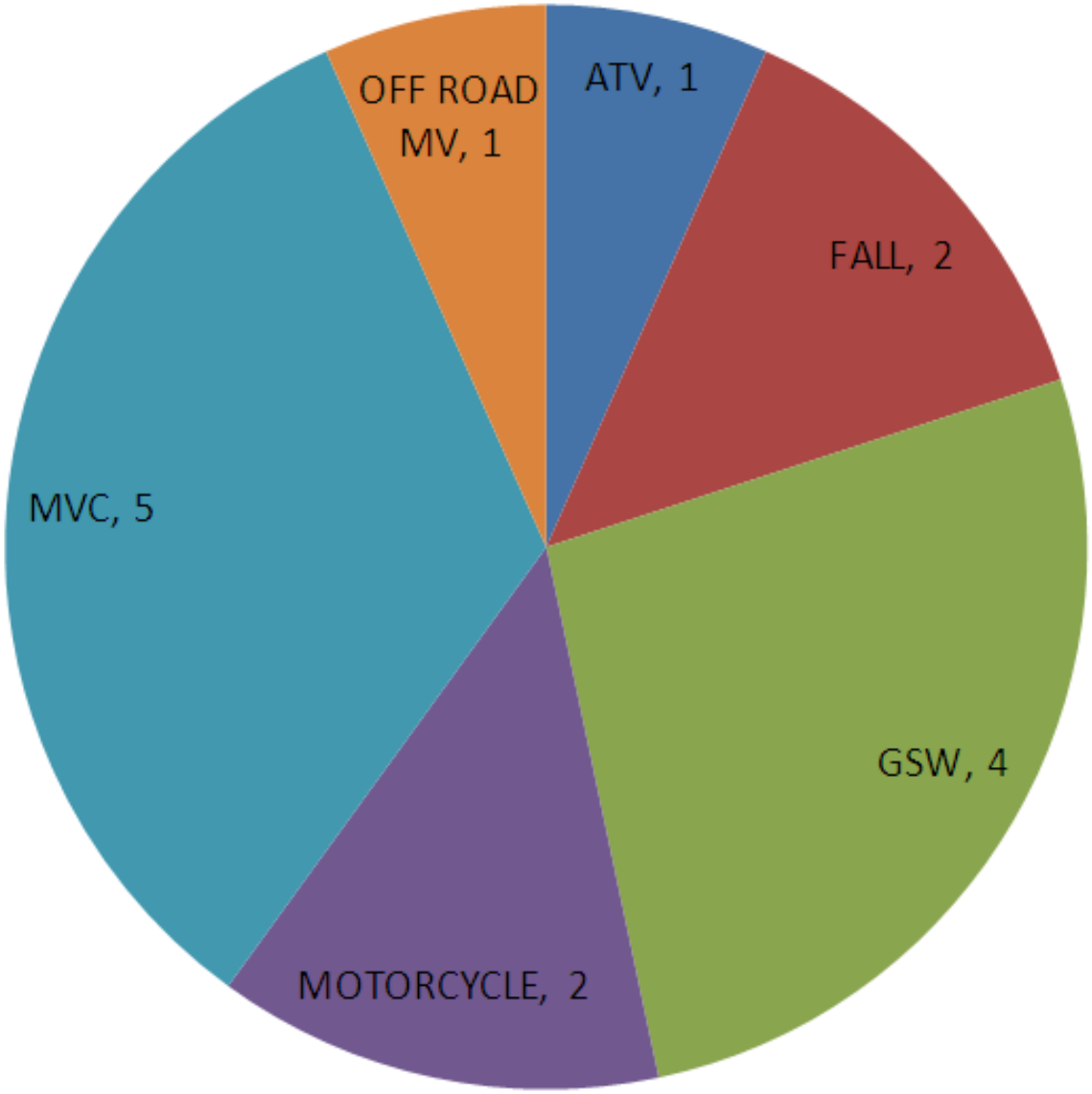
TXA Use

	Oct 12 –Jan 13	Feb 13-May 13	Jun 13-Sept 13
Percent	50% (4 of 8)	100% (5 of 5)	100%(9 of 9)
Action Plan	• Education: Trauma Grand Rounds March 2013	• Education: Trauma Grand Rounds June 2013 • Education: SICU Inservice on TEG/TXA June 2013	• Education: Trauma Grand Rounds Nov 2013



TXA in BMH Trauma
December 2012 - Present

- 15 patients
- Age range 13 – 63 years, mean 34
- ISS range 4 – 57, mean 27
- Mortality 3/15, 20%
- Mean transfusion first 4 hours: 1.3 U
- Mean transfusion first 24 hours: 2.8 U
- 2011 mean transfusion first 24 hours: 4.3 U (n = 73)



Mechanism Of Injury

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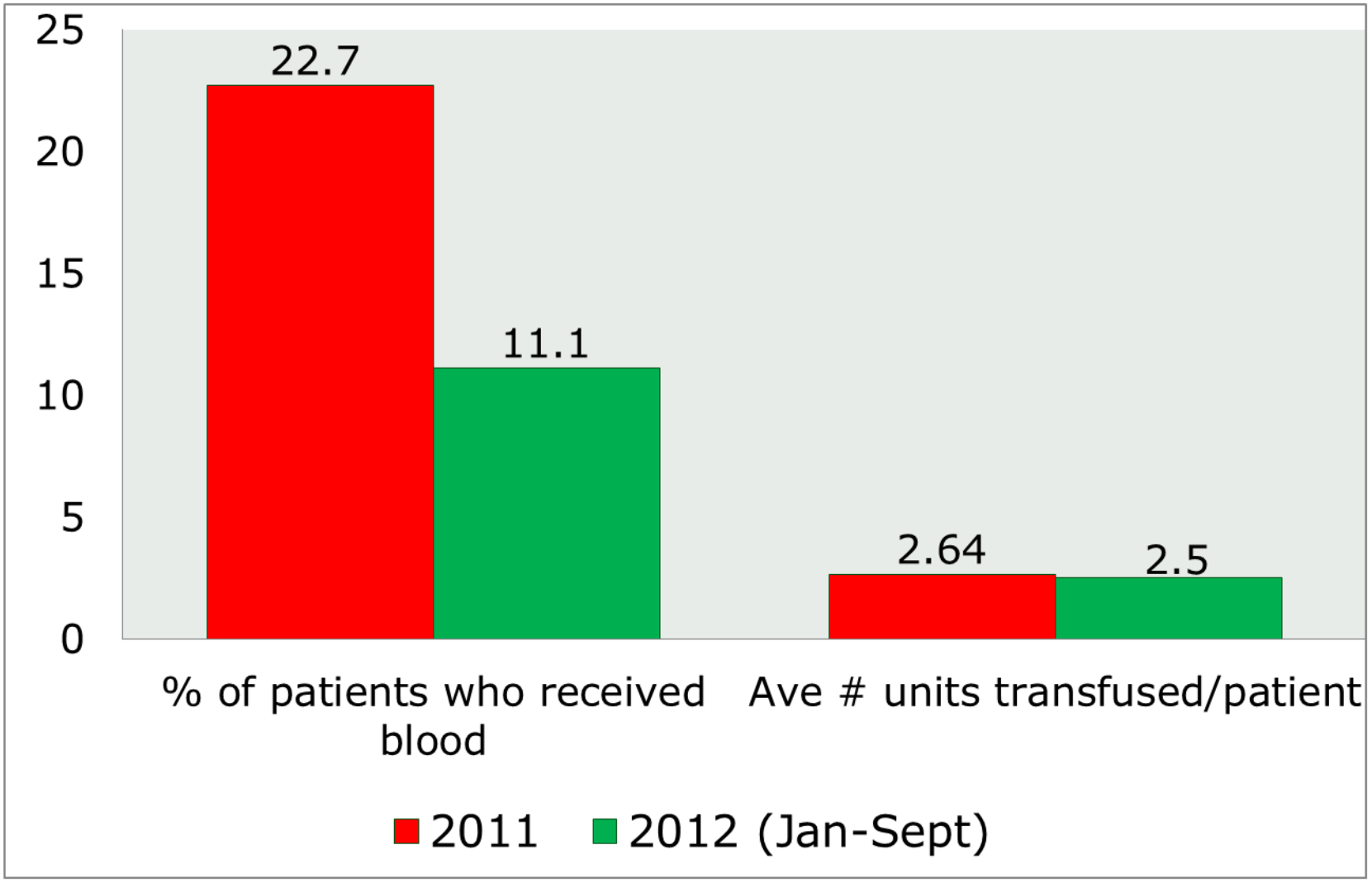
Bronson: Orthopedic Hip/Knee/Spine Patients and Blood Transfusions



Effects OF TXA On Total Knee Arthroplasty Blood Utilization

- Objective
  - To evaluate the effect of tranexamic acid on allogeneic blood transfusions in patients undergoing TKA at Bronson Methodist Hospital

- Retrospective cohort study

Patient Selection

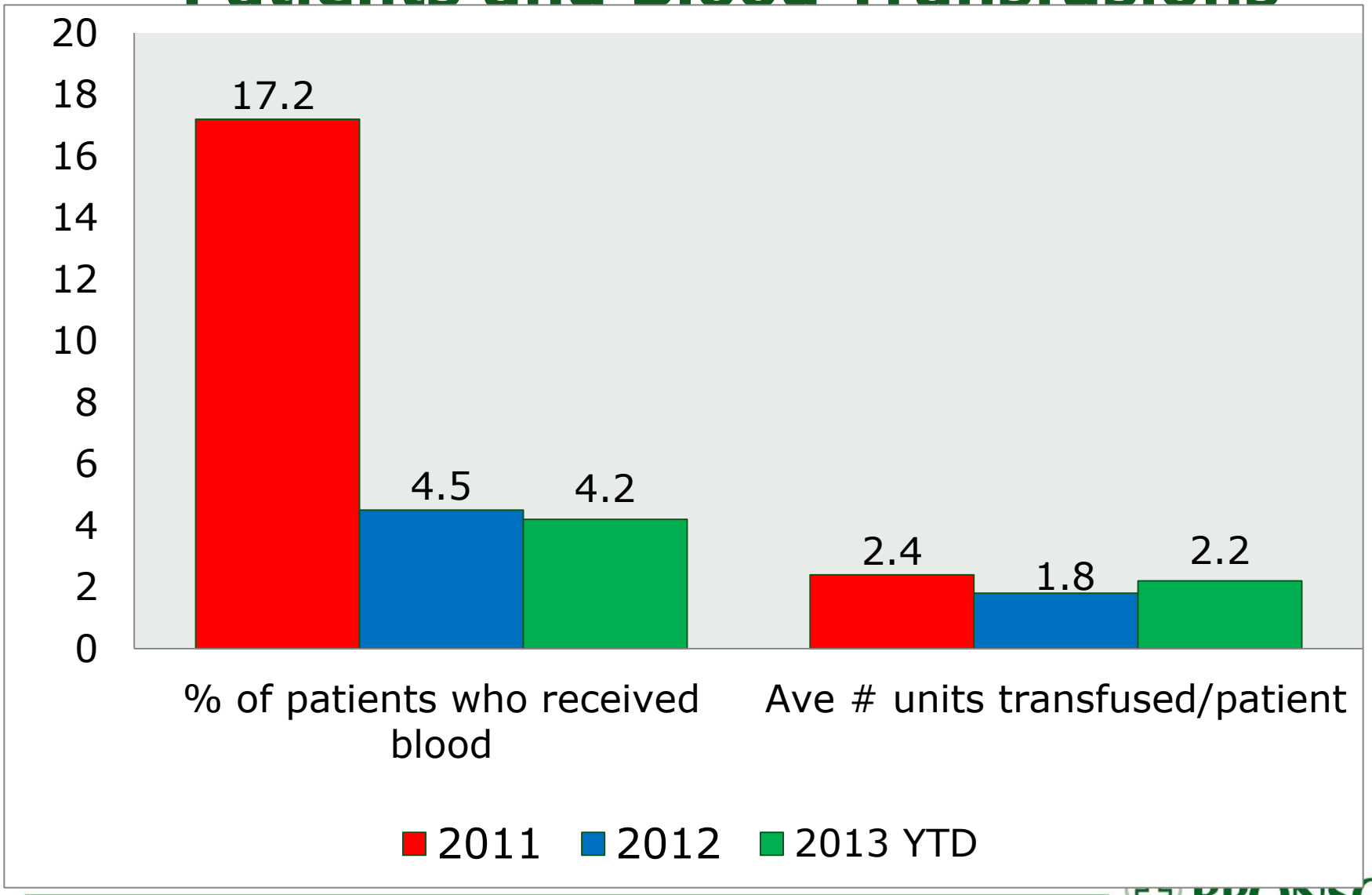
Inclusion Criteria

- Age > 18 years old
- Primary unilateral TKA
  - January 2009 to December 2012
- Treatment group
  - Received TXA during the perioperative period
- Control group
  - Did not receive TXA during the perioperative period

Exclusion Criteria

- Age < 18 years old
- Concurrent surgery with unilateral TKA
- Revision of a previous TKA
- Bilateral TKA

Bronson: Total Knee Arthroplasty Patients and Blood Transfusions



Baseline Characteristics

	Control (n=61)	Treatment (n=60)	p-value
Age (years)*	66.1 (SD±9.6)	66.9 (SD±9.9)	0.63
Gender, n Men Women	 25 (41%) 36 (59%)	 16 (27%) 44 (73%)	0.12
Weight (kg)*	93 (SD ±17.2)	91.2 (SD±17.9)	0.57
Height (cm)*	168.1 (SD±10.9)	166 (SD±8.2)	0.23
Indication, n	OA = 56[+] RA = 2 Other = 3	OA = 56 RA = 4 Other = 0	0.105
TXA dose, n 10 mg/kg 15 mg/kg	 n/a	 17 43	 n/a
Comorbidities*	2.3 (SD±1.3)	2.5 (SD±1.6)	0.42

*Mean and standard deviation (SD); OA = osteoarthritis; RA = rheumatoid arthritis
[+]1 patient had OA & RA

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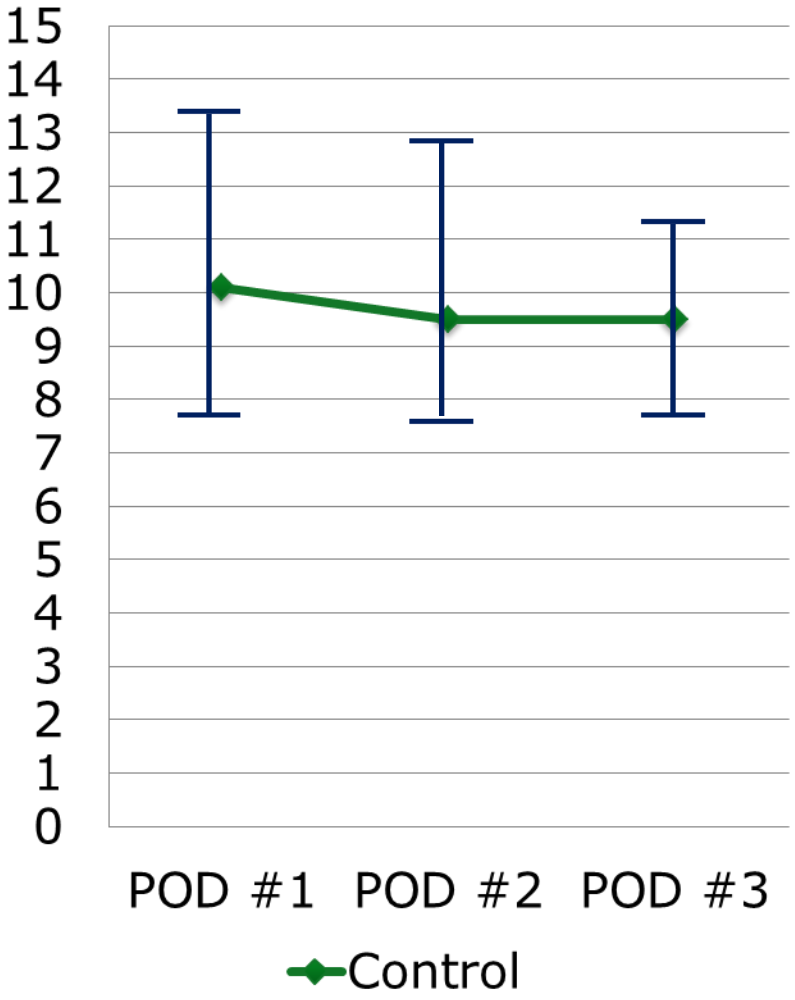
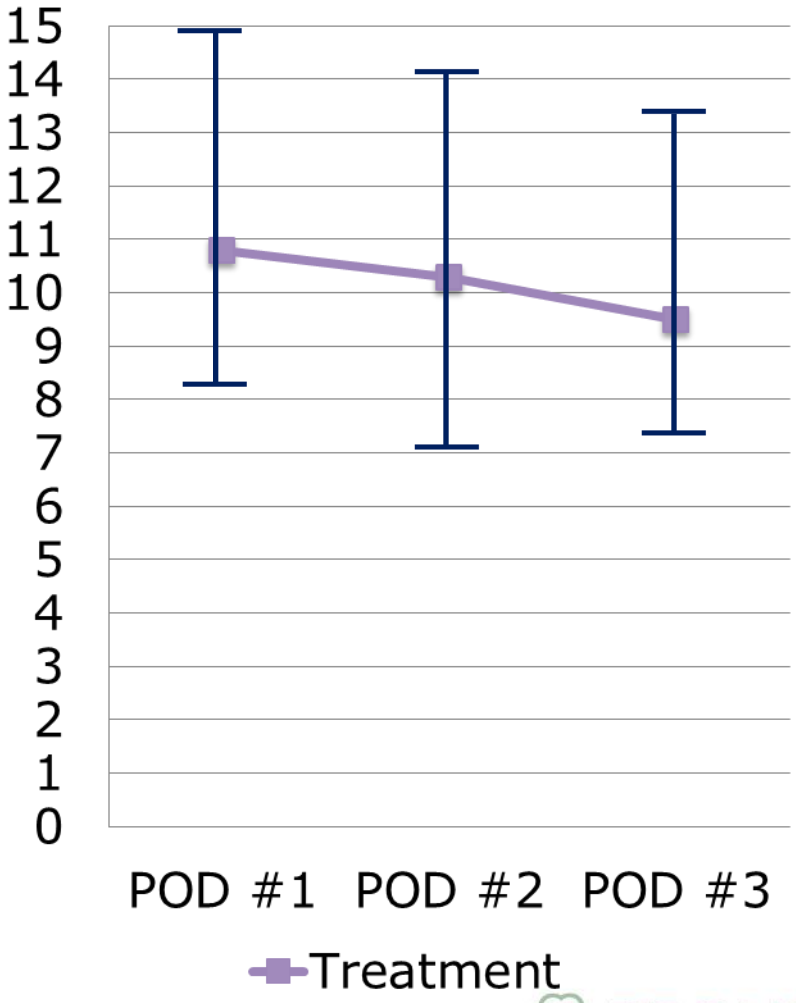
Results

	Control (n=61)	Treatment (n=60)
Total EBL (mL)+	300 (0 – 1000)	300 (20-500)
Length of Case (minutes)+	168 (115-366)	187.5 (124-298)
Anesthesia , n General Spinal	 55 6	 44 16
Knee Block , n	61	59
Cement, n	61	60
LOS (days)*	4 (SD±0.8)	3.72 (SD±0.66)
Total drain loss (mL) +	710 (40-1620)	392.5 (55-820)
Net intraoperative fluids (mL)+	1850 (800-4000)	1900 (500-3200)

*Mean and standard deviation (SD); +median and range; EBL = estimated blood loss;
LOS = length of stay
Blood loss: Minimal = 50mL and < 100 = 100mL

Postoperative Hemoglobin





POD = postoperative day

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Next Steps

- Working with Blood Management Service to look at TXA/blood utilization for spine cases
- WMAC: TXA now carried on aircraft
- Continue to look at patient outcomes and blood utilization in trauma patients
- April 2014: Dr. Todd Rasmussen presenting at WMU Grand Rounds

- TXA added to WMAC protocols ~Sept 2013
  - Utilized at least once since initiation
- TXA potential for regional use
- TXA for CVA

Thank You!

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