The Michigan Trauma Quality Improvement Program

Ypsilanti, MI
October 11, 2022

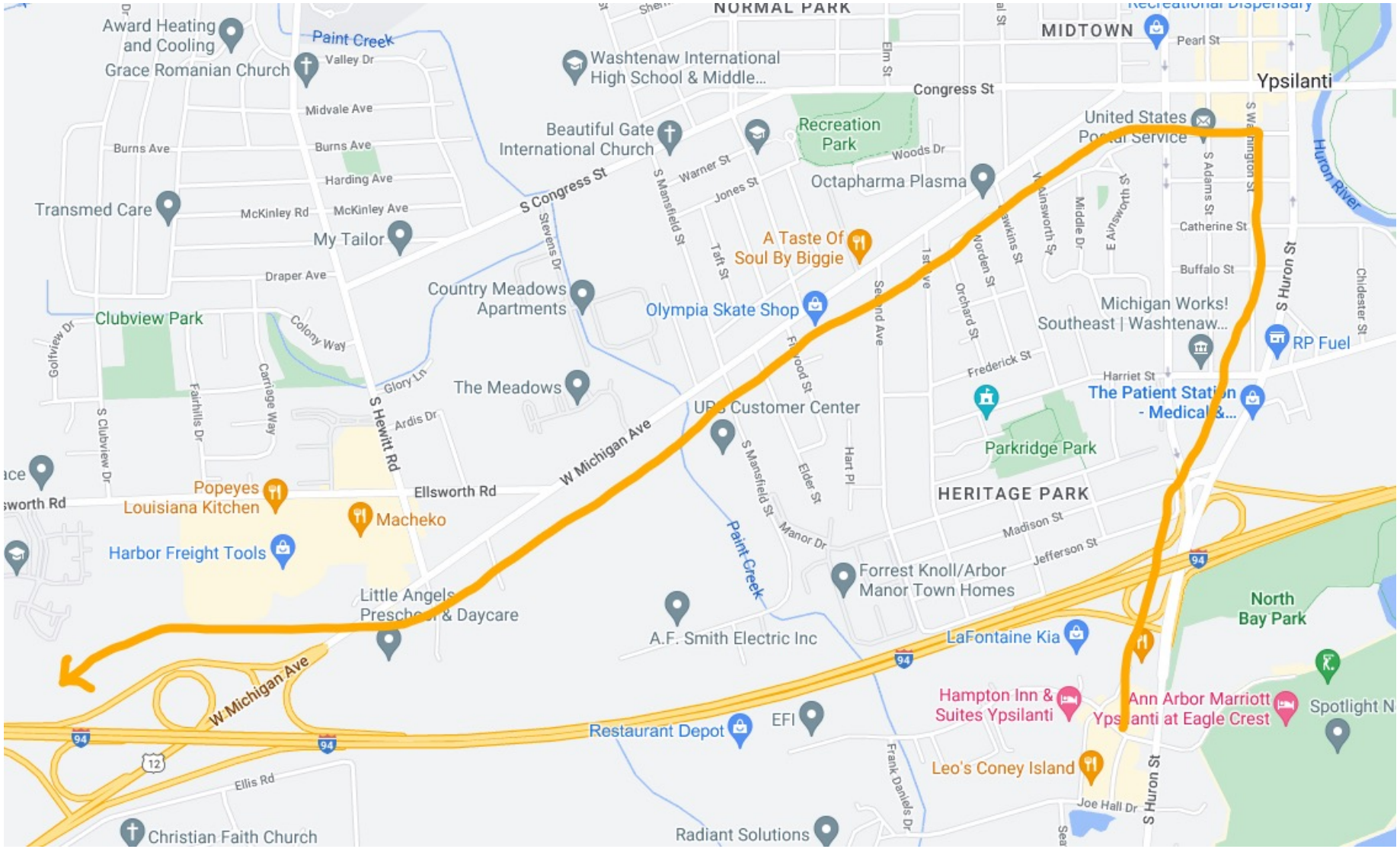
Disclosures

- Mark Hemmila Grants
  - Blue Cross Blue Shield of Michigan
  - Michigan Department of Health and Human Services
  - National Institutes of Health - NIGMS

No Photos Please

Evaluations

- Link will be emailed to you following meeting
- Please answer the evaluation questions
- CME for this meeting


NORMAL PARK
MIDTOWN
Ypsilanti
Award Heating and Cooling
Grace Romanian Church
Paint Creek
Valley Dr
Washtenaw International High School & Middle...
Beautiful Gate International Church
Recreation Park
Congress St
United States Postal Service
Pearl St
Huron River
Midvale Ave
Burns Ave
Harding Ave
Transmed Care
McKinley Rd
McKinley Ave
My Tailor
S Congress St
Stevens Dr
S Mansfield St
Warner St
Jones St
Woods Dr
Octapharma Plasma
A Taste Of Soul By Biggie
Taft St
Draper Ave
Country Meadows Apartments
Olympia Skate Shop
Clubview Park
Colony Way
Golfview Dr
Fairhills Dr
Carriage Way
Glory Ln
The Meadows
S Hewitt Rd
Ardis Dr
UPS Customer Center
W Michigan Ave
Ellsworth Rd
Popeyes Louisiana Kitchen
Macheko
Harbor Freight Tools
S Clubview Dr
Elder St
Hart Pl
Manor Dr
Paint Creek
Forrest Knoll/Arbor Manor Town Homes
Madison St
Jefferson St
HERITAGE PARK
Parkridge Park
Frederick St
Harriet St
Michigan Works! Southeast | Washtenaw...
The Patient Station - Medical &...
RP Fuel
Catherine St
Buffalo St
S Huron St
Chidester St
S Adams St
Middle Dr
Orchard St
Norden St
Hawkins St
Ainsworth St
Second Ave
1st Ave
Little Angels Preschool & Daycare
A.F. Smith Electric Inc
LaFontaine Kia
North Bay Park
Hampton Inn & Suites Ypsilanti
Ann Arbor Marriott Ypsilanti at Eagle Crest
Spotlight N
Restaurant Depot
EFI
Leo's Coney Island
Frank Daniels Dr
Joe Hall Dr
Ellis Rd
Christian Faith Church
Radiant Solutions
94
12

Data Submission

- Data submitted August 5, 2022
  - This report
- Next data submissions
  - October 7, 2022 - thru 6/30/22
  - December 2, 2022 - thru 8/31/22
    - Last chance to correct data for 2022 CQI Index and VBR

Future Meetings

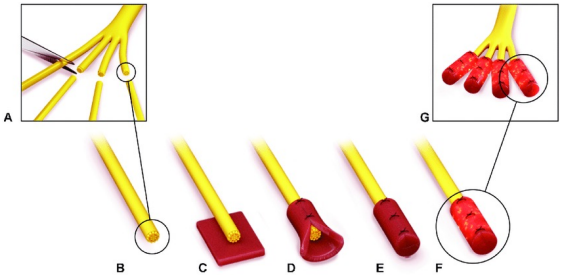
- Education
  - Thursday December 15, 2022, 10a-12n
  - Level 1 and 2 MCR and Registrars, Level 3 TPM and Registrars
  - Virtual
- Winter
  - Tuesday February 7, 2023
  - Virtual

Agenda

- Intro Comments
- Mark - Data
- Mark - Projects
- Jill - Program Manager Update, Analytics
- Lunch

Agenda

- Shauna - Data Validation Changes
- John Scott - Patient Reported Outcomes
- Judy - Program Manager Updates
- Bryant - Orthopaedics Update
- Paul Cederna - Regenerative Peripheral Nerve Interfaces



UM | Neuromuscular Lab

Uniting Biology and Technology

MTQIP Data (Hospital Scoring Index)

Mark Hemmila, MD

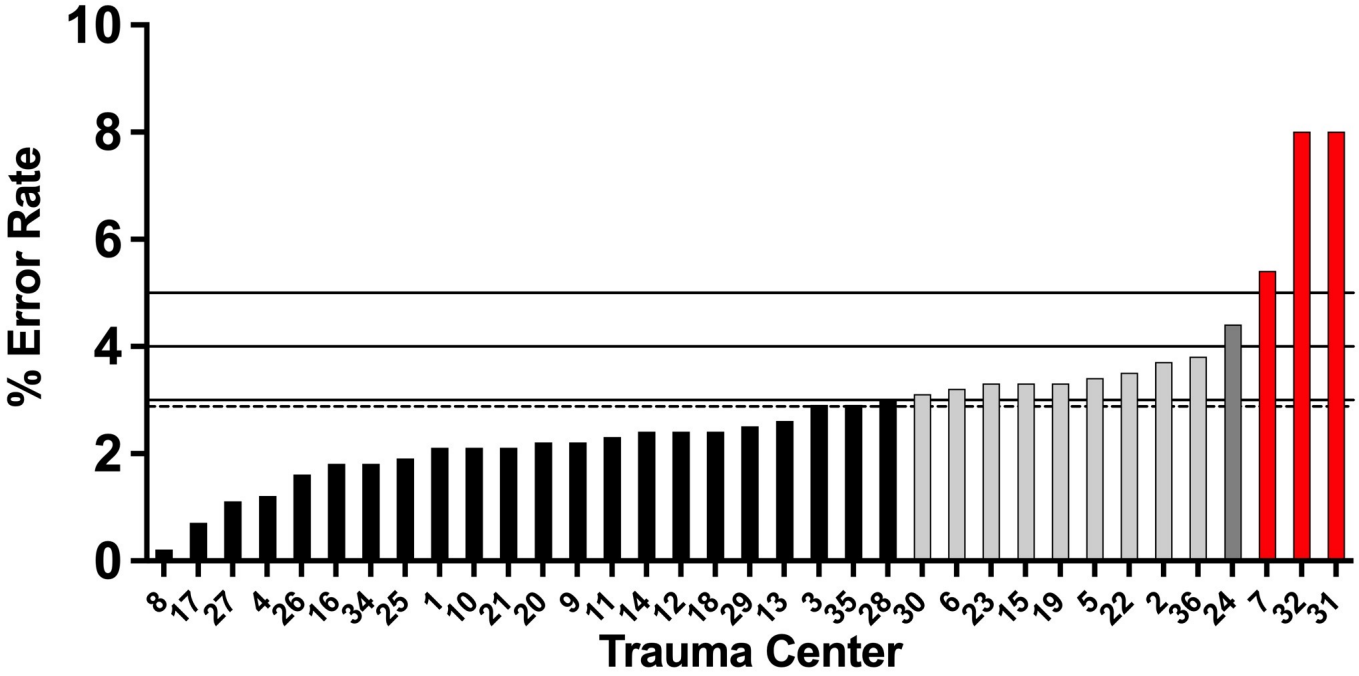
Data for 2022 Hospital CQI Index and VBR

- 1-2 months of data pending
- Corrections pending
- December is final submission

#3 Data Validation Error Rate

- Data validation error rate (visit during 2022)
  - 0-3.0% 10 points
  - 3.1-4.0% 8 points
  - 4.1-5.0% 5 points
  - > 5.0% 0 points

Metric 3 - Data Validation Accuracy
Last Processed Report



Mean 2.88%, ↓ from 2.94%

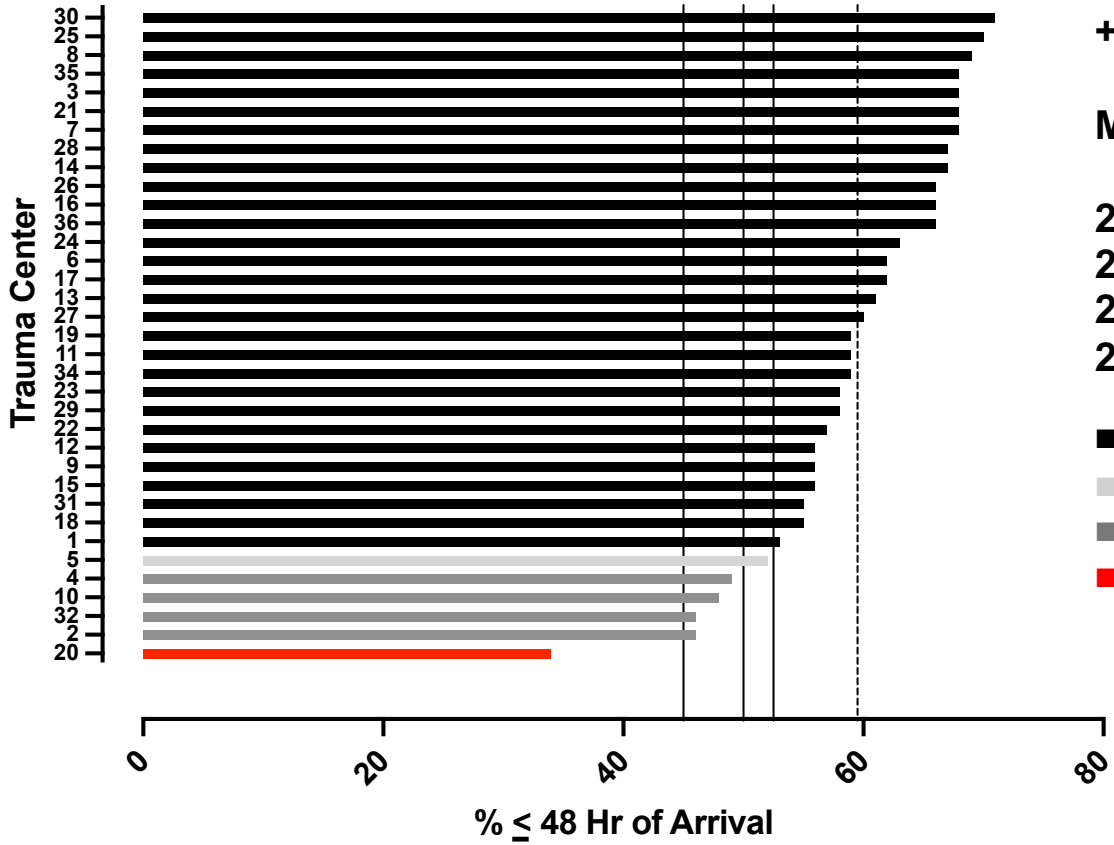
Data Validation Feedback

- Still producing high quality data in todays challenging environment
- Challenges with staff turnover, redeployment
- Do you have any concerns about MTQIPs data validation program?

#4 Timely LMWH VTE Prophylaxis in Trauma Service Admits

- Venous Thromboembolism (VTE) Prophylaxis with LMWH Initiated Within 48 Hours of Arrival in Trauma Service Admits with > 2 Day Length of Stay (18 mo: 1/1/21-6/30/22)
  - ≥ 52.5% of patients (≤ 48 hr)
  - ≥ 50% of patients (≤ 48 hr)
  - ≥ 45% of patients (≤ 48 hr)
  - < 45% of patients (≤ 48 hr)

Metric 4 - VTE Prophylaxis LMWH Timeliness
Cohort 2 - Admit to Trauma
1/1/21 - 5/31/22



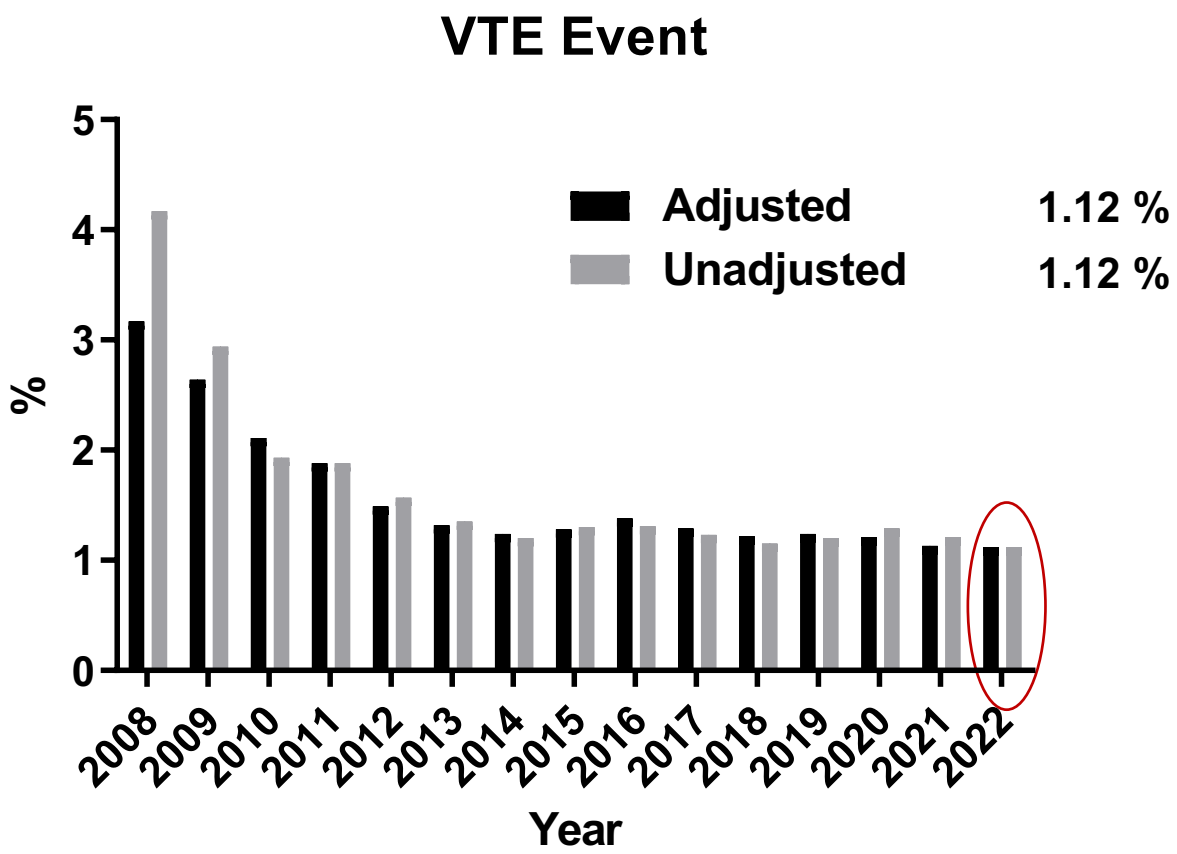
29/35 Centers ≥ 52.5%

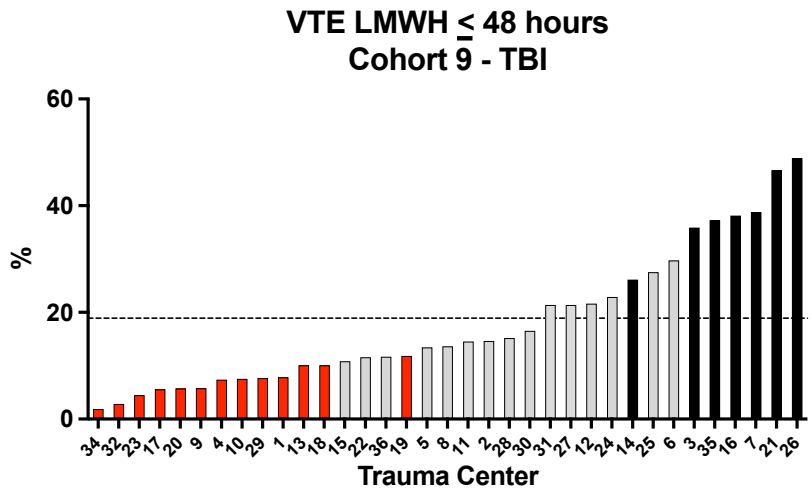
+6 Centers

Mean 59.5%

2017 39%
2018 50%
2019 55%
2021 57%

- ≥ 52.5%
- ≥ 50%
- ≥ 45%
- < 45%


VTE Event
Adjusted
1.12 %
Unadjusted
1.12 %
%
0
1
2
3
4
5
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Year

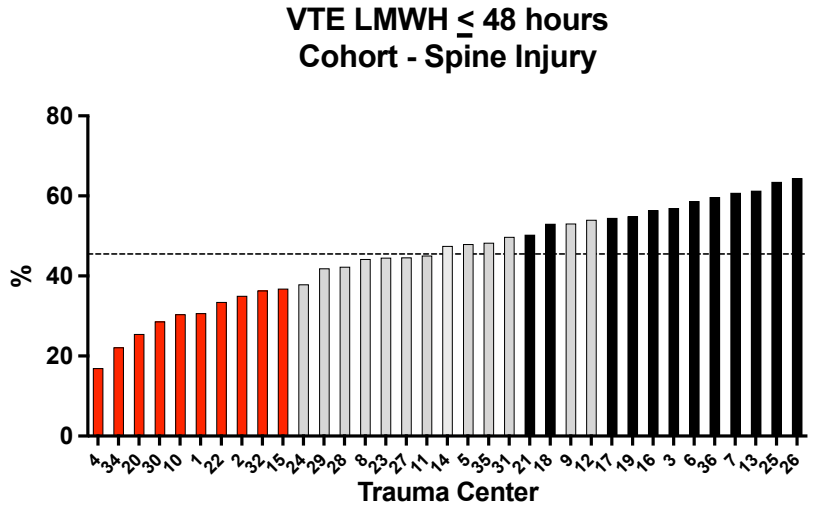


12% > 19%

Collaborative VTE Rate	Cohort 2 (MTQIP All)	Cohort 9 (TBI)
Numerator	401	194
Denominator	44,439	12,209
Unadjusted Rate	0.9%	1.59%
Adjusted Rate	**0.86%**	**1.58%**

VTE rates added based on member meeting question

45% > 45%

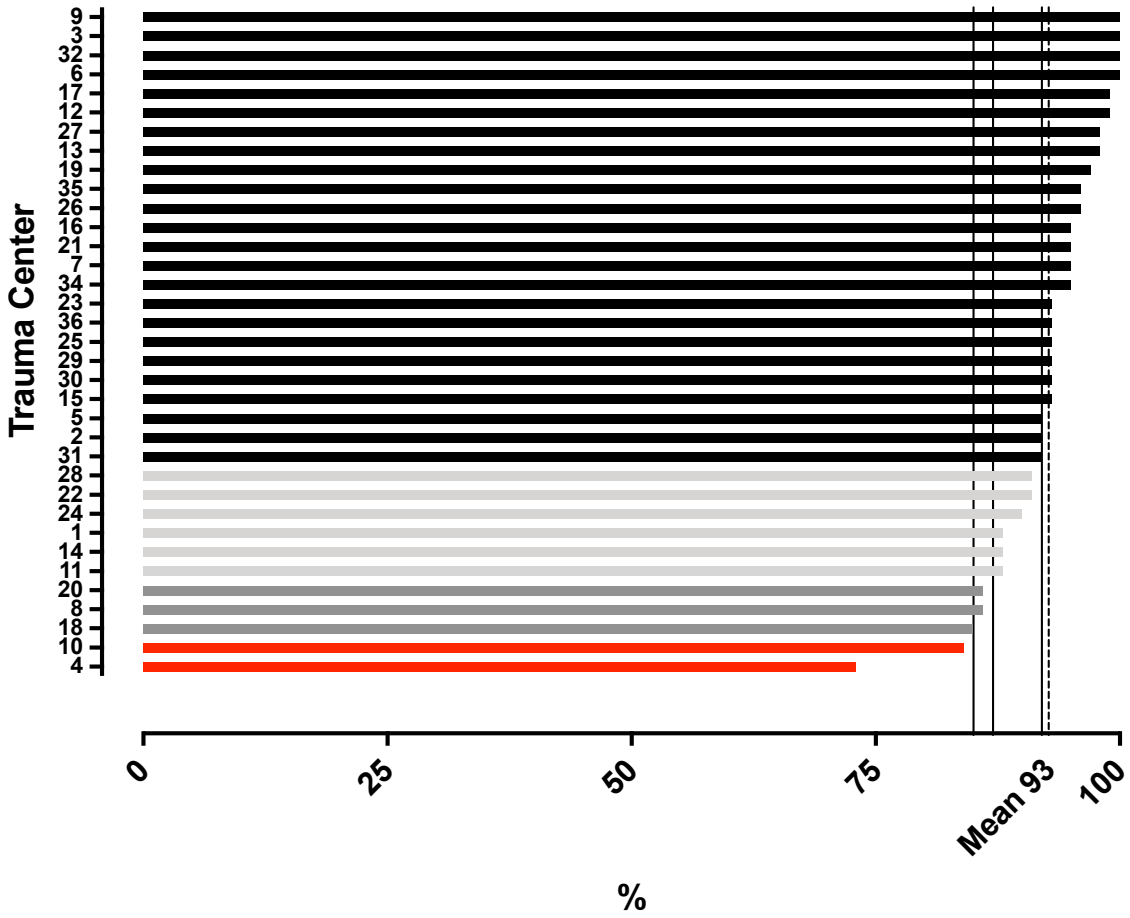


#5 Timely Surgical Repair in Geriatric (Age ≥ 65) Isolated Hip Fracture

- Time to surgical repair of isolated hip fracture in patients age 65 or older (12 mo: 7/1/21-6/30/22)
  - ≥ 92% of patients (≤ 48 hr)
  - ≥ 87% of patients (≤ 48 hr)
  - ≥ 85% of patients (≤ 48 hr)
  - < 85% of patients (≤ 48 hr)

Today

Metric 5 - Timely Surgical Hip Repair ≥ 65 years
Cohort 8 - Isolated Hip Fracture
7/1/21 - 5/31/22



Mean 93%

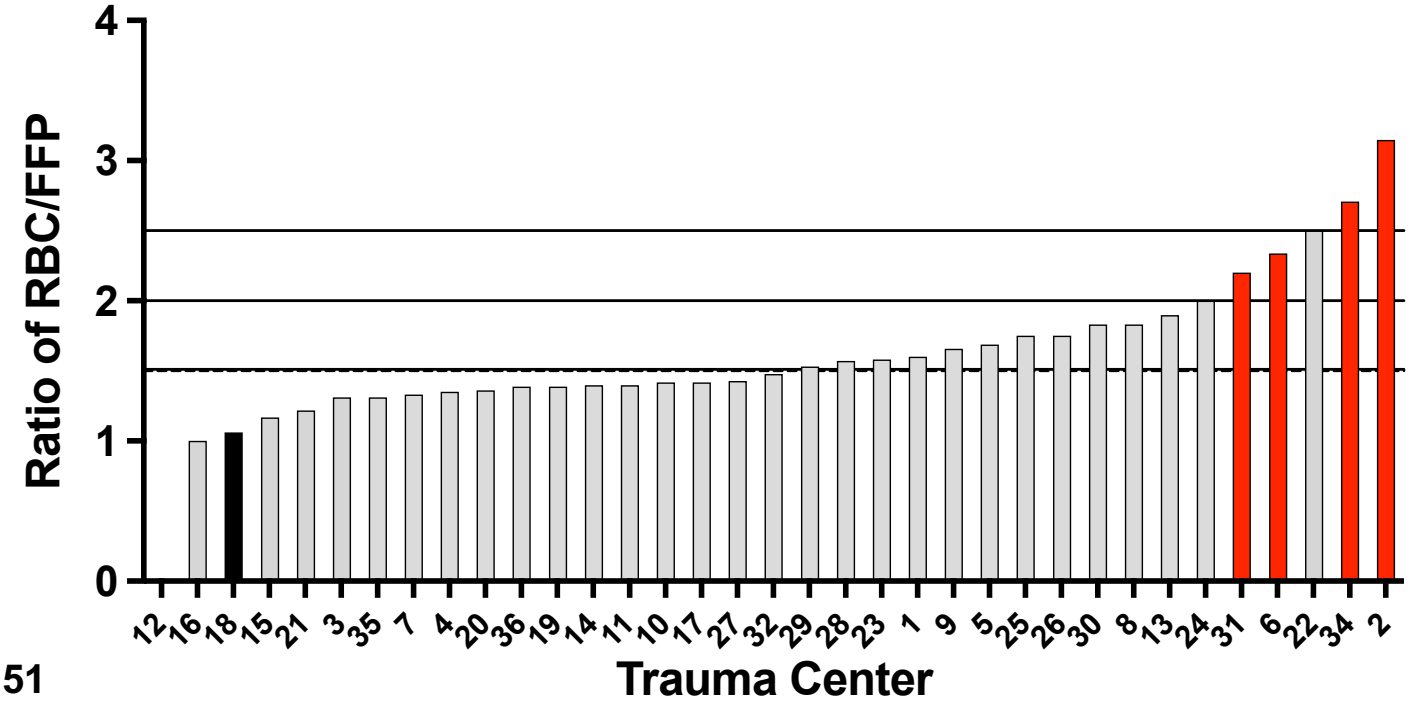
Timely Repair IHF 48 hr > 42 hrs

- Barriers at hospitals not achieving metric?
- Who to engage with as we adjust the metric?
  - Orthopedic Surgery
  - Anesthesia

#6 Red Blood Cell to Plasma Ratio

- Red blood cell to plasma ratio (weighted mean points) of patients transfused ≥5 units in first 4 hours (18 Mo's: 1/1/20-6/30/21)

Metric 6 - RBC to FFP Ratio - Mean
Cohort 1 - MTQIP All
1/1/21 - 5/31/22



Mean 1.51

Blood product availability

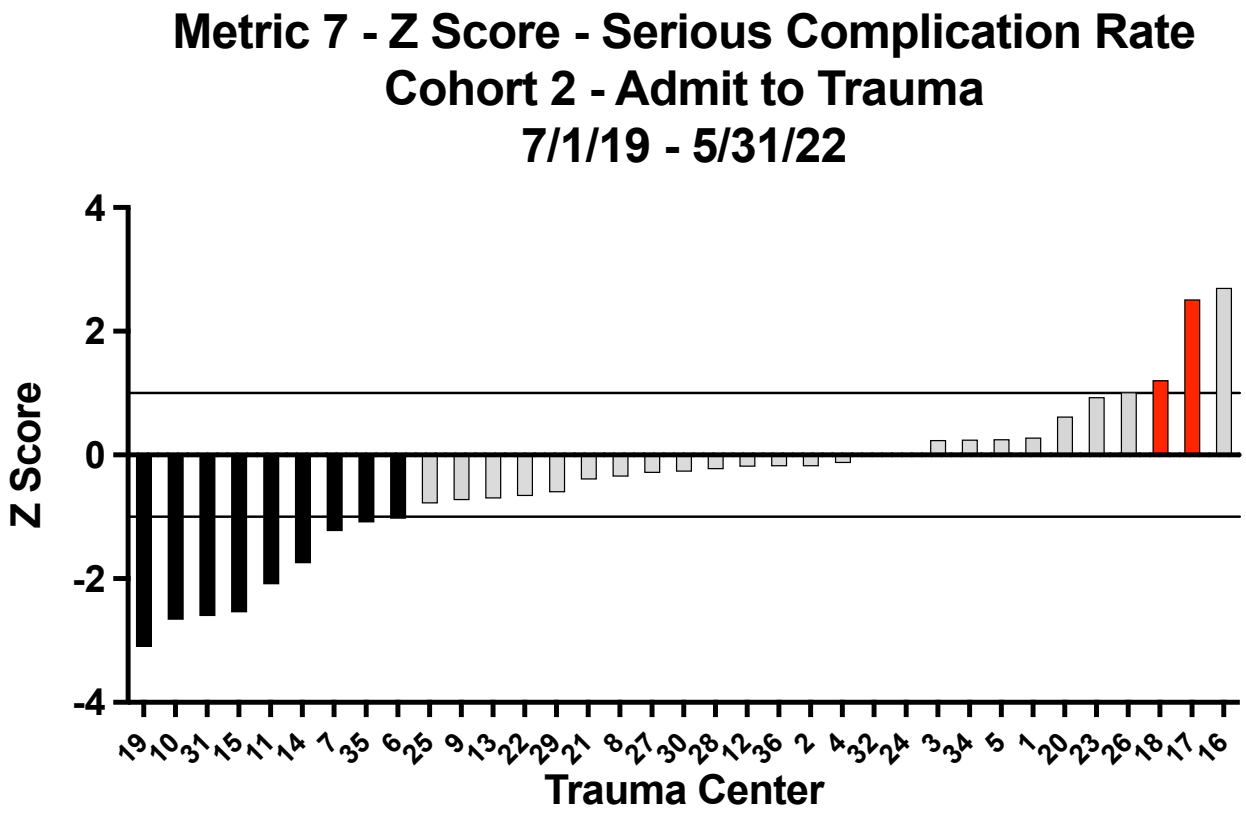
- Are trauma centers continuing to have trouble with availability of blood products for trauma resuscitation?
- Any other trauma centers working to implement whole blood?

Z-score

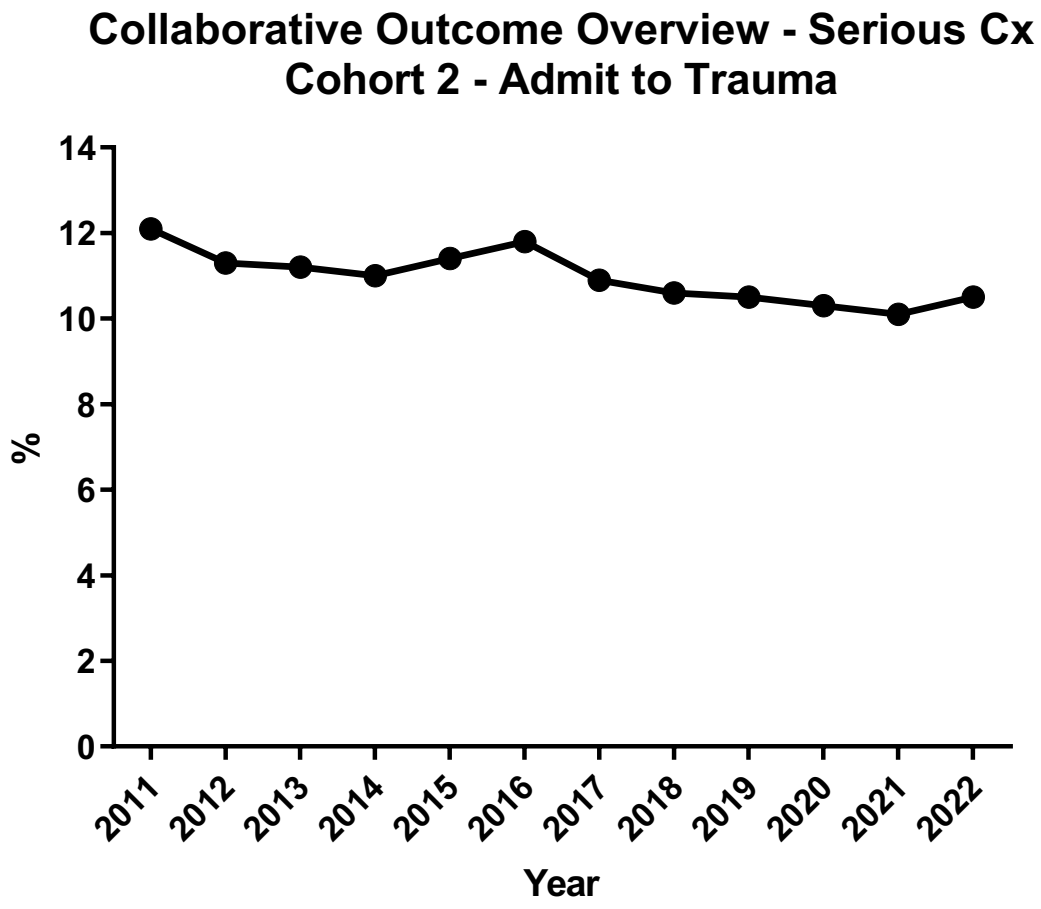
- Measure of trend in outcome over time
- Hospital specific
  - Compared to yourself
- Standard deviation
- > 1 getting worse
- 1 to -1 flat
- < -1 getting better

Today

#7 Serious Complication Rate (Z-score)

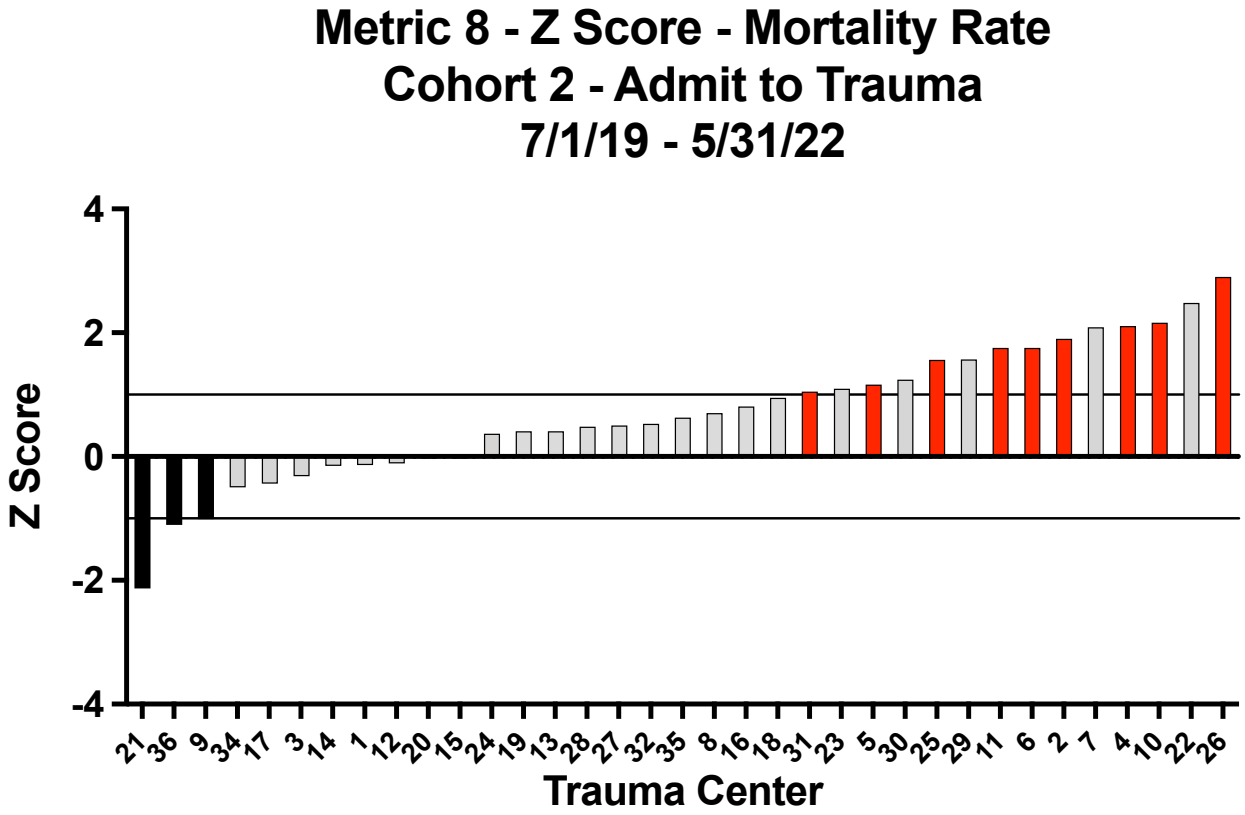


May


Collaborative Outcome Overview - Serious Cx
Cohort 2 - Admit to Trauma
14
12
10
8
6
4
2
0
%
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Year

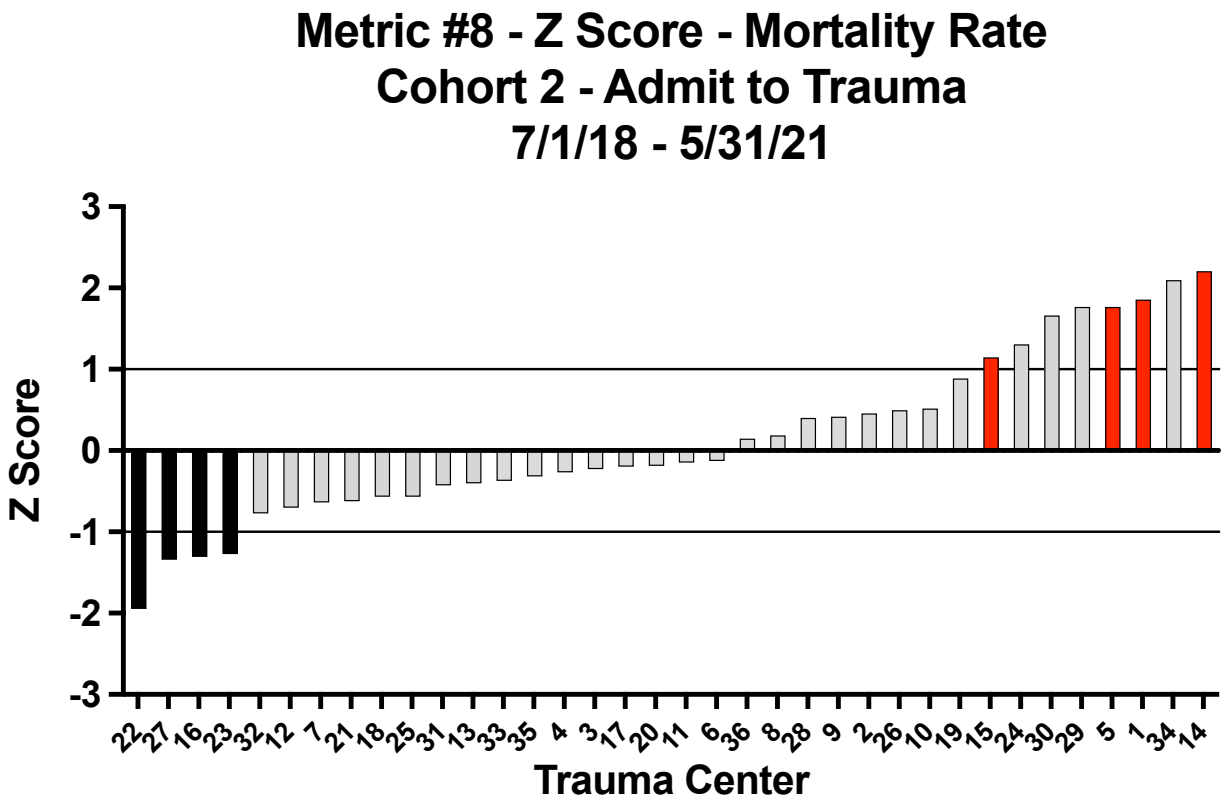
Today

#8 Mortality Rate (Z-score)



Last Year

#8 Mortality Rate (Z-score)



Today


Collaborative Outcome Overview - Mortality
Cohort 2 - Admit to Trauma
%
0
1
2
3
4
5
6
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Year

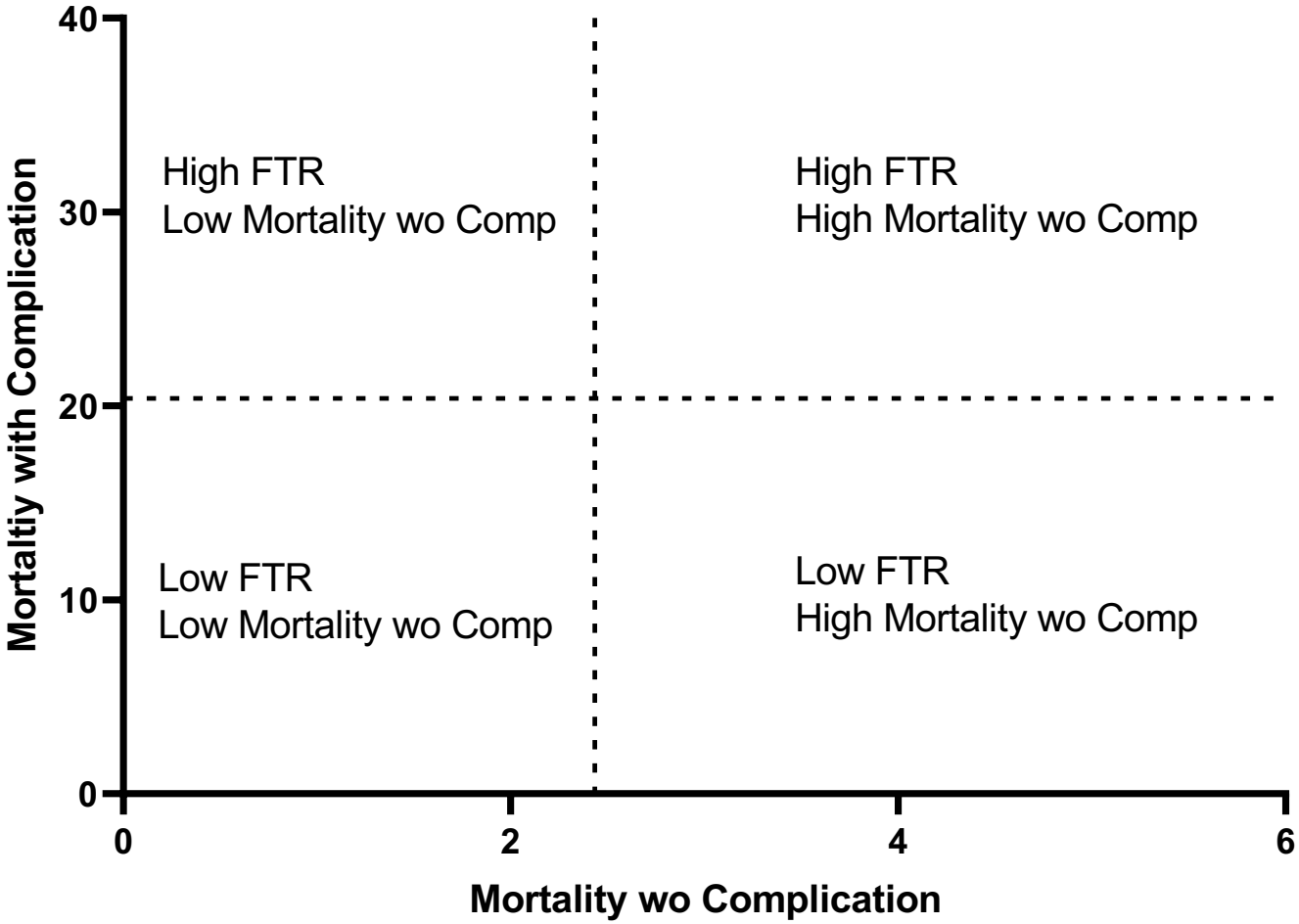
Mortality

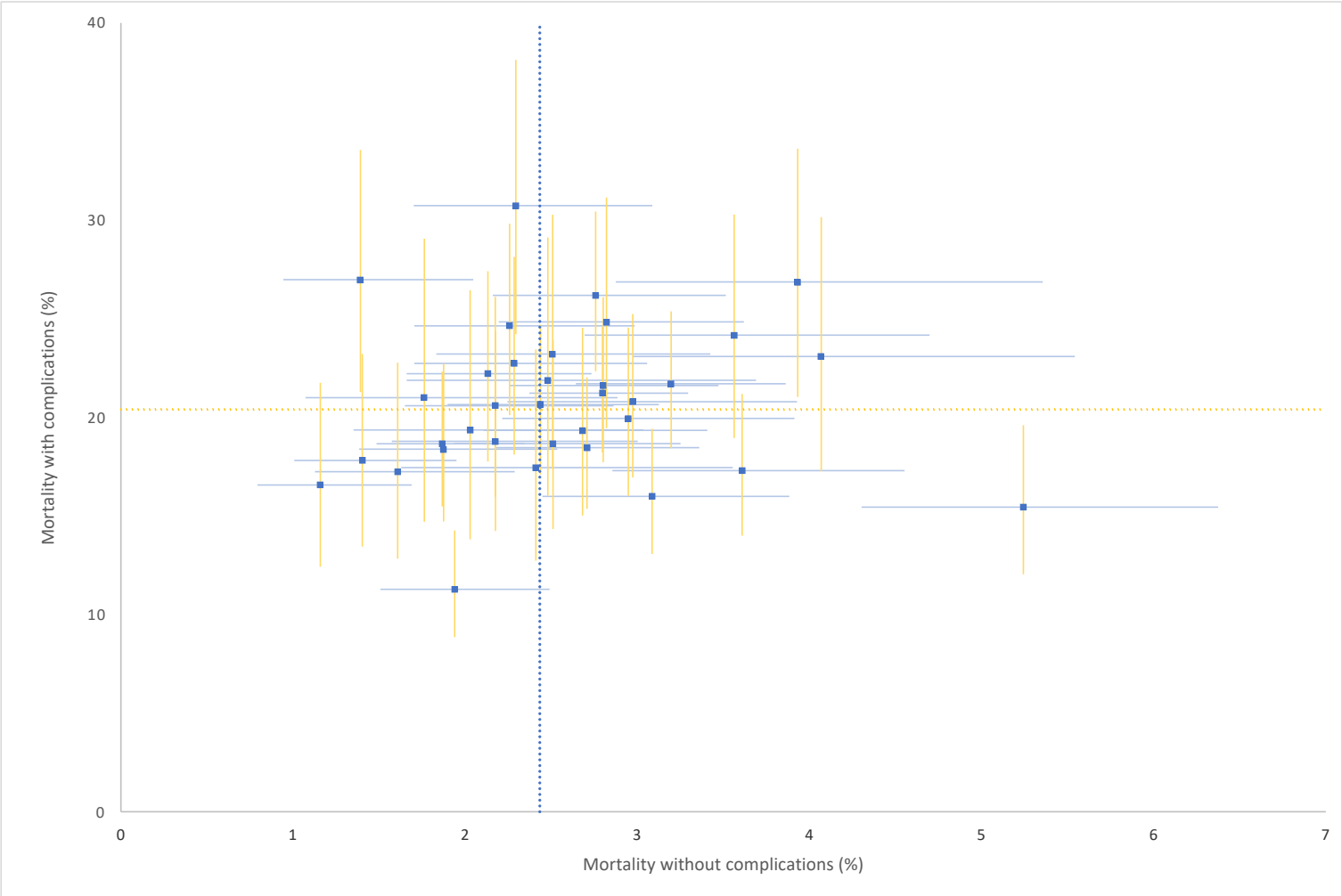
- Any changes in your Fall 2022 ACS TQIP report that you are willing to share ?

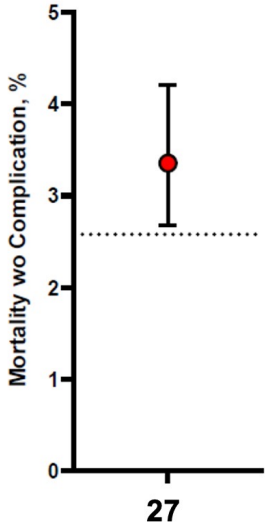
Alive	**Complication**	
Dead	**Complication**	**FTR**
Dead	**None**	
Alive	**None**	

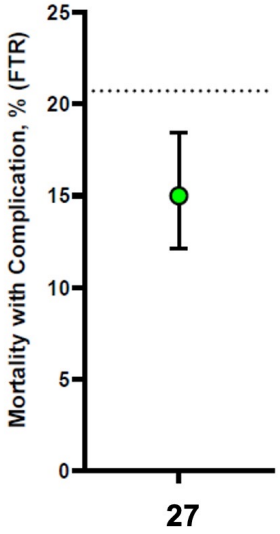
Mortality Rate

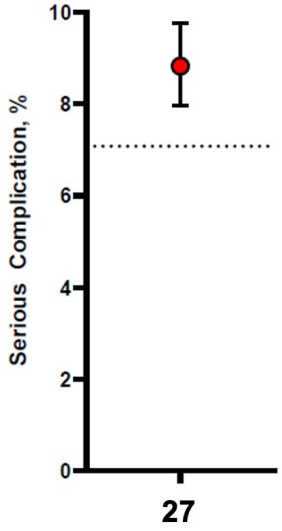
Complication Rate

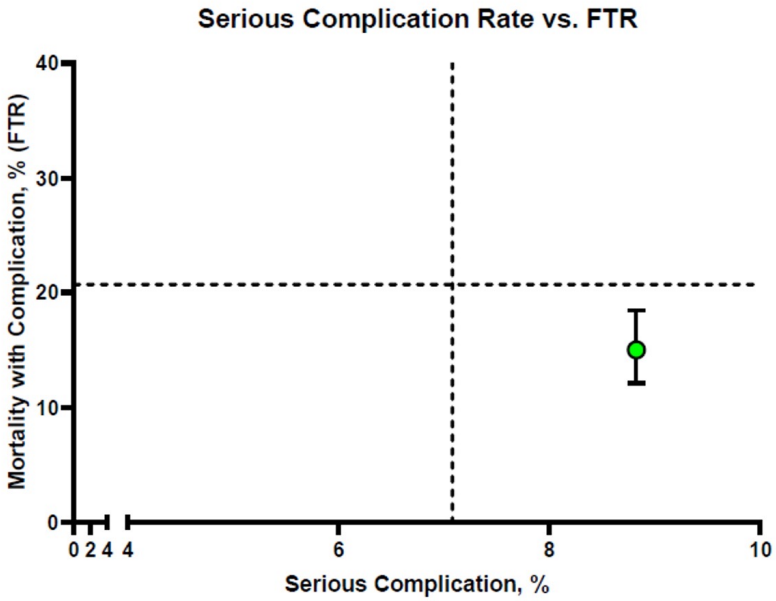

High FTR
Low Mortality wo Comp
High FTR
High Mortality wo Comp
Low FTR
Low Mortality wo Comp
Low FTR
High Mortality wo Comp
Mortaltiy with Complication
Mortality wo Complication
0
10
20
30
40
0
2
4
6

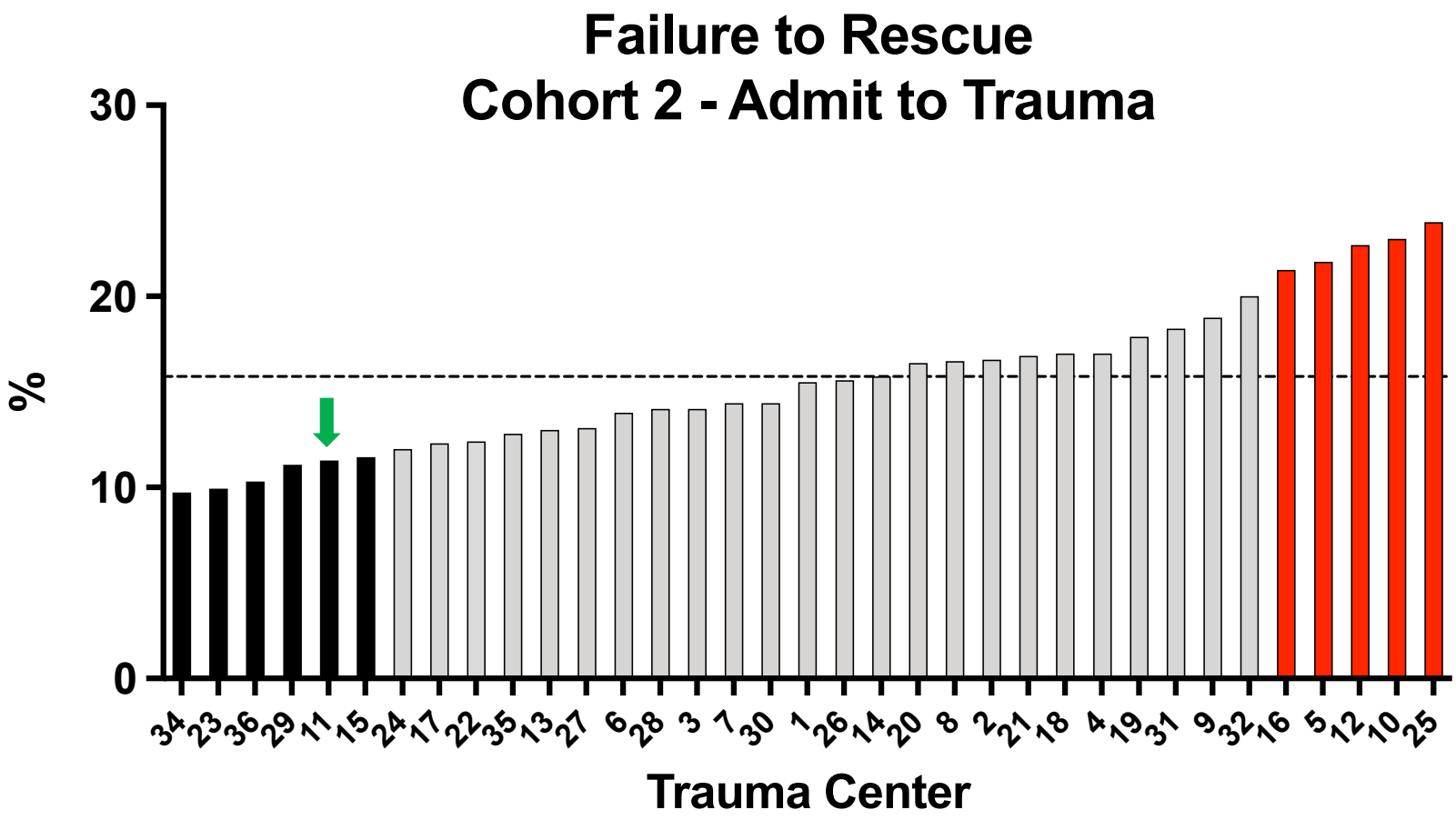

40
30
20
10
0
Mortality with complications (%)
0
1
2
3
4
5
6
7
Mortality without complications (%)

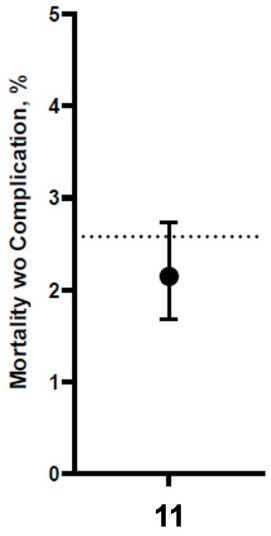

Mortality wo Complication, %
0
1
2
3
4
5
27

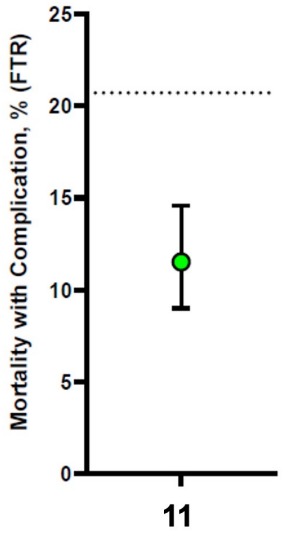

Mortality with Complication, % (FTR)
0
5
10
15
20
25
27

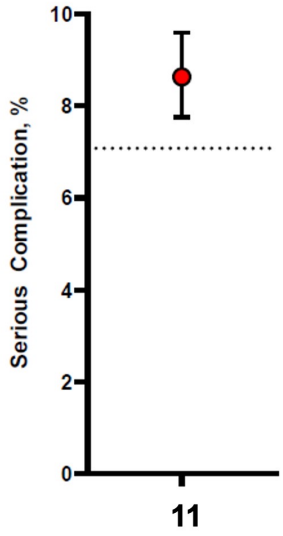

Serious Complication, %
0
2
4
6
8
10
27

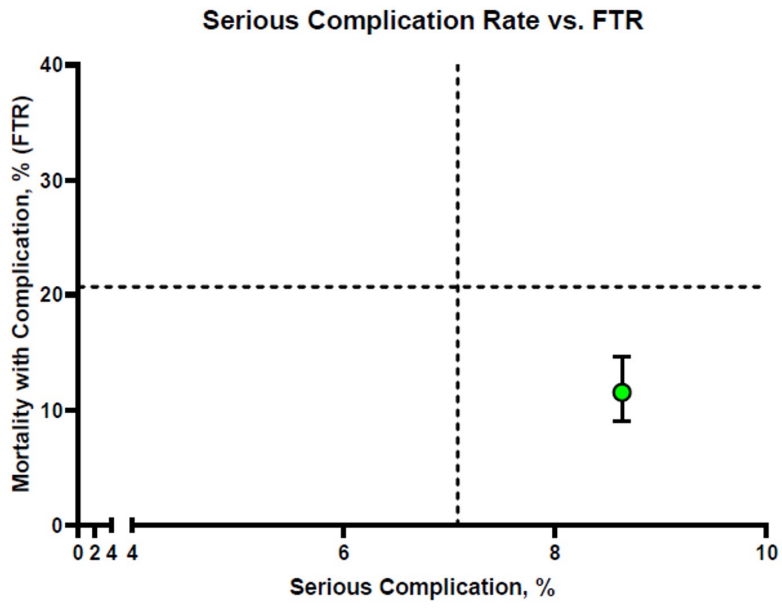

Serious Complication Rate vs. FTR
Mortality with Complication, % (FTR)
0
10
20
30
40
0 2 4 4
6
8
10
Serious Complication, %


Failure to Rescue
Cohort 2 - Admit to Trauma
30
20
10
0
%
34 23 36 29 11 15 24 17 22 35 13 27 6 28 3 7 30 1 26 14 20 8 2 21 18 4 19 31 9 32 16 5 12 10 25
Trauma Center


Mortality wo Complication, %
0
1
2
3
4
5
11


Mortality with Complication, % (FTR)
0
5
10
15
20
25
11


Serious Complication, %
0
2
4
6
8
10
11


Serious Complication Rate vs. FTR
Mortality with Complication, % (FTR)
0
10
20
30
40
0 2 4 4
6
8
10
Serious Complication, %

Mortality and Failure to Rescue

- Let me know if these graphs help or are useless ?
- Trying to present a picture of mortality and complications

#9 Timely Head CT in TBI Patients on Anticoagulation Pre-Injury

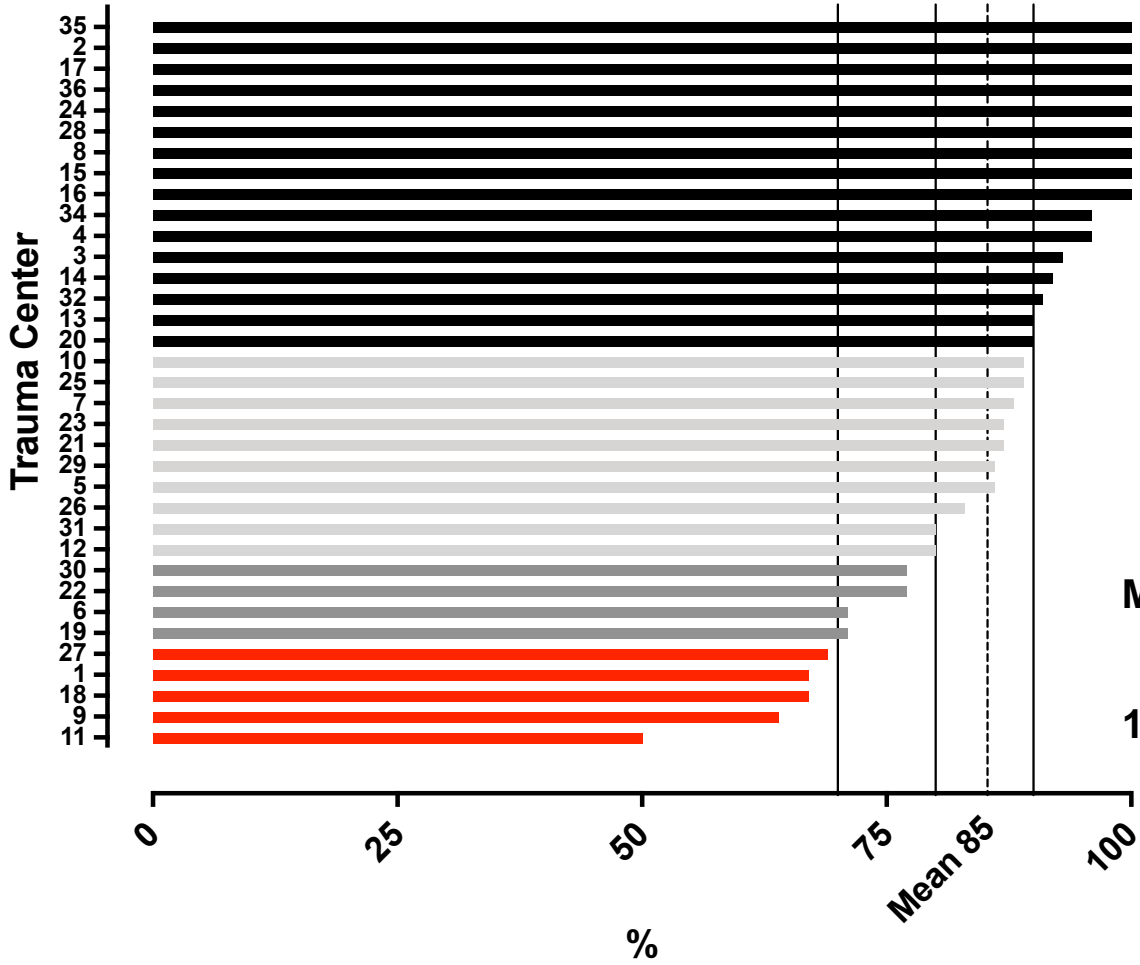
- Head CT date and time from procedures
- Presence of prehospital anticoagulation
- TBI (AIS Head, excluding NFS, scalp, neck, hypoxia)
- Cohort1, Blunt mechanism
- Exclude direct admissions and transfer in
- No Signs of Life = Exclude DOAs
- Transfers Out = Include Transfers Out
- Time Period = 7/1/20 to 6/30/21

#9 Head CT in Anticoagulated Patient with TBI

- Measure = % of patients with Head CT, date, and time
- Timing
  - ≥ 90% patients (≤ 120 min)
  - ≥ 80% patients (≤ 120 min)
  - ≥ 70% patients (≤ 120 min)
  - < 70% patients (≤ 120 min)

Today

Metric 9 - ED Head CT ≤ 120 min
Cohort 1 - MTQIP All on Anticoagulant (Excluding ASA)
7/1/21 - 5/31/22



Mean 85.3% ↑ (84.8)

16/35 Centers ≥ 90% (0)

#10 Timely Antibiotic in Femur/Tibia Open Fractures - Collaborative Wide Measure

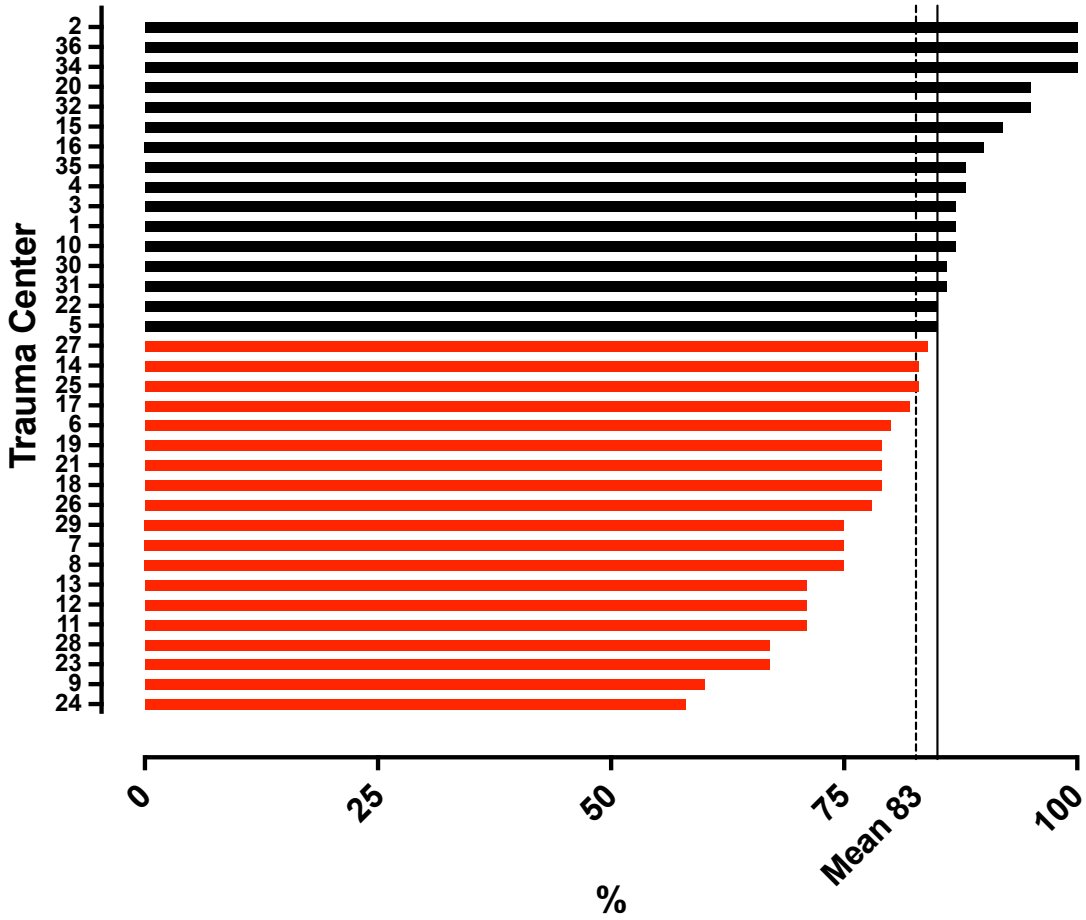
- Type of antibiotic administered along with date and time for open fracture of femur or tibia
- Presence of acute open femur or tibia fracture based on AIS or ICD10 codes (See list)
- Cohort = Cohort 1 (All)
- Exclude direct admissions and transfer in
- No Signs of Life = Exclude DOAs
- Transfers Out = Include Transfers Out
- Time Period = 7/1/20 to 6/30/21

#10 Open Fracture Antibiotic Usage

- Measure = % of patients with antibiotic type, date, time recorded ≤ 90 minutes
  - ≥ 85% patients (≤ 90 min) > 10 points
  - All or nothing
- ACS-COT Orange Book – VRC resources
  - Administration within 60 minutes
    - ACS OTA Ortho Update
    - ACS TQIP Best Practices Orthopedics

Today

Metric 10 - Open Fracture - Time to Abx ≤ 90 min
Cohort 1 - MTQIP All
7/1/21 - 5/31/22

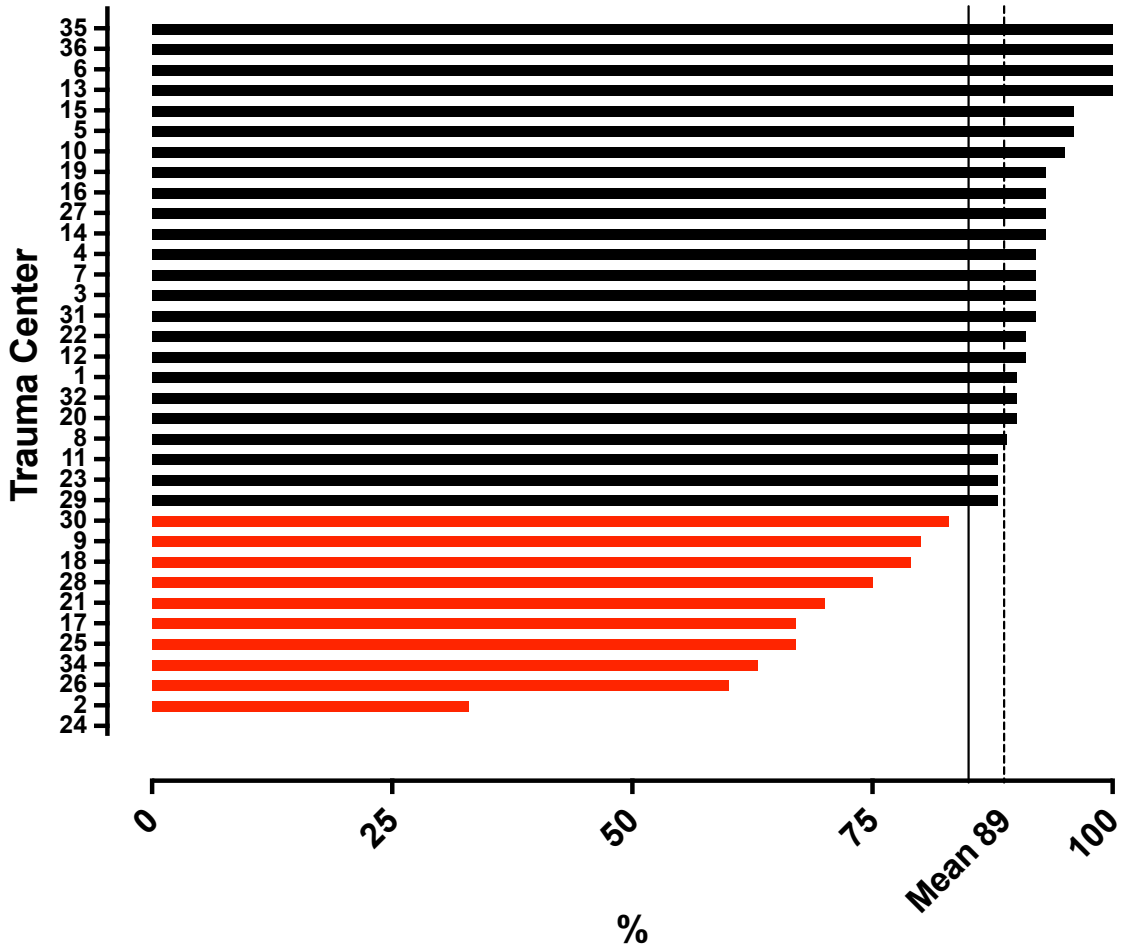


16/35 Centers ≥ 85%

Collaborative Mean = 82.7%

Last Year

Metric #10 - Open Fracture - Time to Abx ≤ 120 min
Cohort 1 - MTQIP All
7/1/20 - 5/31/21

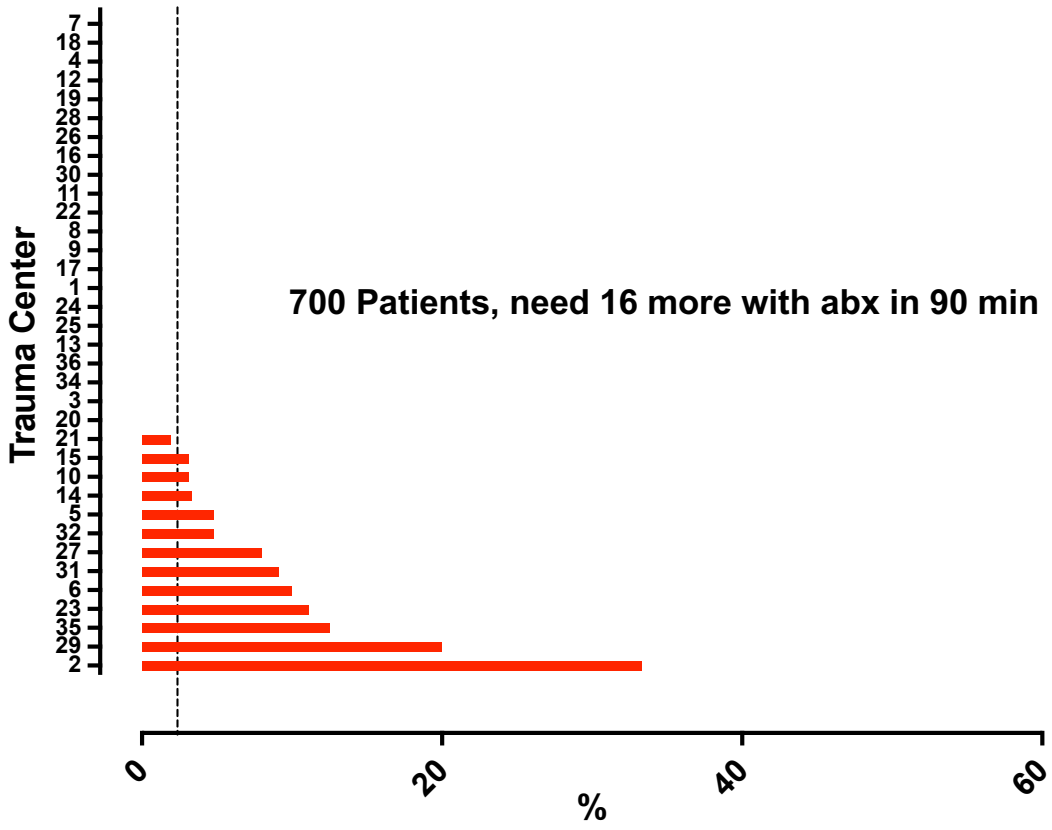


24/35 Centers ≥ 85% (0)

Collaborative Mean = 88.7% ↑ (86.7)

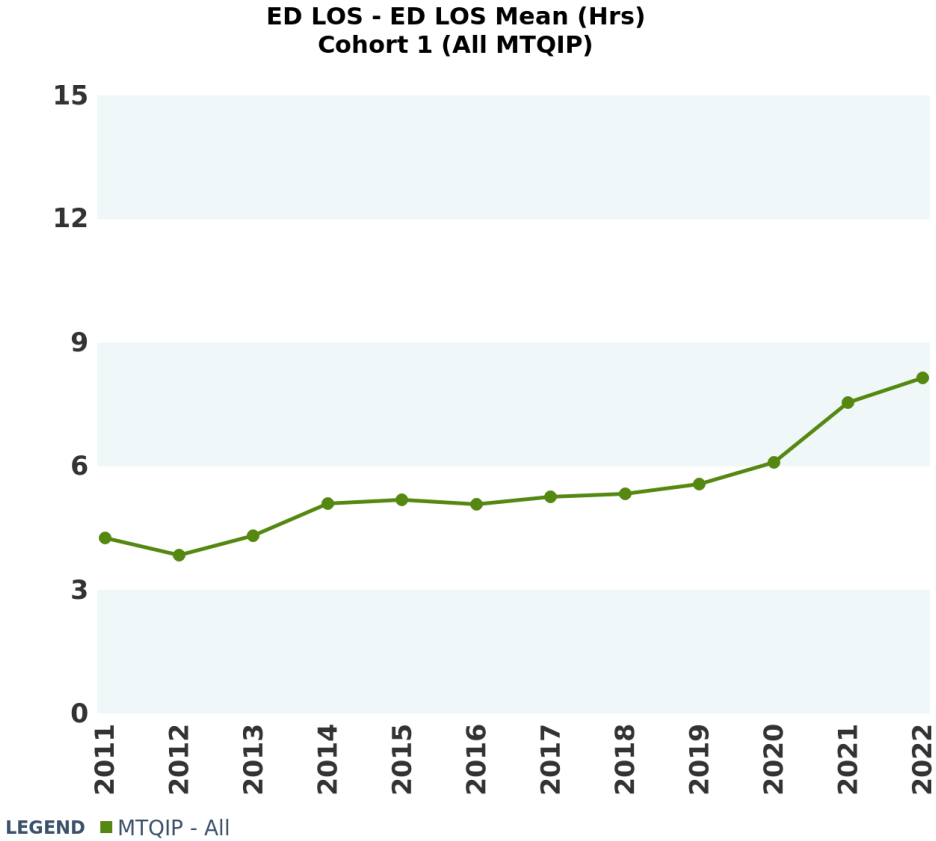
Today

Open Fracture - Missing Type, Date or Time
Cohort 1 - MTQIP All
7/1/21 - 5/31/22



ED Length of Stay

- Increasing
  - Factors
  - Solutions



ACS TQIP Michigan

Mark Hemmila, MD

Table 2: Risk-Adjusted Mortality by Cohort

		Mortality				Odds Ratio and 95% Confidence Interval				
Cohort	N	Observed Events	Observed (%)	Expected (%)	TQIP Average (%)	Odds Ratio	Lower	Upper	Outlier	Decile
All Patients	15,190	1,132	7.5	7.3	8.1	1.00	0.88	1.14	Average	5
Blunt Multisystem	1,709	288	16.9	15.7	15.4	1.17	0.95	1.44	Average	8
Penetrating	610	83	13.6	12.7	11.0	1.28	0.83	1.96	Average	9
Shock	522	117	22.4	21.2	27.7	1.15	0.85	1.58	Average	8
Severe TBI	758	392	51.7	48.9	47.1	1.27	0.98	1.63	Average	8
Elderly	6,788	651	9.6	9.9	11.2	0.95	0.83	1.09	Average	5
Elderly Blunt Multisystem	527	115	21.8	21.6	22.6	1.04	0.80	1.35	Average	8
Isolated Hip Fracture	4,242	177	4.2	4.1	3.8	0.99	0.81	1.20	Average	5

Risk-Adjusted Mortality by Cohort - Fall 2022
TQIP Report ID: Michigan

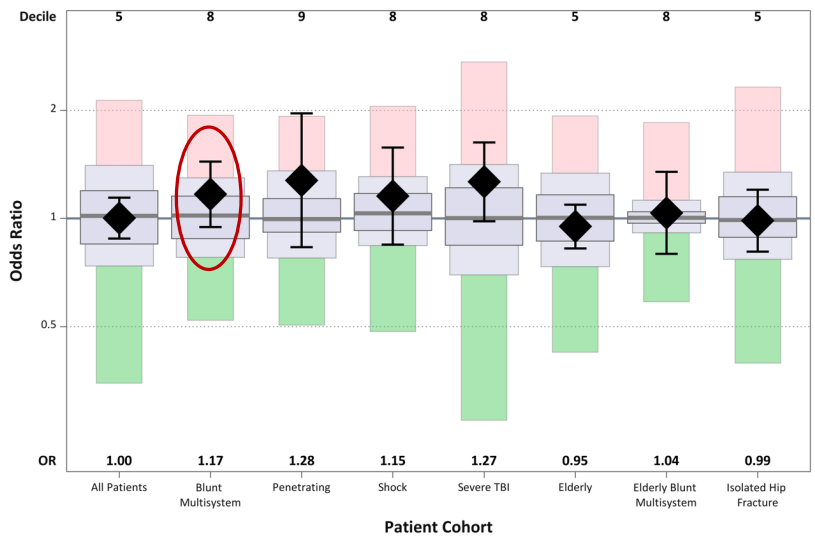


Table 10: Resource Utilization by Cohort

		Patients	Length of Stay (days)	ICU Utilization		Mechanical Ventilation		Unknown LOS (%)		
Cohort	Group	N	Median (IQR)	Patients with ICU Care (%)	Median ICU Days (IQR)	Patients with Mechanical Ventilation (%)	Median Days on Ventilator (IQR)	Hospital	ICU	Ventilator
All Patients	All Others	366,503	6 (3-10)	45.4	3 (2-7)	18.8	3 (2-9)	0.1	0.3	0.5
	Collaborative	15,190	5 (3-9)	36.2	3 (2-6)	13.6	3 (2-9)	0.1	0.0	0.3
Blunt Multisystem	All Others	55,326	10 (5-18)	73.3	5 (3-11)	43.1	5 (2-12)	0.1	0.1	0.5
	Collaborative	1,709	9 (5-16)	68.8	5 (3-11)	39.2	5 (2-12)	0.2	0.0	0.2
Penetrating	All Others	18,896	7 (4-13)	59.7	4 (2-7)	42.1	2.5 (2-5)	0.2	0.2	0.7
	Collaborative	610	7 (4-12)	56.5	4 (2-8)	41.0	2 (1-4)	0.3	0.2	0.5
Shock	All Others	16,267	9 (4-18)	74.6	5 (2-11)	57.1	3 (2-9)	0.2	0.2	0.7
	Collaborative	522	7 (4-14)	62.5	4.5 (3-11)	46.0	3 (2-7)	0.2	0.0	0.0
Severe TBI	All Others	27,097	9 (3-21)	89.6	6 (3-14)	89.3	4 (2-10)	0.2	0.1	0.5
	Collaborative	758	7 (2-20)	84.9	6 (2-15)	87.7	4 (2-11)	0.1	0.1	0.1
Elderly	All Others	137,345	6 (4-10)	45.6	3 (2-6)	12.7	4 (2-9)	0.1	0.2	0.5
	Collaborative	6,788	5 (4-8)	34.7	3 (2-5)	8.6	4 (2-9)	0.1	0.0	0.4
Elderly Blunt Multisystem	All Others	14,536	8 (5-15)	70.0	4 (2-9)	31.8	5 (2-12)	0.1	0.1	0.6
	Collaborative	527	7 (4-12)	62.6	4 (2-7)	25.4	4 (2-11)	0.4	0.0	0.6
Isolated Hip Fracture	All Others	51,133	6 (5-8)	6.8	3 (2-5)	1.5	2 (1-5)	0.1	0.4	0.5
	Collaborative	4,242	6 (5-7)	4.4	3 (2-5.5)	1.3	3 (1.5-4.5)	0.1	0.0	0.3

Table 10: Resource Utilization by Cohort

		Patients	Length of Stay (days)	ICU Utilization		Mechanical Ventilation		Unknown LOS (%)		
Cohort	Group	N	Median (IQR)	Patients with ICU Care (%)	Median ICU Days (IQR)	Patients with Mechanical Ventilation (%)	Median Days on Ventilator (IQR)	Hospital	ICU	Ventilator
All Patients	All Others	366,503	6 (3-10)	45.4	3 (2-7)	18.8	3 (2-9)	0.1	0.3	0.5
	Collaborative	15,190	5 (3-9)	36.2	3 (2-6)	13.6	3 (2-9)	0.1	0.0	0.3
Blunt Multisystem	All Others	55,326	10 (5-18)	73.3	5 (3-11)	43.1	5 (2-12)	0.1	0.1	0.5
	Collaborative	1,709	9 (5-16)	68.8	5 (3-11)	39.2	5 (2-12)	0.2	0.0	0.2
Penetrating	All Others	18,896	7 (4-13)	59.7	4 (2-7)	42.1	2.5 (2-5)	0.2	0.2	0.7
	Collaborative	610	7 (4-12)	56.5	4 (2-8)	41.0	2 (1-4)	0.3	0.2	0.5
Shock	All Others	16,267	9 (4-18)	74.6	5 (2-11)	57.1	3 (2-9)	0.2	0.2	0.7
	Collaborative	522	7 (4-14)	62.5	4.5 (3-11)	46.0	3 (2-7)	0.2	0.0	0.0
Severe TBI	All Others	27,097	9 (3-21)	89.6	6 (3-14)	89.3	4 (2-10)	0.2	0.1	0.5
	Collaborative	758	7 (2-20)	84.9	6 (2-15)	87.7	4 (2-11)	0.1	0.1	0.1
Elderly	All Others	137,345	6 (4-10)	45.6	3 (2-6)	12.7	4 (2-9)	0.1	0.2	0.5
	Collaborative	6,788	5 (4-8)	34.7	3 (2-5)	8.6	4 (2-9)	0.1	0.0	0.4
Elderly Blunt Multisystem	All Others	14,536	8 (5-15)	70.0	4 (2-9)	31.8	5 (2-12)	0.1	0.1	0.6
	Collaborative	527	7 (4-12)	62.6	4 (2-7)	25.4	4 (2-11)	0.4	0.0	0.6
Isolated Hip Fracture	All Others	51,133	6 (5-8)	6.8	3 (2-5)	1.5	2 (1-5)	0.1	0.4	0.5
	Collaborative	4,242	6 (5-7)	4.4	3 (2-5.5)	1.3	3 (1.5-4.5)	0.1	0.0	0.3

Table 10: Resource Utilization by Cohort

		Patients	Length of Stay (days)	ICU Utilization		Mechanical Ventilation		Unknown LOS (%)		
Cohort	Group	N	Median (IQR)	Patients with ICU Care (%)	Median ICU Days (IQR)	Patients with Mechanical Ventilation (%)	Median Days on Ventilator (IQR)	Hospital	ICU	Ventilator
All Patients	All Others	366,503	6 (3-10)	45.4	3 (2-7)	18.8	3 (2-9)	0.1	0.3	0.5
	Collaborative	15,190	5 (3-9)	36.2	3 (2-6)	13.6	3 (2-9)	0.1	0.0	0.3
Blunt Multisystem	All Others	55,326	10 (5-18)	73.3	5 (3-11)	43.1	5 (2-12)	0.1	0.1	0.5
	Collaborative	1,709	9 (5-16)	68.8	5 (3-11)	39.2	5 (2-12)	0.2	0.0	0.2
Penetrating	All Others	18,896	7 (4-13)	59.7	4 (2-7)	42.1	2.5 (2-5)	0.2	0.2	0.7
	Collaborative	610	7 (4-12)	56.5	4 (2-8)	41.0	2 (1-4)	0.3	0.2	0.5
Shock	All Others	16,267	9 (4-18)	74.6	5 (2-11)	57.1	3 (2-9)	0.2	0.2	0.7
	Collaborative	522	7 (4-14)	62.5	4.5 (3-11)	46.0	3 (2-7)	0.2	0.0	0.0
Severe TBI	All Others	27,097	9 (3-21)	89.6	6 (3-14)	89.3	4 (2-10)	0.2	0.1	0.5
	Collaborative	758	7 (2-20)	84.9	6 (2-15)	87.7	4 (2-11)	0.1	0.1	0.1
Elderly	All Others	137,345	6 (4-10)	45.6	3 (2-6)	12.7	4 (2-9)	0.1	0.2	0.5
	Collaborative	6,788	5 (4-8)	34.7	3 (2-5)	8.6	4 (2-9)	0.1	0.0	0.4
Elderly Blunt Multisystem	All Others	14,536	8 (5-15)	70.0	4 (2-9)	31.8	5 (2-12)	0.1	0.1	0.6
	Collaborative	527	7 (4-12)	62.6	4 (2-7)	25.4	4 (2-11)	0.4	0.0	0.6
Isolated Hip Fracture	All Others	51,133	6 (5-8)	6.8	3 (2-5)	1.5	2 (1-5)	0.1	0.4	0.5
	Collaborative	4,242	6 (5-7)	4.4	3 (2-5.5)	1.3	3 (1.5-4.5)	0.1	0.0	0.3

Table 12: Hospital Events by Cohort* (continued)

		Patients	Assorted							
Cohort	Group	N	Pressure Ulcer (%)	Alcohol Withdrawal Syndrome (%)	Deep Vein Thrombosis (%)	Delirium (%)	Pulmonary Embolism (%)	Unplanned Intubation (%)	Unplanned Visit to OR (%)	Unplanned Admission to ICU (%)
All Patients	All Others	364,525	0.8	1.0	1.2	2.0	0.6	2.0	1.6	2.8
	Collaborative	15,190	1.5	1.9	1.2	4.3	0.7	1.8	1.3	2.6
Blunt Multisystem	All Others	54,870	2.2	1.2	3.1	3.9	1.7	4.0	3.6	4.2
	Collaborative	1,709	4.4	2.5	3.5	9.8	2.0	4.3	3.8	3.7
Penetrating	All Others	18,686	1.0	0.7	2.2	1.7	1.3	2.2	5.2	3.5
	Collaborative	610	1.8	0.7	2.3	3.3	0.8	1.3	4.4	1.6
Shock	All Others	16,102	2.7	1.3	3.5	3.1	1.7	4.0	5.2	4.1
	Collaborative	522	2.3	2.1	3.1	7.7	2.1	4.8	4.2	3.3
Severe TBI	All Others	26,871	2.7	1.5	3.3	3.3	1.1	3.1	3.4	3.0
	Collaborative	758	5.8	2.5	3.6	11.8	1.3	4.1	4.4	2.8
Elderly	All Others	136,732	0.8	0.6	0.8	3.1	0.4	2.5	0.9	3.6
	Collaborative	6,788	1.6	1.1	0.8	5.8	0.4	2.4	0.9	3.3
Elderly Blunt Multisystem	All Others	14,430	2.1	0.8	2.2	5.7	1.2	5.5	2.2	5.6
	Collaborative	527	4.0	2.1	1.3	10.6	1.1	6.5	3.2	5.1
Isolated Hip Fracture	All Others	51,091	0.4	0.2	0.3	2.6	0.3	0.6	0.2	2.4
	Collaborative	4,242	1.4	0.4	0.4	6.5	0.3	0.9	0.2	2.6

* In addition to centers excluded from all risk-adjusted models, centers excluded from risk-adjusted hospital events models are excluded from the All Hospitals rows

Table 12: Hospital Events by Cohort* (continued)

		Patients	Assorted							
Cohort	Group	N	Pressure Ulcer (%)	Alcohol Withdrawal Syndrome (%)	Deep Vein Thrombosis (%)	Delirium (%)	Pulmonary Embolism (%)	Unplanned Intubation (%)	Unplanned Visit to OR (%)	Unplanned Admission to ICU (%)
All Patients	All Others	364,525	0.8	1.0	1.2	2.0	0.6	2.0	1.6	2.8
	Collaborative	15,190	1.5	1.9	1.2	4.3	0.7	1.8	1.3	2.6
Blunt Multisystem	All Others	54,870	2.2	1.2	3.1	3.9	1.7	4.0	3.6	4.2
	Collaborative	1,709	4.4	2.5	3.5	9.8	2.0	4.3	3.8	3.7
Penetrating	All Others	18,686	1.0	0.7	2.2	1.7	1.3	2.2	5.2	3.5
	Collaborative	610	1.8	0.7	2.3	3.3	0.8	1.3	4.4	1.6
Shock	All Others	16,102	2.7	1.3	3.5	3.1	1.7	4.0	5.2	4.1
	Collaborative	522	2.3	2.1	3.1	7.7	2.1	4.8	4.2	3.3
Severe TBI	All Others	26,871	2.7	1.5	3.3	3.3	1.1	3.1	3.4	3.0
	Collaborative	758	5.8	2.5	3.6	11.8	1.3	4.1	4.4	2.8
Elderly	All Others	136,732	0.8	0.6	0.8	3.1	0.4	2.5	0.9	3.6
	Collaborative	6,788	1.6	1.1	0.8	5.8	0.4	2.4	0.9	3.3
Elderly Blunt Multisystem	All Others	14,430	2.1	0.8	2.2	5.7	1.2	5.5	2.2	5.6
	Collaborative	527	4.0	2.1	1.3	10.6	1.1	6.5	3.2	5.1
Isolated Hip Fracture	All Others	51,091	0.4	0.2	0.3	2.6	0.3	0.6	0.2	2.4
	Collaborative	4,242	1.4	0.4	0.4	6.5	0.3	0.9	0.2	2.6

* In addition to centers excluded from all risk-adjusted models, centers excluded from risk-adjusted hospital events models are excluded from the All Hospitals rows

Table 14: Discharge Disposition by Cohort

							Mortality		
		Patients	Home	Skilled Nursing Facility	Inpatient Rehabilitation	Long-Term Care Hospital	ED/Hospital Death	Hospice	Other
Cohort	Group	N	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
All Patients	All Others	366,503	215,011 (58.7)	48,869 (13.3)	49,450 (13.5)	4,379 (1.2)	24,696 (6.7)	5,276 (1.4)	18,822 (5.1)
	Collaborative	15,190	8,427 (55.5)	999 (6.6)	3,939 (25.9)	202 (1.3)	869 (5.7)	263 (1.7)	491 (3.2)
Blunt Multisystem	All Others	55,326	22,724 (41.1)	6,579 (11.9)	12,425 (22.5)	1,875 (3.4)	7,708 (13.9)	799 (1.4)	3,216 (5.8)
	Collaborative	1,709	557 (32.6)	79 (4.6)	639 (37.4)	81 (4.7)	258 (15.1)	30 (1.8)	65 (3.8)
Penetrating	All Others	18,896	12,767 (67.6)	308 (1.6)	1,117 (5.9)	169 (0.9)	2,034 (10.8)	21 (0.1)	2,480 (13.1)
	Collaborative	610	403 (66.1)	0 (0.0)	50 (8.2)	14 (2.3)	82 (13.4)	1 (0.2)	60 (9.8)
Shock	All Others	16,267	5,960 (36.6)	1,481 (9.1)	2,611 (16.1)	513 (3.2)	4,315 (26.5)	226 (1.4)	1,161 (7.1)
	Collaborative	522	198 (37.9)	24 (4.6)	131 (25.1)	20 (3.8)	110 (21.1)	7 (1.3)	32 (6.1)
Severe TBI	All Others	27,097	4,890 (18.0)	1,643 (6.1)	4,976 (18.4)	1,515 (5.6)	11,634 (42.9)	1,102 (4.1)	1,337 (4.9)
	Collaborative	758	79 (10.4)	20 (2.6)	176 (23.2)	63 (8.3)	359 (47.4)	33 (4.4)	28 (3.7)
Elderly	All Others	137,345	57,920 (42.2)	36,793 (26.8)	21,763 (15.8)	1,695 (1.2)	10,994 (8.0)	4,509 (3.3)	3,671 (2.7)
	Collaborative	6,788	2,860 (42.1)	744 (11.0)	2,371 (34.9)	80 (1.2)	417 (6.1)	234 (3.4)	82 (1.2)
Elderly Blunt Multisystem	All Others	14,536	3,424 (23.6)	3,728 (25.6)	3,088 (21.2)	507 (3.5)	2,702 (18.6)	583 (4.0)	504 (3.5)
	Collaborative	527	105 (19.9)	50 (9.5)	226 (42.9)	24 (4.6)	93 (17.6)	22 (4.2)	7 (1.3)
Isolated Hip Fracture	All Others	51,133	12,300 (24.1)	25,122 (49.1)	10,606 (20.7)	232 (0.5)	935 (1.8)	971 (1.9)	967 (1.9)
	Collaborative	4,242	1,037 (24.4)	870 (20.5)	2,126 (50.1)	10 (0.2)	81 (1.9)	96 (2.3)	22 (0.5)

IX. Processes of Care: Spleen

Table 22: Procedures for Patients with Blunt Splenic Injuries by Cohort

		Patients	Operative Management	Splenic Preservation	Angiography	Time to Operative Management (hours)	Unknown Time to Operative Management
Cohort	Group	N	N (%)	N (%)	N (%)	Median (IQR)	N (%)
Blunt Splenic Injury	All Others	16,608	3,187 (19.2)	13,591 (81.8)	3,373 (20.3)	1.62 (0.87-3.78)	9 (0.3)
	Collaborative	504	67 (13.3)	442 (87.7)	110 (21.8)	1.47 (0.87-2.9)	0 (0.0)
Isolated BSI	All Others	1,350	247 (18.3)	1,107 (82.0)	462 (34.2)	2.44 (0.95-6.88)	1 (0.4)
	Collaborative	55	6 (10.9)	49 (89.1)	21 (38.2)	1.62 (0.73-2.55)	0 (0.0)

Table 23: Hospital and ICU LOS for Patients with Non-Operative Isolated Blunt Splenic Injuries

	Patients	Hospital Length of Stay (days)	ICU Admission	ICU Length of Stay (days)	Unknown LOS (%)	
Group	N	Median (IQR)	N (%)	Median (IQR)	Hospital	ICU
All Others	1,103	4 (3-5)	606 (55.1)	3 (2-3)	0.1	0.3
Collaborative	49	4 (3-5)	24 (49.0)	3 (2-3)	0.0	0.0

Table 27: Cerebral Monitoring for Severe TBI Patients

	Severe TBI	Cerebral Monitoring	Time to Cerebral Monitoring (hours)[1]	Time to Cerebral Monitoring more than 4 hours	Unknown Time to Cerebral Monitoring
Group	N	N (%)	Median (IQR)	N (%)[1]	N (%)
All Others	26,979	5,850 (21.7)	4.03 (2.33-9.85)	2,903 (50.1)	50 (0.9)
Collaborative	737	157 (21.3)	4.28 (2.3-9.98)	80 (51.6)	2 (1.3)

[1] Among patients who received Cerebral Monitoring after Hospital/ED Arrival

Table 28: Cerebral Monitoring Method for Severe TBI Patients

	Cerebral Monitoring	External Ventricular Drain	Intraparenchymal Oxygen Monitor	Jugular Venous Bulb	Other Pressure Monitoring Device
Group	N	N (%)	N (%)	N (%)	N (%)
All Others	5,850	3,047 (52.1)	340 (5.8)	20 (0.3)	3,468 (59.3)
Collaborative	157	77 (49.0)	9 (5.7)	1 (0.6)	94 (59.9)

Note: Multiple methods are possible for an individual patient

Table 32: Hemorrhagic Shock Management

	Patients	Surgery for Hemorrhage Control	Angiography	Neither Surgery for Hemorrhage Control or Angiography
Group	N	N (%)	N (%)	N (%)
All Others	10,312	5,233 (50.8)	1,728 (16.8)	4,189 (40.6)
Collaborative	244	120 (49.4)	37 (15.2)	105 (43.2)
Note: Patients may have both surgery for hemorrhage control and angiography				

Table 33: Angiography for Hemorrhagic Shock Patients

	Patients	Angiography	Time to Angiography (hours)	Time to Angiography More than 2 Hours	Unknown Time to Angiography
Group	N	N (%)	Median (IQR)	N (%)	N (%)
All Others	10,312	1,728 (16.8)	2.73 (1.42-4.55)	1,091 (63.9)	21 (1.2)
Collaborative	244	37 (15.2)	3.63 (1.95-5.49)	27 (75.0)	1 (2.7)

Table 35: Surgery for Hemorrhage Control for Hemorrhagic Shock Patients

	Patients	Surgery for Hemorrhage Control	Time to Surgery for Hemorrhage Control (minutes)	Time to Surgery for Hemorrhage Control more than 60 Minutes	Unknown Time to Surgery for Hemorrhage Control
Group	N	N (%)	Median (IQR)	N (%)	N (%)
All Others	10,312	5,233 (50.8)	53 (32-107)	2,316 (44.5)	33 (0.6)
Collaborative	244	120 (49.4)	67 (44-124)	69 (58.5)	2 (1.7)

Projects

Mark Hemmila, MD

ASPIRE

- Anesthesia CQI
- 17 shared hospitals
  - Amendments to share data
  - MTQIP full PHI
  - ASPIRE limited data set
- Target areas
  - Isolated hip fracture
  - Femur fracture
  - Spleen (operative)

Matching

- Isolated Hip Fracture
- MTQIP data
  - 2020-2021
  - Isolated hip fracture cohort
  - Operation date
  - 17 shared hospitals
- Match on
  - Age, sex (age truncates at 90 if over 90)
  - Hospital
  - OR date

Matching

- 5,456 MTQIP cases
- 4,022 cases had unique ASPIRE matches (74%)
  - 177 cases with multiple matches
  - 1,257 had no match

Variable	Level	Value
N		4022
age_aspire, mean (SD)		78.8 (10.9)
female_aspire	Yes	2691 (66.9%)
race_aspire	American Indian or Alaska Native	7 (0.2%)
	Asian or Pacific Islander	40 (1.0%)
	Black, not of hispanic origin	178 (4.4%)
	Hispanic, black	4 (0.1%)
	Hispanic, white	22 (0.5%)
	Unknown race	126 (3.1%)
	White, not of hispanic origin	3645 (90.6%)
asa_status	1 a normal healthy patient	13 (0.3%)
	2 a pt with mild systemic disease	580 (14.4%)
	3 a pt with severe systemic disease	2778 (69.1%)
	4 severe syst dz that is a threat to life	651 (16.2%)
anesthesia_duration, mean (SD)		116 (39)
surgery_duration, mean (SD)		62 (32)
anesthesia_technique_general	General - ETT	2200 (54.7%)
	General - LMA	796 (19.8%)
	General - both ET	146 (3.6%)
	General - inhaled	7 (0.2%)
	General - unknown	24 (0.6%)
	No	849 (21.1%)

Questions

- What kinds of information would you be interested in?
- Isolated Hip Fracture
  - Non-general anesthetic vs. General
- Femur Fracture, Spleen
  - Blood
  - Anesthesia time
  - Operative Time
  - Glucose, Temperature

ICAM and MTQIP

ICAM
INTERNATIONAL CENTER FOR AUTOMOTIVE MEDICINE

- Crash Data
  - Traffic Crash Report (UD10) > State of Michigan
  - Event Data Recorder
  - CT Scans
- Trauma Registry
  - Level 1 and 2
  - Level 3

ICAM and MTQIP

- Patient Recorded Outcome Measures
  - Surveys
  - Smart phone data (future)
- Economic
  - Claims
  - BC
  - Medicare/Medicaid

Linkage

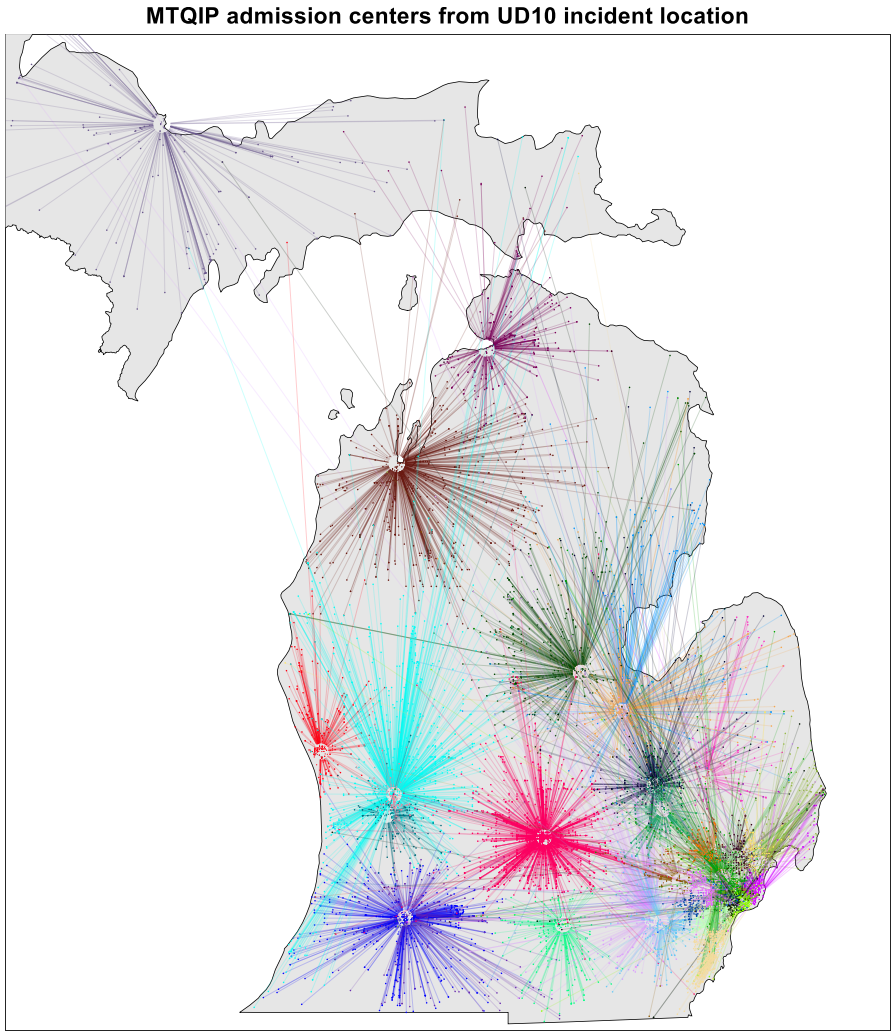
- MTQIP
  - Level 1 and 2 = 50,000 patients/year
  - Level 3 = 10,000 patients/year
  - MVC 15% (9,000 patients/yr)
  - Motorcycle 3.5% (2,100 patients/yr)
  - Transfers in 8,500 patients/year
  - Transfers out 4,000 patients/year

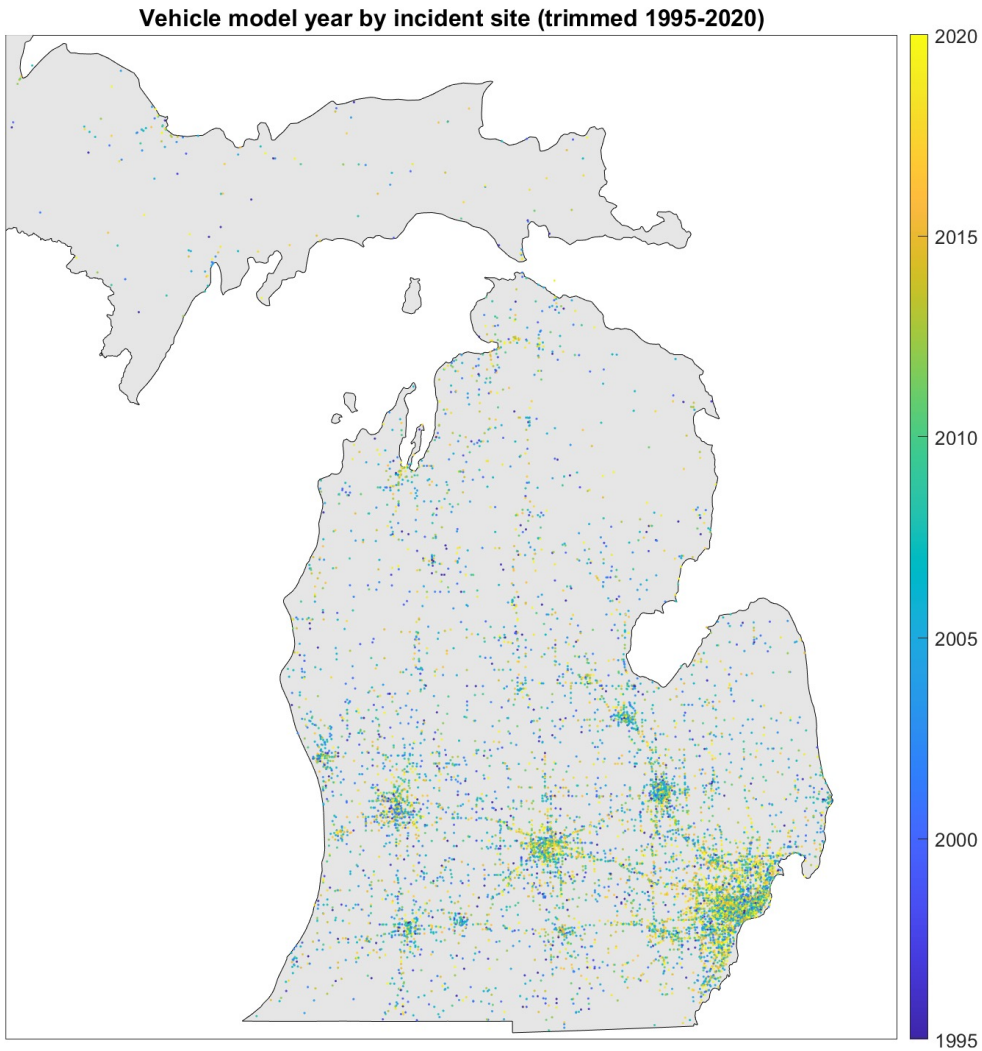
Linkage

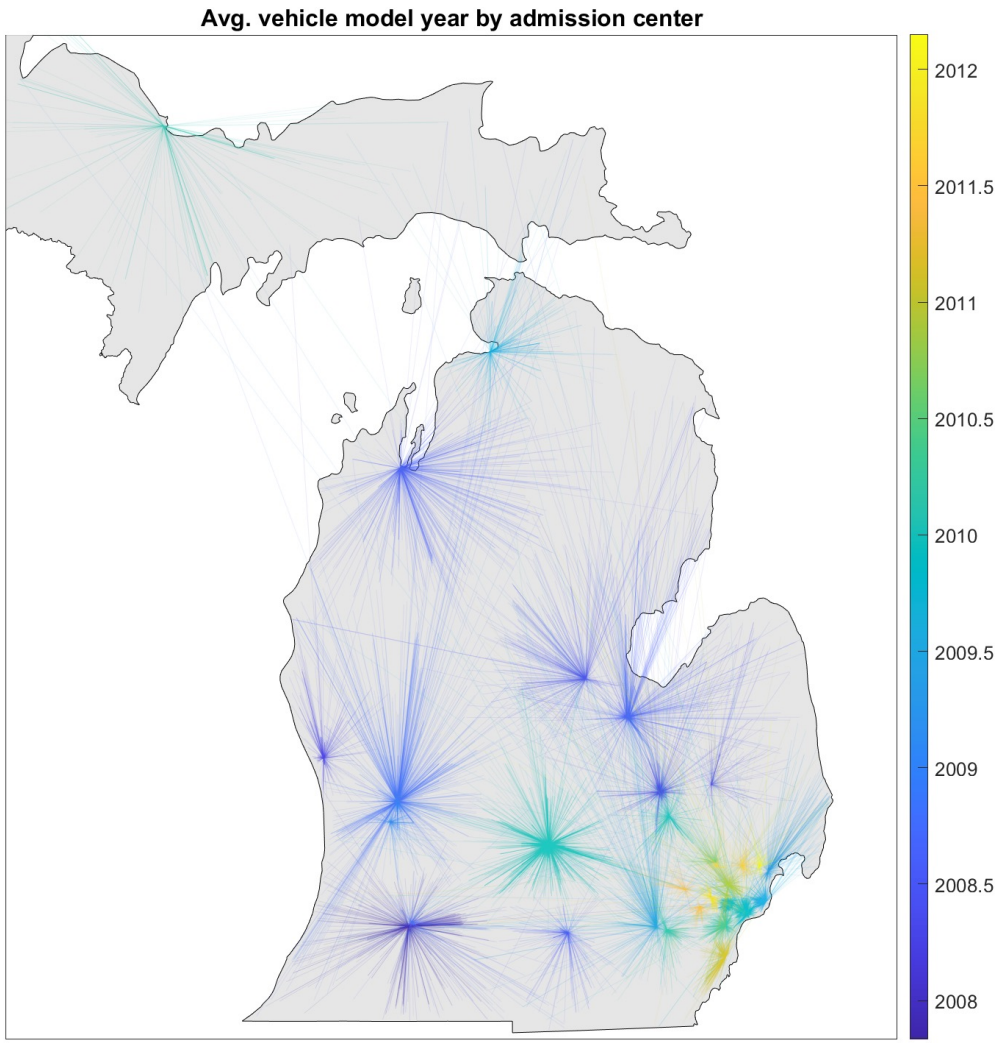
- UD10 Match with hard and soft criteria
  - 26 months data
  - 17,000 out of 100,000
  - 17% of MTQIP patients
  - MTQIP MVC with UD10 = 69% (13,872 of 20,171)
  - MTQIP Motorcycle with UD10 = 52% (2,164 of 4,188)

Links to crash data

- UD10 event data gives insight into transport patterns to MTQIP facilities

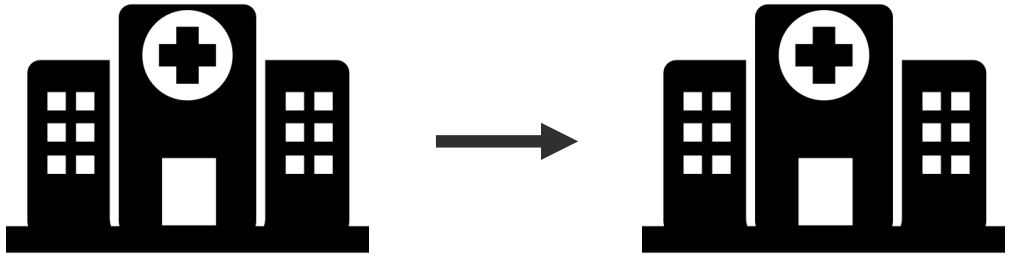



Vehicle model year by incident site (trimmed 1995-2020)
2020
2015
2010
2005
2000
1995


Avg. vehicle model year by admission center
2012
2011.5
2011
2010.5
2010
2009.5
2009
2008.5
2008

Trauma Transfers

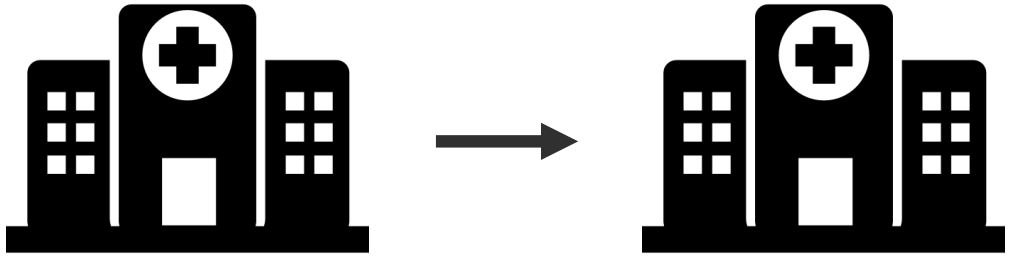
- State of Michigan
- From one Hospital to another Hospital
  - ED to ED (early, hours)
  - OSH to OSH (days)
- Matching in MTQIP data
  - PHI
  - EMS
  - Transfer

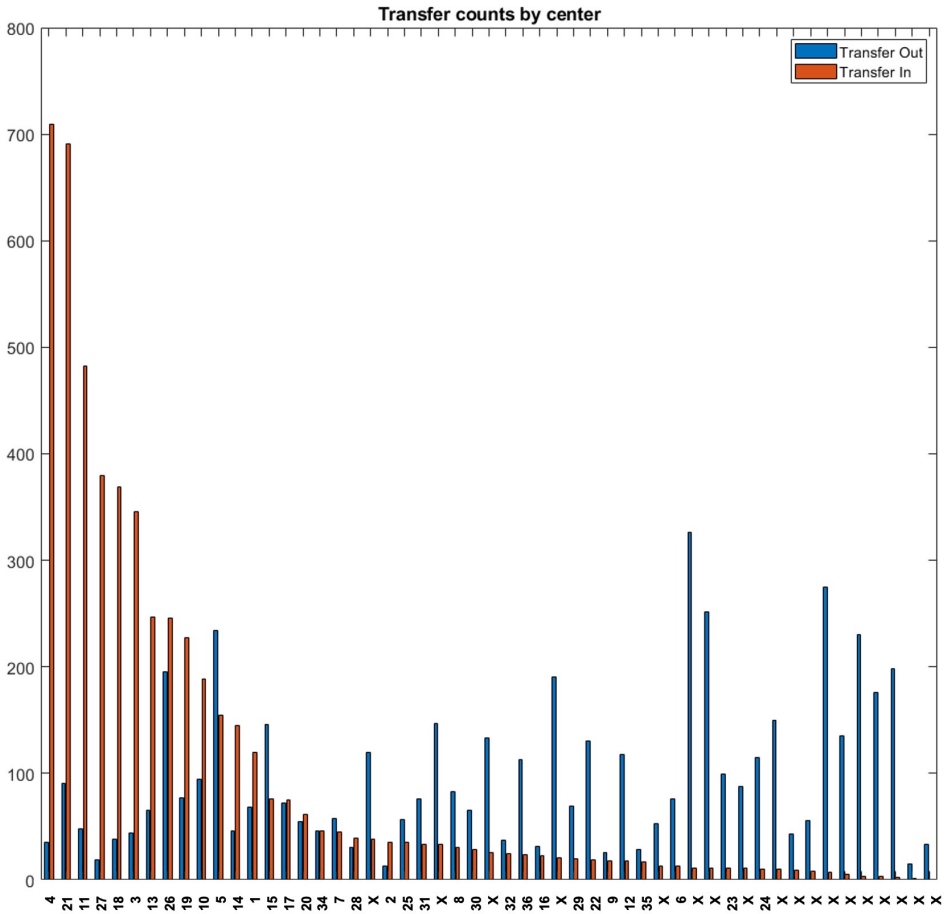


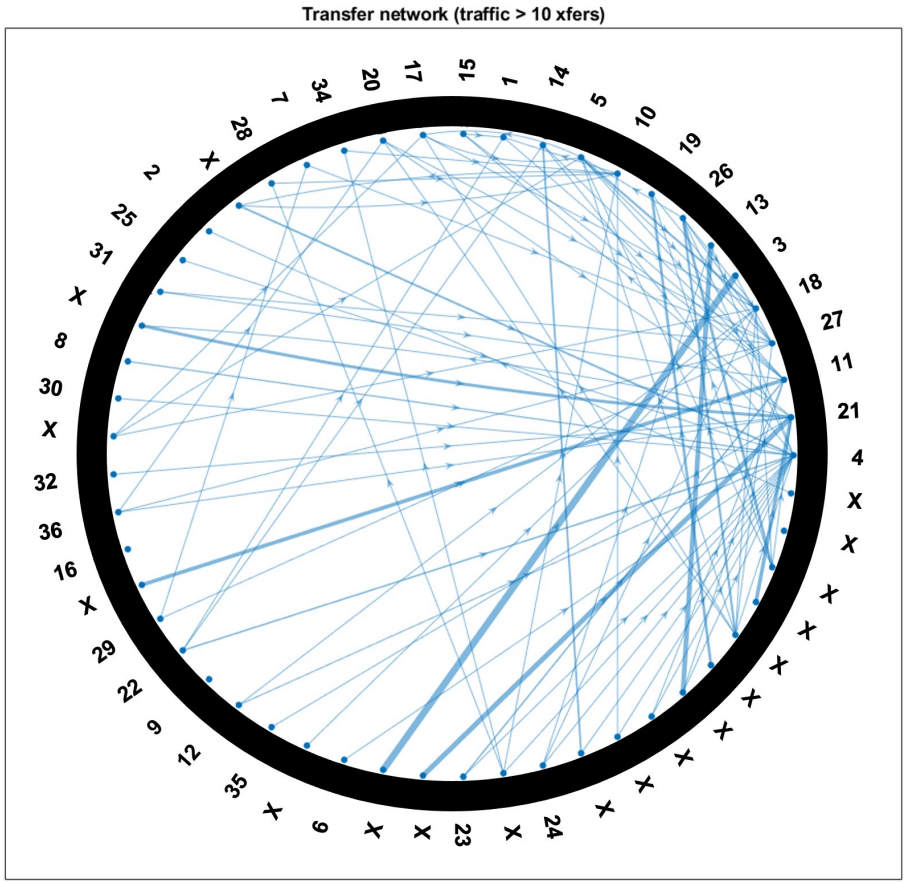
Trauma Transfers – Matching Criteria

- Within 10 days of ED arrival
- First name, Last name
- DOB

- 2020 and 2021







N transfers	2	3	4
N patients	4909	130	12

X = Level III Center

Trauma Transfers

- How to use ?
  - Lists
- What matters ?
  - Triple jump
  - Lateral transfer (2 to 2, 1 to 1)
  - Region to region
  - Mode of transport

What does it mean?

- Crash information
  - Vehicle: Age, manufacturer, safety devices
  - Mechanisms
  - Location
- Patient
  - Where treated
  - Transfers from one hospital to another
  - How treated
  - Outcomes

Questions we could answer

- How does the vehicle age and type affect
  - Injuries ?
  - Patient outcomes ?
- What is the impact of autonomous driving vehicles?
  - Vehicle vs. vehicle
  - Vehicle vs. pedestrian

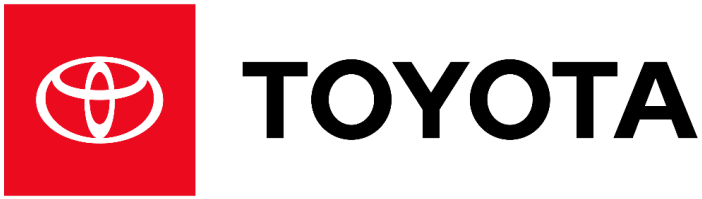
Questions we could answer

- How does the State Trauma System function?
  - Types of patient transfers
  - Appropriateness
  - Resources used
- What does patient recovery look like?
  - Function
  - Care giver burden
  - Trajectory predictions
  - Economic impact

Who cares about this?

- Government
  - Federal
  - State
- Medical system
- Manufacturers
- Public

Who cares about this?



BCBSM and Manufacturers

- Michigan based
- Symbiotic linkage > 3rd party payer contracts

IMPACT OF STATE OPIOID LAWS ON PRESCRIBING IN TRAUMA PATIENTS

Julia Kelm, BS; Staci Aubry, MD, Anne Cain-Nielsen, MS; John Scott, MD, MPH, Bryant Oliphant, MD; Naveen Sangji, MD, MPH; Jennifer Waljee, MD, MPH, Mark Hemmila, MD

MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

INTRODUCTION

Excessive opioid prescribing has culminated in widespread misuse and diversion.

- Michigan's Public Act 246 established a policy to address the opioid epidemic and took effect June 1, 2018.

Objective: To determine the relationship between prescribing policy and opioid use in trauma patients.

Hypothesis: Public Act 246 will be associated with a sustained decrease in overall opioid prescribing at discharge.

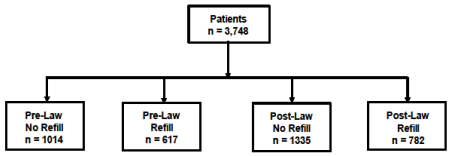
METHODS

Design: Observational Cohort Study

Setting: Level 1 Trauma Center

Cohort: Trauma patients ≥18 admitted between January 1, 2016, and June 30, 2021, who received an oral opioid in-hospital or at discharge

Data Source: Clinical trauma registry, MAR data from EMR

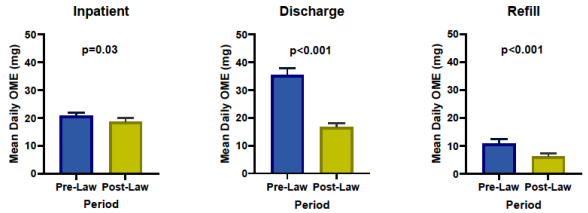


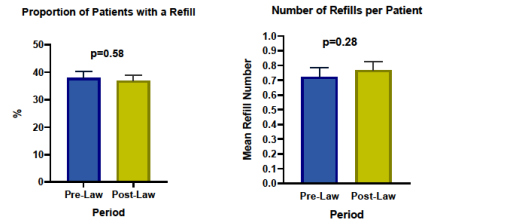
Exposure: Public Act 246 implementation; June 1, 2018

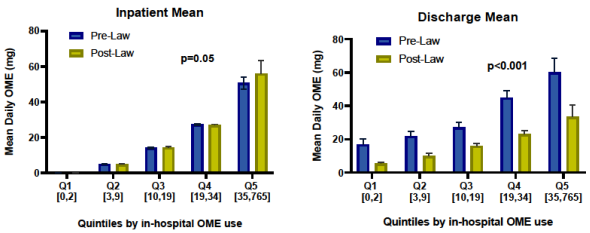
Primary Outcome: Oral morphine equivalents (OME) prescribed at discharge

Analysis: T-tests for unadjusted comparisons; Interrupted time series linear models for policy evaluation

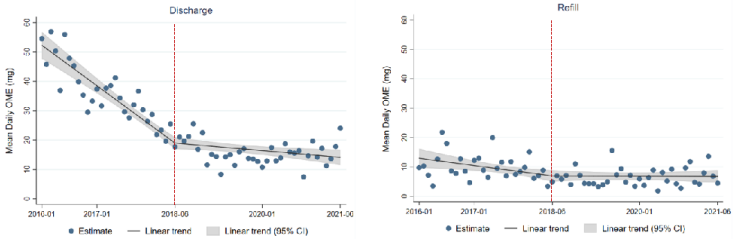
RESULTS







RESULTS



Monthly changes in discharge OME	Monthly slope		Difference in slopes	
	Pre-law	Post-law	Pre vs. Post law	p-value
Discharge OME, mg/day (Mean)	-1.15	-0.13	1.01	<0.001

Monthly changes in refill OME	Monthly slope		Difference in slopes	
	Pre-law	Post-law	Pre vs. Post law	p-value
Refill OME, mg/day (Mean)	0.21	0.01	0.20	0.059

After adjusting for patient factors, injury type/burden, and inpatient OME use a -19.2 OME/day (95% CI -21.7 to -16.8, p< 0.001) difference in discharge prescriptions was present post-law.

DISCUSSION

- Unadjusted and adjusted discharge prescriptions for opioids in trauma patients decreased by half after implementation of a state-mandated opioid prescribing policy.
- Refill prescriptions did not increase in proportion or number per patient.
- The daily amount of OME in 30-day refill prescriptions was significantly less in the post-law implementation period.

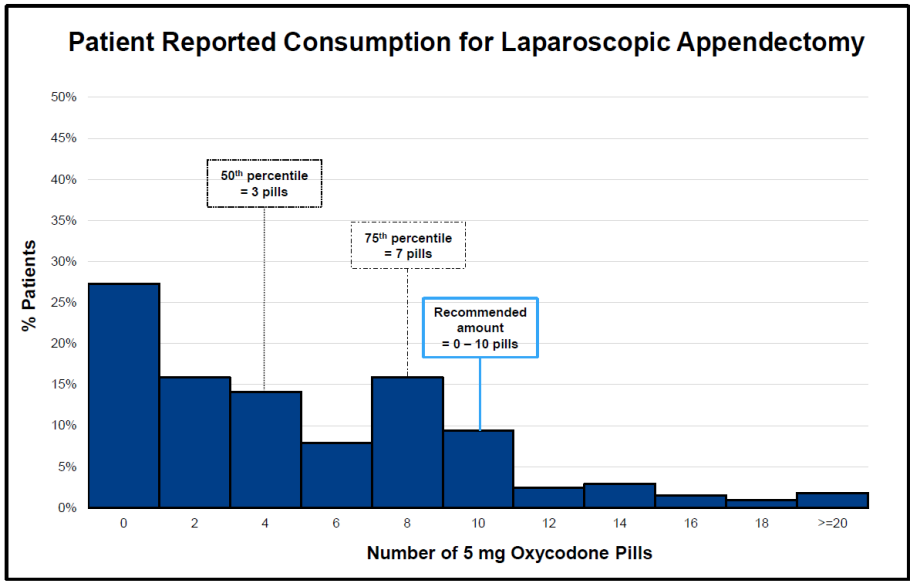
CONCLUSION

A policy to limit opioid prescriptions at hospital discharge resulted in significantly less OME being prescribed to patients, without an increase in obtaining additional OME through refills.

Discharge prescribing decreased by half with no increase in refill amount, number, or proportion of patients

Opioids

- Just began data collection in MTQIP
- Patterns
  - Injuries
  - Treatments
  - Hospitals



957
opioid naïve patients

58
hospitals

January 1, 2018
to
May 31, 2019

World J Surg (2020) 44:1844–1853
https://doi.org/10.1007/s00268-020-05391-8

ORIGINAL SCIENTIFIC REPORT

Beta-Blocker Therapy in Severe Traumatic Brain Injury: A Prospective Randomized Controlled Trial

Hosseinali Khalili[1] · Rebecka Ahl[2,6] · Shahram Paydar[3,4] · Gabriel Sjolin[5,6] · Yang Cao[7] · Hossein Abdolrahimzadeh Fard[2,3] · Amin Niakan[1] · Kamil Hanna[8] · Bellal Joseph[8] · Shahin Mohseni[6,9]

Published online: 30 January 2020

Abstract

Background Observational studies have demonstrated improved outcomes in TBI patients receiving in-hospital beta-blockers. The aim of this study is to conduct a randomized controlled trial examining the effect of beta-blockers on outcomes in TBI patients.

Methods Adult patients with severe TBI (intracranial AIS ≥ 3) were included in the study. Hemodynamically stable patients at 24 h after injury were randomized to receive either 20 mg propranolol orally every 12 h up to 10 days or until discharge (BB+) or no propranolol (BB−). Outcomes of interest were in-hospital mortality and Glasgow Outcome Scale-Extended (GOS-E) score on discharge and at 6-month follow-up. Subgroup analysis including only isolated severe TBI (intracranial AIS ≥ 3 with extracranial AIS ≤ 2) was carried out. Poisson regression models were used.

Results Two hundred nineteen randomized patients of whom 45% received BB were analyzed. There were no significant demographic or clinical differences between BB^+ and BB^- cohorts. No significant difference in in-hospital mortality (adj. IRR 0.6 [95% CI 0.3–1.4], $p = 0.2$) or long-term functional outcome was measured between the cohorts ($p = 0.3$). One hundred fifty-four patients suffered isolated severe TBI of whom 44% received BB. The BB^+ group had significantly lower mortality relative to the BB^- group (18.6% vs. 4.4%, p = 0.012). On regression analysis, propranolol had a significant protective effect on in-hospital mortality (adj. IRR 0.32, $p = 0.04$) and functional outcome at 6-month follow-up (GOS-E ≥ 5 adj. IRR 1.2, $p = 0.02$).

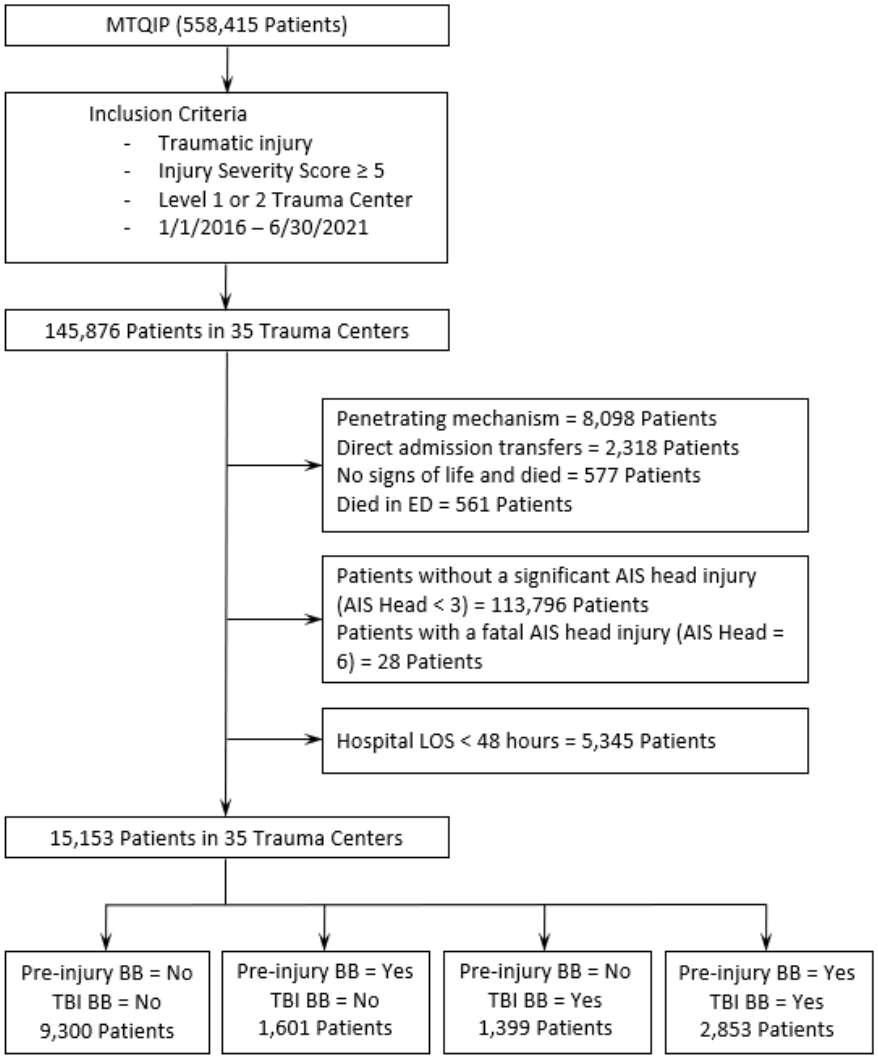
Conclusion Propranolol decreases in-hospital mortality and improves long-term functional outcome in isolated severe TBI. This randomized trial speaks in favor of routine administration of beta-blocker therapy as part of a standardized neurointensive care protocol.

Level of evidence Level II; therapeutic.

Study type Therapeutic study.

TBI and Beta Blocker Medication

- ACS Clinical Congress
- MTQIP Data
  - 2016 -2021
  - Head injury
- Exclude
  - Penetrating
  - Direct admits
  - ED deaths
  - H LOS < 48 hrs



Conclusion - TBI Patients

- Stopping a BB when on a pre-injury BB increases mortality and complications

- Starting a BB when not on a pre-injury BB
  - No difference in mortality
  - Increased complications

Amputations

- ICD 10 Procedure Codes
- Detachment
  - Lower Extremity
    - BKA
    - AKA
  - Upper Extremity
    - Upper arm
    - Lower arm

year	Freq.	Percent	Cum.
2015	1	0.27	0.27
2016	43	11.44	11.70
2017	57	15.16	26.86
2018	54	14.36	41.22
2019	64	17.02	58.24
2020	63	16.76	75.00
2021	67	17.82	92.82
2022	27	7.18	100.00
Total	376	100.00	

Amputations

- ICD 10 Procedure Codes
- Lower Extremity
  - 65 patients/year
    - BKA, 30+ patients/year
    - AKA, 30+ patients/year
- Upper Extremity
  - 6-8 patients/year
    - Upper arm 2/3, Lower arm 1/3

traumactr	Freq.	Percent	Cum.
31	4	1.06	1.06
8	6	1.60	2.66
3	25	6.65	9.31
9	3	0.80	10.11
5	7	1.86	11.97
1	11	2.93	14.89
12	1	0.27	15.16
11	15	3.99	19.15
23	2	0.53	19.68
18	49	13.03	32.71
10	12	3.19	35.90
29	3	0.80	36.70
13	13	3.46	40.16
2	5	1.33	41.49
35	9	2.39	43.88
26	3	0.80	44.68
32	7	1.86	46.54
24	1	0.27	46.81
16	5	1.33	48.14
33	1	0.27	48.40
20	9	2.39	50.80
36	2	0.53	51.33
22	6	1.60	52.93
14	10	2.66	55.59
34	1	0.27	55.85
6	3	0.80	56.65
15	11	2.93	59.57
21	58	15.43	75.00
7	7	1.86	76.86
17	4	1.06	77.93
25	23	6.12	84.04
19	6	1.60	85.64
30	30	7.98	93.62
27	1	0.27	93.88
28	23	6.12	100.00
4			
Total	376	100.00	

Analytics Updates

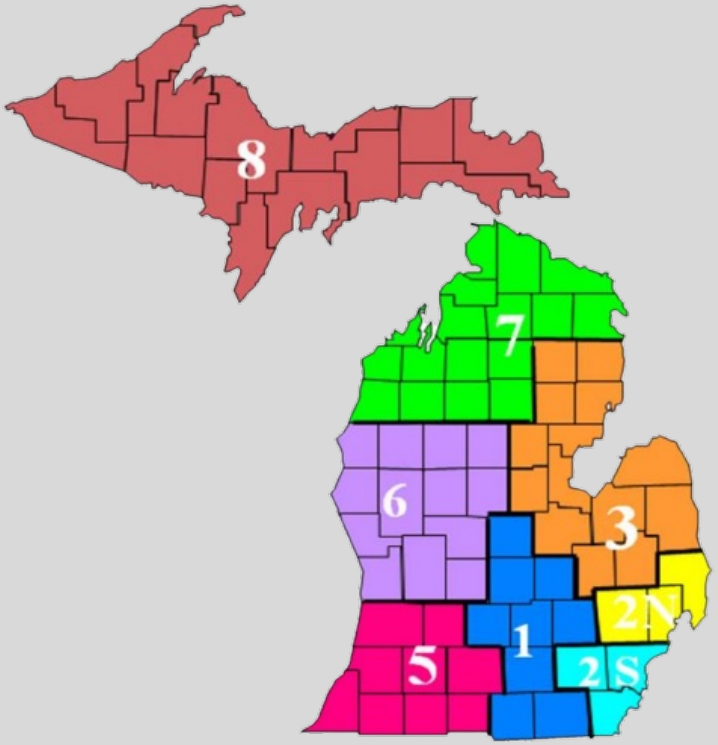
Jill Jakubus, PA-C, MHSA

State of Michigan Work

- Request new trend graphs
- Trend by year
- PDF medium
- Target Jan 2023 report

Request

- Number of patients
- Number of patients level I-III centers
- Mean ED dwell time
- Mean ISS
- Mean age
- Frequency of blunt and penetrating mechanism
- Frequency of transport in mode
- Number of patients with active COVID diagnosis



Data Submission Participants by Region

Region 1
Henry Ford Allegiance Health
McLaren Greater Lansing Hospital
MidMichigan Medical Center - Gratiot
Sparrow Hospital

Region 2N
Ascension Macomb-Oakland Hospital
Ascension Providence Hospital - Novi
Ascension Providence Hospital, Southfield Campus
Ascension Providence Rochester Hospital
Beaumont Hospital, Troy
Beaumont Hospital, Farmington Hills
Beaumont Hospital, Royal Oak
Henry Ford Macomb Hospital
Henry Ford West Bloomfield Hospital
Lake Huron Medical Center
McLaren Macomb Hospital
McLaren Oakland Hospital
McLaren Port Huron Hospital
Trinity Health Oakland Hospital

Region 2S
Ascension St. John Hospital
Beaumont Hospital, Dearborn
Beaumont Hospital, Grosse Pointe
Beaumont Hospital, Trenton
Beaumont Hospital, Wayne
DMC Detroit Receiving Hospital
DMC Sinai-Grace Hospital
Henry Ford Hospital
Henry Ford Wyandotte Hospital
Michigan Medicine
ProMedica Monroe Regional Hospital
Trinity Health Ann Arbor Hospital
Trinity Health Livonia Hospital

Region 3
Ascension Genesys Hospital
Ascension St. Mary's Hospital
Covenant HealthCare
Hurley Medical Center
McLaren Bay Region Hospital
McLaren Flint Hospital
McLaren Lapeer Region Hospital
MidMichigan Medical Center – Midland

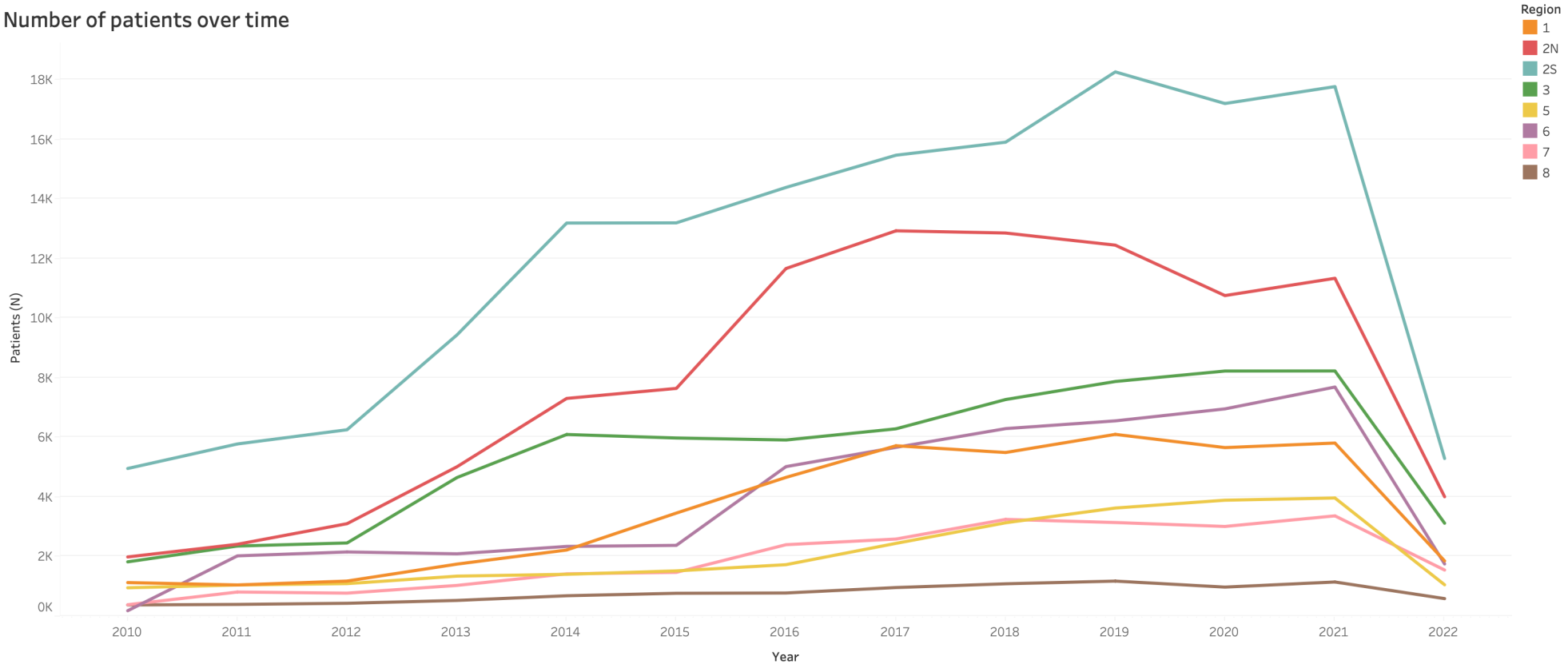
Region 5
Ascension Borgess Hospital
Bronson Battle Creek Hospital
Bronson Methodist Hospital
Oaklawn Hospital
Spectrum Health Lakeland Hospital

Region 6
Holland Hospital
Spectrum Health Blodgett Hospital
Spectrum Health Butterworth Hospital
Spectrum Health Zeeland Hospital
Trinity Health Muskegon Hospital
Trinity Health Saint Mary's - Grand Rapids
University of Michigan Health – West

Region 7
McLaren Northern Michigan Hospital
MidMichigan Medical Center - Alpena
Munson Healthcare

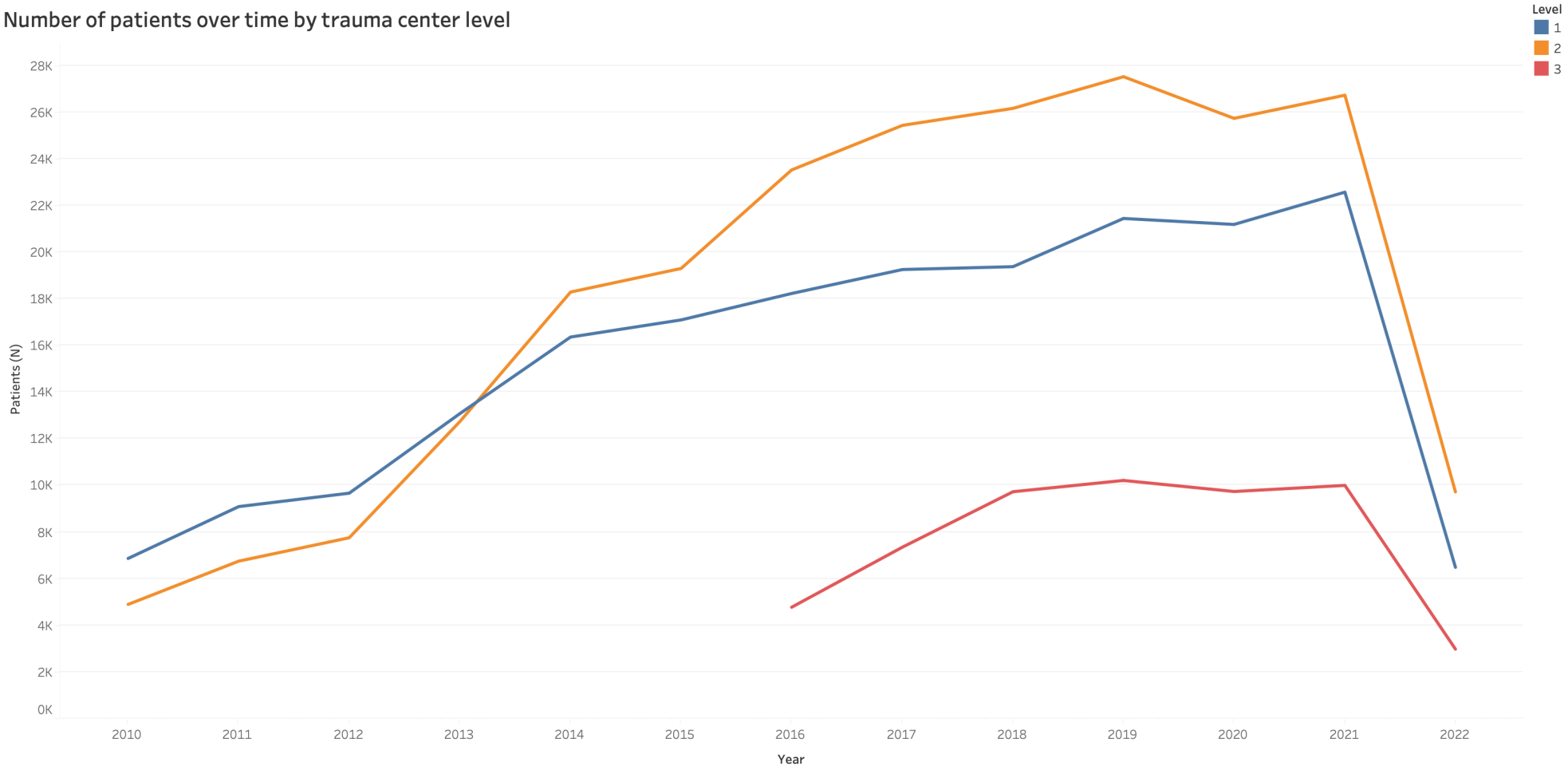
Region 8
Aspirus Keweenaw Hospital
UP Health System - Marquette
UP Health System - Portage
War Memorial Hospital

Number of patients over time



Region	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Grand Total
1	1,124	1,045	1,175	1,744	2,217	3,456	4,657	5,767	5,556	6,152	5,658	5,811	1,858	**46,220**
2N	1,984	2,409	3,100	5,011	7,303	7,639	11,670	13,000	12,872	12,451	10,754	11,334	4,004	**103,531**
2S	4,952	5,775	6,252	9,435	13,189	13,197	14,388	15,474	15,911	18,272	17,200	17,768	5,288	**157,101**
3	1,820	2,350	2,453	4,649	6,093	5,975	5,911	6,284	7,306	7,891	8,235	8,240	3,131	**70,338**
5	949	1,043	1,088	1,340	1,402	1,516	1,725	2,445	3,131	3,625	3,888	3,962	1,050	**27,164**
6	180	2,020	2,151	2,089	2,337	2,373	5,015	5,661	6,290	6,550	6,952	7,685	1,749	**51,052**
7	381	807	770	1,029	1,418	1,477	2,512	2,707	3,334	3,191	3,007	3,363	1,552	**25,548**
8	374	391	429	525	682	766	780	961	1,090	1,177	976	1,144	587	**9,882**
Grand Total	**11,764**	**15,840**	**17,418**	**25,822**	**34,641**	**36,399**	**46,658**	**52,299**	**55,490**	**59,309**	**56,670**	**59,307**	**19,219**	**490,836**

Number of patients over time by trauma center level



Level	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Grand Total
1	6,867	9,089	9,664	13,080	16,356	17,092	18,229	19,368	19,448	21,501	21,182	22,566	6,489	**200,931**
2	4,897	6,751	7,754	12,742	18,285	19,307	23,650	25,568	26,266	27,568	25,732	26,722	9,728	**234,970**
3							4,779	7,363	9,776	10,240	9,756	10,019	3,002	**54,935**
Grand Total	**11,764**	**15,840**	**17,418**	**25,822**	**34,641**	**36,399**	**46,658**	**52,299**	**55,490**	**59,309**	**56,670**	**59,307**	**19,219**	**490,836**

Data Submission Participants

Level I

Ascension St. John Hospital
Beaumont Hospital, Royal Oak
Bronson Methodist Hospital
DMC Detroit Receiving Hospital
Henry Ford Hospital
Hurley Medical Center
Michigan Medicine
Sparrow Hospital
Spectrum Health Butterworth Hospital
Trinity Health Ann Arbor Hospital

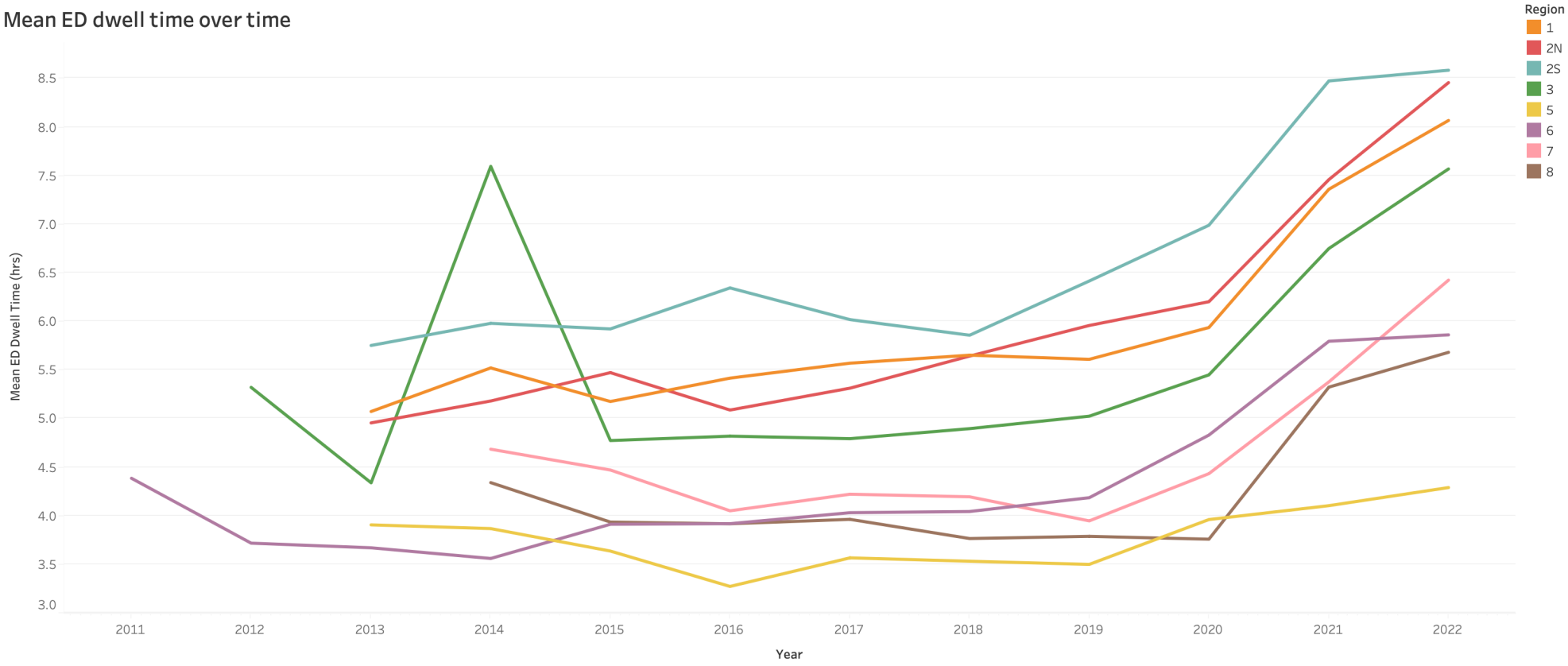
Level II

Ascension Borgess Hospital
Ascension Genesys Hospital
Ascension Providence Hospital - Novi
Ascension Providence Hospital, Southfield Campus
Ascension St. Mary's Hospital
Beaumont Hopsital, Troy
Beaumont Hospital, Dearborn
Beaumont Hospital, Farmington Hills
Beaumont Hospital, Trenton
Covenant HealthCare
DMC Sinai-Grace Hospital
Henry Ford Allegiance Health
Henry Ford Macomb Hospital
McLaren Lapeer Region Hospital
McLaren Macomb Hospital
McLaren Northern Michigan Hospital
McLaren Oakland Hospital
Mercy Health Muskegon
MidMichigan Medical Center - Midland
Munson Healthcare
Trinity Health Livonia Hospital
Trinity Health Oakland Hospital
Trinity Health Saint Mary's - Grand Rapids
University of Michigan Health-West
UP Health System - Marquette

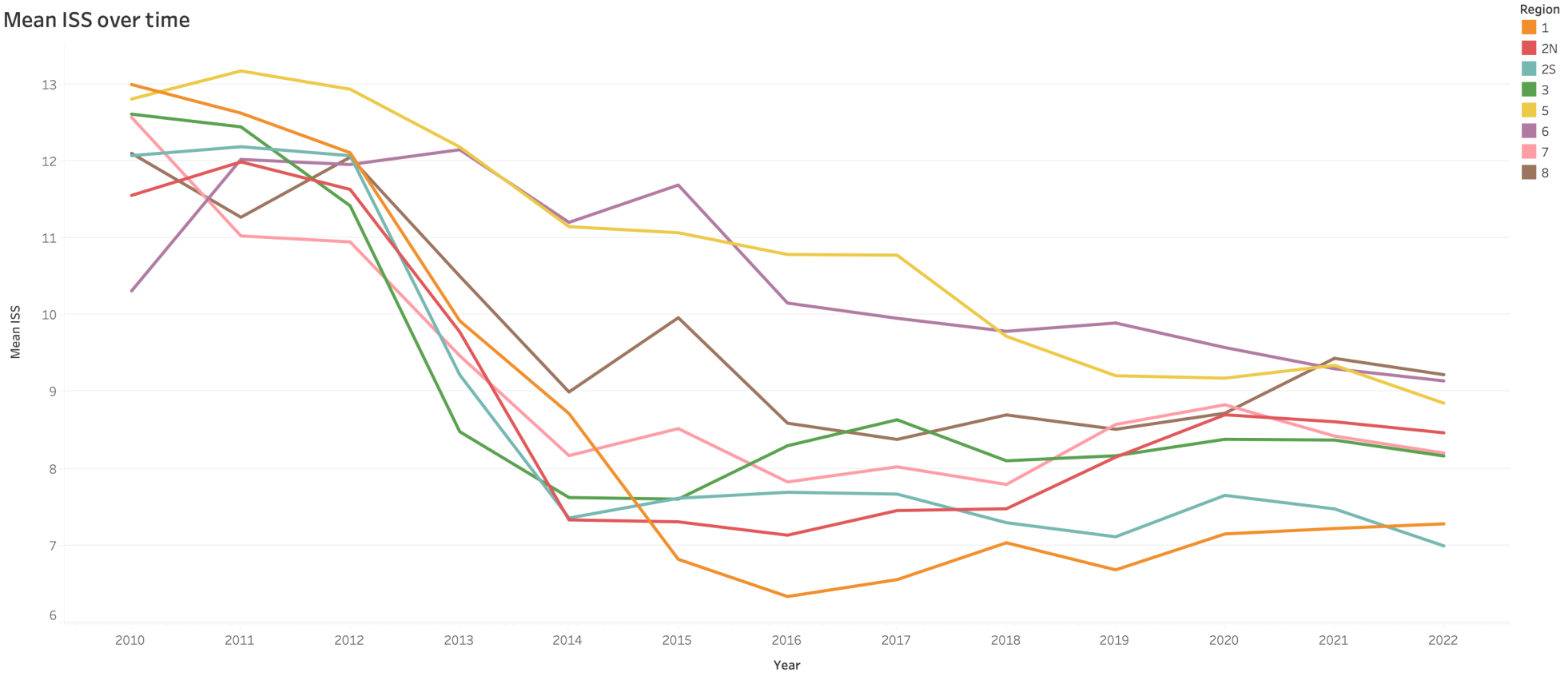
Level III

Ascension Macomb-Oakland Hospital
Ascension Providence Rochester Hospital
Aspirus Keweenaw Hospital
Beaumont Hospital, Grosse Pointe
Beaumont Hospital, Wayne
Bronson Battle Creek Hospital
Henry Ford West Bloomfield Hospital
Henry Ford Wyandotte Hospital
Holland Hospital
Lake Huron Medical Center
McLaren Bay Region Hospital
McLaren Flint Hospital
McLaren Greater Lansing Hospital
McLaren Port Huron Hospital
MidMichigan Medical Center - Alpena
MidMichigan Medical Center - Gratiot
Oaklawn Hospital
ProMedica Monroe Regional Hospital
Spectrum Health Blodgett Hospital
Spectrum Health Lakland Hospital
Spectrum Health Zeeland Hospital
UP Health System - Portage
War Memorial Hospital

Mean ED dwell time over time

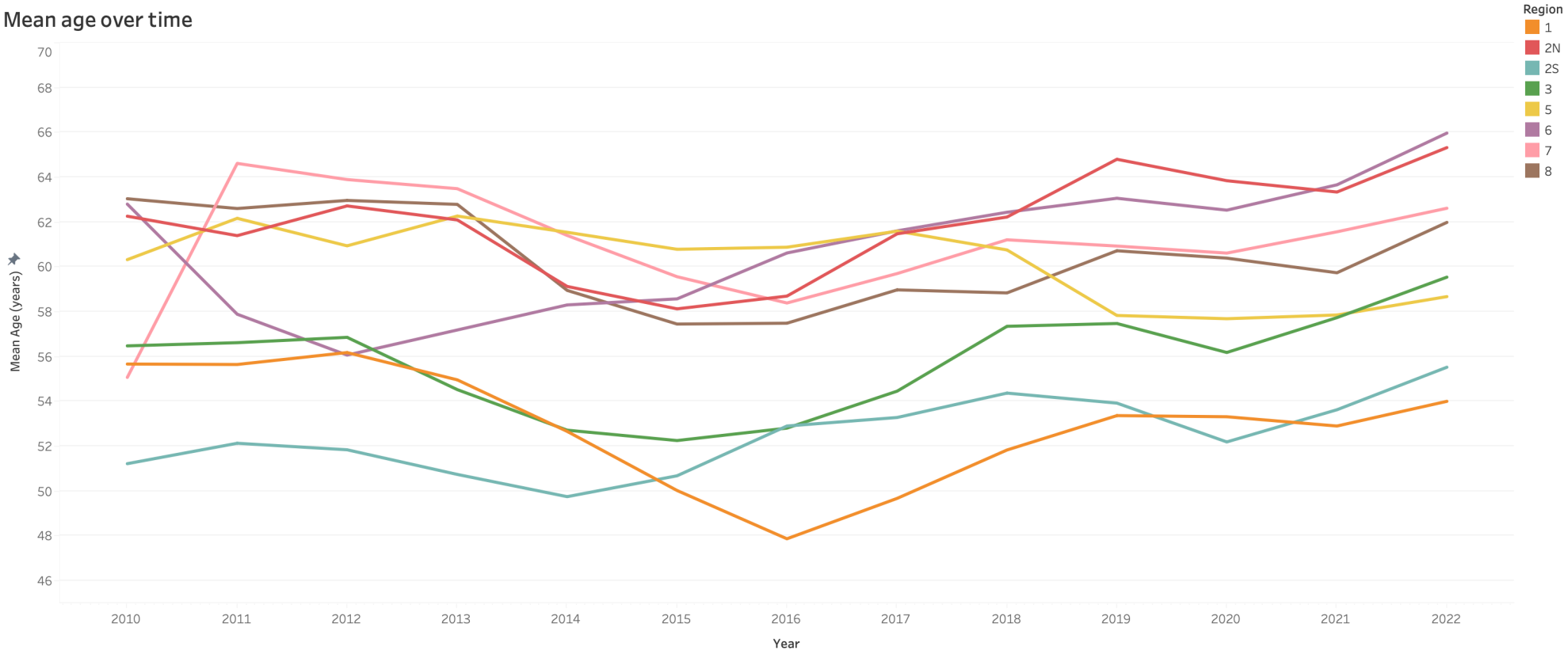


Region	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Grand Total
1				5.1	5.5	5.2	5.4	5.6	5.7	5.6	5.9	7.4	8.1	**5.9**
2N				5.0	5.2	5.5	5.1	5.3	5.6	6.0	6.2	7.5	8.5	**5.9**
2S				5.8	6.0	5.9	6.3	6.0	5.9	6.4	7.0	8.5	8.6	**6.7**
3			5.3	4.3	7.6	4.8	4.8	4.8	4.9	5.0	5.4	6.7	7.6	**5.6**
5				3.9	3.9	3.6	3.3	3.6	3.5	3.5	4.0	4.1	4.3	**3.7**
6		4.4	3.7	3.7	3.6	3.9	3.9	4.0	4.0	4.2	4.8	5.8	5.9	**4.5**
7					4.7	4.5	4.0	4.2	4.2	3.9	4.4	5.4	6.4	**4.6**
8					4.3	3.9	3.9	4.0	3.8	3.8	3.8	5.3	5.7	**4.2**
Grand Total		**4.4**	**3.9**	**4.4**	**5.7**	**5.2**	**5.2**	**5.2**	**5.2**	**5.4**	**5.9**	**7.1**	**7.6**	**5.7**



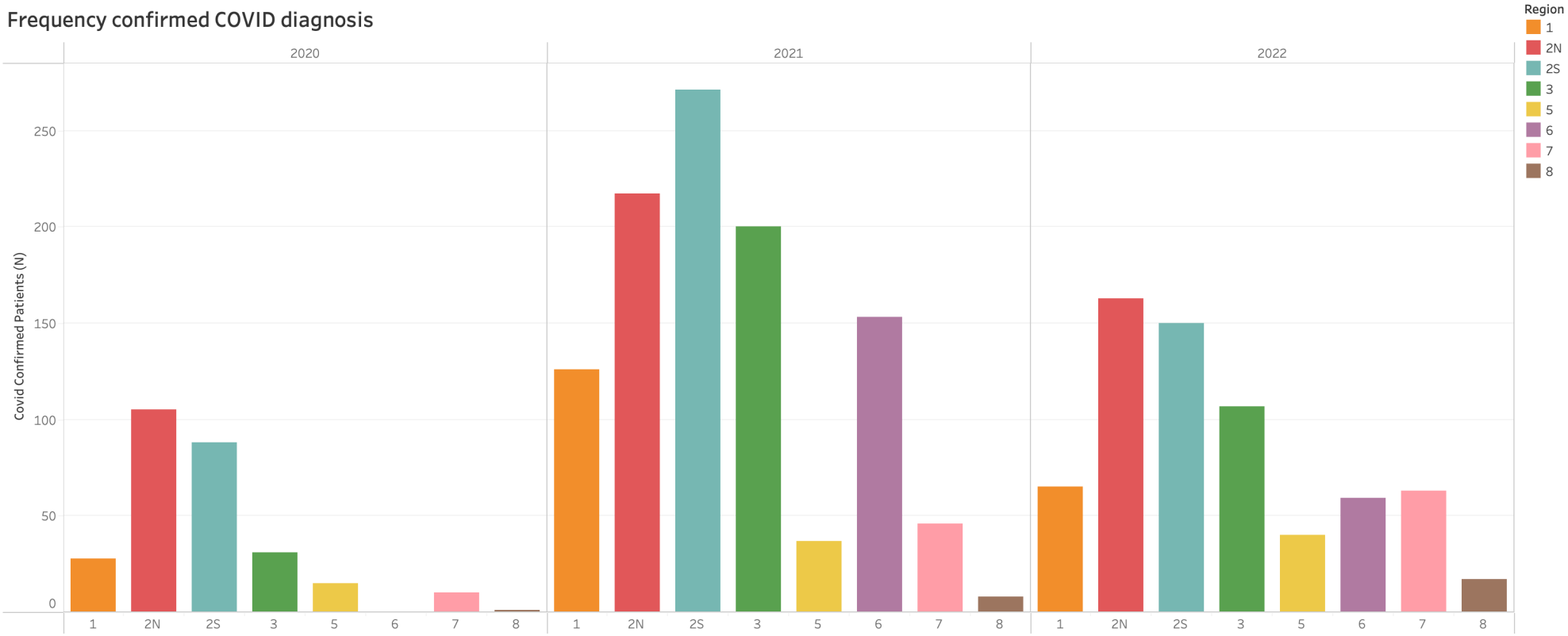
Region	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
1	13.0	12.6	12.1	9.9	8.7	6.8	6.3	6.6	7.1	6.7	7.2	7.2	7.3
2N	11.6	12.0	11.6	9.8	7.3	7.3	7.1	7.5	7.5	8.2	8.7	8.6	8.5
2S	12.1	12.2	12.1	9.2	7.4	7.6	7.7	7.7	7.3	7.1	7.7	7.5	7.0
3	12.6	12.4	11.4	8.5	7.6	7.6	8.3	8.6	8.1	8.2	8.4	8.4	8.2
5	12.8	13.2	12.9	12.2	11.1	11.1	10.8	10.8	9.7	9.2	9.2	9.3	8.9
6	10.3	12.0	12.0	12.1	11.2	11.7	10.2	10.0	9.8	9.9	9.6	9.3	9.1
7	12.6	11.0	10.9	9.5	8.2	8.5	7.9	8.0	7.8	8.6	8.8	8.4	8.2
8	12.1	11.3	12.0	10.5	9.0	10.0	8.6	8.4	8.7	8.5	8.7	9.4	9.3

Mean age over time



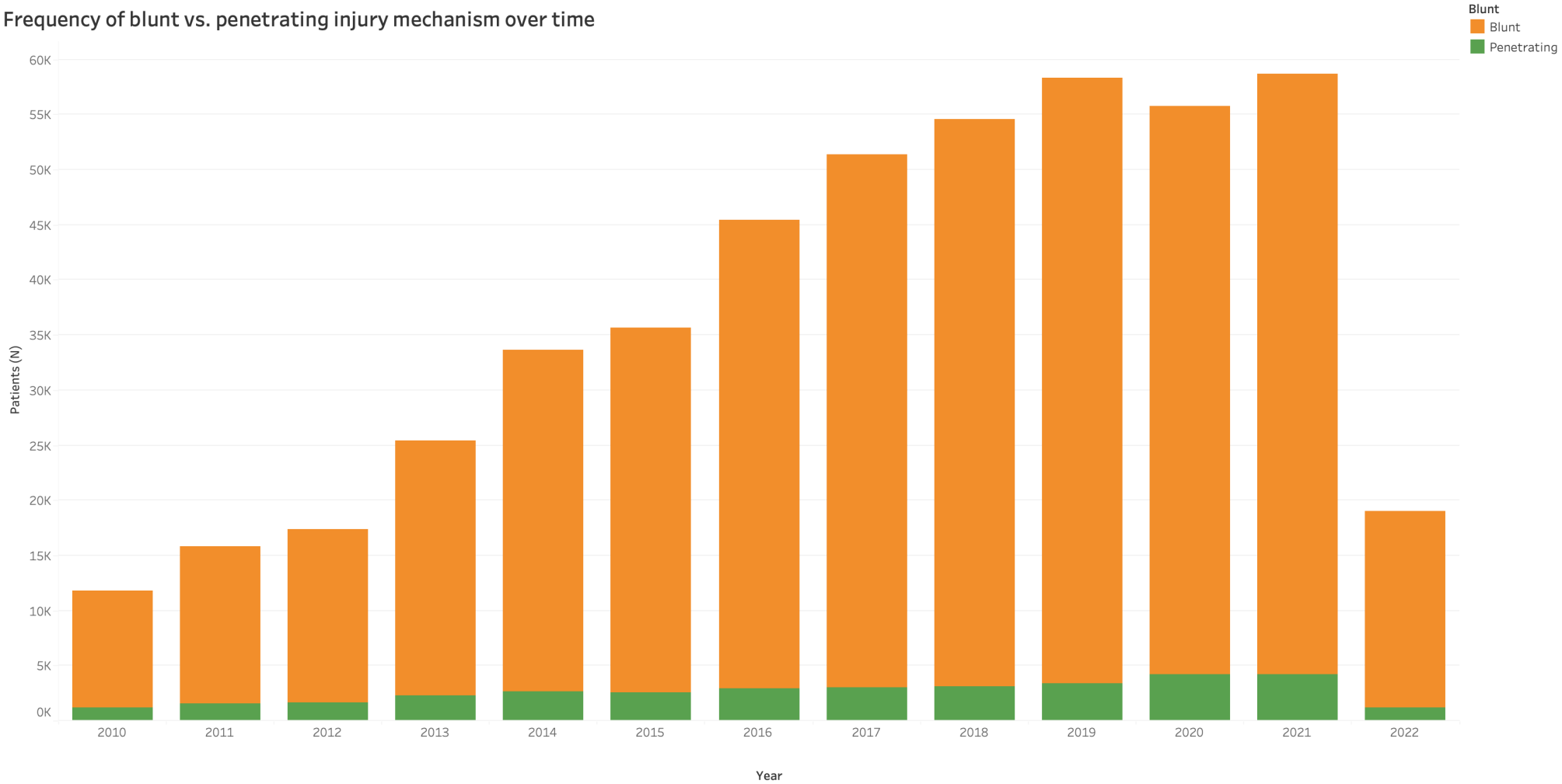
Region	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
1	56	56	56	55	53	50	48	50	52	53	53	53	54
2N	62	61	63	62	59	58	59	61	62	65	64	63	65
2S	51	52	52	51	50	51	53	53	54	54	52	54	56
3	56	57	57	55	53	52	53	54	57	58	56	58	60
5	60	62	61	62	62	61	61	62	61	58	58	58	59
6	63	58	56	57	58	59	61	62	62	63	63	64	66
7	55	65	64	63	61	60	59	60	61	61	61	62	63
8	63	63	63	63	59	57	58	59	59	61	60	60	62

Frequency confirmed COVID diagnosis



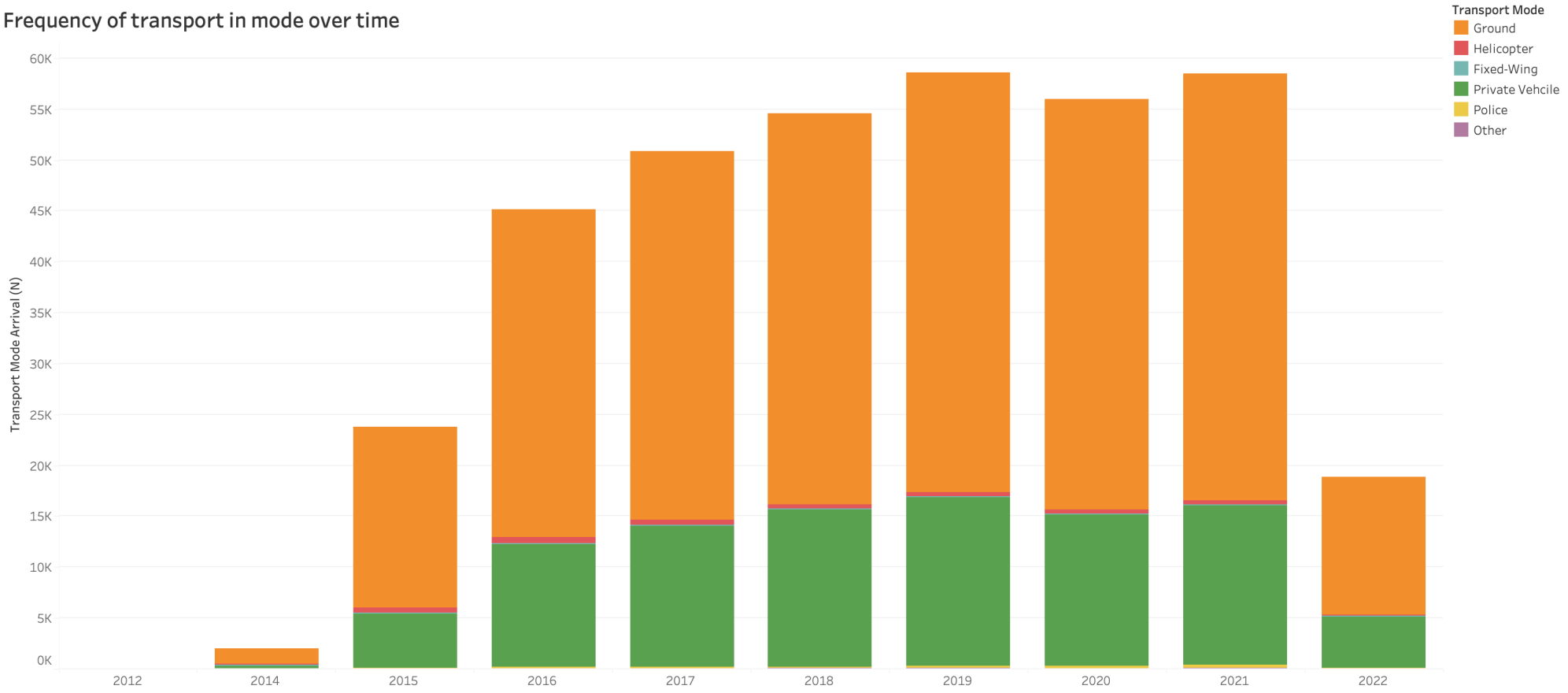
Region	2020	2021	2022	Grand Total
1	28	126	65	219
2N	105	217	163	485
2S	88	271	150	509
3	31	200	107	338
5	15	37	40	92
6		153	59	212
7	10	46	63	119
8	1	8	17	26
Grand Total	278	1,058	664	2,000

Frequency of blunt vs. penetrating injury mechanism over time



Blunt	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Grand Total
Blunt	90%	90%	91%	91%	92%	93%	94%	94%	94%	94%	92%	93%	94%	93%
Penetrating	10%	10%	9%	9%	8%	7%	6%	6%	6%	6%	8%	7%	6%	7%
Grand Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Frequency of transport in mode over time

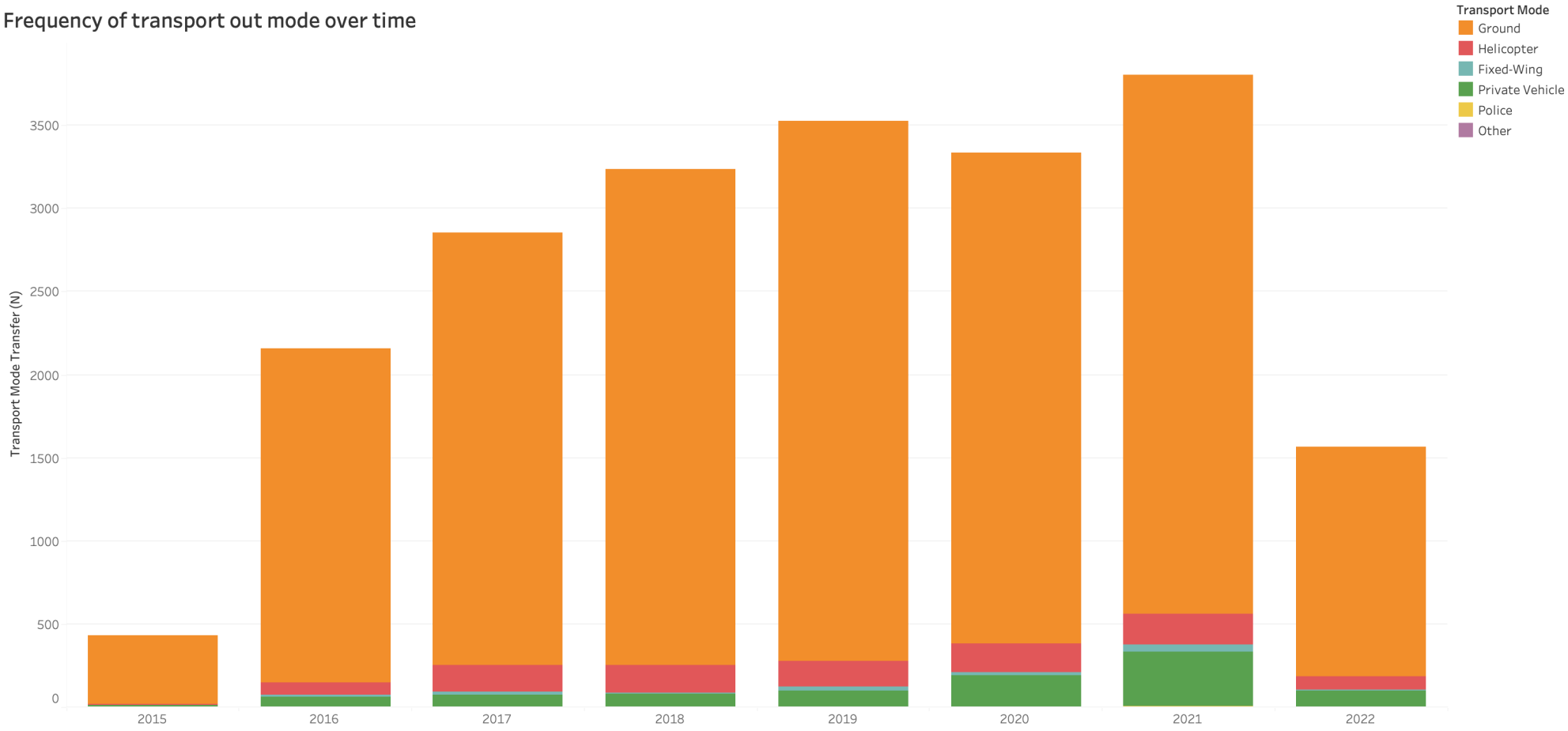


Transport Mode Arrival	2014	2015	2016	2017	2018	2019	2020	2021	2022	Grand Total
Ground	75.3%	74.6%	71.4%	71.2%	70.4%	70.4%	72.0%	71.8%	71.7%	**71.5%**
Helicopter	3.2%	2.1%	1.3%	0.9%	0.7%	0.8%	0.8%	0.7%	0.6%	**0.9%**
Fixed-Wing	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**
Private Vehcile	21.3%	22.9%	26.8%	27.5%	28.4%	28.4%	26.8%	26.9%	26.9%	**27.1%**
Police	0.2%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%	0.5%	0.4%	**0.4%**
Other		0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.2%	0.4%	**0.1%**
Grand Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Bonus

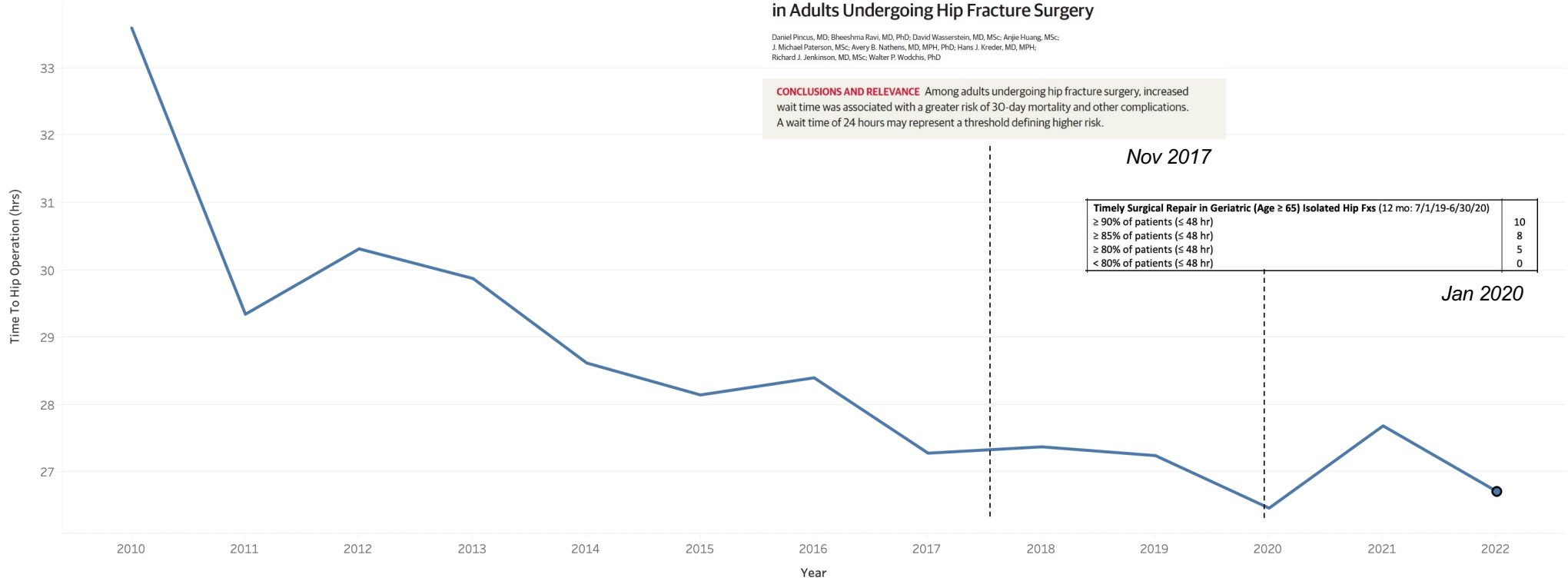
- Frequency of transport out mode
- Mean time to OR IHF
- Mean hospital LOS IHF

Frequency of transport out mode over time



Transport Mode Transfer	2015	2016	2017	2018	2019	2020	2021	2022	Grand Total
Ground	95.4%	93.0%	91.1%	92.1%	92.1%	88.5%	85.3%	88.2%	**90.0%**
Helicopter	2.3%	3.5%	5.7%	5.1%	4.5%	5.2%	4.9%	5.0%	**4.8%**
Fixed-Wing		0.5%	0.7%	0.2%	0.7%	0.6%	1.1%	0.6%	**0.6%**
Private Vehicle	2.3%	2.8%	2.5%	2.5%	2.7%	5.6%	8.6%	6.1%	**4.4%**
Police		0.0%				0.1%	0.1%	0.1%	**0.0%**
Other		0.1%			0.0%		0.1%		**0.0%**

Mean time to OR over time
Isolated Hip Fracture



JAMA | Original Investigation

Association Between Wait Time and 30-Day Mortality in Adults Undergoing Hip Fracture Surgery

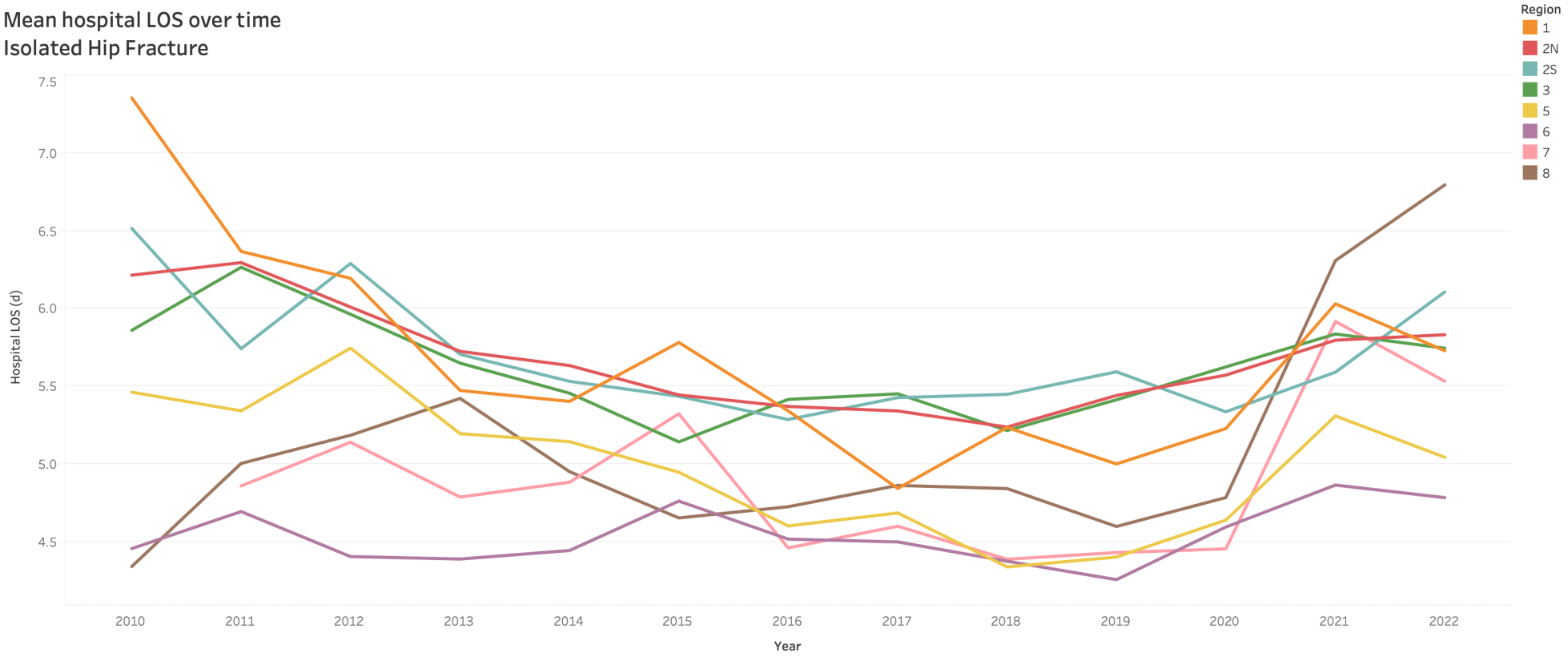
Daniel Pincus, MD; Bheeshma Ravi, MD, PhD; David Wasserstein, MD, MSc; Anjie Huang, MSc; J. Michael Paterson, MSc; Avery B. Nathens, MD, MPH, PhD; Hans J. Kreder, MD, MPH; Richard J. Jenkinson, MD, MSc; Walter P. Wodchis, PhD

CONCLUSIONS AND RELEVANCE Among adults undergoing hip fracture surgery, increased wait time was associated with a greater risk of 30-day mortality and other complications. A wait time of 24 hours may represent a threshold defining higher risk.

Timely Surgical Repair in Geriatric (Age ≥ 65) Isolated Hip Fxs (12 mo: 7/1/19-6/30/20)	
≥ 90% of patients (≤ 48 hr)	10
≥ 85% of patients (≤ 48 hr)	8
≥ 80% of patients (≤ 48 hr)	5
< 80% of patients (≤ 48 hr)	0

Region	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Grand Total
1	19.8	28.0	30.9	26.2	26.1	27.4	26.9	26.2	29.9	26.7	28.5	28.0	24.3	**27.5**
2N	29.0	32.8	33.8	33.4	31.8	32.9	31.4	30.3	30.5	30.6	29.8	28.9	29.6	**30.8**
2S	41.5	36.0	37.0	34.7	33.3	29.3	28.5	28.2	29.3	28.4	27.0	26.7	28.7	**30.0**
3	30.8	25.8	24.5	26.0	24.8	25.1	27.6	26.2	28.0	28.3	26.1	27.2	25.5	**26.7**
5	31.4	25.6	28.0	25.4	24.7	23.3	22.6	24.3	22.0	22.8	22.8	22.5	21.9	**24.0**
6	23.6	25.3	23.2	22.9	23.5	23.6	26.2	22.7	22.0	21.5	22.2	21.9	21.4	**22.6**
7		23.3	27.4	28.9	25.0	27.1	23.2	24.8	22.6	24.9	24.4	47.5	29.4	**28.4**
8	26.2	24.9	30.5	32.2	28.6	29.6	28.7	28.3	28.1	27.9	28.5	25.2	24.7	**28.1**

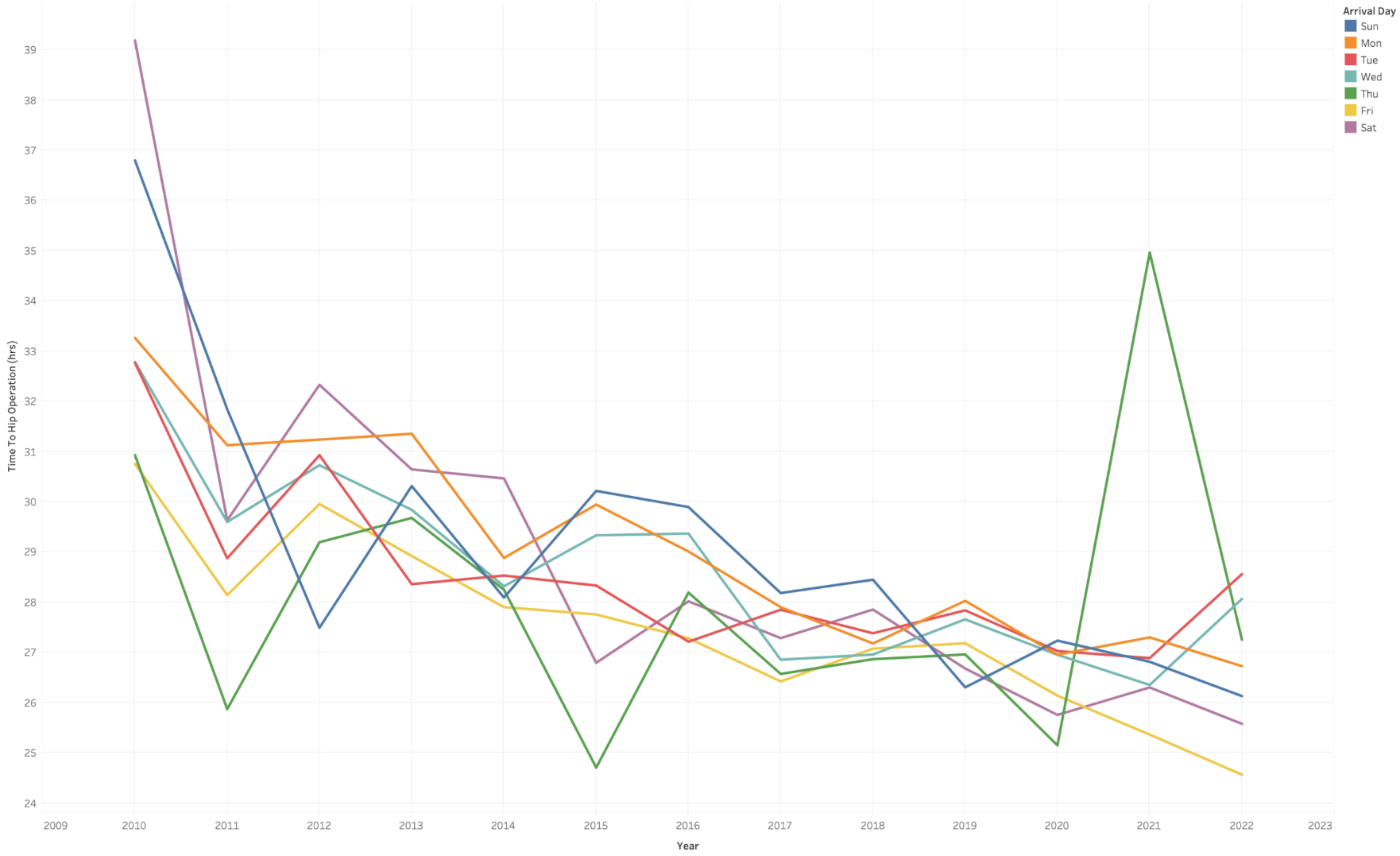
Mean hospital LOS over time
Isolated Hip Fracture



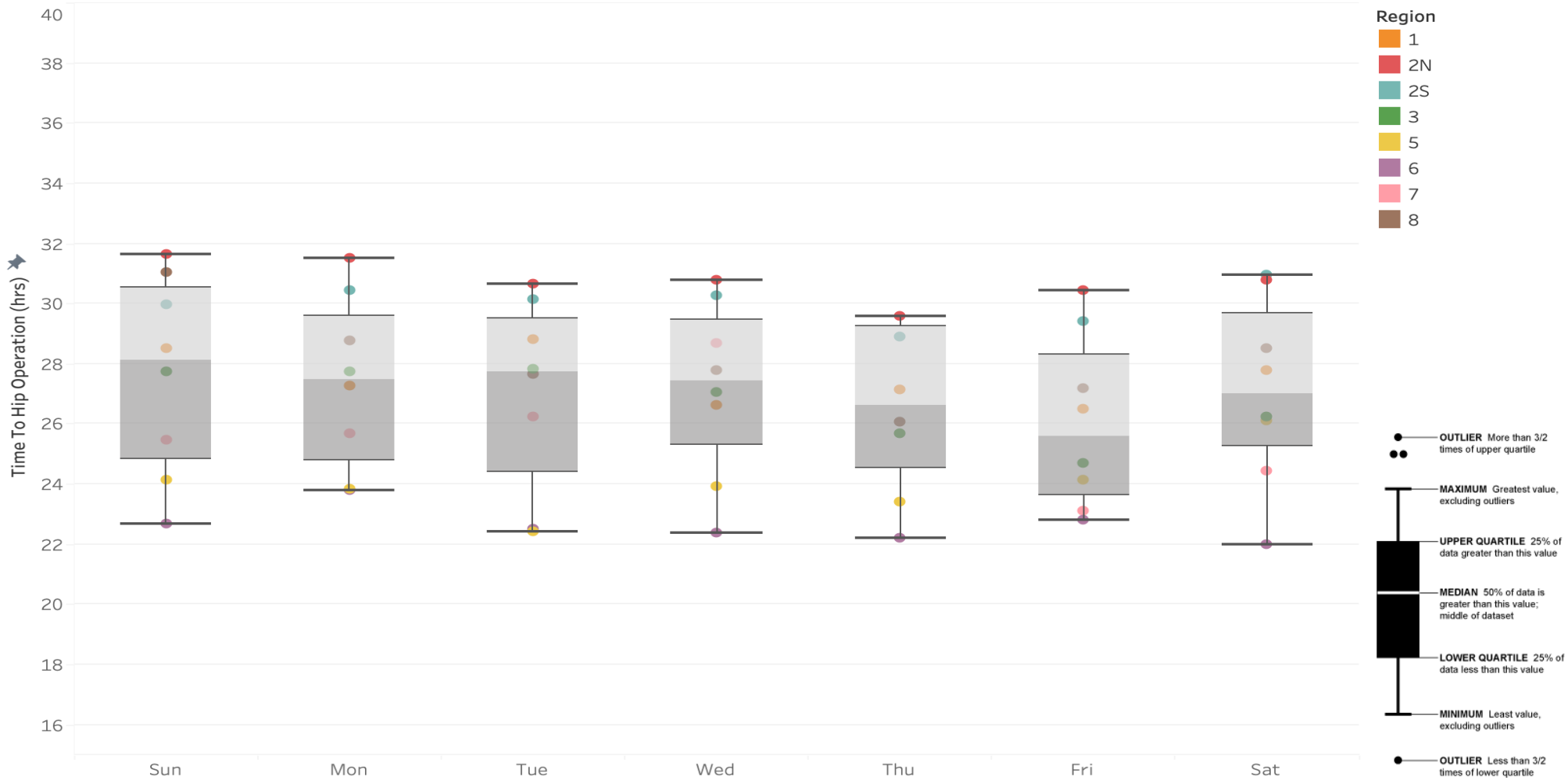
Region	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Grand Total
1	7.4	6.4	6.2	5.5	5.4	5.8	5.3	4.9	5.3	5.0	5.2	6.0	5.7	**5.5**
2N	6.2	6.3	6.0	5.7	5.6	5.4	5.4	5.3	5.2	5.4	5.6	5.8	5.8	**5.6**
2S	6.5	5.7	6.3	5.7	5.5	5.4	5.3	5.4	5.4	5.6	5.3	5.6	6.1	**5.6**
3	5.9	6.3	6.0	5.6	5.5	5.1	5.4	5.5	5.2	5.4	5.6	5.8	5.7	**5.6**
5	5.5	5.3	5.7	5.2	5.1	4.9	4.6	4.7	4.3	4.4	4.6	5.3	5.0	**4.9**
6	4.5	4.7	4.4	4.4	4.4	4.8	4.5	4.5	4.4	4.3	4.6	4.9	4.8	**4.5**
7		4.9	5.1	4.8	4.9	5.3	4.5	4.5	4.3	4.4	4.5	5.9	5.5	**4.9**
8	4.3	5.0	5.2	5.4	5.0	4.7	4.8	4.9	4.9	4.6	4.8	6.3	6.8	**5.1**
Grand Total	**6.1**	**5.7**	**5.8**	**5.5**	**5.3**	**5.3**	**5.1**	**5.1**	**5.0**	**5.1**	**5.2**	**5.6**	**5.7**	**5.3**


For isolated hip fractures, does day of the week of patient arrival matter?

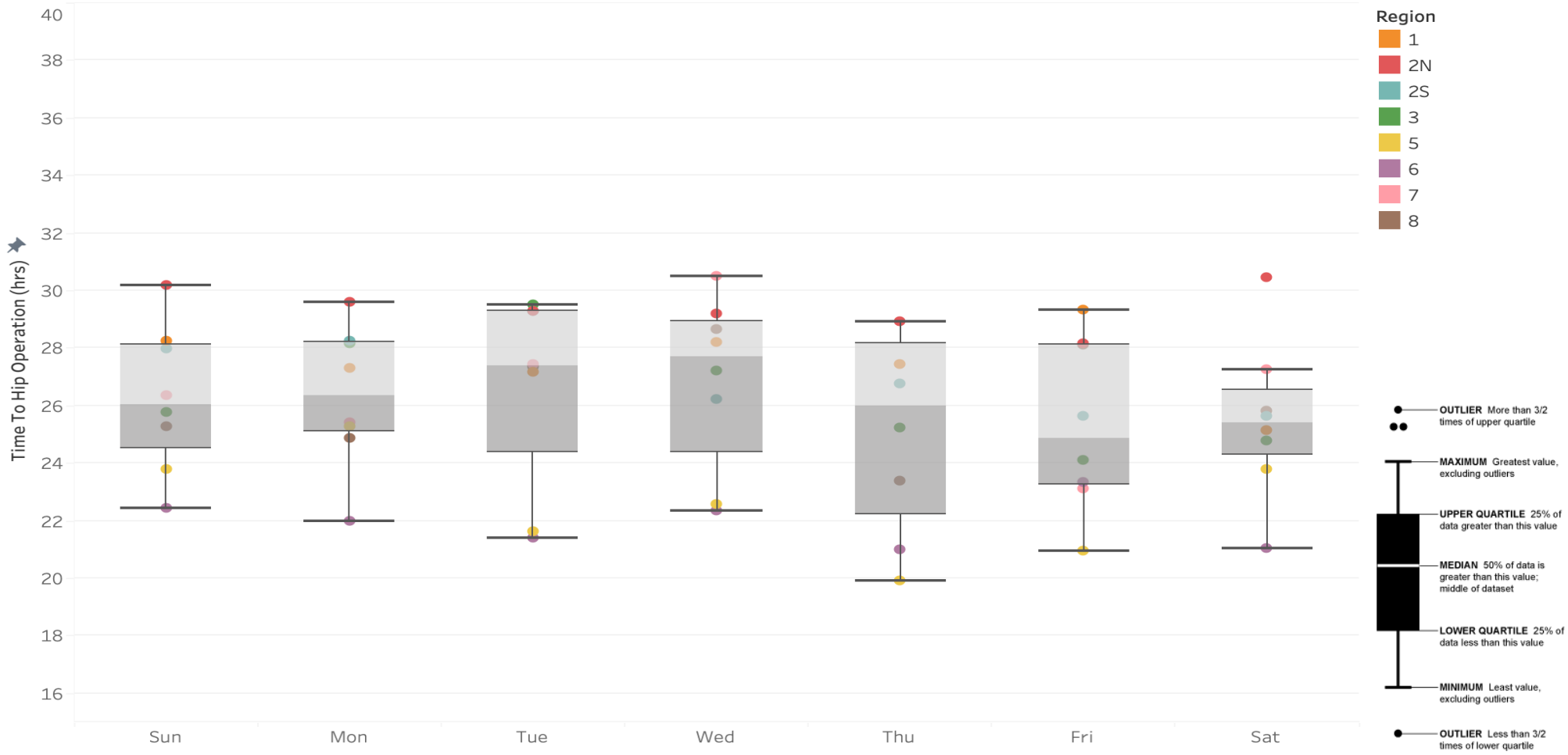
Mean time to OR over time
Isolated Hip Fracture



Mean time to OR by arrival day
Isolated Hip Fracture



Mean time to OR by arrival day
Isolated Hip Fracture
2020 - 2022



Feedback ?

Research in Progress

- **Highlights work members**
- **MTQIP collaborative dataset**
- **Improve care**

Center	PI	Topic	Status
Henry Ford	Johnson	EMS vs. private car effect on outcomes	
Henry Ford	Kabbani	Impact of COVID-19 on outcomes in trauma patients	
Hurley Medical Center	Daswani	Resuscitation efficiency by dedicated trauma nurses in the ED	New
Michigan Medicine	Chung	Hand trauma: A geospatial analysis	Analysis done Manuscript creation
Michigan Medicine	Oliphant	Outcomes in trauma patients	
Michigan Medicine	Scott	Long-term outcomes and trauma policy	
Spectrum Health	Chapman	Outcomes in operative fixation of rib fractures	Analysis done Manuscript creation
Spectrum Health	Miller	Outcomes of simultaneous versus staged IMN nailing fixation of multiple long bone lower extremity fractures	Manuscript submission
St Joseph Mercy	Curtiss	Infection rates in operative trauma patients	
St Joseph Mercy	Hecht	Effect of antiplatelet and anticoagulant agents on outcomes following emergent surgery for trauma	
St Joseph Mercy	Hecht	Effect of antiplatelet and anticoagulant on outcomes following TBI	New
St Joseph Mercy	Hecht	Early chemoprophylaxis in severe TBI patients reduces risk of VTE	
St Joseph Mercy	Hecht	Need for reversal of anticoagulants in small to moderate TBI	New
St. Joseph Mercy	Hoesel	Rib fractures in the elderly	Statistician staffing
St. Joseph Mercy	Sadek	Reversal of anticoagulants and antiplatelets following TBI	
U of M Health - West	Mitchell	Blunt cerebral vascular injury	Statistician staffing

Lunch

Back at 1:00 p

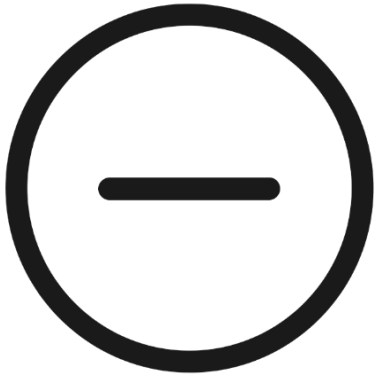
M·TQIP

2023 Data Validation Changes

Shauna Di Pasquo, BSN RN

Data Validation 2023

- Angina Pectoris
- Congenital Anomalies
- Mental/Personality Disorders
- TBI Processes of Care



Retire

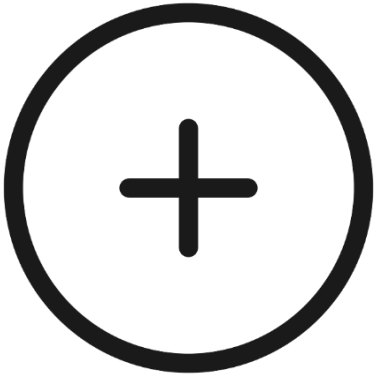
Data Validation 2023

- **Head CT date/time**
  - **Change to include all TBI's**

Change

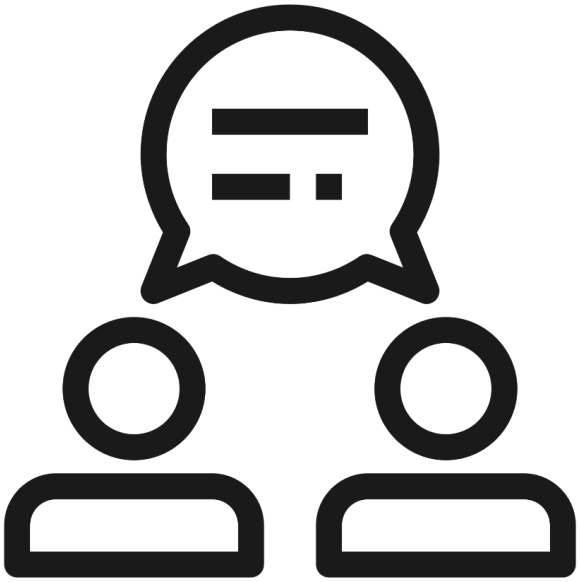
Data Validation 2023

- ADD/ADHD
- Bipolar I/II Disorder
- Major Depressive Disorder
- Other Mental/Personality
- Post-traumatic Stress Disorder
- Schizoaffective Disorder
- Schizophrenia
- Opioid Use Processes of Care



Additions

Discussion Opportunity



Patient Reported Outcomes

John Scott, MD

Why measure Patient Reported Outcomes (PROs)?

- Over 95% of trauma patients survive to hospital discharge nationally
- Groups like MTQIP have led the way in improving inpatient outcomes

- ***"Injury is a moment of crisis with a lifetime of impact"*** – Dr. Eileen Bulger
- National calls for action from the American College of Surgeons' Committee on Trauma, the ACS-TQIP group, the AAST, and others
- But almost nobody is doing this routinely

Meet the MTQIP PRO Team

Janessa Monahan

Iman Meklad

Julia Kelm

Emily Evans

Jill Jakubus

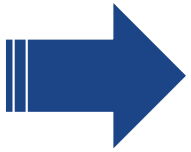
Also: Zachary Goodwin, Amelia Conaster, Cairo De Souza, Esther Oh

Faculty: Mark Hemmila, Bryant Oliphant, John Scott

Single Trauma Center Registry
February 2021 - July 2021

1 Center
Email/Phone

Timeline:
1 month post discharge



Six Participating Hospitals
September 2021 - Present

6 Centers
Email/SMS/Postcard/Phone

Timeline:
1, 3, 6, 12 months post discharge

Inclusion Criteria

- Age ≥ 18
- ISS ≥ 15
- Selected Fractures
- Underwent Operation
- Mechanical ventilation

Clinical Outcomes

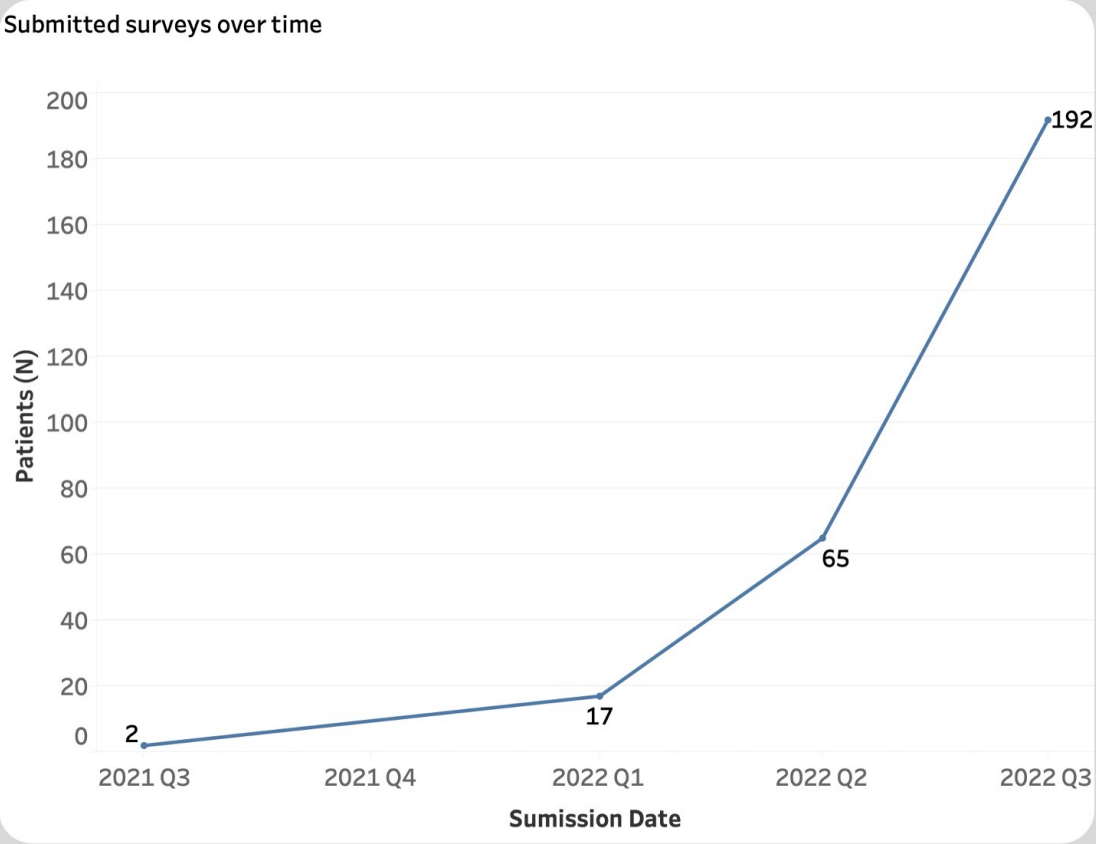
- 5 measures of health related quality of life
- Opioid use
- Caregiver burden

Economic Outcomes

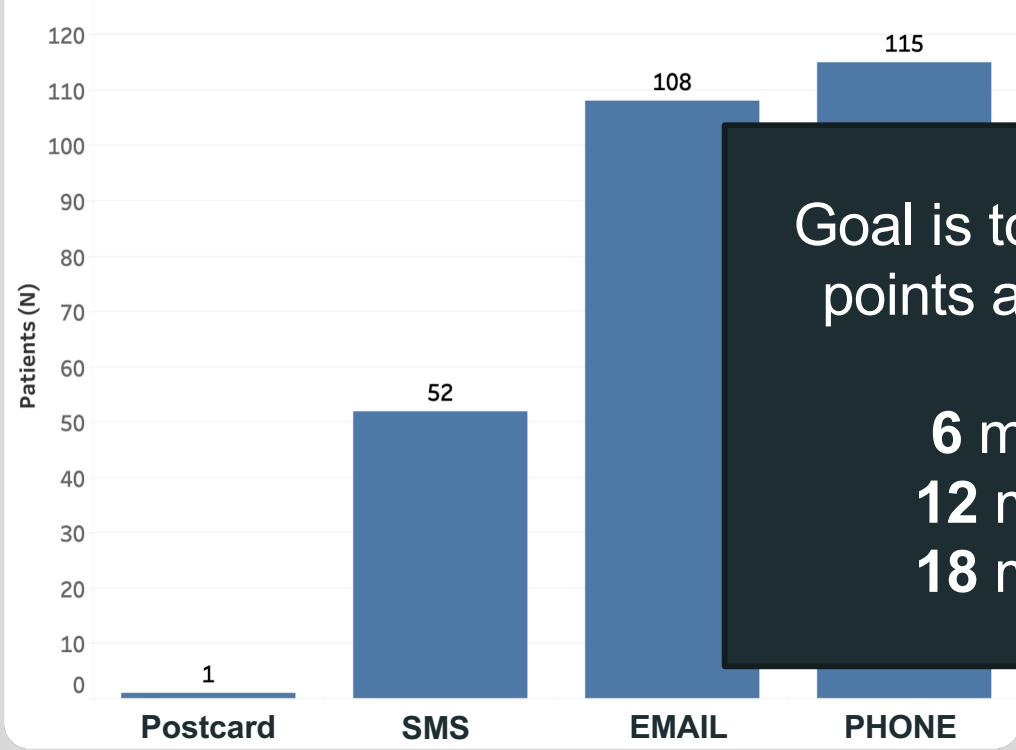
- Income loss
- Return to work
- Out-of-pocket spending
- New medical debt
- Financial toxicity

276
Submitted Surveys

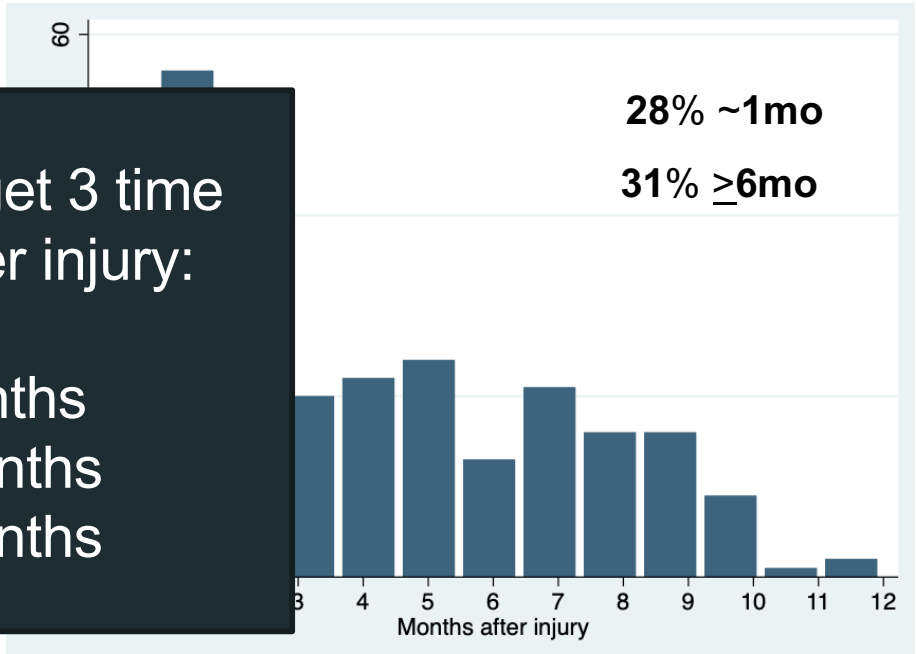
surveys	22	17	13	30	1	193
center	29	32	16	7	25	27



Submitted Surveys by Distribution



Time Elapsed Between Injury and Survey



Goal is to get 3 time points after injury:

6 months
12 months
18 months

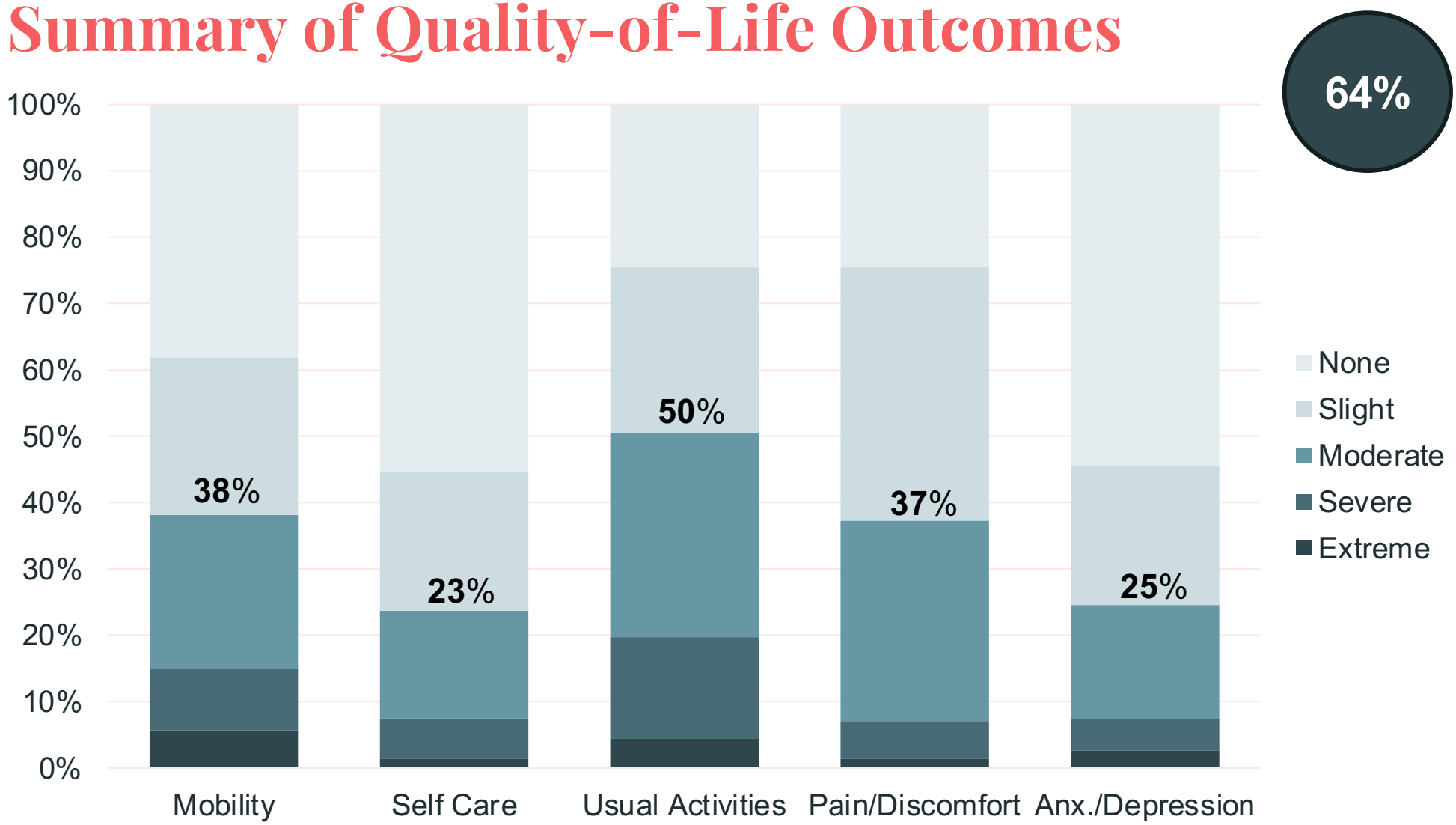
Outreach Experience to Date

	Outreach Attempts	Completed Surveys	Success Rate	Median time to complete
Phone	897	115	12.8%	25 mins
Email	1,875	108	5.8%	10 mins
SMS	1,495	52	3.5%	10 mins

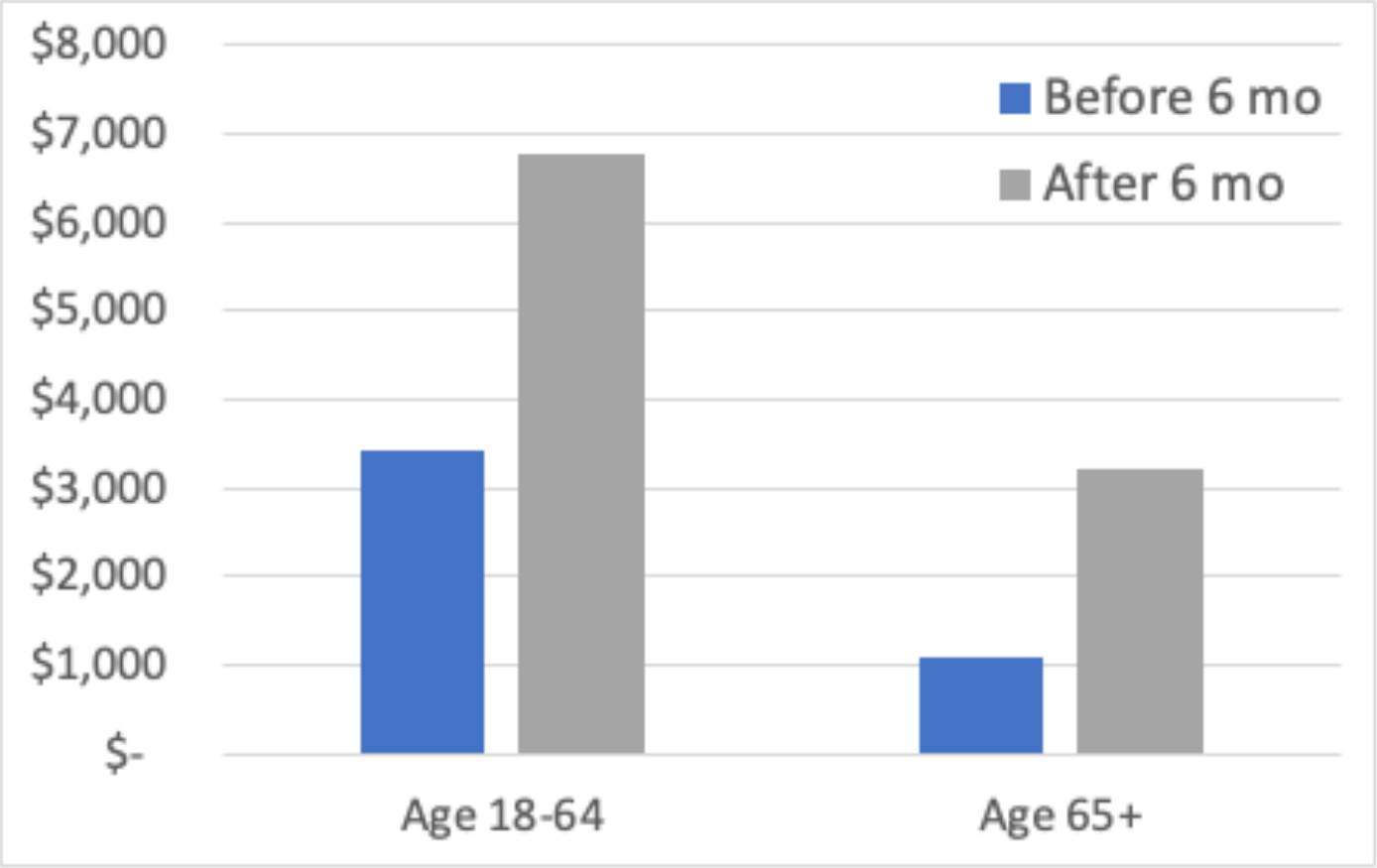
The MTQIP Experience:

Early Survey Results

Summary of Quality-of-Life Outcomes



Out-of-pocket medical spending increases over time



Summary of Financial Outcomes

Measures of Financial Toxicity Among 228 Trauma Survivors (median follow-up of 3.8 months)

Outcome	n / cohort	%
At least one measure of Financial Strain	**146 / 228**	**64%**
Out-of-pocket spending >$1,500	54 / 134	40%
Medical Debt, Difficulty or Inability to Pay Medical Bills*	66 / 134	29%
Moderate of Significant Difficulty with Non-Medical Bills*	65 / 227	29%
Delayed or Forgone Medical Care Due to Cost	45 / 227	20%
Income Decrease or Loss	58 / 213	27%
Job Loss, job change, job limitation, no return to work	71 / 105	68%

Brief Summary of Findings to Date

64%

struggle with **health-related quality of life**

2 of 3

reported **some economic strain**

Dynamic Response

Multiple (3) responses map the **course of recovery**

How can PROs Help YOUR patients?

Ways that Measuring PROs can help your patients

- Evaluate the long-term outcomes of various inpatient treatment strategies
- Identify patient groups at high risk for poor long-term outcomes
- Advocate for additional resources (mental health, social work, financial counseling)
- Map “recovery trajectories” to help guide patients through the recovery process
- And more

Next Steps for PROs with MTQIP?

- Please reach out to Mark, Jill, or a member of the PRO team if you want to get involved with measuring PROs
- Discussion about MTQIP PRO program…
- Thank you for your time and all that you do for the care of the injured in the state of Michigan

MTQIP Program Manager Update

Judy Mikhail, PhD

Program Manager 5 things…

1. Feb Meeting
2. Abstractor Support
3. Low-Value Care
4. Metrics Planning
5. MTQIP Evaluation

#1 Announcement

February MTQIP Meetings

Virtual

#2 BCBSM Data Abstraction Support

*RN fully loaded salary now $107,903
*Percent support now 84% = $90,639

#3 Identifying Low Value Care

Research

JAMA Surg 2022 157(6) 507-514

JAMA Surgery | Original Investigation

Quality Indicators Targeting Low-Value Clinical Practices in Trauma Care

Lynne Moore, PhD; Mélanie Bérubé, RN, PhD; Pier-Alexandre Tardif, MA, MSc; François Lauzier, MD, MSc; Alexis Turgeon, MD, MSc; Peter Cameron, MD; Howard Champion, MD; Natalie Yanchar, MD, MSc; Fiona Lecky, MD, MSc; John Kortbeek, MD; David Evans, MD; Éric Mercier, MD, MSc; Patrick Archambault, MD, MSc; François Lamontagne, MD, MSc; Belinda Gabbe, PhD; Jérôme Paquet, MD; Tarek Razek, MD; Henry Thomas Stelfox, MD, PhD; for the Low-Value Practices in Trauma Care Expert Consensus Group

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Low-value care:

defined as a test or treatment used in practice but is not supported by evidence or exposes patients to unnecessary harm.

Research

JAMA Surg 2022 157(6) 507-514

JAMA Surgery | Original Investigation

Quality Indicators Targeting Low-Value Clinical Practices in Trauma Care

Lynne Moore, PhD; Mélanie Bérubé, RN, PhD; Pier-Alexandre Tardif, MA, MSc; François Lauzier, MD, MSc; Alexis Turgeon, MD, MSc; Peter Cameron, MD; Howard Champion, MD; Natalie Yanchar, MD, MSc; Fiona Lecky, MD, MSc; John Kortbeek, MD; David Evans, MD; Éric Mercier, MD, MSc; Patrick Archambault, MD, MSc; François Lamontagne, MD, MSc; Belinda Gabbe, PhD; Jérôme Paquet, MD; Tarek Razek, MD; Henry Thomas Stelfox, MD, PhD; for the Low-Value Practices in Trauma Care Expert Consensus Group

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RESULTS Of 49 eligible experts approached, 46 (94%; 18 experts [39%] aged ≥50 years; 37 men [80%]) completed at least 1 round and 36 (73%) completed both rounds. Eleven quality indicators were selected overall, 2 more were selected by the international panel and a further 3 by the local stakeholder panel. Selected indicators targeted low-value clinical practices in the following aspects of trauma care: (1) initial diagnostic imaging (head, cervical spine, ankle, and pelvis); (2) repeated diagnostic imaging (posttransfer computed

2 Round Consensus Study
April – June 2021
Experts in the field
Rated 50 practices
7-point Likert scale
Importance, Evidence, Actionability, Measurability

11 Quality Indicators Selected

1. Head CT in adult mild TBI with no indication on validated decision rule.
2. C-spine x-rays in adults with no indication on validated decision rule.
3. Ankle x-rays in adults with no indication on validated decision rule.
4. Pelvic x-rays in stable, alert adults with neg exam
5. RBC in trauma above the transfusion threshold with no ongoing or suspected uncontrolled bleed, no TBI, or Heart Disease
6. Posttransfer repeat CT in adults with no disease progression

Quality Indicators Selected

7. Op exploration pen neck injury with soft signs and neg CTA
8. Antibiotic prophy for external ventricular drain adult TBI
9. Seizure prophylaxis for > 1 wk adult severe TBI
10. NS consult in adult mild complicated TBI not undergoing anticoagulation therapy
11. Spine consult adults isolated L1-L4 transverse process fxs

#4 MTQIP Metrics Planning

When – How – Who-
Feedback

MTQIP Metrics History

Perf Index Metrics	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Participation (Data, Val, Mtgs)															
Site Specific PI Project								Retired							
Timely VTE Prophy										Retired					
MTP BI Ratio															
IVC Filters								Maintenance							
LMWH Use										Retired					
Ser Complication Z score															
Mortality Z score															
Timely Antib Open Fx (COLLAB)															
Timely Head CT TBI Anticoag															
Timely LMWH VTE Proph										Combined					
Timely OR Hip Fx															
Death Determination Doc															

MTQIP *Perpetual* Metrics Planning

- Oct/Feb Meetings: Discuss potential new metrics
- April/May: Survey membership as needed, discuss at May meeting
- May/June: Submit measures to BCBSM
- July: Data collection begins

Membership Metrics Survey Results

Conducted: June 2022

Response rate = 75%

Add new metric: PI Death Determination (5 points)

-Missing 0-2 patients = 5 pts

-Missing 3-4 patients = 3 pts

-Missing > 4 patients = 0 pts

Yes 53/59 = 90%

No 6/59 = 10%

Comments:

5- Easy- already doing for ACS
5- Relevance- how will it help?
6- Timing- to obtain ME report

Reduce points for Head CT in anticoagulated patients to 5

Yes 54/58 (93%)

No 4/58 (7%)

Comments:

5-agree this is reasonable

Change VTE prophylaxis to include credit for the implementation of a weight-based protocol?

Yes 45/57 (79%)

No 12/58 (21%)

Would you like MTQIP to suggest a weight based VTE protocol for use?

Yes 45/57 (79%)

No 12/57 (21%)

Comments:

5-Is there enough evidence?
4-Need lead time to implement
2-An MTQIP protocol would help
2-We already use wt based
2-What about DOACs?
3-What about factor Xa levels?

VTE Consensus Conference – Coalition for National Trauma Research (nattrauma.org)

Should we consider lowering the time to surgical repair of geriatric isolated hip fractures (currently >=92% within 48 hrs)?

Yes 32/53 (60%)

No 21/53 (40%)

Which would you prefer?

<=42 hrs 29/46 (63%)

<=36 hrs 17/46 (37%)

Comments:

2- No, pend for future (staffing problems post covid)

7- Go to 42 hrs to keep up with Lit, ACS, UK

2- Go to 36 hrs

2- Go to 24 hrs

Miscellaneous Metrics Comments

- Can we consider expanding antibiotics to ALL open fxs?

- Consider nurse sensitive measures?
  - Incentive Spirometry with rib fxs
  - Foley days
  - Ambulation
  - Staffing

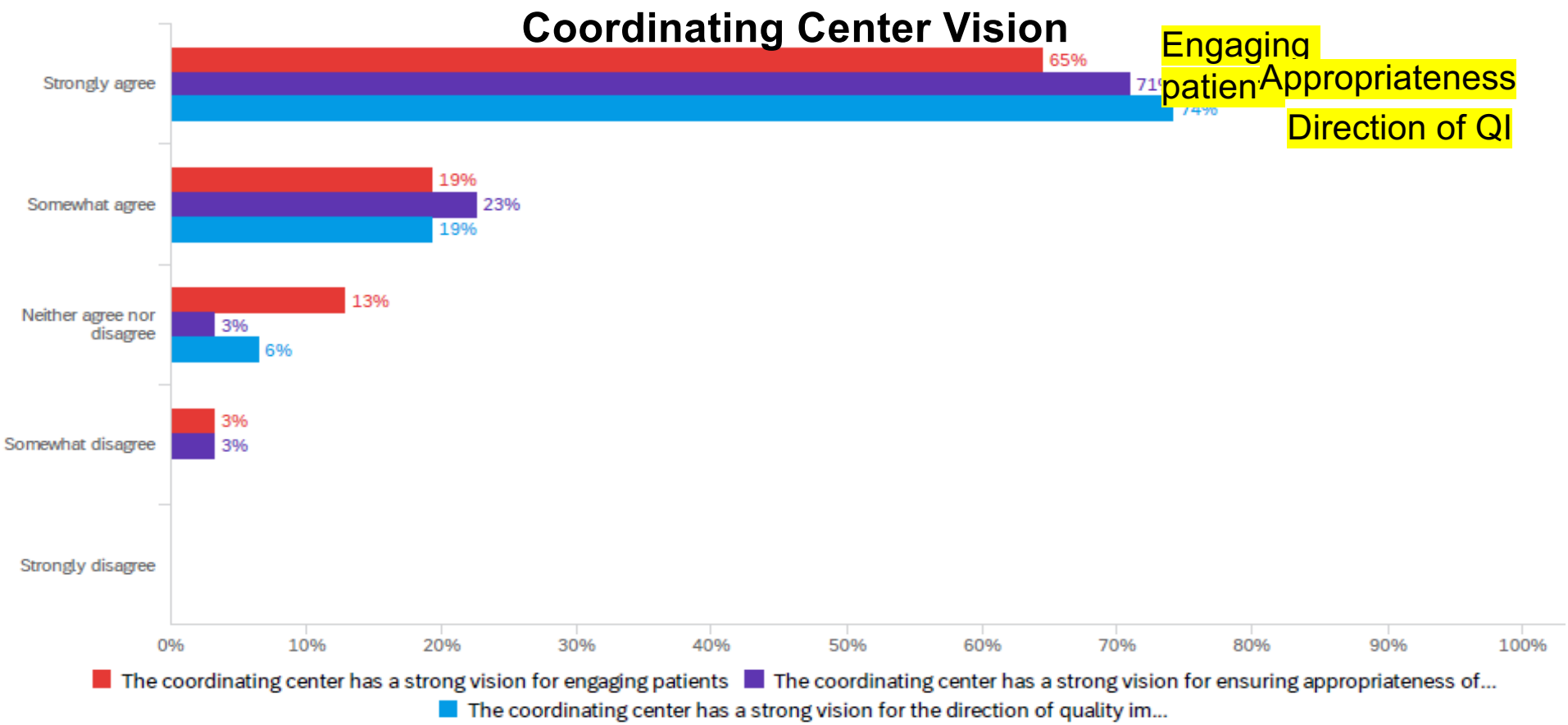
In Summary
Metrics Next Steps for 2024

- Lower time to Hip Fx repair from 48 to 42 hrs
- Lead time to add wt-based VTE prophylaxis?

#5 MTQIP Biennial Evaluation Results

Survey originating from BCBSM
Sent every 2 years to membership to evaluate MTQIP
Sent by Judy to TMDs, TPMs, MCRs, Registrars
Conducted March 7-14, 2022

Surgeons (n=29)

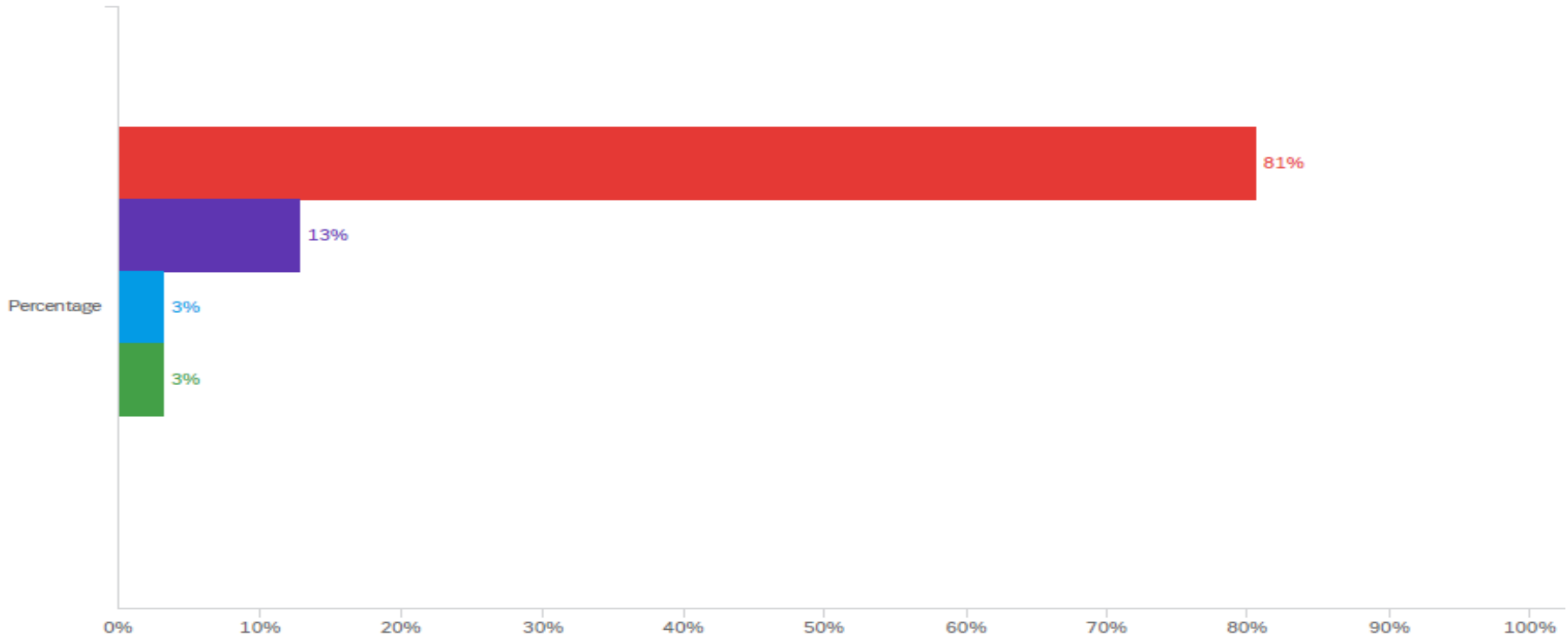


Surgeons

Q7 - 2. I am satisfied with the leadership I receive from the Program Director.

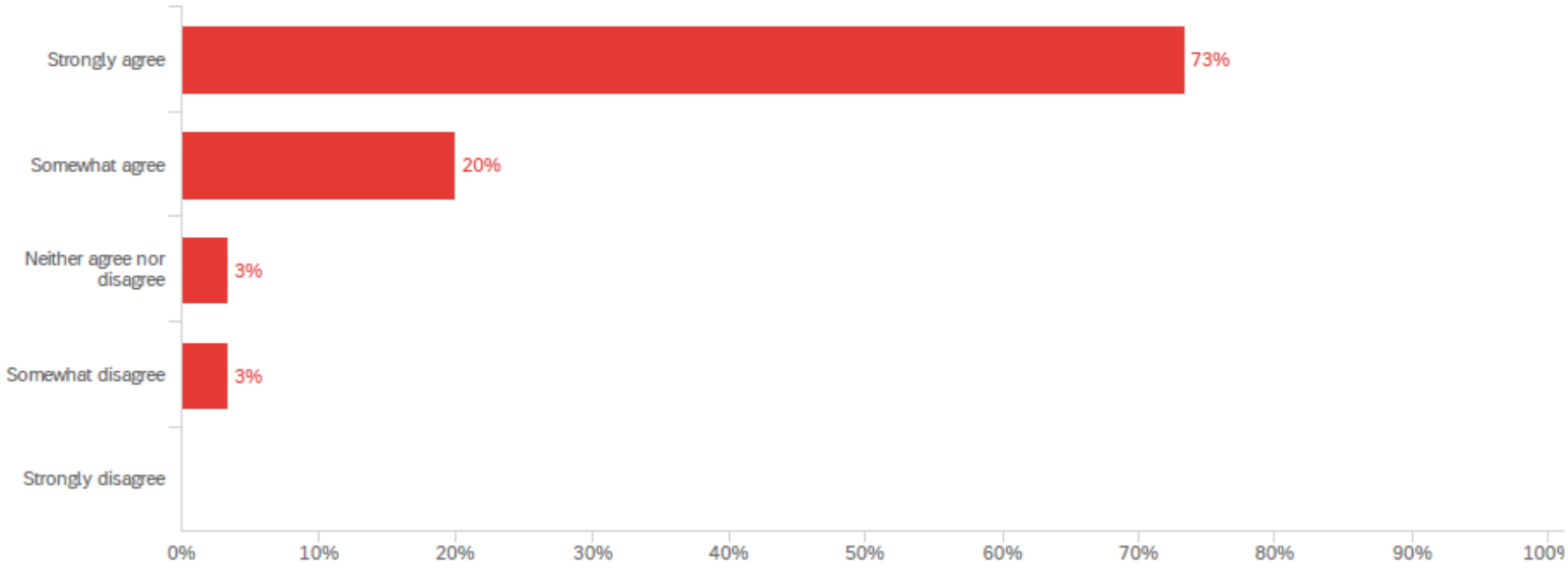
Surgeons

Q9 - 3. I am satisfied with the leadership I receive from the Program Manager.



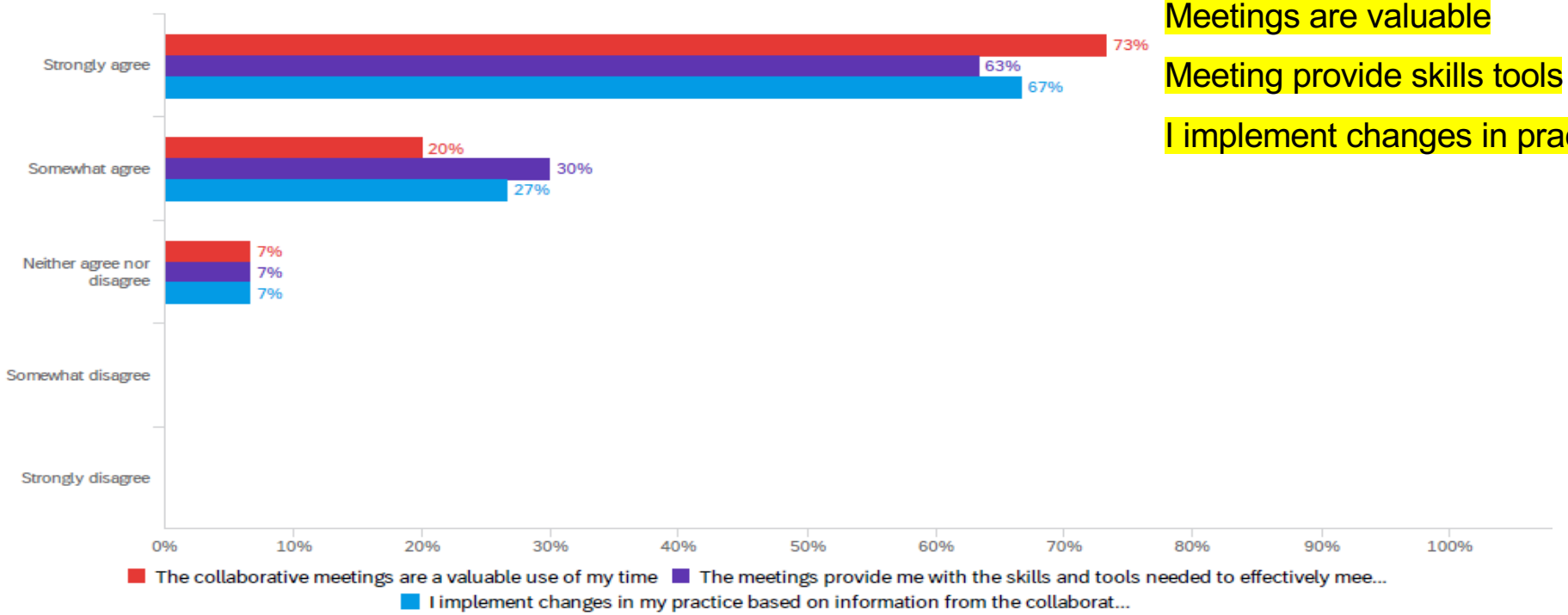
Surgeons

Q13 - 5. The coordinating center works with me to address performance issues.



Surgeons

Q16 - Section 2: CQI Collaborative Meetings 7. Please indicate your level of agreement with the following statements.



Meetings are valuable

Meeting provide skills tools

I implement changes in practice

Themes. Surgeons. What you like about meetings.

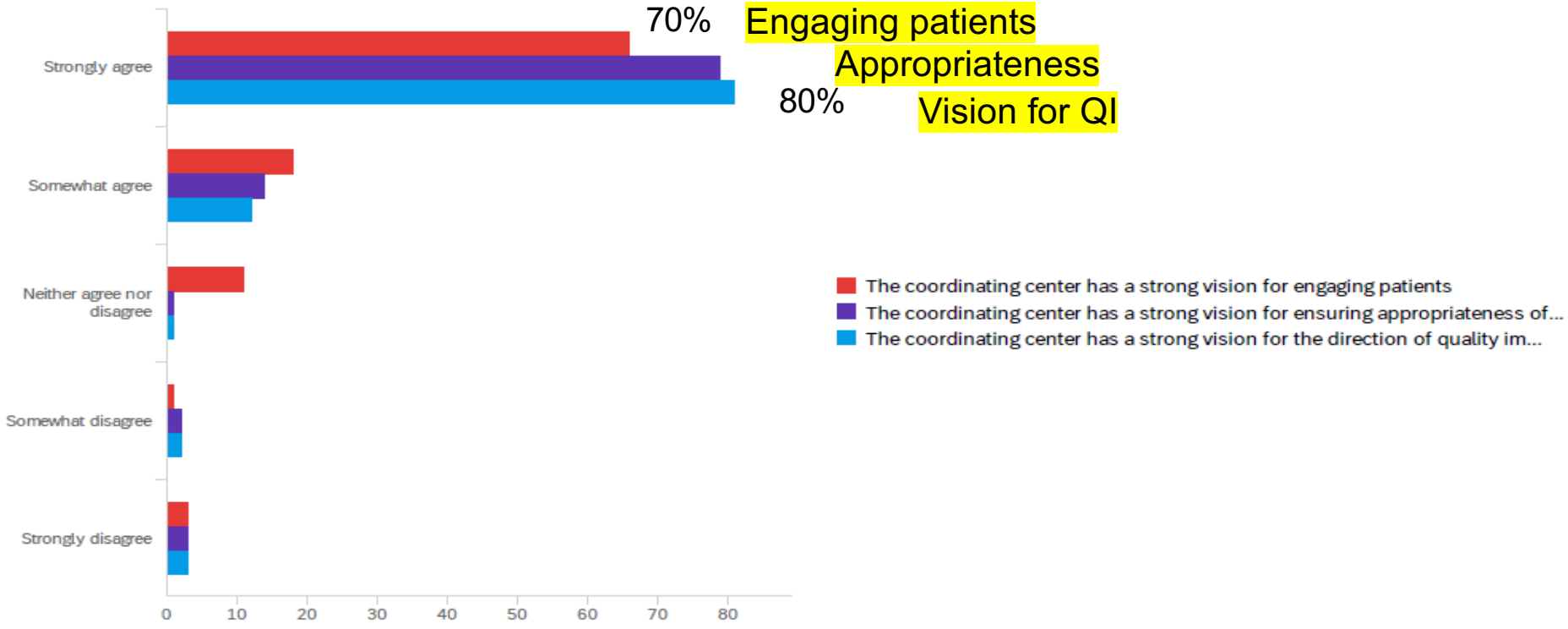
- Open discussion among centers what works - what doesn’t
- Networking with other directors
- Sharing of benchmarking data
- Uninhibited open review of failures
- Other centers presentations
- Clinical topics

Themes. Surgeons. How to improve meetings

- Continue having centers present
- Return to in-person meetings
- More subspecialist engagement

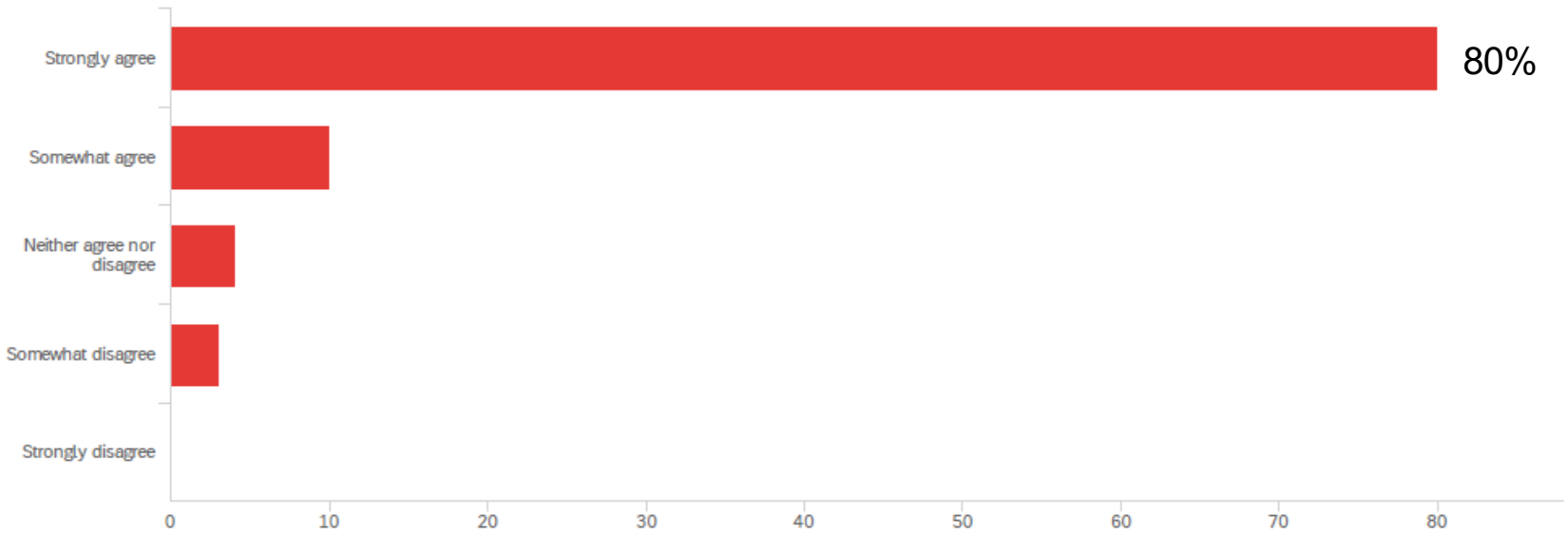
Staff (TPMs, MCRs, Registrars) n=106

Q5 - 1. Please indicate your level of agreement with the following statements.



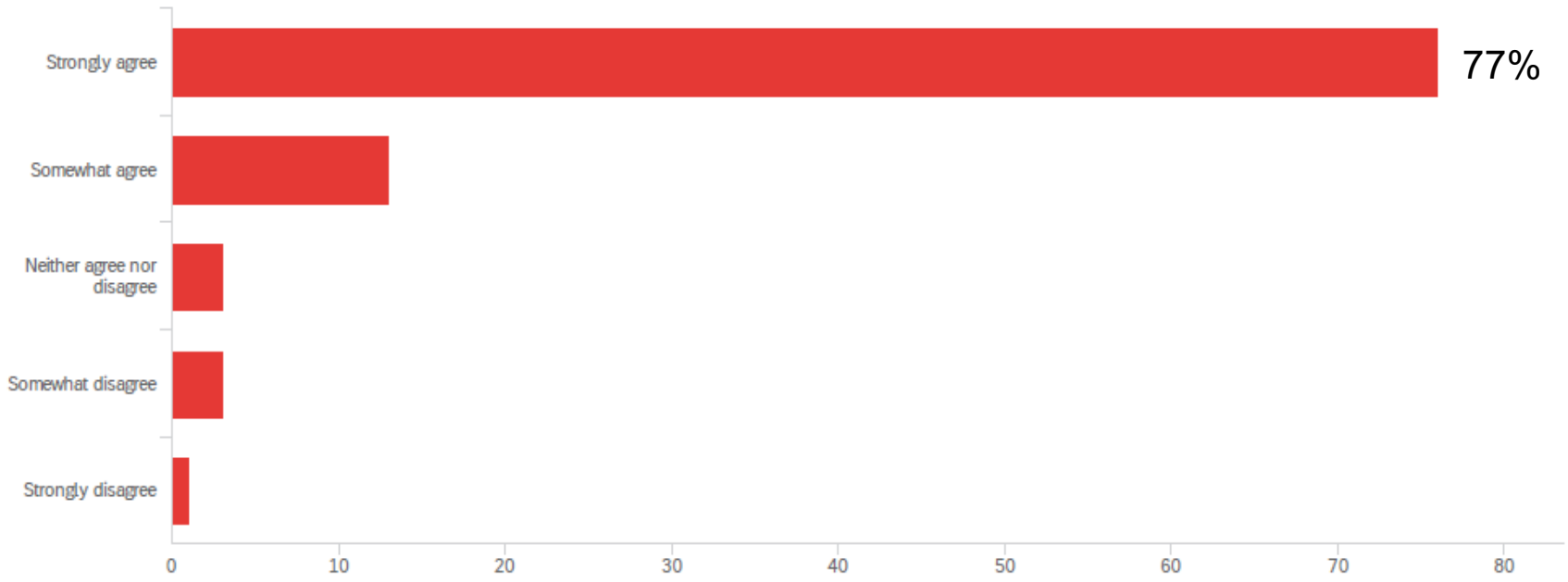
Staff

Q7 - 2. I am satisfied with the leadership I receive from the Program Director.



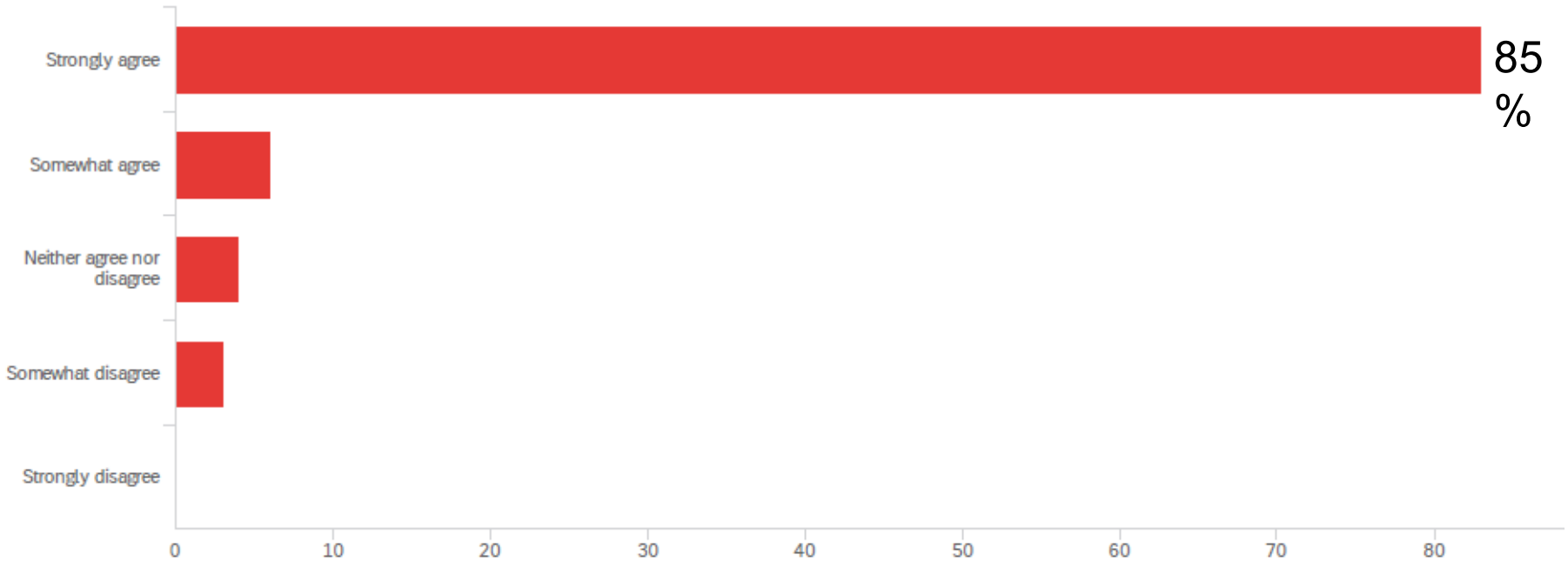
Staff

Q9 - 3. I am satisfied with the leadership I receive from the Program Manager.



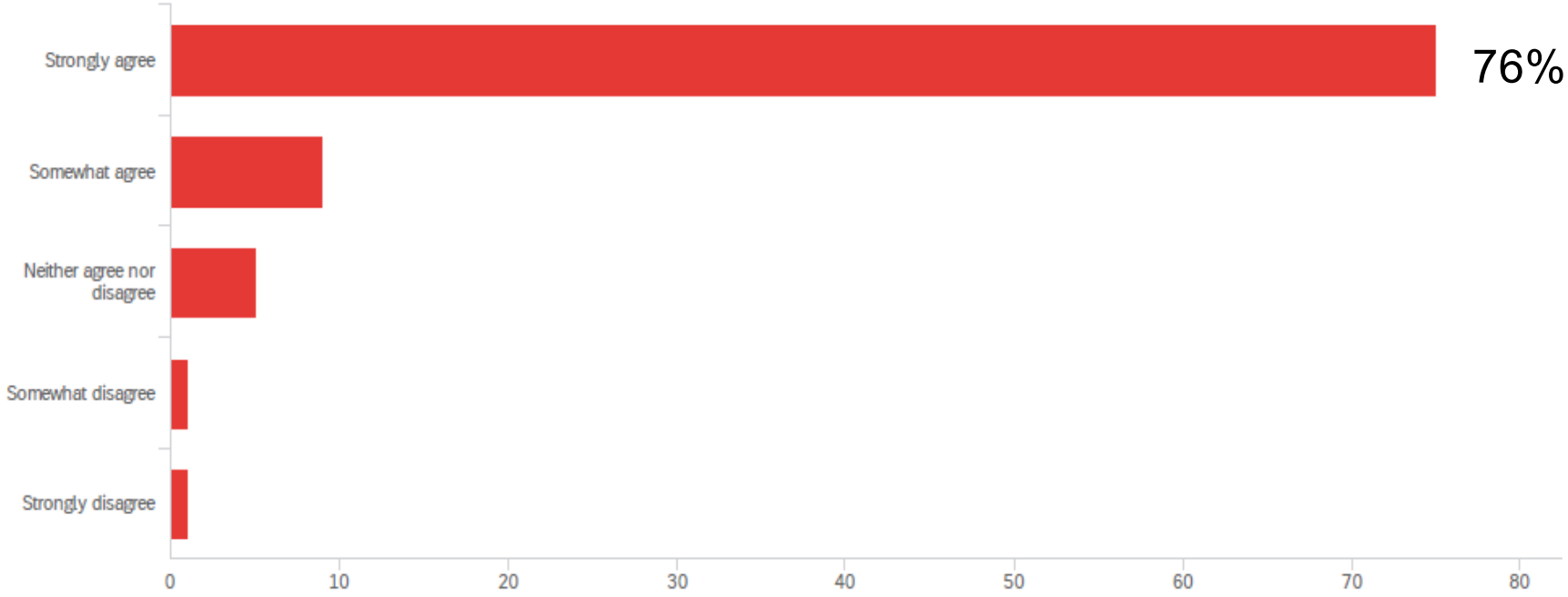
Staff

Q11 - 4. My concerns are addressed in a timely manner.



Staff

Q13 - 5. The coordinating center works with me to address performance issues.



Themes Staff Comments

MTQIP Leadership

- Excellent resources
- Timely responses

MTQIP Meetings

- Review of the data
- Content informative and valuable
- Like the polling questions
- Learn from other centers
- Guest speakers
- Networking and interaction with peers
- This is our favorite meeting to attend

Themes Staff Comments

- **Meeting Format**
  - Virtual allows more members to attend
  - Virtual avoids winter driving
  - Virtual decreases networking
  - Prefer in-person meetings
  - Wish that Registrars could attend every meeting

Themes Staff Comments

- **Data**
  - Some definitions remain unclear, but MTQIP staff responds promptly to all questions.
  - Prefer more alignment between MTQIP and TQIP definitions
  - Wish the data lag was less
  - Data submission is time-consuming but not MTQIPs fault

Themes Staff Comments

- **Data Validation**
  - Shauna, and Sara have always been great
  - Essential part of the collaborative
  - Helps us improve our data

Themes Staff Comments

- **Meeting Ideas**
  - Continue to expand to include subspecialties
  - Looking forward to Ortho group efforts
  - Allow us to submit questions ahead of the meetings to be discussed
  - Consider reviewing segments of the new Optimal resource guidelines.

Thank you for your feedback!

Reminder 4 questions on today's meeting evaluation

Question #1	Question #2	Question #3	Question #4
I find value in MTQIP CQI	Our hospital can only participate in MTQIP CQI with financial support from BCBSM	The MTQIP coordinating center is a valued partner	BCBSM/BCN has been a reliable partner in the MTQIP CQI quality effort

Orthopaedic Update

Bryant Oliphant, MD

MTQIP Ortho Group - Update

October 11, 2022

Bryant W. Oliphant, MD, MBA, MSc
Staff Physician Detroit Receiving Hospital
Assistant Professor – Wayne State University, Department of Orthopaedic Surgery
Research Investigator – University of Michigan, Department of Orthopaedic Surgery
@BonezNQuality

M·TQIP

Update

- Formalizing List of Service Chief + Surgeons → TPM involvement?
- Creating Ortho Advisory Working Group
- Engaging & Informing Ortho Surgeons about MTQIP
- Want to hear from TPMs/TMDs: ortho wants/issues

Working Group Items

- Consensus VTE Prophylaxis – Weight Based
- Hip Fracture Barriers/Facilitators
- OR/Staffing availability – Post-COVID
- Work in conjunction with other MTQIP Items
- ArborMetrix Access/Awareness

Future Possibilities

- PROMs
- Long term outcomes – post D/C → Feedback/Loop closure
- Orthopaedic classification/granularity

Questions

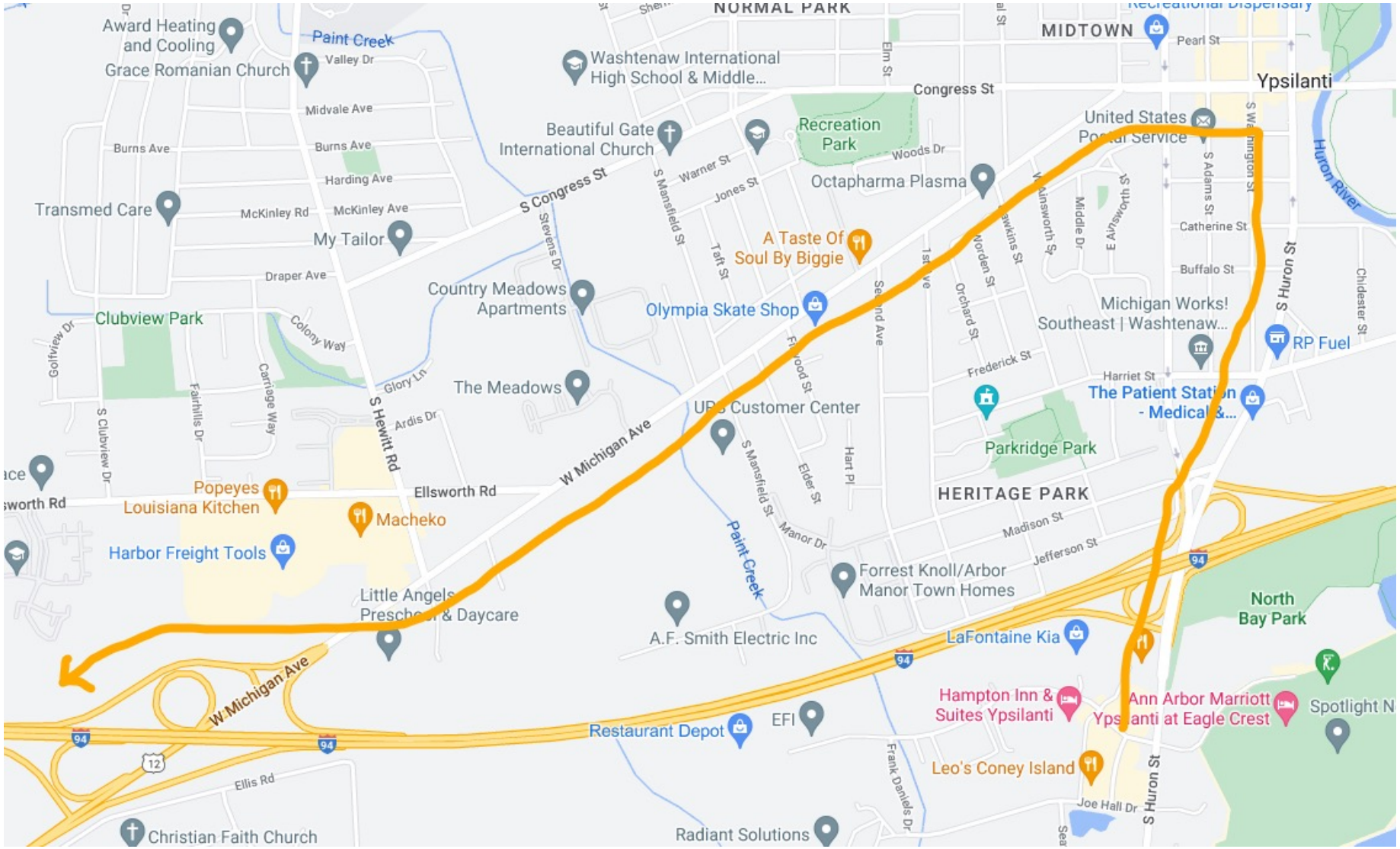
- Contact info:
- Bryant W. Oliphant, MD, MBA, MSc
- bryantol@med.umich.edu
- Cell:
- @BonezNQuality

M·TQIP

RPNI

Paul Cederna, MD

Slides not available


NORMAL PARK
MIDTOWN
Ypsilanti
Award Heating and Cooling
Grace Romanian Church
Paint Creek
Valley Dr
Washtenaw International High School & Middle...
Beautiful Gate International Church
Recreation Park
Congress St
United States Postal Service
Pearl St
Huron River
Midvale Ave
Burns Ave
Harding Ave
Transmed Care
McKinley Rd
McKinley Ave
My Tailor
S Congress St
Stevens Dr
S Mansfield St
Warner St
Jones St
Woods Dr
Octapharma Plasma
A Taste Of Soul By Biggie
Taft St
Draper Ave
Country Meadows Apartments
Olympia Skate Shop
Clubview Park
Colony Way
Golfview Dr
Fairhills Dr
Carriage Way
Glory Ln
The Meadows
S Hewitt Rd
Ardis Dr
UPS Customer Center
W Michigan Ave
Ellsworth Rd
Popeyes Louisiana Kitchen
Macheko
Harbor Freight Tools
S Clubview Dr
Elder St
Hart Pl
Manor Dr
Paint Creek
Forrest Knoll/Arbor Manor Town Homes
Madison St
Jefferson St
HERITAGE PARK
Parkridge Park
Frederick St
Harriet St
Michigan Works! Southeast | Washtenaw...
The Patient Station - Medical &...
RP Fuel
Catherine St
Buffalo St
S Huron St
Chidester St
S Adams St
Middle Dr
Orchard St
Norden St
Hawkins St
Ainsworth St
Second Ave
1st Ave
Little Angels Preschool & Daycare
A.F. Smith Electric Inc
LaFontaine Kia
North Bay Park
Hampton Inn & Suites Ypsilanti
Ann Arbor Marriott Ypsilanti at Eagle Crest
Spotlight N
Restaurant Depot
EFI
Leo's Coney Island
Frank Daniels Dr
Joe Hall Dr
Ellis Rd
Christian Faith Church
Radiant Solutions
94
12

Conclusion

- Thank you for attending
- Evaluations
  - Fill out and turn in
- Questions?
- See you in February