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Using TQIP Data to Determine the Effect of Adding Emergency General Surgery Services to Trauma Outcomes

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Background

- LVH-Muhlenberg Trauma opened July 2020
- LVH-Muhlenberg Trauma overtook emergency general surgery (EGS) May 2023
- Patient volume increased from 121.63 a month to 133 following addition of EGS^{1,2,3}
- Increase in surgical volume decreases mortality and increases quality of care⁴

Objectives

- Determine if the addition of the EGS service to the trauma team impacted the mortality outcomes of trauma patients

Methods

- Using TQIP data, perform a retrospective review using risk-adjusted mortalities

Results

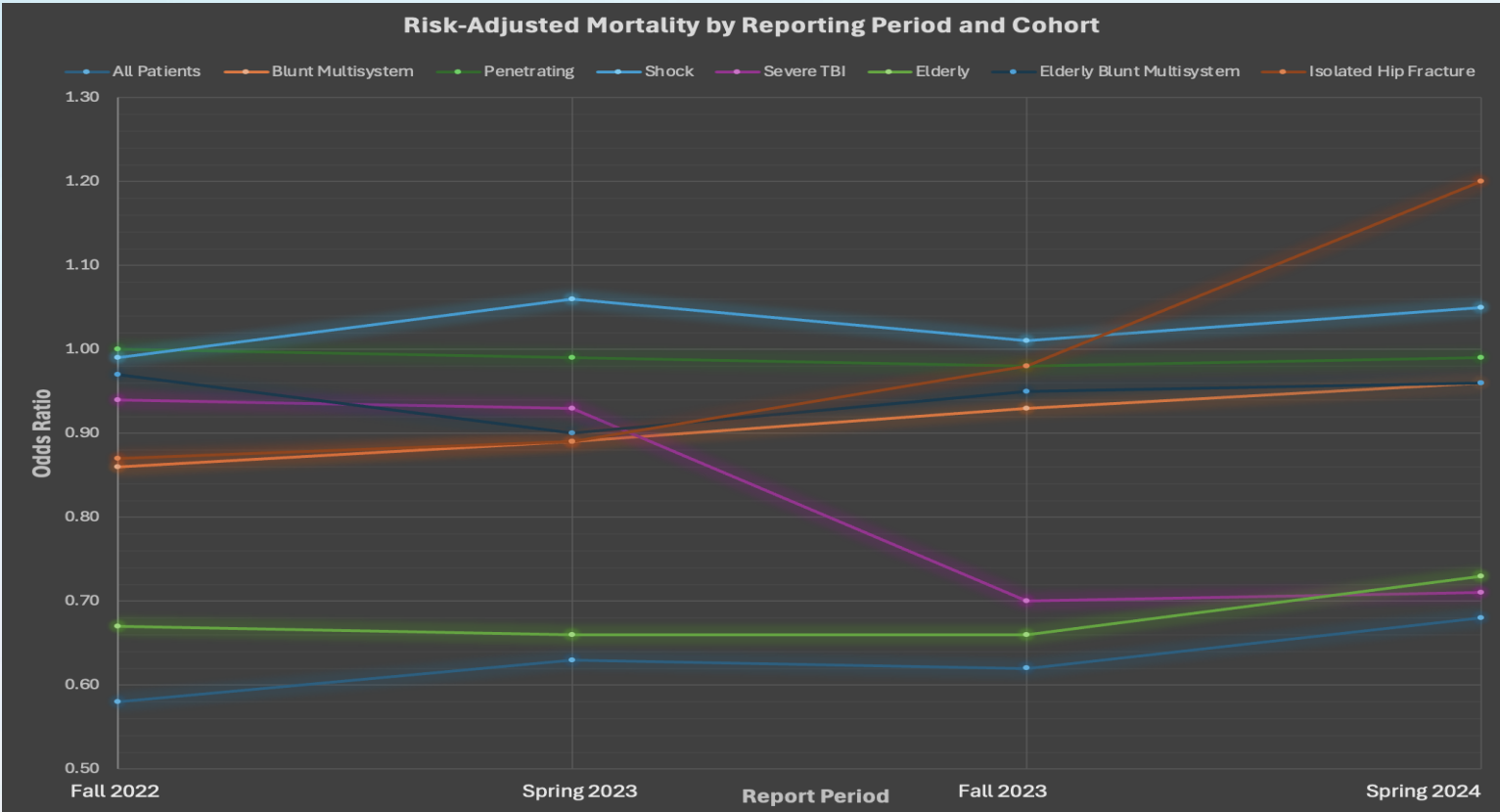


Figure 1. Risk-adjusted mortality of trauma patients by reporting period and cohort

| Cohort | Fall 2022 | Spring 2023 | Fall 2023 | Spring 2024 |
|---------------------------|-----------|-------------|-----------|-------------|
| All Patients | 0.58 | 0.63 | 0.62 | 0.68 |
| Blunt Multisystem | 0.86 | 0.89 | 0.93 | 0.96 |
| Penetrating | 1.00 | 0.99 | 0.98 | 0.99 |
| Shock | 0.99 | 1.06 | 1.01 | 1.05 |
| Severe TBI | 0.94 | 0.93 | 0.70 | 0.71 |
| Elderly | 0.67 | 0.66 | 0.66 | 0.73 |
| Elderly Blunt Multisystem | 0.97 | 0.90 | 0.95 | 0.96 |
| Isolated Hip Fracture | 0.87 | 0.89 | 0.98 | 1.20 |

Table 1. Risk-adjusted mortality of trauma patients by reporting period and cohort

Conclusions

- Fall 2023 risk-adjusted mortality for all patients increased from 0.62 to 0.68 (a 9% increase)
- Both were still in 1st decile
- Only slight increases in all cohorts, most notably isolated hip fractures from 0.98 to 1.20

Future Steps

- Continue to monitor trauma mortality outcomes with the increased patient volumes
- Continue to analyze EGS outcomes to determine the quality of the care

References

1. ACS Trauma Quality Improvement Program Benchmark Report Lehigh Valley Health Network Muhlenberg Fall 2022
2. ACS Trauma Quality Improvement Program Benchmark Report Lehigh Valley Health Network Muhlenberg Fall 2023
3. ACS Trauma Quality Improvement Program Benchmark Report Lehigh Valley Health Network Muhlenberg Spring 2024
4. Birkmeyer JD, Siewers AE, Finlayson EV, et al.. Hospital Volume and Surgical Mortality in the United States. *The New England Journal of Medicine*. 2002; 346 (15): 1128-1137. doi: 10.1056/NEJMsa012337.