Oh Snap! Open Fractures and the Time to IV Antibiotics

Missy Sorensen, Trauma Nurse Coordinator; Lana Martin, Trauma Program Manager; John Bealer, Trauma Medical Director; David Listman, ED Medical Director; David Nash, Pharmacist | Children's Hospital Colorado, Colorado Springs

Children's Hospital Colorado
Colorado Springs

BACKGROUND

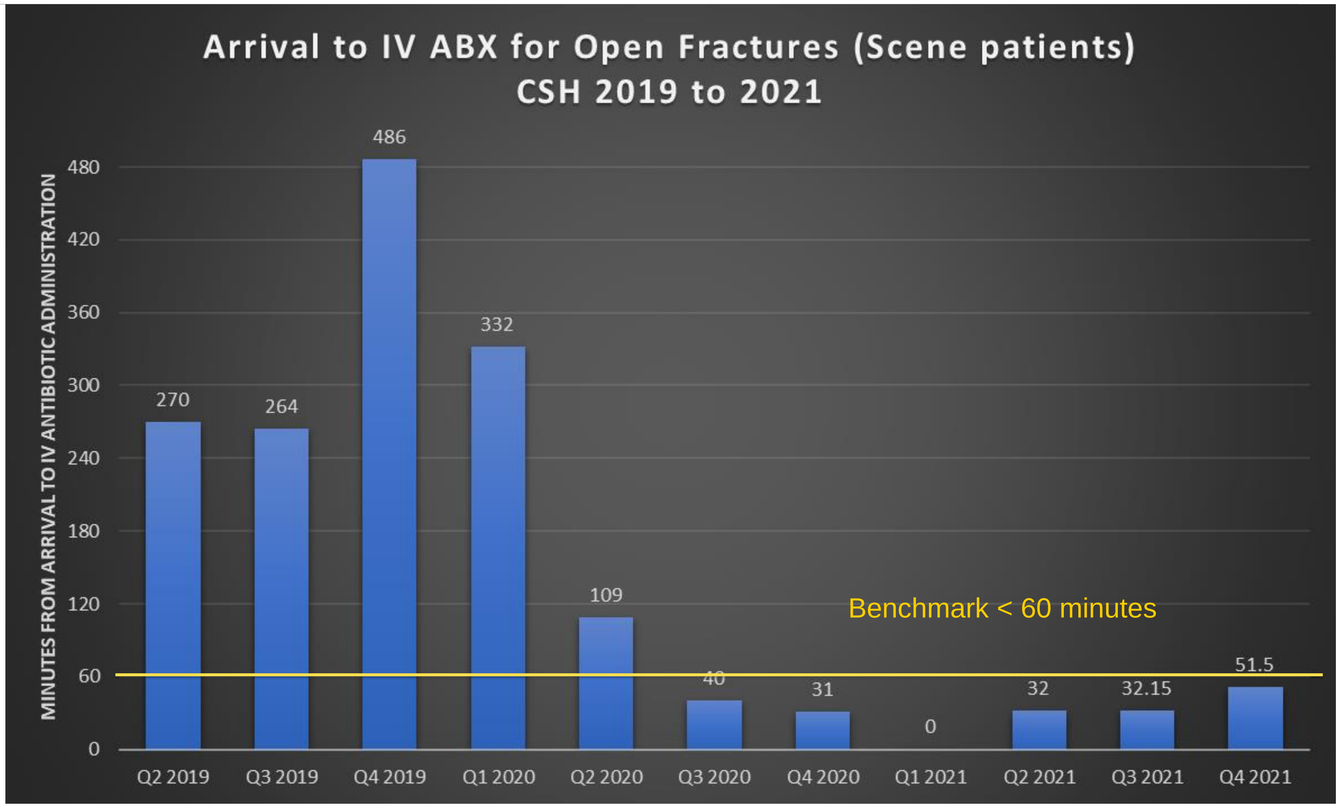
Open fractures are proven to be more susceptible to infection. The standard of care within the trauma industry, highlighted in the ACS TQIP Best Practices in the Management Of Orthopaedic Trauma, is that patients with open fractures **should receive intravenous antimicrobials within one hour of presentation** to the trauma facility to reduce risk of infection.

Project AIM: To identify the current status of care at CHCO, to evaluate our current practice and systems, and to make changes to assure consistent compliance in meeting the benchmark of the administration of intravenous antibiotic administration in < 60 minutes from arrival for all patients who present with an open fracture from the scene.

METHODS

- Data was collected from May 2019 and continues through today
- **Inclusion criteria:** All patients who presented with an open fracture, below the clavicles, that presented from the "scene"
- Standard definitions were utilized which includes a hierarchy of data sources to provide solid uniformity throughout the data collection process
- Each case evaluated for:
  - Arrival to facility time
  - MD order time for IV Antibiotics
  - Pharmacy Review time
  - Administration time
- Pharmacist collaborated to ensure a 6-minute turn around time from MD order time to med administration
- Email follow-up was provided to the ED Medical Director on each case

RESULTS



REFERENCES

American College of Surgeons. Resources for Optimal Care of the Injured Patient 2014. Available online at *https://www.facs.org/quality-programs/trauma/tqp/center-programs/vrc/resource*

American College of Surgeons (2015). Trauma quality improvement program: Best practices in the management of orthopaedic trauma. Retrieved from *https://www.facs.org/-/media/files/quality-programs/trauma/tqip/ortho_guidelines.ashx*

Children's Hospital Colorado Springs Trauma Registry

CONCLUSIONS

We identified a lack of evidence-based literature to support IV Antibiotic administration in < 60 minutes for open fractures of skulls and faces. This was confirmed with our liaison team and inclusion criteria were adjusted to better reflect the patient population who are most likely to benefit from the change initiative.

Our team was able to decrease the average time from arrival to IV Antibiotic administration from a maximum of 486 minutes to **a sustained average < 60 minutes over the past 6 quarters.**

IMPLICATIONS

- This project provided an evidence-based framework to utilize as a template for change that can be applied to other projects
- Evaluated the system rather than the individuals, encouraging a sustainable change
- A multidisciplinary collaborative approach to the problem produced a sustainable long-term solution
- Treatment of open fractures is in direct alignment with the goals of literature and national best practices
- Empowerment of nursing staff and pharmacy to address IV antimicrobial therapy with the provider team proactively when an open fracture is identified
- Readmission rates due to infections are nearly nonexistent