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Development of a Pediatric Perioperative Antibiotic Prophylaxis Administration Dashboard: Characteristics Needed to Achieve Impact

Conclusions:

- Effective implementation of standardized clinical practice guidelines requires continuous monitoring of compliance and outcomes.
- A robust, real-time analytics dashboard with visual representations of process metric performance positively impacts this process.

Significance:

- Appropriate perioperative antibiotic administration can help prevent surgical site infection.
- Components of effective antibiotic administration include appropriate timing, spectrum, re-dosing, and duration of antibiotic administration.
- We sought to create a dashboard to assist our pediatric perioperative team with real-time access to all four metrics, with drill down capabilities to evaluate both aggregate and patient and provider-level detail.
- This tool assists in continuous identification of opportunities for improvement and focused correction.



Data Source/Population and Results:

- A multidisciplinary, collaborative team including pediatric surgeon, pediatric infectious disease physician, clinical pharmacist, and business intelligence developer developed a dashboard to display compliance metrics adopted from the children's hospital's antibiotic prophylaxis guideline for clean and clean-contaminated cases for all surgical specialties.
- Cases categorized as contaminated, dirty, or had preceding infection were excluded.
- Data were mapped from the electronic health record (EHR).
- Analytics and visualization were housed in a Tableau (Salesforce, Inc.) dashboard.
- Specialty-specific summary scorecards were disseminated to specialty surgical quality officers twice a year but could also be viewed in real time.

Lessons Learned

- Feedback from dashboard use has been uniformly positive.
- Dashboard functionality enables clear visualization of performance in all four categories of perioperative antibiotic adminis tration and allows tracking of variances and trends over time.
- Drill down capabilities allow specialty leadership to monitor unique needs and individual surgeon compliance.
- Specialty surgical quality officers currently utilize dashboard for monitoring compliance and identifying opportunities for improvement in data, process, and outcomes.



