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# Quality Quarterly

## Pediatric Surgery Quality Collaborative Newsletter

As many parts of the country are dealing with the Delta surge, I hope you all remain healthy and vaccinated! We continue to grow as a collaborative community. As of this writing, we are 72 members strong! Given our growth and desire to maintain sustainability, we are convening members of our executive committee, implementation committee, and at-large members in September to develop a strategic plan for the PSQC. Our intent is to develop a roadmap for how we'll select projects in the future, governance of the collaborative and a refined approach to our partnership with ACS NSQIP. We anticipate we'll have our final product completed by mid-December and will share with all of our members.

In this issue, we are featuring some of the abstracts submitted by our members and exhibited at the just concluded ACS Quality and Safety Conference. Each abstract has a link to the poster. Please have a look at the great work we all do!

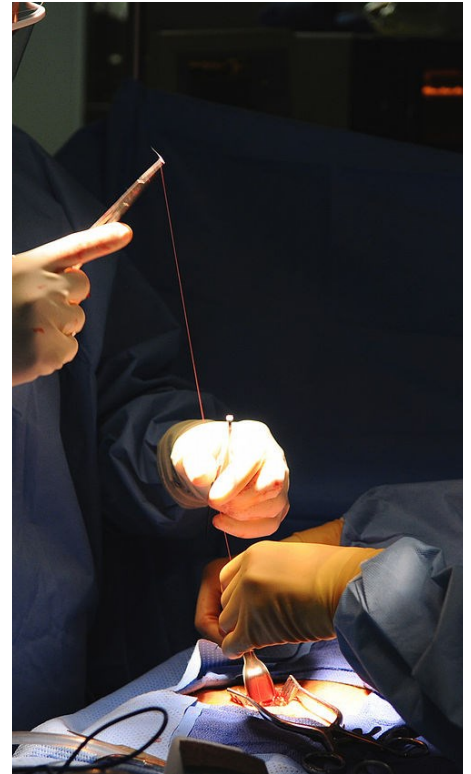
On August 19, we will host our next webinar on the CT scan reduction project featuring collaborative hospitals who have had success in implementing change with an emphasis on the use of ultrasound as the primary diagnostic imaging approach in patients who present with suspected appendicitis. Our next webinar in October, will feature members who have adopted MRI as a primary imaging approach.

We do plan to launch our next project by January 2022. More to come on what it will be and how you can be involved.

Thank you for your continued support of the PSQC!

 , FACS  
PSQC EXECUTIVE DIRECTOR

Surgeon-in-Chief, Children's Memorial Hermann Hospital  
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## PSQC Implementation Committee

By now, those PSQC hospitals which joined the collaborative in time for the data cut-off, have received an updated CT utilization graph based on the July 2021 Targeted Appy SAR. For our members who have been included in multiple SARs, you should have received a graph plotting your CT utilization versus negative appendicitis rate over each SAR for which the PSQC has received a report. We hope that having this information will provide more clarity on where your hospital sits in relation to other PSQC member hospitals. Ultimately, we hope that this will assist you in any quality improvement efforts you elect to initiate to improve on this important metric.

The PSQC has hosted three virtual peer coaching sessions for our members who have expressed a desire to improve on this metric. Nine member hospitals have participated, and we will follow up with each of them in the coming months to determine how helpful the peer coaching was in launching any changes. The sessions have been very informal, with an opportunity for open and frank discussion about challenges-structural and cultural- hospitals face when wanting to make changes and how our peer coaches approached those challenges at their institutions. We will resume our coaching sessions this fall. For those of you who may be interested in reviewing the sessions, they were recorded and are available for review with permission. To gain access, please email Terry at [terry.fisher@uth.tmc.edu](mailto:terry.fisher@uth.tmc.edu).

If any of you have ideas on future projects, or on approaches to supporting change management in a virtual setting, please do not hesitate to reach out to us. This is a collaborative-it is essential our members feel included and empowered to participate in decision making and implementation. You can email Terry at [terry.fisher@uth.tmc.edu](mailto:terry.fisher@uth.tmc.edu) anytime with comments.

A handwritten signature in black ink, appearing to read 'Mehul Raval'. The signature is stylized and fluid, with a long horizontal stroke at the end.

**Mehul Raval, MD, MS, FACS, FAAP**

Chair PSQC Implementation Committee

Associate Professor of Surgery and Pediatrics

Lurie Children's Hospital

# ACS Quality and Safety Conference

Many of our member hospitals had posters at the recently concluded conference. Just a few are below. You can visit the poster wall [here](#). Please take some time to review the great work they are doing!

### 2021 ACS QUALITY and SAFETY CONFERENCE VIRTUAL

#### Utilization of NSQIP-Pediatric Data to Validate Antibiotic Stewardship

**CONCLUSION:** A newly implemented standardized antibiotic protocol can be validated as aligning with best practice and resulting in decreased post-operative surgical site infection rates using ACS NSQIP-Pediatric Reports.

**SIGNIFICANCE STATEMENT:** ACS NSQIP-Pediatric Antibiotic Stewardship Pilot Reports can be utilized to not only validate that the implementation of a Standardized Antibiotic Protocol aligns with best practice, but also provides comparison of performance validation metrics with all participating hospitals. The ACS NSQIP-Pediatric Semi Annual Reports (SAR) can also be utilized to monitor and track surgical site infection (SSI) rates pre and post implementation.

**Data Source/Population and Results:**

- 2015 SAR identified high outliers in both General Surgery and Otolaryngology post op surgical site infection rates
- 2015-2016 variations in Pediatric Surgical prophylactic antibiotic utilization were identified
- 2016-2017 formation of a quality project with focus on reviewing best practices for surgical antibiotic prophylaxis
- Collaboration with pharmacy, infection control, surgeons and executive committees refined the protocol to focus on local infectious patterns and available formulary
- 2017 Standardized Antibiotic Protocol finalized and implemented
- 2018 began participation in the ACS NSQIP-Pediatric Antibiotic Stewardship Pilot
- Antibiotic Stewardship Pilot Reports and SAR's post implementation confirmed alignment with the standards set forth in best practice (low outlier for non-compliance) and resulted in an overall decrease in post-op SSI rates (decreasing Odds Ratios over time)

**Lessons Learned**

- Best Practices reviews and collaboration with multidisciplinary team members were essential in streamlining an entity specific guide for Antibiotic Standardization
- Utilization of NSQIP-Pediatric SAR's identified a high outlier in post op SSI rates pre protocol implementation, and validated a post standardization decrease in those rates to an "As Expected" level
- Utilization of NSQIP-Pediatric Antibiotic Stewardship Pilot Reports validated performance metrics for non-compliance as being a "low outlier" when compared to other participating hospitals

Laurie Ethenidge SCR NSQIP-Pediatric – James & Connie Maynard Children's Hospital at Vidant Medical Center, Greenville NC  
 Elaine Henry QNS III – James & Connie Maynard Children's Hospital at Vidant Medical Center, Greenville NC  
 Danielle Walsh MD – East Carolina University Brody School of Medicine, Greenville NC

### TESTICULAR TORSION EMERGENCY RESPONSE – A QUALITY IMPROVEMENT INITIATIVE

Multiple simultaneous process improvements can decrease the time from diagnosis to treatment for patients with testicular torsion.

Testicular torsion is an emergency. Rapid evaluation, diagnosis, and surgery are required to prevent testicular loss. Decreasing the time from presentation to intervention increases the chances of testicular salvage.

**Fig. 1: Original throughput**

**Fig. 2: New processes**

**Lessons Learned**

- Hospital-wide, system-based improvements can improve throughput of patients with testicular torsion
- At each step cooperation is required to achieve success
- Similar improvements can be used for other emergent conditions i.e. appendicitis.

Aaron Dahmen MD, Mark Rich, MD, Alexandra Kirkland, Jill Dykstra-Nykanen, Dianna Cardona-Grau, MD, Benjamin Rhee, MD, Hubert Swana MD

### 2021 ACS QUALITY and SAFETY CONFERENCE VIRTUAL

#### Alignment of Institutional Surgical Prophylaxis Guidelines with ACS NSQIP

We aim to describe the alignment of our local guidelines with national surgical antimicrobial prophylaxis (SAP) guidance for General Surgery and Orthopedic procedures

**Figure 1: Percent Alignment for Spectrum and Duration by Surgery Service**

**Table 1: Alignment Rate with NSQIP Guidelines by SAP Buckets**

**Figure 2: Top Reasons for Non-Compliance with NSQIP Guidelines**

**Data Source/Population and Results:**

- We identified 74 case types in our institutional SAP guidelines. Of which, 28 were excluded because CPT excluded from assessment (e.g., appendectomy) or because the case type was not listed in the NSQIP guidelines (e.g., central venous catheter insertion)
- The overall alignment with local and institutional SAP recommendations for General Surgery and Orthopedic services was 76.1% (N=46); 80.4% for spectrum and 91.3% for duration (Figure 1).
- The SAP buckets that were least aligned were Gastric-SI, Ortho, and Abdominal (Table 1).
- The top reasons for non-compliance with national guidelines were overtreatment, post-op duration longer than recommended, and SAP given when not indicated (Figure 2).

**Lessons Learned**

- Institutional SAP guidelines alignment with NSQIP SAP guidelines vary across different procedure types and practice areas
- Most common reasons for non-compliance with national guidelines included prescribing anaerobic coverage when not indicated (gastric-SI) and post-operative durations that were longer than recommended (orthopedic)
- Re-evaluation of local SAP practices and surgical infection rates is recommended to best align with national standards

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### 2021 ACS QUALITY and SAFETY CONFERENCE VIRTUAL

#### "All In": An Expanded Role of the SCR in Hospital Wide Quality Improvement

Immersive involvement of the SCR in QI projects enhances the ability of the QI team to monitor effects of measures implemented to improve patient outcomes.

The role of the Surgical Clinical Reviewer (SCR) for the National Surgical Quality Improvement Program (NSQIP) is to record patient level data and 30-day outcomes for surgical patients. At URMCGCH, the SCR's presence at complications conference allows timely information on the trends of patient outcomes and participation in QI projects. We highlight two projects wherein SCR involvement in Plan-Do-Study-Act quality improvement (QI) cycles meaningfully contributed to improved outcomes.

**Figure 1: Days Since Last Gastrostomy Dislodgement**

**Figure 2: Complicated Appendicitis Post-operative Organ Space Infection (OSI) rate by year**

**Data Source/Population and Results:**

- G TUBE QI (Figure 1):** The average time period between inpatient gastrostomy dislodgements increased from 42 days (2017-18) to 133 days (2019-20).
- OSI IN COMPLICATED APPENDICITIS (Figure 2):** Modifying antibiotic management for complicated appendicitis (CA) decreased surgical site infections from 24% in 2019 to 12% in 2020.

The time needed for extra data collection was built into SCR workflow during initial entry of patients into NSQIP. G tube and CA patients were collected in a separate database to monitor relevant outcomes beyond 30 days.

**Lessons Learned**

- Involvement of SCR at the outset of QI projects may facilitate creation of data collection tools, prospective identification of relevant patients and data extraction during the established process of chart review
- SCR may provide significant contribution to QI projects especially when meaningful outcomes are beyond 30 days after surgery

Elizabeth Levatino, RN BSN, Marjorie J. Arca, MD, Theresa Foto, FNP-BC, RN, Cassandra Gleason, FNP-C, Marsha Pulhamus, CPNP, RN, Luis Ruffolo, MD, and Derek Wakeman, MD



### PSQC Logo Contest!

Hello all!

As the PSQC has grown so much in the last six months, we really feel its time to have our own logo. And what better resource for creative ideas than our own members!

We invite **you** to send us your best ideas for a logo for the PSQC. As you draft up ideas, keep in mind it should reflect our core mission of improving clinical outcomes in pediatric surgery. And, as an added incentive, our winner will of course get recognition in our publications and on our website-plus-a \$50 gift card!

Please email your ideas to me at terry.fisher@uth.tmc.edu by November 15, 2021.

*Terry*

Terry Fisher, MPH, PMP  
PSQC Program Manager  
McGovern Medical School  
Houston, TX

## Recent Publications of Interest

### [Effectiveness of a Clinical Pathway for Pediatric Complex Appendicitis based on Antibiotic Stewardship Principles](#)

A CA protocol based on clinical parameters is safe and effective, resulting in similar intra-abdominal abscess and readmission rates compared to more resource-intensive regimens.

### [Opioid Stewardship in Pediatric Surgery: Approaching Zero](#)

Adequate pain control at discharge after pediatric general surgical procedures can be achieved for most children with scheduled nonopioid medications only. A limited supply of opioids for analgesia after discharge may benefit small subset of patients. This strategy would help reduce opioid prevalence in the community.

### [The Role of Anesthetic Management in Surgical Site Infections After Pediatric Intestinal Surgery](#)

Higher doses of sevoflurane are associated with increased odds of SSIs after pediatric elective intestinal surgery. A randomized controlled study of volatile anesthetic-based *versus* intravenous anesthetic-based anesthesia will be needed to further determine the role of anesthetic drugs in SSI risk.

### [Recurrent Extubation Failure Following Neonatal Cardiac Surgery Is Associated with Increased Mortality](#)

This study confirmed that patients with recurrent EF have a high mortality. Neonates with a cardiovascular reason for first-time EF are more likely to have a recurrent EF than those with other causes.

### [Nurse Practitioner-Managed Clinic Reduces Emergency Department Visits for Parents of Children With Problematic Gastrostomy Tubes](#)

Implementation of a nurse-practitioner-managed clinic resulted in reduction in 30-day, 90-day, and 1-year ED visits among patients with gastrostomy issues and is associated with high levels of patient and provider satisfaction.

