ENGAGE WITH QUALITY IMPROVEMENT AND PATIENT SAFETY (E-QIPS)

Ureteroscopy Standardization and its Impact on Efficiency in the Operating Room
QUALITY OR SAFETY PROBLEM

Unnecessary time spent in the operating room locating, accessing and opening products needed intraoperatively for ureteroscopy.

BACKGROUND

Currently, we often have to ask for each item that we need intraoperatively during ureteroscopic procedures. Subsequently, the surgeon is waiting around until this item is found and opened. Ideal practice would be that we have everything that we need for a given case open without opening unnecessary items. For any additional items needed, they would be easily accessible. There is no current evidence in literature regarding standardizing ureteroscopic practices to improve efficiency in the OR. We hypothesized that by creating a framework for standardizing how ureteroscopic supplies are opened and located preoperatively and intraoperatively, that we could decrease unnecessary time in OR.

PROJECT OBJECTIVES

We sought to decrease time spent locating and opening products, thus increasing efficiency and decreasing time spent in the operating room.

INTERVENTION

The following changes were made to our practice:

1. Ureteroscopic procedures were posted in one of four ways:
   a. Distal Ureteroscopy (URS), Lithotripsy (LL), Stent placement
   b. Proximal URS, LL, Stent placement
   c. Proximal URS, LL, Stent removal vs exchange
   d. Diagnostic URS, possible biopsy
2. Color coded system: For each of the four different postings, items were organized as green, yellow or red. Ex: Distal URS, LL, stent placement → Green (Sensor Wire (G2), 5 French (Fr) open ended catheter (G3), Semi-Rigid Ureteroscope), Yellow (Sensor Wire (G2), 200 micron holmium laser fiber (Y1), 1.5 Fr Basket (Y2)), Red (Specimen Cup (R1), 6 Fr x 22124126cm stents (R2))
   a. Green: Items to open at the start
   b. Yellow: Ready to open during the case
   c. Red: Ready to open at the end of the case
3. Coding system to easily locate items in the cystoscopy suite
   a. Instead of labeling an item with a specific name, items in the cystoscopy suite were given an alphanumeric code. Ex: Instead of “10/12 ureteral access sheath”, this was a “GS.”

To garner buy in, we empowered the frontline urology OR staff (nurse and scrub technician) to design a system to benefit themselves and their coworkers. They were frustrated by how ureteroscopy was scheduled and understood the frustrations of the staff coming to the urology room when they routinely worked in other rooms. We had routine meetings to discuss implementation of their ideas in an appropriate format. After the scheduling and color-coding were complete, we had a meeting with the OR staff at one of the weekly OR staff meetings to discuss the new system and answer any questions from the OR staff. Furthermore, we asked operating room staff to “buy in” to this process to know that this was going to be the new structure for ureteroscopy at the Lexington VA Medical Center. We kept in mind that staff often rotate through the OR, so we placed signs in our cystoscopy suite to be very clear on what was expected of each staff member.
MEASURES OF SUCCESS

We measured our success by recording data prior to implementation of our standardization process and then afterwards. We analyzed our data using simple statistics and recorded results for multiple different metrics (Ex: time to pull product, number of products pulled, time urologist attention diverted, time to open product, etc). When comparing these many metrics prior to and after intervention, we sought to identify all statistically significant differences.

OUTCOMES

We found statistically significant differences pre- vs post-intervention in:
1. mean time to locate requested products (125.2 vs 42 seconds),
2. mean time staff was out of the room locating products (84.4 vs 14.7 seconds)
3. mean time OR surgeon's attention was diverted (65.5 vs 6.2 seconds)
4. percentage of OR time spent locating and opening products (3.26 vs 1.39%)

POTENTIAL IMPACT AND SCALABILITY

We found that through these significant differences, we saved time in the operating room at our local VA Medical Center. If we implemented simple changes across the country to improve how cases are posted and how items are located during ureteroscopy, this could potentially decrease OR times and improve efficiency related to ureteroscopy.

SUSTAINING THE CHANGES

This change can be sustained by continuing to post cases in this way and continuing to take feedback from our OR staff to ensure that they are still okay with this process and continue to "buy in".

ADDITIONAL RESOURCES

No additional resources are needed. Other sites would just need to adopt a specific way of posting ureteroscopy cases and lay out guidelines for what would qualify as "Green," "Yellow," and "Red" items.

KEY SUMMARY

a. Ureteroscopy is a common urologic procedure with significant variability from one case to the next.

b. With high turnover in ancillary operating room staff who may be less familiar with specifics of ureteroscopy, there is often significant wasted time spent in the operating room waiting for items to be located, accessed and opened

c. By implementing ureteroscopy standardization, we sought to decrease the time spent locating and opening products, thus increasing efficiency and decreasing time spent in the operating room.
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INTRODUCTION

- Ureteroscopy is a common urologic procedure with significant variability from one case to the next.
- The operating surgeon often does not know the exact products that will be needed for a case until the procedure is under way.
- There is often high turnover in ancillary operating room staff throughout the day, where some assistance may be less familiar with the subtleties of ureteroscopic instrumentation.
- This can lead to wasted, unnecessary time in the operating room, waiting for items to be located, accessed and opened.

METHODS

- Ureteroscopy standardization implemented at our local Veterans Affairs Medical Center (VAMC).
- The following changes were made to our practice:
  1. Ureteroscopic procedures were posted in one of four ways (summarized in Table 1).
  2. Color-coded system:
     - Green: Items to open at the start
     - Yellow: Ready to open during the case
     - Red: Ready to open at the end of the case
  3. Coding system to easily locate items in the cystoscopy suite
     - Instead of labeling an item with a specific name, items in the cystoscopy suite were given an alphanumeric code.
- Outcomes recorded prior to and after implementation of our standardization processes.

RESULTS

- 55 cases pre-intervention, 13 cases post-intervention.
- Statistically significant differences in the following:
  - Mean time to locate requested products (125.2 vs 42 seconds, p = 0.005)
  - Mean time staff was out of the room locating products (84.4 vs 14.7 seconds, p = 0.005)
  - Mean time operating room surgeon's attention was diverted (65.5 vs 6.2 seconds, p = 0.007)
  - Percentage of OR time spent locating and opening products (3.26% vs 1.39%, p = 0.005)

CONCLUSIONS

- Standardizing the methods by which products are located and used during ureteroscopy can decrease unnecessary time spent in the operating room.

PROJECT LEAD CONTACT INFORMATION

Jordan Goldwag, MD; Laila Bangash, MHA, MBA; Andrew Harris, MD
University of Kentucky Urology Residency Program, Lexington Veterans Affairs Medical Center
Jgo285@uky.edu