PD14-05

Harnessing the Epic Electronic Medical Record to Track Indwelling Ureteral Stents

Kathryn Wagner[a], Kathryn Walker[b], Erin Floridia[b], Carlos Medina[b], Courtney Rowe[b]

[a] University of Connecticut, Farmington, CT, USA.
[b] Connecticut Children's Medical Center, Hartford, CT, USA.

AUA Virtual Meeting 2020

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Outline

- Introduction
- Quality Improvement Initiative
- Findings
- Conclusions
- Future Directions

Financial Disclosures

None

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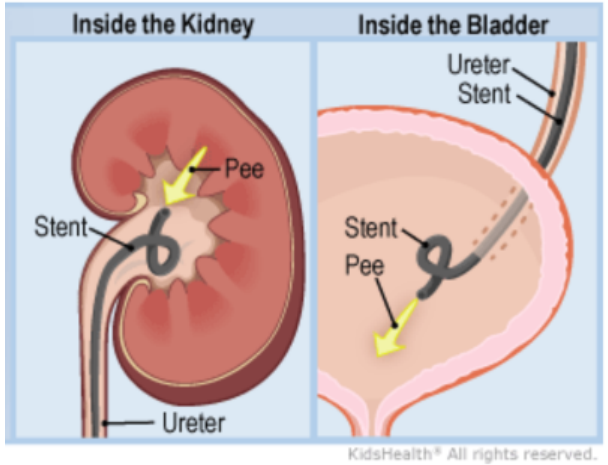
Introduction

- Ureteral stents are temporary implants used to bypass obstruction or facilitate healing after surgery
- Standard of care: removal within 3 months to avoid complications
  - Stone formation
  - Obstruction
  - Infection
- Urologists have struggled to keep track of patients with stents and avoid loss to follow-up



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The Problem

- 10-15% of ureteral stents are retained in patients lost to follow-up[1,2]
- Encrustation affects 50-70% of stents after 12 weeks[1,3]
- The cost of removal of a retained stent averages 7x higher than timely removal[1]
- Around 25% of patients with retained ureteral stent and initially normal renal function will develop CKD[4]
- Between 1995 and 2009, there were 23 malpractice suits involving patients in UK's NHS ruling against urologists for retained stents[5]

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The Options

- Status Quo
- Third-party stent tracker applications
  - Costly
  - Privacy issues/HIPAA violations
  - Labor-intensive
  - Do not capture all patients automatically
- Use the existing Electronic Medical Record (EMR)

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- 187-bed children's hospital in Hartford, CT
  - Tertiary Care Center, Level 1 trauma
- 4 full-time pediatric urologists

Our Initiative

Use Epic EMR to 1) identify retained stents in our patients and 2) change our workflow to prevent stent retention and ensure timely follow-up

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Stent Data in Epic

- OR staff scan barcode to log the implant in patient's chart
  - Status is "Implanted" until time of removal, when OR staff change status to "Explanted"
- Many stents were removed during office cystoscopy or left on string and removed by patient/provider
  - New workflow involves marking these as "Explanted" at removal
- Reporting tools in EMRs like Epic can be used to track all implants system-wide
  - Our report pulls all instances of ureteral stent with status "Implanted"

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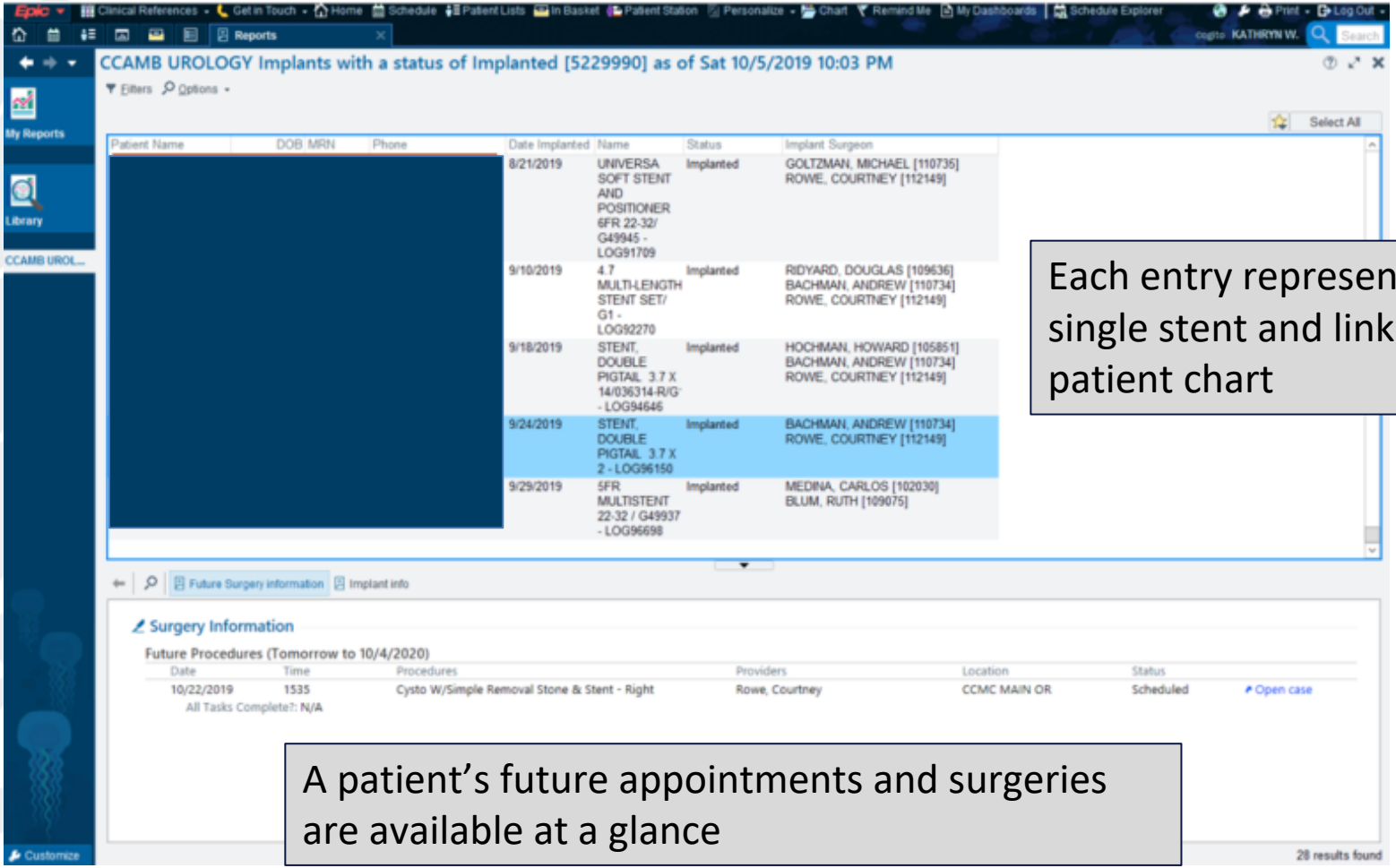

Each entry represents a single stent and links to the patient chart

A patient's future appointments and surgeries are available at a glance

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Our Findings

- 152 stents from April 2014 to June 2019 had status “Implanted” in Epic
  - 144 were documented in Epic as removed by cystoscopy or string
  - 2 patients had stent for palliation and died with stent in situ
  - 3 patients did not have documentation of stent removal and were contacted
    - All had followed up with outside provider for timely removal
  - The remaining 3 patients had recent stent placement
  - No patient had a retained stent

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Conclusions

- Tracking ureteral stents is imperative to prevent significant morbidity and legal liability
- Using existing EMR is a simple, cost-effective, and reliable solution
- At CCMC, we found no instance of ureteral stent retention since Epic launch
- The report is now run on a regular basis to ensure all patients have follow-up
- Next step: deploy the system at regional adult hospitals

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Thank you!

Kitty Walker and Epic Analytics team

Erin Floridia, PA

Courtney Rowe, MD

Carlos Medina, MD

Anne Dudley, MD

Howard Hochman, MD

Jill Bernstein, MD

Trish Giscombe, RN

Sam Chen, RN

CCMC Urology staff

Please email kwagner@uchc.edu with any questions about our development process

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