Implementing and evaluating the efficacy of an Acute Care Urology model

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The Problem

After hours surgery is more costly and places greater burden on the patient, surgeon, and hospital.

> 50% of stone surgeries were performed after hours.

North York General Hospital
Toronto, Canada
120,000 annual visits
Toronto population is 2.7 million
Our Solution

Dedicated Acute Care Urology surgeon
Additional staff focused solely on ACU work

Rapid Referral Clinic
Daily clinic → ED patients seen within 48hrs

Dedicated Daytime OR blocks
Every Tuesday and Thursday

Adapted from ACS models used in:
- General Surgery
- Orthopedic Surgery
- Plastic Surgery
Our Solution

Present to ED with renal colic → Request urology consult in ED → Refer to on-call urologist office → After hours Surgery

Present to ED with renal colic → All consults sent to rapid referral clinic → Dedicated OR time block (2/week)

All patients are seen within 48 hours
To implement and evaluate an Acute Care Urology (ACU) model at a large Canadian community-based hospital.
Methodology

Manual Chart Review:
579 patients presenting with renal colic to the Emergency Department (ED)

Patient & Provider Survey:
Patients, ED physicians, Urologists

Pre-Intervention:
September – November 2015
n=290

Post-Intervention:
September – November 2016
n=289
Participants

Assessed for eligibility (n=579)

Diagnosis of Obstructing Stone + Referral to Urology

Pre-intervention
Sept-Nov 2015 (n=290)

Referred to outpatient urology (n=72)

Standard OR block (n=15)

Post-intervention
Sept-Nov 2016 (n=289)

Assessed in rapid referral clinic (n=122)

Daytime ACU OR block (n=28)

Exclusion criteria:
No imaging performed
Non-urologic diagnosis
Non-stone diagnosis
No stone on imaging
Non-obstructing stone
Passed stone in ED
## Results

<table>
<thead>
<tr>
<th>Performance Indicator</th>
<th>Pre-Intervention</th>
<th>Post-Intervention</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED-to-Clinic time</td>
<td>15.8 days</td>
<td>4.2 days</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>% of patients referred to outpatient urology clinic</td>
<td>51.1%</td>
<td>70.5%</td>
<td>0.0004</td>
</tr>
<tr>
<td>% of patients who successfully obtained appointments</td>
<td>71%</td>
<td>87.3%</td>
<td>0.0055</td>
</tr>
<tr>
<td>ED wait-time</td>
<td>230.50 min</td>
<td>210.88 min</td>
<td>0.6000</td>
</tr>
<tr>
<td>% of after hours surgeries</td>
<td>51.0%</td>
<td>15.4%</td>
<td>0.0001</td>
</tr>
</tbody>
</table>
Results

Figure 5: Results of ED physician satisfaction survey (n=20)

Qualitative Feedback from ED:
“Great to know patients will have timely follow-up guaranteed”
“Streamlined the referral process”
“Timely access and ability to divert recurrent ED visits”

Comments from patient satisfaction surveys:
“No delay in seeing a urologist”
“Seamless care between areas of the hospital”
“The efforts to improve the delivery of services are making a noticeable difference"
Survey Results from NYGH urologists (n=4)

• 100% were completely satisfied
• 100% believed patient outcomes have improved with implementation of the ACU model
• 100% believed that acute urology patients are operated on in a more timely fashion since implementation of ACU.

What is your overall satisfaction with the addition of the Acute Care urology clinic?
Considerations

- Urologists did not have to sacrifice OR time
- ACU clinic services diverse urgent ED referrals (i.e. hematuria, urinary retention), but does not affect care of acutely ill (i.e. septic stone presentation)
- No statistically significant difference between stone size pre- and post-intervention
Conclusions

- The number of after-hours and weekend surgeries significantly decreased
- The ACU model resulted in a lower ED-to-clinic wait time
- More patients were successfully referred for outpatient care and obtained appointments
- Both patients and providers were satisfied with the ACU model
Any Questions?