Ambulatory Emergency Care Pathways

Renal Stones

Effective Date: October 2011
## Content Summary

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## 1. Condition Details

### Condition Details Summary

<table>
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<th>Data (Baseline using 2010/11 outturn)</th>
<th>HRG/ICD-10 Codes</th>
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<tbody>
<tr>
<td>Total Patients per Month (Avg)</td>
<td>23.92</td>
</tr>
<tr>
<td>Bed Days Utilised per Month (Avg)</td>
<td>16.08</td>
</tr>
<tr>
<td>Number of Beds Utilised per Month (Avg)</td>
<td>0.04</td>
</tr>
<tr>
<td>Average Length of Stay</td>
<td>0.67</td>
</tr>
<tr>
<td>Potential Percentage suitable for ambulatory care</td>
<td>60-90%</td>
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</table>

### Sign Off:

- **Pathway Designed by Clinical Subject Matter Expert**
  - __________________________ Signed
  - __________________________ Print

- **Pathway Approved by Specialty Lead**
  - __________________________ Signed
  - __________________________ Print

- **Pathway Authorised by Divisional Director**
  - __________________________ Signed
  - __________________________ Print
2. Pathway Algorithm

Patient Presents with:
Left or Right Loin Pain
(NOT LUQ & RUQ Acute Abdominal Pain)

History & Examination
(Incl Basic Obs: Temp, Pulse, BP)

Investigations
FBC, IES, BM, Urine Dip Stick, KUB, IVP

Red Flags
Heamodynamic Instability, Known AAA Peripheral Vascular Disease,
Hyperglycaemic (BM>11)

Positive for Renal Stone

Yes
(Refer to Urology)

No

Consider Alternative Diagnosis

Stone Causing Obstruction &/or Infection &/or Renal Impairment, OR Pain Requiring Rectal, IV or IM Analgesia

Yes
ADMIT

No Stone Present

Stone Causing NO or PARTIAL Obstruction

Prescribe Analgesia (if req)
ibuprofen 200-400mg tds/qds
maximum 2.4g daily in divided doses

Discharge Patient
Issue Patient Info
Arrange Clinic F/Up (if required)
Letter to GP
- “Tick” APD box on CAS form

IF F/Up Required:
(Arrange for IVP within 1/52
& contact the Urology Secretary (x2376) to book priority clinic within 2/52)
### 3. Patient Criteria

**Red Flags - Exclude the following Patients and Admit:**

- Heamodynamic Instability
- Known AAA Peripheral Vascular Disease
- Hyperglycaemic (BM>11)

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**Clinical Criteria that requires addressing same day for AECP, else Admit / Reconsider Diagnosis:**
What are Renal Stones?

A Renal (Kidney) Stone is a hard mass developed from crystals that separate from the urine and build up on the inner surfaces of the kidney. Normally, urine contains chemicals that prevent or inhibit the crystals from forming. These inhibitors do not seem to work for everyone, however, so some people form stones. If the crystals remain tiny enough, they will travel through the urinary tract and pass out of the body in the urine without being noticed. Most kidney stones pass out of the body without any intervention by a doctor.

How did I get it?

About 3 in 20 men and 1 in 20 women in the UK develop a kidney stone at some stage in their life. For unknown reasons, the number of people with kidney stones has been increasing over the past 30 years. This may be due to our diets or lack of exercise. The prevalence of stone-forming disease rose from 3.8 percent in the late 1970s to 5.2 percent in the late 1980s and early 1990s. Stones occur more frequently in men. They can occur at any age, but most commonly occur between the ages of 30 and 60. About half of people who develop a kidney stone will have at least one further recurrence at some point in the future.

Doctors do not always know what causes a stone to form. While certain foods may promote stone formation in people who are susceptible, scientists do not believe that eating any specific food causes stones to form in people who are not susceptible. A person with a family history of kidney stones may be more likely to develop stones. Urinary tract infections, kidney disorders such as cystic kidney diseases, and certain metabolic disorders such as hyperparathyroidism are also linked to stone formation.

Rare inherited disorders that can cause stone formation include a hereditary disease called renal tubular acidosis. Cystinuria and hyperoxaluria are two other rare, inherited metabolic disorders that often cause kidney stones.
**How will it be treated?**
Fortunately, surgery is not usually necessary. Most kidney stones can pass through the urinary system with plenty of water to help move the stone along. Often, you can stay home during this process, drinking fluids and taking pain medication as needed. You may also be asked to take a tablet called tamsulosin which will help you pass a stone that is in the ureter (the tube that drains the kidney to the bladder. The doctor usually asks you to save the passed stone(s) for testing. (You can catch it in a cup or tea strainer used only for this purpose.)

Today, treatment for these stones is greatly improved, and many options do not require major surgery or general anaesthesia.

Extracorporeal shockwave lithotripsy (ESWL) is the most frequently used procedure for the treatment of kidney stones. In ESWL, shock waves that are created outside the body travel through the skin and body tissues until they hit the denser stones. The stones break down into sand-like particles and are easily passed through the urinary tract in the urine. This treatment can be given under analgesia as a day-case procedure.

At St Peters we have a state of the art ‘Lithotriptor’ to carry out ESWL
Surgical Treatment
Surgery should be reserved as an option for cases where other approaches have failed. Surgical options include laser fragmentation of most stones up to 2 cm. For larger stones in the kidney percutaneous nephrolithotomy can be used.

Surgery may be needed to remove a kidney stone if it:

- does not pass after a reasonable period of time and causes constant pain
- is too large to pass on its own or is caught in a difficult place
- blocks the flow of urine
- causes ongoing urinary tract infection
- damages kidney tissue or causes constant bleeding
- has grown larger (as seen on follow-up x-ray studies).

When will I receive my treatment?
This will depend on the size of the stone, where it is in the urinary system and whether or not you have concerning signs or symptoms. There are 3 ‘hurdles’ for a stone to get over before it can be passed out of the body in the urine. The first ‘hurdle’ is when the stone leaves the kidney. Once in the ureter there are two more ‘narrow bits’. The second hurdle is where the ureter goes over the bony pelvis and the last hurdle is where the stone enters the bladder. Once in the bladder the stone can be passed in the urine.

When you are in hospital your doctor will agree a management plan with you and give you analgesia and other medicine to help you pass the stone. He will then review you in clinic in 2-3 weeks time with a repeat x-ray to check that you have passed the stone. If you have symptoms of infection, obstruction to the kidney or poorly controlled pain then your interventional treatment may be brought forward.
What can I do if I become worried about my condition?
If you have a kidney stone, you may already know how painful it can be. Most kidney stones pass out of the body without help from a doctor. But sometimes a stone will not pass. It may even get larger. Your doctor can help.

You should call a doctor if you have any of the following signs:

• extreme pain in your back or side that will not go away
• blood in your urine
• fever and chills
• vomiting
• urine that smells bad or looks cloudy
• a burning feeling when you urinate

If at any point you are concerned, please see your GP or contact NHS Direct on 0845 46 47.

The information in this leaflet is not intended to replace the advice given to you by your doctor or the service looking after you.
5. KPIs

<table>
<thead>
<tr>
<th>KPIs</th>
<th>Description</th>
<th>How it will be measured</th>
<th>Baseline (2010/11)</th>
<th>At Min %</th>
<th>At Max %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core KPIs</td>
<td>Reduction in the number of patients requiring a stay of more than 24 hours (i.e. a 0-Day LoS)</td>
<td>PAS</td>
<td>287</td>
<td>72</td>
<td>108</td>
</tr>
<tr>
<td></td>
<td>Reduction in the Avg number of Bed Days utilised for the condition</td>
<td>PAS</td>
<td>193</td>
<td>48</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>Reduction in Bed Numbers</td>
<td>PAS</td>
<td>0.529</td>
<td>0.132</td>
<td>0.198</td>
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<tr>
<td>Other KPIs</td>
<td></td>
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<tr>
<td>Scope</td>
<td><strong>Scope:</strong> Patients entering the AECP Pathway at St. Peter’s Hospital</td>
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<td><strong>Governance:</strong> Reports to the Unscheduled Care Programme Board and Divisional Performance Review Meetings</td>
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- Above Min and Max figures are part year effects for 2011/12 based on month of implementation