SYMPTOMS AND LABS
- Obstructing stone with fevers, chills, rigors, elevated WBC, infected urine
- Intractable pain, nausea or vomiting
- Signs of acute renal failure
- Solitary kidney
- Immunocompromise

SUGGESTED PREVISIT WORKUP
- CBC, BMP, UA, Urine culture
- Only if does not delay emergent transfer to emergency department

SUGGESTED EMERGENT CONSULTATION

HIGH RISK

SUGGESTED WORKUP
- CT abdomen (preferred) or KUB or renal US
- CBC, BMP, UA
- Consider apha blockers for ureteral stones, especially distal stones
- Symptomatic pain and nausea control as needed
- If patient pass stone, send stone for analysis

SUGGESTED MANAGEMENT
- CT abdomen (preferred) or KUB or renal US
- CBC, BMP, UA
- Symptom control and observation for up to 4-6 weeks if patient agreeable
- Consider alpha blockers, especially in distal ureter
- Offer reimaging to patients to verify passage of stones at 4-6 weeks or if stone movement will change management. Reimaging should focus on the region of interest and limit radiation exposure to uninivolved regions
- If stone passed, send for analysis
- If pain cannot be controlled, emergent signs develop or patient desires intervention, Consult Urology

CLINICAL PEARLS
- Majority of stones less than or equal to 5 will pass spontaneously, but these numbers refer to success rates at 6 weeks. Patients may or may not be willing to wait that long.
- Smaller asymptomatic renal stones, especially in the lower pole of the kidney may not need intervention, but a discussion of risk and benefits of observation vs. intervention is advised

SUGGESTED ROUTINE CARE

LOW RISK

SUGGESTED WORKUP
- CT abdomen (preferred) or KUB or renal US
- CBC, BMP, UA
- Consider apha blockers for ureteral stones, especially distal stones
- Symptomatic pain and nausea control as needed
- If patient pass stone, send stone for analysis

SUGGESTED ROUTINE CARE
- Stones less than or equal to 5 mm in largest diameter where flank, abdominal, groin or genital pain, nausea and anorexia can be reasonably controlled with oral pain medications
- Uncomplicated (i.e. do not have any of the criteria in the high and moderate risk columns)

SUGGESTED CONSULTATION OR CO-MANAGEMENT

MODERATE RISK

SUGGESTED WORKUP
- Flank, abdominal, groin or genital pain that can be reasonably controlled with oral pain medications, and patient desires intervention
- Any ureteral stone above 5 mm in largest diameter
- If stone passage on observation with or without Medical Expulsion Therapy (MET) is not successful after four to six weeks
- Incidentally found on imaging for other conditions and patient desires intervention
- Stones discovered in work up of recurrent urinary tract infections
  - Bladder stones
  - Non obstructing stone in solitary kidney
  - Kidney stone in pregnancy
  - Patients with recurrent stone passage
  - Patients with known rare stones such as struvite or cysteine

SUGGESTED CONSULTATION OR CO-MANAGEMENT
- CT abdomen (preferred) or KUB or renal US
- CBC, BMP, UA
- Consider apha blockers for ureteral stones, especially distal stones
- Symptomatic pain and nausea control as needed
- If patient pass stone, send stone for analysis

SUGGESTED CONSULTATION OR CO-MANAGEMENT
- CT abdomen (preferred) or KUB or renal US
- CBC, BMP, UA
- Symptom control and observation for up to 4-6 weeks if patient agreeable
- Consider alpha blockers, especially in distal ureter
- Offer reimaging to patients to verify passage of stones at 4-6 weeks or if stone movement will change management. Reimaging should focus on the region of interest and limit radiation exposure to uninivolved regions
- If stone passed, send for analysis
- If pain cannot be controlled, emergent signs develop or patient desires intervention, Consult Urology

These clinical practice guidelines describe generally recommended evidence-based interventions for the evaluation, diagnosis and treatment of specific diseases or conditions. The guidelines are: (i) not considered to be entirely inclusive or exclusive of all methods of reasonable care that can obtain or produce the same results, and are not a statement of the standard of medical care; (ii) based on information available at the time and may not reflect the most current evidenced-based literature available at subsequent times; and (iii) not intended to substitute for the independent professional judgment of the responsible clinician(s). No set of guidelines can address the individual variation among patients or their unique needs, nor the combination of resources available to a particular community, provider or healthcare professional. Deviations from clinical practice guidelines thus may be appropriate based upon the specific patient circumstances.