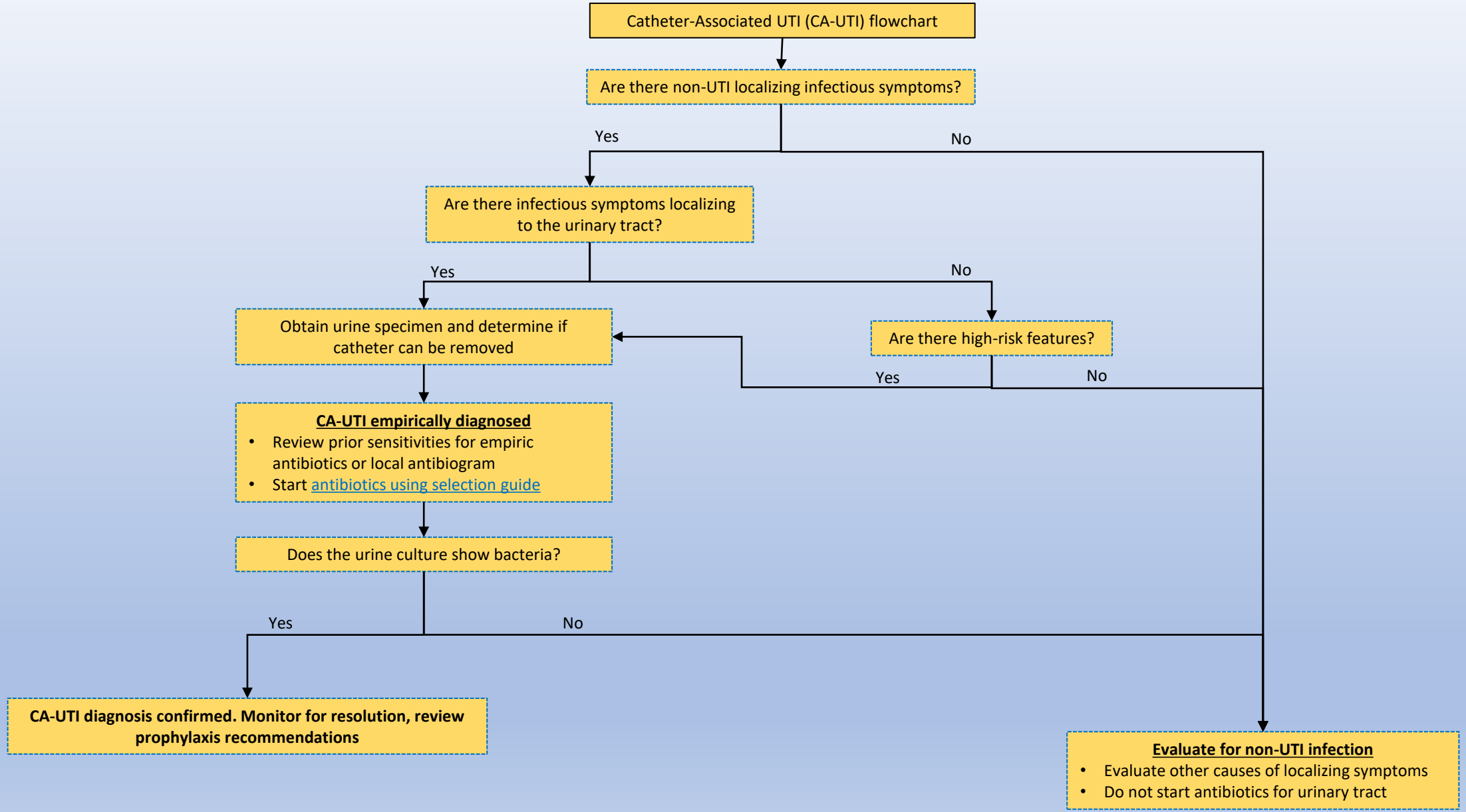
Catheter-Associated UTI (CA-UTI) flowchart
Are there non-UTI localizing infectious symptoms?
Yes
No
Are there infectious symptoms localizing to the urinary tract?
Yes
No
Obtain urine specimen and determine if catheter can be removed
Are there high-risk features?
Yes
No
CA-UTI empirically diagnosed
• Review prior sensitivities for empiric antibiotics or local antibiogram
• Start antibiotics using selection guide
Does the urine culture show bacteria?
Yes
No
CA-UTI diagnosis confirmed. Monitor for resolution, review prophylaxis recommendations
Evaluate for non-UTI infection
• Evaluate other causes of localizing symptoms
• Do not start antibiotics for urinary tract

Are there non-UTI localizing infectious symptoms?

Pearl: CA-UTI is defined as the presence of a urinary catheter within past 48 hours of symptom onset, presence of signs or symptoms compatible with UTI, absence of other infectious source, and significant bacteriuria with one or more species.

The diagnosis of a CA-UTI requires the absence of other identified sources of infection.

Consider CNS, respiratory, GI, skin and soft tissue, and other infections

Click for more on evaluating on urinary tract localizing symptoms

Are there infectious symptoms localizing to the urinary tract?

Pearl: CA-UTI is defined as the presence of a urinary catheter within past 48 hours of symptom onset, presence of signs or symptoms compatible with UTI, absence of other infectious source, and significant bacteriuria with one or more species.

Localizing:
- ❑ Flank pain (between epigastrium and back)
- ❑ Costovertebral tenderness
- ❑ Hematuria
- ❑ Pelvic discomfort
- ❑ Suprapubic pain/tenderness

If bladder catheter recently removed/absent:
- ❑ Dysuria
- ❑ Urgency
- ❑ Frequency

If spinal cord injury:
- ❑ Increased spasticity
- ❑ Autonomic dysreflexia
- ❑ Sense of unease

Constitutional (may be attributable if no other etiology is found):
- ❑ Fever
- ❑ Rigors
- ❑ Malaise
- ❑ Lethargy

Dark/cloudy/foul smelling urine and nonspecific symptoms (confusion, falls, behavioral changes) ARE NOT symptoms of a UTI in the absence of localizing signs to the urinary tract

Click for more on localizing signs/symptoms to the urinary tract in CA-UTI

Pearl: The presence of high-risk features serve to lower the treatment threshold for CA-UTI.

Are there high-risk features?

High risk features:

- ❑ **Fever lasting 24 hours or more**
- ❑ **Rigors or shaking chills**
- ❑ **Clear cut delirium (not just change in mental status) after ruling out other causes - please see Delirium Guide**

Click for more about red flags in CA-UTI evaluation

Obtain urine specimen and determine if catheter can be removed

PEARL – collect culture before starting antibiotics due to wide range of pathogens and increased likelihood of resistance with CA-UTI

This is an ideal time to assess if a urinary catheter is still required; removing the catheter is the best way to prevent CA-UTI

If catheter <u>NOT</u> required:

- Obtain a midstream/clean catch urine specimen
- If unable get midstream/clean catch due to mentation
  - Men: consider a condom catheter for 30 – 120 minutes or in and out catheterization
  - Women: Consider in and out catheterization

If catheter <u>IS</u> required:

- Placed <2 weeks: the decision to obtain from sampling port vs placing a new catheter should be made on a case-by-case basis viewing the risks and benefits
- Placed >2 weeks: replace catheter first and then obtain urine specimen

Click for more collecting a urine sample in CA-UTI

CA-UTI empirically diagnosed

- Review prior sensitivities for empiric antibiotics or local antibiogram
- Start antibiotics using selection guide

PEARL: CA-UTI is defined as the presence of a urinary catheter for >48 hours, presence of signs or symptoms compatible with UTI, absence of other infectious source, and significant bacteriuria with one or more species

1. Determine if prostatitis/GU infection in men
2. Encourage hydration
3. Review prior sensitivities for empiric antibiotics or local antibiogram
4. Start antibiotics using selection guide

Click for more on the empiric diagnosis of CA-UTI

PEARL: "Significant" bacteriuria varies and is arbitrarily used to suggest the bacterial growth is not a result of contamination. A higher cutoff makes it less likely to be the result of contamination.

Per 2009 IDSA CA-UTI guidelines, "a quantitative count of greater than or equal to 1,000 colony forming units for symptomatic persons… is recommended as representing significant bacteriuria, because this threshold is a reasonable compromise between sensitivity in detecting CA-UTI and feasibility for the microbiology laboratory [minimum detection] in quantifying organisms."

Note: A polymicrobial infection (1+ organisms) is expected in CA-UTI

Does the urine culture show bacteria?

The diagnosis is now confirmed!

Monitoring

- Patients should improve within 48-72 hours. Failure to improve should prompt evaluation for complicating factors and imaging (such as CT A/P or renal US)
- Deescalate/narrow antibiotics as able based on clinical status and susceptibilities

Prophylaxis

- Best prophylaxis is to remove urinary catheter if possible

Click for more for CA-UTI diagnosis, monitoring, and prophylaxis

CA-UTI diagnosis confirmed. Monitor for resolution, review prophylaxis recommendations

PEARL – 100% of patients with indwelling catheters for >30 days will be colonized and bacteriuric. This does not indicate a UTI and often is due to asymptomatic bacteriuria

Evaluate for non-UTI infection

- Evaluate other causes of localizing symptoms
- *Do not start antibiotics for urinary tract*
- Reconsider UTI diagnosis if:
  - new symptoms arise
  - existing symptoms do not resolve
  - no other etiology for symptoms is found after comprehensive evaluation
- If in hospital or long-term care, implement **active monitoring**:
  - vital sign monitoring, paying attention to hydration status, and repeated physical exam

Click for more on evaluating non-UTI etiologies

Evaluate for non-UTI infection
- Evaluate other causes of localizing symptoms
- Do not start antibiotics for urinary tract