Background: Urinary Incontinence (UI) is defined as involuntary loss of urine control (1). It has been reported in 77% of cancer patients receiving palliative care, and 72% of patients in hospice (2,3). UI is associated with a decreased quality of life (QOL), higher caregiver burden, and a poor prognosis in patients with serious illness (3,4). This Fast Fact looks at causes, subtypes, and the clinical work up of UI for patients at elevated 1-year mortality risk due to an underlying serious illness.

Causes of UI in palliative care settings: Among a plethora of etiologies (1), inability to ambulate to the bathroom in time is the most common cause of UI in end-of-life (EOL) care (5). Urinary tract infections, cognitive impairment and use of sedative medications like benzodiazepines also are common causes of UI in EOL settings (6,7). Four common subtypes of UI have been recognized. Although in patients with serious illness, a mix of subtypes of UI in individual patients is clinically most common, it is important for clinicians who care for serious ill patients to have awareness and knowledge of these subtypes to best target management strategies (8-11):

- **Stress incontinence:** the involuntary emission of urine with that occurs from an increase in abdominopelvic pressure and weak urethral sphincter tone. Causes of increased abdominal pressure in palliative care patients include large volume ascites, coughing (especially in chronic pulmonary diseases), and large tumors. Common contributors to poor urinary sphincter tone include advanced age, inadequate estrogen levels, spinal cord compression and pelvic radiation. Patients typically describe stress UI as presenting without warning while sneezing, coughing, or ambulating.

- **Urge incontinence:** a sudden and compelling desire to pass urine accompanied by involuntary leakage. Neurological issues like prior stroke, and Parkinson disease are common etiologies, as are bladder tumors from a primary cancer, diabetes mellitus, a urinary infection, or bladder stones.

- **Overflow incontinence:** when a large volume of urine is retained in the bladder post-voiding leading to overdistention of bladder. It is commonly caused by inflammation from prior catheterization and benign prostatic hypertrophy (BPH). Other common etiologies in this patient population include weakness of bladder muscles or damage to pudendal or hypogastric nerves from radiation, or tumor lesions in the lumbosacral spine. This commonly manifests by a frequent dribbling of urine due to a bladder that does not empty completely.

- **Functional Incontinence:** when there is no specific local neuromuscular cause of incontinence. Among patients living with serious illness, the most common causes include advanced dementia and/or a lack of mobility due to a declining functional status.

History-taking in seriously ill patients with UI: Clinicians usually do not bring up incontinence with patients (12), either incorrectly believing that nothing can be done for it, or it may be embarrassing for the patient to answer or they do not triage the symptom amongst other clinical issues which need to be addressed. Similarly, patients often do not volunteer this symptom (13).

- A screening question (Do you leak urine?) may help open the conversation (14).
- Ascertaining urinary volume and frequency as well as the duration of UI and eliciting factors can help determine the type of UI involved.
- Associated symptoms like dysuria, hematuria, and constipation can identify other etiologies of UI.
- Perform an oral intake review to look for excessive fluid intake.
- Perform a medication history to screen for overprescribing as a factor, particularly clinicians should reevaluate the benefit to harm profile of ongoing diuretic therapy among patients with UI.
- Assess the patient’s ability to walk and perform ADLs, making sure to understand the caregiver's perspective as well (8,10,11).

Physical examination (PE) maneuvers to assess UI: Beyond the usual PE, clinicians should test the patient’s ability to ambulate, steadiness on their feet, and transfer speed. Abdominal exam may show masses, and ascites. More sensitive exams such as a genital exam should be pursued when clinicians encounter clinical suspicion for external urethral abnormalities, vaginal atrophy, decreased pelvic muscle strength, pelvic masses, and vaginal prolapse. A rectal exam should be considered when BPH and/or...
impacted feces is suspected (8-11). In more alert patients, a bladder stress test can be done on the bedside by asking the patient to cough after voiding to check for leakage (15).

**Diagnostic work-up of UI:** Based on bothersome retention and overflow symptoms, a bedside bladder scan may show excessive post-void urinary residual (e.g., >450 mL) and help guide when urinary catheterization is needed for symptomatic relief (16). However, decisions to pursue catheterization should be based on the patient’s symptoms and the trends in the PVR measurements rather than a strict threshold PVR measurement (see Fast Fact #287 for a more thorough discussion). A urine dipstick can rule out infectious causes. Investigations such as CT scans, MRI, video cystometrogram, and cystoscopy may be warranted in select circumstances, but usually are pursued after consultation with a urology specialist in patients with extended prognoses. Patients with short prognoses (e.g., < 1 month) often are unlikely to benefit from subsequent invasive treatments for UI (17).

**Conclusion:** Clinicians should know specific types of UI and their etiology when caring for patients with serious illness. A history and examination with focus on common causes in EOL settings, and confirmation with basic bedside workup can help with diagnosis, and management of UI.

**References:**
