Urinary Incontinence in the Long Term Care Setting

CLINICAL PRACTICE GUIDELINE

PALTmed
POST-ACUTE AND LONG-TERM CARE MEDICAL ASSOCIATION

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Preface

This clinical practice guideline (CPG) has been developed as part of a project conducted by Post-Acute and Long-Term Care Medical Association (PALTmed), the national professional association of medical directors, attending physicians, and others practicing in the long term care (LTC) continuum. This is one of a number of guidelines undertaken as part of the association's mission to improve the quality of care delivered to patients in these settings.

Original guidelines are developed by interdisciplinary workgroups, using a process that combines evidence- and consensus-based approaches. Workgroups include practitioners and others involved in patient care in LTC facilities. Beginning with pertinent literature searches for articles and information related to the guideline subject and a draft outline/framework, each group works to develop a concise, usable guideline that is tailored to the LTC setting. Because scientific research in the LTC population is limited, many recommendations are based on findings from research involving community-living older adults. Some recommendations are based on the expert consensus opinion of practitioners and experts in the field of geriatric medicine.

PALTmed's Clinical Practice Guideline Steering Committee directs the guideline development and revision process. Each year the Steering Committee reviews all PALTmed CPGs that are 3 years old and commissions a thorough literature review to determine whether the content of each guideline remains current. The PALTmed Clinical Practice Committee Chair selects the existing guidelines to be revised and new guidelines to be created based on (1) the Steering Committee's recommendations, (2) data collected, and (3) an assessment of the difficulty of development and relevance to the v member-ship. PALTmed's Board of Directors has final approval over this process.

Purpose

PALTmed seeks to develop and revise guidelines that focus on specific concerns and common problems in the LTC setting. Although other agencies, organizations, and associations have developed guide-lines for conditions that occur in elderly and chronically ill individuals, many of these guidelines limit or omit considerations unique to the LTC population.

PALTmed guidelines emphasize key care processes and are created to be used in conjunction with facility-specific policies and procedures that guide staff and practitioner practices and performance. They are meant to be used in a manner appropriate to the population and practice of a particular facil-ity. Guideline implementation may be affected by resources available in the facility, including staffing, and will require the involvement of all those in the facility who have a role in patient care.

Audience

This guideline is intended for the members of the interdisciplinary team in LTC facilities, including the medical director, director of nursing, practitioners, nursing staff, consultant pharmacist, and other professionals such as therapists, social workers, dietitians, and nursing assistants who care for residents of LTC facilities.

PALTmed CPGs address many functions and tasks related to recognizing, clarifying, managing, and monitoring various medical conditions and situations. The guidelines focus on process (what should be done) rather than on personnel (who should perform specific tasks). For example, staff members from many disciplines working in the LTC setting, including nursing assistants, licensed nurses, dietitians, and social workers, may make and document observations (e.g., that a patient does not sleep at night, has become more withdrawn, or has a change in usual eating patterns). Only some of these disciplines, however, may be qualified to determine the significance of those observations (e.g., the cause of sleeplessness or a change in eating patterns). In contrast, practitioners may not be present to make observations, but are trained to analyze the significance and causes of symptoms. Thus, each facility should ensure that tasks are done cor-rectly and by the appropriate interdisciplinary team members. It is important for observers to make and effectively document their observations; when interpretation of those observations is not within the scope of their training or practice,they should receive appropriate support from practitioners.

Assumptions

Guidelines for the LTC setting should be consistent with the fundamental goals of desirable LTC prac-tice. Operationally, this requirement means that the care team in the LTC facility should systematically address (1) each individual's risk factors for a number of diseases and conditions and (2) the adverse consequences of these diseases and conditions on the patient's functioning and quality of life. When LTC facility patients are at or near the end of life, care goals will shift from functional improvement or physical stability to palliation or comfort care. PALTmed guidelines address this transition and provide suggestions for appropriate modification of the patient's care plan.

LTC facilities care for a variety of individuals, including younger patients with chronic diseases and disabilities, short-stay patients needing postacute care, and very old and frail individuals suffering from multiple comorbidities. When a workup or treatment is suggested, it is crucial to consider whether such a step is appropriate for a specific individual. A workup may not be indicated if the patient has a terminal or end-stage condition, if it would not change the management course, if the burden of the workup is greater than the potential benefit, or if the patient or his or her legally authorized representative would refuse treatment. It is important to carefully document in the patient's medical record the reasons for decisions not to treat or perform a workup or for choosing one treat-ment approach over another.

How to Use These Guidelines

Each guideline includes a narrative portion that covers definition, recognition, assessment, treatment, and monitoring of the condition being addressed. **Recognition** means identifying the presence of a risk or condition. **Assessment** means clarifying the nature and causes of a condition or situation and identifying its impact on the individual. **Treatment** means selecting and providing appropriate inter-ventions for that individual. **Monitoring** means reviewing the course of a condition or situation as a basis for deciding to continue, change, or discontinue interventions.

Each guideline also includes an algorithm that summarizes the steps involved in addressing the condition or situation that is the focus of the guideline. In the algorithm, rectangles signify points where action is to be taken; diamonds indicate points where a decision must be made.

Guide to Terminology

We recognize that people who reside in LTC facilities are **residents**. However, throughout these guidelines we use the term **patient(s)** because we are addressing individuals within the context of treating a medical condition. In addition, these guidelines also apply substantially to individuals who are admitted to LTC facilities for short-term post-acute care.

When referring to pharmaceutical products, we avoid the use of brand names and refer to classes of drugs whenever possible.

A **nursing home/skilled nursing facility** (NF/SNF) is a place of care for people who require 24-hour nursing and rehabilitation for chronic medical conditions or impaired mental capacity and who have significant deficiencies in activities of daily living. The goal of care is to assist the individual in achieving his or her highest level of function and well-being. Both SNFs and NFs care for frail elderly patients and younger adults with physical disabilities (although pediatric and other specialized SNFs also exist). Many SNFs and NFs offer special care units (e.g., dialysis, ventilator units).

A **subacute ("step-down") care unit** is a facility in which care can be the bridge between an acute hospital stay and a return to a community home. It combines aspects of both the hospital and the SNF to reduce the cost of services while maintaining quality of care. This type of care requires frequent patient reassessment and review of the clinical course and treatment plan for a limited time period, until the patient's condition has stabilized or a predetermined treatment course is completed.

Grading System for AMDA Clinical Practice Guidelines

The system PALTmed has adopted for grading clinical practice guidelines is based on the GRADE Work-ing Group Approach.

Judgments about the quality of evidence require assessing the validity of results for important outcomes in individual studies. Explicit criteria should be used in making these judgments. In the GRADE Working Group approach, a systematic review of available evidence guides these judgments. Sequential judgments are made concerning the following factors:

- The quality of evidence across studies for each important outcome,
- Which outcomes are critical to a decision,
- The overall quality of evidence across these critical outcomes,
- The balance between benefits and harms, and
- The strength of recommendations.

Reviewers consider four key elements: study design, study quality, consistency, and directness.

Definitions

The **quality of evidence** indicates the extent to which one can be confident that an estimate of effect is correct.

The **strength of a recommendation** indicates the extent to which one can be confident that adherence to the recommendation will do more good than harm.

Study design refers to the basic study design (broadly, observational studies and randomized trials).

Study quality refers to the detailed study methods and execution. Appropriate criteria are used to assess study quality for each important outcome. For randomized trials, for example, these criteria might include the adequacy of allocation concealment, blinding, and follow up. Reasons for downgrading a quality rating must be explicit (e.g., failure to blind patients and physicians reduced the quality of evidence for an intervention's impact on pain severity, a serious limitation).

Consistency refers to the similarity of effect estimates across studies. If there is important unexplained inconsistency in study results, confidence in the effect estimate for that outcome is reduced.

Directness refers to the extent to which the people, interventions, and outcome measures in the studies are similar to those of interest. For example, the directness of the evidence may be uncertain if the people of interest are older, sicker, or have more comorbidity than those in the studies. To determine whether important uncertainty exists, one can ask whether there is a compelling reason to expect important differences in the effect size. Because many interventions have more or less the same relative effects across most patient groups, reviewers should not use overly stringent criteria in deciding whether evidence is direct.

Criteria

PALTmed's Clinical Practice Committee has chosen to use the following criteria for assigning grade of evidence:

Quality of Evidence

High: At least 1 randomized controlled trial (RCT) ***OR*** 3 pre/post interventions or other prospective interventions or 3 well-structured, relevant observational studies.

Moderate: Studies that use well-tested methods to make comparisons in a fair way, but where the results leave room for uncertainty (e.g., because of the size of the study, losses to follow-up, or the method used for selecting groups for comparison).
Low: Studies in which the results are doubtful because the study design does not guarantee that fair comparisons can be made.

Strength of Recommendation

Strong: Benefits clearly outweigh risks.
Weak: Benefits are balanced with risks.
Insufficient: Evidence is inadequate to make a recommendation.

Criteria for *decreasing* the grade of a recommendation:

- Serious (- 1) or very serious (- 2) limitation to study quality
- Important inconsistency (- 1)
- Some (- 1) or major (- 2) uncertainty about directness
- Imprecise or sparse data (- 1)
- High probability of reporting bias (- 1)

Criteria for *increasing* the grade of a recommendation:

- Strong evidence of association: Significant relative risk greater than 2 (less than 0.5), based on consistent evidence from two or more observational studies, with no plausible confounders (+1)
- Very strong evidence of association: Significant relative risk greater than 5 (less than 0.2), based on direct evidence with no major threats to validity (+2)
- Evidence of a dose-response gradient (+1)
- All plausible confounders would have reduced the effect (+1)

These criteria are cumulative – e.g., if RCTs have serious limitations ***and*** there is uncertainty about the directness of the evidence, the grade of evidence would drop from high to low.

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Urinary Incontinence
in the Long Term Care Setting

DEFINITION

Urinary incontinence is the involuntary loss of urine.

INTRODUCTION

Urinary incontinence (UI) is one of the most common conditions among patients residing in long-term care (LTC) facilities,[1,2] affecting more than 59% of all such patients.[3] The prevalence of overactive bladder (one type of UI) in the U.S. adult population is estimated at 42.2 million[4]; one study suggests a prevalence in the LTC population of 70% in blacks and 63% in whites.[5] The prevalence of UI generally increases with age, and women are affected more than men. Although UI is increasingly prevalent with age, it is not a normal part of aging.

If left untreated, UI may be associated with negative outcomes including falls,[6] skin problems,[7] urinary tract infections (UTIs),[8] numerous psychological effects,[9] and dependence that often leads to placement in an LTC facility. UI can adversely affect patients' dignity and can contribute to depression, embarrassment, and social isolation. The annual cost of managing UI in LTC facilities is estimated at $5.3 billion.[10]

UI is a condition with various causes. It can often be managed and modified, and in some cases reversed, even in frail older adults and individuals with dementia who reside in LTC facilities. Correction of underlying factors such as medical illnesses, functional limitations, and medication side effects can also improve UI.

Outcomes That May Be Expected From Implementation of This Clinical Practice Guideline

The use of this guideline should help to achieve the following outcomes:

- Improved identification through the assessment process of individuals who have modifiable UI,
- Improved individualized plans of care to manage UI,
- Improved health and quality of life for patients with UI,
- More effective staff education and utilization of staff resources for optimally evaluating and managing UI,
- Improved staff satisfaction,
- Minimization of inappropriate use of absorbent products and indwelling urinary catheters, and
- Reduction in significant complications of UI and indwelling urinary catheters.

RECOGNITION

Table 1 describes six recognized types of UI, the typical symptoms associated with each type, and specific examples in each category.[11]

TABLE 1
Types of Urinary Incontinence

Type	General Description	Typical Symptoms	Examples of Specific Causes
Overactive bladder	Results from sudden, involuntary contraction of the detrusor muscle; causes a sudden and unstoppable need to urinate, even though the bladder may only contain a small amount of urine.[12]	Characterized by urgency, frequency, and nocturia, with or without urge incontinence	◆ Inflammatory: interstitial cystitis ◆ Neurologic: spinal cord injury ◆ Bladder obstruction[13] ◆ Infection
Urge incontinence	Associated with detrusor muscle overactivity, which may be age-related, be secondary to neurogenic disinhibition of the central nervous system, or result from bladder infection or urethral/bladder irritation	Complaint of involuntary leakage accompanied by or immediately preceded by urgency	◆ Neurogenic: Neurological disease (e.g., Parkinson's disease, stroke) ◆ Inflammatory: Acute or chronic cystitis (e.g., bacterial, postradiation); estrogen deficiency in women ◆ Some drugs (e.g., cholinesterase inhibitors*)
Stress incontinence	Associated with increase in intra-abdominal pressure; results from impaired urethral closure caused by insufficient pelvic support	Incontinence occurs with coughing, sneezing, laughing, climbing stairs, bending, lifting, standing, and changing positions in bed	◆ Multiple childbirths ◆ Age-related physiologic changes ◆ Estrogen deficiency in women ◆ Damage to sphincter resulting from radiation or surgery
Overflow incontinence	Associated with leakage of urine when the bladder is at maximum capacity and remains distended	Straining, dribbling, weak urinary stream, hesitancy, frequency, nocturia; may also be precipitated by the events listed under stress incontinence	◆ Related to conditions that cause detrusor muscle underactivity or denervation of bladder wall musculature; anticholinergic medications ◆ Neurogenic: Diabetes, multiple sclerosis, low spinal-cord injury or disease, pelvic nerve damage resulting from surgery or radiation, vitamin B_{12} deficiency (rare) ◆ Obstructive: BPH, urethral stricture, tumor, fecal impaction, pelvic organ prolapse

TABLE 1 Continued
Types of Urinary Incontinence

Type	General Description	Typical Symptoms	Examples of Specific Causes
Functional incontinence	Results from physical or cognitive problems that prevent reaching toilet facilities in time in a patient whose urinary tract function would otherwise be adequate for him or her to be continent	Usually large-volume urine loss; intact awareness of the need to urinate; may complicate, exacerbate, or precipitate other forms of UI	◆ Impaired mobility (e.g., resulting from arthritis of upper or lower limbs or back, muscle weakness, impaired dexterity, poor vision or lighting, physical restraints, excessive distance from toilet facilities, high beds or low chairs that prevent independent rising) ◆ Unwillingness to toilet (depression, anxiety) ○ Chronic cognitive impairment ○ Communication difficulty ○ Dementia, delirium, depression, confusion ○ Caregiver or toileting assistive devices not available ○ Caregiver- or setting-induced reluctance to toilet ◆ Clothing management difficulties (e.g., resulting from loss of manual dexterity, range of motion deficits, visual impairments, cognitive deficits), dementia, delirium, confusion, refusal to be toileted
Transient incontinence	Temporary episodes of UI in a usually continent individual that are usually reversible once the cause is identified and treated	Any of above symptoms	The DIAPPERS mnemonic[14] can be helpful: ◆ **D**elirium (dehydration, dietary irritants) ◆ **I**nfection/inflammation ◆ **A**trophic urethritis and vaginitis, acute urogenital prolapse ◆ **P**harmaceuticals ◆ **P**sychological (anxiety, depression) ◆ **E**xcess urine output (endocrine disorders, heart failure, overhydration, sleep apnea) ◆ **R**educed mobility and retention ◆ **S**tool impaction
Mixed incontinence	Combination of urge and stress incontinence	Symptoms of urge and stress incontinene	Conditions that cause urge and stress incontinence

BPH: benign prostatic hyperplasia; UI: urinary incontinence.
*See package inserts for donepezil,[15] rivastigmine,[16] and galantamine.[17]

STEP 1

Does the patient have a history of urinary incontinence? Obtain information about the patient's past and present urinary function.

- Review the transfer summary and other chart data for indications of a UI problem;
- Review for recent or prior placement of an indwelling urinary catheter and associated diagnosis;
- Review the results of a previous UI evaluation, if any;
- If the patient has a history of UI, identify the onset and type of incontinence to the extent possible; and
- Review all medication changes in the 30 to 90 days before UI is noted, to rule out medication changes as contributing factors.

Additionally, the Minimum Data Set (MDS 3.0) recommends the following process:

1. Review the medical record for bladder or UI documentation or flow sheets, nursing assessments and progress notes, practitioner history, and physical examination.
2. Interview the patient if he or she is capable of reliably reporting on his or her continence. Speak with family members or significant others if the patient is not able to report on continence.
3. Ask direct care staff members on all shifts who routinely work with the patient about episodes of UI.

Appendix 1 provides examples of several assessment tools for UI.

STEP 2

Does the patient show signs and symptoms of urinary incontinence? UI is identified by direct observation (i.e., by observing a UI episode or finding the patient wet).

- Document any signs and symptoms of UI in the patient's medical record,
- Determine how often the patient leaks urine and how much urine is lost (small or large volume), and
- Determine whether the patient uses a protective pad, brief, or other absorbent product.

AMDA's *Know-It-All Before You Call—Data Collection System* includes checklists for documenting new-onset or increasingly severe UI and nocturia.[a]

Documentation needs to include details such as

- Related circumstances (e.g., the incident occurred while the patient was trying to get to the bathroom);
- Frequency of UI episodes;
- Time of day or night (e.g., in the morning after administration of a diuretic, or at night in a patient with congestive heart failure);
- Whether the patient also has fecal incontinence (associated with increased severity and decreased reversibility of UI); and
- Presence of complications (e.g., dermatitis, skin maceration).

Be attuned to frequent clothing changes by the patient that may reflect continence issues. A bladder record or voiding diary will help to characterize the patient's UI. Complete MDS 3.0 Section H, and complete Section M if skin integrity is an issue. If UI is recurrent or persistent, complete the relevant items in the MDS.

Use the MDS 3.0 criteria (Table 2) for guidance in identifying the severity of a patient's UI. Note that patients with indwelling urinary catheters, external catheters, ostomies, (including urostomy, ileostomy, and colostomy) or intermittent catheterization, or who have no urine output, are coded separately. Patients who achieve continence through the use of such devices may nevertheless benefit from the assessment and treatment processes described in this guideline.

[a] PALtmed. *Incontinence and Nocturia* in *Know-It-All Before You Call—Data Collection System.* Essential clinical data collection: A guide for nurses on reporting change of condition. Card Nos. 43 and 50. Ordering information available at https://paltmed.org/products/know-it-alltm-you-call-data-collection-system-paltc-assisted-living-setting.

TABLE 2
MDS 3.0 Criteria for Levels of Continence

Level	Criteria
0. Always continent	Throughout the 7-day look-back period the patient has been continent of urine, with no episodes of UI.
1. Occasionally incontinent	Fewer than 7 episodes of UI during the 7-day look-back period. This includes UI of any amount of urine sufficient to dampen undergarments, briefs, or pads during daytime or nighttime.
2. Frequently incontinent	7 or more episodes of UI during the 7-day look-back period, but during this period the patient had at least one continent void. This includes UI of any amount of urine, daytime and nighttime.
3. Always incontinent	During the 7-day look-back period, the patient had no episodes of continent voiding.
4. Not rated	Throughout the 7-day look-back period, the patient had a catheter (indwelling or condom), urinary ostomy, or no urine output (e.g., on chronic dialysis with no urine output).

Source: Centers for Medicare and Medicaid Services.[18]

ASSESSMENT

STEP 3

Identify factors affecting the patient's continence. With the interdisciplinary team, assess for risk factors that may affect the patient's potentially modifiable causes of UI (Table 3) so that interventions may be targeted to those factors.[11] Consider the input of the consultant pharmacist in the review of medication effects on continence status.

TABLE 3
Examples of Risk Factors for Urinary Incontinence

Category	Risk Factor
Conditions	Atrophic vaginitis, BPH, constipation, dehydration, delirium (recent surgery or acute medical illness), fecal impaction, hypercalcemia, hyperglycemia, impaired mobility, neurological disease, nocturnal polyuria, obstructive sleep apnea, pelvic floor dysfunction, symptomatic UTI, uncontrolled pain, urethral stricture, urethritis, urinary retention
Chronic diagnoses	Anxiety; arthritis of the knees, hips, or spine; bladder or prostate cancer; cerebral vascular accident; congestive heart failure; cord injury; dementia; depression; diabetes; multiple sclerosis, Parkinson's disease or other degenerative neurological conditions; obesity; obstructive sleep apnea; pelvic organ prolapse; postprostatectomy; venous insufficiency with edema
Environment	Inadequate access to toilet; lack of specialized or adaptive equipment (e.g., urinal, bedside commode); restrictive clothing; potentially restrictive equipment (e.g., IV lines, CPAP devices); use of physical restraints
Medications	Alpha blockers; antidepressants, including tricyclic and norepinephrine-blocking agents; antihistamines and other anticholinergics; antipsychotics; calcium antagonists; calcium channel blockers; cholinesterase inhibitors; decongestants; diuretics; estrogen; hypnotics; opioid analgesics; sedatives
Other	Bladder irritants (e.g., excessive intake of caffeinated beverages, soda, alcohol beverages); recent placement of an indwelling urinary catheter; visual disturbances; excess fluid intake

CPAP: continuous positive airway pressure; IV: intravenous; UTI: urinary tract infection.

STEP 4

Perform a physical examination and an additional work-up as indicated. The primary purpose of the history and physical examination is to detect potentially modifiable or reversible factors that are contributing to the patient's UI.[10,11]

Initial Examination

Initial evaluation by both nursing personnel and practitioners includes visual inspection of the perineum for localized skin irritation or lesions.[20] If the patient has UI on admission or has new onset of UI, the practitioner ought to review the situation and perform a targeted physical exam.[10,11] The use of nurse incontinence specialists, usually certified registered nurse practitioners with special training in the evaluation and treatment of incontinence in the LTC setting, can be beneficial.

Targeted Physical Examination[10,11]

A targeted physical exam by the practitioner may include an abdominal assessment, neurological assessment, rectal exam, or vaginal exam.

- *Cardiovascular examination:* Evidence of volume overload.
- *General:* Observe mobility, gait, and mental status; obtain information on hygiene and self-care, and presence or absence of an indwelling urinary catheter.
- *Abdominal/rectal examination:* Inspection and palpation of the abdomen to detect bladder distention or tenderness, retained stool, or pelvic masses. A digital rectal exam can assess sphincter tone, the presence or absence of retained stool in the rectal vault, and other possible causes of urinary obstruction (e.g., enlarged prostate, fecal impaction).
- *Neuropsychological exam:* A screening exam to detect peripheral neuropathy; Parkinson's disease; prior stroke; or evidence of delirium, depression, or cognitive changes. Can include bulbocavernosus reflex and anal wink.
- *Bimanual pelvic exam:* To check for pelvic organ prolapse, evidence of urogenital atrophy, vaginal discharge, a retained pessary, or pelvic masses.
- *Prostate exam:* Size of gland and evidence of prostate cancer.

Laboratory Testing

The practitioner may order the following laboratory tests:[10,11]

- Urinalysis or urine culture if infection is suspected (to rule out infection as a causative or contributing factor and to screen for hematuria, glucosuria, proteinuria);
- Glucose if frequency or increased urine volume;
- BUN/creatinine (to assess renal function);
- Calcium (to rule out hypercalcemia); and
- Vitamin B_{12} (to check for vitamin B_{12} deficiency if other causes of urinary retention have been ruled out).

Other Assessments

- Functional assessment: Along with the physical assessment, a functional assessment by an occupational or physical therapist may include an evaluation of the patient's ability to toilet (e.g., independent, with verbal prompting, with support from one or two care assistants, with an assistive device).

- Cognitive assessment: Appropriate assessment of the patient's cognitive status is important because of cognition's effects on treatment and prognosis.
- Screening for depression.

Postvoid residual testing. When urinary retention is suspected on the basis of history, physical examination, or risk factors (e.g., diabetes, use of anticholinergic medications), a postvoid residual (PVR) test is indicated.[7,20-24] Where available, bladder ultrasound (performed by trained personnel) is less invasive and is a preferred alternative to indwelling urinary catheterization for determining PVR. The test should be performed within a few minutes after a continent or incontinent void. Preferably, the volume of the void should be measured; if it is an incontinent void, the amount of incontinence (i.e., small, moderate, large) should be recorded, along with the PVR volume.

Expert opinion suggests that a PVR ought to be performed in patients with UI who have higher risk for an elevated PVR.[23,24] Indications for PVR include

- New-onset UI after pelvic surgery or pelvic prolapse;
- Presence of neurological disorders (e.g., Parkinson's disease);
- Presence of spinal cord lesions;
- Detrusor underactivity or bladder outlet obstruction (BOO) diagnosed by urodynamic studies; or
- History of
  - Failed antimuscarinic therapy,
  - Recurrent UTIs,
  - Urinary retention,
  - Severe constipation,
  - Diabetes with neuropathy, or
  - Use of medications that interfere with detrusor contractility or increase sphincter tone.

PVR volume is usually 5–10 mL, but volumes up to 100 mL are considered normal; a volume of less than 200 mL effectively excludes overflow incontinence. A PVR greater than 200 mL is abnormal; PVRs between 50 and 200 mL ought to be interpreted in the light of other clinical findings.

Bladder stress testing. Also called a "cough test," this test is done with the patient lying down with a full bladder. The patient is asked to cough; if visible leakage or urine results, the test is positive, and the patient likely has stress incontinence. If negative, the test may be repeated standing. Loss of urine (especially large-volume loss) occurring a few minutes later is suggestive of overactive bladder (OAB) or urge incontinence.[20] Because this test is difficult to perform in patients with severe impairments of mobility or cognition, it should be considered only in patients for whom a specific diagnosis is needed[7,20-26] (e.g., when pharmacologic therapy or surgery is being considered, although pharmacological therapy can be used without stress testing).

Prostate-specific antigen testing. Localized prostate cancer is rarely the cause of urinary symptoms. In elderly men with UI, a prostate-specific antigen test adds little value and is not recommended as a screening test for prostate cancer in men aged over 75[27,28] or in men with a life expectancy of less than 10 years.[29] (See PALTmed's clinical practice guideline *Health Maintenance in the Long Term Care Setting*.[b])

Urodynamic studies. Urodynamic studies are indicated in selected patients for whom the etiology of UI remains unclear. Simple bedside cystometry can be performed by trained facility personnel, where available, or by outside consultant services.

[b] PALTmed. *Health Maintenance in the Long Term Care Setting*. Clinical Practice Guideline. Ordering information available at https://paltmed.org/products/health-maintenance-cpg.

Consider whether additional diagnostic testing might help to define the category, severity, or causes of UI. For example, conditions that cause urinary retention may lead to overflow incontinence (Table 4) and may cause other complications, including renal failure and renal concentration defects.

Diagnostic testing may not be indicated if it would not help to direct patient management, if the patient or legally authorized representative is likely to refuse treatment, or if the burden of the workup is greater than the potential benefits. This decision should be documented in the patient's record.

TABLE 4
Common Risk Factors for Urinary Retention

- Anticholinergic medications, opioid analgesics, sedatives, hypnotics, and other drugs that interfere with bladder emptying (See PALTmed's resource *Multidisciplinary Medication Management. A Resource for the Long Term Care Continuum.*[c])
- Diabetes complicated by autonomic neuropathy
- Male sex (because of high prevalence of BPH, possibly resulting in bladder outlet obstruction, in men aged over 50)
- Spinal diseases
- Vitamin B_{12} deficiency
- Paraplegia/quadriplegia
- Recent anesthesia
- Recent bed rest for acute illness
- Trauma or pain (e.g., pelvic fractures)
- Recent placement of an indwelling urinary catheter
- Pelvic organ prolapse
- Fecal impaction

STEP 5

Summarize relevant information about the patient's urinary incontinence. If the patient has UI on admission; if there is a change in cognition, physical ability, or urinary tract function on admission; or if a new UI meets MDS criteria, review existing information to help target subsequent interventions. Acute change in UI status or new-onset UI can be indicative of urologic or systemic disease and should be fully evaluated. Relevant information includes the following:

- Previous interventions for UI and their results, if known;
- Physical conditions that may affect the patient's continence (e.g., abdominal or urologic surgery, atrophic vaginitis, prolapsed uterus or bladder, prostate enlargement, neurologic disorders, use of an indwelling urinary catheter);
- Any existing or previous complications related to the use of an indwelling urinary catheter (e.g., bladder calculi, encrustation, trauma, symptomatic UTI);
- Functional impairments that may impede the patient's ability to maintain continence;
- Significant impairments or alterations in patterns of fluid intake and hydration status, including the presence of significant constipation or fecal impaction;
- Medications that may affect continence (e.g., agents with anticholinergic properties, diuretics); and
- Environmental factors and assistive devices (e.g., grab bars, raised toilet seats, bedside commodes, urinals, bed rails, restraints, walkers) that may either facilitate or impede the patient's ability to access the toilet.

[c] PALTmed. *Multidisciplinary Medication Management. A Resource for the Long Term Care Continuum.* Columbia, MD: PALTmed.

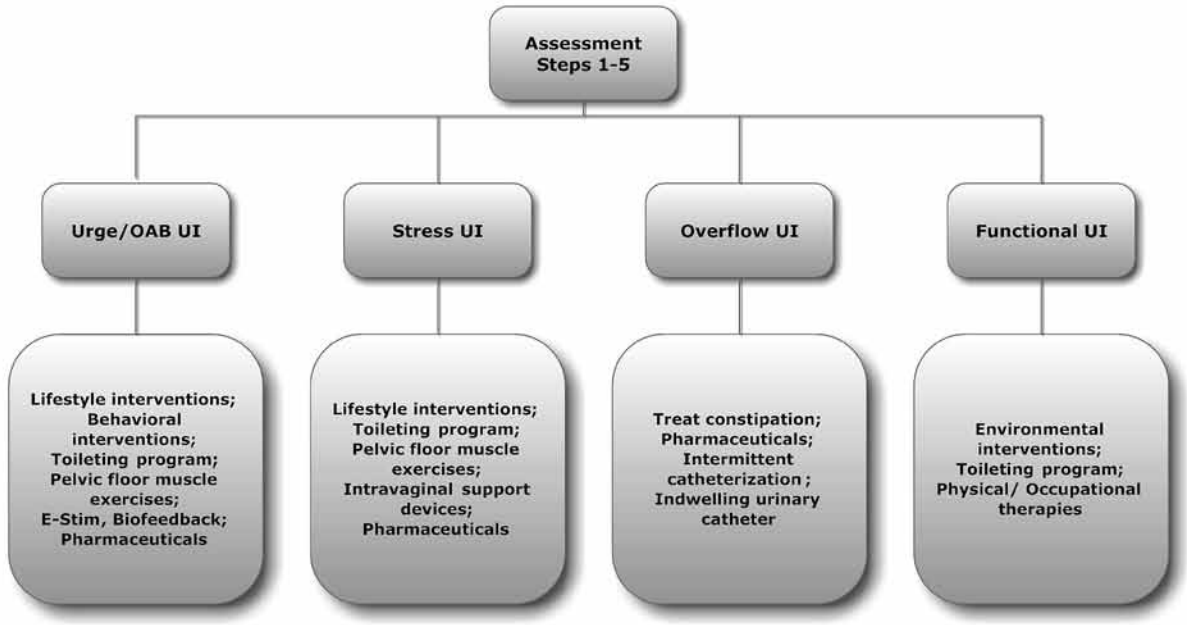
STEP 6

Identify individual treatment goals and develop a plan of care. On the basis of the information collected by caregiving staff and the practitioner (Steps 1 through 5), develop an individualized care plan to manage the patient's UI.[11] Stepwise treatment strategies ought to be discussed with the patient and/or family. The overall goal should be to improve function and quality of life and decrease episodes of UI.

The most basic goals of managing UI are to try to reduce its frequency and severity and to minimize related complications. Effective treatment of underlying causes may not always be possible or pertinent because of a patient's general condition, treatment preferences, or functional abilities.

Figure 1 lists categories of treatment options for specific types of UI. Some of these approaches are cause specific, such as treating constipation, whereas others (e.g., treating a UTI) address palliation of UI that is partially or totally irreversible. Some interventions will require referral for consultation or specialty expertise. In-facility options for selected interventions depend on staff availability and expertise. Insufficient improvement in continence status following intervention trial(s) requires reevaluation or referral appropriate to patient preferences.[13,30,31]

FIGURE 1
Categories of Treatment Options for Specific Types of Urinary Incontinence



Adapted from Abrams et al, 2010[32]

STEP 7

Address transient causes of, and modifiable risk factors for, urinary incontinence.[11,20,23,24,33] As appropriate, treat transient causes of UI and address modifiable risk factors—both those related to urinary tract function and those that affect urinary function by impairing an individual's overall function, mobility, level of consciousness, and so on.

For example, manage delirium, treat urethritis, provide an easily accessible toilet, and offer frequent reminders to toilet and assistance with toileting if necessary. Examples of appropriate assistive devices to facilitate proper toileting may include elevated toilet seats, a walker to increase balance and safety, and clothing fastened with Velcro® for easier undressing.

On the basis of an individualized assessment, provide sufficient fluids to promote adequate urine flow. Also try to promote regular bowel function, as clinically significant constipation may inhibit adequate bladder function. Manage acute conditions such as delirium and conditions that cause pain or affect mobility and function. Review and adjust medications that may affect continence (e.g., by stopping or reducing a dose, choosing an alternative medication, or changing the time of medication administration).

Management of urinary tract infections and bacteriuria. Chronic asymptomatic bacteriuria is frequent in the LTC setting, with a prevalence as high as 50%.[34] The U.S. Preventive Services Task Force (USPSTF) recommends against screening for asymptomatic bacteriuria in nonpregnant women (Grade D recommendation*), citing a lack of evidence that it improves clinical outcomes in adult men and nonpregnant women.[35] The presence of bacteriuria without symptoms, whether or not pyuria is present, does not merit treatment, especially in patients who have indwelling urinary catheters. Virtually every patient who has an indwelling catheter for more than 7 days has bacteriuria, but only some of them have a symptomatic UTI. Urine cultures, if required, should be obtained using appropriate techniques (e.g., clean-catch collection, catheterization). Specimens from indwelling catheters should be aspirated through disinfected sampling ports.[36]

Patients with symptoms of a UTI or of urosepsis (bacteria in the bloodstream, probably from a urinary source, with signs of sepsis) should receive appropriate treatment. The goal of treating a UTI is, at a minimum, to alleviate systemic or local symptoms. Total eradication of all bacteria may not always be feasible (e.g., in a patient who has an indwelling urinary catheter or other source of chronic bacteriuria). A post-treatment urine culture (i.e., test of cure) is not necessary.

Definition of Colonization

According to the State Operations Manual, **colonization** refers to the presence of microorganisms on or within body sites without detectable host inflammatory response, cellular damage, or clinical expression.[37]

Studies have consistently shown that about 30% of elderly LTC patients who have no symptoms of UTI and as many as half of patients who are highly functionally impaired have a positive urine culture on routine surveillance sampling.[38] The more debilitated the patient, the more likely that asymptomatic bacteriuria will be present. Thus, for patients with suspected UTI but without urinary or other symptoms (i.e., dysuria, frequency, urgency), a positive urine culture is of limited value.[39] In general, cultures should be obtained only in the presence of signs or symptoms of infection.

In most cases, asymptomatic bacteriuria is a benign condition that does not contribute to illness or death in elderly LTC patients.[38] Prospective studies show that untreated asymptomatic bacteriuria in LTC patients may persist for 1 to 2 years without evidence of increased illness or death.[40] Moreover, treatment of asymptomatic bacteriuria with antibiotics is not clinically beneficial or cost-effective. Asymptomatic bacteriuria will often relapse if treated and treatment may be associated with the development of

* According to the USPSTF's definitions of the grades assigned to recommendations (last updated in 2007), a Grade D recommendation means that the USPSTF recommends against the service and that there is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits. (See USPSTF Grade Definitions, available at http://www.uspreventiveservicestaskforce.org/uspstf/grades.htm.)

antibiotic-resistant pathogens as well as with risk of adverse drug reactions.[38] In addition, antibiotic-related colitis is a common complication of antibiotic use that may cause serious illness.

An additional concern is that the presence of asymptomatic bacteriuria may lead to inaccurate diagnosis and to overlooking or undertreating other serious health problems. For example, an elderly patient who is eating and drinking poorly because of unrecognized bacterial pneumonia or an adverse drug reaction is likely to have a positive urine culture. Attributing the status change to the irrelevant positive urine culture may result in failure to detect the patient's more serious underlying problem.[38]

The revised F-Tag 441 guidelines for surveyors[37] raised the bar: LTC facility staff should not treat on the basis of a positive urine culture in the absence of clinical signs or symptoms supporting the presence of an infection. The surveyor guidelines used as an example a situation in which a facility routinely obtained urine cultures of asymptomatic patients with indwelling catheters and put patients with positive cultures on antibiotics. This practice resulted in two patients acquiring antibiotic-related colitis and undergoing significant weight loss.[39]

LTC facilities should have clear policies and practices to ensure that patients are not started on antibiotics without a credible clinical rationale.[34,35,38-41] Facilities should establish minimum criteria for initiating antibiotics, using the McGeer,[42] Loeb,[43] or modified Loeb[44] criteria as a starting point. For example, the infection preventionist and the medical director would partner to monitor and report the proportion of courses of antibiotic treatment for presumed urinary infection that failed to meet specific criteria. In addition, they would review the antibiogram to detect trends in antibiotic resistance (ideally, the clinical laboratory should provide one for the specific facility). Any decision about initiating or stopping antibiotic therapy should be based on clinical symptoms, laboratory data, the presence or absence of an indwelling urinary catheter, and the patient's overall condition.

Antibiotics are to be stopped if the urine culture is negative or no pyuria is present because pyuria is present in virtually every case of symptomatic UTI. However, the presence of pyuria does not increase the likelihood of asymptomatic UTI because pyuria is present in more than 90% of LTC patients with asymptomatic bacteriuria.[41] Continued bacteriuria without residual symptoms does not warrant repeat or continued antibiotic therapy. Recurrent symptomatic UTIs (two or more within 6 months) in a noncatheterized patient may warrant additional evaluation (e.g., a check for abnormal PVR urine volume; renal or bladder ultrasound to rule out structural abnormalities such as an enlarged prostate, periurethral abscess, strictures, bladder calculi, urolithiasis, stones, polyps, or tumors). Consider referral to a urologist in keeping with the patient's goals of therapy. (See also PALTmed's clinical practice guideline on managing infections in the LTC setting.[d])

STEP 8

Provide a toileting program as appropriate.[45-50] If the patient remains incontinent after transient causes of UI have been treated, consider initiating a toileting program for appropriate patients—that is, a plan whereby staff members at scheduled times each day either take the patient to the toilet, give the patient a urinal, or remind the patient to go to the toilet. If the patient requires assistance from more than one person to transfer to the toilet, address his or her mobility problems before attempting a toileting assistance trial.[45-48]

Patients with severe dementia may still benefit from toileting assistance to decrease episodes of UI. For patients who do not respond to toileting assistance, facilities can adopt a "check-and-change" strategy. This involves checking the patient's continence status at regular intervals and using incon-

[d] PALTmed. *Common Infections in the Long Term Care Setting*. Clinical Practice Guideline.

tinence devices or garments that are changed as needed. The primary goals of a check-and-change strategy are to maintain patient dignity and comfort and protect the skin.[e]

Toileting programs for functionally impaired patients who require toileting assistance include bladder rehabilitation or retraining, prompted voiding, habit training or scheduled voiding, and check and change. (MDS 3.0 notes that toileting programs may have different names. This guideline uses the MDS definitions; see Table 5 for a comparison.)

Prompted voiding, the best studied of these interventions, attempts to teach the incontinent patient to recognize bladder fullness or the need to void and to ask for help either independently or after being prompted by a caregiver. Prompted voiding involves contacting the patient periodically (e.g., every 2 hours during the day and at bedtime), checking his or her continence status, prompting him or her to use the toilet, and providing positive verbal feedback. Prompted voiding may also include the use of stimuli such as tapping the symphysis pubis, rubbing the inner thigh, or running cold water from a nearby faucet.

About 25% to 40% of patients with UI respond well to prompted voiding during the day; the average number of daily episodes of UI drops from three or four to one or fewer. Prompted voiding is not helpful at night, however, (e.g., between the hours of 10 p.m. and 5 a.m.) and has been shown to disrupt sleep. Incontinence care should be individualized at night in order to maintain comfort and skin integrity and minimize sleep disruption.

Patients with UI ought to have a trial of a toileting plan such as prompted voiding unless there is a documented reason not to do so. A toileting trial should include observations of at least 3 days of toileting patterns with prompting to toilet, with results documented in a bladder record or voiding diary. Document the results of the toileting trial in the patient's clinical record. If the patient responds well, continue with the toileting program. If the patient does not respond and does not try to toilet, manage him or her supportively with a check-and-change strategy. Patients who cooperate with prompted voiding and attempt to toilet regularly but have no reduction in incontinent episodes are probably good candidates for additional therapy such as a bladder relaxant medication (see Step 10).

STEP 9

Consider additional or alternate interventions as appropriate. Patients who remain incontinent after a toileting intervention ought to be considered for other interventions depending on the type of UI they are thought to have. Patients may have preferences concerning the type of treatment they wish to receive for UI. When appropriate, they should be asked about such preferences.

If it is decided to initiate additional treatment, document the patient's response in the medical record. If the patient initially responds favorably to treatment, but then his or her condition worsens, assess for the onset or exacerbation of conditions that can affect urinary continence. Review the patient's current medications for possible adverse effects on urinary continence. In particular, note any recent medication changes that may be adversely affecting urinary continence.

The following interventions to manage UI require more intensive participation and cooperation by the patient. Although relatively few LTC patients are likely to be able to participate in such programs, some individuals (e.g., more cognitively and functionally intact short-stay patients) may be able to do so. It is important to match the intervention to the patient's ability to cooperate and not to try to impose an inappropriate intervention on a patient who cannot participate.

[e] PALTmed. *Dementia in the Long Term Care Setting*. Clinical Practice Guideline. Ordering information available at https://paltmed.org/products/dementia-cpg.

TABLE 5
Comparison of Toileting Program Names

Cochrane Review Definitions[49,50]	MDS 3.0 Definitions
Habit training: A form of toileting assistance involving the identification of an incontinent person's natural voiding pattern and the development of an individualized toileting schedule, which preempts involuntary bladder emptying.	**Habit training or scheduled voiding:** A behavior technique that calls for scheduled toileting at regular intervals on a planned basis to match the patient's voiding habits or needs.
Bladder training: Encourages the patient to extend the time between voiding so that continence might be regained. This can take months to achieve but may help those who are physically and mentally able to use this method.	**Bladder rehabilitation/bladder retraining:** A behavioral technique that requires the patient to resist or inhibit the sensation of urgency (the strong desire to urinate), to postpone or delay voiding, and to urinate according to a timetable.
Prompted voiding: A toileting program that includes scheduled toileting prompts, typically every 2 hours. Assistance is provided in toileting. Positive reinforcement is provided for successful session(s).	**Prompted voiding:** Includes (1) regular monitoring with encouragement to report continence status, (2) using a schedule and prompting the patient to toilet, and (3) praise and positive feedback when the patient is continent and attempts to toilet.
	Check and change: Involves checking the patient's dry/wet status at regular intervals and using incontinence devices and products.

Bladder rehabilitation or bladder retraining. Cognitively intact patients who have stress, urge, or mixed incontinence may be candidates for bladder retraining. This approach requires the patient to resist the strong desire to urinate, to postpone or delay voiding, and to urinate according to a timetable. Successful bladder retraining typically requires the patient to have no more than occasional incontinence, to be relatively independent in activities of daily living, and to be aware of the need to urinate. A bladder retraining program usually requires at least several weeks to achieve success.

Pelvic-floor-muscle rehabilitation. This approach (Kegel and other exercises) may help patients who have urge or stress incontinence.[45,46] It involves strengthening the voluntary periurethral and perivaginal muscles that facilitate urethral activity and support the pelvic organs. Strengthening exercises, including exercises for the obturator internus muscles, pelvic diaphragm, urogenital diaphragm, and the external sphincters, may be indicated. The patient must be able to follow instructions and cooperate with close staff monitoring.

Physiological quieting. This approach involves techniques that relate to the autonomic nervous system, which contributes to control of the bowel and bladder. It may involve diaphragmatic breathing, hand warming, and body/mind quieting and may be incorporated with behavioral approaches to continence management. This optional management technique may be appropriate for a select group of patients.[13,51]

Electrical stimulation. This technique (abbreviated as E-stim) involves the application of electrical current by a trained practitioner to sacral and pudendal afferent fibers through vaginal, anal, or surface electrodes. It is used to inhibit bladder overactivity and improve awareness, contractility, and efficiency of pelvic muscle contraction. This management technique may be appropriate for selected patients with stress, urge, or mixed incontinence. Although some data suggest that E-stim may have some efficacy in treating UI, this intervention has not been studied in the LTC setting.

STEP 10

Evaluate the effectiveness of interventions thus far, and implement additional approaches as indicated. If the measures described in Steps 7 through 9 are not appropriate or do not adequately resolve the patient's UI, consider other possible interventions, including pharmacologic therapy. Patients should have a trial of behavioral interventions before pharmacologic therapy is considered. Behavioral therapy, including bladder training and prompted voiding, improves symptoms of urge and mixed incontinence. Documentation of behavioral interventions prior to pharmacological treatment in assistive living facilities is a component of the Geriatric Physician Performance Measurement Set (National Quality Forum).[52] (See Figure 1.)

Pharmacologic therapy. Medications are often used to treat specific types of UI, especially stress and urge incontinence associated with OAB (Table 6).[53-79] Pharmacologic agents may reduce the number of urination episodes and incontinence episodes per 24-hour period while increasing the volume per episode of urination. Because drug therapy is targeted to specific underlying abnormalities, it is important to identify the type of UI before initiating treatment.

Consider significant risks and anticipated benefits before prescribing medication for UI. Identify other medications in the patient's regimen that may counteract the beneficial effects or exacerbate the side effects of agents prescribed for UI. For example, in patients with urinary obstruction medications with anticholinergic properties may impair continence or cause urinary retention. The concomitant use of cholinesterase inhibitors with anticholinergic medications may reduce the efficacy of both agents and cause significant side effects.[80-82] (See Appendix 2 for more information on the impacts of different classes of medications on UI.)

Serum anticholinergic levels of patients, especially those with dementia, in the LTC setting have been shown to adversely affect cognition and capacity for self-care. Anticholinergic load is cumulative; thus, when a patient is taking several medications, his or her cumulative anticholinergic load may be substantial despite the fact that taken individually, each medication's level of anticholinergenicity may be low. The practitioner should consider the potential benefits of reducing anticholinergic load by discontinuing nonessential medications or switching to agents that may be equally effective while having a lower level of anticholinergenicity.[83]

An alternative to anticholinergic agents is a newly approved drug, mirabegron. Mirabegron is a once-daily selective beta 3-adrenoceptor agonist for patients with OAB to facilitate filling of the bladder and storage of urine without the anticholinergic properties seen with antimuscarinic medications. Mirabegron is not recommended in patients with uncontrolled hypertension (defined as systolic blood pressure greater than or equal to 180 mm Hg and/or diastolic blood pressure greater than or equal to 110 mm Hg).[84] Studies performed to date have not demonstrated geriatric-specific problems that would limit the usefulness of mirabegron in the elderly.[85]

Besides being available as immediate release and extended-release tablets, oxybutynin is available as a topical agent and transdermal patch. The latter was recently approved for over-the-counter use in women with symptoms of overactive bladder. It will be commercially available for OTC use in September 2013. This topical and transdermal dosage forms avoid first-pass metabolism in the liver, thereby reducing the formation of the desethyloxybutynin metabolite and associated anticholinergic side effects. Clinical studies with transdermal oxybutynin showed that it reduced the anticholinergic side effects commonly associated with oral oxybutynin. In one study, skin irritations occurred in 14% of subjects who received transdermal oxybutynin compared with 4% of those who received a placebo patch.[86]

TABLE 6
Potential Pharmacologic Interventions According to Type of Incontinence

Drug/Type of Incontinence	Drug Class	Dose Range	Side Effects
Urge incontinence and/or OAB			
Darifenacin extended release (Enablex®)	Antimuscarinic	7.5–15 mg qd (7.5 mg/d with moderate liver impairment or potent 3A4 inhibitors)	Dry mouth, constipation, dyspepsia are most commonly reported.
Fesoterodine extended release (Toviaz®) *Note that fesoterodine is metabolized to the same active metabolite as tolterodine.*	Antimuscarinic	4–8 mg qd	Dry mouth and constipation are most commonly reported.
Mirabegron (Myrbetriq®)	Beta-3 adrenergic agonist	25–50 mg qd (intial 25 mg, may increase to 50 mg po qd after 8 weeks based on efficacy)	Hypertension, headache, UTIs, nasopharyngitis.
Oxybutynin transdermal gel (Gelnique® 10%)	Antimuscarinic	One satchet (100 mg/g) topically qd	Dry mouth, application site reactions, constipation, and headache.
Oxybutynin transdermal patch (Oxytrol®) 3.9 mg/ 24HR	Antimuscarinic	One 3.9 mg/day system applied twice weekly (every 3 to 4 days)	Dry mouth and application site pruritus.
Oxybutynin syrup 5 mg/ 5ml (Ditropan®)* Oxybutynin tablet immediate release (Ditropan®)* Oxybutynin extended 24 hour release (Ditropan XL®)*	Antimuscarinic	2.5–5ml qd 2–3 times/ day (MDD: 5ml QID) 2.5–5 mg qd 2–3 times/ day (MDD: 5 mg QID) **For frail elderly patients, a lower initial starting dose of 2.5 mg given 2 or 3 times a day has been recommended because of a prolongation of the elimination half-life XL: 5–10 mg once daily	Dry mouth, constipation, dizziness, and nausea.

TABLE 6 Continued
Potential Pharmacologic Interventions According to Type of Incontinence

Drug/Type of Incontinence	Drug Class	Dose Range	Side Effects
Solifenacin extended release (Vesicare®)	Antimuscarinic	5–10 mg qd (5 mg/d with moderate liver impairment, CrCl less than 30 ml/min, or potent CYP3A4 inhibitors)	Dry mouth and constipation are most commonly reported. Use with caution in patients who have congenital or acquired cardiac QT prolongation.
Tolterodine immediate release (Detrol®)* Tolterodine extended release (Detrol LA®) Note that tolterodine is metabolized to the same active metabolite as fesoterodine.	Antimuscarinic	Immediate release: 1–2 mg bid Extended release: 2–4 mg/d	Dry mouth, constipation, and headaches are most commonly reported. Side effects may be less likely with use of extended-release formulation.
Trospium immediate release (Sanctura®) Trospium extended release (Sanctura XR®)	Antimuscarinic	Immediate release: 20 mg daily Extended release: 60 mg, once daily	Dry mouth and constipation are most commonly reported. Side effects may be less likely with use of extended-release formulation.
BOO in association with Overflow incontinence and/OAB			
Alfuzosin (Uroxatral®)	Alpha-adrenergic antagonist	10 mg/d for BPH (immediately after the same meal each day)	Incidence of side effects is comparatively low. Weakness, dizziness, upper respiratory infection, headache, and impaired ejaculation may occur. Avoid in patients who have moderate or severe hepatic insufficiency or with potent CYP3A4 inhibitors.
Doxazosin (Cardura®)*	Alpha-adrenergic antagonists	1–8 mg/d (increase by 1 mg every 7–14 d)	Orthostatic hypotension (watch particularly for a first-dose effect), dry mouth, constipation, diarrhea, syncope, tinnitus, tachycardia, rash, sexual dysfunction, dyspnea.
Dutasteride (Avodart®) Men only	5-alpha reductase inhibitor	0.5 mg/d for BPH	Impotence, decreased libido, ejaculation disorder, gynecomastia.
Finasteride (Proscar®) Men only	5-alpha reductase inhibitor	5 mg/d	Impotence, decreased libido or ejaculate volume, mastodynia.
Silodosin (Rapaflo®)	Alpha-adrenergic antagonists	4–8 mg/d for symptoms of BPH	Retrograde ejaculation is most commonly reported. Avoid with severe renal impairment, severe hepatic impairment, or while using strong CYP3A4 inhibitors.

TABLE 6 Continued
Potential Pharmacologic Interventions According to Type of Incontinence

Drug/Type of Incontinence	Drug Class	Dose Range	Side Effects
Tamsulosin (Flomax®)	Alpha-adrenergic antagonist	0.4–0.8 mg daily for symptoms of BPH (approximately 30 min following the same meal each day)	Incidence of side effects is comparatively low. Impaired ejaculation, rhinitis, dizziness, and back pain are most commonly reported. Tamsulosin is associated with the highest reported incidence of intraoperative floppy iris syndrome. At this time, treatment of BPH remains the only FDA indication for this drug. Any other use is considered "off label" and therefore is not included in this guideline.[88]
Terazosin (Hytrin®)*	Alpha-adrenergic antagonists	1–10 mg/d (increase by 1 mg every 4 days as needed)	Orthostatic hypotension (watch particularly for a first-dose effect), dry mouth, constipation, diarrhea, syncope, tinnitus, tachycardia, rash, sexual dysfunction, dyspnea.

bid: twice a day; BOO: bladder outlet obstruction; CrCl: creatinine clearance; d: day; FDA: Food and Drug Administration; OAB: overactive bladder; qd: once a day; tid: three times a day; MDD: maximum daily dose.
*Potentially inappropriate in older adults

Note: Oxybutynin may be indicated in other populations, but is not appropriate for the LTC population. Practitioners should carefully consider the potential impact of anticholinergic side effects of medications before, during, and after any drug therapy changes to assess the effects of those changes on continence, falls, and cognition.

Note: Imipramine and oxybutynin may be indicated in other populations, but are not appropriate for the LTC population. Practitioners should assess total psychoactive drug load before, during, and after any drug therapy changes to assess the effects of those changes on continence, falls, and cognition.[89,90]

A trial of pharmacologic therapy should be undertaken for 1 to 3 months. With some drugs for OAB, it can take up to 12 weeks for the patient to feel the full benefit of therapy.[87] Monitoring should include careful checking for side effects, objective assessment of UI frequency, and assessment of the patient's satisfaction with treatment. If in 3 months the patient has not responded to the maximum tolerable dose, either discontinue the medication or switch to another agent in the appropriate category.

All medications used to treat UI can have significant side effects in susceptible patients, including changes in behavior, level of consciousness, and function. Some newer agents may have fewer cognitive side effects, a characteristic that has been ascribed to their selectivity for target receptors in the bladder and lower likelihood of crossing the blood-brain barrier. This is particularly true of hyoscyamine-based (e.g., Anaspaz, Cystospaz, Levbid, NuLev) and atropine-like (e.g., flavoxate, methenamine combination) medications that are sometimes used to treat UI but are generally not appropriate in frail, cognitively impaired elderly patients. Newer extended-release oral antimuscarinics may have fewer side effects than the older immediate-release oral preparations because they achieve steady therapeutic serum levels of the drug. Transdermal preparations may have fewer side effects than oral ones because transdermal delivery, by bypassing the liver, significantly reduces the quantity of circulating drug metabolites.

For patients with OAB or urge incontinence, monitor at-risk patients for possible urinary retention after initiating antimuscarinic drug therapy. At-risk patients include those with diabetes, men who

have symptoms of voiding difficulty in addition to OAB symptoms, and patients who have a high normal PVR (100–200 mL) prior to starting antimuscarinic therapy. These patients probably have detrusor hyperactivity with impaired contractility and may be especially susceptible to further urinary retention when treated with antimuscarinic agents. It may be appropriate to reassess PVR to exclude urinary retention after initiating therapy.

Incontinence devices and products. Although they do not address underlying causes, incontinence devices and products may play a limited role in the management of UI or a more significant role if the underlying risks or causes of UI cannot be treated. Disposable, absorbent products are helpful for some patients, especially at night. However, external urine collection devices (e.g., external catheters) are rarely useful. Condom catheters may be associated with localized dermatitis, cellulitis, and potential pressure ulcers, but compared with indwelling urinary catheters are associated with a lower incidence of UTIs.[91] These devices and products should not be used in place of more-specific treatments that are feasible, appropriate, and desired by the patient or family. Individualize the use of incontinence devices and products on the basis of the patient's specific needs and risks. Do not use them in a manner that increases dependency on the products.

Absorbent products include perineal pads or panty liners for slight leakage, belted or beltless undergarments, shaped pads, protective underwear for moderate to heavy leakage, and traditional diaper-style products for heavy to severe UI. Not all absorbent products are of equal quality; when selecting a product line, consider both product performance and patient needs (Table 7). Choose products that

- Are comfortable to wear,
- Are available in various styles and sizes,
- Can quickly wick wetness away from the skin,
- Promote and maintain a healthy skin environment, and
- Are conducive to personal dignity (e.g., as unobtrusive or non-evident to other people as feasible).

Other devices such as bed pads may be used to try to keep beds, clothing, and other external items dry. Such devices should wick away moisture to help protect skin from maceration and rashes caused by prolonged contact with moisture.

Check—and change as needed—patients using absorbent products or external collection devices at regular intervals, according to their voiding patterns and manufacturers' recommendations.

TABLE 7
Considerations When Selecting a Supplier of Incontinence Products

- Specific needs of the facility and its patients
- Product performance
- Supplier's or manufacturer's ability to
  - Offer a program or system for managing UI within the facility
  - Provide tools and training manuals (e.g., assessment forms, tracking forms, retraining program, risk assessment forms)
  - Provide hands-on training for staff, including check-and-change routines, demonstrations of proper use, and proper selection and sizing of products
  - Provide outcome data
- Cost-effectiveness
- Availability of research or other data demonstrating the products' effectiveness
- Reusability or disposability of products

Pelvic support devices. Some women whose urinary retention or incontinence is associated with bladder or uterine prolapse may benefit from the placement of a pessary (an intravaginal device used to treat pelvic muscle relaxation or prolapse of pelvic organs). Monitor the patient with a pessary for effectiveness and complications, remove it periodically for cleaning, and consider discontinuing it if it is ineffective or if significant complications (e.g., infection, bleeding) occur.

Surgery. Although most surgical intervention is not effective in the frail LTC population, it may be indicated in selected cases. Surgery for stress incontinence in women or urinary obstruction in men may be effective in some cases (e.g., transurethral prostate resection or dilation of a urethral stricture may be beneficial in selected cases). Practitioners may wish to consider referring patients who could benefit from surgery to a urologist, gynecologist, or urogynecologist.

STEP 11

Consider catheterization. LTC facilities are expected to evaluate the appropriateness of and need for continuing use of catheters and to include patient or family preferences in the evaluation process. If other interventions are not feasible or have not adequately addressed the patient's UI, consider bladder catheterization. Catheterization may be intermittent or indwelling. For the well-educated, motivated patient, intermittent catheterization may be an option. In the frail elderly LTC population, however, intermittent catheterization frequently is used as a bridge to bladder retraining. (See *Intermittent urinary catheterization*, below.)

Consideration for indwelling urinary catheterization follows the intent of the Centers for Medicare and Medicaid Services with the introduction of F-Tag 315,[92] which is intended to ensure that each patient with UI is identified, assessed, and provided appropriate treatment and services to achieve or maintain normal urinary function to the extent possible. It specifies that

- An indwelling catheter should not be used without valid medical justification;
- An indwelling catheter for which continuing use is not medically justified should be discontinued as soon as clinically warranted;
- Services are provided to restore or improve normal bladder function to the extent possible after catheter removal; and
- Patients with or without a catheter should to the extent possible receive appropriate care and services to prevent infections.

Intermittent urinary catheterization. Intermittent catheterization is relatively contraindicated and possibly traumatic in cases of outlet obstruction. It is most useful as part of a bladder retraining program after removal of an indwelling catheter from a patient who had urinary retention precipitated by a clinical event such as a hip fracture or stroke. It may also be useful in carefully selected patients who have chronic urinary retention and is preferable to an indwelling urethral or suprapubic catheter in patients with bladder-emptying dysfunction. Intermittent catheterization should be performed at regular intervals to prevent bladder overdistension.[93]

Self-catheterization may be appropriate for selected patients who are willing and able to participate. For those with a transient hypotonic bladder, PVR testing and a trial of prompted or scheduled voiding (see Step 8) can help to identify the return of bladder tone.

TABLE 8
Appropriate Indications for Use of a Chronic Indwelling Urinary Catheter in the Long Term Care Setting[36]

- Urinary retention that
  - Causes persistent overflow incontinence, symptomatic infections, or renal dysfunction
  - Cannot be corrected surgically or medically
  - Cannot be practically managed with intermittent catheterization
- Short-term for skin wounds or pressure ulcers (Stage III or IV) when other measures are not viable and healing is enhanced by keeping the area dry. Wounds and pressure ulcers located in the pelvic region will make it more difficult to keep the ulcer free of contamination from urine (or feces) and to keep surrounding intact skin from breaking down. When weighing the use of indwelling catheters, consider whether the benefit outweighs the increased risk of infection.
- Provision of palliative care or of care for severely impaired patients for whom bed and clothing changes are uncomfortable or disruptive.

TABLE 9
Management of an Indwelling Urinary Catheter in the Long Term Care Setting[6]

- Use the smallest-gauge catheter possible, consistent with good drainage.[95] A practitioner order for the catheter, specifying size, type, and routine care, should be in place.
- Maintain a sterile, closed, gravity-drainage system and avoid breaking the closed system.
- Handwashing is the primary infection control practice.[95] Use clean techniques in emptying and changing the drainage system. Wash hands before and after cleaning a patient's catheter. Do not touch the spigot on the contaminated emptying container.
- Secure catheters to the upper thigh or lower abdomen to avoid bladder and urethral trauma.
- Keep the collection bag below the level of the bladder at all times. Do not rest the bag on the floor.
- Avoid frequent and vigorous cleaning of the catheter entry site. Washing with soapy water once per day is sufficient.
- Avoid obstruction, kinking, or trauma to the urinary tract associated with the catheter. Catheter obstruction is correlated with infection.
- Do not routinely irrigate the bladder with antimicrobials.
- Change catheters and drainage bags on the basis of clinical indications such as infection, obstruction, or when a closed system has been compromised.
- If obstruction is anticipated, closed continuous irrigation is suggested to prevent obstruction.
- It is optimal to individualize scheduled catheter changes before anticipated obstruction. Do not routinely change the catheter at a fixed time interval, as may be common practice. Change catheters and drainage bags on the basis of clinical indications (e.g., infection, obstruction, compromise of the closed system).[95]
- Do not routinely instill antiseptic or antimicrobial solutions into the urinary drainage bag.
- Clamping indwelling catheters prior to removal is not necessary.
- Collect small volumes of urine from the port with a sterile syringe or cannula adapter after wiping the port with disinfectant.
- Collect larger volumes of urine aseptically from the drainage bag.
- Do not perform routine surveillance cultures to guide individual patient management. All patients with indwelling catheters have bacteriuria, which is often polymicrobial. If the patient has a UTI associated with a catheter, remove the old catheter and collect a urine specimen when the new catheter is placed.[95]
- Do not treat bacteriuria unless symptoms develop. Consider other possible sources of symptoms before attributing symptoms to UTI.
- If symptomatic UTIs develop frequently, consider a urologic evaluation to rule out pathologic conditions (e.g., stones, periurethral or prostatic abscesses, chronic pyelonephritis). The rate of catheter-associated bacteriuria is directly proportional to the length of time a catheter is in place, especially beyond a few days. If a catheter is in place for more than 30 to 45 days, cultures will be positive (see the section *Management of urinary tract infections and bacteriuria,* page 10).[96-98]
- Consider the patient's privacy and cover or conceal the Foley bag when the patient is in common facility areas such as the dining room.

Indwelling urinary catheterization. A chronic indwelling catheter (suprapubic or urethral) may be appropriate for some patients in specific circumstances (Table 8). Surveyor guidance related to the federal Omnibus Budget Reconciliation Act of 1987[94] LTC regulations requires a clinically valid reason for the use of an indwelling catheter; "incontinence" alone is inadequate justification. The associated benefits and risks should be considered. A suprapubic catheter may be better tolerated, especially in men who have suffered from epididymitis, stricture, meatal damage, or periurethral abscess secondary to the obstructing effects of the urethral catheter on seminal drainage. Clamping indwelling catheters of any type before removal is not necessary.[93]

Position, secure, and manage an indwelling urinary catheter properly to minimize urethral damage and other complications (Table 9). Use a sterile catheter technique for the initial insertion. Monitor for and manage complications such as pain, bleeding, urosepsis, and catheter blockage. Consider collaboration with a urologist for patients with long term indwelling catheters to evaluate for long-term compli-cations and to consider alternative forms of urinary diversion. (Please refer to PALTmed's clinical practice guideline on pressure ulcers for information on the use of indwelling urinary catheters for wounds.[f])

STEP 12

Monitor the course and consequences of urinary incontinence and its treatment. Monitor the treatment of patients with UI to observe whether the selected interventions achieve progress toward each patient's individual care goals (e.g., decrease the number of UI episodes, maintain continence during waking hours, minimize sleep disruption resulting from nocturnal urgency or incontinence, maintain skin integrity, minimize UTIs, maximize mobility, minimize psychosocial complications such as em-barrassment or depression related to UI or the use of incontinence products). Conduct renal function tests in cases of obstruction, overflow, or dyssynergy. Use software to monitor continence management and individual patient continence programs.

Specifically, monitor patients for [92, 94]

- Effectiveness of interventions, using an objective measure of the severity of UI such as systematic recordings or a bladder diary;
- Response to any medications initiated to try to control continence;
- The appropriateness of changing to a less-obtrusive or lower-risk intervention;
- Patient satisfaction with treatment; and
- Slide effects or complications of treatment.

Documentation in the medical record should include periodic review of the degree and type of the rationale for continuing or changing current treatment approaches; the presence of complications (e.g., dermatoses, maceration, skin breakdown); and any other information relevant to the individual patient.[92]

If the patient has been adequately evaluated and reversible or modifiable underlying causes of UI have not been found, additional evaluation may not be helpful and treatment options may be limited. In such cases, it is helpful to document that no reversible causes were identified, whether treatment trials produced a clinically meaningful decrease in wetness, and the effects of attempted interventions on quality of life and caregiver burden.

[f] PALTmed. *Pressure Ulcers in the Long Term Care Setting*. Clinical Practice Guideline. Ordering information available at https://paltmed.org/products/pressure-ulcers-other-wounds-cpg.

TABLE 10
Sample Performance Measurement Indicators

Outcome Indicators

- Decreases in
  - Number of low-risk patients losing control of bladder function
  - Number of patients with indwelling urinary catheters without an appropriate indication
  - Number of patients with UI without a trial of a toileting plan
  - Number of patients with UI-associated dermatitis
  - Number of patients treated with potentially inappropriate meds for bladder dysfunction, UI
- Increases in:
  - Number of patients assessed for signs or symptoms of UI on admission
  - Number of patients with diagnosed UI whose history and symptoms are documented in the medical record
  - Number of patients with UI for whom interdisciplinary treatment plans have been prepared

Process Indicators

- Increases in
  - Evaluation of effectiveness of toileting plans in patients with UI
  - Evaluation of effectiveness of pharmacologic treatment in patients with UI
  - Implementation of staff training for appropriate catheter insertion, catheter management and specimen collection technique

For patients with an indwelling urinary catheter, caregiving staff and the practitioner should periodically document the medical justification for continuing to use the catheter and the status of any complications from its use (e.g., symptomatic UTI, catheter-related erosion or discomfort).

To help ensure the application of consistent and effective approaches to the prevention, early recognition, assessment, and management of UI, it is important to educate and train staff about incontinence recognition, evaluation, and management. Staff should be trained to follow an orderly process, which includes consistent compliance with procedures based on guidelines such as this one. Appendix 3 provides suggested components of a staff training program in UI assessment and management.

STEP 13

Monitor the facility's management of urinary incontinence. This guideline recommends processes that, if implemented, should help LTC facilities to systematically manage and improve the care of patients who are incontinent of urine. Table 10 lists sample performance measurement indicators.

A good urinary continence program could also have a positive effect on rates of falls, fecal impactions, and constipation.

SUMMARY

Although it is increasingly prevalent with age, UI is not part of normal aging. UI should always be managed, and it often can be modified and improved, even in frail older adults and people with dementia or mobility problems who reside in LTC facilities. Use of the systematic approach outlined in this clinical practice guideline should help caregivers and practitioners to optimize the management of UI in the LTC setting.

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APPENDIX 1
Assessment Tools for Urinary Incontinence

1. PIER (ACP)-Recommended Question Set for Screening for UI

Screen all women using specific questions.

- Initially ask two open-ended questions:
  - Do you have a problem with your bladder?
  - Do you have trouble holding your urine (water)?
- If the answer is no, ask more specific questions such as:
  - Do you lose urine if you don't want to?
  - Do you wear a pad or other protection for leakage of urine?

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2. International Consultation on Incontinence Questionnaire

In addition, a validated ICIQ-UI short form has standardized questions and is available in multiple languages.

Many people leak urine some of the time. We are trying to find out how many people leak urine, and how much this bothers them. We would be grateful if you could answer the following questions, thinking about how you have been, on average, over the PAST FOUR WEEKS.

1. How often do you leak urine? *(check one box)*

Never	☐	0
About once a week or less often	☐	1
Two or three times a week	☐	2
About once a day	☐	3
Several times a day	☐	4
All the time	☐	5

We would like to know how much you think leaks.

2. How much urine do you usually leak (whether you wear protection or not)? *(check one box)*

None	☐	0
A small amount	☐	2
A moderate amount	☐	4
A large amount	☐	6

3. Overall, how much does leaking urine interfere with your everyday life?
Please circle a number between 0 (not at all) and 10 (a great deal)

0	1	2	3	4	5	6	7	8	9	**10**
Not at all										A great deal

ICIQ score: sum scores 1 + 2 + 3 ☐ ☐

4. When does urine leak? *(Please check all that apply to you)*

Never – urine does not leak	☐
Leaks before you can get to the toilet	☐
Leaks when you cough or sneeze	☐
Leaks when you are asleep	☐
Leaks when you are physically active/exercising	☐
Leaks when you have finished urinating and are dressed	☐
Leaks for no obvious reason	☐
Leaks all the time	☐

Source: Avery, K, Donovan, J, Peters, TJ, et al. ICIQ: A brief and robust measure for evaluating the symptoms and impact of urinary incontinence. Neurourol Urodyn 2004; 23:322. Copyright © 2004 Wiley-Liss, Inc. Reproduced with permission from ICIQ, www.iciq.net.

3. Sandvik Severity Score[78]

Multiply leakage frequency by leakage volume to determine Incontinence Severity Score

How often do you experience urine leakage?	×	How much urine do you lose each time?	=	
0 = Never **1 = Less than once a month** **2 = One or several times a month** **3 = One or several times a week** **4 = Every day and/or night**	×	**1 = Drops or little** **2 = More**	=	**0 = No UI** **1 - 2 = Slight** **3 - 4 = Moderate** **6 - 8 = Severe**

[78]Sandvik H, Seim A, Vanik A, Hunskaar S. A severity index for epidemiological surveys of female urinary incontinence: comparison with 48-hour pad-weighing tests. Neurourol Urodyn 2000; 19(2): 137-45. Copyright © 2000 by Wiley-Liss, Inc. Used with permission.

APPENDIX 2
Impacts of Different Medication Classes on Urinary Incontinence

Medication Class	Mechanism of Action Contributing to Urinary Incontinence
Alpha-adrenergic receptor antagonists (prazosin, terazosin)	Cause or worsen UI caused by relaxation of the smooth muscle in the bladder neck and urethra
Alpha-adrenergic agonists (pseudoephedrine, ephedrine)	Enhance urethral resistance, contributing to emptying problems or overflow UI in patients with bladder outlet obstruction
ACE inhibitors	Dry cough contributes to stress UI
Anticholinergics*	Incomplete bladder emptying and potential to produce urinary retention, along with sedation, delirium, immobility, constipation, and xerostomia
Antidepressants (including tricyclic and norepinephrine-blocking antidepressants)	SSRIs increase cholinergic transmission and may lead to incontinence
Calcium channel blockers	Relax detrusor muscle, may precipitate retention, increase nighttime urine production, cause constipation
Cholinesterase inhibitors	Increase bladder contractility and may precipitate urge incontinence
Diuretics	Sudden increase in urine production may cause leakage
Opioid analgesics	May cause transient delirium, sedation, and immobility; also commonly produce constipation, urinary retention, or both
Psychoactives†	May cause confusion and impaired mobility and precipitate incontinence

ACE, angiotensin-converting enzyme; SSRIs, selective serotonin reuptake inhibitors; UI, urinary incontinence.

*See PALTmed. *Multidisciplinary Medication Management. A Resource for the Long Term Care Continuum.*
†Assess total psychoactive drug load before, during, and after any changes in drug therapy.‡§

‡ Cooper JW, Freeman MH, Cook CL, Burfield AH. Psychotropic and psychoactive drug load assessment and falls in nursing facility residents. Consult Pharm 2007; 22: 483-489.

§ Cooper JW, Freeman MH, Cook CL, Burfield AH. Psychotropic and psychoactive drugs and hospitalization rates in nursing facility residents. Pharm Pract 2007;5(3): 140-144.

APPENDIX 3

Suggested Components of a Staff Training Program in Urinary Incontinence Assessment and Management

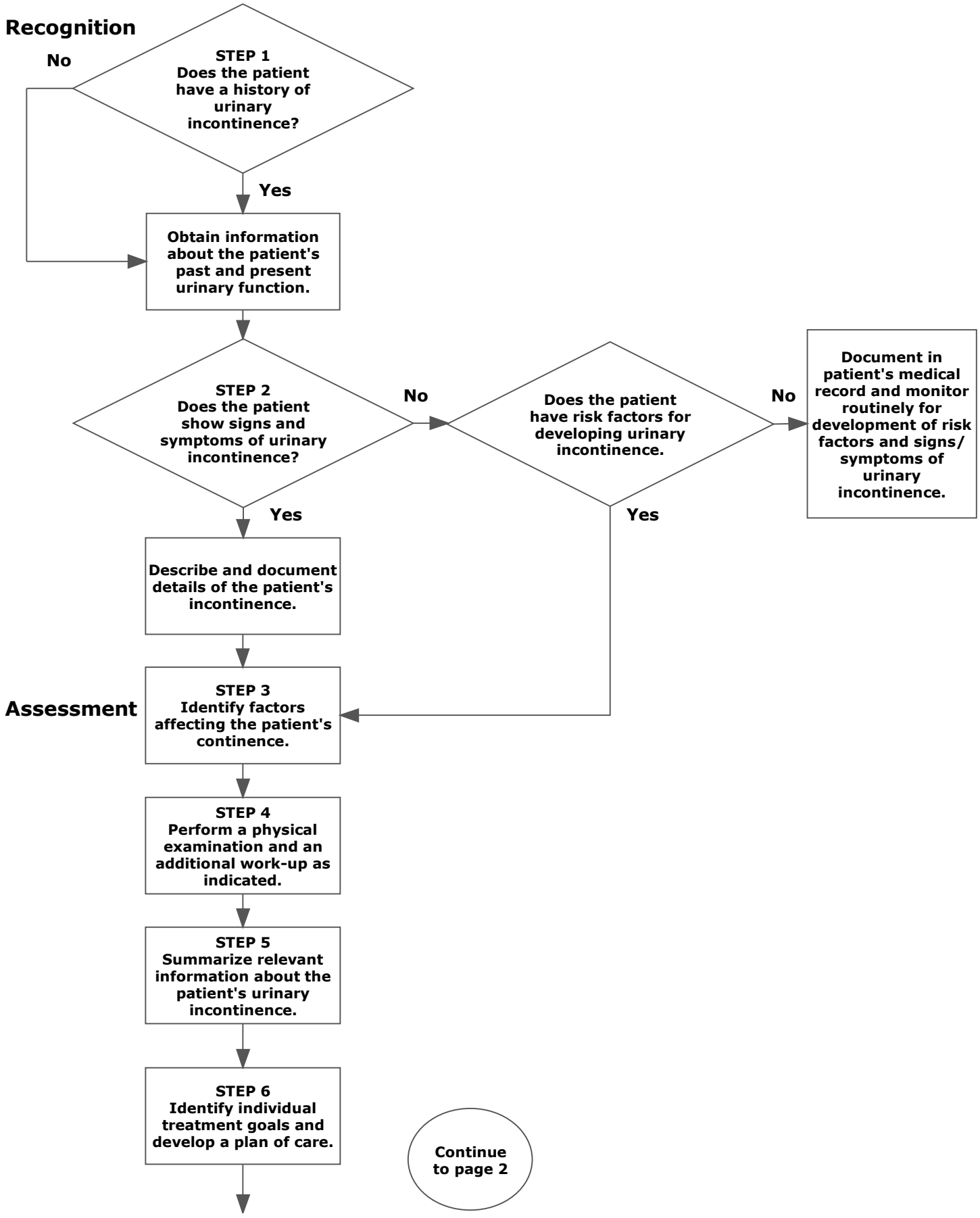
At a minimum, education and training related to UI should cover the following topics:

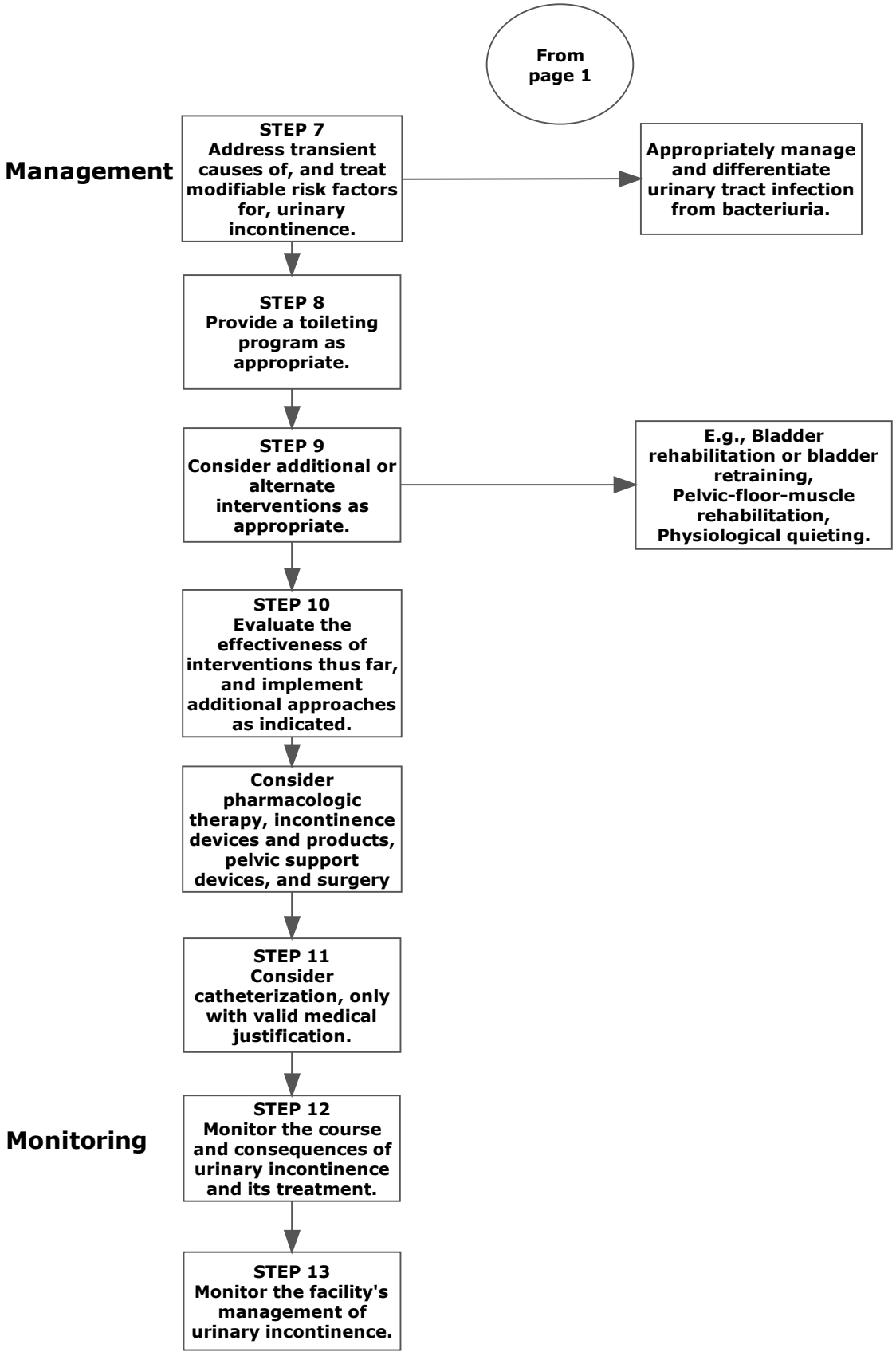
- Review of normal aging changes (highlighting that UI is not a normal part of aging)
- Documentation of pertinent information about the patient and his or her history of UI
- Identification of the risk factors for UI
- Types of UI
- Perineal skin assessment/evaluation and related documentation
- Identify treatment options for managing UI
- Development and implementation of an individualized plan of care
- Ensure that continence care is consistent with patient wishes and goals
- Assessment of infection, including differentiation from colonization
- Patient and family involvement in the plan of care
- Principles of catheter management and infection control
- Medication changes that can cause or help UI

GRADING RECOMMENDATIONS

The Urinary Incontinence recommendations were currently being graded at the time of this printing. Please see http://www.cpgnews.org/UI/grading.cfm for finalized grading.

This is the urinary incontinence in the long term care setting algorithm to be used in conjunction with the written text of this clinical practice guideline. The numbers next to the different components of the algorithm correspond with the steps in the text.


Recognition
STEP 1
Does the patient have a history of urinary incontinence?
No
Yes
Obtain information about the patient's past and present urinary function.
STEP 2
Does the patient show signs and symptoms of urinary incontinence?
No
Does the patient have risk factors for developing urinary incontinence.
No
Document in patient's medical record and monitor routinely for development of risk factors and signs/ symptoms of urinary incontinence.
Yes
Yes
Describe and document details of the patient's incontinence.
Assessment
STEP 3
Identify factors affecting the patient's continence.
STEP 4
Perform a physical examination and an additional work-up as indicated.
STEP 5
Summarize relevant information about the patient's urinary incontinence.
STEP 6
Identify individual treatment goals and develop a plan of care.
Continue to page 2


From page 1
Management
STEP 7
Address transient causes of, and treat modifiable risk factors for, urinary incontinence.
Appropriately manage and differentiate urinary tract infection from bacteriuria.
STEP 8
Provide a toileting program as appropriate.
STEP 9
Consider additional or alternate interventions as appropriate.
E.g., Bladder rehabilitation or bladder retraining, Pelvic-floor-muscle rehabilitation, Physiological quieting.
STEP 10
Evaluate the effectiveness of interventions thus far, and implement additional approaches as indicated.
Consider pharmacologic therapy, incontinence devices and products, pelvic support devices, and surgery
STEP 11
Consider catheterization, only with valid medical justification.
Monitoring
STEP 12
Monitor the course and consequences of urinary incontinence and its treatment.
STEP 13
Monitor the facility's management of urinary incontinence.

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