



MANAGEMENT OF

Urinary Incontinence in Women

This care process model (CPM) was developed by clinical experts from Intermountain Healthcare's Women and Newborns Clinical Program. The guidelines are derived from expert consensus and publications summarizing evidence-based treatment.

These guidelines address diagnosis and treatment of urinary incontinence in nonpregnant women. Although this model of care is appropriate for most patients, it should be adapted to meet the needs of individual patients and situations and should not replace clinical judgment.

► Why Focus ON URINARY INCONTINENCE?

- **It's common.** The prevalence of incontinence is fairly high and increases with age. Moderate or severe urinary incontinence affects 7% of women ages 20 to 39, 17% ages 40 to 59, 23% ages 60 to 79, and 32% age 80 years and older.¹ Most gynecologists and other primary care physicians will encounter women with incontinence and will need to evaluate and treat them.
- **It's underreported and undertreated.** It's estimated that most women with urinary incontinence don't seek medical help.² Even when incontinence is reported, clinicians often undertreat. In one survey, only 60% of patients seeking care for their incontinence recalled receiving any treatment for the condition, and nearly 50% of those who did receive treatment reported moderate to great frustration with ongoing symptoms.³
- **Its impact is significant.** Urinary incontinence is associated with medical morbidity and decreased quality of life.
 - Medical morbidities include perineal candida infection; cellulitis and pressure ulcers (from constant skin moisture and irritation); and urinary tract infections and urosepsis from urinary retention.
 - Poor self-esteem, social withdrawal, depression, and decreased sexual function are common effects of urinary incontinence.⁴
- **A systematic approach may improve treatment and outcomes.** The process outlined in this CPM — one that distinguishes among types of incontinence and advocates a multicomponent approach to treatment — may ensure that treatment matches the condition and that surgical approaches are ventured appropriately.

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► GOALS OF THIS CPM

- To summarize the sequence and practices of evidence-based management of urinary incontinence in women
- To promote resources that support good clinical care and patient education

► REFERENCES

For a list of references used in this CPM, see the GYN topic page on intermountain.net/clinicalprograms.

▶ ALGORITHM: MANAGEMENT OF URINARY INCONTINENCE IN WOMEN

Patient with symptoms of urinary incontinence identified through screening or other report (A)

1 EVALUATE SYMPTOMS (B)

Medical history

Investigate:

- **Urine leakage:** frequency, timing, and volume (“How many pads do you use each day?”)
- **Impact of urine loss** on lifestyle, self-esteem
- **Associated symptoms:** dysuria, frequency, incomplete voiding
- **Fluid intake:** amount of fluid, type of fluid, timing of intake
- **Current medications**
- **Medical conditions**
- **Prior treatments and surgery**

For more in-depth (and potentially more reliable) information, consider having patient complete a **voiding diary** (“bladder diary”) for 3 to 7 days.

Physical exam

In addition to general and lower neurologic examinations:

- **Include a full-bladder stress test** (patient in supine and standing position). Consider:
 - Is there bladder neck mobility?
 - Is there associated prolapse?
 - How much leakage occurs?
- **After stress test, ensure validity of test by measuring post void residual (PVR).** If the patient voids < 50 cc, she may need more volume to document loss; if > 300 cc and patient is not incontinent, then she does not have severe stress incontinence.
- **Evaluate for vaginal atrophy.**

Tests

- **Test all patients for UTI** (urine dipstick).
- **Consider these tests as needed:**
 - **Cystometry.** Order simple cystometrics if stress incontinence is present by history but not on exam.
 - **Multichannel urodynamics.** Order if patient has significant history of insensate loss, mixed incontinence, or prior surgical repair.

REFER
to urogynecologist or urologist

yes

Findings warrant
REFERRAL?
see note, right

no

Findings that may warrant referral:

- Failed prior surgical management
- Insensate loss or elevated PVR
- Severe incontinence or stress incontinence without hypermobility and with suspected intrinsic sphincter deficiency

2 IDENTIFY TYPE(S) OF URINARY INCONTINENCE; MANAGE (C)

Identify type(s) of incontinence and plan management with patient. Begin with conservative management — behavioral approaches, medical management, and adjunctive measures — combining approaches as needed. Use the *Incontinence Questionnaire* or other tool to help discriminate type of incontinence, measure its impact on quality of life, and gauge response to treatment.

Stress urinary incontinence (SUI)

- Involuntary leakage with effort, exertion, sneezing, or coughing (with severe sphincter damage, leakage may be provoked by minimal or no activity).
- The most common type of incontinence in women of varying ages.
- **For conservative management,** studies particularly support efficacy of:
 - Behavioral approaches: weight loss, pelvic muscle training
 - Adjunctive measures: pessary
- Surgery should be considered only with significant SUI, failed conservative management, and/or significant concomitant prolapse.

Urge incontinence

- Involuntary leakage with urgency — a sudden, compelling need to pass urine.
- Reported by patients to be the most bothersome type of urinary incontinence.
- **For conservative management,** studies particularly support efficacy of:
 - Behavioral approaches: pelvic muscle training, bladder training
 - Medication

Mixed incontinence

- Symptoms of both SUI and urge incontinence.
- Second most common type of urinary incontinence.
- **For conservative management,** studies particularly support efficacy of:
 - Behavioral approaches: pelvic muscle training, bladder training
 - Medication



Incontinence Questionnaire, patient fact sheet

See Resources, page 4, for access and ordering information.

3 FOLLOW UP (D)

- **Follow up in 4 to 8 weeks to evaluate efficacy of management efforts.**
- **Use a patient questionnaire** to assess patient perception of improvement.
- **If symptoms aren't resolved/improved to patient's satisfaction, return to step 1 of the algorithm and**
 - Re-evaluate symptoms, adding voiding diary, tests as needed.
 - Re-evaluate for referral.
 - Adjust management: combine or add conservative approaches. Consider surgery only if other options are depleted.

► NOTES ON THE ALGORITHM

(A) IDENTIFICATION

Because many women are reluctant to initiate a conversation about incontinence, this CPM recommends that providers specifically inquire about symptoms. One suggested approach⁴ includes these screening questions:

- Do you ever leak urine when you don't want to?
- Do you ever leak urine when you cough, laugh or exercise?
- Do you ever leak urine on your way to the bathroom?
- Do you sometimes use pads or tissues in your underwear to catch leaks?

(B) EVALUATION

Initial therapy can usually be based on evaluation over the course of one or two office visits. Evaluation should assess severity and impact of symptoms, identify causes of transient urinary incontinence (UTI, vaginitis, medication side effects, excess fluids, etc.), and investigate genitourinary or nongenitourinary etiologies of incontinence. Notes on the recommended evaluation components appear below:

- **Medical history.** Be alert to the possibility of medical and neurological conditions that may cause urinary incontinence, such as diabetes, stroke, and lumbar disk disease. Strong coughing, as in patients who smoke or have chronic pulmonary disease, can worsen symptoms of stress incontinence. Consider, too, whether medications may affect bladder or urethral function; see the list of common medications at right. Finally, when more information is desired, consider assigning the patient a **voiding diary**. (Information from a daily diary is particularly valuable if it includes daytime voiding frequency, nighttime voiding frequency, and episodes of leakage.)
- **Physical exam.** A thorough examination "above the waistline" can help detect contributory factors and underlying serious conditions. Key features of the gynecologic exam appear in the algorithm.

(C) MANAGEMENT

Management is based on the severity and type of the patient's incontinence. Conservative approaches to urinary incontinence include the behavioral, medical, and adjunctive measures listed below; combine these as needed. (The algorithm provides guidance re: approaches most likely to be effective for each type of incontinence). Surgery is reserved for select cases of stress incontinence as noted in the algorithm.

At treatment initiation and as part of follow-up, use a patient questionnaire to help discriminate type of incontinence, measure its impact on quality of life, and gauge response to treatment. This CPM recommends use of the **Incontinence Questionnaire** described in the sidebar.

Behavioral approaches

- **Pelvic muscle training** (Kegel exercises, weighted cones)
- **Bladder training** and **prompted voiding**
- **Lifestyle changes** (fluid management, weight loss, caffeine reduction, smoking cessation, constipation relief)

Medical management

Used most often for urinary frequency or for mixed or urge incontinence, medication may improve detrusor overactivity by inhibiting the contractile activity of the bladder. Common classes include anticholinergics, tricyclic antidepressants, and musculotropic medications. See the table on page 4 for specific guidance re: medication uses and dosing.

Adjunctive measures

- Pessary
- Pads and protective garments

(D) FOLLOW-UP

Follow up to evaluate efficacy of management efforts and the need for additional or other treatments. Although management efforts can be evaluated solely in terms of clinical outcomes — e.g., reduction in number of symptoms or episodes, or reduction in volume of urine loss — patient-based outcomes are more commonly used. This CPM recommends use of the **Incontinence Questionnaire** described in the sidebar.

Medications that can affect lower urinary tract function²

Type of medication	Effects on lower UT
Diuretics	Polyuria, frequency, urgency
Caffeine	Frequency, urgency
Alcohol	Sedation, impaired mobility, diuresis
Narcotic analgesics	Urinary retention, fecal impaction, sedation, delirium
Anticholinergic agents	Urinary retention, voiding difficulty
Antihistamines	Anticholinergic actions, sedation
Antidepressants, Psychotropic agents	Anticholinergic actions, sedation
Antipsychotics	Anticholinergic actions, sedation
Sedatives and hypnotics	Sedation, muscle relaxation, confusion
Alpha-adrenergic blockers	Stress incontinence
Alpha-adrenergic agonists	Urinary retention, voiding difficulty
Calcium-channel blockers	Urinary retention, voiding difficulty

Incontinence Questionnaire

Questions in this Intermountain tool are adapted (with permission) from validated tools.^{5,6} The first part of the questionnaire helps determine the type of incontinence (stress, urge, mixed); questions in the second part help assess severity and outcomes by asking the patient to rate the impact of urine leakage on their:

- Ability to do household chores
- Physical and entertainment activities
- Ability to travel
- Participation in social activities
- Emotional health and feelings of frustration

See "Resources" on page 4 to learn how to access this tool.

► **MEDICATION TABLE**⁷⁻¹⁰

Medications for Urge and Mixed Incontinence. *Anticholinergic medications, alone or combined with behavioral approaches, are first-line treatment. Within this class, medications are equally effective; the key differences are price and frequency of adverse effects.*

1st line	Brand, generic names	Dosage	Tier, est. cost*	Comments
ANTICHOLINERGICS	Ditropan oxybutynin	2.5 to 5 mg by mouth 2 to 4 times a day	Tier 1, \$	Higher incidence of adverse effects (dry mouth, constipation, dizziness, vision disturbance), but usually first choice because of cost.
	Ditropan XL oxybutynin XL	5 to 30 mg by mouth once a day	Tier 1, \$	Adverse effects reduced ≥ 50% or more compared to immediate release oxybutynin.
	Sanctura trospium	20 mg by mouth twice a day	Tier 1, \$	Take on empty stomach (food decreases bioavailability 70%-80%). Decrease dose to 20 mg daily for renal insufficiency or elderly patients >75 years. Frequency of adverse effects less than extended release products, but more than patch.
	Enblex darifenacin	7.5 to 5 mg by mouth once a day	Tier 2, \$\$	Some interactions may warrant dose modifications (e.g., Tamoxifen, Mellaril, azole antifungals). Frequency of adverse effects less than extended release products, but more than patch.
	Toviaz fesoterodine	4 to 8 mg by mouth once a day	Tier 3, \$\$\$	Efficacy similar to other anticholinergics. May have quicker onset of action compared to tolterodine; both drugs are metabolized to same active metabolite. Side effects similar to other newer anticholinergics; most common are dry mouth and constipation. Other drugs that inhibit/induce the CYP3A4 enzyme likely to increase/decrease effectiveness.
	Oxytrol patch oxybutynin	3.9 mg applied 2 times a week	Tier 3, \$\$\$	Most common adverse effects are pruritis (15%) and erythema (9%) at application site. Lowest frequency of anticholinergic effects compared to ALL other products.
	Vesicare solifenacin	5 to 10 mg by mouth once a day	Tier 3, \$\$\$	Reduce dose to 5 mg daily for renal insufficiency. Some drug interactions may warrant dose modifications (e.g., azole antifungals). Frequency of adverse effects less than with extended release products, but more than with patch.
	Detrol tolteradine Detrol LA tolteradine LA	1 to 2 mg by mouth twice a day 2 to 4 mg by mouth once a day	Tier 3, \$\$\$	Fewer adverse effects compared to oxybutynin IR. Extended release products are better tolerated. Reduce dose for renal insufficiency. Some drug interactions may warrant dose modifications (e.g., Prozac, Paxil, Dilantin, Phenobarbital, Tegretol, Rifampin, Decadron, azole antifungals – Nizoral, Sporonox, Vfend, Noxafil, Diflucan).
	Sanctura XR trospium XR	60 mg by mouth once a day	Tier 3, \$\$\$	Not for those with renal insufficiency or patients >75 years.
TRICYCLICS	Tofranil imipramine	25-100 mg by mouth nightly	Tier 1, \$	Tricyclic antidepressant medication is second-line therapy generally reserved for patients with an additional indication (e.g., depression, neuropathic pain or mixed UI). Order in 50 mg tablets for best price.
ESTROGEN	Premarin vaginal cream	0.5 gm vaginally 3 times a week	Tier 2, \$\$	Marginally effective. Avoid systemic estrogens; they may worsen symptoms.
	Vagifem	10 mcg vaginally 2 times a week	Tier 2, \$\$	Better patient acceptance than cream.

Medications for Stress Incontinence. *Medications for stress incontinence provide MODEST effects.*

1st line	Brand, generic names	Dosage	Tier, est. cost*	Comments
α-ADRENERGIC AGONIST	Sudafed pseudoephedrine	15 to 60 mg by mouth 3 times a day	OTC, \$	First-line medication therapy if no contraindication (hypertension, CAD, cardiac arrhythmia). Adverse effects include insomnia, restlessness, headache. Can purchase from pharmacist behind the counter. AVOID Sudafed PE (phenylephrine). This drug is not bioavailable and less effective.
ESTROGEN	Premarin vaginal cream	0.5 gm vaginally 3 times a week	Tier 2, \$\$	Less effective than α-adrenergic agonists. In combination may give added effect. Works best if urethritis or vaginitis are present.
	Vagifem vaginal tablets	10 mcg vaginally 2 times a week	Tier 2, \$\$	Better patient acceptance than cream.
TRICYCLICS	Tofranil imipramine	25 to 100 mg by mouth nightly	Tier 1, \$	Tricyclic antidepressant medication is an option when first-line therapy is inadequate. Good choice for mixed UI. Higher incidence of adverse reactions.

► **CLINICIAN RESOURCES**

Resources for provider and patient education are available on the “GYN” topic page for clinicians, accessible through either of these links:

- intermountain.net/clinicalprograms
- intermountainphysician.org/clinicalprograms

FOR PROVIDERS

- Care process models
- Relevant forms, incl. “Incontinence Questionnaire”

FOR PATIENTS

- Fact sheets in English and Spanish

