

**Urinary Incontinence in Long Term Care**

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**Understanding the clinical approach to urinary incontinence**

- Anatomy
- Physiology
- Risk factors
- Clinical evaluation
- Management
- Case study

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**Definition of urinary incontinence**

- Lower urinary tract symptoms (LUTS)
  - Storage
  - Voiding
  - Post-micturition

Abrams et al., *Neurourology*, 2002

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## Urinary incontinence

- Involuntary loss of urine
- Social or hygienic problem
- Objectively demonstrable

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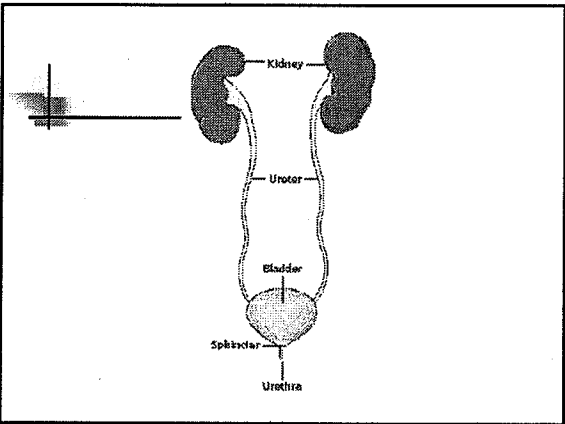
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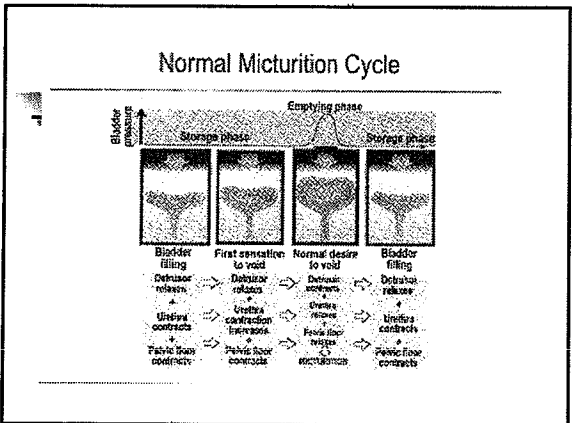
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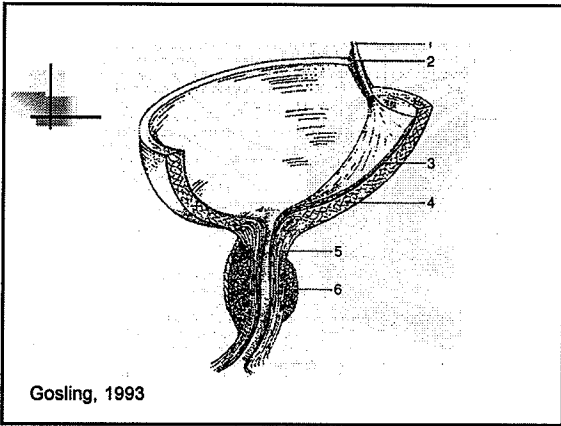
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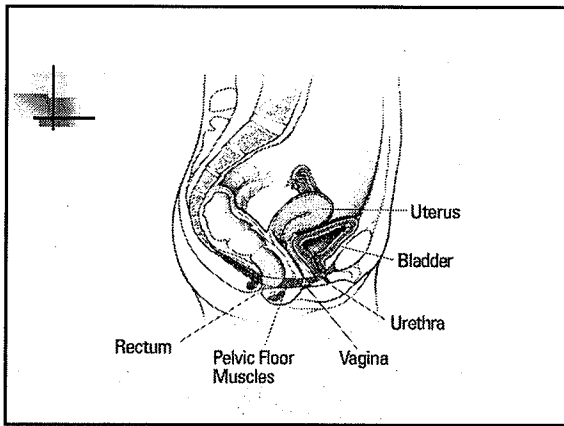
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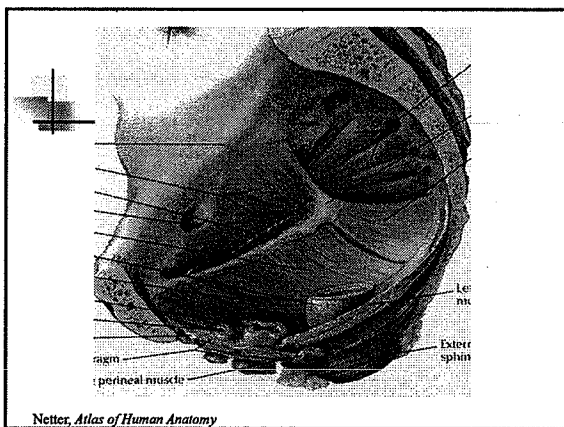
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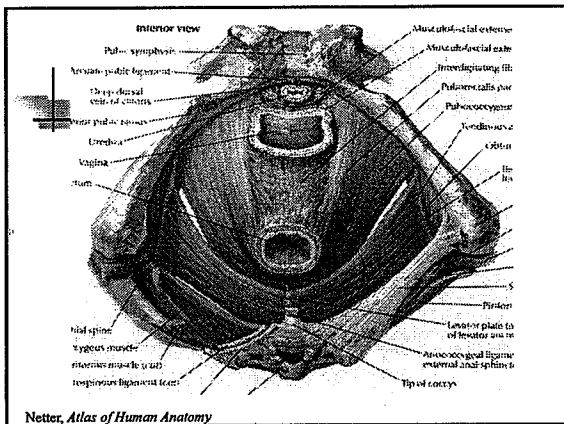
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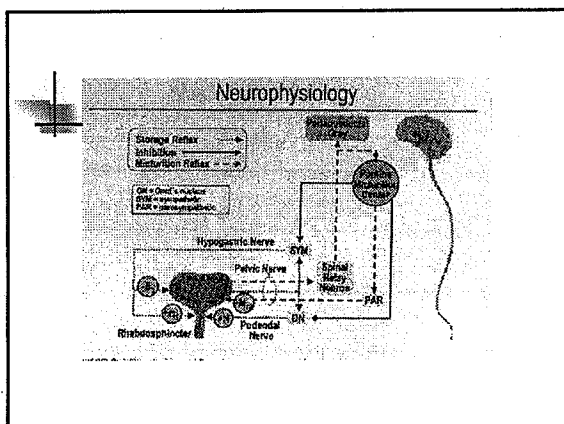
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### Classification of UI

| Type       | Symptoms   |
|------------|--|
| Stress     | With In increased in abdominal pressure                                  |
| Urge       | With perception of bladder fullness                                      |
| Overflow   | With overdistended bladder   |
| Functional | When toilet inaccessible (cognitive, physical, or environmental barrier) |
| Mixed      | More than one type   |

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### **Risk factors for UI**

- **Physical** (age, sex, body mass index, functional status)
- **Genetic** (family history)
- **Neuropsychiatric** (MS, spinal cord injury, dementia, depression, stroke, diabetic neuropathy)
- **Traumatic** (childbirth, prostatectomy, radiation)
- **Medical** (smoking, bowel dysfunction)

Landefeld et al., *Ann Intern Med*, 2008

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### **Assessment**

- **Objective: to reduce symptoms and impact of urine leakage**
- **Treatment goals individualized**
- **Determine potential for response to treatment interventions**
  - **Interdisciplinary care planning process**

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### **Goals of basic evaluation**

- **Determine type of UI**
- **Identify conditions requiring further evaluation**
- **Identify potentially reversible factors**

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### **Components of basic evaluation**

- History
- Physical examination
- Data

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### **History**

- Setting
- Severity
- Medical conditions
- Medications
- Genitourinary history

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### **Setting**

- Stress vs urge symptoms
- Voiding difficulty
- Pain

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**Severity**

- Impact on quality of life
- Predictor of treatment outcome

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**Voiding diary**

| Time | Amount Voided | Voiding Strategy | Leak Volume | Urgency Present | Amount/Type of Sleep |
|------|---------------|------------------|-------------|-----------------|----------------------|
|      |               |                  |             |                 |                      |
|      |               |                  |             |                 |                      |
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**Medical conditions**

- Diabetes
- Neurologic dysfunction
  - Stroke
  - Demyelinating disorders
- Bladder outlet obstruction
  - Advanced vaginal prolapse
  - Prostatic enlargement

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### Medications

- Diuretics
- Alpha adrenergic blocking agents
- Anticholinergic agents

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### Genitourinary history

- Incontinence procedures
- Prostatectomy

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### Physical examination

| System                 | Condition   |
|------------------------|---|
| Cognitive and physical | <ul style="list-style-type: none"> <li>• Barriers to toileting</li> </ul>   |
| General                | <ul style="list-style-type: none"> <li>• Volume overload</li> <li>• Neurologic deficits</li> </ul>                            |
| Pelvic                 | <ul style="list-style-type: none"> <li>• Perineal skin breakdown</li> <li>• Atrophy</li> <li>• Vaginal prolapse</li> </ul>    |
| Rectal                 | <ul style="list-style-type: none"> <li>• Sphincter tone</li> <li>• Fecal impaction</li> <li>• Prostate enlargement</li> </ul> |

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**Data**

- **Urinalysis**
- **Post-void residual**

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**Urinalysis**

- **Purpose**
  - Exclude significant bacteriuria
  - Exclude hematuria
- **Collection technique**
  - Clean-catch
- **Tests**
  - Rapid-screening methods (dipstick, enzyme-based)
  - Microscopy

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**Post-void residual (PVR)**

- **Normal 50-100 ml**
- **Retention may occur without clinical evidence**
- **Methods**
  - Catheterization
  - Portable bladder ultrasound
- **Highly variable**

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**Potentially reversible causes of urinary incontinence in LTC**

- D** delirium
- R** restricted mobility, retention
- I** infection, inflammation, impaction
- P** polyuria, pharmaceuticals

Ouslander & Schnelle, *Ann Intern Med*, 1995

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**Recurrent urinary tract infections in the elderly**

- **Catheterization**
- **Declining functional status**
- **Alteration of normal vaginal flora**
  - **Role of estrogens**
- **Abnormal bladder emptying**

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**Conditions requiring specialist evaluation**

| Condition                   | Comments                                     |
|-----------------------------|--|
| History                     |  |
| • Recurrent symptomatic UTI | Evaluate for urinary tract abnormality       |
| Physical examination        |  |
| • Vaginal prolapse          | Pessary or surgical management               |
| • Prostate enlargement      |  |
| Data                        |  |
| • Hematuria                 | Evaluate for urinary tract abnormality       |
| • Consistently elevated PVR | Evaluate cause<br>Evaluate for complications |

Ouslander & Schnelle, *Ann Intern Med*, 1995

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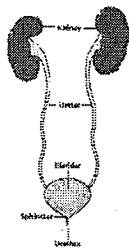
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## Drug therapy for UI

- Potential targets
  - Detrusor overactivity ("bladder relaxants")
  - Urethral weakness
  - Urine production



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## Anticholinergic agents for urge incontinence

- Oxybutynin
- Tolterodine
- Solifenacin
- Darifenacin
- Trospium

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## Limitations of anticholinergic medications

- Small, inconsistent effects\*
- Used infrequently<sup>§</sup>
- Potential adverse effects
  - Dry mouth
  - Dry eyes
  - Blurred vision
  - Gastroesophageal reflux
  - Constipation
  - Cognitive decline

\* Fink et al., *Mayo Clin Proc*, 2008  
§ Narayanan et al., *J Am Med Dir Assoc*, 2007

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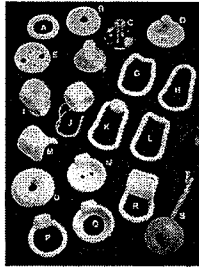
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## Vaginal pessaries

- Mechanical support for urethra



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## Behavioral interventions for UI in long-term care settings

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*Not one for waking up in the middle of the night, Ellen trained her bladder to use the bathroom on its own.*

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**Behavioral interventions for UI in LTC**

- Patient-dependent
- Caregiver-dependent

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**Behavioral interventions for UI in LTC**

- Prompted voiding
- Habit training
- Timed voiding
- Bladder training

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**Prompted voiding**

- Behavioral therapy
- Goal: improvement of bladder control
- Candidates: Persons with or without cognitive impairment
- Interventions
  - Wetness evaluation
  - Verbal toileting prompts
  - Positive reinforcement

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### Sample prompted voiding protocol

- **Assessment (3-5 days)**
- **Targeting**
  - *Select residents most likely to benefit from protocol*
  - *Best predictor: ability to appropriately toilet during first 2-3 days\**

\*Ouslander et al., JAMA, 1995

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### Prompted voiding for the management of UI in adults

- **25-60% response rate\***
- **Decreased incontinence episodes\***
  - *<1 vs. 3-4*
- **Increased self-initiated voiding<sup>§</sup>**

\* Ouslander & Schnelle, *Ann Intern Med*, 1995  
§ Eustice, Roe, & Paterson, *Cochrane Database of Systematic Reviews*, 2000

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### Prompted voiding

- **Stress incontinence often volume dependent, especially with outlet obstruction\***
- **Improvement may result from learning to request help<sup>§</sup>**
- **No benefit from addition of anticholinergic medication<sup>¶</sup>**

\* Resnick, Yalla & Laurino, *JAMA*, 1989  
§ Storer & Libow, *J Gen Intern Med*, 1992  
¶ Ouslander et al., *J Am Geriatr Soc*, 1995

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**Prompted voiding: future research directions**

- Duration of effectiveness
- Nighttime hours
  - Increased urine production
  - Sleep disruption

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**Habit training**

- Recognition and reproduction of usual voiding schedule
  - Pre-emption

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**Habit training**

- Caregiver-dependent
- Appropriate for cognitively- or physically-impaired persons

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### **Timed voiding**

- Relationship between symptoms and environment
- "scheduled," "routine," "fixed," "regular"

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### **Timed voiding**

- Caregiver-dependent
- Appropriate for cognitively- or physically-impaired persons
- Appropriate for persons with incomplete bladder emptying

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### **Bladder training**

- Active education and intervention to delay voiding
- Tools
  - Identification of voiding patterns
  - Modification of physical barriers and dietary/fluid irritants
  - Pelvic muscle training
  - Urge strategy
- Patient-dependent

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|                  | Nature of intervention   | Individual participation | Appropriate in cognitively impaired persons | Special considerations  |
|------------------|--|--------------------------|---|---|
| Prompted voiding | <ul style="list-style-type: none"> <li>Verbal prompts</li> <li>Positive reinforcement</li> </ul> | Yes                      | Yes   | <ul style="list-style-type: none"> <li>Target well-established</li> </ul>   |
| Timed voiding    | <ul style="list-style-type: none"> <li>Fixed by time or event</li> </ul>                         | No                       | Yes   |   |
| Habit training   | <ul style="list-style-type: none"> <li>Based on micturition pattern</li> </ul>                   | No                       | Yes   | <ul style="list-style-type: none"> <li>Multiple voiding schedules</li> <li>Target not well established</li> </ul> |
| Bladder training | <ul style="list-style-type: none"> <li>Active urge deferment</li> </ul>                          | Yes                      | No  |   |

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### Role of physical rehabilitation

- **Functional Incidental Training (FIT)\***
  - Prompted voiding combined with low-intensity endurance and strength exercises

Schnelle J et al. Translating clinical research into practice. A randomized, controlled trial of exercise and incontinence care with nursing home residents. *J Am Geriatr Soc* 2002;50:1476-83. Ouslander JG et al. Functional incidental training: a randomized, controlled, crossover trial in Veterans Affairs nursing homes. *J Am Geriatr Soc* 2005;53:1091-1100.

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### Surgery

- **Bladder neck support**
  - Suburethral sling
  - Transurethral bulking injection
- **Removal of anatomic obstruction**
  - Enlarged prostate
  - Urethral stricture
- **Neuromodulation**
  - Sacral nerve stimulation
  - Posterior tibial nerve stimulation

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## Urinary catheters

- Intermittent
- Indwelling
  - Transurethral
  - Suprapubic
- External

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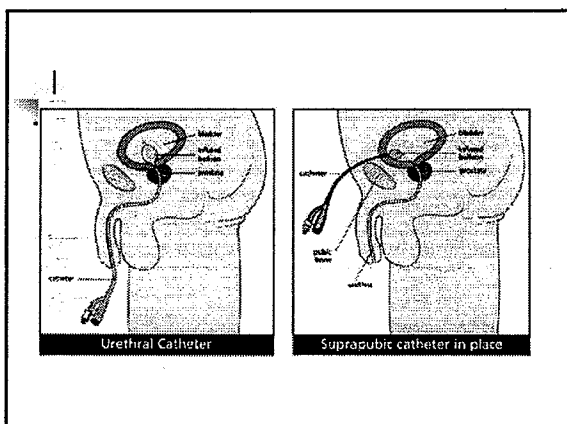
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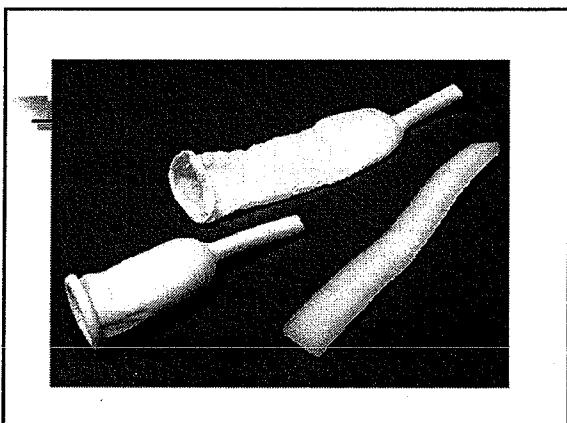
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**Intermittent catheterization**

- Urinary retention and overflow incontinence
- 2-4 X daily

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**Intermittent catheterization**

|                          |                          |
|--------------------------|--------------------------|
| ■ <b>Benefits</b>        | ■ <b>Limitations</b>     |
| ■ Documented feasibility | ■ Anatomic abnormalities |
| ■ Sterility not required | ■ Infection              |
|                          | ■ Expense                |

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**Long-term indwelling catheterization**

|                          |                                     |
|--------------------------|-------------------------------------|
| ■ <b>Overused</b>        | ■ <b>Recommendations</b>            |
| ■ <b>Risks</b>           | ■ Keep system closed                |
| ■ Urinary tractinfection | ■ Replace catheter every 4-8 weeks  |
| ■ Chronic bacteriuria    | ■ Appropriate indication documented |
| ■ Encrustations          |                                     |
| ■ Stones                 |                                     |
| ■ Periurethral abscess   |                                     |

Ouslander & Schnelle, *Ann Intern Med*, 1995

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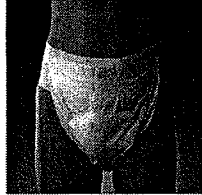
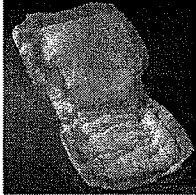
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## Absorbent pads and undergarments



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## Absorbent pads

### ■ Benefits

- Simplifies care
- Allows increased mobility and socialization
- Requires less caregiver time

### ■ Limitations

- Not a treatment substitute
- May decrease motivation for treatment
- Environmental barrier to toileting
- Skin irritation and breakdown

Starer & Libow, *J Gen Intern Med*, 1992

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**What do the data tell us about management of UI in LTC?**

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**Nursing home care processes related to urinary incontinence**

- 347 residents, 14 skilled nursing facilities
- 1.8 toileting assists per day (1.6-2.0)
- No documentation of incontinence assessment
- Poor correlation of chart documentation of toileting assists to resident reports

Schnelle et al., *Medical Care*, 2003

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**Nursing home care processes related to UI**

- 7458 beds, 52 nursing homes
- 20% of AHRQ standards met
  - Pelvic and rectal examinations
  - PVR assessment
  - Attention to reversible causes

Watson et al., *J Am Geriatr Soc*, 2003

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**What is the most appropriate outcome measure?**

- Wet checks
- Reports of incontinence episodes
- Quality of life

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**Case study**

- **Sea View Hospital Rehabilitation Center and Home**
  - 304-bed LTC facility
  - Skilled nursing, rehabilitation, and specialty services
  - New York City Health and Hospital Corporation

Morgan et al., *The Joint Commission Journal on Quality and Patient Safety*, 2008

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**Performance Improvement Team**

- *Associate DON*
- Directors of
  - Medicine
  - Nursing
  - Pharmacy
  - Rehabilitation
  - Care management
  - Food services
- MDS nurses
- Staff nurses
- PCTs

Morgan et al., *The Joint Commission Journal on Quality and Patient Safety*, 2008

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**Performance improvement activities**

- Revision of assessment documentation
- Documentation of toileting plan
  - Patient care technician assignment card
  - Activities of daily living accountability sheet
- Toilet-assist devices
  - Standing lift
- Hospital-wide education
- Revision of bowel and bladder incontinence policy

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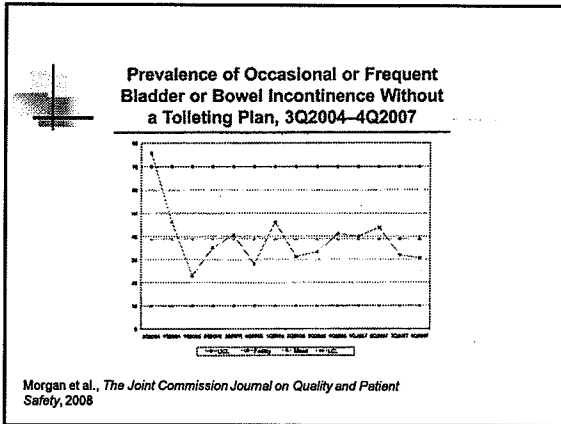
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- Process monitoring**
- Chart audits
  - Unit rounds
  - Staff competency evaluations

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- Management of UI in LTC: Summary**
- Low-risk behavioral interventions
    - Scheduled or prompted voiding
    - Dietary and fluid management
  - Physical/environmental alterations
    - Toileting and ambulation devices
  - Protection and comfort
    - Absorbent products
    - Intermittent or suprapubic catheterization

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**“Despite the high prevalence and considerable cost burden of the condition, most affected individuals do not seek help for incontinence. Studies indicate, however, that treatment is effective in most people with UI.”**

*AHCPR Quick Reference Guide for Clinicians, 1996*

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**Suggested reading**

- Ouslander JG and Schnelle F. Incontinence in the nursing home. *Ann Intern Med* 1995;122(6): 438-49.
- Johnson TM et al. Urinary incontinence treatment preferences in long-term care. *J Am Geriatr Soc* 2001;49:710-8.
- Watson NM. Use of the Agency for Health Care Policy and Research Urinary Incontinence Guideline in Nursing Homes. *J Am Geriatr Soc* 2003;51:1779-86.
- Landefeld CS et al. National Institutes of Health State-of-the-Science conference statement: prevention of fecal and urinary incontinence in adults. *Ann Intern Med* 2008;148(6):449-58.
- Morgan C et al. Enhanced toileting program decreases incontinence in long term care. *Joint Comm J Qual Safety* 2008;(34(4):206-8.

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## SAMPLE PROMPTED VOIDING PROTOCOL

*7:00 am to 7:00 pm*

1. Contact resident every two hours
2. Check for wetness
3. Ask if resident would like to use toilet
  - a. If response is yes:
    - i. Assist resident
    - ii. Record results on bladder record
    - iii. Give positive reinforcement
  - b. If response is no, inform resident that you will be back in two hours and request that they try to delay voiding until then

*7:00 pm to 7:00 am*

Modify protocol or use pads

Exhibit

Potentially reversible causes of urinary incontinence in long-term care settings

|   | Cause                  | Comment  | Treatment   |
|---|------------------------|--|---|
| D | Delirium<br>Depression | New or worsening incontinence<br>Can affect motivation for continence          | <ul style="list-style-type: none"> <li>• Treatment of underlying cause</li> </ul>   |
| R | Restricted mobility    | Musculoskeletal pain (joint fracture, arthritis), restraints                   | <ul style="list-style-type: none"> <li>• Regular toileting assistance</li> <li>• Toilet substitute</li> <li>• Remove restraint</li> </ul>   |
|   | Retention              | Overflow incontinence  | <ul style="list-style-type: none"> <li>• Treatment of underlying cause</li> <li>• Judicious catheter use</li> </ul>   |
| I | Infection              | New or worsening incontinence, unexplained fever, anorexia, functional decline | <ul style="list-style-type: none"> <li>• Urine culture</li> <li>• Antibiotic (treatment of asymptomatic bacteriuria not recommended)</li> </ul>   |
|   | Inflammation           | Atrophic vaginitis   | <ul style="list-style-type: none"> <li>• Topical estrogen supplementation</li> </ul>  |
|   | Impaction              | Mechanism unclear<br>May be associated with fecal incontinence                 | Bowel regimen: <ul style="list-style-type: none"> <li>• Fluids, fiber, stool softening agents</li> <li>• Toileting after meal</li> <li>• Intermittent bowel stimulation (laxative, suppository, enema)</li> </ul> |
| P | Polyuria               | Diuresis (osmotic, pharmacologic)<br>Peripheral edema                          | <ul style="list-style-type: none"> <li>• Improvement of glucose control</li> <li>• Modification of diuretic dosing schedules</li> <li>• Fluid mobilization</li> </ul>   |
|   | Pharmaceuticals        |  | <ul style="list-style-type: none"> <li>• Discontinuation, reduction or modification of dose</li> </ul>  |

Modified from Ouslander JG and Schnelle JF. Incontinence in the nursing home. *Annals of Internal Medicine* 1995;122(6):438-49.