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Objectives

1. Understand the scope and cost of UI in the elderly population
2. Describe normal bladder and pelvic muscle function
3. Discuss assessment and management of various types of incontinence
4. Identify implement strategies for effective behavioral treatment related to continence
5. State how to establish and facilitate a Multi-disciplinary Team Continence Improvement Program
Almost one-half (46.1%) of short-term nursing home residents and three-quarters (75.8%) of long-term nursing home residents experience some sort of urinary incontinence.

Estimated cost of UI $19.5 billion

- Majority of cost (50%–75%) is attributed to resources used for routine care.

(CDC, 2014)
Statistics

- Typical SNF resident is incontinent 7 times daily

- Average 200 bed facility
  - Supplies alone = $10,000 per month
  - If we could reduce this by 50% ... 

Get the Facts

- UI affects 13 million Americans
- 85% are women
- While many elderly are affected, it is not a normal part of aging
- Many never discuss their condition with their physician and UI goes untreated
Incontinence

- Medicare takes urinary incontinence seriously (Tag F315)
  - “A resident who is incontinent of bladder receives appropriate treatment and services to prevent urinary tract infections and to restore as much normal bladder function as possible.
  - Each resident who is incontinent of urine is identified, assessed and provided appropriate treatment and services to achieve or maintain as much normal urinary function as possible”

Clinical, Psychological and Social Impact

- UI is often under reported, generally not identified and when it is, often inadequately treated

- UI imposes a significant psychological impact on individuals, their families, and caregivers
Family/Caregiver Psychosocial Costs
- Guilt
- Frustration
- Care-Giver Burden
- Depression
- Risk of Mistreatment

Individual Psychosocial Costs
Psychosocial:
- Embarrassment
- Anger
- Frustration
- Fear
- Depression
- Social restrictions
- Social isolation

Quality of life:
- Loss of Self-Esteem
- Altered Body Image
- Impaired Sexual Functioning
- Lower Quality of Life
- Limited Work Productivity
### Cost of Complications

<table>
<thead>
<tr>
<th>Direct</th>
<th>Indirect</th>
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<tr>
<td>• Skin Irritations and Infections</td>
<td>• Drug Side-Effects</td>
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<td>• Pressure Ulcers</td>
<td>• Adverse Drug Effects</td>
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<td>• Falls</td>
<td>• Allergic Reactions to Drugs and Materials</td>
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<td>• Urinary Sepsis</td>
<td>• Increased nursing care</td>
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<td>• Physical Activity Restrictions</td>
<td>• Lost Wages</td>
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<td>• Dehydration</td>
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<td>• Medication side effects</td>
<td>- Family member</td>
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<tr>
<td>• Sleep disruption</td>
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### Brief Anatomy Overview

[Image]
Definitions

Continence: A state in which a person possesses and exercises the ability to store urine and micturate at a socially acceptable place and time

Micturition: Storage and emptying of urine from the bladder

Urinary System Structures

- Kidneys
- Ureters
- Bladder
- Urethra
Prostate is a gland which surrounds the neck of the bladder and the urethra in the male.
Structures Involved in Micturition

- Bladder/Detrusor
  - Smooth muscle under voluntary control
- Trigone
  - Area where ureters empty into the bladder and looks like a triangle
  - This area contracts first to help prevent reflux of urine back up to the kidneys
Take Note . . .

- Elderly with compression fractures at S2-S4
  - From osteoporosis etc can lead to urinary retention since the peripheral parasympathetic nerves from S2-S4 facilitate the contraction of the detrusor
- Radical prostatectomy as well as pregnancy and childbirth can damage the Pudendal nerve also located at the S2-S4 level
- Detrusor motor control area in the cerebral cortex arterial supply is from the Middle and and Anterior artery.
  - Same arteries are affected by CVA leading to an unstable bladder
Urinary Sphincters

- Sphincters used to stop sudden urine flow
  - Fast twitch fibers (35%) acting quickly and intensely when coughing, sneezing or doing something unexpected that increases the pressure on the bladder and urethra
- External sphincter under voluntary control
  - (ie open and close these circular muscles at will through the Pudendal nerve)
- Internal sphincter NOT under voluntary control
  - (in females, internal sphincter not effective as the bladder angle changes)
- Internal sphincter
  - For males is above the prostate and external below the prostate
  - For females is located toward the neck of the bladder

Pelvic Floor Muscles

- Levator Ani Muscles form the pelvic floor
  - Pubococcygeal
  - Iliococcygeal
  - Ischiococcygeal
- Function in a sling-like fashion/hammock, maintaining constant low level contraction for postural support of the internal organs
- Also called pelvic diaphragm
- Deep muscle group of the perineum
Pelvic Floor Muscles

- Support the bladder and urethra for optimum position for continence
- Primarily slow twitch or type I muscle fibers
- Attach to the obturator tendon, the pubis, the sacrum and inner surface of the pelvis
- Also involved in providing improved closure of the urethral and anal sphincters

Lower Quadrant Cylinder

- Muscles forming the lower cylinder
  - Diaphragm superiorly
  - Multifidus posteriorly
  - Transverse abdominus anteriorly
  - Levator ani inferiorly

- When we move, these core muscle groups are active in all movements
Types and Causes of Urinary Incontinence

Types of Urinary Incontinence

- Stress
- Urge
- Mixed
- Overflow
- Functional
- Iatrogenic
Stress Urinary Incontinence (SUI)

- Involuntary loss of urine, occurring when, in the absence of a detrusor contraction, the intravesical pressure exceeds the maximum urethral pressure

- Leakage of small amounts of urine during physical movement (laughing, coughing, sneezing, exercising)

Causes of Stress UI

- Incompetent urethra
- Weak pelvic floor musculature
- Neurologic dysfunction and atrophy – reaction time from abdominal pressure increase to sphincter activation too slow
- Denervation injury of pelvic floor musculature due to pregnancy
Urge Incontinence

- Involuntary loss of urine associated with a strong desire to void (urgency)
- Leakage of large amounts of urine at unexpected times, including during sleep
- Urge incontinence results when an overactive bladder contracts without us wanting it to do so.
  - Feel as if they can't wait to reach a toilet
  - May leak urine without any warning at all
  - Infection can cause irritation to bladder lining
  - Can be a nervous system problem

Causes of Urge Incontinence

- Urinary tract infections, cystitis, bladder tumor, stones, irritation (fluids & diet)
- Decreased sensation of fullness
- Neurologic sensitization and dysfunction
- CVA
- Immobility
- Dementia
- Multiple Sclerosis
- Parkinsons
- Spinal cord tumor or lesions
Mixed Incontinence

- Combination of urge and stress urinary incontinence, often associated with the elderly patient

- Most common type of incontinence in SNF

Overflow Incontinence

- Any involuntary loss of urine associated with the overdistention of the bladder (automatic response by the body to protect the kidneys)

- Overflow incontinence occurs when the bladder is allowed to become so full that it simply overflows
Causes of Overflow Incontinence

- Outlet obstruction
  - Enlarged Prostate
  - Fecal impaction
- Diabetes
- Heavy Alcohol use
- Decreased nerve function
- Weak detrusor
- Peripheral Neuropathy

Functional Incontinence

- Urinary leakage associated with inability to toilet because of impairments of cognitive and/or physical functioning, psychological unwillingness, or environmental barriers
- Functional incontinence occurs when one cannot get to the toilet or get a bedpan when needed
  - The urinary system may work well, but physical or mental disabilities or other circumstances prevent normal toilet usage
Causes of Functional Incontinence

- Most common = STAFF
- Impaired mobility
- Severe dementia
- Communication difficulties
- Depression
- Hostility
- Caregiver, toilet and/or toilet substitutes unavailable

Iatrogenic Incontinence

- Diuretics
- Sleeping pills/sedatives
- Decongestants
- Anti-depressants
- Cold remedies
- Parkinson’s meds
- Pain meds
- Blood pressure
Neurogenic Incontinence

- Symptoms range depending on site of neurologic insult
  - Detrusor underactivity/overactivity
  - Sphincter underactivity/overactivity
  - Loss of coordination with bladder function

Other Causes of UI

- Confusional state or diet
- Atrophic vaginitis/urethritis
- Psychological disorders, especially severe depression
- Endocrine disorders, hyperglycemia or hypercalcemia
- Restricted mobility
- SCI
Other Causes of UI

- Urinary tract or vaginal infections
- Post Menopausal – lack of estrogen
- Constipation or fecal impaction
- Weakness of certain muscles
- Blocked urethra d/t enlarged prostate
- Some types of surgery
- Childbearing

Determining Type of Incontinence

Stress Incontinence

- Does the patient leak while laughing, coughing, sneezing, lifting or physical activity?
- Has the patient had a prostatectomy?
- Does the patient urinate during sex?
- Did the patient have vaginal deliveries?
- Did the patient have a hysterectomy?
Determining Type of Incontinence

Urge Incontinence
- Does the patient have a strong urge to urinate but is unable to make it to the restroom?
- Does the patient strain to urinate?
- Does the patient have large accidents?
- Does the patient urinate a lot at night?
- Is the patient urinating frequently?

Functional Incontinence
- Does the patient have arthritis? Fatigue? Weakness? Seem depressed?
- Does the patient have dementia?
- Does the patient have trouble removing clothes? Walking? Walk too slowly?
- Does the patient have accidents early in the morning?
Determining Type of Incontinence

Overflow Incontinence
- Has the patient injured the spinal cord? Or issue with nervous system?
- Does the patient have diabetes?
- Could he have an enlarged prostate?
- Had surgery that traumatized urethra?
- Could the patient be constipated?
- Tenderness over the pubic bone?

Signs of an Enlarged Prostate
- Difficulty getting stream started
- Slow, weak, or interrupted stream
- Frequent voiding small amounts
- Pain or burning with voiding
- Voiding at night
- Urgency
- Incomplete emptying
- Incontinence
Average Bladder Function

- Average Bladder Capacity:
  - Younger Adult - 500-600 cc or 16.6-20 fluid oz. (2-2 ½ Cups of fluid)
  - Elderly – 200–400 cc or 6.6–13.3 fluid oz. (3/4–1 ¾ Cups of fluid)

- Average # Voids/Day:
  - Younger Adult  4-7 times / 24hrs
  - Elderly  5–8 times / 24hrs
Average Bladder Function

- Nocs:
  - Younger Adult - Seldom or 1 times
  - Elderly - 1 to 2 times

- 24 Hour urine output
  - Younger Adult – 1000-5000 cc or 33.3
    166.7 fluid oz. (4.16–20.8 Cups)
  - Elderly – 1000–2000 cc or 33.3
    66.7 fluid oz. (4.16–8.3 Cups)

A healthy person's bladder can usually be emptied voluntarily prior to sensory awareness, defined as voluntary control.

Time from initial urge until bladder reaches capacity is usually 1-2 hours
Post-Void Residual

PVR (Post Void Residual) or the urine left in the bladder after toileting can be assessed by straight catheter or a bladder scan.

WNL ≤ 100cc or ≤ 50cc; more = retention

Fluid Intake Requirements

- Fluids come from food and liquid intake
- Thirst sensation may be decreased in older adults - offer fluids throughout the day
- Dehydration is serious and prevalent with LTC
Dietary Irritants and Fluids

Many foods can irritate the lining of the bladder. Eliminating dietary caffeine can help this. However, limiting overall fluid intake is not effective for managing UI.

### Bladder Irritants
- Alcoholic Beverages
- Apples
- Apple juice
- Artificial sweetener
- Beer
- Cantaloupe
- Carbonation
- Chilies/spicy foods
- Chocolate
- Citrus fruits / juices
- Coffee (including decaf)
- Colas
- Corn syrup
- Cranberries
- Honey
- Grapes / grape juice
- Guava
- Milk
Bladder Irritants

- Peaches
- Pineapple
- Plums
- Strawberries
- Sugar
- Tea
- Tomatoes
- Vinegar
- Vitamins B and C
- Wine

Substitutions

- Low-acid fruits
- Tea substitutions
- Vitamin substitute
- Juice substitutes
- Coffee substitutions
- Water
- ½ and ½ water to juice
- Decreasing the amount of times coffee is served
Vitamin C
- Asparagus
- Avocado
- Broccoli
- Brussels sprouts
- Cabbage, raw
- Cantaloupe
- Cauliflower
- Green pepper
- Greens (collards, kale)
- Lima beans
- Mango
- Papaya
- Peas
- Raspberries
- Spinach
- Squash
- Strawberries
- Turnips
- Vitamin C fortified cereal

- These DO NOT irritate the bladder

Calcium
- Broccoli
- Clams
- Collards, cooked
- Farina
- Oysters
- Salmon
- Sardines
- Self-rising flour
- Soybeans, cooked
- Turnip greens, cooked
- Ice milk

- These DO NOT irritate the bladder
Prescribed Medications

- Oxybutynin (Ditropan) and Tolterodine (Detrol) -- urge incontinence
- Pseudoephedrine (Sudafed) -- stress incontinence
- Imipramine (Tofranil) -- urge or stress incontinence
- Tamsulosin (Flomax) or Terazosin (Hytrin) -- overflow incontinence

Team Assessment
Interdisciplinary Team

- Patient
- Primary Care Provider
- Director of Nursing or nursing designee
- Nursing Assistants
- Occupational Therapy
- Physical Therapy
- Speech Therapy
- Dietician
- Family
- Recreational Therapy
- Social Services

Facility Commitment

- Many factors make treatment of incontinence challenging in a LTC environment
- Facility commitment is essential to overcoming these barriers
Facility Commitment

Key elements to a successful program include:
1. Frequent assessment / monitoring
2. Individualized continence management plans
3. Pharmacological and non-pharmacological strategies
4. Formalized approach to management

Facility Commitment

5. Education and good team communication
6. Demonstrates an effective continence plan reduces workload for all staff
7. IDT communication and planning is key
Nursing and MD Evaluation

- History
- Detail of Symptoms and Associated Factors
- Physical Exam
- Urinary Analysis and PVR

Patient Questionnaire

- Gender
- Do you ever leak urine when you don’t want to?
- When did you notice the onset of urinary leakage?
- Did the urine leakage begin after trauma?
- Did you leak urine as a child? Until what age?
Patient Questionnaire

- How does UI affect you?
- How often do you leak urine?
- When does leakage occur?
- Do you wake up at night to urinate?
- Do you awaken as you are losing urine?
- When you leak urine, how much leaks?
- Do specific activities cause you to leak urine?

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Patient Questionnaire

- Do you ever have trouble getting to the toilet on time or have accidents while removing your clothes prior to urination?
- Do you realize that you are losing urine as it runs out?
- How often do you normally urinate?
- Once your bladder feels full, how long can you hold it?
- Can you stop the flow of urine at will?
- Do you know when you have to go?
Patient Questionnaire

- Do you have any of the following?
  - Difficulty starting a stream
  - Straining
  - Very slow stream or dribbling
  - Discomfort or pain
  - Burning
  - Blood in the urine
- Do you feel that you completely empty?
- Do you leak urine while having sex?

Patient Questionnaire

- Current method of managing urinary leakage?
- How much fluid do you take in within a 24 hour period?
- Do you ever have uncontrolled loss of stool?
- Current medications
Medical History
- Congestive heart failure
- Stroke
- Depression
- Glaucoma
- Cancer
- Dementia
- Diabetes
- Heart arrhythmia
- Parkinson’s disease
- Fainting
- Prior CNS trauma/surgery
- Dizziness
- Other neurological disorder

Prior Genitourinary History
- Rheumatic heart disease
- Bladder tumor
- Multiple vaginal deliveries
- Recurrent UTI
- C-sections
- Pelvic irradiation
- Bladder suspension
- Urethral stricture/dilation
- Vaginal hysterectomy
- Prostate surgery
- Abdominal hysterectomy
Minimum Data Set: Section H

- Determining if the resident is currently experiencing some level of incontinence or is at risk of developing urinary incontinence
- Completing an accurate, thorough assessment of factors that may predispose the resident to having urinary incontinence
- Implementing appropriate, individualized interventions and modifying them as appropriate

Minimum Data Set: Section H

- Toileting trial should include observations of at least 3 days of toileting patterns; record results in a bladder record or voiding diary
- Review voiding patterns (such as frequency, volume, duration, quality)
- Simply tracking continence status IS NOT considered a trial of an individualized, resident-centered toileting program
Minimum Data Set: Section H

- Trial of a toileting program
  - Rehabilitation/Bladder Retraining
    - Resident resists or inhibits the sensation of urgency, postpone or delay voiding, and urinate according to a timetable
  - Prompted Voiding
    - Monitoring continence status, using a schedule and prompting, praise and positive feedback

Minimum Data Set: Section H

- Habit Training/Scheduled Voiding
  - Scheduled toileting at regular intervals to match the resident’s voiding habits or needs
- Check and Change
  - Checking status and using incontinence devices and products
Minimum Data Set: Section H

- **Response to Toileting Program**
  - No improvement
    - Frequency of UI did not decrease during the toileting trial
  - Decreased wetness
    - Frequency decreased, but the resident remained incontinent
    - Improvement should be clinically meaningful

Minimum Data Set: Section H

- Completely dry (continent)
  - No episodes of urinary incontinence during the toileting trial
- Unable to determine or trial in progress
Practical Utilization of MDS

- Use within an Transdisciplinary Continence Care Team
- Effective Evaluation and Documentation
- Individualizing a Continence Improvement Program
- The Quality Measure reports, derived from the MDS, may be utilized for screening residents for possible inclusion in a Continence Improvement Program

24 Hour Voiding Diary

- Purpose: To obtain accurate, baseline bladder health information of the resident receiving skilled therapy for UI
- Standard of Care is 3 days
- Administered three times
  - At Initial Evaluation for – baseline
  - After 4 weeks of therapeutic intervention to determine progress to date
  - At D/C from program to determine status at D/C
24 Hour Voiding Diary

- Voiding diary can provide information about:
  - Urinary frequency
  - Incontinence type
  - Fluid intake
  - Time of occurrence

The most important thing to document is an accurate count of incontinent episodes.
### Voiding Diary

<table>
<thead>
<tr>
<th>Time of Day</th>
<th>Type and Amount of Fluid Intake</th>
<th>Type and Amount of Food Eaten</th>
<th>Amount Voided (in ounces)</th>
<th>Amount of Leakage</th>
<th>Activity Engaged in When Leakage Occurred</th>
<th>Was Urge Present</th>
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<td>Mild</td>
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### Voiding Diary

<table>
<thead>
<tr>
<th>Time</th>
<th>Incontinent of Urine</th>
<th>Dry</th>
<th>Voided bedpan/toilet</th>
<th>Aware of Urge to Void</th>
<th>Fluid Intake</th>
<th>Initials</th>
<th>Comments</th>
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Non implantable pelvic floor electrical stimulation is covered
- for the treatment of stress and/or urge urinary incontinence
- in cognitively intact patients who have failed a documented trial of pelvic muscle exercise (PME) training.
- A failed trial of PME is defined as no clinically significant improvement in urinary incontinence after completing four weeks of an ordered plan of pelvic muscle exercise designed to increase periurethral muscle strength.
What Does this Mean?
- Therapy and nursing should begin with pelvic floor exercises
- If these fail, a course of e-stim may be considered
- If completed appropriately, the exercises are found to be effective

Therapeutic Exercises
- Sit to stand or stand to sit, Quad/Hamstring
- Squats
- Biceps/Triceps, armchair handles, pulleys
- Gait
- Hand dexterity
- Postural correction
Therapeutic Exercises

- Adductor Ther Ex
- Abductor (Obturator Internus) Ther Ex
- Pelvic Floor Activation
- Gluteal sets
- Transverse Abdominus Ther Ex
Therapeutic Exercises

Nursing Interventions
Nursing Interventions
- Teach pelvic muscle exercises
- Assess voiding patterns and maintain bladder records
- Assess for bladder irritating substances
- Assess for chronic constipation
- Encourage drinking 6-8 glasses of fluid
- Instruct on habitual voiding
- Implement a bladder-retraining program

Nursing Interventions
- Teach relaxation techniques (e.g., deep breathing, imagery)
- Client education and instruction
- Encourage client to express concerns
- Review bowel patterns
- Respond promptly to requests for assistance
- Place bedside commode/nightlight
- Suggest assistive devices
Nursing Interventions
- Advise against restrictive clothing
- External urine collection device
- Consult with physician
- Teach signs and symptoms of UTI
- Assess perineum, apply moisture barrier cream
- Change saturated pads promptly
- Inspect skin frequently

Habit Training
- Toileting scheduled to match the patient’s voiding habits based on the voiding diary; to toilet in advance of need
  - Upon rising
  - After meals
  - After naps
  - Before bed
- Goal is not every 2 hours
Treatment Parameters

- Timed or Habit Voiding
  - Request that patient void each hour
  - As patient demonstrates longer dry periods, increase time by 15 minute increments as patient is able
  - Duration 2-4 weeks

Scheduled Toileting

- Timed schedule: every 3-4, etc. hours
- Caregiver dependent
Behavioral Training

- Prompted voiding
  - Recommended in patients who can learn to recognize some degree of bladder fullness or the need to void, or who can ask for assistance or respond when prompted to toilet

Treatment Parameters

- Prompted Voiding
  - Monitor patient – caregiver asks patient if he/she is wet or dry
  - Prompt patient – caregiver verbally asks patient to attempt to void
  - Praise patient – caregiver praises patient for a successful void
  - Duration 2 weeks
Treatment Parameters

- Double Voiding
  - Recommended for those individuals who do not completely empty the bladder
  - After patient has voided once, request patient to stand up for a few seconds, sit back down and try to void a second time
  - Duration 2 weeks

Behavioral Training

- Bladder Training
  - To postpone voiding
- Urge Inhibition Training
  - Techniques for resisting or inhibiting the sensation of urgency

*Bladder training and urge inhibition training are strongly recommended for urge and mixed incontinence and also recommended for management of SUI*
Treatment Parameters

- Bladder Retraining
  - Request patient to delay void until scheduled time
  - Begin with patient’s natural frequency
  - Vary schedule when patient feels urge to void, have patient take 2 deep breaths, use relaxation and distraction, contract pelvic floor muscles, wait 10 minutes, rise slowly and walk to bathroom to void.
  - Duration 2-4 weeks

ADL Training

- Environmental - bedside commode, urinal, room closer to the toilet
- Clothing modifications – zippers, Velcro
- Toileting independence strategies
  - Self performance in locomotion and transfer
  - Self performance in toilet use/hygiene
- Memory/cognition strategies
Pelvic Muscle Rehabilitation

- Increase urethral and anal closure pressure
- Increase muscular support of the pelvic viscera
- Improves cerebral control of micturition
- Reduces urgency
- Enhances voluntary inhibition of urgency
- Improves functional angles at bladder neck and in the rectum

Rehabilitation Results

- Decreased number of incontinent episodes
- Decreased volume of urine loss
- Decreased number of voids per day
- Increased bladder capacity
- Increased strength/tone of pelvic muscles
- Increased QUALITY OF LIFE
Pelvic Floor Muscle Exercises

- How to isolate the muscle group
- How to know if you're performing correctly
- Traditional Kegel exercises
  - Quick twitch
  - Slow twitch
  - Impacting the cortical loop through relaxation and Kegel exercises

Pelvic Floor Exercises

- Find the muscles
  - Tighten muscles to avoid passing gas
  - Wink the rectum
  - Voluntarily stop urine stream
  - Squeeze muscles around finger inserted in anus or vagina
  - Move penis up and down
Pelvic Floor Exercises

- Squeeze and relax the muscle quickly 4-5 times
- Squeeze the muscle for 5 seconds, relax for 5 seconds
- Repeat 5-10 times
- Repeat exercises 3 times during day
- Perform exercises lying, sitting, standing

Pelvic Floor Exercises

- Perform exercises 3 times each day, 5-10 repetitions each session
- Perform the exercises in different positions each session
- Time of day is not critical
Pelvic Floor Exercises

Impacting the cortical loop through relaxation and Kegel exercises

Treatment Parameters

- Pelvic Floor Exercises
  - Patient to perform the exercises in side-lying, supine, sitting and standing
  - Five to ten repetitions of each exercises
  - Performed 3-5 times each day
  - Duration 2-4 weeks
Treatment Parameters

- Relaxation
  - Ability to relax abdominal muscles and intra-abdominal pressure while maintaining pelvic floor contraction
- Duration 2-4 weeks
Initiation of Skilled Therapy

• Initial physician order received for: PT/OT evaluate and treat
• Following initial evaluation, PT or OT shall prepare, date and sign a written plan of care of PT or OT services including:
  • Measurable goals related to problems identified in the evaluation
  • Proposed treatments to meet goals
  • Proposed frequency and duration of treatments

• ST should be included if the resident is having problems with liquids or communication problems

• Dietary should be consulted prior to changing liquids during meals
**Initiation of Skilled Therapy**
- Medical diagnosis – may use UI ICD-10 codes (check LCD)
- Treatment diagnosis should be:
  - The reason skilled therapy is indicated
  - What is causing the UI

**Therapy Evaluation**
- Reason for Referral
- Prior Level of Function
- Chief Complaint
- Previous Treatments
- History - Past Medical, Surgical, OB/GYN, Medications
- Aggravating and Alleviating Factors - UI Symptoms
- Precipitating Events
Therapy Evaluation

- Skills and Functional Assessment
- Maladaptive Behavior
- Effect of UI on Quality of Life
- PVR
- Goals
- Treatment Plan
  - Strengthening
  - Environmental Modification
  - Functional Maintenance Program
  - E-Stim

Goals

Goals related to the problem of UI episodes

- Increase strength of pelvic floor muscles as evidenced by no leakage during sit to stand transfers
- Patient to enjoy meals in dining room without need to toilet 4/7 days

General goals

- Patient will increase UE strength from __ to __ to increase ability to self toilet / mobilize self in chair/bed
- Patient will be able to ambulate __ feet within __ seconds to increase ability to self toilet
Clarification Order

(OT/PT) behavioral treatment for diagnosis of ________(pelvic muscle dysfunction and incontinence improvement, coordination deficits, muscle weakness) including _______(ther ex, ther act, self care/ADL, E-stim for neuromuscular re-ed of pelvic muscles) _______(3 or 5)x week for _______(4 or 6) weeks.

Functional Documentation

- Urge Incontinence
  - Independent Kegel exercises/pelvic floor exercises
  - Habit training/caregiver training
- Functional Maintenance Program
  - Regular toileting every 2-4 hours
  - Train caregiver to assist with exercises
  - Behavior modification/relaxation techniques
Functional Documentation

- Stress Incontinence
  - Pelvic floor exercises
  - Increase continence/controlled voiding
  - Follow established bladder program
  - Functional maintenance program
  - Manage clothing/briefs and pads
  - Ability to use communication system

- Functional Incontinence
  - Transfers and ambulation
  - Toilet and bedside commode transfers
  - Manipulate clothing/adaptive clothing
  - Use communication system
  - Maintain personal hygiene
  - Negotiate around furniture
  - Read, understand and follow program
  - Functional maintenance program
Functional Documentation

- Overflow Incontinence
  - Use pads/briefs for incontinence
  - Manipulate equipment for self-catheterization
  - Safely use Valsalva maneuver and external abdominal pressure to facilitate emptying of the bladder

Model of Care

- Restoration
- Compensation
- Adaptation
Functional Documentation

- Restoration
  - Increase active shoulder motion/strength for independence in personal hygiene
  - Improve extremity/trunk strength for toilet transfers
  - Improve fine motor coordination to manage clothing
  - Follow a toilet schedule

Functional Documentation

- Compensation level
  - Compensatory strategies for navigation/orientation
  - Independent use of bedpan
  - Environmental modification for safe toilet transfers
  - Adding brake extenders for transfer safety
Functional Documentation

- Adaptation level
  - Training caregivers to take the patient to the bathroom on a set schedule
  - Training caregivers in the proper transfer techniques to promote safe transfers and limit episodes of stress incontinence due to the transfer method used

Electrical Stimulation
Treatment Plan

- After 30 days, **if skilled**, continue with:
  - UE/LE Exercises if skilled
  - Postural correction
  - ADL training
  - Balance, gait, transfers, etc.
- Add e-stim (either MFAC or IFC) for pelvic floor muscle strengthening for urge, stress or mixed UI

E-Stim Treatment Options

- MFAC
- IFC
E-Stim Indications

- Treatment of dysfunctions that are related to levator ani spasm or bladder hypersensitivity
  - Urgency and frequency
  - Inability to neurologically identify the pelvic floor muscles
- Inability to isolate pelvic muscles from others
- Exceptionally weak pelvic muscles

Efficacy of E-Stim

- 68% of patients were continent or had improved so much that the planned operation to correct incontinence was canceled
- High success rate (72%) 2 years post
Medium Frequency Alternating Current (MFAC)

- **Procedure**
  - PME assisted by MFAC stim

- **Modality**
  - Electrical stimulation - MFAC

- **Program**
  - MFAC Re-Ed Strength

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Medium Frequency Alternating Current (MFAC)

- **Treatment rationale**
  - To treat disuse atrophy of the pelvic muscles. More aggressive stimulation than IFC
  - May also select if IFC is not comfortable or unable to stimulate the pelvic muscles effectively with IFC

- **Functional objective**
  - Restore muscle tone and control through voluntary and e-stim assisted exercises
Electrode Placement and Treatment Area

- Output A
  - Lead 1
    - Transverse Abdominis – place a 2x4 (or 3x5) electrode superior and parallel to inguinal crease
  - Lead 2
    - Place a 2x4 (or 3x5) electrode over the ischial tuberosity on the contralateral side

Electrode Placement and Treatment Area

- Output B
  - Lead 1
    - Transverse Abdominis – place a 2x4 (or 3x5) electrode superior and parallel to inguinal crease contralaterally to channel A, lead 1
  - Lead 2
    - Place a 2x4 (or 3x5) electrode over the ischial tuberosity contralaterally to channel A, lead 2
MFAC Muscle Re-education

- Treats disuse atrophy of the pelvic muscles
- Assists the patient in identifying the PFM as E-stim MFAC causes the PMF contraction and the patient can work with the stimulator to produce a combined voluntary and involuntary contractions
Interferential Current (IFC)

- Procedure
  - PME assisted by Interferential Current Therapy
- Modality
  - Electrical Stimulation - IFC
- Program
  - IFC Sensory

Treatment rationale
- To treat disuse atrophy of the pelvic muscles
- Technique less aggressive than MFAC
- Used earlier in rehab program with graduation to MFAC as disuse atrophy improves and patient tolerates greater contraction intensity
- Selected if MFAC is not comfortable or ineffective in stimulation of the pelvic muscles

Functional objectives
- Restore muscle tone and control of pelvic musculature through voluntary and e-stim assisted exercise
Electrode Placement and Treatment Area

- **Output A**
  - Lead 1
    - Transverse Abdominis – place a 2x4 (or 3x5) electrode superior and parallel to inguinal crease
  - Lead 2
    - Place a 2x4 (or 3x5) electrode over the ischial tuberosity on the contralateral side

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Electrode Placement and Treatment Area

- **Output B**
  - Lead 1
    - Transverse Abdominis – place a 2x4 (or 3x5) electrode superior and parallel to inguinal crease contralaterally to channel A, lead 1
  - Lead 2
    - Place a 2x4 (or 3x5) electrode over the ischial tuberosity contralaterally to channel A, lead 2
Post-Treatment

- Pelvic muscle exercise
- Behavioral Interventions/training as appropriate
- Improvement of ADL ability required for the patient in clothing management, access to toileting and overcoming environmental barriers
- Documentation completed, including patient tolerance of treatment
Contraindications/Precautions

- Advanced Heart Disease and/or Pacemaker
- Cancer
- Pregnancy
- Fever and Infection (including UTI)
- Danger of hemorrhage
- Circulatory insufficiency

Contraindications/Precautions

- Absent or diminished sensation
- Epilepsy
- Healing tissue (muscle stimulation)
- Close proximity to and/or with other high frequency devices, e.g. SWD
Wrapping it Up

Continence Management Strategies

• Urge Incontinence: Sudden need to urinate
• Causes
  • Bladder stones
  • Stroke, Dementia, Parkinson’s
• Treatment
  • Behavioral strategies
  • Habit and bladder training
  • Relaxation
  • E-stim
Continence Management Strategies

- Stress Incontinence: Leakage of Urine
  - Causes
    - TURP
    - Weakness of pelvic floor muscles or sphincters
    - Obesity
    - Childbirth
  - Treatment
    - Pelvic floor exercises
    - E-stim

- Functional Incontinence: Socially unacceptable urine outflow
  - Causes
    - Unable/unwilling to reach toilet (restraints, inaccessible, staff not available)
  - Treatment
    - Habit training
    - Scheduling
    - Behavior modification
    - Strength, ROM, gait, transfers, ADL training
Continence Management Strategies

- Overflow Incontinence: Leakage of Urine
- Causes
  - Prostate enlargement
  - Diabetic neuropathy
  - Spinal cord injury
- Treatment
  - Medications
  - Adaptive equipment
  - Habit training

Case Study A

- 87 y/o female with R hip fracture
- Hx CVA with right hemiparesis, MI
- Leakage with transfers
- Drinks tea and OJ
- Pelvic muscle exercises not effective
Case Study A

• Type of incontinence
  • Stress UI
• Other contributing factors
  • Clothing management?
  • Dietary considerations?
  • Exercises not helpful?

Case Study B

• 65 y/o male hx prostate cancer, diabetes
• Never knows he needs the bathroom until too late
• Assist for transfers due to weakness and LOB
• Cluttered room
Case Study B

- Type of incontinence
  - Overflow UI
- Other contributing factors
  - Cannot make it to bathroom in time
  - Weakness, loss of balance
  - Cluttered room
  - Unsafe ambulation
  - Decreased transfer ability

Case Study C

- 87 y/o female w/CVA, speech deficits, unilateral neglect, spasticity
- Hx UTI
- Leakage worst at night, large amounts
- Assist for toileting, transfers, mobility and hygiene
Case Study C

- Type of incontinence
  - Urge UI
- Other contributing factors
  - Symptoms worse at night, large volumes
  - Bladder infection/UTI
  - Not attending activities
  - Assistance for transfers, hygiene, mobility
  - Baking activities?

Facility Commitment

- Many factors make treatment of incontinence challenging in a LTC environment
- Facility commitment is essential to overcoming these barriers
Thank You!!