

## To Pee or not to Pee That is the question

James R. Powell MD  
Medical Director of DDI/Opti-Healthcare  
Clinical Instructor, Department of Medicine  
Stony Brook University School of Medicine  
[jpowell@ddiinfo.org](mailto:jpowell@ddiinfo.org)

## Objective

- To look at the unique needs of adults with developmental disabilities and explore specific causes for urinary accidents
- To explore the trends we see in the office setting and demonstrate ways that may improve outcome
- To review case studies related to urinary accidents and discuss treatment options

## The evolution of this lecture

"Its just behavioral"

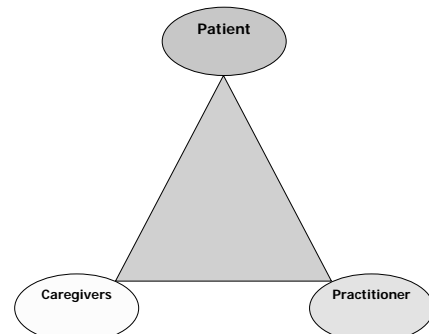
Is there a medical/behavioral  
model for urinary accidents and  
urinary frequency?

Not if we don't work together

What are the three biggest  
obstacles to providing effective  
care?

- Communication
- Communication
- Communication

Understand the relationship of  
the "triangle of care"



### What are the goals of the interventions for our patients?

- Improve hygiene
- Decrease infections
- Decrease injury
- Promote dignity and respect
- Improve quality of life

### What do we consider *normal*?

- We produce about 1-1.5 litres of urine a day
- The average bladder holds about 0.25 litres before we begin to feel uncomfortable
- The bladder can hold about 0.5 litres before it has empty
- A person will urinate about 4-8 times a day
- A person should drink 8 8oz glasses a day

### Comprehensive History for the Practitioner

- Describing the Present Illness:
- This section is a clear, chronological account of the problems for which the patient is seeking care. The data comes from the patient, staff, family members and/or nursing staff; however the organization is yours. The narrative should include the onset of the problem, the setting in which it developed, its manifestations, and any treatment.
- The principle symptoms should be described in terms of:
  - Location
  - Quality
  - Quantity or severity
  - Timing (i.e., onset, duration, and frequency)
  - The setting in which they occur
  - Factors that have aggravated or relieved them
  - Associated manifestations
- All this information will improve the ability to diagnosis the condition and decrease any unnecessary testing and additional delays in care.

### Urinary Diary

- Utilize a simple form for recording voids, incontinent episodes, fluid intake
- Can be therapeutic by itself by raising awareness
- Very useful in planning therapy regarding fluid adjustment, timing and type of medications
- Make sure the data reflects the true picture (program, home, staff)
- 3 days if possible

### What other medical/behavioral issues have recently changed?

- New Medications
- Different doses of medications
- New/exacerbated medical conditions
- New environmental changes including staffing patterns, programs changes or family issues

### An easy acronym used to remember these causes is the word DRIP

- **D** = Delirium, Dehydration, Diapers.
- **R** = Retention, Restricted Mobility.
- **I** = Impaction, Infection, Inflammation.
- **P** = Pharmaceuticals, Polyuria, Paget's Disease

## Potentially Reversible Causes

- D** - Delirium
- I** - Infection
- A** - Atrophic vaginitis or urethritis
- P** - Pharmaceuticals
- P** - Psychological disorders
- E** - Endocrine disorders
- R** - Restricted mobility
- S** - Stool impaction

2

## Medication Use within Developmentally Disabled Patients

| Total # of patients studied                              | % of pts | average | 211<br># of pts |
|--|----------|---------|-----------------|
| Average Age  |          | 40.2    |                 |
| Range of Ages  |          |         | 7-94 yrs        |
| % Male Patients  | 72.0%    |         | 152             |
| % Female Patients  | 28.0%    |         | 59              |
| Average # of Meds/pt                                     |          | 7       |                 |
| % on Allergy Meds  | 28.4%    |         | 60              |
| % on Derm Meds   | 52.1%    |         | 110             |
| Avg # of Derm Meds Used                                  |          | 1.6     |                 |
| % on Antiulcer Meds                                      | 30.3%    |         | 64              |
| % on Laxatives   | 48.3%    |         | 102             |
| Avg # of Laxatives Used                                  |          | 1.5     |                 |
| % on Psychiatry Meds                                     | 59.2%    |         | 125             |
| % on Anticonvulsants                                     | 46.4%    |         | 98              |
| % on Anticonvulsants who are also on calcium supplements | 31.6%    |         | 31              |

## Medications commonly used by individuals that can cause confusion and behaviors:

- Anticholinergics
- Antipsychotics
- Benzodiazepines
- Beta blockers
- Centrally acting antihypertensives
- Dopaminergic drugs
- Glucocorticoids
- H2-receptor blockers
- Nonsteroidal anti-inflammatory drugs
- Pain medications
- Sulfa drugs
- Tricyclic antidepressants

## Percentage of diagnosis codes for Primary Care visits in a Quality Assurance study

| Diagnosis                    | %      |
|------------------------------|--------|
| Hypertension                 | 11.74% |
| Lipid Disorders              | 11.04% |
| Upper Respiratory Infections | 8.36%  |
| General Medical exam         | 6.55%  |
| Diabetes Mellitus            | 4.67%  |
| Dermatitis                   | 3.87%  |
| Impacted Cerumen             | 3.36%  |
| Hypothyroidism               | 3.28%  |
| Reflux esophagitis           | 2.75%  |
| Allergic rhinitis            | 2.52%  |
| Back Pain                    | 2.04%  |
| Asthma                       | 1.92%  |
| General Convulsive Epilepsy  | 1.83%  |
| Urinary Tract Infections     | 1.80%  |
| Otitis Media                 | 1.63%  |
| Constipation                 | 1.59%  |
| Dermatophytosis              | 1.56%  |
| Pharyngitis                  | 1.42%  |
| Edema                        | 1.31%  |
| Conjunctivitis               | 1.22%  |

## Comparison of rankings between Opti-Healthcare and national statistics

| Description                 | Opti-Healthcare Population | General Population |
|-----------------------------|----------------------------|--------------------|
| Hypertension                | 1                          | 1                  |
| Lipid Disorders             | 2                          | 16                 |
| Upper Resp Infections       | 3                          | 3                  |
| General Medical exam        | 4                          | 6                  |
| Diabetes Mellitus           | 5                          | 4                  |
| Dermatitis                  | 6                          | n/a                |
| Impacted Cerumen            | 7                          | n/a                |
| Hypothyroidism              | 8                          | n/a                |
| Reflux esophagitis          | 9                          | n/a                |
| Allergic Rhinitis           | 10                         | 13                 |
| Back Pain                   | 11                         | 7                  |
| Asthma                      | 12                         | 14                 |
| General Convulsive Epilepsy | 13                         | n/a                |
| Urinary Tract Infections    | 14                         | n/a                |
| Otitis Media                | 15                         | 10                 |
| Constipation                | 16                         | n/a                |
| Dermatophytosis             | 17                         | n/a                |
| Pharyngitis                 | 18                         | 19                 |
| Edema                       | 19                         | n/a                |
| Conjunctivitis              | 20                         | n/a                |

## Definition

### INCONTINENCE:

Involuntary loss of urine or stool in sufficient amount or frequency to constitute a social and/or health problem. A heterogeneous condition that ranges in severity from dribbling small amounts of urine to continuous urinary incontinence with concomitant fecal incontinence

## How Common is Incontinence?

- Prevalence increases with age (but it is not a part of normal aging)
- 25-30% of community dwelling older women
- 10-15% of community dwelling older men
- 50% of nursing home residents; often associated with dementia, fecal incontinence, inability to walk and transfer independently

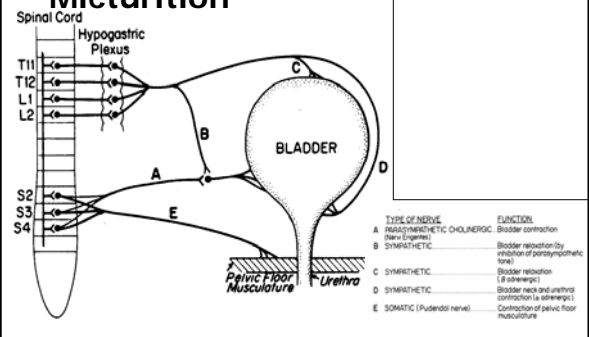
## Anatomy of Micturition

- Detrusor muscle
- External and Internal sphincter
- CNS control
  - Pons - facilitates
  - Cerebral cortex - inhibits
- Hormonal effects - estrogen

## Peripheral Nerves in Micturition

- Parasympathetic (cholinergic) - Bladder contraction
- Sympathetic - Bladder Relaxation
- Sympathetic - Bladder Relaxation ( $\beta$  adrenergic)
- Sympathetic - Bladder neck and urethral contraction ( $\alpha$  adrenergic)
- Somatic (Pudendal nerve) - contraction pelvic floor musculature

## Peripheral Nerves in Micturition



## Taking the History

- Duration, severity, symptoms, previous treatment, medications, GU surgery
- 3 P's
  - Position of leakage (supine, sitting, standing)
  - Protection (pads per day, wetness of pads)
  - Problem (quality of life)
- Bladder record or diary

## Potentially Reversible Causes

- D** - Delirium
- I** - Infection
- A** - Atrophic vaginitis or urethritis
- P** - Pharmaceuticals
- P** - Psychological disorders
- E** - Endocrine disorders
- R** - Restricted mobility
- S** - Stool impaction

### Medications That May Cause Incontinence

- Diuretics
- Anticholinergics - antihistamines, antipsychotics, antidepressants
- Sedatives/hypnotics
- Alcohol/Caffeine
- Narcotics
- Calcium channel blockers

### Categories of Incontinence

- Urge incontinence (over active bladder)
- Stress incontinence
- Overflow incontinence
- Functional incontinence

### Urge Incontinence

- Most common cause of UI >75 years of age
- Abrupt desire to void cannot be suppressed
- Usually idiopathic
- Causes: infection, tumor, stones, atrophic vaginitis or urethritis, stroke, Parkinson's Disease, dementia

### Stress Incontinence

- Occurs with increase in abdominal pressure; cough, sneeze, etc.
- Hypermotility of bladder neck and urethra; associated with aging, hormonal changes, trauma of childbirth or pelvic surgery (85% of cases)
- Intrinsic sphincter problems; due to pelvic/incontinence surgery, pelvic radiation, trauma, neurogenic causes (15% of cases)

### Overflow Incontinence

- Over distention of bladder
- Bladder outlet obstruction; stricture, BPH, cystocele, fecal impaction
- Non-contractile bladder (hypoactive detrusor or atonic bladder); diabetes, MS, spinal injury, medications

### Functional Incontinence

- Does not involve lower urinary tract
- Result of psychological, cognitive or physical impairment

## Mixed Incontinence

- The reality is that often times for our patients they have an over active bladder and an under active urethra. They experience mild urine loss during activity and acute urine loss without any warning

## Characteristics of BPH

- Common prostate condition in men over 50
- Prostate size  $\geq 30$  ml
- Prostate specific antigen (PSA)  $\geq 1.5$
- Progressive disease
- Major cause of urinary symptoms in older men

## How do we improve the diagnosis of BPH with our patients?

- The history
- Digital rectal exam
- The labs
- The witnessed void
  
- The Down Syndrome experience

## Physical Examination

- Mental status
- Mobility
- Fluid overload
- Abdominal exam
- Neurologic exam
- Pelvic
- Rectal

## How do we improve the diagnosis of BPH with our patients?

- The history
- Digital rectal exam
- The labs
- The witnessed void

## Characteristics of BPH

- Common prostate condition in men over 50
- Prostate size  $\geq 30$  ml
- Prostate specific antigen (PSA)  $\geq 1.5$
- Progressive disease
- Major cause of urinary symptoms in older men

## Diagnostic Tests

- Post-void residual
- Blood Tests (calcium, glucose, BUN, Cr)
- Urine analysis/Urine Culture

## Interpretation of Post-Void Residual

- PVR < 50cc - Adequate bladder emptying
- PVR > 100cc - Refer to Urology
- PVR > 400cc - Overflow UI likely

## Treatment Options

- Reduce amount and timing of fluid intake
- Avoid bladder stimulants (caffeine)
- Use diuretics judiciously (not before bed or getting on the bus to program)
- Reduce physical barriers to toilet (use bedside commode)
- Loose weight will help UI(OAB)

1

## Treatment Options

- Bladder training
  - Patient education
  - Scheduled voiding
  - Positive reinforcement
- Pelvic floor exercises (Kegel Exercises)
- Biofeedback
- Caregiver interventions
  - Scheduled toileting
  - Habit training
  - Prompted voiding

2

## Pharmacological Interventions what does the insurance cover?

- Urge Incontinence
  - Oxybutynin (Ditropan)
  - Imipramine (Tofranil)
- Stress Incontinence
  - Pseudo-Ephedrine (Sudafed)
  - Estrogen (orally, transdermally or transvaginally)



## What is the behavioral approach?

- Evaluate context data.
- Ask how the staff typically responded to the accident

## Education of Staff

- Do not provide an emotional reaction to the event
- Incontinence that doesn't begin as a socially mediated event can be shaped into a secondary function

## Implement appropriate Proactive strategies

- Timed toileting (q1-3 hours with a goal to increase the interval to 3-4 hrs)
- Prompting double voiding if possible
- Limiting fluids after dinner
- Communication through picture signals, sign language, etc...
- Bedside commode and fade it gradually to the bathroom

## Change the consequences provided after an accident

- Neutral staff effect
- Encourage the individuals assistance with cleaning up
- Less preferred methods of cleaning if possible being careful not to reward or punish the individual. (the bubble bath or the aversive shower)
- Provide positive reinforcement for dry nights or appropriate use of the toilet

## Smearing Behavior

- Can we provide enhanced sensory stimulation with a sensory box or healthy stimulatory substitute
- Protective pajamas only if appropriate and approved by all parties

## Other options

- Social Stories-staff read appropriate routines in a story format once or twice a day
- Video modeling
- Pictorial-Task Analysis
- Bed Alarms-not effective if mental age is less than 5

## Case Studies #1

- 32 y/o male with autism, MR, anxiety, and a seizure disorder.
- Chief complaint: Urinating all day
- Meds: Zoloft, Depakote, and Inderal
- What is your diagnosis?

### Case #2

- 63 y/o female with Down syndrome, Moderate MR, OA, dementia, hypothyroidism presents with persistent fungal rashes
- What's your diagnosis?

### Case #3

- 23 y/o male with Autism, MR, impulse control disorder presents with urinary accidents through out the day
- Medications: Abilify, Prozac, MVI,
- What's your diagnosis

### Case # 4

- 44 y/o female with MR, seizure disorder, anxiety presents with increasing night time accidents and irritability.
- Medications include Zyprexa, Ativan, Tegretol, MVI, Claritin, Nasonex.
- What is the diagnosis?

### Interesting case points

- The gallbladder that cured urinary incontinence
- The annual Urine Analysis- be careful what you order

### Medications

When prescribing it is not only important to be conscious of the medication itself but also the potential for synergistic side effects

Oh yeah...does your insurance cover it?

### DDAVP (Desmopressin)

- A great responses to nocturnal symptoms
- Hyponatremia-more common in our experience with individuals on multiple medications
- Watch Na levels and water intake

## Anticholinergics

- Not impressed with one more than another (Detrol, Ditropan, Vesicare, etc...)
- Favorable side effect profile with our patients although some studies indicate newer medications cause less cognitive dysfunction
- Some fatigue and constipation and dry mouth

## BPH therapy

- Tamsulosin (Flomax) Generally safe except for some dizziness and drop in blood pressure (be mindful in Down Syndrome)
- Terazosin (Hytrin) centrally acting alpha blocker with fair BP lower response. Watch BP
- Dutasteride (Avodart) 5-alpha reductase inhibitor that shrinks the prostate
- Cardura and Proscar are used effectively-just less personal experience to comment on them in our patients

## When do I refer to Urology

- Hematuria without a cause
- Abnormal US/PVR
- Persistent infections
- Not responding to initial medical interventions.
- Abnormal exam/labs

## Conclusion

- If you ask you will find
- Keep realistic expectations
- Utilize the entire team to maximize success