The Cost of Urinary Incontinence

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Urinary incontinence (UI), defined as the loss of bladder control, is considered to be a health symptom rather than a disease (Johnson, 2008). In 1996, the Agency for Health Care Policy and Research (AHCPR) estimated that 13 million Americans suffered from UI, with females representing 85% of these individuals. In 1998, Resnick estimated that 1 in 4 women over the age of 18 years experience involuntary UI, and 1 in 5 adults over the age of 40 years experience recurrent urgency and frequency. The National Association for Continence (NAFC) (2008) repotted the psychosocial consequences of UI as being depression, isolation, decreased self-esteem, and work-related difficulties. Thus, costs associated with UI are both direct, related to treatment, and indirect, from the psychosocial sequelae.

The NAFC reports that with appropriate treatment, approximately 80% of those with UI can be cured or experience improved symptoms. The greatest obstacle toward obtaining treatment appears to revolve around reluctance to disclose the condition. Routine health care encounters do not typically assess UI, and anecdotal clinical reports note that individuals tend to suffer from and treat UI privately. Thus, it is postulated that UI is one of the more under-reported conditions within health care. Routine assessment for UI will provide the capability to diagnosis the condition early and treat the underlying pathology. Individuals at risk for UI include those over the age of 60 years, those with a history of chronic urinary tract infections, and those who have limited mobility, obesity, and/or poor personal hygiene. Women at risk for UI include those who have had more than three normal spontaneous vaginal deliveries or who have undergone a hysterectomy. Men at risk for UI include those who have an enlarged prostate, have undergone treatment for prostate cancer, or have a history of pelvic disorders, including trauma (Miller, Saigal, & Litwin, 2009). Early identification and treatment will enhance the quality of life for individuals with UI, thus preventing avoidance of social situations, decreased self-esteem, and depression. This approach will not only decrease the amount of money spent on symptomatic treatment but will also prevent or address the psychosocial effects of UI.

It has been estimated that 13 million Americans have suffered from urinary incontinence (UI). Costs associated with UI include not only those pertaining to direct treatment, but they include costs related to the indirect psychosocial effects of the condition as well. This article will review both direct and indirect costs of UI and how urologic nurses can assist patients with UI in their overall plan of care.

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Direct Costs of UI

Data describing the direct costs associated with symptomatic treatment of UI are difficult to find. Many adults elect to treat their condition privately, relying on pads, diapers, and frequent clothing changes. There is no method to track these costs, for they are not reimbursable by insurance or Medicare. However, each incidence of UI treated with a bladder control pad results in an average cost of $1.66. This cost is based on purchasing bladder incontinence pads in bulk (at $70 per case of 42) and on changing pads after each incidence. Symptomatically treating UI in this manner results in an annual cost of $605.90. The use of ultra bladder control pads, which are capable of absorbing a greater amount of urine, triples the cost. These bladder control pads are $70 per case of 14, or $5.00 each. The daily use (not incidence use) of these bladder control pads results in an annual cost of $1825. Adult diapers may be disposable or re-usable. Washable diapers tend to be more expensive initially, but the ability to wash, re-use, and be environmentally respectful decreases costs associated with this option over time. Bed and chair protection may be provided in a variety of ways, from absorbent liners, which can be disposable or re-useable, to adapting vinyl tablecloths, shower liners, or rubber pads for this use.

Data from the AHCPR (1996) provide statistics with respect to the prevalence and care needs for those with UI. According to the AHCPR, caregivers of homebound older adults report that UI is present 53% of the time, making it one of the 10 leading diag-
noses for homebound individuals. UI ranks first in total charges to Medicare for nursing services per person receiving home care benefits (Martin, 1997).

Medications used to treat UI are generally anticholinergics, alpha-adrenergic agonists, and estrogen. Imipramine (Tofranil®), an antidepressant, has also been used to treat UI. Commonly used anticholinergics include oxybutynin (Ditropan®), tolterodine (Detrol®), darifenac (Enablex®), solifenacin (Vesicare®), and trospium (Sanctura®). Each of these medications has been FDA approved for the treatment of overactive bladder. In a Cochrane Review of the use of anticholinergic drugs versus placebo as a treatment for an overactive bladder, Nabi, Cody, Herbison, and Hay-Smith (2008) concluded these drugs provide a statistically significant improvement in symptomology yet only a modest improvement in the self-reported quality of life. Costs associated with these medications vary, depending upon the insurance co-pay and the availability of discount pharmacies. On-line sources for each medication are available within the United States, where prices range from $95 to $290 for a one-month supply. Oxybutynin, in the generic formula, is the only anticholinergic available from many local pharmacies at a discount ($4.00 for a 30-day supply). Thus, if an individual has no insurance assistance and the generic formula can be used, the medication costs can be as low as $48. Otherwise, the costs would average between $1140 to $3480, annually.

Alpha-adrenergic medications include ephedrine and pseudoephedrine. These medications are not indicated specifically for UI and have potentially dangerous side-effects. Ephedrine and pseudoephedrine are available over-the-counter in cough medications and appetite suppressants. The cost of ephedrine and pseudoephedrine ranges from $90 to $150 for 200 tablets. The recommended dose is individualized and should be coordinated with other medication(s). For a BID schedule, the annual cost of these medications ranges from $330 to $550. As over-the-counter medications, these costs are not usually covered by medication insurance.

Estrogen, known to increase blood flow and enhance nerve function, may be used to maintain the strength and flexibility of tissues within the bladder and urethra. There is a paucity of research literature correlating the use of estrogen to improved urinary symptoms. Costs associated with estrogen vary and are dependent upon the type and dose of estrogen. Since it is rarely prescribed for UI, its direct costs to UI were not determined.

The tricyclic antidepressant imipramine (Tofranil®) has been used to treat UI from mixed (urge and stress) causes. Desmopressin (DDAVP®), which decreases the production of urine, has also been used to treat UI. Instilling an extract of capsaicin, the spicy component of chili peppers, is presently undergoing clinical studies as treatment to temporarily (2 to 7 months) numb a hypersensitive or overactive bladder. Resiniferatoxin, an extract from a cactus-like plant, is also undergoing clinical trials and appears to provide effective treatment for up to three months. The injection of Botulinum toxin type A (Botox®) into the bladder muscle paralyzes it, which benefits those with an overactive bladder for up to 9 months. While these clinical trials appear hopeful, they should be recommended only to those who have not responded to other medications.

Surgical treatments for UI include 1) retropubic suspension, 2) suburethral slings, and 3) bulking injections. Basically, a retropubic suspension raises the bladder neck if it has dropped out of place. A suburethral sling, placed under the urethra, supports a urethra that has fallen out of place. Bulking injections are recommended when surgery has either not worked or is not an option. Injecting substances into the tissue around the urethra temporarily (months to years) decreases the diameter of the urethra, which improves the ability to hold urine. The injection of bulking substances may be done as an outpatient procedure, decreasing the costs associated with this procedure. The other two procedures require a hospital stay, anesthesia, and recovery time, and have specific associated risks. Costs associated with these procedures vary and are dependent upon insurance coverage, co-pays, and employee benefits. Each procedure is a covered entity under Medicare Part A after annual deductibles are met.

Indirect Costs

Previous research has documented depression, isolation, decreased self-esteem, and work-related difficulties as consequences of UI. These are considered indirect costs related to the psychosocial consequences of UI. Urgency UI is the most significant type of UI in older adult men and women (Ouslander, 2002). UI has been demonstrated to seriously affect quality of life and is known to be associated with various comorbidities and functional disabilities (McGrother et al., 2006; Quander, Moms, Melson, Bienias, & Evans, 2005). In a longitudinal study, which provides level IV research evidence according to Melnyk and Fineout-Overholt (2005), Nuotio, Luukkaala, Tammela, and Jylha (In press) identified that a depressive mood was predictive with UI, even after controlling for comorbid conditions and disabilities. Further analysis of these data revealed that UI is a marker for general fragility. This was especially true among men, where advancing age, comorbid conditions, a decreased ability to perform activities of daily living, and mobility disability were significant and predictive factors for mortality.

Level III survey research support is available from the National Health and Nutrition Examination Survey. Self-report data on a variety of health conditions were collected from randomly selected households throughout the United States between 1999 and 2000. Analyses of these data (Anger, Saigal, Stithers et al., 2006) describe UI among community-dwelling men and women. The overall prevalence of UI was 17%. Incidence of UI was reported at 11% among men aged 60 to 64 years and 31% among men 65...
years of age or older. Among these populations, a daily UI incidence of 42% was reported, while 24% of these individuals reported it weekly. African-American men reported the highest prevalence of UI (21%), which was almost similar among African-American women (20%). The rate of UI among Caucasian and Mexican-Americans varies, with women reporting UI prevalence rates that are at least 2.5 times higher than men of the same ethnicity.

Further analyses estimate the prevalence of UI among females aged 60 years or older to be 38%. Stratifying the incidence of UI determined that 13.7% of these women report daily UI, which increased in frequency with age. Individuals between the ages of 60 to 64 years reported a 12.2% incidence of UI, which increased to 19.4% among those 65 years of age or older. Prevalence was 41% among non-Hispanic white women, 20% among non-Hispanic black women, and 36% among Mexican-American women. Women with less than a high school education reported fewer incidences of UI than those with at least a high school education. Ethnicity appears to be a contributing factor for UI, complicated by differing patterns between men and women.

Data from the National Nursing Home Survey, which provides Level IV research evidence, describe the incidence of reported UI among nursing home residents in the United States (Anger, Saigal, Madison, Joyce, & Litwin, 2006). These data indicate that upon admission, only 1% to 2% of nursing home residents have an indwelling Foley catheter, need assistance from equipment or personnel to use the toilet, or have documented difficulty controlling urination. Yet clinical queries determined that bladder dysfunction is prevalent. More than half of these female nursing home residents self-reported difficulty controlling urination or requiring assistance to use the toilet. The variability in determining what constitutes UI, along with a hesitancy to inquire about or report UI, hampers the ability to accurately determine its incidence among nursing home residents. In a 1997 AHCPR report, the direct costs of caring for UI in nursing facilities were estimated at $5.2 billion (Newman, 1997). It has also been noted (Saffel, 2006) that the need for frequent toileting and/or urinary urgency increases the risk of falls among older adults by as much as 26% and increases the risk of bone fracture by as much as 34%.

A retrospective review of nursing home admission medical records by Thom, Haan, and Van Den Eeden (1997) identified an increased risk for newly identified UI following a diagnosis of Parkinson’s disease, dementia, stroke, depression, and congestive heart failure among both men and women, even after adjusting for age and cohort. Subsequently, the diagnosis of UI increased the risk of hospitalization and the necessity to be placed in a nursing home. These risks were independent of age or the presence of other health care conditions and had little effect on total mortality. One study used a prospective cross-sectional survey design, which provides Level IV data, to explore the prevalence of UI in high school females (Docker, Becker, Huber, Lacher, & Obeng, 2008). Ninety females between the ages of 15 and 18 years completed a survey. The results describe the incidence of UI at 42.2% and as being associated with coughing, sneezing, laughing, weight lifting, jumping, or making abrupt movements. Strategies used to manage or prevent UI included “doing nothing,” “holding it,” or “urinating more frequently.” Seven participants reported receiving education, specifically pelvic floor muscle training, and one participant stated this education was from a health care provider.

**Conclusion**

The incidence of UI is pervasive throughout people of all ages and genders. It is associated with negative and detrimental effects, both physically and psychologically. Appropriate, accurate, and routine assessment for this condition should begin during adolescence. Such a proactive approach will allow education to be provided, preventive interventions to be included in daily routines, and referrals to health care providers to occur. Early identification and treatment of physiological abnormalities will prevent lifelong psychosocial sequelae. In 2003, as well as in this issue (see p. 146), Joseph recommended that incontinence be identified as the sixth vital sign. Routine inquiry about the presence of incontinence would provide for early and routine identification of this prevalent condition. Treatment recommendations could be initiated before quality of life is impacted, thus decreasing or preventing the indirect or psychosocial effects of UI. As health care reform continues toward a preventative approach, it is time to incorporate incontinence in routine assessments. When asked for suggestions for reforming health care, improving the quality of life for patients or ways to identify treatable conditions early, think UI!

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