Urinary Incontinence Quality Improvement in Nursing Homes: Where Have We Been? Where Are We Going?

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Abstract and Introduction

Abstract

The Centers for Medicare and Medicaid Services (CMS) has made urinary incontinence (UI) a quality indicator as part of the Nursing Home Quality Initiative (NHQI). In addition, CMS issued revised guidance on UI and catheters (known as tag F315) for nursing homes regarding compliance in the evaluation and management of UI and catheters, and an investigative protocol for state nursing home surveyors to use during regulatory inspections. The prevalence of UI in nursing homes remains high despite many years of research and clinical efforts to cure or improve it. Nurses play a key role in assuring appropriate assessment of nursing home residents to prevent and treat UI. Changes at the organizational level and inpatient care are needed to make dignity of nursing home residents central to UI quality improvement efforts. This article reviews the epidemiology of UI, the evidence for behavioral interventions, and the types of quality improvement strategies used for UI in nursing homes.

Introduction

Urinary incontinence (UI) in nursing homes has been the subject of clinical and research interest for nearly 30 years. It has been alternatively viewed as an in tractable problem requiring containment and as a problem worthy of rehabilitation efforts. Over the past few decades, nursing staff members and nursing home residents have been the subjects of many research studies investigating the effect of UI on psychosocial aspects of their lives. The effect of UI on nursing staff behavior in terms of work-related issues, such as turnover, has also been investigated. At the same time, behavioral interventions have been developed and tested in nursing homes. In addition, technological innovations have led to absorbent products that are designed to contain large quantities of urine and to protect the skin from the effects of incontinence.

UI is a quality indicator in the Centers for Medicare and Medicaid Services (CMS) Nursing Home Quality Initiative (NHQI) and thus is meant to serve as an indicator for consumers about the quality of care delivered by nursing homes (U.S. Department of Health and Human Services [DHHS] Centers for Medicare & Medicaid Services [CMS], 2006). Despite efforts of clinicians and researchers, however, over 50% of nursing home residents are incontinent of urine (DHHS CMS, 2005). This does not mean that nurses have failed in their efforts to prevent and treat UI, which is a complex condition influenced by intrinsic and extrinsic factors that are often beyond the control of the nursing staff. The real measure of success or failure is evidence of at-risk and incontinent residents receiving appropriate assessment and treatment for UI.

The purpose of this article is to review the epidemiology of UI in nursing homes, as well as discuss past and present quality improvement efforts for UI in nursing homes. In addition, recommendations for nursing interventions that address the incidence of incontinence and potentially reduce its prevalence among nursing home residents will be made.

Epidemiology of UI in Nursing Homes

Prevalence of UI

Prevalence refers to all cases of incontinence at a specified point in time. UI prevalence in nursing homes is associated with immobility and medical co-morbidities, such as diabetes mellitus and dementia. Environmental factors can also influence the prevalence of incontinence. For example, in one study, toilet height for 45.2% of nursing home residents was higher than the optimal height (defined as 100% to 120% of the resident's lower leg length), which could consequently increase risk of falls and

difficulty toileting (Capezuti et al., 2008). Other environmental factors include signage for toilet facilities, distance to reach toilets, and availability of bedside commodes and urinals.

The median prevalence of UI in nursing homes worldwide is 55% (Hunskaar et al., 2005). While current estimates of incontinence prevalence are approximately 65% of nursing home residents in the United States (Newman, 2006), it is important to remember that this means approximately 35% are continent. No large trial has been located that reports on the factors that make continence a resilient characteristic of these individuals.

Incidence of UI in Nursing Homes

Incidence refers to the new cases of UI that developed during a specified period of time. Individuals who were previously continent and became incontinent during a specified time frame are referred to as incident cases of incontinence. Incidence statistics are important because they can help identify risk factors for UI. Thus, if risk factors are subjected to modification through nursing or medical intervention, then the incidence of incontinence, and potentially its prevalence, can be reduced.

In one study, incidence of daytime (from 7:00 a.m. to 7:00 p.m.) incontinence for the first year after nursing home admission was 27%. Gender differences were also noted (21% in women and 51% in men) (Palmer, German, & Ouslander, 1991). Incidence was associated with being male, having dementia, fecal incontinence, and an inability to transfer or walk independently (Ouslander, Palmer, Rovner, & German, 1993). Another study with 52 nursing homes in New York state (Watson, Brink, Zimmer, & Mayer, 2003) found an overall incident rate of 4.2 cases per 100 beds in a 12-week period. In older Hispanic adults living at home, incident incontinence was associated with activities of daily living impairments; the authors concluded that incident incontinence may be an early marker of frailty onset (Miles et al., 2001).

Remission of UI in Nursing Homes

Little information about re mission of incontinence has been found. In one study, remission was associated with the ability to ambulate and transfer independently, absence of fecal incontinence, and lower prevalence of dementia (Ouslander et al., 1993).

The epidemiology of UI provides insight about the magnitude of the problem, risk factors for incontinence, factors associated with recovery from incontinence, and stability of the condition. For example, one study found that 83% of nursing home residents had no change in continence status over a 6-month period, indicating that the continence status of most nursing home residents is persistent over time (DuBeau, Simon, & Morris, 2006). These data provide guidance for targeting residents who are at risk, as well as monitoring the level of incontinence and effects of management and treatment interventions. Although male gender is not a modifiable risk factor, newly admitted male nursing home residents are at greater risk than women of becoming incontinent over their first year in the nursing home. This may indicate that the mechanism of becoming incontinent in men differs from that in women. Gender-specific strategies to prevent incontinence may need to be developed.

Quality of Life

Numerous studies reported that UI has a negative impact on the emotional well being of affected older adults (Fonda et al., 2005). Minimum Data Set (MDS) data are used in secondary analyses that have led to a better understanding of the quality of life in nursing home residents who are incontinent. Using social engagement as a proxy for quality of life, DuBeau et al. (2006) found that deterioration continence was associated with lower quality of life. Further more, worsening continence status increased the risk for social engagement decline over 6 months by 46%. In contrast, O'Dell, Jacelon, and Morse (2008) conducted face-to-face interviews with 25 women living in residential care facilities and found that most women accepted being incontinent and preferred to remain incontinent rather than undergo evaluation and treatment. These women also reported generally receiving lower levels of personal care (such as limited food choices). It is possible these women may have lowered their continence expectations to be congruent with the reality of their situation, similar to evidence produced by Schnelle et al. (2003). These researchers found that nursing home residents who were incontinent had reduced expectations. They said that they preferred, on average, 2.4 toileting assists a day, when in actuality, they received 1.3 assists a day, and as a result, may have learned not to expect more frequent toileting help (Schnelle et al., 2003).

Economic and Other Costs

The costs of nursing home care in the United States were estimated at $150 billion (in 2007 dollars), with 62% assumed by taxpayers in the form of Medicare and Medicaid payments (Gaugler, Duval, Anderson, & Kane, 2007). The economic costs of incontinence reported in the literature varied but were significant. One estimate of total direct costs for urinary incontinence was $5.32 billion (2000 dollars) (Hu et al., 2004). Admissions to U.S. nursing homes attributable to UI were estimated to be 6% for women and 10% for men, creating an additional $6 billion annualized costs (2004 dollars) for these admissions (Morrison & Levy, 2006).

The Past

Evidence-Based Practice

During the 1980s and 1990s, research focused on behavioral interventions designed to improve or cure incontinence was at its height. Several behavioral interventions were developed and extensively tested. These included prompted voiding, habit training, or scheduled voiding (see Table 1).

Prompted voiding, based on operant conditioning, was developed in the 1980s. The two essential features of prompted voiding were 1) prompting the individual to toilet and 2) social approval contingent on eliciting appropriate behavior, such as self-initiated request for toileting assistance and voiding while on the toilet. Prompted voiding subsequently evolved in the clinical setting to a process whereby the staff member prompts the resident to toilet and praises the resident for appropriate toileting (Palmer, 2005). For prompted voiding to be effective, the individual must be able to delay voiding and cooperate with toileting, or have an awareness of when there is a need to void or know when they are wet.

Because prompted voiding required staff implementation, two main models for staff compliance were developed. One approach involved staff management techniques and the other promoted statistical quality control principles (Palmer, 2005). A systematic review of prompted voiding research concluded that insufficient evidence for long-term effectiveness existed but that there was measurable short-term benefit (Eustice, Roe, & Paterson, 2000).

Habit training (also called habit re-training) is based on the resident's usual pattern of voiding, determined by a bladder record completed by the nursing staff. A systematic review found some evidence of less incontinence in residents undergoing habit training; it was noted, however, that caregivers had difficulty in adhering to the schedule (Ostaszkiewicz, Chestney, & Roe, 2004).

Timed voiding (also called scheduled toileting) is based on a pre-determined schedule of voiding, such as voiding every three to four hours. Timed voiding is probably the most frequently used behavioral technique employed in nursing homes. A systemic review was unable to find evidence for or against the effectiveness of timed voiding (Ostaszkiewicz, Johnston, & Roe, 2004).

In habit training and timed voiding, no rehabilitation of the bladder is involved. The resident is a passive participant; there are no attempts to assist the resident in delaying voiding or resisting the urge to void (DHHS CMS, 2005). The goal is to pre-empt an incontinent episode. It is clear that adequately powered, well-designed clinical trials are needed to determine the effectiveness of habit training as well as other behavioral interventions designed for nursing home residents.

Pharmacological therapy has been used in nursing homes, often in a limited manner due to multiple medications and co-morbidities of residents. Recent evidence also indicates that medications with anti-cholinergic effects impair memory (Sink et al., 2008), which could, in turn, worsen incontinence in individuals who independently toilet or actively participate in toileting interventions with caregivers.

According to the CMS tag F315, indwelling catheters re quire medical justifications for their use. Appropriate justifications for catheter use include intractable urinary retention, contamination of stage III or stage IV pressure ulcers, terminal illness, and severe impairment where positioning and clothing changes are uncomfortable or are associated with intractable pain (DHHS CMS, 2005).

Absorbent Products

Absorbent products have been a mainstay in UI containment. Their use, however, should be based on the resident's needs and preferences rather than solely for the convenience of the staff. According to tag F315, long-term management of incontinence with absorbent products should only occur after an appropriate evaluation and after alternative treatments were considered (DHHS CMS, 2005). In one study, it was found that nursing home residents did not receive adequate incontinence assessment, and of the incontinent residents, only 3% received any treatment for incontinence. Ninety-nine percent of the incontinent residents in this study used absorbent products (Watson et al., 2003). Using absorbent products as the sole management strategy represent tertiary prevention: to prevent complications and to minimize adverse effects on quality of life. This approach may be an appropriate strategy for incontinence management but only after an appropriate assessment has been performed.

The behavioral change theories underlying toileting interventions focus primarily on individual behaviors of the individual who is incontinent and those of the caregiver. These behaviors, however, are also influenced by organizational and regulatory factors. Staffing turnover, training, re source allocation, and organizational culture have been associated with patient outcomes in relation to continence status (DuBeau, 2005). Because the nursing home industry is heavily regulated by state and federal governments, the influence of regulation on organizational behavior must be considered as well.

The Present

One of 14 quality indicators for the Nursing Home Initiative, established in 2002 by the CMS, is the, "percent of low risk residents who lost control of the bowels or bladder looking back over 14 days" (DHHS CMS, 2006). Low-risk residents are those without severe cognitive impairment and who are not totally dependent in mobility activities of daily living. Also excluded from this group are those with catheters and ostomies, or those who are comatose (DHHS CMS, 2006). Quality Improvement Organizations

(QIOs) privately contract to CMS to monitor nursing home care in terms of its appropriateness, effectiveness, and quality in relation to the quality indicators. QIOs collaborate with nursing homes to improve care and share best practice information among other facilities; some evidence exists that the collaboration works. For example, the impact of QIOs on another quality indictor, pressure ulcers, was released in 2007. Incidence of stage III and stage IV facility-acquired pressure ulcers was reduced by 69% in one year. No reduction in stage I and stage II pressure ulcers, however, were noted (Lynn et al., 2007). Currently, evidence of the impact QIOs have on UI is absent.

Another factor affecting quality of care was the release of Tag F315 in June 2005 (DHHS CMS, 2005). Results from a survey conducted at state-wide training sessions in Kansas attended by nursing home administrators, directors of nursing, surveyors, Mini mum Data Set coordinators, and staff nurses revealed that significant gaps in knowledge and attitudes about UI and tag F315 existed (DuBeau, Ouslander, & Palmer, 2007). The lack of medical director input was seen as a barrier to compliance by nurses who responded to the survey. Some nurses indicated that medical directors did not view incontinence as a medical problem.

Another survey was administered to physicians, directors of nursing, geriatric nurse practitioners, and nursing assistants about the management of geriatric syndromes (delirium, pain, falls, behavioral symptoms related to dementia, unintended weight loss, and UI). Nursing assistants were viewed as the "first-line managers" of incontinence with less involvement by physicians and geriatric nurse practitioners (Lawhorne, Ouslander, Parmelee, Resnick, & Calabrese, 2008).

Results from these studies indicated that without intervention to address discrepancies among stakeholders and active interdisciplinary collaboration to embed quality improvement activities into the structure and culture of nursing homes, quality improvement efforts will have limited success.

The Future

Quality improvement has been called "excellent management" (Mosser & Kane, 2007, p 1673). The director of nursing plays a key role in quality improvement (Olson & Zwygart-Stauffacher, 2008) and along with the leadership team, develops the strategic vision, implementation plan, and evaluation process for patient outcomes. Inclusion of the clinical staff, particularly nursing assistants, in creating the vision and plans may help reduce resistance that often comes when changes in care protocols are imposed (Mueller, 2004). Several nursing home initiatives stress culture change, staff empowerment, and quality improvement. Discussion of these long-term care models is beyond the scope of this article; however, two examples can be found through the Wellspring Institute (www.wellspring.org) and the Pioneer Network (www.pioneernetwork.net).

To prevent incontinence in low-risk residents, protocols that embrace primary prevention strategies at the organizational level should be implemented. These protocols include assisting residents to maintain mobility and transfer abilities, thus reducing incidence of incontinence. UI is a social skill developed during the first five years of life, making it a well-ingrained behavior. Facilitating cognitive functioning by creating triggers (such as prompting the resident to void and helping the resident to sit on the toilet) may also help preserve continence. Regardless of nursing efforts, residents may decline as a result of disease or chronic health conditions (Arling, Kane, Mueller, Bershadsky, & Degenholtz, 2007).

However, nurses should not accept failure (Palmer & Johnson, 2003). Failure is not the presence of incontinent residents in nursing homes. Failure is the lack of competent assessment, inappropriate treatment or management of incontinence, and lack of adjustments to care that preserve the dignity of residents who are incontinent as their status in the nursing home changes.

With the advent of the Nursing Home Quality Initiative, QIOs, and revised tag F315, nurses have powerful allies in the quest for the appropriate assessments and treatments that their residents require. Partnerships with academic nurses interested in promoting geriatric nursing are imperative to create and maintain the impetus for change. Through the groundbreaking efforts of Florence Nightingale, nursing embraced careful quantitative assessment, meticulous documentation, and quality improvement. Mark, Hughes, and Jones (2004) argued that nurses can fall into "cultural entrapment" by clinging to the same set of ideas and beliefs about the way care should be managed or delivered. The myth of "q 2h" toileting and trying to fit residents to a "toileting program" rather than designing a patient-centered approach must be abandoned. An unintended consequence of enforcing a toileting schedule every two hours would be iatrogenic urinary frequency (as defined by the National Institutes of Health as 8 or more voids in a 24-hour period (Weber et al., 2001).

Changing long-held beliefs and attitudes in tandem with increasing nurses' self-efficacy to assess an incontinent resident is important in any quality improvement program (Mueller, 2004). An assessment tool, the Continence History, Assessment, Medications, Mobility Plan (CHAMMP), has been proposed to help nurses organize information needed to develop a patient-centered care plan (Bucci, 2007).

Nursing assistants provide 80% of the direct care in nursing homes yet receive the least formal education about patient care (Institute of Medicine of the National Academies, 2008). Anderson and colleagues (2005) suggest that more face-to-face interaction by nurses to help nursing assistants interpret and assign meaning to behaviors or events could improve patient outcomes. Nurses and nursing assistants should engage in in-service training to learn together and talk about specific residents. These sessions can also provide an occasion to provide feedback about performance, present results of quality improvements

efforts, and suggest changes in care based on these evaluations.

Quality improvement models for incontinence have been proposed. For example, the Gerontological Advanced Practice Nurse (GAPN) can act as a change agent in the facility to help change core values of the system, ensuring that continence promotion is viewed as belonging to all the stakeholders. Just as patient safety is seen as a responsibility of all employees, so should continence promotion. Waiting until quarterly reports are reviewed to discover that a nurse has stopped performing comprehensive assessments or that staff members did not receive orientation about the toileting protocols is too late. A nursing assistant, housekeeper, director of nursing, or any other facility employee should be able to report, without sanction, a violation in policy so an immediate remedy can be made. While the impact of a decline in compliance to quality improvement standards may appear minimal at the organizational level, a significant impact could occur at the resident level. When staff persist in non-compliant behavior over time, residents may reduce expectations for toilet assists and consequently opt for less-preferable methods in their attempt to preserve dignity.

Not feeding or clothing nursing home residents when nursing units are short staffed is unacceptable; yet, continence efforts are often the first to be overlooked (Krichbaum, Pearson, Savik, & Mueller, 2005). Rather than using dryness levels as the sole primary outcome, refocusing on preserving dignity and quality of life may achieve the desired outcome: appropriate continence care.

In 1948, the United Nations declared dignity as a human right (United Nations, 1948). Almost 60 years later, a human rights complaint on behalf of incontinent nursing home residents was filed by the Ontario Federation of Labour to the Human Rights Commission (Walkom, 2007). Although this case was later dismissed, it started a dialogue about the link between continence and dignity. Continence should be viewed as a dignity issue, especially when nursing home residents express preference for care that promotes comfort, does not depend on staff, and is not embarrassing (Johnson, Ouslander, Uman, & Schnelle, 2001). Nurses with interdisciplinary and lay collaborations will be key players to making dignity the center of all human efforts in the facility.

Summary and Conclusions

UI is a prevalent, costly, and complex condition that requires significant investment of nursing home resources. Despite significant research and clinical efforts, prevalence of UI in nursing homes has not been reduced. This apparent lack of change should not be viewed as failure on the part of nursing, but rather, an acknowledgment of many factors external to nursing action and nursing control that play a role in providing continence care. With recent changes in the monitoring of care provided in nursing homes, opportunities are available for nurses to take a central role in leading quality improvement programs in the facility. In addition, nursing staff members responsible for patient care will require administrative feedback, on-going education, and adequate resources to provide appropriate assessment and care for incontinent residents.

Table 1. Behavioral Interventions Used in Nursing Homes

Name	Target Group	Procedure	Primary Outcomes	Comments
Prompted Voiding Eustice, Roe, & Paterson, 2000; Palmer, 2005	Cognitively impaired; physically impaired	Verbal prompts are used to ask the residents if they are wet or dry, and if they need toilet assistance Physical assistance to the toilet is provided Positive reinforcement for appropriate toileting is given	Self initiated requests for toileting in 24 hours Number of incontinent episodes in 24 hours Number of completed toiletings divided by total number of expected toiletings during specified time period	Labor intensive Requires staff adherence Self initiated requests not included in most clinical protocols
Habit Training or Habit Retraining Ostaszkiewicz, Chestney, & Roe, 2004	Residents with or without cognitive impairment	Identify resident's natural voiding pattern and create an individualized toileting schedule.	Number of incontinent episodes in 24 hours Pad change due to incontinence in 24 hours	Rationale for intervention is to pre-empt bladder emptying Requires staff adherence to schedule
Timed Voiding Ostaszkiewicz, Johnston, & Roe, 2004	For residents not capable of independent toileting; usually cognitively impaired adults	Fixed intervals between toiletings Not used to motivate resident to resist urge to void or delay voiding	Number of incontinent episodes in 24 hours Pad changes due to incontinence over 24 hours Maintenance of skin integrity	Considered a passive toileting assistance program Requires staff adherence to schedule

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