

The National Consumer Voice for Quality Long-Term Care

# THE HIGH COST OF POOR CARE:

The Financial Case for Prevention  
in American Nursing Homes



by Lani G. Gallagher



1001 Connecticut Avenue, NW, Suite 425

Washington, DC 20036

Tel: (202)332-2275

Fax: (202)332-2949

E-mail: [info@theconsumervoice.org](mailto:info@theconsumervoice.org)

Websites: [www.theconsumervoice.org](http://www.theconsumervoice.org)

[www.ltcombudsman.org](http://www.ltcombudsman.org)

April 2011

*The National Consumer Voice for Quality Long-Term Care (formerly NCCNHR) is a 501(c)(3) nonprofit membership organization founded in 1975 by Elma L. Holder that advocates for quality care and quality of life for consumers in all long-term care settings.*

©2011. The National Consumer Voice for Quality Long-Term Care

Twenty years ago, The National Consumer Voice for Quality Long-Term Care—then the National Citizens’ Coalition for Nursing Home (NCCNHR)—published *The High Cost of Poor Care—The Cost-Effectiveness of Good Care Practices*. The publication compiled research demonstrating the proof of Benjamin Franklin’s adage, “an ounce of prevention is worth a pound of cure.” In the case of long-term care, factors such as good basic nursing practices and assistance with activities of daily living were shown to save millions of dollars that would have been spent for costly medical treatment and hospitalization for conditions such as pressure sores, bone fractures, and incontinence.

In 2011, as Congress debates budget proposals that would weaken the structure and financing of Medicaid and (very likely) quality standards and regulatory enforcement in nursing homes, it is imperative to remember that poor care is expensive. Routine tasks performed by nursing assistants – such as repositioning nursing home residents to relieve pressure and assisting those with severe disabilities to eat and drink – would be replaced by costly medical care to heal pressure sores and treat the myriad medical problems caused by malnutrition and dehydration.

The cost of poor care in America’s nursing homes is staggering, whether it is measured by poor health outcomes and the number of lives lost, or by the amount of money spent on treating preventable conditions. While the trauma inflicted upon nursing home residents and their loved ones is not easily categorized and calculated, the financial costs are quantifiable. The financial burden of poor care rests not only on individuals and families, but also on all American taxpayers, through Medicare and Medicaid. And that burden is heavy. This report examines the costs of several different preventable conditions and discusses each in detail.

## FALLS

Falls are the leading cause of injury among adults 65 and older (Findorff, Wyman, Nyman, & Croghan, 2007). Nursing homes are, unsurprisingly, a high fall risk setting (Becker & Rapp, 2010), with elderly living in nursing homes having higher fall rates than people of the same age living in the community (Sorensen et al., 2006). On average, in a facility with 100 beds, there will be 100 to 200 falls each year (Sorensen et al., 2006), and three-quarters of nursing home residents will have at least one fall per year (Sorensen et al., 2006). Approximately one-quarter of all such falls will require medical attention (Sorensen et al., 2006).

The possible injuries after a fall are varied, but it is estimated that 10% to 25% of falls in long-term care facilities result in fractures or lacerations (Becker & Rapp, 2010). Of these injuries, hip fractures are the most common, though the rates of pelvic fractures have been increasing in recent years (Becker & Rapp, 2010). Both of these have additional negative effects on a patient's health. Pelvic fractures among nursing home residents are associated with higher mortality rates in the months after the injury (Rapp et al., 2010), and hip fractures increase the risk for developing pressure ulcers (Lyman, 2009), a condition which will be discussed later in this report.

The financial cost is also significant. In 2000, the direct cost of all fall injuries for persons over age 65 was more than \$19 billion (Centers for Disease Control and Prevention, 2008). Fractures account for \$12 billion annually (Centers for Disease Control and Prevention, 2008). It is important to note that these figures include all people over 65, not just those in nursing homes. However, because falls are more common in long-term care settings, and nursing homes residents are more prone to serious complications after a fall (Becker & Rapp, 2010), it is reasonable to conclude that injuries among this population make up a disproportionate amount of the total costs.

The numbers are not only high in the aggregate, but also for the individual. In a study of adults 72 and older, the average cost of health care after sustaining a fall injury was \$19,440 (Centers for Disease Control and Prevention, 2008). For hip fractures specifically, the average cost has been estimated at more than \$35,000 (Findorff et al., 2007). In some cases, health care for one individual after a fall can reach as high as \$86,000 (Findorff et al., 2007).

Approximately 20% to 30% of falls in long-term care facilities are preventable (Becker & Rapp, 2010). Fall prevention is often used as justification for employing physical restraints in nursing homes, despite the negative health consequences related to immobility (Becker & Rapp, 2010). In fact, the opposite has greater success; exercise is the best known prevention method, when done at least twice a week (Becker & Rapp, 2010). Exercise does not require complex technology or pharmaceuticals; it is a relatively simple intervention, with the potential to dramatically lower costs. Though not all falls in nursing homes can be prevented, a 30% reduction represents a significant cost saving, given the magnitude of the problem. And there may be other positive economic externalities, as it would effectively reduce a share of the risk for other conditions, like pressure ulcers.

## PRESSURE ULCERS

Pressure ulcers, which have long been used as an indicator of quality of care (Russo, Steiner, & Spector, 2008), are a widespread problem in long-term care settings, with prevalence rates ranging from 2.2% to 23.9% (Institute for Healthcare Improvement, 2007). Medicare pays for 73.8% of hospitalizations for pressure ulcers, while Medicaid covers an additional 12% (Russo et al., 2008). The number of such hospital stays increased 27.2% from 1993 to 2006, outpacing the increase in hospitalizations for all causes during the same time period (Russo et al., 2008). The total annual cost for treating pressure

ulcers in the United States is \$11 billion (Institute for Healthcare Improvement, 2007).

Evidence shows that the vast majority of pressure ulcers can be avoided. Two programs in particular illustrate this point. A prevention program based on the Agency for Health Care Policy and Research (AHCPR) guidelines resulted in a massive drop in the number of pressure ulcers in one nursing home. Prevalence ranged from 12% to 25% before the project, declining precipitously after implementation, and falling to almost zero in the fourth year after its inception (Tippet, 2009)<sup>1</sup>. There were several costs associated with the program. During the first year, \$20,000 was paid to a doctor acting as a wound consultant (Tippet, 2009). This fell to \$7,200 per year in subsequent years, as the consultant's participation decreased (Tippet, 2009). Purchasing pressure support surfaces for the entire facility cost \$11,000 at the start of the program (Tippet, 2009). The savings, however, far outweighed the costs. Expenditure on preventative skin care materials and equipment decreased by \$200 a month, going from \$865 to \$665, and more importantly, the saving due to the reduction of pressure ulcers was more than \$122,000 annually (Tippet, 2009). This figure is based on conservative estimates of the average cost of treating pressure ulcers and is likely greater (Tippet, 2009).

In another program, in a nursing home with 555 patients, the use of heel protectors resulted in a 95% reduction in new heel pressure ulcers (Lyman, 2009). This is an important finding, as 30% of all pressure ulcers occur on the heel (Lyman, 2009). The heel protectors cost \$56 each (Lyman, 2009). Taking into account the cost of providing two heel protectors to each person in the facility, the net financial saving was between \$12,400 and \$1,048,400 in the three months after the intervention (Lyman, 2009). This is undoubtedly a wide range, but it reflects the varying cost of treating pressure ulcers according to severity (Lyman, 2009). For the worst pressure ulcers, this can be as high as \$70,000. If an estimated average cost of treating pressure ulcers is used, the saving was approximately \$50,769 for the facility (Lyman, 2009).

## **URINARY INCONTINENCE**

Urinary incontinence, which has negative emotional and social consequences beyond the physical symptoms of the condition, affects 65% of American nursing home residents (Palmer, 2008). The total direct cost of urinary incontinence among nursing home residents is \$5.3 billion per year (Palmer, 2008). This amount does not take into account the cost associated with nursing home admission due specifically to incontinence, which would add another \$6 billion annually (Palmer, 2008).

Like pressure ulcers, urinary incontinence can be used as an indicator of quality of care (Palmer, 2008). Specific care practices, such as prompted voiding and strength and endurance exercises (Minnesota Evidence-Based Practice Center, 2007), have demonstrated a positive effect in nursing home residents (Landefeld et al., 2008). Another method of addressing this problem is implementation of the Agency for Health Care Quality and Research clinical practice guidelines on incontinence and pressure ulcers (Frantz, Xakellis Jr., Harvey, & Lewis, 2003). These guidelines have been shown to improve dryness and reduce the prevalence of pressure ulcers, costing roughly \$10 per resident per day to prevent two of the most common conditions in nursing homes (Frantz et al., 2003).

## **MALNUTRITION**

Calculating the total cost attributable to malnutrition is extremely difficult. It is easy to measure the direct health care costs of pressure ulcers or fractures, because those ailments are often the primary diagnosis or reason for treatment. Malnutrition, however, incurs costs primarily because it is an underlying cause of other conditions and worsens existing ones.

Malnutrition weakens the immune system, leaving the person vulnerable to infections, and renders them more susceptible

---

<sup>1</sup> Over the same time period, the facility experienced a 37% reduction in falls (Tippet, 2009). The reason for this is unknown, though the timing suggests an association with the pressure ulcer prevention program (Tippet, 2009).

to pressure ulcers and fractures (Carrier, Ouellet, & West, 2007). It also results in more frequent hospitalizations, lengthier recovery times, and higher mortality (Carrier et al., 2007).

In one study, the daily hospital costs for malnourished patients were 60.5% higher than those for patients with a normal nutritional status (Voss, Tootell, & Gussler, 2006). This difference multiplies when the cost of medications and tests are added to the total (Voss et al., 2006). With those included, the costs for malnourished patients were 308.9% greater than those for patients with a normal nutritional status (Voss et al., 2006). This data clearly suggest a high financial cost of malnutrition, particularly in light of the fact that the rate of protein-calorie malnutrition in elderly nursing home residents has been estimated to be as high as 85% (Croghan & Pasvogel, 2003).

Malnutrition is complex among the elderly, as a host of factors play a role in its etiology (Carrier et al., 2007). Poor oral health and a general decline in health status are both related to malnutrition (Carrier et al., 2007), and as dependency increases, so does the risk of malnutrition (Kaiser et al., 2010). There are also institutional issues contributing to the problem, such as inadequate staffing (Croghan & Pasvogel, 2003). There are, however, a number of factors involved that can be controlled, in order to improve nutritional status.

Greater variety in diet is associated with better nutrition among nursing home residents, as shown by the results of one study, which found that a longer menu cycle had a protective effect against the risk of malnutrition (Carrier et al., 2007). Enhancing the flavor of food also improves nutritional intake among nursing home residents (Croghan & Pasvogel, 2003). These results suggest that residents' preferences play a role in their nutritional status. This is supported by another finding from the aforementioned study: the use of porcelain plates (as opposed to plastic) was also found to have a protective effect against malnutrition, possibly because doing so creates a more home-like atmosphere during mealtime (Carrier et al., 2007). Improving the presentation and taste of food in nursing homes may be a useful tool in reducing the rate of malnutrition in these facilities. Other simple interventions, such as removing lids and packaging before serving may also have a positive effect (Carrier et al., 2007). It is important to note that by improving residents' nutritional status, these measures have the potential to simultaneously reduce hospitalizations, pressure ulcers, and fractures; and these positive externalities have cost benefits of their own.

## DEHYDRATION

Dehydration is a widespread problem in nursing homes. In one study, at least 92.5% of residents were found to have inadequate fluid intake (Kayser-Jones et al., 1999)<sup>2</sup>. Of all persons discharged after a hospitalization primarily for a fluid or electrolyte disorder<sup>3</sup> in 2008, more than half were age 65 or older (Agency for Healthcare Research and Quality, 2008). For people between the ages of 65 and 84, the average length of stay was 3.9 days (Agency for Healthcare Research and Quality, 2008). This number increased slightly for those 85 and older, reaching 4.2 days (Agency for Healthcare Research and Quality, 2008).

Using a weighted average of the costs for both of these age brackets<sup>4</sup>, the cost of a hospitalization for dehydration was \$5,839 (Agency for Healthcare Research and Quality, 2008). Charges levied by the hospital, however, were substantially higher than actual costs, with an average charge of \$18,048 per hospitalization (Agency for Healthcare Research and Quality, 2008). Medicare paid for 56.6% of these hospitalizations, while an additional 13.2% were covered by Medicaid (Agency for Healthcare Research and Quality, 2008). In 2008, there were 275,485 discharges with a principle diagnosis of a fluid or electrolyte disorder among people age 65 or older (Agency for Healthcare Research and Quality, 2008). Using

<sup>2</sup> Depending on the standard used, the proportion ranged between 92.5% and 100%.

<sup>3</sup> Primarily dehydration

<sup>4</sup> Author's calculation based on AHRQ data

this figure and the average listed above, it is possible to get an estimation of the total cost of dehydration in age group, which amounts to approximately \$1.6 billion in real costs and \$4.97 billion in hospital charges (Agency for Healthcare Research and Quality, 2008)<sup>5</sup>.

Like malnutrition, there are both clinical and institutional causes of dehydration. Fevers and infections are common among nursing home residents, and both contribute to dehydration (Kayser-Jones et al., 1999). Difficulty swallowing and other physical impairments are also a factor, and once again, inadequate staffing has a negative effect, as it results in hurried feeding and less fluid intake (Kayser-Jones et al., 1999). Often, fluids are inaccessible to residents between meals, also limiting their intake (Kayser-Jones et al., 1999). Making fluids more available and allowing sufficient time for feeding may help improve residents' hydration. There are also established interventions which exhibit success in this regard. Multiple verbal prompts to drink between meals, combined with accommodation of residents' beverage preferences, have been shown to increase fluid intake (Simmons, Alessi, & Schnelle, 2001).

## **AMBULATORY CARE-SENSITIVE DIAGNOSES AND AVOIDABLE HOSPITALIZATIONS**

Ambulatory care-sensitive diagnoses (ACSDs) are diseases for which hospitalization can typically be avoided with adequate primary care. Examples include congestive heart failure, asthma, and diabetes (Probst, Moore, Baxley, & Lammie, 2003). ACSDs are often used as a proxy measure for unnecessary hospitalizations (Ouslander et al., 2010), and studies of hospitalizations of nursing home residents indicate that a high percentage is due to these conditions. In Los Angeles, this proportion was found to be 45%, and in a study conducted in Georgia, it reached 67% (Ouslander et al., 2010). The Georgia study also showed that each of these hospitalizations resulted in an average of \$6,572 in Medicare spending (Ouslander et al., 2010). In New York State alone, over a five year period, spending on avoidable hospitalizations of nursing home residents totaled over \$1.2 billion, with an increasing trend in annual expenditure<sup>6</sup> (Grabowski, O'Malley & Barhydt 2007). However, this issue is concerning not only because of the associated cost, but also because unnecessary hospitalizations constitute a threat to patients' health, due to the risk of hospital-acquired infections (Ouslander et al., 2010).

Having a nurse practitioner or physician's assistant onsite in the nursing home is associated with lower hospitalization rates (Ouslander et al., 2010). Again, the impact that adequate staffing can make on the health of nursing home residents is clear. Cost is often cited as a barrier to hiring more staff, but there is evidence to suggest that the cost of hiring new staff would be offset by savings resulting from better preventative care. Researchers in the Georgia study mentioned above were able to show that if preventable hospitalizations were reduced by just one-third, a feasible goal<sup>7</sup>, there would be enough financial savings to hire a nurse practitioner or physician's assistant in every nursing home in Georgia for five days a week and still have money leftover (Ouslander et al., 2010).

Poor preventative care in nursing homes is a drain both on families and American society as a whole, resulting in physical and emotional hardships, as well as massive financial costs. This report does not present an exhaustive analysis of all preventable conditions, nor does it address all the areas in which improvements could be made in quality of care; but it does show that there is a clear opportunity for substantial improvements. Prevention can be done cost-effectively, saving billions of dollars annually and improving the lives of countless nursing home residents.

---

<sup>5</sup> Author's calculation based on AHRQ data

<sup>6</sup> From 1999 to 2004, there was a 7.1% increase in annual spending, after adjusting for inflation.

<sup>7</sup> Based on nursing homes with the lowest hospitalization rates

## REFERENCES

- Agency for Healthcare Research and Quality. (2008). *H-CUPnet: National and regional estimates on hospital use for all patients from the HCUP nationwide inpatient sample (NIS)*. Retrieved December 13, 2010, from <http://hcupnet.ahrq.gov>.
- Becker, C., & Rapp, K. (2010). Fall prevention in nursing homes. *Clinics in Geriatric Medicine*, 26(4), 693-704. doi:10.1016/j.cger.2010.07.004.
- Carrier, N., Ouellet, D., & West, G. E. (2007). Nursing home food services linked with risk of malnutrition. *Canadian Journal of Dietetic Practice and Research*, 68(1), 14-20.
- Centers for Disease Control and Prevention. (2008). *Cost of falls among older adults*. Retrieved November 24, 2010, from <http://www.cdc.gov/ncipc/factsheets/fallcost.htm>.
- Crogan, N. L., & Pasvogel, A. (2003). The influence of protein-calorie malnutrition on quality of life in nursing homes. *Journals of Gerontology - Series A Biological Sciences and Medical Sciences*, 58(2), 159-164.
- Findorff, M. J., Wyman, J. F., Nyman, J. A., & Croghan, C. F. (2007). Measuring the direct healthcare costs of a fall injury event. *Nursing Research*, 56(4), 283-287.
- Frantz, R. A., Xakellis Jr., G. C., Harvey, P. C., & Lewis, A. R. (2003). Implementing an incontinence management protocol in long-term care. clinical outcomes and costs. *Journal of Gerontological Nursing*, 29(8), 46-53.
- Grabowski, D.G., O'Malley, A.J. & Barhydt, N.R. 2007, "The Costs and Potential Savings Associated with Nursing Home Hospitalizations", *Health Affairs*, vol. 26, no. 6, pp. 1753-1761.
- Institute for Healthcare Improvement. (2007). *Relieve the pressure and reduce harm*. Retrieved November 24, 2010, from <http://www.ihl.org/IHI/Topics/PatientSafety/SafetyGeneral/ImprovementStories/FSRelievethePressureandReduceHarm.htm>.
- Kaiser, M. J., Bauer, J. M., Rämisch, C., Uter, W., Guigoz, Y., Cederholm, T., et al. (2010). Frequency of malnutrition in older adults: A multinational perspective using the mini nutritional assessment. *Journal of the American Geriatrics Society*, 58(9), 1734-1738.
- Kayser-Jones, J., Schell, E. S., Porter, C., Barbaccia, J. C., & Shaw, H. (1999). Factors contributing to dehydration in nursing homes: Inadequate staffing and lack of professional supervision. *Journal of the American Geriatrics Society*, 47(10), 1187-1194.
- Landefeld, C. S., Bowers, B. J., Feld, A. D., Hartmann, K. E., Hoffman, E., Ingber, M. J., et al. (2008). National institutes of health state-of-the-science conference statement: Prevention of fecal and urinary incontinence in adults. *Annals of Internal Medicine*, 148(6), 449-458.
- Lyman, V. (2009). Successful heel pressure ulcer prevention program in a long-term care setting. *Journal of Wound, Ostomy and Continence Nursing*, 36(6), 616-621.

Minnesota Evidence-Based Practice Center. (2007). *Prevention of urinary and fecal incontinence in adults*. No. 161. Rockville, MD: Agency for Healthcare Research and Quality.

Ouslander, J. G., Lamb, G., Perloe, M., Givens, J. H., Kluge, L., Rutland, T., et al. (2010). Potentially avoidable hospitalizations of nursing home residents: Frequency, causes, and costs. *Journal of the American Geriatrics Society*, 58(4), 627-635.

Palmer, M. H. (2008). Urinary incontinence quality improvement in nursing homes: Where have we been? Where are we going? *Urologic Nursing: Official Journal of the American Urological Association Allied*, 28(6), 439-444, 453.

Probst, J. C., Moore, C., Baxley, E. G., & Lammie, J. L. (2003). *Hospitalization for ambulatory care sensitive conditions: Congestive heart failure, diabetes and asthma in South Carolina*. South Carolina Rural Health Research Center.

Rapp, K., Cameron, I. D., Kurrle, S., Klenk, J., Kleiner, A., Heinrich, S., et al. (2010). Excess mortality after pelvic fractures in institutionalized older people. *Osteoporosis International*, 21(11), 1835-1839. doi:10.1007/s00198-009-1154-0.

Russo, A., Steiner, C., & Spector, W. (2008). *Hospitalizations related to pressure ulcers among adults 18 years and older, 2006*. Statistical Brief #64. Agency for Healthcare Research and Quality.

Simmons, S. F., Alessi, C., & Schnelle, J. F. (2001). An intervention to increase fluid intake in nursing home residents: Prompting and preference compliance. *Journal of the American Geriatrics Society*, 49(7), 926-933.

Sorensen, S. V., De Lissoy, G., Kunaprayoon, D., Resnick, B., Rupnow, M. F. T., & Studenski, S. (2006). A taxonomy and economic consequences of nursing home falls. *Drugs and Aging*, 23(3), 251-262.

Tippet, A. W. (2009). Reducing the incidence of pressure ulcers in nursing home residents: A prospective 6-year evaluation. *Ostomy Wound Management*, 55(11), 52-58.

Voss, A. C., Tootell, M., & Gussler, J. D. (2006). *Malnutrition: A hidden cost in health care*. Columbus, OH: Abbott Laboratories.