



A Multidisciplinary Approach to Reducing Lifetime Medical Costs of Catastrophically Injured Patients in Litigation

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Abstract

This study provides a framework for reducing medical costs associated with catastrophic injuries while improving patient health outcomes in general. Reducing costs and improving patient health outcomes can only be accomplished with a collaborative approach provided by interdisciplinary medical and nursing team's skilled nursing facility personnel, and attorneys who represent these patients. We propose linking acute treatment specialists with post-acute specialized skilled nursing rehabilitation facilities which provide the highest quality of transitions of care and ultimately a better quality of life at a reduced lifetime cost. How can those catastrophically injured patients afford medical care over their lifetime, minimize liability claims, and still be provided the best patient outcomes? By providing post-acute care in a skilled nursing rehabilitation center that focuses on continuity of care combined with qualified settlement strategies in order to deliver the desired care at minimized costs to patients, while restoring patients to their highest functionality and quality of life.

Keywords: Reducing costs; Skilled nursing facilities; Structured settlements; Catastrophic injuries; Litigation costs; Home health costs

Introduction

The costs of injury claims have been rising for decades. Multi-year trends in claims growth in the United States are largely correlated with medical expenditure growth [1].

Furthermore, after adjusting for inflation, increases in U.S. Tort costs have far exceeded the increase in the percentage increase in inflation in the U.S.

There is a direct link between the seriousness of a claimant's injury and total lifetime medical expenditures. Catastrophic injuries, by definition, are those so serious in nature that their effects often leave the victim permanently damaged. Many are life-threatening or life-altering injuries which require extensive medical care, rehabilitative treatment, medical equipment, medications, plus nursing or attendant care long after the event has occurred. Some examples of injuries that are considered "catastrophic" for purposes of an injury claim include Spinal Cord Injuries (SCI), Acquired Brain Injuries (ABI) and Traumatic Brain Injuries (TBI). The impact that these injuries can have on the short-term and long-term functional capabilities of a person are so severe that they are defined as catastrophic. A person who has suffered a catastrophic injury may face a life of dependency upon others, loss of employability, and a loss of quality of life.

Furthermore, TBI's contribute to over 30% of all injury-related deaths in the US [2]. In the United States, approximately 5.3 million people are currently living post TBI-related injuries with permanent irreversible cognitive and psychological impairments. In the US alone [3], report that approximately 1.7 million people will sustain a TBI each year between 2017 and 2020, which is estimated to cost over \$60 billion.

The monetary cost of brain injuries varies significantly from case to case; but, it is estimated that a mild head injury can cost over \$85,000 per year to maintain a patient; a moderately injured patient can cost over \$900,000, and a severely injured person can exceed \$1.5 million per year.

Overall, it is estimated that the costs of TBI's in the United States exceeds \$48 billion annually. Furthermore, the cost of caring for a survivor of severe traumatic brain injury is between \$600,000 and \$1,875,000 over that patient's reduced lifetime. This does not include indirect costs to society

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from the families directly impacted. Those costs are often associated with lost earnings, lost work time, lost productivity, as well as the obvious costs of providing attendant care and ancillary services [4,5].

Motor vehicle accidents are the most common cause of TBI's and spinal cord injuries, accounting for approximately 47% of all cases [6]. Given the population of over 314 million people in the U.S. in 2016, recent estimates reflect that the annual incidence of Spinal Cord Injury (SCI) is approximately 54 cases per million population, or approximately 17,000 new SCI cases each year [7].

Depending on the nature of the SCI, the cost for the first year of care ranges from \$300,000 to over \$1 million, with the first-year expenses being the largest. Subsequent costs per year range from \$40,000 to \$170,000 depending on the need for primary and secondary care and attendant care. More severe injuries are costlier, with high tetraplegia at C1 to C4 producing the highest costs of over \$1,000,000 for the first year of care and ongoing costs exceeding \$150,000 annually.

How can those catastrophically injured patients afford medical care over their lifetimes, minimize liability claims, and still be provided the best patient outcomes? By providing post-acute care in a skilled nursing rehabilitation center that focuses on best practices of transitions of care combined with structured settlement strategies to deliver the desired minimized costs. This is done through two primary mechanisms: 1) utilizing specialized skilled nursing rehabilitation centers; 2) facilitating a qualified, bonded structured settlement approach to financing the cost of care.

Skilled nursing rehabilitation centers offer initial assessments, patient planning, and ongoing provisions for medical care for patient's complete continuum of care. In catastrophic injury claims, attendant care is always required and oftentimes it is the primary expenses over the lifetime of those claimants. Skilled nursing facilities can monitor and facilitate patients' best recovery outcome with a goal of patient independence, while providing the medical modalities outlined in the continuum of care plan. Specialized skilled nursing facility care can be best achieved through an inter-professional team, or range of therapists, physicians, dieticians, and other healthcare professionals, which care is not often available in a home setting. The team-based approach for monitoring patient's continuum of care program can be comparable to initial inpatient rehabilitation settings in a hospital not dedicated to the catastrophically injured.

Secondly, structured settlements provide the injured with a fixed income stream to ensure a lifetime of care. Thus, the claimant is protected from overspending on medical costs in the early years, so that there is sufficient money for care in the later years of the claimant's normal or reduced life expectancy. This removes the need for financial investing or fiscal responsibility with a large lump sum of money, while providing income streams that pay for medical care costs and protect against medical inflation.

Costs of Medical and Attendant Care and Medical Inflation

While dealing with catastrophic claims that require attendant care, the economic cost projects can vary, based on the level of professional medical training required to care for the claimants plus the number of hours per day of intervention.

It is important to remember that historically, medical costs have grown at a faster rate than general inflation. The CPI gives an

overview of general inflation by analyzing a basket of goods and services. When one compares general inflation (measured by the CPI) to medical inflation over the past 20 years, it is clear that medical inflation continues to outpace general inflation.

The growth rate for the CPI over the last 20 years is approximately 2.16%, whereas medical care costs have grown at approximately 3.58% (www.bls.gov).

How to Determine Functional Recovery and Independence

The effectiveness of post-acute rehabilitation programs is measured by utilizing outcome scales as part of a patient's functional assessment. About half of all patients in rehabilitation suffer from chronic neurologic disease, including stroke, brain dysfunction, spinal cord dysfunction, debility and other neurologic conditions, such as multiple sclerosis [8]. Some evaluative scales are appropriate for a large range of medical conditions, while other scales are disease-specific. In general, clinicians rate how independent or dependent patients are in performing certain functional tasks.

The most relied upon outcome measure used post-acute rehabilitation programs is the Functional Independence Measure, abbreviated FIM [9]. The FIM was developed in 1987 and endorsed by the American Academy of Physical Medicine and Rehabilitation, and the American Congress of Rehabilitation Medicine. The FIM instrument measures both motor function and cognitive impairment, which is essential to assess brain injury and spinal cord injury patients. The FIM instrument is used to document the patient's independent functioning in 18 Activities of Daily Living (ADL): 13 motor items covering self-care, sphincter control, transfers and locomotion, and five cognition items covering communication and social cognition. In each activity, the patients are observed by a clinician and rated on levels of dependence (assistance needed) and independence, with (1) being the lowest score, which represents total dependency, to (7) being the highest, which represents complete patient self-independency [6].

A second nationally recognized measurement tool used to measure functional capacity is the Mayo-Portland Adaptability Inventory (MPAI), which is in its fourth revision (MPAI-4). MPAI was primarily designed to assist in the clinical evaluation of patients during the post-acute period following Acquired Brain surgery (ABI) and represents the range of physical, cognitive, emotional, behavioral, and social problems that patients encounter after an ABI. This 35-item instrument assesses disability after brain injury with three subscales: Ability Index, Adjustment Index, and Participation Index. The brief Participation Index may serve as a particularly useful measure of the final common aim of rehabilitation, i.e., societal participation. Item scores range from zero (0) to four (4), with (0) signifying no functional disability for the domain, and (4) signifying the patient with the ABI impaired with the item or activity 25% to 50% of the time.

Evaluation and rating of each of the areas designated by MPAI assures that the most frequent sequence of ABI is considered for rehabilitation planning and clinical interventions. MPAI-4 items also provide an assessment of major obstacles to community integration which may result directly from ABI as well as features of the social and physical environment [10].

Post-acute rehabilitation improves the quality of life of individuals who have experienced a TBI or Acquired Brain Injury (ABI), and serves to reduce lifetime medical costs. In short, rehabilitation is the

predominant post-acute treatment for individuals with TBI and ABI [11]. Furthermore, post-acute rehabilitation is shown to positively help those suffering from TBI's to help achieve some resemblance of their former quality of life.

One celebrated study in the Journal of Neurotrauma, "Post-Acute Acquired Brain Injury Rehabilitation: Effects on Outcome Measures and Life Care Costs," evaluated both the functional effectiveness and cost effectiveness of post-acute ABI rehabilitation patients by comparing outcome measures discussed above together with life care costs of patients with Cerebrovascular Accident (CVA) who underwent a similar interdisciplinary rehabilitation program [11]. In this study of 36 former ABI and CVA rehab patients, functional effectiveness was determined through an assessment of the patient's level of functional independence at admission, at discharge, and at least one (1) year post discharge, using outcome scales such as those previously outlined that evaluate level of disability as well as social, cognitive, emotional and physical problems. Cost effectiveness was determined by completion of life care plans, or lifetime cost projections, by independent certified life care planners for each of the 36 patients.

Most of the patients in the study completed a post-acute rehabilitation program for five days per week for variable lengths of stay; however, the median duration of treatment was 197 days of rehabilitation.

The data conclusively determined that post-acute rehabilitation, with or without traditional acute rehabilitation, significantly improved functional outcomes for all 36 patients. The patients demonstrated improved quality of life, higher levels of function and independence, decreased disability, decreased level of assistance needed for daily living, reduction in ABI-related morbidity and increases in occupational status or ability to return to work or vocation.

In addition to improved functional outcomes and quality of life, the study concluded that ABI-related lifetime costs projections markedly diminished after post-acute rehabilitation, referred to throughout the study as "Rehabilitation Savings" (RS). In other words, those patients who underwent post-acute ABI rehabilitation were expected to incur lower lifetime costs compared to patients who did not continue rehabilitation during the post-acute period. More specifically, the costs needed for long-term needs such as hospitalizations, medical procedures, nursing, attendant care, medications and the like over the patient's life expectancy significantly decreased after ABI rehabilitation. The study proved that on average, over \$2 million was saved in lifetime costs per patient for those who received post-acute rehabilitation. Cost and functional effectiveness was more pronounced when post-acute rehabilitation was initiated within the first year of ABI.

Inter-professional Team Settings and Transitions of Care

Inter-professional teams of physicians, therapists, nurses and others work together for the best possible patient outcome. Transitioning from acute care to post-acute care, and transitioning between different levels of post-acute care, can be one of the most important factors in a patient gaining independence. Transitions of care are important in post-acute settings because proper transitions of care help reduce hospital readmission rates, especially among patients with multiple needs. This, in turn, reduces medical costs over the patients' lifetimes.

When transitioning from a hospital or acute care setting to a post-acute care facility, there may be discontinuities between facilities. The discontinuities could include inadequate clinical staff at the skilled nursing facility to assist with the acuity of the patient admitted [12], lack of care coordination and overall inter facility communication [13], which may include information on critical therapies, conflicting medications, and/or additional lack of patient information. The lack of smooth transitions leads to 20 to 30 percent of patients being re-hospitalized in post-acute care settings [14]. For example, 15% of patients with chronic conditions, including TBIs, are readmitted within two months of a standard hospital discharge [3].

The issue of unnecessary hospital admissions from skilled nursing facilities has been well established. Furthermore [12], note rehospitalizations are higher among patients discharged to skilled nursing facilities than any other setting. The largest numbers of rehospitalizations for general health maintenance are for those suffering from traumatic brain injuries within two years [15]. Consequently, post-acute rehabilitation centers must have an inter-professional team in place, such as in skilled nursing facilities, to provide a cooperative approach to improving patients' outcomes. This will reduce readmissions and medical costs, and improve the quality of life for the patients.

Post-Acute Rehabilitation Centers

Post-Acute Care (PAC) literature provides a macro level categorization of post-acute settings into four levels: Homes with services provided by home health agencies, skilled nursing facilities, inpatient rehabilitation facilities, and long-term acute care facilities. Some patients receive traditional acute rehabilitation prior to post-acute rehabilitation, while others receive post-acute rehabilitation in lieu of hospitalization in an acute care facility.

The post-acute rehabilitation care setting can vary in terms of specialty, intensity of care, therapeutic activities, and available resources; however, each setting shares a common goal, namely, to restore the individual to the highest level of independent functioning possible and to enable that patient to re-enter the community if possible. The sole focus is continuous advancement of a patient's self-re-engagement of their own care and delivering rehabilitation success towards functional progress.

Many post-acute rehabilitation programs implement an interdisciplinary collaborative approach due to the variety of possible patient needs [16,17]. Studies indicate that post-acute rehabilitation programs that use an interdisciplinary approach are more likely to be effective in the treatment of patients with traumatic brain injuries due to their individualized treatment plans [17,18]. An ideal interdisciplinary program should include post-acute inpatient, community-based and outpatient rehabilitation, Physiatry Medical Management, psychiatry, neuropsychological, internal medicine, intensive physical, occupational, speech and language, recreational and neurobehavioral therapies, community re-integration, vocational evaluation and counseling, and patient and family training and education.

One Possible Solution to Reduce Costs: Structured Settlements

Structured settlements provide significant financial benefits to patients and their guardians. Many ABI, SCI, and TBI patients who are injured end up in lawsuits that can last for years. On the plaintiff

side, a guaranteed income stream with tax advantages for receiving structured payments in lieu of lump sum awards is often a solution to a lifetime of uncertainties of care costs [19]. If a claimant decides to put all or part of his award settlement into a structured settlement, then the structured settlement would pay out regularly scheduled payments for some contractual time frame, usually the claimant's life expectancy, normal or reduced. This is of special importance since life expectancy has not been improved dramatically for those who suffered TBI 20 years ago *vs.* patients today [20]. Medical advances could come about, resulting in extended life expectancies for those suffering from a TBI. Thus, the structured settlement would guarantee the claimant a set amount each year for their medical costs due to their catastrophic injury through their life expectancy.

Typically, when claimants receive Lump Sum Awards, they do not always invest wisely or save for future medical expenses. If they do invest the money, and their investment does not perform adequately, or depletes the initial principal, then the claimant is without funds to pay for essential medical care costs. Long term rates of return assumed in the calculations of the lump sum awards are often less than long term rates of return that insurance companies can provide with a structured settlement [21]. The higher rate of return can offset rising medical inflation [21]. Structured settlements are commonly seen as more advantageous to the plaintiff than defendant; however, the lower upfront costs for the defendant are often needed to help settle the case, and structured settlements provide fewer expenses associated with legal and court fees [21].

Through structured settlements, the claimant receives predetermined and actuarially calculated periodic payments that provide tax-free treatment under the Internal Revenue Code. Structured settlements provide periodic payments that are completely tax free [22]. There is a point to be made regarding lump sum *vs.* structured settlements for the plaintiff's attorney. Even if the structured settlement is more favorable for the claimant, the claimant's attorney may not feel this is advantageous to his position in receiving payment for services. That is, claimants' attorneys receive payment with the periodic payments from the structured settlement [21]. The tax-free benefits differ from claimant to claimant, based on each individual and their personal tax situation, but the tax savings can be used to provide additional medical care [23-34].

Conclusion

Just like in the medical field, the legal field can benefit from collaborative work between professionals, especially between those striving to reduce medical costs in catastrophic injury claims and protecting claimants from unexpected costs. If attorneys are willing to bring skilled structured settlement strategists and representatives of skilled nursing facilities into the catastrophic claims arena, medical costs can be reduced and a patient's quality of life can be increased.

Lump sum awards are the norm for tackling medical costs, but unexpected medical costs or complications that create changes in frequency or duration of treatments can create scenarios where the injured will not have sufficient funds. Also, lump sum awards are routinely reinvested in a risk-free rate, but fail miserably while trying to keep up with medical inflationary costs.

Structured settlements provide fixed income streams and remove the additional requirement of the injured investing the lump sum award to keep up with future funds because medical inflationary costs are usually built into the structured settlement award. Structured

settlements also reduce the risk of going to trial. Structured settlement strategists can create scenarios where the plaintiff receives tax-free income, and the defendant does not necessarily need the entire lump sum of money upfront. Thus, both sides work towards a settlement resolution as opposed to risking a long drawn-out court battle.

In summary, the researchers have demonstrated that the cost of personal injury claims, which have increased dramatically since 2009 for catastrophically injured patients, can be reduced following protocols outlined above. That is, spinal cord injury patients, acquired brain injury patients, and traumatic brain injury patients, often treated in an acute care setting initially, can best recover their functional capacities as measured by the scales discussed above, following admission to skilled nursing care facilities which provide interdisciplinary teams of specialists and structured settlement experts.

The most cost-effective source for treating catastrophically injured individuals is a combination of skilled nursing care, a qualified interdisciplinary team of professionals, and a structured settlement financial plan, agreed upon by plaintiff and defendant, which can serve to reduce medical care costs and provide sufficient funds needed to finance a lifetime of medical and attendant care needs, ultimately restoring patients to their highest functionality and quality of life.

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