

## *Outstanding Outcomes*

*New study reaffirms Paradigm's industry leading clinical results and long-term savings for catastrophic claims*

Catastrophic injuries are infrequent, highly complex, and extremely volatile, both clinically and financially. Conventional case management approaches may fail to produce optimal clinical outcomes for catastrophically injured workers, and may also end up costing significantly more over the lifetime of a claim. Challenges include effectively navigating a complicated specialty healthcare system, consistently applying evidence-based medical practices and proactively mitigating complications in these highly complex and volatile cases.

Milliman, Inc., an independent actuarial and consulting firm, was retained to measure whether Paradigm Outcomes, a specialized medical case management company focused exclusively on catastrophic and complex injuries, positively impacts return to work and financial outcomes for these acute catastrophic cases.

Milliman examined cases managed by Paradigm and concluded that Paradigm cases significantly outperformed their industry data for similar cases, achieving 5 times better return to work outcomes and 40% lower lifetime costs.

Paradigm's Systematic Care Management<sup>SM</sup> model incorporates the benefits of medical and clinical experts, a custom infrastructure, experienced providers and more than 20 years of data to manage acute catastrophic injuries from the date of loss until a specified clinical outcome is achieved—typically 23 months after the injury. The company ensures access to the most experienced medical and rehabilitation

providers available so the injured workers achieve better clinical outcomes and the Paradigm clients experience lower long-term medical and indemnity costs.

### **Study Methodology**

Milliman examined medical and indemnity spending for acute onset catastrophic cases with diagnoses of traumatic brain injury (TBI), spinal cord injury (SCI), multiple trauma and amputation. Using a sophisticated full-cost methodology, Milliman compared the outcomes of cases managed by Paradigm to carefully matched cases in Milliman's workers' compensation database of industry claims. The cases studied are representative of historical and expected future acute catastrophic cases under Paradigm management.

*Milliman observed that cases managed by Paradigm resulted in significantly improved clinical and financial outcomes compared to similar cases overseen using conventional case management approaches.*

Starting with 571 cases Paradigm completed between 2007 and 2012, Milliman randomly selected 204 cases for analysis based on the following criteria:

- Medical management was completed during calendar years 2007-2012

- The original injury was catastrophic or complex/high medical in nature generally falling into the spinal cord injury, acquired brain injury, complex multiple trauma, or amputation categories
- The claim had never before been managed by Paradigm

For a comparison sample set, Milliman reviewed their database of more than 100,000 workers' compensation cases reviewed by the firm for case reserve and case management purposes. Of these, 488 matched the selection criteria for catastrophic and complex high cost injury diagnoses (ICD-9) cases.

## Results

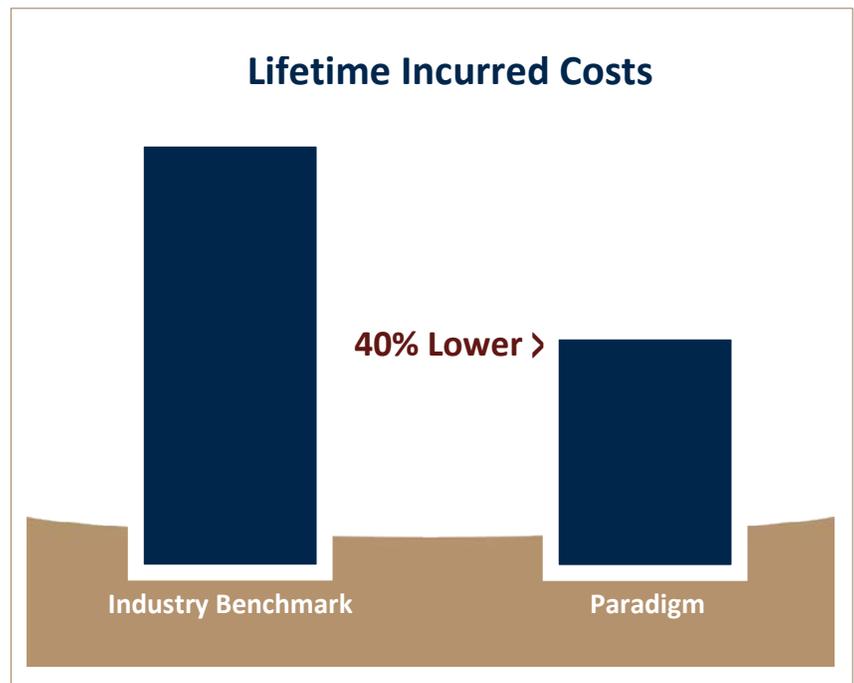
Milliman observed that cases managed by Paradigm resulted in significantly improved clinical and financial outcomes compared to similar cases overseen using conventional case management approaches. Specifically, Paradigm cases incurred lifetime costs 40% lower than comparable cases and experienced return to work rates 5 times higher than the set of benchmarked cases.

## Consistent Findings

Milliman conducted an equivalent study of Paradigm's performance in 2008 that yielded similar conclusions—namely, that Paradigm's Systematic Care Management<sup>SM</sup> approach secured better results for both the injured worker and Paradigm's client. The 2008 analysis found that Paradigm achieved lifetime savings of 36% and 5 times higher return to work outcomes. With this new 2013 study, Milliman substantiated the earlier findings by determining Paradigm achieved 40% lifetime savings and, again, 5 times higher return to work outcomes versus matched industry cases using conventional case management approaches.

The 2013 study is significant for several reasons. First, the updated analysis using essentially the same methodology reproduced the earlier results. Second,

the comparable data set for both Paradigm and Milliman expanded considerably. Since the release of the first Milliman study in 2008, Paradigm increased its completed case management database by more than 40% and Milliman collected additional industry claims. The study compared new Paradigm cases (excluding the original 2008 data) against Milliman's expanded database of industry claims. While some of Milliman's industry claims were used in the previous study, many of those were updated to provide more complete and accurate data. Milliman researchers carefully matched Paradigm cases to industry claims by diagnosis, and added new comparison points by age, severity, outcome and jurisdiction. The consistent findings reinforce claims that Paradigm's integrated,



comprehensive approach to case management reliably and repeatedly yields both better clinical results and lower lifetime costs.

## Paradigm Impact

The Milliman consultants cited unique aspects of Paradigm's Systematic Care Management<sup>SM</sup> approach as key to its superior results. Specifically, Milliman noted that Paradigm's incorporation of clinical experts, up-front, outcome-focused case planning, data

analysis, and guaranteed outcomes are the cornerstones to achieving optimal financial and clinical results.

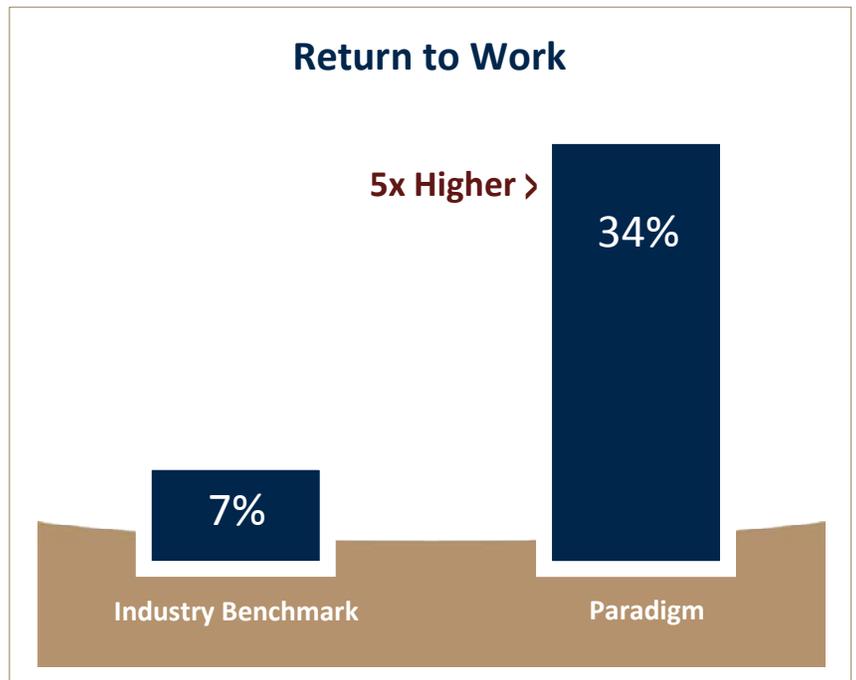
“Paradigm’s highly proactive management minimizes the risk of possible medical complications, avoids unnecessary deviation from the recovery plan, and rapidly addresses any complications that do develop,” concluded study author Robert Briscoe, a Senior Consultant and Principal with Milliman.

To achieve the case-level clinical and financial outcomes, Paradigm assigns each injured worker a physician-led consultative team that supports the recovery process by applying many years of experience and data drawn from more than 12,000 completed Paradigm cases. The team includes a dedicated, onsite nurse case manager (Network Manager), a specialized physician (Paradigm Medical Director), other medical experts and a healthcare manager (Director of Clinical Services). The team coordinates prescribed care, connecting injured workers and their families with the most experienced treating specialists and leading medical facilities available.

“Paradigm was founded in 1991 on the idea that bringing the best recovery team together for catastrophically injured people would result in both optimal clinical outcomes and long term savings,” said Paradigm’s Chief Medical Officer Michael Choo, MD. “Our model invests in the most effective care possible. The Paradigm team coordinates a comprehensive, evidence-based, and outcome-driven approach among multiple specialists. This study shows once again that everyone succeeds when you focus on the injured worker’s needs and make sure they get the right care at the right time. That’s the Paradigm difference.”

## Study Details

This study is based on long term cost projections by Milliman comparing 204 randomly selected Paradigm



cases from a pool of 571 completed cases to 488 matched “industry” cases from Milliman’s 100,000 plus database of workers’ compensation claims. Milliman’s claim database is believed to reasonably represent the U.S. workers’ compensation industry. It is the result of claim reviews for case reserve and case management purposes from national, regional and single state insurers of all sizes, as well as self-insured employers, state funds and other entities responsible for workers’ compensation claims. The study methodology was adjusted for economic timing of payments, and all case reserves were calculated uniformly by Milliman claims experts, thus removing the wide diversity of case reserving adequacy found in the industry.

Milliman’s full-cost and matching methodology consisted of:

- Case matching by diagnosis and sub-diagnosis where possible (e.g., ASIA Impairment Scale)
- Analysis of Paid to Date amounts for the first 24 months, adjusted for economic inflation
- Establishment of case medical reserves across multiple claim elements, calculated at 24 months post injury, and escalated based on element type
- Indemnity reserve calculation
- Expense projection

The 2013 study added new criteria for matching and analyzing the claims to account for multiple factors affecting both the injured worker's prognosis and variations in cost:

- **Jurisdiction or state match:** Different states have different wage/indemnity benefits and medical costs
- **Age match:** Groups injured workers within a ten-year age range (five years older or younger)
- **Outcome match:** Whether the injured worker returned to work, was medically released to return to work, or was integrated into a community of people with similar disabilities
- **Severity match:** Initial severity of the injury (spinal cord injuries rated by the American Spinal Cord Injury Association Impairment Scale)

The study methodology was based on a representative base of injury claims with all carrier and self-insured employer claim volume sizes and claim jurisdictions represented.

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*Robert Briscoe, Milliman Inc.*

#### **Return to Work**

The data on return to work is based solely on claims with known return to work status. While a common goal in workers' compensation cases is to return employees to their former jobs or other gainful employment, in catastrophic and complex cases, the industry comparison group demonstrates a low success rate. In contrast, nearly 34% of injured workers assisted by Paradigm had returned to work by the end of the acute period, while fewer than 7% of the claims

reviewed in the benchmark database were released to return to work or had returned to work. When a qualified treating physician gave a release to return to work to an injured worker in the data set, Paradigm cases achieved greater than 66% return to work status.

#### **Cost Comparison**

The study was conducted on two economic bases:

1. Using claim dollar amounts as incurred regardless of the injury year of the claim
2. Using claim dollar amounts adjusted for economic inflation from the actual date of injury of each claim to 2012

The combined estimated medical and indemnity incurred costs for the selected Paradigm files were 40.1% lower than costs for matched claims in the benchmark database. This is the overall average. The individual savings percentages for each claim category illustrate the intrinsic variability of catastrophic medical claim costs and the application of Paradigm's care management process to different injury types. Since the 2008 study, conducted independently with different Paradigm claims and largely different industry claims, summarized that Paradigm reduced costs by 36%, Milliman concluded that Paradigm's practices produce consistent savings for new claims on a year by year basis.

#### **Conclusion**

The 2008 and 2013 Milliman studies demonstrate Paradigm's services consistently save clients an average of 36% to 40% on most claims categories compared with conventional industry claims management practices. Paradigm's cases also achieve return to work rates 5 times higher than the industry benchmark. These results were demonstrated consistently throughout a decade of Paradigm's case management activity and across two largely independent sample studies.

## Background

For more information, including a copy of the Milliman study, please contact Kevin Turner at (925) 677-4835 or [kevin.turner@paradigmcorp.com](mailto:kevin.turner@paradigmcorp.com).

Paradigm Outcomes provides acute and ongoing catastrophic and complex case management services for traumatic brain injuries, spinal cord injuries, multiple traumas, amputations, burns and chronic pain. As the nation's leading provider of complex and catastrophic medical management in the workers' compensation industry, Paradigm achieves 5x better medical outcomes and lowers total costs by 40%. Paradigm accomplishes this by bringing together nationally recognized doctors and specialists, the best network of care facilities in the country, and more than 20 years of clinical data to guide decisions. For more information, visit [www.paradigmcorp.com](http://www.paradigmcorp.com).

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