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Understanding Outcomes Scoring

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Harbor Health Systems has been the leader in benchmarking Physician performance in workers' compensation for more than a decade. Through Harbor's score carding and benchmarking systems, payers and self-insured employers not only gain insight into who the top performing Physicians are in their networks, but can utilize these top doctors to achieve better outcomes for injured workers – faster recovery at less cost.

This white paper summarizes the methodology by which Harbor scores these Physicians, as well as identifies issues within workers' compensation that impact the benchmarking process.

About the Authors

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Medical Director & Clinical Research Director

Dr. Blatt is serving as the Medical Director and Clinical Research Director for Harbor Health Systems.

Dr. Blatt was in the private practice of orthopedic surgery in Torrance California, from 1978 until 2002. He then spent twelve years as the National Medical Director of Anthem Workers' Compensation, with responsibilities for the recruitment, training and supervision of a large multispecialty physician advisor panel and case management nurses, as well as the management of the provider network. He worked closely with clients to develop value-added programs for their medical management and lectured in seminars relating to the managed care approach for workers' compensation.

Dr. Blatt received his undergraduate degree from the State University of New York at Stony Brook, and his medical degree at the Chicago Medical School.

He completed his internship and residency in orthopedic surgery at Harbor General-UCLA Medical Center.

Dr. Blatt is a Fellow of the American Academy of Orthopedic Surgery and a Diplomat of the American Board of Orthopedic Surgery.

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Clinical Biostatistician

Martin Lee, Ph.D., has served as Clinical Biostatistician for Harbor Health Systems for 10 years.

Dr. Lee is responsible for analysis of provider scorecards and research initiatives. His career encompasses more than 35 years in the pharmaceutical and biotech industries.

Martin L. Lee is Adjunct Professor of Biostatistics in the Fielding School of Public Health at UCLA and Adjunct Professor of Internal Medicine, Charles R. Drew University of Science and Medicine. The author or coauthor of over 200 scientific papers, he is a Fellow of the Royal Statistical Society and member of the American Statistical Association, the Society for Clinical Trials, the Biometrics Society, and the International Society of Thrombosis and Hemostasis. In addition he is a Chartered Statistician and a Chartered Scientist as designated by the Royal Statistical Society.

Dr. Lee received a B.A. degree in mathematics, and M.S. and Ph.D. degree in biostatistics from the University of California, Los Angeles.

Benchmarking Overview

The goal of Harbor Health System's outcomes scoring is to identify doctors most closely associated with positive outcomes based on their performance. This scoring approach differs from pathway and compliance measures associated with benchmarking in that it focuses on the global population results rather than on a specific provider's clinical decisions. In many cases, the clinical skills of the physician may not correlate with workers' compensation outcomes. This is because at the larger claim level, multiple influences other than clinical decisions such as unique payer issues or claims handling may affect the result of the claim.

It is important to realize that these measurements are determined at the overall claim level, not at the level that a specific provider was engaged. That is because this benchmarking approach seeks to capture larger relationships that are related to clinical skills, patient engagement skills, and the overall ability to work within the workers' compensation regulatory framework. Over the years, Harbor has found top scoring providers tend to have strength in all three of these areas, and that difficulty in any one area can have an adverse impact on the overall experience of the injured worker.

Unfortunately, the workers' compensation system has many scenarios that can negatively influence the patient's experience. Doctors who may have difficulty gaining the trust of the patient can have just as negative an impact on overall claims costs as doctors who struggle with producing good clinical results.

It is for these reasons that Harbor always emphasizes that this approach to scoring does not measure the quality of the Physicians. Rather it measures the Physician's association to the overall claim outcomes.

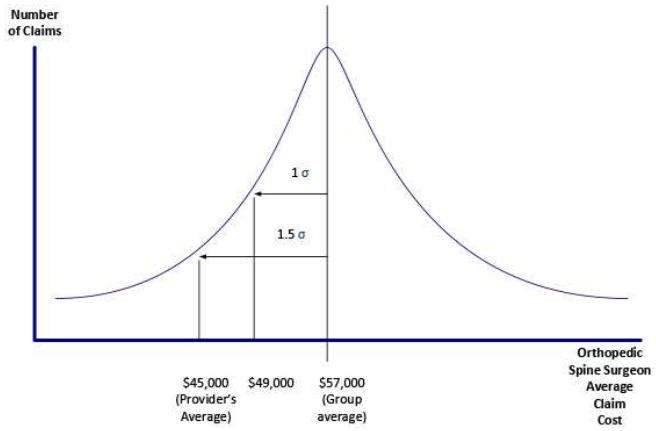
Measurement Factor	Description
Total Incurred	Sum of Medical, Indemnity and Expense Paid plus reserves for open or future medical for closed
Medical Incurred	Total Medical Incurred plus reserves
Allowed Amount	Sum of allowed amount for billed procedures after bill review
Billed Amount	Sum of billed amount for procedures prior to bill review
Claim Duration	Total duration of claim
Care Duration	Total time over which medical services were provided
Total Temporary Disability	Count of days that Claimant was not able to work
Litigation	Percentage of claims which are litigated
Reopen rate	Percentage of claims which reopen for further medical care (recidivism)

Outcomes Measurements

In Harbor's models there are multiple variables reviewed in the process of developing a score depending on whether the model utilized is claim-based, bill-based or a combination of both. Harbor has developed two (2) bill-based models for scoring: one based on post bill review "medical allowed" and the other based on pre bill review, "medical billed". Some of the factors are listed in the table above.

Scoring Methodology

Scores within the benchmark focus primarily on three factors: cost, disability and duration. For any given measurement factor, Harbor compares the average performance of the provider to the average performance of his or her peer population (specialty and, where appropriate, tertiary specialty and only within their state). Scores are measured as the difference (better or worse) in that category and compared to the appropriate population mean in terms of its distance measured as the number of standard deviations.



By way of example, consider the following simplified process:

1. A group of peers consisting of orthopedic spine surgeons in California are defined as a stratum. The claims selection criteria would be the California claims that include ortho-spine procedure codes. There may be dozens of providers who have billed for ortho-spine procedures against 300 claims, and the average cost of all of these claims hypothetically is $57,000.

2. One particular physician who performs such procedures is connected to 21 claims through the billing activity and identifies them as the treating provider. The average total costs for the 21 claims linked to the provider is, for example, $45,000.

3. Clearly this provider is averaging about $12,000 per claim better than their peer population. If the standard deviation (σ) for the peer population was $8,000, then this provider would be 1.5 standard deviations better than the mean.

To determine a score, all of the outcome factors considered go through a similar process, and are combined using a proprietary weighting methodology that reflects the overall relevance of each outcome measure.

Sources and Use of Data

Harbor receives claims and billing data from payers and/or vendors. Most scoring is calculated based on a specific payer's set of claims. The claims could be delivered by the payer or TPA and the bills by the Bill Review vendor.

Claims data is the key driver for calculating the scoring factors. In a workers' compensation claims file, Harbor will receive data such as date of injury, open/closed claim date, incurred costs, disability days and so on. In short, any data that accumulates at the patient level over time would be included in the claims file.

Bill data received is usually post bill review; in some cases it is combined with original bill data. Harbor is also able to score on both post and pre bill review data. The key information in the bill data is who provided services, what was done and when. As a general rule, for claim-based scoring, the claims data defines the outcomes measurement and the bill data establishes provider specialty linkages to claims.

Harbor is also able to accept utilization review data from the payers and the UR vendors of the payers. Distinct from the scoring models described above, Harbor has also developed a Physician scoring model based on the approval percentage of the utilization review requests submitted by that specific provider.

Case Mix, Statistical Significance, Adverse Selection and Comorbidities

Workers' compensation data contains certain barriers to the typical best practices used for assuring human factors are properly accounted for in the scores. Harbor's approach to stratifying populations is constructed to take into account case mix by using patient complexity and injury severity factors.

Adverse selection (the impact of highly reputable Physicians attracting the most difficult cases) has been examined as a factor in the statistical model. As of yet, most evidence of adverse selection in workers' compensation tends to correlate better with attorney impact rather than with patient selection. However, using adjustment factors applied to the outcome variables based on comorbidities of the injured worker and a proprietary process to adjust for the severity of the injury, Harbor accounts for these case-mix factors when scoring a Physician. Comorbidity factors include diabetes, obesity, mental health issues, addiction, hypertension and/or combinations of more than one. Based on the degree of impact noted in our analysis, an adjustment factor is applied to claim outcomes used in the scoring of a Provider to compensate for the medical complexity of the Injured Worker who would be more prone to certain complications because of these diagnoses. Both ICD-9 and ICD-10 codes are used to identify claims with these ancillary diagnoses, which are in the Physician's census of claims for scoring.

Severity of injury is adjusted for using ICD-9 and ICD-10 codes by comparing, through a proprietary method, a claim's outcomes to the expected outcome as defined by a national standard for a particular diagnosis.

A single outlier case can negatively impact a provider's score with no other pattern of practice at issue. Harbor identifies statistical outlier claims by specialty and jurisdiction and removes such claims prior to scoring. Provider scores are flagged when they are computed based on too few claims to be statistically meaningful. This situation is determined by specific statistical criteria.

Every applicable CPT and HCPCS code is reviewed and mapped to enhance physician specialty listing. By doing so, we are able to better identify physician specialties by the procedure codes which are billed by that physician. We have also mapped every relevant taxonomy code to the appropriate specialty listings used in scoring. By doing so, we are able to perform a more "granular" scoring of the 15 most commonly used specialties in Workers' Compensation. These specialties include Acupuncture, Chiropractic, Dental, General Surgery, Hand Surgery, Neurology, Orthopedic Surgery, Pain, Podiatry, Primary Care, Psychiatry, Spine Surgery, Physical Medicine and Rehabilitation, Cardiology and Pulmonary Medicine.

Appeals and Educational Opportunities

Harbor has a rigorous Quality Assurance program which reviews scoring used to restructure a client network. Should there be any question or challenge to the outcome score assigned to a specific physician or group, Harbor Health will provide research to include the most common factors that could improperly affect a provider's standing. This includes processes to ensure that the Physician is indeed identified in the correct specialty, the benchmark peer group used in the Physician's scoring is correct and that relevant outlier claims have been removed prior to scoring.

There are multiple opportunities for providers to learn more about their standing and how to maximize their performance. By understanding overall outcomes better, including the specific

provider's performance relative to his/her peer group, providers can begin to think outside their practice to see how their role can impact the outcome of the claim.