

# Benchmarking Medical Absence

Measuring the Impact of Occupational Health Nursing

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Benchmarking is a term heard frequently in occupational health nursing, especially from management, but it is not a skill frequently taught in nursing education. According to the American Association of Occupational Health Nurses (AAOHN), the focus of occupational health nursing is the promotion and restoration of health, prevention of illness and injury, and protection from work-related and environmental hazards (AAOHN, 2004). The benefits of these activities may seem obvious, especially to employees who lead healthier and more productive lives as a result. The benefits to employers may also seem obvious, but will be more apparent when benefits are converted into terms that have a place on employers' balance sheets. Employers make decisions about allocating scarce resources, and in the process they quantify benefits as well as the costs of each endeavour. Business executives look to occupational health nurses to maximize employee productivity and reduce costs through lowered disability claims, fewer on-the-job injuries and improved absentee rates. By measuring the impact of their work, occupational health nurses are in a better position to get the resources to accomplish desired outcomes. This article explores reasons occupational health nurses must benchmark, how to benchmark, and how to use the results.

## WHY BENCHMARK

When looking at reasons for benchmarking the total costs of medical absence, the focus of top management on benchmarking and the relationship of benchmarking to the role of occupational health nurses must be considered.

### The Significant Cost of Medical Absence

Benchmarking is important because medical absence is an area of substantial costs. Medical absence rates, including sick leave, short-term disability, long-term disability, and workers' compensation, range from an average low of 1.7% to an average high of 6.3% for all U.S. employers, depending on the study and the data set used (Bureau of National Affairs, 2002; CCH Incorporated, 2002; Mercer Human Resource Consulting, 2002; Watson Wyatt, 2002). A recent study from Work Loss Data Institute shows this number at 3.4% (Work Loss Data Institute, 2003), which translates into an annual direct cost to U.S. employers in 2004 of more than \$253 billion, based on total U.S. employment costs of \$7.45 trillion, according to the Bureau of Labor Statistics (U.S. Department of Labor, 2004).

Total costs of medical absence including indirect costs have been conservatively estimated to be five times the direct costs, based on industry studies (Guidotti, Cowell, & Jamieson, 1989; Kalina, 1998). Including indirect costs, the total cost of medical absence is \$1.265 trillion per year, almost as large as total health care spending in the United States by all sources. In addition to the costs of missed work, there are also increased medical costs involved with lost time injuries and illnesses, whether these costs are covered under group health benefits or workers' compensation.

With so much money at stake, it is clear why employers have become increasingly focused on containing these costs, not just in their entirety, but also on the impact they have on their competitive advantage, and in how they compare to other employers in the increasingly competitive worldwide business environment.

## **Top Management Expectations**

Benchmarking has become an increasingly used term in most top management circles, especially in large private sector employers. It has also become a major topic taught in business schools and covered in respected business journals.

According to business strategy professor, Michael Porter (2000), writing for the Harvard Business Review:

*“Today's dynamic markets and technologies have called into question the sustainability of competitive advantage. Under pressure to improve productivity, quality, and speed, managers have embraced tools such as benchmarking. Dramatic operational improvements have resulted” (p. 74).*

According to a well known top management advisor, Peter F. Drucker (1999):

*“The most important contribution of management in the 21st century will be to increase worker productivity. So far it is abysmally low, and in many areas (hospital nurses, for instance, or design engineers in the automobile industry), actually lower than it was 70 years ago. So far, almost no one has addressed it” (p. 267).*

Drucker (1994) also said:

*“You can't manage what you can't measure. The most recent of the tools used to obtain productivity information is benchmarking-comparing one's performance with the best performance in the industry or, better yet, with the best anywhere in business. Benchmarking assumes correctly that what one organization does, any other organization can do as well. And it assumes, also correctly, that being at least as good as the leader is a prerequisite to being competitive. Benchmarking provides the diagnostic tools to measure productivity and to manage it” (p. 54).*

Top management is looking for benchmarking in other areas, so it is natural they would look for it in an area that represents more than a trillion dollars in costs.

## **Show Me the Data: Six Good Reasons To Measure Medical Absence**

Occupational health nurses are in a unique position to influence medical absence costs through their focus on health promotion and restoration. By quantifying this influence to management through an analysis of the financial impact, occupational health nurses provide additional value to their employers as well as employees. There are six important reasons why occupational health nurses should make benchmarking these costs part of their jobs.

What Gets Measured, Gets Attention; What Gets Counted, Counts. Occupational health nurses make a significant contribution to improving the health and productivity of the work force. Measurement directs and focuses the attention and interest of line management on these outcomes, and what an occupational health nurse can contribute to the bottom line.

You Can't Manage What You Can't Measure. Data generated by medical absence measurement can be used to determine program efficiency and effectiveness and make decisions about what services to continue, start, and stop. This includes programs in health and wellness, safety, benefits design, and the use of evidence-based guidelines for treatment and return-to-work (RTW). According to Osborne and Gaebler (1992):

If you don't measure results, you can't tell success from failure. If you can't see success, you can't reward it. If you can't reward success, you're probably rewarding failure. If you can't see success, you can't learn from it. And, if you can't recognize failure, you can't correct it (p. 171).

Performance Measurements Encourage Creativity. Standards and measures fuel creativity by standardizing the ends (reducing absence) rather than by dictating the means to achieve them. By standardizing the desired outcome in terms of clear measures of medical absence outcomes, occupational health nurses are free to devise creative means to achieve the desired outcome. According to Buckingham and Coffman (1999):

Performance measures encourage delegation and discourage micro-management. When you don't tell people what to do, but rather where you want to be, they will surprise you with their ingenuity and diligence (p. 33).

If You Can Demonstrate Results, You Can Win Management Support. Clear outcomes data, measures, and indices constitute powerful information. They influence the scarce allocation of resources in a company, and result in funding of additional occupational health programs that may have an impact on a company's bottom line.

Performance Measurement Becomes Strategy. Behavioural psychologists have shown that data collection and measurement alone will change simple behaviours in complex ways. Checking a car's speedometer, keeping track of money spent, and counting calories may all change behaviours without other interventions. Medical absence outcomes measurement can operate in a similar fashion as a powerful strategy for change, with all departments focusing on a common goal.

Ignorance is Not Bliss. Measuring and comparing company performance against national norms or the performance of other companies engenders a positive "peer pressure" and can provide a competitive edge. Knowing what others have been able to achieve makes the numbers all the more achievable, and motivates individuals and organizations to reach or even surpass published standards.

## **HOW TO BENCHMARK**

In reviewing benchmarking techniques, occupational health nurses must first examine sources of data, both internal and external. Next, various techniques can be used to examine external data sources, including evaluating performance related to "beating the guideline," grading RTW with both percentage grades and letter grades (A through F), comparing outlier percentage outcomes, and comparing incidence and prevalence with national norms. (As used in this article, incidence is the rate of occurrence of absence from a particular illness or injury in days per 100 workers, and prevalence is the percentage of total lost workdays that are the result of an injury or illness.)

### **Internal Data**

Internal data may come from a number of sources. These could be disability claims or workers' compensation claims. If the data include incidental absence (workers out for 7 days or fewer), it should be noted so the proper external dataset can be selected. For consistency with the external data, only closed claims should be included. This benchmarking will not account for cases of employees who are still out of work, for which the ultimate disability duration is yet to be known. On each claim, the minimum data required will be an International Classification of Diseases, 9th Revision (ICD9) diagnosis code and the number of calendar days of absence. Internal data should be normalized with external data to be as compatible as possible. For example, if the external data reports calendar days lost in the past year, internal data should be capped at 365 days per claim, even if the absence exceeds 1 year.

Obtaining a diagnosis code is important to ensure fairness across different units because the benchmarking is condition adjusted. This allows like analysis and comparison of different operating units despite the potential for heterogeneous case mixes, and it also takes into account different work forces and job tasks, which result in a different mix of ICD9 codes. This is also a requirement for the

use of techniques to improve outcomes, such as evidence-based treatment and disability duration guidelines because these guidelines cannot be applied without a correct diagnosis.

In addition to the two required data elements, ICD9 codes and disability duration, other data elements should be selected depending on availability and the outcome reports desired. Most employers capture division and plant data so they can compare different units. Of course, if multiple years are covered, the year of RTW should also be captured. Many employers use benchmarking as a way to evaluate different vendors, different insurers, different third-party administrators (TPAs) or case management companies, or even different health care providers. If so, then capture that information. Demographic details can also reveal important differences, so where possible, it is valuable to capture age, gender, and payroll type (e.g., salaried versus hourly).

Gathering consistent internal data is not only a critical first step in comparing outcomes to national norms, but it is also important because it can be used as the first step toward benchmarking internally. Even without outside data sources, employers may compare their overall medical absence outcomes over time and between different operating units.

### **External Data Sources**

Various external data sources, including Medical Disability Advisor (Reed, 2001), Health Management Guidelines (Bruckman & Rasmussen, 1996), ACOEM Guidelines (Glass et al., 2003), InterQual Clinical Decision Support Tools (McKresson Health Solutions LLC, 2004), Employer Measures on Productivity Absence and Quality (EMPAQ) (National Business Group on Health, 2004), and Official Disability Guidelines (Denniston et al., 2004), have been included in this discussion.

**Medical Disability Advisor (MDA).** The MDA is a favourite textbook of occupational health nurses because it has extensive descriptions for each diagnosis and a glossary of terms and anatomical drawings. Conditions and procedures are arranged alphabetically. The MDA is updated every 3 to 4 years (the fourth edition was published in 2001). The MDA is comprehensive, covering more than 1,000 of the 10,000 ICD9 diagnoses. ICD9 codes are identified and cross-referenced.

There are two sets of disability duration guidelines in the MDA with a table under the heading "Length of Disability" showing minimum, optimum, and maximum expectancy for five types of jobs-sedentary, light, medium, heavy, and very heavy work. There is typically a broad range from the minimum expectancy to the maximum expectancy, and for most conditions, the numbers are identical for the different job types.

The second set of disability duration guidelines is labelled "Duration Trend from the Normative Data" with a graph of cases versus days. These graphs are not supplied for every chapter, but they are found on approximately one-quarter of the conditions covered. Typically there are significant differences in the "Length of Disability" tables and the "Normative Data" graphs because, according to the preface, the tables are "based on clinical judgment and experience" and the graphs are actual data, although the source of the data is not specifically identified. The MDA is available as a 3,000-page hardcover book, a CD-ROM for \$325, or on the Web for \$225 per year.

**Health Management Guidelines.** The Health Management Guidelines text (published by Milliman USA, an actuarial consulting firm) covers a variety of specialties in a nine-volume series and is widely used among managed health care providers and insurers. They are known primarily for their hospital length-of-stay guidelines, and their subscribers include many large health maintenance organizations. Volume 7 of the Guidelines covers workers' compensation. There are no tables or graphs of actual disability duration norms in the Guidelines because it does not report what the norms are. Instead, it provides "optimals," what the editors believe possible based on their judgment and what studies have shown can be achieved.

The workers' compensation guidelines are comprehensive, covering approximately 300 diagnoses. A separate volume, Return to Work, covers non-occupational conditions and has approximately 100 diagnoses. The two volumes covering workers' compensation were last updated in 1998. Volume 7 of the Guidelines, Workers' Compensation, is available in a 400-page loose-leaf book for \$525, and through a raw data license. Volume 8, Return to Work, also sells for \$525.

**ACOEM Guidelines.** The American College of Occupational and Environmental Medicine (ACOEM) established a practice committee to prepare their own guidelines. Entitled Occupational Medicine Practice Guidelines, Evaluation and Management of Common Health Problems and Functional Recovery in Workers, the ACOEM guidelines cover 54 diagnoses organized into nine sections by body part. In addition to advice on disability duration, the ACOEM guidelines provide information on differential diagnosis, including initial assessment, medical history, physical examination, and diagnostic criteria. The disability duration guidelines in ACOEM include recommendations of the authors plus, in the second edition, selected experience data provided from Official Disability Guidelines (ODG), using one of the data sources in ODG, the National Health Interview Survey (NHIS) conducted annually by the National Center for Health Statistics (NCHS) of the Center for Disease Control and Prevention (CDC). The first edition was published in 1997 and the second edition of the ACOEM guidelines was published in December 2003. The new edition is available in a 500-page book and an electronic version at a cost of \$199.

**InterQual Guidelines.** McKesson Corporation is a Fortune 16 company, the world's leading health care services company and largest provider of medical management solutions. McKesson's InterQual products are clinical decision support tools. McKesson's QualityFirst Workers' Compensation / Disability Guidelines support real-time patient care management for optimal health care and safe, timely RTW. Beginning with the 2005 release, all of the disability duration information in these guidelines will be provided from ODG as a result of a partnership between McKesson and Work Loss Data Institute. The InterQual Guidelines are typically used online, and pricing depends on the number and types of users within an organization.

**Employer Measures on Productivity Absence and Quality (EMPAQ).** Under the direction of the Council on Employee Health and Productivity (CEHP) of the National Business Group on Health, and in collaboration with the Integrated Benefits Institute (IBI) and the Disability Management Employer Coalition (DMEC), EMPAQ is developing and will deliver industry-wide, consensus-based standardized EMPAQ measures that enhance employers' and suppliers' abilities to evaluate employee satisfaction and overall program performance and purchase and deliver services effectively. These EMPAQ measures will enable employers and suppliers to determine how effective their health-related lost-time programs are on critical indicators such as cost, administrative effectiveness, and productivity outcomes.

The plan is to design measures that are practical for business, can be implemented relatively quickly, and assist employers in answering three questions often asked by senior management:

- \* How are we doing relative to our internal operating plan?
- \* How are we doing relative to our competition?
- \* How do we compare against industry "best practices?"

In November 2003, a 114-page technical manual was published outlining these metrics. Pricing of the merged data has not yet been established.

**Official Disability Guidelines.** The 2004 edition of the ODG provides normative data on disability duration, with a database of more than 3 million cases for every possible condition by ICD9 code. The data are presented in several forms, including summary guidelines, decile tables, bar chart specific "clumps" of data, and the number of workers without lost work time. Because every

diagnosis is covered, some sample sizes are small, but that is helpful in identifying relatively rare conditions and the scarcity of resulting data. But, with more than 3 million cases, the more common injuries and illnesses have large sample sizes.

From this database, ODG also offers incidence and prevalence information. For example, the percent of total lost work days by health condition and resulting lost days per 100 workers for the average employer is available. Employers can identify not only those employees whose health status results in prolonged absence, but also those conditions that occur more frequently in a particular worksite to be targeted for improvement through safety or ergonomics programs.

ODG has a section for each condition called "Return-To-Work Best Practice Guidelines," which provides expected disability duration based on severity, treatment, and type of job. These best practices result from "drilling down" into the data and identifying the factors that impact disability duration for each diagnosis. The information on type of job can be used with the "Activity Modifications" to identify modified duty work, isolate when the modified duty work can commence, and for how long it should be continued before return to full duty. Data sources for the ODG include the Occupational Safety and Health Administration, the Bureau of Labor Statistics, and the NHIS.

Table 1		
724.2 Lumbago		
Return-To-Work Summary Guidelines		
Dataset	Midrange	At-Risk
Claims data	20 days	92 days
All absences	5 days	38 days

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Table 1  
724.2 Lumbago Return-To-Work Summary Guidelines

The same source of reported disability duration data is used for the ACOEM Guidelines and the InterQual Guidelines. Thus, three of the six above-mentioned providers of benchmarking data use the same original data source. The organization by ICD9 in ODG allows grouping similar conditions together, because the ICD9 coding structure is hierarchical with five different levels. Both the calendar-days-by-decile tables and the incidence and prevalence information are available at group levels (e.g., all mental conditions) as well as for individual diagnoses under the group levels. The complete ODG disability duration guidelines are available in a 1,600page reference book or in electronic versions for \$195, and a Top 200 Conditions book for \$99. It is packaged with the treatment guidelines, ODG Treatment, for \$325, and available for raw data license to computer-automate the benchmarking process.

### **Benchmarking Lost Time: "Beating the Guideline"**

Data from ODG is used to illustrate some industry standard benchmarking techniques. Table 1 is an example of the source data for a particular condition. The first step is to choose which ODG data to use. Table 1 shows estimated days out of work (based on national norms) for each condition to select a target up front. This information appears at the beginning of each diagnosis, and summarizes experience data that are contained in the ODG decile table (the RTW claims data or calendar days away from work by decile), using the 50% number for "Midrange" and the 90% number for "At-Risk." This "decile table" includes only cases that were out more than 7 days, making the data consistent with and comparable to the claims data that most ODG clients use when benchmarking. These numbers are shown in the Summary Guidelines in the first row, entitled "Claims Data."

Grading System			
A+	99 to 92	C+	49 to 42
A	91 to 83	C	41 to 33
A-	82 to 75	C-	32 to 25
B+	74 to 67	D+	24 to 17
B	66 to 58	D	16 to 8
B-	57 to 50	D-	7 to 0

## Grading System

In recent years, there has been increased focus on "incidental absence," those cases in which workers are typically out for 7 days or fewer, that may never become claims under most workers' compensation rules or under the eligibility requirements of most disability benefit programs. Furthermore, many employers and their vendors have moved to early reporting of absence to improve early RTW. Because of this, they are identifying cases in their case mix that never would have been in their database of reported absence in the past. To provide benchmarking data for these clients, another row has been added, entitled "All Absences." This row uses the 50% number for Midrange and the 90% number for At-Risk, covering all absences (not just cases when workers were out more than 7 days). Because these data include the shorter duration cases, Midrange and At-Risk numbers will generally be shorter than the previous numbers displayed in the Claims Data row.

When deciding which numbers to apply in benchmarking, users will need to ask themselves whether or not their own dataset generally includes cases in which workers are out for 7 days or fewer. If so, to be consistent in their application of the national norms, they should use the row labelled All Absences. For some conditions, such as a broken leg, there will not be significant differences in the numbers in the two rows. For other conditions, where a significant percentage of workers miss fewer than 8 days, such as colds or flu, the differences will be substantial.

Organizations can demonstrate the value of RTW efforts for all cases or a select subset (e.g., by case manager), as follows:

- \* Sum up all internal closed claims durations, excluding permanent total disability.
- \* Sum up corresponding At-Risk durations from ODG Summary Guidelines (with an ICD9 coded At-Risk date corresponding to each claim).
- \* Subtract sum of internal claims durations from Sum of At-Risks to show days "saved" (e.g., sum of all durations is 897 days, sum of At-Risk days is 4,711 days;  $4,711 - 897 = 3,814$  days saved). At 250 days per year, this equates to 15 full-time workers, and this can be compared to the head count in disability management, as an indicator of return on investment.
- \* Divide days saved by number of claims to calculate average days saved per claim.
- \* Compute dollars saved using:  $(\text{average daily wage} \times 5) \times \text{number of days saved}$  (e.g., 3,814 days saved at \$ 180 per day = \$686,520 per year in direct costs). To include indirect costs, multipliers range from 2 to as much as 7. Using 5, total saving are \$3.4 million. Note: chief financial officers (CFOs) do not always accept indirect costs.

It may seem self-serving to demonstrate days "saved" versus the At-Risk date, which is the number of days at which a claim becomes an "outlier." The answer to this is that unmanaged claims and unscripted RTW efforts result in rampant outliers, gouging the bottom line. It is the job of the occupational health nurse to avoid and contain these scenarios. By comparing how much these efforts "beat" the outlier number, a consistent measure across all units is adopted.

## Benchmarking Lost Time: Grading Return To Work

Taking this a step further, percentage grades and even letter grades may be assigned. This can be especially valuable when comparing different divisions and plants, different vendors, different health care providers, or even different benefit plans. The steps are as follows:

- \* Sum up all internal closed claims durations, capping each at 365 days (if necessary) and excluding permanent total disability claims.
- \* Sum up corresponding At-Risk durations from ODG Summary Guidelines (with an ICD9 coded At-Risk date corresponding to each claim).
- \* Divide the sum of the At-Risk dates minus the sum of internal claims durations by the sum of the At-Risk dates: (sum of At-Risks - sum of claims)/sum of At-Risks.
- \* Multiply the result by 100 to get a percentage score, e.g., sum of all durations is 897 days, sum of At-Risk days is 4,711 days ( $(4711 - 897)/4711 \times 100 = 81\%$ ).
- \* Grade the results. 75% to 100% is an A, 50% to 75% is a B, 25% to 50% is a C, 0% to 25% is a D, and anything negative is an F. In the example above, 81 % is an A. More detailed letter grading is outlined in the Sidebar.

Regardless of one's ultimate grade, the value of these benchmarks is to create consistency across different conditions, allowing for comparison among internal or external claims entities (e.g., TPAs, providers, case managers), geographic and demographic samples or subdivisions of another nature, and time-series evaluations of new programs, despite the likelihood of heterogeneous case mixes. While an A is difficult to attain by today's standards, this illustrates the tremendous room for improved outcomes in both workers' compensation and non-occupational disability. Of course, the availability of modified duty is an essential component, and should be stressed as necessary to achieve maximum success. Table 2 is an example of how this calculation would work for a firm with a limited number of cases. (While the use of the At-Risk number for benchmarking is recommended, relying only on this number as a trigger for prospective case management is not recommended. As can be observed, cases that are out very long have already earned a failing grade of F, are not likely to ever RTW, and it is too late to begin case management efforts.)

Claim No.	ICD9 Code	Duration	ODG At-Risk
1	354.0	11	94
2	847	14	68
3	722.1	113	141
4	728.1	25	100
5	354.0	29	94
6	354.0	17	94
7	847.0	38	68
8	724.2	3	78
9	648.0	7	64
10	728.1	35	100
11	847.0	15	68
12	724.2	18	78
13	354.0	28	94
14	847	28	68
15	728.52	39	100
<b>Total Days:</b>		<b>888</b>	<b>1,218</b>

\* To calculate Firm X's percentage and letter grade for return-to-work performance, add the sum of Firm X's claim durations from the sum of the corresponding official Disability duration (ODG) At-Risk date and divide the result by the sum of the corresponding (ODG) At-Risk dates. Firm multiple that result by 100.  $(1218 / 888) \times 100 = 137.16\%$ . Firm X earns a grade of B+.

Table 2  
Example: Firm X Distributions of Non-Permanent Closed Claims\*

## Benchmarking Lost Time: Outlier Percentage

"Outliers" is a term used to describe the worst 10% of cases with respect to disability duration, or those cases having durations greater than the ODG At-Risk date (by which 90% return as a national benchmark). This relatively small percentage of claims represents a huge proportion of costs. Any

claim exceeding the At Risk date solicits a "red flag," is recognized an outlier, and, using the methodology (grading RTW), receives a failing grade of F.

It is important to monitor these claims and identify the cause of and solution to any significant imbalance. In cost-savings initiatives, return on investment will likely be greatest in reducing an imbalance of outliers. Outliers not only contribute heavily to delayed recovery rates, but also to excessive use of medical services. Organizations can measure Outlier Percentage for all cases or a select subset (by provider, for example) as follows:

ICD9 Code	ICD9 Description	Date	Average	% of Total	Outlier %	Outlier Count
800	Sprain of hand	15,200	14,571	16.4	13.7	241
801	Laceration of hand	15,200	14,571	16.4	13.7	241
802	Contusion of hand	15,200	14,571	16.4	13.7	241
803	Dislocation of hand	15,200	14,571	16.4	13.7	241
804	Fracture of hand	15,200	14,571	16.4	13.7	241
805	Amputation of hand	15,200	14,571	16.4	13.7	241
806	Other injury of hand	15,200	14,571	16.4	13.7	241
807	Unlabeled injury of hand	15,200	14,571	16.4	13.7	241
808	Unlabeled injury of hand	15,200	14,571	16.4	13.7	241
809	Unlabeled injury of hand	15,200	14,571	16.4	13.7	241
810	Unlabeled injury of hand	15,200	14,571	16.4	13.7	241

Table 3  
Outcomes by ICD9 Diagnosis Code, Top 10 Conditions Work Loss Data institute Benchmarking Report for Client X (Using non-proprietary data)

- \* Divide the number of outliers (those claims where time away from work exceeded the ODG At-Risk date for that condition) by total number of claims.
- \* Multiply the result by 100 to get Outlier Percentage; 10% is the national benchmark, where lower is always better (e.g., 897 days lost from 91 cases). Comparing each of 91 cases' duration to the At-Risk days shows that 12 cases were longer than benchmarked (12/91 = 13% cases were outliers versus 10% standard, 90% not outliers).
- \* If the Outlier Percentage of a claims entity notably exceeds 10% (or that of its peers), steps should be taken to harness potential outliers through prospective RTW initiatives (e.g., using ODG Summary and Best Practice Guidelines to more effectively case manage, and direct new cases to the best performing operating units).
- \* Problem or "outlier" providers can be identified this way. Injured workers can be directed to providers or claims entities with the lowest Outlier Percentage.

### Incidence and Prevalence

The next level of benchmarking is used to identify the prevalence of different conditions and compare this prevalence to national norms. This is typically performed by calculating the percent of total lost work days for particular diagnoses and calculating a prevalence ratio by comparing the percentage of total lost work days to the percentage of lost work days for all employers. Conditions with a prevalence ratio greater than 1.5 are targeted for improvement. For example, the bar chart in ODG for ICD9 code 354.0, carpal tunnel syndrome, shows Impact on Total Absence: Prevalence 0.4321 % of total lost work days; Incidence 3.67 days per 100 workers. If the percent of total lost

work days for an employer were 1%, that would indicate a prevalence ratio of 2.31. This should trigger an examination of the causes and possible solutions, which might include ergonomic interventions to reduce incidences, or it might include use of evidence-based treatment guidelines to facilitate appropriate recovery and minimize excessive time off. This latter intervention would also be warranted for conditions receiving a poor grade in disability duration benchmarking.

Incidence and prevalence information is usually also compared using groups of diagnoses, either by combining conditions at the higher levels of ICD9 codes, or by linking them to Major Diagnostic Categories. For example, all ICD9 codes between 290 and 319 represent the Mental Disorders. Because this is an area that can represent a large and growing percentage of absence, it is helpful to compare an employer's own experience to the national norms, both in prevalence as well as disability duration, to identify some of the key drivers of absence.

## USING THE RESULTS

The results of the benchmarking techniques described above are usually presented in tables, with an accompanying narrative, for review by management. This is typically performed internally, or if the data sets are particularly large, the data analysis and presentation may be performed by benefits consulting firms or by the providers of the external data sources (e.g., Work Loss Data Institute.)

ICD9	Grade	Reimbursement	Score	Pass	Net	Loss Ratio
M1001	B	0.0	\$134,460		\$107,518	\$13,947
M1002	A	1	\$487,889		\$467,889	\$0
M1003	B	0.0	\$1,230,542		\$1,114,659	\$115,884
M1004	C	0.8	\$1,986,333		\$2,100,666	-\$114,333
M1005	D	0.7	\$87,412		\$68,139	\$19,273
M1006	A	1	\$1,000,412		\$1,000,412	\$0
M1007	B	0.0	\$45,739		\$41,208	\$4,531
M1008	B	0.0	\$795,873		\$718,713	\$77,160

ODGHS NLS: Used with permission of NLS.

Table4  
Managed Care Organization Reimbursement Based on Return-to-Work Benchmarks: Work Loss Data Institute Vendor Reimbursement Report for Client Y (using nonproprietary data)

Table 3 is an example from a report. This table shows outcomes by ICD9 Diagnosis Code for the Top 10 conditions, including columns for the client's experience in number of claims and total days of absence, compared with two columns from the ODG Summary Guidelines, the At-Risk number of days and the Midrange number of days of absence. Then an ODG Grade is shown, both percentile and letter grades. The next two columns show the number of cases that are Outliers (defined as exceeding the At-Risk days) and the percentage of these cases to the total number of cases (where 10% is the standard which defines the At-Risk days). Finally, there is a prevalence column that shows percent of total lost work days represented by each diagnosis for this client, and a comparison of the client's prevalence to the overall prevalence based on the Work Loss Data Institute national database.

The Figure is an example bar chart prepared for top management at a major U.S. Fortune 500 manufacturer, showing relative performance by plant in medical absence compared to the national norms in ODG, using percentage grades. As can be seen in the chart, there was great variation, from a negative grade for plant D (which would have been a grade of F), to an 82% for plant B (which would have been an A). These measures are currently part of the evaluation and bonus structure for plant line management.

Table 4 is an example of a table used by a state workers' compensation authority to determine relative reimbursement levels to managed care organizations based on how they perform relative to national norms in RTW. This shows that the fourth organization could have received an additional \$796,667 if they had received a grade of A instead of C.

Benchmarking is also used to compare state-by-state workers' compensation outcomes. The latest State Report Cards Study (Work Loss Data Institute, 2004) is used to evaluate different states as well as different managed care techniques used by each state. Table 5 shows each state along with its ultimate grade in the latest study.

## CONCLUSIONS

A case has been made for benchmarking medical absence. The resources available to assist in the benchmarking effort have been presented and the methods and formulas for deriving and presenting the results have been explained. The primary roles of the occupational health nurse in benchmarking are the promotion and restoration of health, prevention of illness and injury, and protection from work-related and environmental hazards. The keystone of this role is to keep workers employed, notwithstanding their health deficiencies or their handicaps.

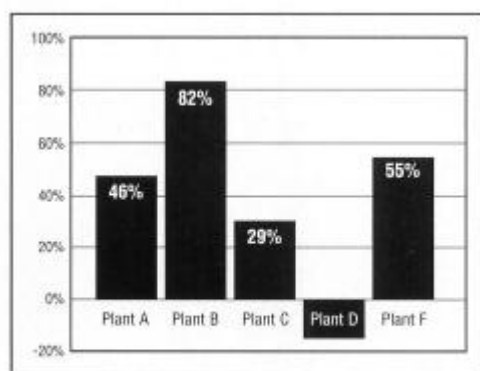


Figure. Comparative plant return-to-work performance, 2003.

Figure. Comparative plant return-to-work performance, 2003.

Alabama (AL)	A	Missouri (MO)	B-	New Mexico (NM)	D
Arizona (AZ)	A	Missouri (MO)	B-	North Carolina (NC)	D
Arkansas (AR)	A	Nebraska (NE)	B-	North Dakota (ND)	D
California (CA)	A	Nevada (NV)	C+	Oklahoma (OK)	D
Colorado (CO)	A	New Hampshire (NH)	C	Rhode Island (RI)	D-
Connecticut (CT)	A-	New Jersey (NJ)	C	Texas (TX)	D-
Delaware (DE)	A-	New York (NY)	C	Utah (UT)	F
Florida (FL)	A-	Ohio (OH)	E	Virginia (VA)	F
Georgia (GA)	A-	Oklahoma (OK)	E	Washington (WA)	F
Idaho (ID)	A-	Pennsylvania (PA)	E	West Virginia (WV)	F
Illinois (IL)	A-	Rhode Island (RI)	E	Wisconsin (WI)	F
Indiana (IN)	A-	South Carolina (SC)	E-		
Iowa (IA)	A-	South Dakota (SD)	E-		
Kansas (KS)	B				
Kentucky (KY)	B				
Louisiana (LA)	B				
Maine (ME)	B				
Maryland (MD)	B				
Massachusetts (MA)	B				
Michigan (MI)	B				
Minnesota (MN)	B				
Mississippi (MS)	B				
Montana (MT)	B				
Nebraska (NE)	B				
Nevada (NV)	B				
New Hampshire (NH)	B				
New Jersey (NJ)	B				
New Mexico (NM)	B				
New York (NY)	B				
North Carolina (NC)	B				
North Dakota (ND)	B				
Ohio (OH)	B				
Oklahoma (OK)	B				
Oregon (OR)	B				
Pennsylvania (PA)	B				
Rhode Island (RI)	B				
South Carolina (SC)	B				
South Dakota (SD)	B				
Texas (TX)	B				
Utah (UT)	B				
Virginia (VA)	B				
Washington (WA)	B				
West Virginia (WV)	B				
Wisconsin (WI)	B				
Wyoming (WY)	B				

Table 5  
State Report Cards for Workers' Compensation

Does the "business" of benchmarking help to fulfil the code of ethics and standards of practice assumed by the occupational health nurse? The answer is yes. Using the benchmarking tools presented in this article can assist the occupational health nurse in all 11 Standards of Practice outlined by the AAOHN, whose mission is to advance the profession of occupational health nursing:

- \* Ethics.
- \* Planning.
- \* Research.
- \* Diagnosis.
- \* Evaluation.
- \* Assessment.
- \* Collaboration.
- \* Implementation.
- \* Resource management.
- \* Outcome identification.
- \* Professional development.

Without the ability to understand and compare what is achievable in stay-at-work or RTW, there is ineffective case management and little or no planning or accountability. As such, workers are often caught in a downward disability spiral, best described by Christian (2004) as "system-induced disability." Ill or injured workers, for lack of effective management, are allowed to atrophy out of the workplace, far longer than statistically or medically necessary, resulting in workers believing they are more seriously injured or ill than is the case. Unnecessary absence from the workplace has increasing detrimental repercussions, impacting the quality of life of workers and families, the economy, and society in general. The value of benchmarking as a tool for managing, assisting, and maintaining employment of the ill or injured worker cannot be overstated. It is the obligation of the occupational health nurse to understand and use the resources at hand to identify potential hazards, prevent accidents, and restore gainful employment in a safe and timely manner. Benchmarking can make a difference in fulfilling that obligation.

The same techniques fulfil an equally important obligation assumed by the occupational health professional to their employer-maximizing employee productivity and reducing costs through lowered disability claims, fewer on-the-job injuries, and improved absentee rates. The health of the employee and the health of the employer's bottom line are connected and the occupational health nurse is pivotal in improving and maintaining the health of both.

## **IN SUMMARY**

1. Occupational health nurses are in a unique position to influence medical absence costs through their focus on health promotion and restoration.
2. Corporate management looks to occupational health nurses to maximize employee productivity and reduce costs through lowered disability claims, fewer on-the-job injuries, and improved absentee rates.
3. Benchmarking provides the occupational health nurse with the diagnostic tools to measure and manage productivity, demonstrate results, and justify the resources needed to accomplish desired outcomes.
4. Benchmarking assists the occupational health nurse in all standards of practice outlined by the AAOHN: Assessment, diagnosis, outcome identification, planning, implementation, evaluation, resource management, professional development, collaboration, research, and ethics.

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