

## New Tool for Return-to-Work Expectations

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### Introduction

The possibility of accurately predicting the length of disability for a complicated injury or illness should interest anyone involved in managing or measuring short term disability (STD), long term disability (LTD), and workers' compensation (WC) cases. It is well known that the longer a disability continues, the lower the probability of recovery and return to work. Manage early and often would be an ideal tactic if one could know which treatable cases, left to their own, are likely to move beyond the pale of recovery.

While some predictive technologies are used to evaluate actuarial data, others are designed for those who have a case-by-case interest in outcomes. It is the case-by-case tool that applies to nurse case management. These users will benefit from being familiar with this new type of tool that helps predict the time it will take for an individual to return to work. This new approach, made possible by the analysis of extensive disability case data, allows the user to submit specific demographic and medical details and get in return a specific estimated time of recovery.

Generically, the tool may be referred to as a predictive index. It takes the particular information concerning an absence--such as sex, age, location, and comorbidities--and provides an expected disability duration that reflects what similar absence profiles have involved.

Over the last twenty years, one standard way of estimating the trajectory of an absence has been to refer to static return-to-work guidelines. These have proven to be very useful, particularly for uncomplicated cases. However, once a case involves more than one diagnosis or involves uncommon demographic factors, the static guidelines, by design, cannot provide the likely timeline. For such cases, a predictive index may be extremely helpful.

An overview of the sort of variables that can be entered into a predictive index will demonstrate the power of this dynamic approach.

Demographic information such as age and sex will influence a disability duration, but not always as one would expect. Sometimes increased age may increase the recovery period for a certain diagnosis, but it may also decrease it, reflecting, on one hand, the work ethic and tolerance typical of the older age group and, on the other hand, the fact that some diagnoses such as osteoarthritis that are common for older employees are more disruptive when affecting a younger employee.

Job classification (physical exertion requirements) for a given employee's work significantly affects return to work at full capacity, particularly for musculoskeletal problems, as well as for any condition that weakens the individual.

Similarly the geographic location may affect the level of care, particularly for areas that are quite rural, limiting the access to healthcare specialists.

Finally, whether the basis for comparison consists of STD cases or WC cases can be significant. A 54-year-old male suffering from osteoarthritis would have about 50 days more work loss, on average, if his case were managed under WC, than if it were managed under an STD program. Concerning this difference, we will return at the end of this article to the role of psycho-social factors, and how a predictive index can highlight that role.

The importance of calculating comorbidities and/or co-existing diagnoses into the projected return-to-work date is obvious. If the individual also suffers from diabetes, respiratory problems, or depression--

to name some common comorbidities--the normal recovery time will often be more than doubled. Having a more accurate, non-optimal return-to-work date allows nurse case managers to flag the case from the outset in order to give the individual any additional attention that might circumvent some of the typical delays.

### Predictive Index Example

An example from actual disability case data will illustrate how a predictive index can prepare the nurse case manager or disability specialist for the likelihood of an extended absence. In this case, a 70-year-old, male technician with a physically demanding job suffered from ICD-9-CM 722.52, Lumbar or Lumbosacral Disc Degeneration. If that had been the sole diagnosis and all had gone well, the technician may have returned to work within 42-91 days<sup>1</sup>. Instead, the technician returned in **210** days.

If the case had been subjected to the predictive index, the following results would have been available the day the case opened (because from the outset three coexisting diagnoses were noted):

Technician	If only primary diagnosis	Surgical treatment (81.61 - Fusion or Refusion of 2-3 Vertebrae)	Co-existing diagnosis (724.2 - Lumbago)
722.52 - Lumbar or Lumbosacral Disc Degeneration	84.1 days	+ 6.8 days	+ 7.2 days
Age 70	17.1 days	(increased to 20.7)	(increased slightly)
Male	1.0 days	(increased slightly)	(increased slightly)
Very Heavy Job Class	15.1 days	(increased slightly)	(increased slightly)
<b>Total</b>	122.6 days	137.5 days	144.8 days

### Analysis and Psycho-social Factors

The predicted index of **145** days falls short of the actual work loss of about **210** days, but still comes **54** days closer to the longest estimate that would be provided by the static duration guideline (i.e. **91** days). With the expectation of the additional **54** days, the employer can provide a more adequate replacement resource for the job duties, and the nurse case manager can give the employee a realistic target to work toward.

The number of days unaccounted for by the index--the difference between the predictive index of **145** and the real duration of **210**--is **65** days. These **65** days may arise from the principle that the longer the period of work loss, the slower the recovery, and/or they may arise from additional medical complications. To the extent the unaccounted for days have no attributable medical cause, they can be said to arise from a variety of psycho-social factors. And this cluster of non-medical influences deserves attention.

<sup>1</sup> Using the very heavy job class for 722.52, this is the span for Optimum to Maximum on [www.mdguidelines.com](http://www.mdguidelines.com), which hosts its "Predictive Model," a leading example of predictive index tools.

According to an article entitled "Predicting Return to Work with Data Analytics," the prevalence of mental health disorders is on the rise:

Psycho-social factors now play an increasingly larger role in long-term disability; during the 1990s, the incidence rate of mental-nervous claims almost tripled. New diagnoses such as fibromyalgia have appeared on the scene. Clinical depression has become an accepted, treatable disease. Work absences no longer carry the stigma it once did. Today, co-morbid conditions are more prevalent, and diagnoses are more complex.<sup>2</sup>

To this description, which focuses mainly on the psychological issues, one can add the social elements that range from personal attitudes toward work and family life to the workplace culture and benefit structures--all which can act as hindrances to employee productivity.

As an experiment, if we look back to the predictive index for this particular case, we can re-assign the case from being measured against STD data to WC data. When WC data is used to provide the data for the case, the total is **188** days, much closer to the actual time scale of **210** days. WC recovery periods are typically longer, illustrating an area where enough data exists to accurately predict the effects of two different benefit structures. While many psycho-social factors are harder to document, they are worth documenting, so that further developments in the predictive index can reflect the probable effects if no intervention occurs.

In our example, whether one used the STD value or the WC value, a realistic return-to-work date could have been offered to the employee with the advantage of giving him a goal within his reach, the pursuit of which might circumvent some of the unnecessary delays the actual case encountered.

For detailed information and discussion points background contact Louis Burkhardt, at: [lburkhardt@reedgroup.com](mailto:lburkhardt@reedgroup.com).

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<sup>2</sup> Senensky, Barry, and Jonathan Polon. "Predicting Return to Work with Data Analytics – The Science of Disability Insurance Predictive Modeling." *ClaimAnalytics*. 19 Oct. 2010  
<[http://www.claimanalytics.com/return\\_to\\_work.html](http://www.claimanalytics.com/return_to_work.html)>.