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Selecting Management System Metrics

For Best Results, Aim Before You Fire

BY THEA DUNMIRE

At its core, a management system consists of processes established to achieve the outcomes you want. The outcomes you want to achieve are referred to as "intended outcomes" in the International Organization for Standardization's (ISO) management system standards.

The effectiveness of an OHS management system cannot be determined solely by the injury and illness rates.

PLAN, DO, CHECK, ACT

What the ISO management system standards add to this basic concept is a prescribed sequence in which these processes should be structured to achieve optimum results. This prescribed sequence is the concept of PDCA (Plan, Do, Check, Act):

- First, you plan what you need to do to achieve the desired outcomes.
- Then, you do what you planned.
- Then, you check whether your actions have accomplished what you wanted.
- Finally, based on what you discovered, you act to refine and improve your processes.

The key to improving your intended outcomes is to make incremental changes by applying the PDCA concept over and over again. In this manner, you improve the processes that have been established to achieve the outcomes you want.

In other words, you use the approach of "Ready-Aim-Fire," and then you evaluate how close you came to hitting the target before trying again. You do not use the approach of "Ready-Fire-Aim" and then hope for the best. One of the keys to success is assessing your previous attempt so you can improve your aim the next time.

We often use a PDCA approach in our daily lives to accomplish our personal goals, such as improving one's golf score or losing weight. First, you plan and implement a process change, such as trying a new golf swing or a better diet strategy. Then, based on the results obtained, you make adjustments so you can achieve improved results next time.

An important limitation is that whenever you have a complex system, you cannot guarantee outcomes. This is particularly the case when humans are involved:

- You can hit a perfect golf swing, and the ball can take an unexpected bounce.
- You can create a great product, but you can't guarantee customer satisfaction.
- You can implement a fabulous fitness routine, but you can still get sick.
- You can implement the best safety programs, but you can't guarantee zero injuries.

CHOOSING APPROPRIATE PERFORMANCE INDICATORS

Every management system has two focuses: a process focus and an outcome focus. To evaluate the performance of an OHS management system, you need to have both process metrics and outcome metrics.

How do you decide which process metrics or outcome metrics to use?

To come up with the right performance indicator (a metric), you need to first determine what question you want answered. You need to decide the purpose for which a particular performance indicator is to be used and by whom. Outcome metrics are clearly linked to results but are often misleading in evaluating complex systems. Process metrics are often easier to develop and interpret but can be irrelevant to the outcomes you ultimately want to achieve.

USE OF OUTCOME METRICS

Many organizations almost exclusively focus on results (that is, outcome metrics) when it comes to safety. They calculate and compare lost work days and injury statistics. They use these statistics in their sustainability reporting and for measuring managerial performance. Outcome metrics are also used to determine audit and inspection frequency and to target OHS improvement initiatives.

Focusing exclusively on outcome metrics is appealing but does not necessarily indicate whether or not an OHS management system is effective. There are simply too many other factors that cause variation in injury statistics. These include differences in worker populations and variation in data collection and analysis methodologies. When different assumptions and methodologies are used for data

collection, the resulting measures can have very different meanings. There is also the element of chance inherent in any complex system. An organization with an excellent management system can have several recordable injuries; an organization with no management system can have zero recordable injuries.

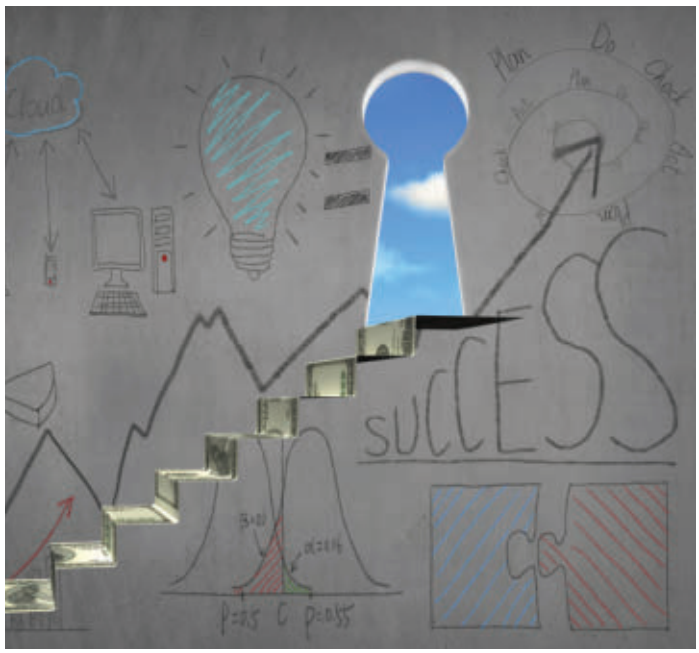
Using outcome metrics for evaluating OHS management systems is similar to using mortality rates to assess quality of healthcare. Mortality rates may provide useful information for establishing health policy; however, they may not provide a statistically sound means of evaluating the quality of care at particular healthcare facilities. Factors such as the patient type, patient health, severity of disease, availability of follow-up care, ability to conform to care instructions, and differences in data collection also have important effects on outcome rates.

USE OF PROCESS METRICS

One key to using process metrics is selecting the right ones. The performance being measured needs to be related to the desired outcomes. For OHS management, this means that what is being measured needs to make a difference in reducing injuries and ill health of workers. This is the most difficult part of selecting appropriate process metrics. The other key is choosing metrics where reliable data about the process can be collected and you have confidence this data will be collected in a manner that is usable for making objective decisions.

When properly selected, process metrics can be used to assess the adequacy and effectiveness of the OHS management system processes. For example, if there is a clear link between the competence of individuals in performing high-risk tasks and the occurrence of injuries, then a process metric linked to evaluating the competence of workers performing this work makes sense. An example of this would be work on energized equipment. The use of this metric would also depend on establishing clear and valid competence criteria to assess and interpret the results.

Healthcare provides another helpful example of process metrics. As discussed in a paper by Jonathan Mant published in the *International Journal for Quality in Health Care*, if taking an aspirin a day is shown to reduce the incidence of heart attacks, one can monitor whether a particular target population has, or has not, taken an aspirin a day. If the link between taking aspirin and preventing heart attacks is true, using this process metric to manage patient care should result in reduced heart attacks. The key, of course, concerns whether there is, in fact, a link between the action (taking aspirin) and the desired outcome (reducing heart attacks). If you are interested in reading additional examples of process metrics in healthcare, you can access the Mant paper at **http://bit.ly/healthcaremetrics**.



One of the complications in assessing OHS management systems is that many organizations are much more focused on achieving the intended outcome of compliance with laws and regulations than they are on the intended outcome of prevention of worker injury and ill health. This results in a disconnect when the process metrics being assessed—for example, fire extinguisher inspections—are not an important factor in causation of worker injury. It is important when establishing process metrics to be clear about which outcome one is hoping to affect. It can be important to have compliance metrics, but they need to be linked to the achievement of compliance outcomes.

The "checking" part of PDCA is a critical component of an OHS management system. It is as important as the "planning" and "doing" elements where organizations often focus the majority of their time and resources. If an organization wants to reduce worker injury and ill health, it needs to focus attention on developing sound process metrics. Just as the quality of healthcare cannot be assessed solely by mortality rates, the effectiveness of an OHS management system cannot be determined solely by the injury and illness rates. The key to an effective management system is choosing the appropriate process metrics for measuring performance—in other words, selecting those metrics where there is a clear connection to reducing injury and illness.