

Leading Indicators That Reveal the Real Health of Your Safety Culture



For decades, safety performance in many organizations has been measured by a familiar set of outcomes. Lost-time injuries, medical aid incidents, workers' compensation claims, and recordable injury rates dominate safety reports and executive briefings. These statistics are important. They provide historical data that helps organizations understand how often workers have been injured and whether injury trends are improving or deteriorating over time.

However, as safety science has evolved, regulators, insurers, and safety professionals have increasingly recognized that these statistics offer only a partial view of safety performance. They measure the consequences of failure, not the effectiveness of prevention.

By the time an injury appears in the statistics, something in the safety system has already broken down.

This realization has led many organizations to adopt a different approach to safety measurement. Rather than relying exclusively on incident rates, they are increasingly monitoring leading indicators—signals that reveal whether the systems designed to prevent injuries are functioning effectively.

For organizations seeking to benchmark their safety culture, leading indicators provide one of the clearest windows into the true health of the safety system.

Understanding the Difference Between Lagging and Leading Indicators

Traditional safety metrics such as lost-time injury rates are known as lagging indicators. They measure events that have already occurred. Because these indicators record past outcomes, they cannot warn organizations about emerging risks until after harm has already taken place.

Lagging indicators remain valuable because they allow organizations to track trends and identify patterns in injuries. However, their usefulness is limited when organizations attempt to assess the effectiveness of their preventive systems.

A workplace may report very few injuries for several years while underlying hazards continue to accumulate unnoticed.

The catastrophic explosion that destroyed the coal mine involved in the Westray Mine disaster demonstrated this dynamic with tragic clarity. The public inquiry led by Justice K. Peter Richard revealed that unsafe methane levels, inadequate ventilation, and production pressures had been present long before the explosion occurred. These systemic risks were not visible in injury statistics until the disaster claimed twenty-six lives.

Leading indicators seek to address this limitation by measuring the activities and behaviors that prevent incidents from occurring in the first place.

Rather than asking how many workers were injured last year, leading indicators examine whether hazards are being identified, whether supervisors are actively monitoring safety

conditions, and whether workers feel comfortable reporting risks.

These indicators shift the focus from reacting to incidents toward preventing them.

Hazard Reporting as a Cultural Signal

One of the most revealing leading indicators in any workplace is the frequency and quality of hazard reporting.

When workers actively report hazards, near misses, and unsafe conditions, the organization gains visibility into risks that might otherwise remain hidden. Each report represents an opportunity to correct a hazard before it results in injury.

However, the value of hazard reporting extends beyond the hazards themselves. Reporting patterns reveal a great deal about the organization's safety culture.

In workplaces where workers trust management to respond constructively to safety concerns, hazard reporting rates tend to increase. Workers believe that raising concerns will lead to meaningful corrective action rather than blame or discipline.

By contrast, in organizations where reporting is discouraged—either explicitly or indirectly—hazards may remain unreported. Workers may fear that raising concerns will be interpreted as criticism of supervisors or management.

Ironically, a workplace that reports very few hazards may actually have a weaker safety culture than one with frequent hazard reporting.

For OHS leaders benchmarking safety culture, the key question is not simply how many hazards are reported, but how the organization responds when they are reported.

If hazards are consistently investigated and corrected,

reporting becomes a powerful driver of continuous improvement.

Supervisor Safety Engagement

Another leading indicator that reveals the strength of a safety culture is the level of supervisor engagement in safety activities.

Supervisors occupy a critical position within the safety system. They translate policies into daily practice, reinforce expectations, and intervene when unsafe conditions arise.

When supervisors regularly interact with workers about safety issues—through informal conversations, job observations, or coaching—workers receive a clear message that safety is an operational priority rather than an administrative requirement.

Research into high-reliability organizations consistently shows that visible leadership engagement plays a significant role in preventing incidents. Workers are more likely to follow safety procedures when supervisors actively reinforce them.

Conversely, when supervisors appear disengaged from safety activities, workers may conclude that production pressures take precedence over safety expectations.

Regulators frequently examine this dynamic during workplace investigations. In prosecutions following serious incidents, investigators often ask whether supervisors were present, whether they enforced safety procedures, and whether they intervened when hazards became visible.

In the criminal negligence case *R v Metron Construction Corporation*, prosecutors demonstrated that supervisory oversight had been insufficient on the construction site where four workers died. The absence of effective supervision allowed unsafe practices to develop and ultimately contributed

to the fatal collapse of a swing stage.

This case illustrates why supervisory engagement is such a powerful leading indicator. When supervisors actively enforce safety standards, unsafe practices are far less likely to become normalized.

Corrective Action and Organizational Responsiveness

Another powerful leading indicator involves the speed and consistency with which organizations respond to identified hazards.

Every hazard report, inspection finding, or incident investigation produces an opportunity for corrective action. The effectiveness of these corrective actions provides insight into whether the safety management system is functioning properly.

If hazards remain unresolved for extended periods, workers may lose confidence in the reporting system. Over time, unresolved hazards can accumulate and create conditions that increase the likelihood of serious incidents.

By contrast, organizations that respond quickly to safety concerns reinforce a culture of accountability and trust.

Regulators often evaluate this dimension of safety performance during inspections. Investigators review maintenance records, inspection reports, and hazard logs to determine whether identified risks were addressed in a timely manner.

In several Canadian prosecutions following workplace fatalities, investigators discovered that hazards had been identified months or even years before the incident occurred but had not been corrected.

These failures often demonstrate systemic weaknesses in the

safety management system.

Tracking corrective action timelines therefore provides valuable insight into how effectively the organization responds to risk.

Worker Participation and Psychological Safety

A healthy safety culture also depends on active worker participation. Workers are often the first to encounter hazards, and their willingness to raise concerns plays a crucial role in identifying emerging risks.

Canadian OHS legislation recognizes the importance of worker participation through the concept of the internal responsibility system. This principle holds that employers, supervisors, and workers share responsibility for maintaining safe working conditions.

Joint Health and Safety Committees, required in many Canadian workplaces, serve as a central mechanism for worker involvement in safety decision-making.

However, formal structures alone do not guarantee meaningful participation. Workers must also feel psychologically safe when raising concerns.

Psychological safety refers to the belief that individuals can speak openly about problems without fear of retaliation or embarrassment. In workplaces where psychological safety is strong, workers report hazards more readily and participate actively in safety discussions.

Conversely, in environments where workers fear negative consequences for raising concerns, safety information may remain hidden.

This dynamic has played a role in numerous industrial

disasters around the world, including the explosion that destroyed the offshore drilling rig involved in the Deepwater Horizon oil spill. Investigations following the disaster revealed that several warning signs had been raised before the explosion but had not been adequately addressed.

For organizations benchmarking safety culture, worker participation provides a powerful indicator of whether the safety system is functioning as intended.

Using Leading Indicators to Benchmark Safety Culture

Organizations seeking to benchmark their safety culture should consider how these indicators function together.

Hazard reporting reveals whether risks are visible. Supervisor engagement shows whether safety expectations are reinforced. Corrective action timelines demonstrate how effectively the organization responds to emerging risks. Worker participation indicates whether employees feel empowered to contribute to safety improvements.

When these indicators function together, they create a dynamic safety management system capable of identifying and correcting hazards before injuries occur.

Importantly, leading indicators often improve before injury statistics change. An organization that strengthens hazard reporting, supervision, and corrective action processes may initially see more safety activity rather than fewer incidents.

Over time, however, these improvements typically reduce the likelihood of serious incidents.

In this sense, leading indicators function much like early warning signals. They reveal whether the safety system is functioning properly long before lagging indicators provide

confirmation.

Moving Beyond Incident Statistics

Incident rates will always remain part of workplace safety reporting. They provide useful historical context and can highlight long-term trends in injury patterns.

However, organizations that rely exclusively on these statistics risk overlooking deeper signals about the health of their safety culture.

Leading indicators provide a more dynamic and forward-looking measure of safety performance. They reveal whether workers are engaged, whether supervisors are enforcing standards, and whether hazards are corrected before they escalate.

For OHS leaders seeking to benchmark their organization's safety culture, these signals offer far more insight than injury statistics alone.

By examining how hazards are reported, how supervisors engage with workers, and how quickly corrective actions occur, organizations can begin to measure the true effectiveness of their safety systems.

In doing so, they shift the focus from reacting to past incidents toward preventing future ones.

That shift represents one of the most important developments in modern occupational health and safety management.