

## Health and Safety Programs

# Health and Safety Programs - Leading and Lagging Indicators

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## How do leading and lagging indicators apply to a health and safety program?

Within an occupational health and safety program, leading and lagging indicators can be used to monitor and improve workplace health and safety.

Evaluation and ongoing monitoring are important elements of any management process and form the basis for continuous improvement. Using lagging and leading indicators together will help provide a clearer picture of what is and is not working in your occupational health and safety program.

By establishing leading and lagging indicators and continuously monitoring the program's effectiveness, a workplace can provide evidence that everything reasonably practicable was done to ensure that appropriate measures were taken to prevent injury, illness, or damage to the environment, materials, and equipment. They can also help indicate improvements that can be made.

Leading indicators should be used to complement the more traditional outcome-based measures of lagging indicators. By using both types of indicators, workplaces can balance the limitations that come from both leading and lagging indicators.

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## What are leading indicators?

Leading indicators are proactive, preventative, and predictive measures taken to identify and eliminate hazards in the workplace. Leading indicators look forward to future health and safety performance with the goal of continually improving.

Workplaces can use leading indicators to determine the effectiveness of their health and safety programs and to highlight any issues that should be corrected before an incident occurs.

Examples of leading indicators include:

- Engagement in training programs and orientation
- Percentage of managers with occupational health and safety training
- Percentage of workers with health and safety training
- Frequency of health and safety meetings
- Frequency of ergonomic assessments
- Frequency of safety audits
- Workplace culture

When using leading indicators, it is important to make sure the metrics are based on **impact**. For example, instead of measuring the number and attendance of safety meetings and training sessions – measure the impact of the safety meeting and training by determining the number of people who engaged in the meeting and how many met the key learning objectives of the training.

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## What are the benefits and limitations of leading indicators?

Some benefits of using leading indicators include:

- Focusing on future safety performance and continuous improvement.
- Assisting in proactively identifying and understanding the factors that affect the risk of injury and illness and how to prevent them.
- Connecting key performance indicators to specific health and safety program goals.
- Increasing accountability for goals, whether it is through compliance, improvement, or continuous learning.

Some limitations of using leading indicators include:

- Lacking understanding and experience around how to identify, apply, and benefit from leading indicators.

- Allocating sufficient resources for the initial setup and measurement of leading indicators.
  - Requiring adequate support from upper management.
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## What are lagging indicators?

Lagging indicators are a record of what has happened. They look back and measure a company's health and safety performance by tracking incident statistics such as:

- Injury frequency and severity
- Lost time injuries
- Incidents (including property damage, environmental spill)
- Near-misses and close calls
- Workers' compensation costs

These metrics are used to evaluate the overall past effectiveness of your workplace health and safety program. The numbers tell you how many people got hurt and how badly. As they are looking retroactively, they are reactive in nature.

Be sure to look at a number of factors. For example, when an employer sees a low rate of lost time injuries over the last 6 months, they may believe that they do not have a safety issue, when there may have been double the number of near misses over that time. This low rate of lost time injuries could mislead the employer to believe that there are no health and safety issues that may contribute to a future increase in lost workdays.

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## What are the benefits and limitations of lagging indicators?

Some benefits of using lagging indicators include:

- Assisting in the identification of safety trends over time. This trend is a signal that improvements are needed in the workplace safety system.
- Demonstrating historic trends over the years to see if there are certain months or times that may have higher injury rates so that appropriate action can be taken.
- Benchmarking and compiling safety statistics for comparison across many industries.
- Using standard calculations for injury frequency rates that are widely accepted and understood.

Some limitations of using lagging indicators include:

- They do not reveal whether an organization will be effective at preventing incidents.
- Only report on what has already happened – they ‘lag’ behind.
- There is a gap in time between the event and when the outcomes are measured. It takes time to show when a desired safety outcome has failed, or when a health and safety objective has not been achieved.
- Results in the implementation of reactive rather than proactive measures.

Another important consideration when it comes to trends is that many workplaces have too few injuries to be able to distinguish real trends from random occurrences, and there is also the possibility that not all incidents or injuries are reported.

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## How are leading and lagging indicators used in hazard identification and risk assessment?

Using lagging and leading indicators together will help provide a better understanding of what is and is not working in your occupational health and safety program. Every organization and workplace is unique, so it is important to determine which indicators will provide you with the best information.

Leading indicators can be used proactively to identify and control hazards in the workplace. By allowing for a continuous improvement process, the workplace can identify hazards before an incident.

Lagging indicators can be used during risk assessments to assign probability and severity of occurrence from past events and incidents. Lagging indicators can also evaluate the effectiveness of controls by monitoring trends after workplace modifications.

For example, if a leading indicator is training, and more employees and managers are trained on the importance of indoor air quality and hazards associated with poor indoor air quality, the workplace can proactively address potential hazards such as furnace maintenance or excessive condensation on windows, and develop preventive maintenance programs. To make sure that preventive maintenance is working, lagging indicators such as reports of poor indoor air quality or trends in employee complaints can be monitored.

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## Where can I get more information?

More information is available from:

- [Leading Indicators for Workplace Health and Safety: A user guide](#) prepared by the Government of Alberta.

- [Using Leading Indicators to Improve Safety and Health Outcomes](#) prepared by the Occupational Safety and Health Administration (OSHA) US.

\*We have mentioned these organizations as a means of providing a potentially useful referral. You should contact the organization(s) directly for more information about their services. Please note that mention of these organizations does not represent a recommendation or endorsement by CCOHS of these organizations over others of which you may be aware.

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