

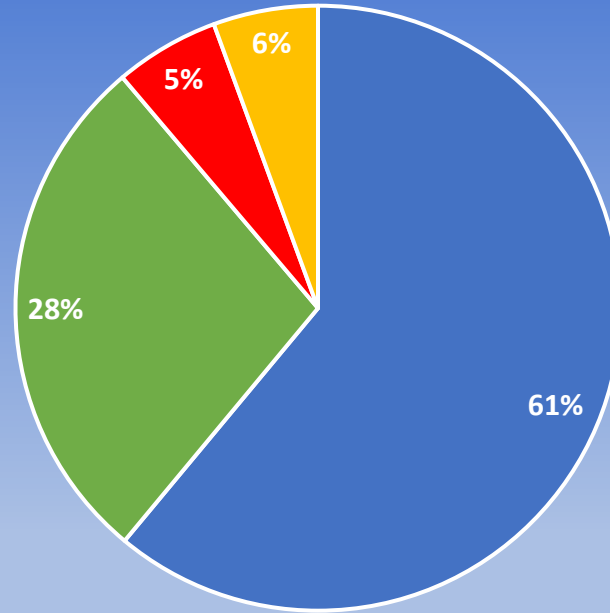
Using Leading Indicators to Drive EHS Performance

Brian Wanzonried

Gavilon

Leading Indicators

Importance of Measuring EHS Performance Using Leading Indicators



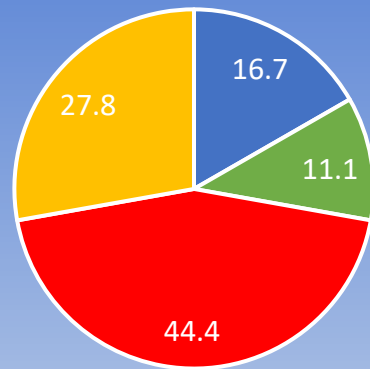
■ Extremely Important ■ Very Important ■ Moderately Important ■ Slightly Important

Leading Versus Lagging

- **Lagging:** Retrospective, incidents that have occurred
- **Leading:** Predictive and forward looking and directly controllable
- **Near misses**

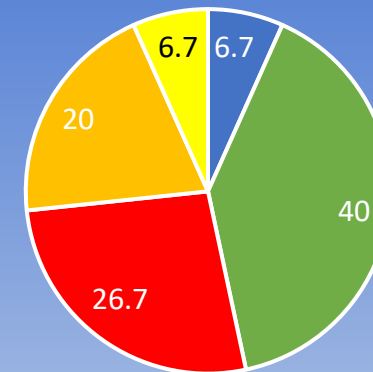
Leading Versus Lagging Indicators

The Use of Leading and Lagging Indicators to Measure EHS Performance - Corporate Level



- Only Lagging Indicators
- Mostly Leading Indicators With Some Lagging Indicators
- Mostly Lagging Indicators With Some Leading Indicators
- Equal Balance Between Lagging and Leading Indicators

The Use of Leading and Lagging Indicators to Measure EHS Performance - Site Level

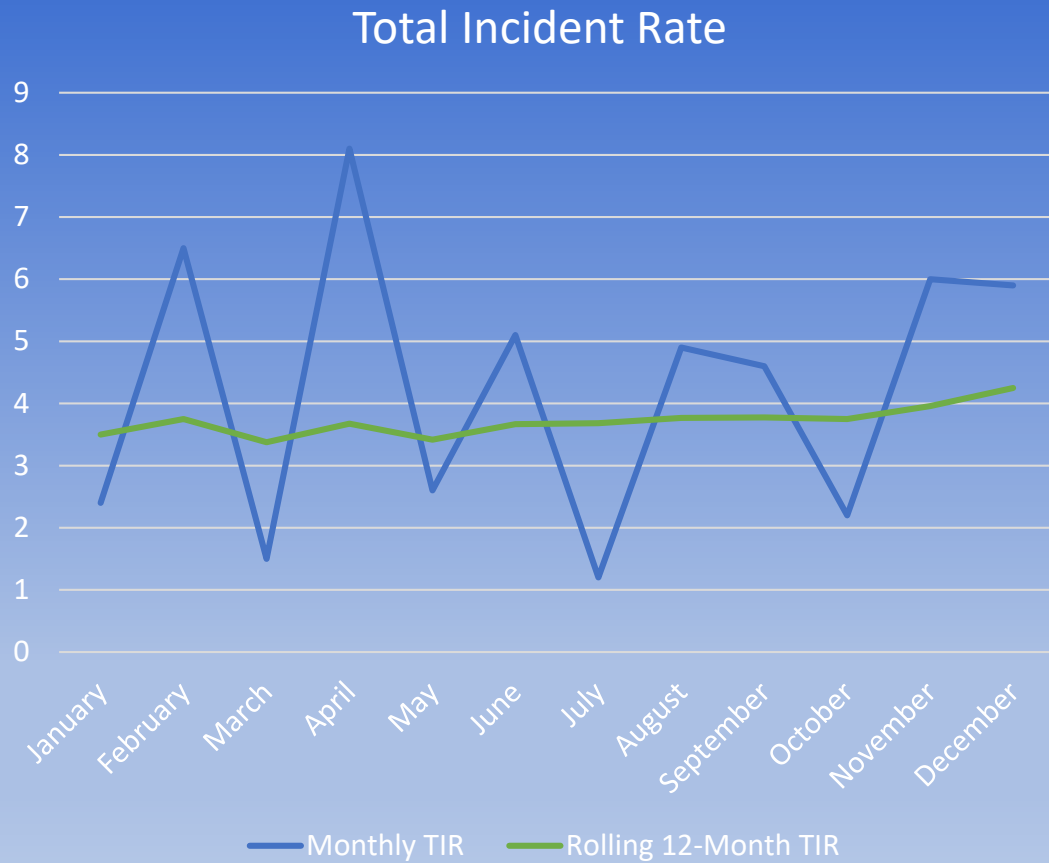


- Only Lagging Indicators
- Mostly Leading Indicators With Some Lagging Indicators
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- Equal Balance Between Lagging and Leading Indicators
- Only Leading Indicators

Lagging Indicators

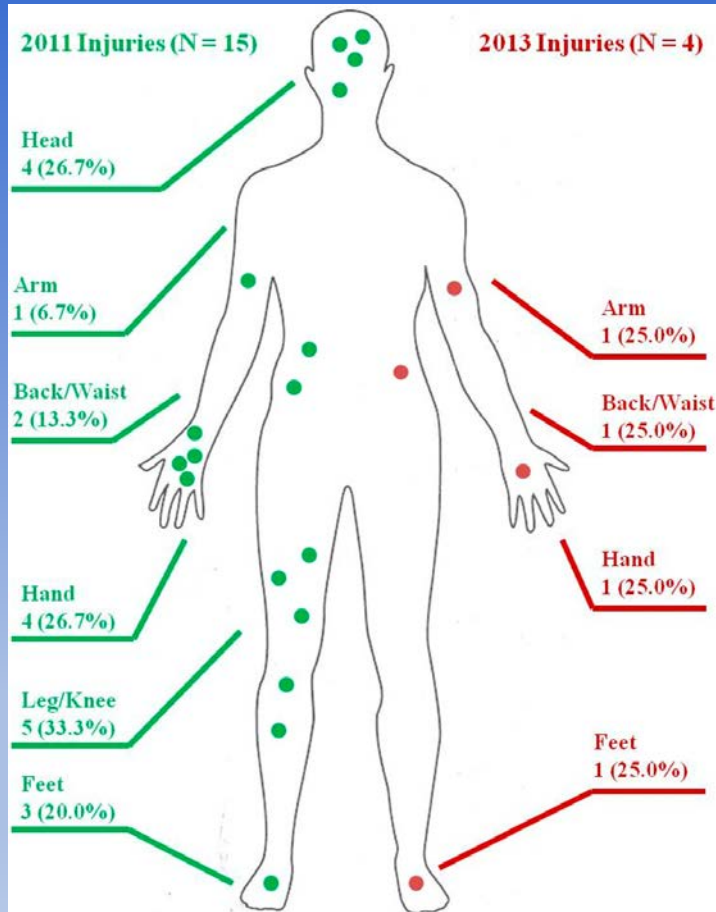
- Total incident rate
- Other accidents or incidents
- Spills and releases
- Violations

Lagging Indicator Issues



- Insufficient data

Lagging Indicator Issues



- Don't identify cause of issue

Lagging Indicator Issues

- Safety incentive programs

October 11, 2018

MEMORANDUM FOR: REGIONAL ADMINISTRATORS
STATE DESIGNEES

THROUGH: AMANDA EDENS
Director
Technical Support and Emergency Management

FRANCIS YEBESI
Acting Director
Whistleblower Protection Programs

FROM: KIM STILLE
Acting Director
Enforcement Programs

SUBJECT: Clarification of OSHA's Position on Workplace Safety Incentive Programs

Leading Indicators Defined

Proactive, preventative, and predictive measures that monitor and provide current information about the effective performance, activities, and processes of an EHS management system that drive the identification and elimination or control of risks in the workplace that can cause incidents and injuries.

Source: Transforming EHS Performance Measurement Through Leading Indicators, Campbell Institute, National Safety Council, 2013

What Leading Indicators Do

- Monitor and evaluate performance
- Motivate behavior, commitment, and improvement,
- Anticipate, prevent or eliminate risks and losses

Leading Indicators Examples

Task

- Audits
- Behavioral based safety observations
- Corrective actions and recommendations
- Employee involvement
- Inspections
- Investigations
- Management engagement activities
- Meetings
- Perception surveys
- Preventive maintenance
- Training

Measurement

- Frequency
- Number of or percent of participants
- Number or percent completed
- Number or percent completed on-time
- Time spent

Example Leading Indicators

Honeywell

- **Indicators:**
 - Unsafe behaviors and conditions
- **Results:**
 - 108 recordable injuries in 2010
 - 54 recordable injuries in 2013
 - 100% increase in observations

Fluor

- **Indicators:**
 - Management participation in worker orientation, site walkthroughs, etc.
- **Results:**
 - Initial low scores addressed by senior leadership
 - Management participation now highest score based on audits

Example Leading Indicators

OSHA Inspection and Clearing of Walkways

- **Problem:**
 - Slip, trip and fall incidents
 - Cluttered floors
- **Indicator:**
 - Frequency of floor inspections and cleaning
- **Goal:**
 - Daily

OSHA Hazard Prevention and Control

- **Problem:**
 - Past due action items
- **Indicator:**
 - Percentage of past due action items
- **Goal:**
 - Less than 10% past due

Identifying Your Leading Indicators

- **What indicators**
 - Goals and objectives
 - Intended audience
 - Already measured
- **How many**

Identifying Your Leading Indicators

- Use SMART
 - Specific
 - Measurable
 - Accountable
 - Reasonable, and
 - Timely

Training and Communication

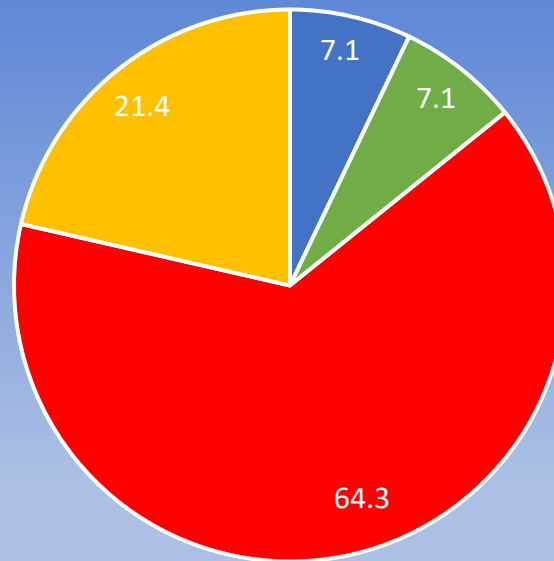
- Who gathers leading indicator data?
- How often will you gather data?
- What do metrics mean?
- What will be done with results?
- How will you disseminate information and how often?

Evaluating Leading Indicators

- Rethink metrics
- Correlation with lagging indicators

Evaluating Leading Indicators

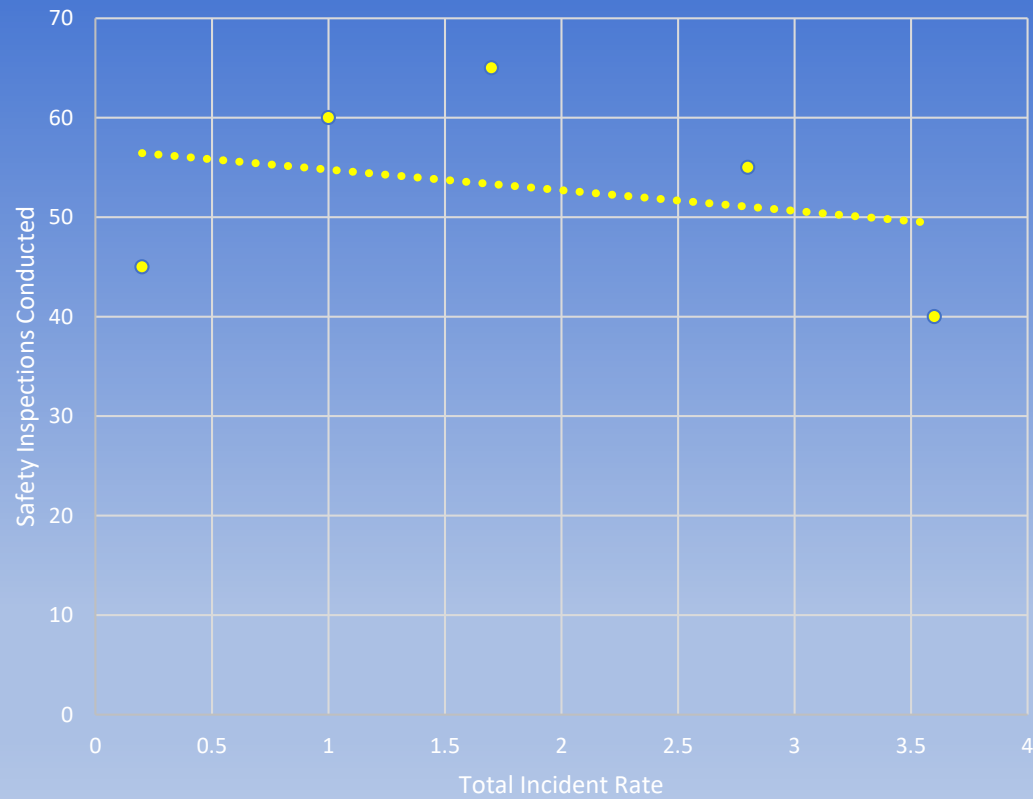
Importance of Linking Performance on Leading Indicators to Changes In Lagging Indicators



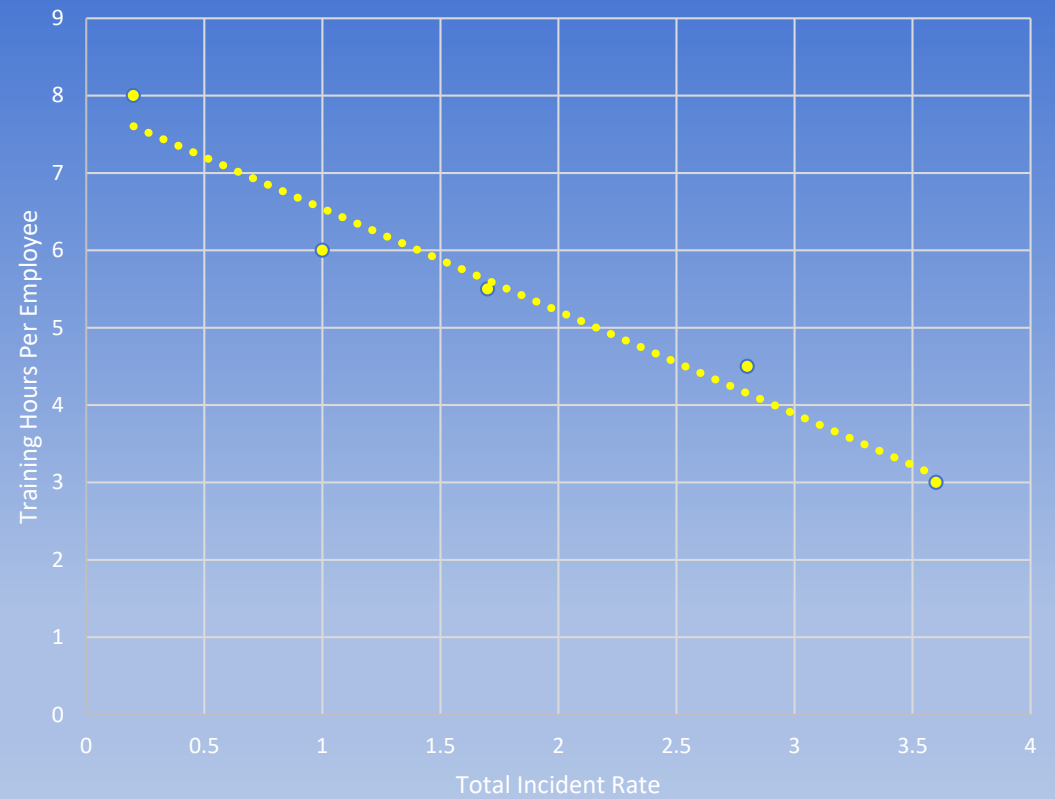
■ Slightly Important ■ Moderately Important ■ Very Important ■ Extremely Important ■

Leading Versus Lagging Indicator Correlation

Total Incident Rate Versus Inspections



Total Incident Rate Versus Training

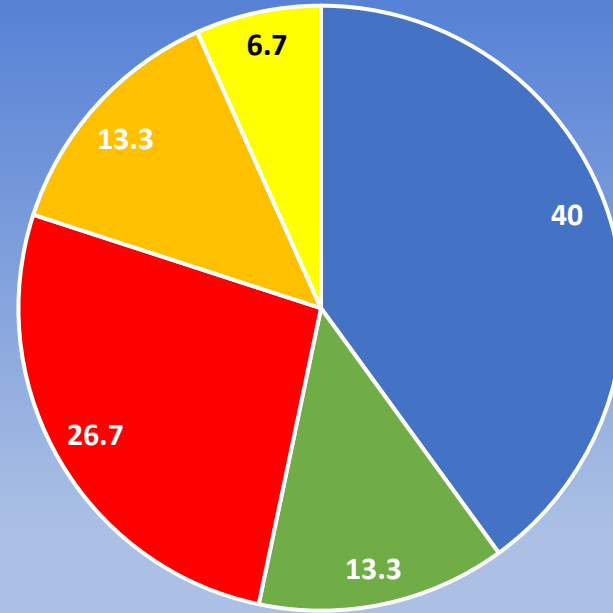


Performance Management

- Drives results
- Shows leadership commitment
- Requires fairness and communication of expectations

Leading Indicator Compensation

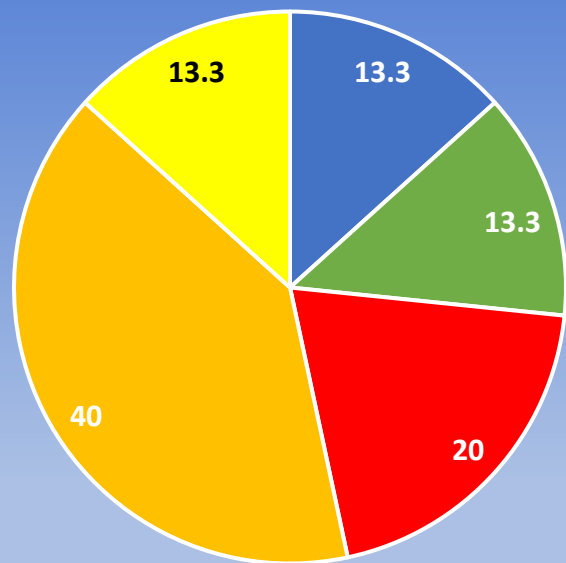
Extent to Which Executive Compensation is Tied to Leading Indicators



■ Not at All ■ Very Little ■ Some ■ Quite a Bit ■ A Great Deal

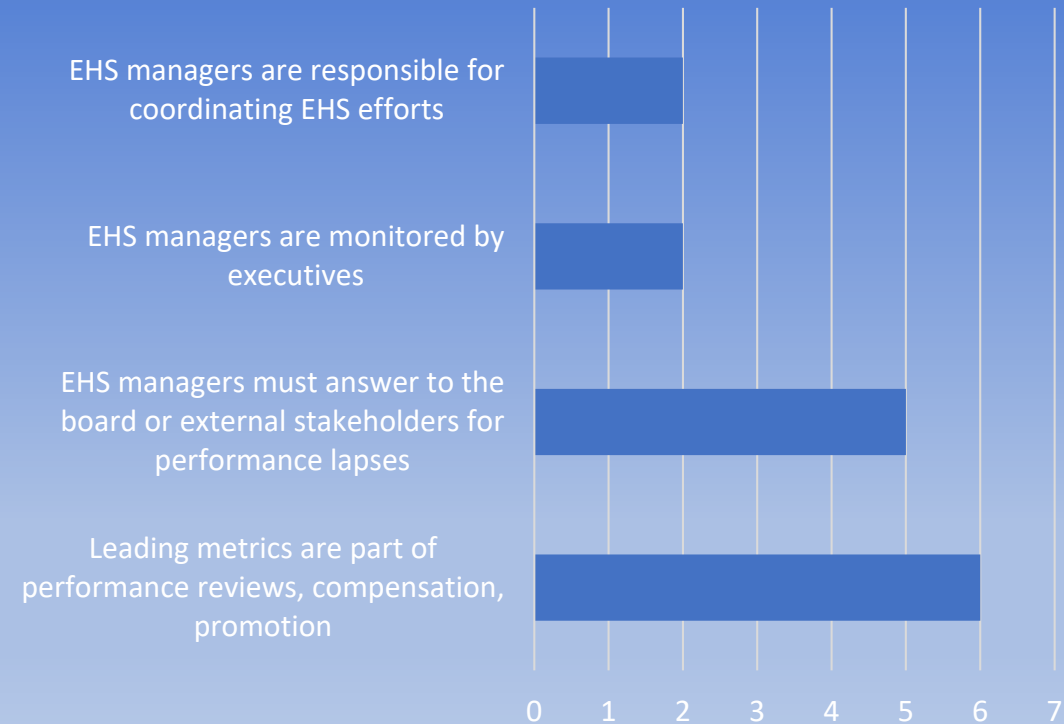
Leading Indicator Compensation

EHS Professional's Accountability for Performance of Leading Indicators



■ Not at All ■ Very Little ■ Some ■ Quite a Bit ■ A Great Deal

How EHS Managers Are Held Accountable for Leading Indicators



Additional Information

- [Breaking Up with Lagging Indicators, EHS Today Magazine, Cory Worden, March 15, 2016](#)
- [Does Your Incentive Program Meet OSHA's Draft Safety and Health Program Management Guidelines](#)
- [A GPS For Safety, Terry Mathis, EHS Today, November 1, 2019](#)
- [Elevating EHS Leading Indicators: From Defining to Designing, Campbell Institute, National Safety Council, 2015](#)
- [Guidelines for Process Safety Metrics, Center for Chemical Process Safety, Wiley, New York 2010](#)
- [Leading vs Lagging Indicators: What's the Difference?](#)
- [Practical Guide to Leading Indicators: Metrics, Case Studies and Strategies, Campbell Institute, National Safety Council, 2017](#)
- [Transforming EHS Performance Measurement Through Leading Indicators, Campbell Institute, National Safety Council, 2013](#)
- [Using Leading Indicators to Improve Safety and Health Outcomes , Occupational Safety and Health Administration, June 2019](#)

Questions?