INTELEX

INSIGHT REPORT

Turning EHS Data Collection into Meaningful Action

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Introduction

In the rapidly evolving field of occupational safety management, there is an abundance of data generated from various activities. Workplace inspections, safety audits, near-miss reports, incident investigations, training sessions, and compliance checks create a continuous stream of information. Advanced technologies such as sensors, wearable devices, mobile apps, and integrated software platforms have simplified the process of capturing metrics, populating dashboards, and producing detailed reports. This surge of data promised a transformation in safety management, allowing organizations to predict hazards, proactively manage risks, and make evidence-based decisions in real time.

However, for many organizations, this vision has not yet been realized. While data collection has improved significantly, translating that information into actionable insights often proves challenging. Safety professionals frequently find themselves inundated with sprawling spreadsheets, disconnected systems, and compliance-driven reports that fail to answer a crucial question: What does this data reveal that we didn't already know? Consequently, there is a persistent gap between the promise of data-driven safety and the reality of information overload, where raw data accumulates faster than meaningful insights can be extracted.

This report offers a comprehensive roadmap for safety professionals and organizational leaders. It highlights the difference between data collection and insight, identifies the challenges organizations face in moving beyond metrics, and outlines actionable steps to convert information into narratives that drive change. By emphasizing purpose, integration, and collaboration, safety leaders can transition from merely collecting data to fostering a culture of shared accountability, proactive risk management, and sustained safety improvement. This journey from data to insight is not solely about technology; it is about empowering individuals to act decisively and collaboratively.

The Data Trap: Why Collection Isn't Enough

The belief that more data inherently leads to better safety outcomes is deeply ingrained in many organizations. Dashboards filled with colorful charts, meticulously completed forms, and comprehensive audit logs create an impression of maturity and diligence. However, without purpose, analysis, or context, this data becomes "digital clutter," which can be a liability rather than an asset.

Many safety programs fall into the trap of amassing data without a clear goal. Often, it's driven by compliance requirements or the assumption that more information equals greater control. This approach yields little value. Safety managers dedicate hours to populating dashboards and generating reports, only to find these efforts confirm known issues without offering new solutions.

The critical question "how does this data help us reduce risks, engage workers, or prevent incidents?" remains unanswered.

The Consequences of Directionless Data

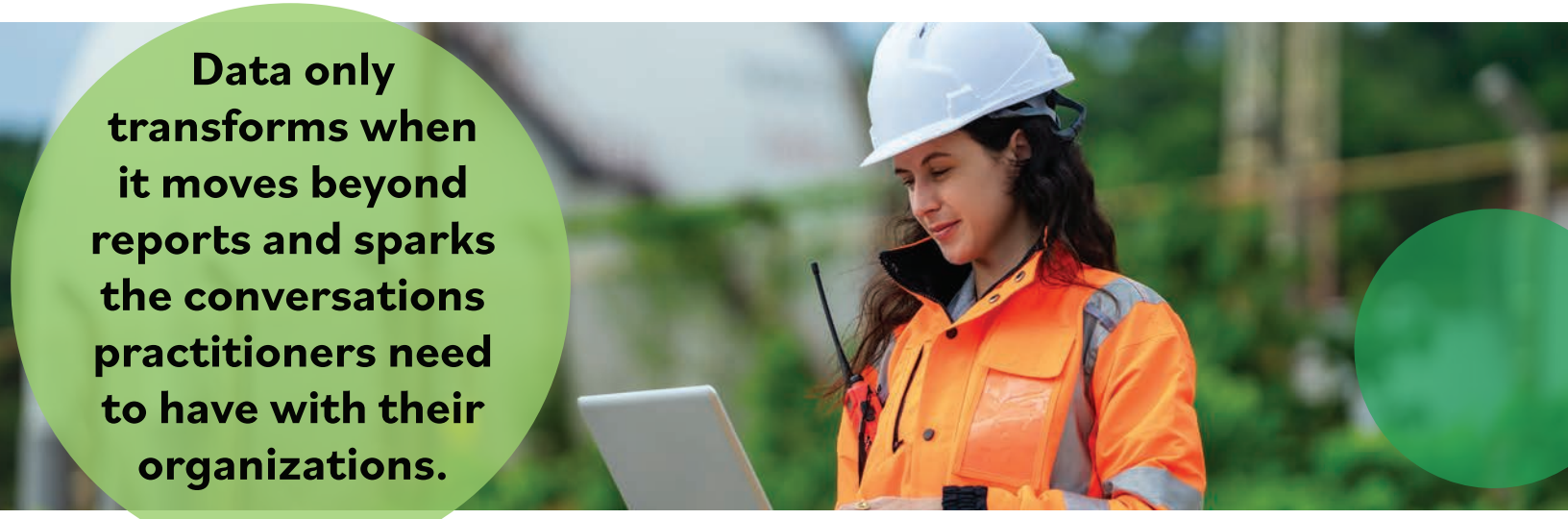
Data, without interpretation, remains noise, not insight.

Collecting data without a clear strategy has significant consequences:

- **Decision Fatigue:** Sorting through endless metrics to identify what matters most is time-consuming and mentally exhausting, diverting focus from strategic priorities.
- **Missed Opportunities:** Unanalyzed data hides emerging risks, behavioral patterns, or systemic issues, undermining proactive safety efforts.
- **Worker Disengagement:** When frontline employees see no tangible outcomes from their contributions, like hazard reports or near-miss submissions, they lose trust in the system, leading to reduced participation and a weaker safety culture.

This cycle is reactive: collect, report, comply, repeat. It prevents organizations from using data proactively to identify and mitigate risks before incidents occur.

Data only transforms when it moves beyond reports and sparks the conversations practitioners need to have with their organizations.



How to Break the Cycle

Data overload poses a significant challenge for safety programs. Safety practitioners, already stretched thin, struggle to manage the sheer volume of information that's collected. At the same time, frontline workers, who are closest to workplace hazards, may feel their input is overlooked, further eroding trust and engagement.

Meanwhile, regulatory demands continue to evolve, such as the stricter OSHA standards or the new EU ESG (environmental, social, and governance) reporting requirements. Organizations that focus solely on traditional compliance metrics may overlook emerging risks. This can leave them vulnerable to penalties or reputational damage.

To break this cycle, safety programs must shift from gathering data to curating insights. This requires a strategic approach: collecting only what is necessary, analyzing it effectively, and communicating findings in ways that inspire action at all levels of the organization.

The goal is not more data. It's better decisions that drive safety performance and operational excellence.

What Is Insight?

Insight is not a metric, a report, or a snapshot of past performance. It is the synthesis of data into a coherent, actionable narrative that reveals why something happened, what it means, and how to address it.

In the context of safety, insight transforms raw information into foresight, enabling organizations to anticipate risks, address root causes, and align safety efforts with broader operational and ESG goals.

Characteristics of True Insight

When harnessed effectively, insight delivers:

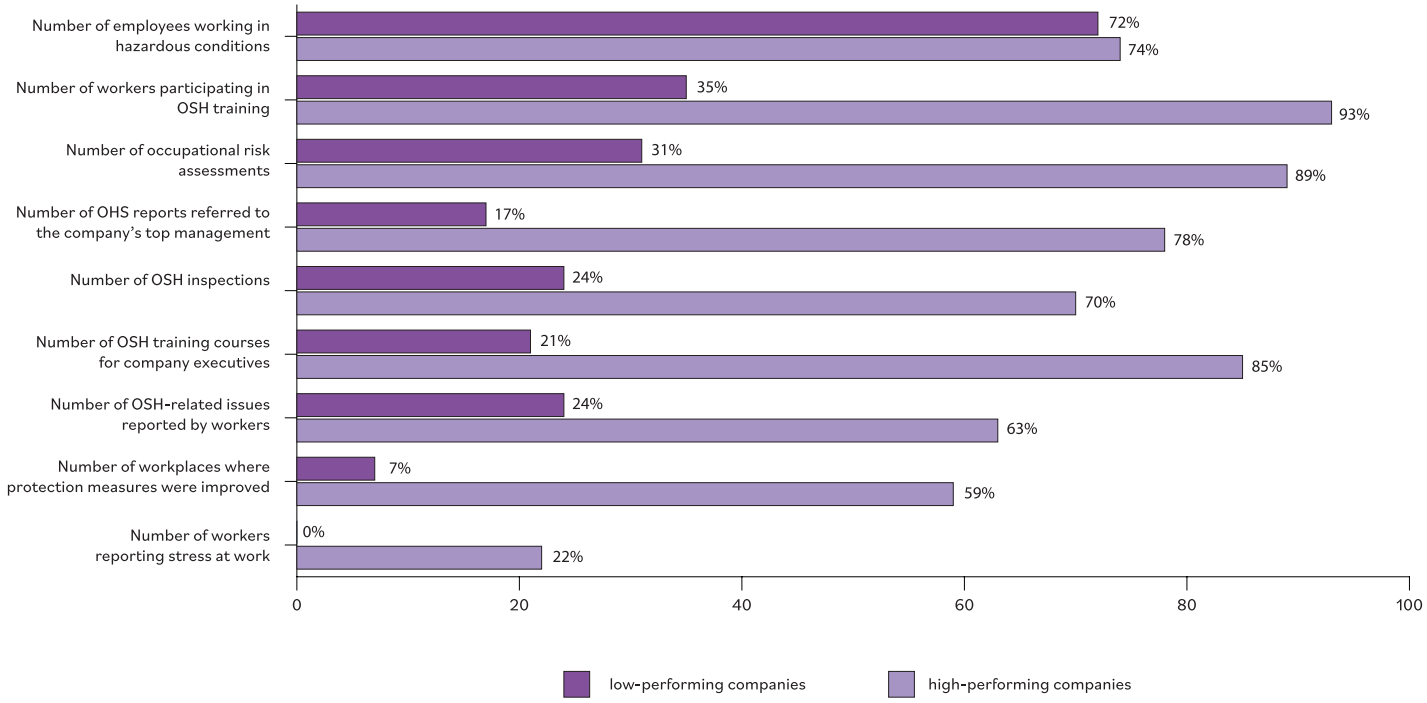
- **Clarity Between Symptoms and Causes**: It distinguishes surface-level issues (e.g., high incident rates) from underlying drivers (e.g., inadequate training, equipment failures, or cultural factors).
- **Foresight Over Hindsight:** While lagging indicators (e.g., injury rates that measure past incidents) describe what has happened, insight leverages leading indicators (e.g., safety observations, near misses, or training completion rates) to predict and prevent future incidents.
- **Systemic Connections:** Links data across incidents, inspections, training, and environmental metrics to uncover patterns that span departments, locations, or processes.
- **Behavioral Context:** Ties metrics to human behaviors, revealing how cultural, operational, or leadership dynamics influence safety outcomes.
- **Shared Ownership:** Makes data accessible and actionable for everyone, from executives to frontline workers, fostering collaboration and accountability.

In my book, *From Participation to Partnership: A Journey to Safety at the Frontline*, I emphasize the idea that "we don't do safety to people, we do it with them." Insight connects abstract metrics with the real experiences of workers, fostering a shared understanding. For example, when a worker's hazard report leads to an equipment upgrade that prevents an injury, they see their impact, boosting engagement and creating a virtuous cycle of trust, participation, and continuous improvement. True Interdependence.

Visualizing the Journey

In a 2015 study to measure the use of lagging and leading indicators for the evaluation of occupational safety and health performance, Zofia Pawlowska surveyed 60 companies to determine what kinds of indicators were used for OSH performance measurements in companies with different levels of OSH performance.

Companies were grouped into high-performing and low-performing categories based on how fully they had adopted OSH management system rules. While nearly all companies tracked standard lagging indicators like injury counts and days lost, the study revealed a key difference: high-performing companies used a broader set of indicators overall.



Percentages of high-performing and low-performing companies in which specific lagging indicators are used.

Approximately 46% of the high-performing companies and only 5% of the low-performing companies regularly monitor at least three indicators.

The greatest difference between high-performing and low-performing companies occurred in the following indicators:

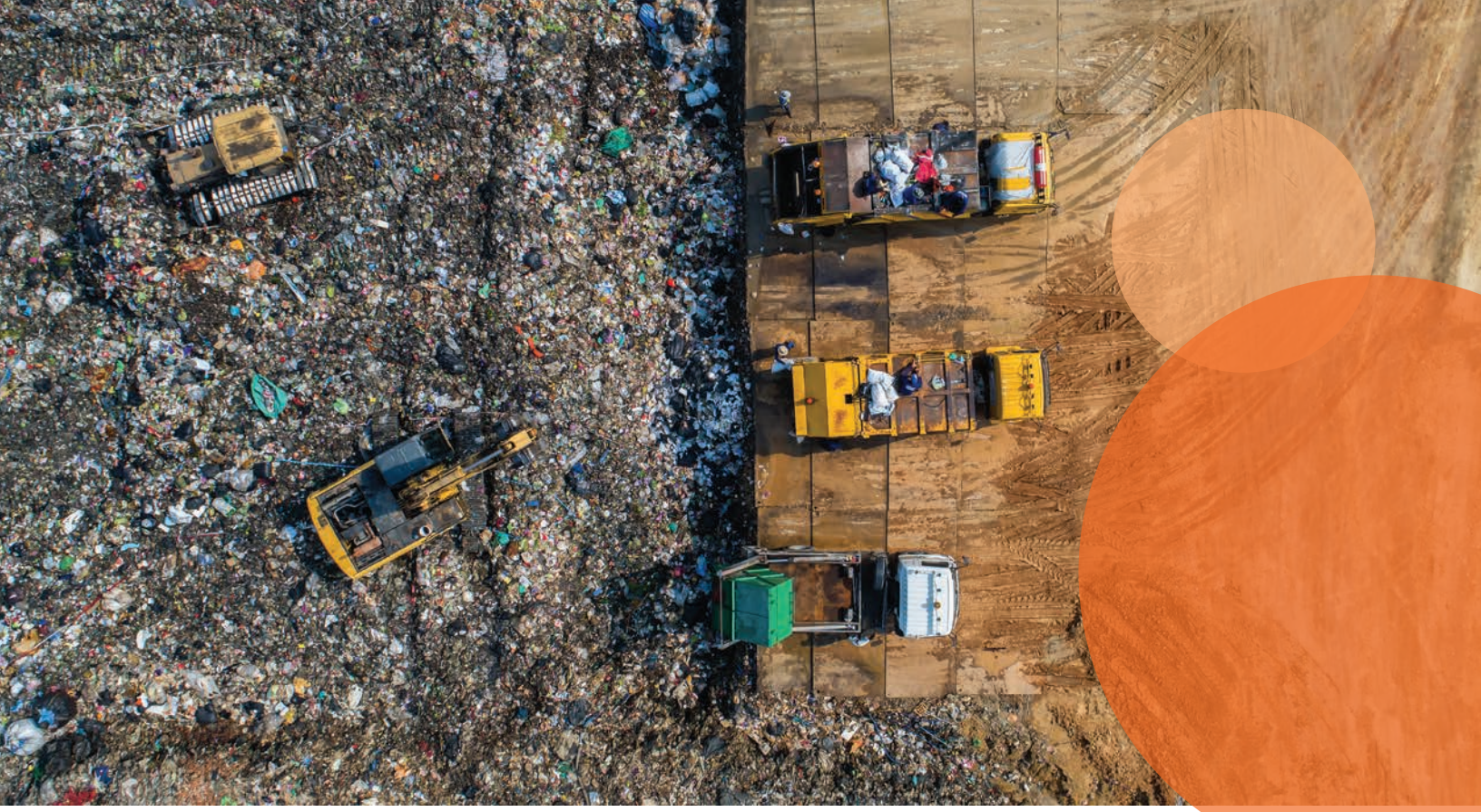
- The number or percentage of employees participating in occupational health and safety training.
- The number of workstations that underwent risk assessment.
- The number of safety reports submitted to management in a given year.

In short, companies that monitor proactive indicators see stronger safety performance. Yet many companies still face barriers to adopting and sustaining this approach.

Barriers to Insight and How to Overcome Them

Despite advances in data collection technologies, many organizations struggle to translate safety data into actionable insights due to operational, technological, and cultural barriers.

Barrier	Cause	Solution	Action	Example
Overloaded Practitioners	Safety professionals juggle endless tasks leaving little time for data analysis. Data collection often becomes a checkbox exercise instead of a strategic tool.	Automate routine tasks like report generation using platforms like Intelex, freeing time for analysis. Provide data literacy training to enhance interpretation skills and streamline workflows, thereby reducing administrative burdens.	Identify one task (e.g., manual compliance reporting) to automate this month.	A safety manager at a manufacturing plant automates weekly audit reports, saving 10 hours monthly for strategic analysis.
Data Silos	Many organizations use separate systems for incidents, audits, and training, creating silos that hide important safety trends.	Consolidate data into a single platform like Intelex and standardize collection processes across departments. Use APIs to connect legacy systems, ensuring seamless data flow.	Conduct a 30-day audit to identify and merge disconnected systems.	A mid-sized retailer uses this approach to consolidate incident and training data, uncovering a link between low training completion and higher injury rates.
Limited Analytical Capacity	Manual spreadsheet analysis is slow and error-prone, while advanced tools like predictive modeling remain underused because of cost, complexity, and limited expertise.	Start with simple trend reports, then scale to AI-driven analytics with tools like Intelex to customize solutions to your risk profile. For small budgets, use tools like Intelex Essentials to get started.	Create a dashboard tracking one leading indicator (e.g., near misses) this quarter.	A logistics firm started with a simple Excel dashboard, identifying a 20% increase in near misses tied to equipment wear.
Compliance-First Mindset	Many safety programs prioritize lagging indicators to meet regulatory requirements, keeping them reactive rather than proactive.	Shift focus to leading indicators like safety observations or training effectiveness. Align metrics with risk reduction to secure leadership buy-in, framing safety performance as a driver of cost savings and operational excellence.	Present a business case to executives, linking leading indicators to cost savings (e.g., reduced downtime).	A construction company shows how tracking near missed can save $50,000 in potential injury costs to get leadership buy-in and additional budget.
Weak Feedback Loops	Insights that don't reach the frontline feel bureaucratic, reducing participation. Without clear communication, workers perceive data collection as pointless.	Share outcomes via dashboards, team briefings, and celebrations of successes like hazard corrections. Use mobile tools from Intelex to make data accessible.	Share a monthly dashboard highlighting how worker reports lead to improvements.	A warehouse team celebrates a worker's hazard report that fixed a faulty forklift, boosting reporting by 30%



[Success Story] How Cory Cut Reporting Time From 7 Days to 30 Minutes

Cory, a UK-based waste and energy management company, faced significant challenges with legacy safety processes. Paper-based reports, manual audits, and slow feedback cycles hindered visibility and responsiveness.

By partnering with Intelex, Cory:

After adopting Intelex, Cory:

- Reduced data analysis time from 7 days to 30 minutes
- Doubled safety observations within six months, and
- Sustained reduction in all-injury frequency rate and lost-time injury frequency rate.
- Improved worker morale as employees saw their reports drive tangible changes, such as updated waste-handling protocols.

How Cory Achieved These Results:

Plant managers and operators received real-time data through role-based dashboards, and workers were able to submit hazard reports from the field using mobile tools. Cory's EHS team could perform proactive maintenance, like recurring equipment issues, through integrated analytics that highlighted trends.

The Universal Lesson:

Empowering workers with accessible tools (e.g., mobile apps or free platforms like Google Forms) boosts engagement and visibility, even for smaller firms. Cory's success inspired a cultural shift, with workers feeling valued as partners in safety.

Six Steps to an Insight-Driven Safety Culture

To transform safety data into impact, follow these actionable steps, each with specific examples and tools to guide implementation:

Steps	Actions	Example	Software Tool / Tip
Design with Purpose	Collect only metrics tied to specific goals (e.g., reducing near misses).	Track recurring hazards to prioritize equipment upgrades in a factory.	Use a checklist to define 3-5 key metrics aligned with safety goals.
Elevate Leading Indicators	Prioritize proactive metrics like safety observations or training effectiveness.	Implement a weekly observation program via mobile apps in a warehouse.	Start with near-miss reports.
Integrate Systems	Consolidate data into one platform to uncover trends.	Audit systems in 30 days to merge incident and training data in a retailer.	Choose software that can scale as your needs change.
Share the Story	Use dashboards and briefings to engage workers.	Share a monthly dashboard showing hazard report outcomes at a construction site.	Choose robust reporting and dashboarding capabilities.
Close the Loop	Assign and track actions from insights (e.g., hazard fixes).	Set a 48-hour resolution target for hazards.	Use automated task tracking to simplify management.
Engage to Learn	Involve workers in data analysis and solutions.	Host quarterly forums to review near-miss data with frontline teams.	Use Bulletins app to gather worker feedback on training.

How can you involve your team in data-driven decisions this month? Try hosting a safety huddle to review one key metric and brainstorm solutions.

Emerging Trends in Safety

As safety evolves, emerging technologies and trends are reshaping how organizations generate insights. Artificial Intelligence (AI) and Internet of Things (IoT) devices, like wearable sensors, enable real-time risk prediction.

These tools integrate with platforms like Intelex, offering precise analytics without requiring advanced expertise. Additionally, ESG priorities are driving safety to align with sustainability goals, such as reducing environmental incidents or improving worker well-being. Stricter regulations (e.g., OSHA's updated standards for heat stress) will make proactive, insight-driven safety essential for compliance and competitiveness.

Leadership's Role in Making Insight Actionable

Insight reflects leadership, not just technology. Effective safety leaders don't just report data; they interpret it, share it, and inspire action. They build trust by showing that data collection leads to outcomes, not paperwork.

- Listen to the Frontline: Engage workers in data analysis, valuing their expertise.
- Communicate Clearly: Translate metrics into actionable message.
- Act Decisively: Ensure insights drive changes, like equipment upgrades or training improvements.

Leaders foster a culture where mistakes are learning opportunities, not blame. By encouraging hazard reporting without fear, they enrich data and enable continuous improvement.

Conclusion: Use Data to Inspire Action

The goal of safety is not to amass data; it's to create impact. Insight bridges raw metrics to meaningful change, preventing incidents, engaging workers, and aligning with operational and sustainability goals. Platforms like Intelex and principles from "Participation to Partnership" empower organizations to make the invisible visible, turning numbers into narratives that inspire action.

As AI, IoT, and ESG priorities evolve, insight-driven safety will become standard, enabling precise risk prediction and integrating safety into digital transformation.

Start a Conversation | Ready to see how our suite of software can drive real results for your safety, health and environment goals? Book some time to see what's possible.

Pricing Information | Looking for a custom quote or pricing details? We'll give you a breakdown of the total business value of our software, projected ROI and both hard and soft dollar benefits.

Personalize Your Demo | Prefer to go solo? Use our demo builder to create your own personalized online experience. Choose from our pre-made demos or handpick features from our EHSQ solutions to make it your own.

Disclaimer

About the Author

Scott Gaddis is the VP of Safety and Health at Intelex. Scott is a strategic leader with 30+ years of experience guiding organizations in EHS initiatives, regulatory compliance and risk management. He excels in regulatory compliance, risk management and EHS system improvement, driving strategies that enhance workplace safety and operational excellence. Scott holds a BS and MS in occupational safety and health from Murray State University.

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For over 30 years, Intelex has been making a difference in the world by helping our 1,400 customers achieve safer, more sustainable operations. Our web and mobile solutions streamline and simplify environmental, safety, quality and risk management, empowering organizations to meet the challenges of an increasingly complex marketplace while minimizing negative social, environmental and human impacts. Intelex is proud to be an operating company of Fortive Corporation, which provides strength in numbers, strength in skills and perspectives and strength in our shared conviction to make an impact.

References

Gaddis, Scott. 2024. From Participation to Partnership: A Journey to Safety at the Frontline. Charleston, SC: Palmetto Publishing

Pawłowska Z. Using lagging and leading indicators for the evaluation of occupational safety and health performance in industry. Int J Occup Saf Ergon. 2015;21(3):284-90. doi: 10.1080/10803548.2015.1081769. PMID: 26647949; PMCID: PMC4685598.