



**MSD Solutions Lab**  
an **nsc** program



# MSD Solutions Index Pledge Community Report

Insights from the 2024-2025 MSD Solutions Index  
across the MSD Pledge Community

Year Three

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## Executive Summary

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The MSD Solutions Index (Index) is a survey launched by the MSD Solutions Lab in 2022 designed to evaluate an organization's musculoskeletal disorder (MSD) prevention initiatives. It represents three focus areas of MSD prevention at the organizational level: risk reduction, safety culture, and innovation and collaboration. The 2024-2025 Index was completed by 42 organizations, primarily located in the United States and largely representing manufacturing or professional, scientific and technical services. This third cycle of the Index continued to provide insights into the MSD Pledge community's successes as well as opportunities for improvement. This cycle also provided us with a longitudinal dataset to better assess changes over time for organizations that have participated in each cycle of the Index to date.

This report provides a summary of MSD prevention maturity within the Pledge community. When appropriate, this report also compares responses on the Index from 2022-2023 and 2023-2024 to responses from 2024-2025. Similar to the 2023-2024 findings, the 2024-2025 findings reveal that Pledge community organizations continue to demonstrate strong safety cultures. However, consistent with the previous year, the findings show comparatively less progress in risk reduction and in innovation and collaborative efforts. Stronger overall MSD prevention efforts were seen in association with:

- Incorporating human factors into the design of equipment, layout of workspaces, workflow improvements, shift schedules and procedures to prevent injury and reduce errors
- Providing ergonomic equipment and purchasing materials with ergonomics in mind
- Utilizing technology for MSD prevention
- Fostering trust among different levels of the organization
- Involving frontline workers in decisions
- Tracking leading indicators
- Measuring organizational efforts in risk reduction
- Using employee perception surveys and having methods in place for workers to share feedback related to ergonomic safety
- Having MSD prevention or ergonomics programs
- Reporting stronger safety cultures

The report concludes with several recommendations to help organizations advance their MSD prevention and mitigation efforts.

## Introduction

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Born out of the MSD Solutions Lab at the National Safety Council, the MSD Solutions Index is an annual survey designed to help organizations understand and further advance their unique journeys in MSD prevention. The Index is available to organizations that have signed the [MSD Pledge](#): an initiative to create a community of organizations with the shared goal of reducing MSDs. This initiative aims to reach this goal through three focus areas:

- **Risk reduction:** Understanding and analyzing the causes of MSDs and investing in solutions and practices to reduce risk
- **Safety culture:** Promoting and ensuring a workplace where safety excellence, transparency and accurate reporting are equally valued – understanding that all workers, at every level of an organization, have a role to play in the safety and health of the workplace
- **Innovation and collaboration:** Leveraging best practices and sharing learnings and innovations to improve safety practices across the community

Responses provided by organizations on the Index are used to measure the community's alignment with the MSD Pledge commitments. Completion of the Index provides Pledge organizations with personal insights into their areas of success and opportunity related to worker health, safety and MSD prevention. Furthermore, completion of the annual Index holds Pledge organizations accountable for their commitment to advancing their risk reduction, safety culture, and innovation and collaboration efforts to further MSD reduction and prevention.

Participants receive an overall Index result, as well as results for the three subsections: risk reduction, safety culture, and innovation and collaboration. Overall and subsection results fall into one of the following five categories:

- **Innovating:** Alignment with and progress along the MSD Pledge is desirable and ideal – indicates an organization should continue its current practices of learning and investing in new innovations and sharing successes with others but continue to actively search for ways to grow and improve
- **Proactive:** Alignment with and progress along the MSD Pledge is strong – indicates an organization has well-executed prevention efforts through which MSDs are anticipated and prevented before they occur, with some areas for growth and improvement
- **Advancing:** Alignment with and progress along the MSD Pledge is satisfactory – indicates an organization is building solutions to manage MSD risks and hazards, with several areas for growth and improvement
- **Reactive:** Alignment with and progress along the MSD Pledge is moderate – indicates an organization is responsive to injuries when they occur, with many areas for growth and improvement
- **Novice:** Alignment with and progress along the MSD Pledge is rudimentary – indicates an organization has few MSD prevention efforts in place, may not be fully aware of the issues related to MSDs or may not know where to start

## Survey Methodology

The 2024-2025 Index cycle opened through an online survey platform on Dec. 9, 2024, and closed on July 31, 2025. Periodic reminders were sent to organizations that had not completed the Index through the participation window. Once responses were collected and analyses were complete, organizations received a report with individualized feedback based on their responses as a whole and within the three subsections. Results for each of the three subsections of the survey were calculated into scores, and those scores were summed to provide organizations with their overall Index result. Participants may exhibit varying levels of maturity across the three subsections, such as being categorized as “novice” in risk reduction while also achieving a “proactive” designation in safety culture. Correlations were conducted between pertinent variables for further analysis and are included throughout the report and in Appendix A. For a comprehensive understanding of the survey design and methodology, refer to the [2022-2023 and 2023-2024 MSD Solutions Index Reports](#). When interpreting the findings, please note that risk reduction, safety culture and innovation and collaboration subsection results were highly correlated with an organization’s overall Index result. This is due to the structure of the survey questions, in which the subsection items make up the overall survey items.

## Findings

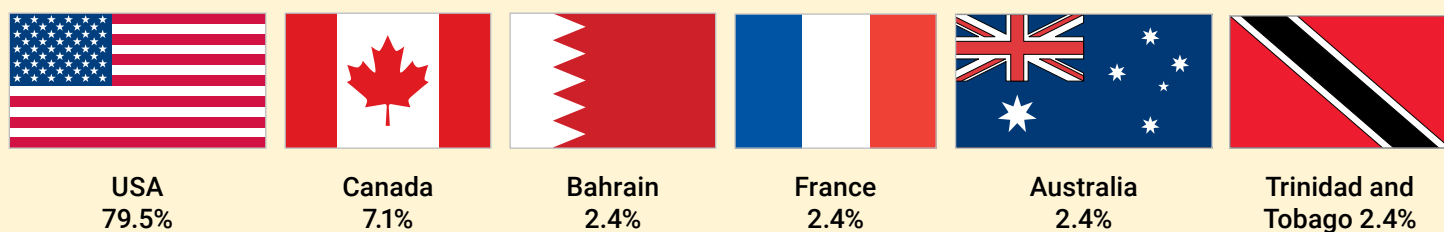
### Community Demographics

A total of 42 organizations completed the 2024-2025 MSD Solutions Index. Respondents were senior-level leaders or safety and health professionals, with most completing the Index for their entire organization (83.8%), as opposed to a single department, and the majority headquartered in the United States (83.3%; Figure 1).

Over a quarter of respondents represent the manufacturing industry (33.3%), followed by the professional, scientific and technical services industry (16.7%). Of responding organizations, 66.7% have some of their staff working remotely, while 73.8% report some of their staff working hybrid. Remote and hybrid work among responding Pledge members increased significantly since the previous year, likely reflecting workforce preferences and a continued increase in hybrid and remote work options for workers in a variety of industries.

For the purposes of this report and the MSD Pledge community, small organizations have fewer than 50 employees, medium organizations have 50-1,000 employees and large organizations have over 1,000 employees. Given the variability in standard business size classifications across sources (e.g., Healthcare.gov, Small Business Administration and Bureau of Labor Statistics), this report establishes size-range cut points based on data from the MSD Solutions Index and the MSD Pledge community to ensure contextual relevance and consistency. Most responding organizations were large in size (45.2%), while others were small or medium (19.1% and 28.57%, respectively). This contrasts with the 2022-2023 Index results, in which most organizations were medium in size (40.4%). Larger organizations had slightly higher representation this year than in 2023-2024 as well (45.2% versus 40.9%). This continued increase in the representation of larger organizations may signify a sustained need for even large organizations to assess and better their MSD prevention efforts.

**Figure 1.** Breakdown of Participation by Organization Headquarters



**Table 1.** Respondents by Industry

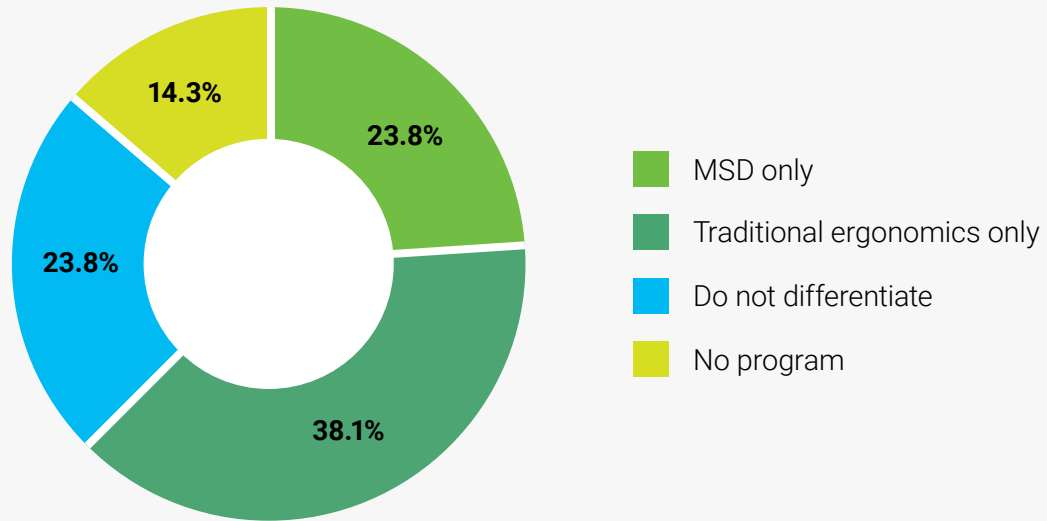
Respondent by Industry*	Percentage of Responding Organizations
Manufacturing	33.3%
Professional, Scientific and Technical Services	16.7%
Health Care and Social Assistance	9.5%
Transportation and Warehousing	9.5%
Construction	7.1%
Educational Services	4.8%
Utilities	4.8%
Wholesale Trade	4.8%
Accommodation and Food Services	2.4%
Finance and Insurance	2.4%
Mining	2.4%
Public Administration	2.4%

\*Some respondents who selected "Other" as their industry were recoded by the authors based on [NAICS code](#) for ease of analysis

## Overall Index Summary

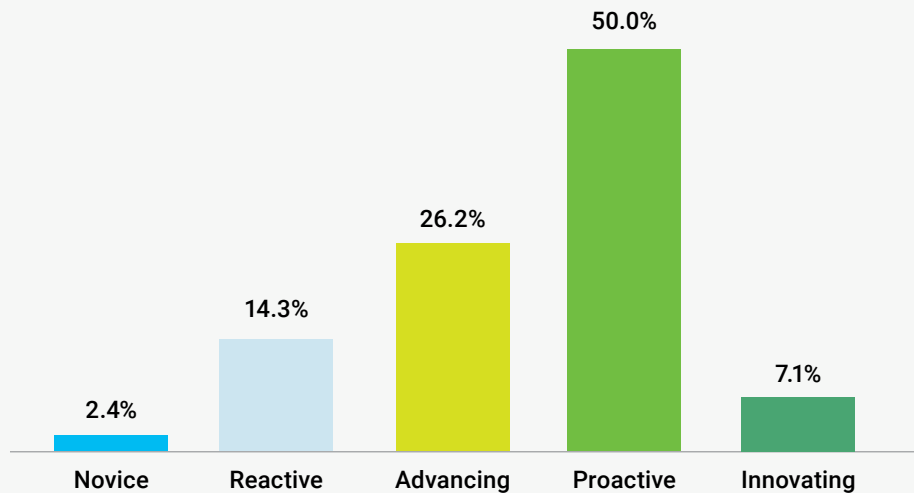
For the purposes of the Index, a traditional ergonomics program was defined as a systematic process for identifying, analyzing and controlling organizational, job task and individual risk factors. An MSD prevention program was defined as a traditional ergonomics program plus additional tools and information specifically for MSD prevention. Of all respondents, 85.7% had some form of MSD prevention and/or ergonomics program in place. As shown in Figure 2, 23.8% of respondents stated they do not differentiate between their ergonomics and MSD prevention programs, while 14.3% indicated they do not have either program. This is a slight decline in program presence compared to last year, in which over 88% indicated having a program in place for addressing MSDs. **Moreover, consistent with 2023-2024, organizations that had some form of a program had higher overall Index results ( $r = .54, p < .01$ ), higher safety culture results ( $r = .54, p < .01$ ) and higher risk reduction results ( $r = .39, p < .05$ ).**

**Figure 2.** Percentage of Responding Organizations with an MSD Prevention and/or Ergonomics Program



Most organizations (76.2%) who participated in the Index in the 2024-2025 cycle received overall results in the advancing (26.2%) or proactive (50%) categories, meaning the majority of organizations that completed the Index might have established MSD prevention and/or ergonomics strategies with opportunities for advancement. Several (7.1%) organizations in 2024-2025 received overall results in the innovating category (Figure 3), which mimics findings from 2023-2024. Also similar to 2023-2024 results, there was no relationship between an organization’s overall Index score and either its size or number of years its MSD prevention or ergonomics program has been established. This finding suggests that merely being a larger organization or having a program in place for an extended period does not guarantee better MSD prevention outcomes. Instead, program effectiveness likely depends on other factors, such as effective communication, worker involvement and ongoing support for MSD solutions, not organizational size or program tenure alone.

**Figure 3.** Percentage of Respondents per Results Category for the Overall Index





### Organization Size

In contrast to the past two years of data, the size of an organization was unrelated to both the likelihood of having an MSD prevention or ergonomics program and the length of time an MSD prevention or ergonomics program has been in place. Previously, larger organizations were more likely to have programs with longer tenure. This may indicate that smaller organizations in the Pledge community have had programs in place for several years and are no longer novices when it comes to MSD prevention initiatives.

In 2024-2025, larger organizations were more likely to have higher risk reduction scores than smaller organizations ( $r = .35, p < .05$ ). Findings from 2024-2025 responses indicate that the size of an organization did not have an impact on participants' MSD prevention initiatives and safety cultures. This juxtaposes findings from 2023-2024 in which larger organizations had lower levels of frontline worker involvement and were less likely to consider ergonomics in purchasing decisions.

### Risk Reduction

Human factors refers to making work processes compatible with human abilities and limitations, which can include equipment design, workspace layout, workflow improvements, shift schedules, and procedures to prevent injury and reduce errors. The extent to which these human abilities and limitations were designed into organizations' work processes has a significant positive correlation with an organization's overall Index result ( $r = .55, p < .01$ ).

Related to this, organizations that considered ergonomics in their purchasing decisions also had higher overall results ( $r = .60, p < .01$ ). Organizations that more consistently provide workers with appropriate ergonomic tools and equipment were also found to have higher overall Index results ( $r = .54, p < .01$ ). Further, organizations that internally measured risk reduction scored higher on the Index overall ( $r = .57, p < .01$ ). Lastly, tracking more leading indicators was related to higher scores on the Index overall ( $r = .47, p < .01$ ). These major themes and relationships were seen in responses on the 2022-2023 and 2023-2024 MSD Solutions Index as well, indicating consistency in the importance of including risk reduction tactics to bolster overall MSD prevention efforts.

## Safety Culture

From the lens of safety culture, utilizing employee perception surveys was correlated with a stronger overall Index result ( $r = .54, p < .01$ ). Similarly, the more frontline workers are involved in making organizational decisions, the stronger the organization's overall Index result ( $r = .59, p < .01$ ). Providing employees with a means to share their suggestions for ergonomic solutions was also correlated with stronger overall Index results ( $r = .70, p < .01$ ).

## Innovation and Collaboration

Unlike last year, sharing effective MSD solutions, internally or externally, was not correlated with overall Index scores. However, even though the sharing of solutions was not correlated with stronger overall MSD prevention efforts, sharing solutions across industries to broaden the collective understanding of MSD interventions is still a best practice. Regarding innovation, the more involved organizations were with technology use (e.g., piloting or implementing), the stronger their overall MSD prevention efforts ( $r = .37, p < .05$ ).

## Longitudinal Insights

The 2024-2025 cycle of the MSD Solutions Index marked the third year of Index data collection. As such, of organizations that participated in the Index in 2024-2025, 57.1% also participated in 2023-2024. Additionally, 42.9% of organizations that completed the Index in 2024-2025 have completed the Index for three consecutive years.

For those organizations with three years of data for analysis, several trends were uncovered. In general, organizations improved in their MSD mitigation efforts. Specifically, 72.2% of organizations that completed the Index in all three years have improved their overall scores over the three-year period. Risk reduction scores were improved for 55.6% of organizations when comparing three years of results, and 77.8% of organizations had higher scores in the safety culture subsection over the three-year period. Innovation and collaboration subsection results were higher for 55.6% of organizations as well when looking at their three-year data trends. Lastly, 50% of organizations experienced increases in all subsections and overall between 2022-2023 and 2024-2025. Collectively, these results suggest that organizations involved in the MSD Pledge and completing the MSD Solutions Index are experiencing improvements to their MSD initiatives over time.

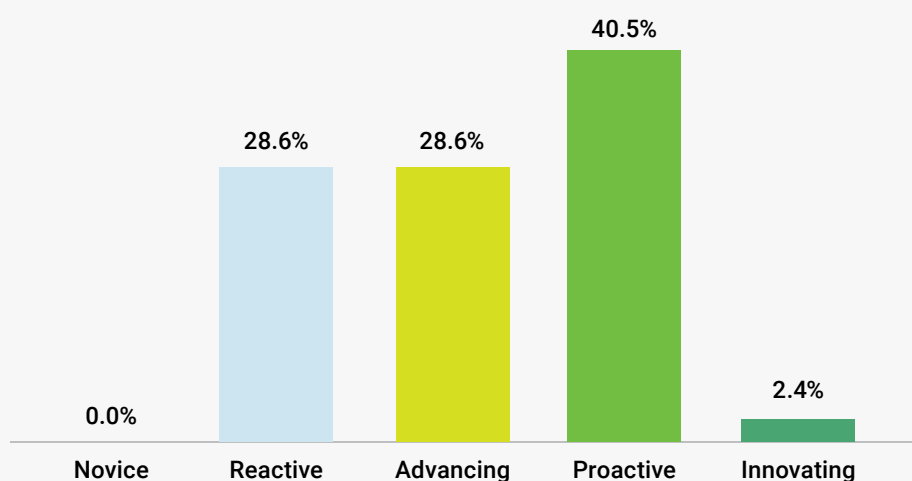
## Subsection Summaries

### Risk Reduction

Among responding organizations, 28.6% received a result of advancing within the risk reduction subsection on the Index, 28.6% fell below the advancing category (all scoring reactive) and 42.9% were above the advancing category (40.5% proactive; 2.4% innovating; see Figure 4). This is a deviation from the 2023-2024 results, in which only about 16% of companies fell below the advancing category. In 2024-2025, organizations scored generally more "average," with scores in the middle three categories than in previous years, highlighting a continued need to bolster risk reduction knowledge and skills among organizations. As mentioned, a significant, positive correlation exists between risk reduction results and organizational size ( $r = .35; p < .05$ ). Larger organizations tend to score more favorably on items in the risk reduction subsection, potentially due to resource flexibility (e.g., personnel, budget). These findings in larger organizations may also be attributed to dedicated ergonomics and safety personnel and established processes for measuring risks, including collecting data on leading indicators. Additionally, these organizations might have the expertise to implement preventive interventions at scale and integrate them into their broader business processes and various departments. This includes leveraging centralized procurement for ergonomic equipment and standardized training for all of their workers. More importantly, since these organizations may face stricter regulatory inspections and often have formal compliance programs, they are pushed to prioritize injury prevention and risk mitigation.

Analyses from 2024-2025 results show that organizations that have risk reduction goals have higher risk reduction scores, possibly highlighting alignment between goals and efforts ( $r = .58, p < .01$ ). Organizations that utilize technology for MSD prevention also reported stronger scores in the risk reduction subsection ( $r = .52, p < .01$ ), showcasing the efficacy of technology for MSD risk reduction. Lastly, tracking more leading indicators than lagging indicators yielded higher scores in the risk reduction subsection ( $r = .43, p < .01$ ). Leading indicators are proactive, preventive and predictive measures that monitor and provide current information about the performance, activities and processes of an environment, health and safety (EHS) management system that drive the identification and elimination or control of risks in the workplace. While identifying preventive actions that qualify as leading indicators in addition to garnering leadership support may appear laborious, the payoff is clearly seen in reduced risks, reduced unreported incidents, increased hazard awareness and reporting, and clearer decision-making.

**Figure 4.** Percentage of Respondents per Results Category for the Risk Reduction Subsection



Tables 2 and 3 reflect the most common risk factors and impacted body parts across the Pledge community. Due to the high participation of organizations from the manufacturing industry and the professional, scientific and technical services industry, certain risk factors were most frequently selected, such as awkward postures/excessive bending or twists, lifting or carrying, prolonged sitting/standing, and repetitive activities.

Similarly, the most impacted body parts were the lower back, followed by the shoulder/upper arm and neck/upper back. Fewer organizations cited individual factors (e.g., underlying medical ailments, comorbidities, general health) as risk factors for MSDs in their organizations in 2024-2025 than in 2023-2024. Conversely, more organizations cited gripping, pace of work, whole body vibration, temperature extremes, and compression or contact stress as common MSD risks in 2024-2025 than in 2023-2024 (represented in bold in Table 2). The lower back remained the most reported body part impacted by MSDs, with 78.6% of respondents citing this as a commonly impacted body part versus 77.3% in 2023-2024. Wrist pain and related symptoms decreased among the sample in 2024-2025, with only a third of organizations reporting the wrist as commonly impacted, compared to half of organizations in 2023-2024. Organizations remained aware of impacted body parts as well, with only 4.8% reporting they were unsure of their most commonly impacted body parts (versus 2.3% in 2023-2024 but still down from 17.3% in 2022-2023).

This indicates growth in organizations' abilities to better understand impacted body parts. These risk factors and affected body parts align with the demands commonly seen in the industries predominantly represented by Index respondents (Chinedu et al., 2020; Hembecker et al., 2017).

**Table 2.** *Most Common MSD Risk Factors*

<b>Risk Factor</b>	<b>Percentage of Responding Organizations*</b>
Awkward postures/excessive bending or twists	52.4%
Lifting or carrying	40.5%
Repetitive activities (non-computer related)	31.0%
Pushing or pulling	26.2%
Prolonged sitting/standing	26.2%
Repetitive activities (computer related)	21.4%
Forceful exertions	21.4%
Static postures	14.3%
<b>Gripping</b>	14.3%
Reaching	11.9%
Individual factors	9.4%
Psychosocial factors	7.1%
Overhead work	7.1%
<b>Temperature extremes</b>	4.8%
<b>Pace of work</b>	2.4%
Whole-body vibration	2.4%
<b>Compression or contact stress</b>	2.4%

\*Sum totals above 100%, as the question was multi-select

**Table 3.** *Body Parts Most Impacted by MSDs*

<b>Body Part</b>	<b>Percentage of Responding Organizations*</b>
Lower back	78.6%
Shoulder/upper arm	69.1%
Neck/upper back	45.2%
Wrist	33.3%
Knee	19.1%
Hand/fingers	16.7%
Trunk/abdomen	9.5%
Elbow/forearm	7.1%
Other	2.4%
Hip	2.4%
Ankle	2.4%
Unsure / don't know	4.8%

\*Sum totals above 100%, as the question was multi-select

In 2024-2025, 67.7% of responding organizations reported tracking the number of MSDs occurring in their workplaces. This is down from last year, in which over 75% of responding organizations indicated tracking MSDs in their workplaces. Yet trends regarding indicator tracking have remained positive. In 2024-2025, 78.6% of organizations indicated tracking more leading indicators than lagging indicators, which is up from 65.1% in 2023-2024 and up from less than half in 2022-2023. This continued improvement may represent a wider-scale shift from lagging to leading indicators taking place in organizations.

Additionally, many organizations reported they most frequently employ MSD interventions at the personal level (e.g., personal protective equipment [PPE]; at 52.4%). Fewer (31%) employed interventions at the organizational level, such as through workstation redesign. This is different from previous years, as organizational-level interventions were more common in 2023-2024, and participants utilized personal and organizational interventions almost equally in 2022-2023. Only 2.4% of organizations reported they most frequently used interventions at a systems level (e.g., automation, robotization) in 2024-2025. This underscores that the adoption of technological solutions is still in its infancy and may be far from replacing other intervention types, similar to last year. Additionally, the shift to more personal-level interventions shows the sustained need for more simplistic, easy-to-implement intervention types that can address risks at a level above PPE within the [Hierarchy of Controls](#).

Lastly, when asked what types of information assist in determining the need for ergonomics and workplace safety changes, 85.7% of respondents stated they utilize employee feedback. This is a slight increase from 2022-2023 and 2023-2024 results, in which 81.8% and 80.4% of organizations utilized employee feedback when looking to make safety changes, respectively. Involving workers in MSD prevention design and implementation is imperative to MSD prevention success, so it is encouraging that a majority of respondents are continuing to gather employee feedback. Just under half (47.6%) indicated they utilized risk assessment tools, such as the Rapid Upper Limb Assessment (RULA), Rapid Entire Body Assessment (REBA) or third-party feedback. This is down from last year, in which 51.2% of organizations utilized standardized risk assessment tools, but up from year 1 Index data, in which slightly over a third of organizations used risk assessment tools (37.3%).

### **Areas of Celebration**

Within risk reduction, Index participants excelled and uncovered important relationships in several areas. Of the respondents, 50% rated their workplace's ability to prevent MSDs as either very good (42.9%) or excellent (7.1%). This rating remains backed by significant, positive correlations between the self-rating of a workplace's ability to prevent MSDs, its overall Index result ( $r = .56, p < .01$ ), its risk reduction result ( $r = .39, p < .01$ ), its safety culture result ( $r = .58, p < .01$ ), and its innovation and collaboration result ( $r = .36, p < .01$ ). Risk reduction subsection results were also positively correlated with whether an organization had an MSD prevention program ( $r = .38, p < .01$ ).

Currently, only 14.3% of respondents do not have an ergonomics or MSD prevention program. This is similar to last year, in which over 11.4% did not have an ergonomics or MSD prevention program in place. Organizations without a program may benefit from reviewing [MSD Solutions Lab resources](#), such as the [Sample Ergonomic Policy](#).

Notably, organizations tracking more leading than lagging indicators of MSDs received significantly better overall Index results ( $r = .47, p < .01$ ) and better safety culture ( $r = .43, p < .01$ ) and risk reduction ( $r = .43, p < .01$ ) results. The tracking of lagging indicators was rarely correlated with overall or subsection scores, whereas the tracking of several leading indicators had significant positive correlations with higher risk reduction scores. Tracking of proactive MSD risk assessments had the strongest correlation ( $r = .72, p < .01$ ), indicating that it is a strong predictor of more robust risk reduction efforts. Interestingly, tracking MSD corrective actions and the number of employees impacted by MSD risk reduction efforts had a significant positive correlation with higher safety culture scores. This suggests that tracking indicators that directly reflect engagement with employees, like the implementation of corrective actions and the breadth of their impact, may serve as meaningful predictors of a stronger safety culture. Additionally, tracking the number of jobs in which MSD risk was reduced had a significant positive correlation with higher innovation and collaboration scores (Table 4). This could indicate that organizations actively tracking MSD risk reduction across job roles may also be more likely to implement innovative and collaborative problem-solving, whether through implementing new technologies or sharing effective solutions across the organization. Identifying preventive actions that qualify as leading indicators results in increased incident reporting, increased hazard awareness and reporting, and clearer occupational health and safety decision-making, making it a best practice for MSD prevention (Sheehan et al., 2016; Sinelnikov et al., 2015).



**Table 4.** Correlations Between the Tracking of Leading and Lagging MSD Indicators and Key Organizational Outcomes: Overall Index, Risk Reduction, Safety Culture, and Innovation and Collaboration Scores

	Overall Score	Risk Reduction Score	Safety Culture Score	Innovation and Collaboration Score
<b>Tracking of Leading Indicators</b>				
Early reporting of soreness/pain	.314*	.292	.271	.211
Ergonomics and safety training completion	.467**	.490**	.365*	.249
Leadership engagement	.257	.197	.284	.074
MSD corrective actions	.509**	.563**	.398**	.203
MSD program audits	.301	.447**	.112	.246
Number of reported near misses	-.131	.076	-.284	-.023
Number of employees impacted by MSD risk reduction	.420**	.275	.474**	.169
Number of high-risk jobs eliminated	.384*	.398**	.265	.355*
Number of jobs for which the MSD risk was reduced	.374*	.516**	.136	.424**
Perception/culture survey results	.392*	.428**	.286	.196
Proactive MSD risk assessments completed	.534**	.716**	.280	.350*
Prevention through Design	.437**	.508**	.351*	.053
<b>Tracking of Lagging Indicators</b>				
OSHA logs or other recorded logs	.254	.315*	.147	.179
Short-term disability	.125	.190	.107	-.148
Workers' compensation claims	.304	.389*	.192	.131

\*\*Correlation is significant at the 0.01 level.

\*Correlation is significant at the 0.05 level.

Note: See methodology in Appendix B



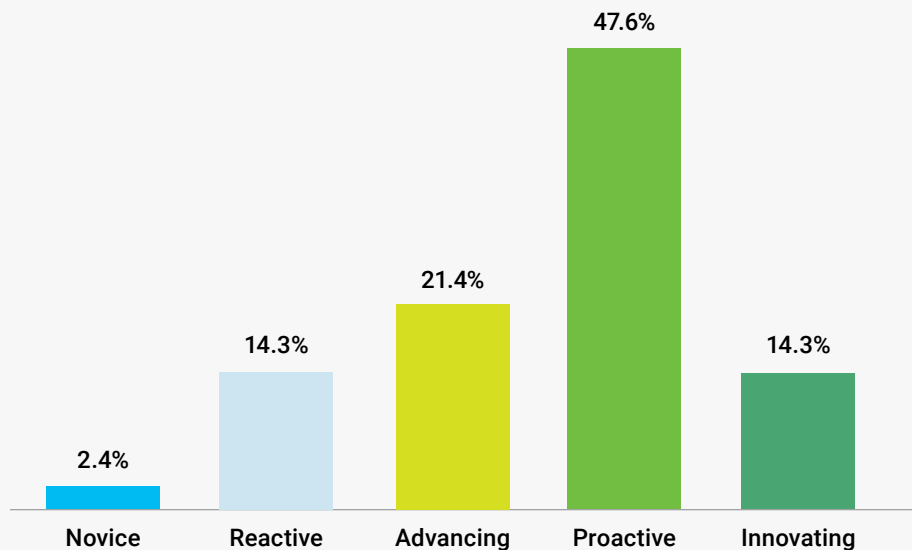
### **Opportunities for Improvement**

Findings in the risk reduction subsection indicate 38.1% of respondents reported having risk reduction goals in their workplaces. This is an increase from 2023-2024 results, in which only 22.7% of respondents had goals, yet was a decrease from year 1 Index data, in which 42.3% of respondents had goals. The majority of organizations that have risk reduction goals also have an ergonomics or MSD prevention program; however, less than half of the organizations with an MSD prevention program reported having risk reduction goals. Having measurable goals is an important factor in the process of reducing and eliminating workplace MSDs. Those aiming to set risk reduction goals should identify their high-risk tasks and main risk factors. In combination with risk analysis, goal setting could show where and how to make the most needed improvements.

### **Safety Culture**

In general, respondents showed slightly higher average scores in the safety culture subsection in comparison to 2022-2023 and 2023-2024, with 61.9% of respondents in the proactive or innovating result categories (Figure 5).

**Figure 5.** Percentage of Respondents per Results Category for the Safety Culture Subsection



Most organizations responding to the Index indicated strong levels of trust among workers and their supervisors, senior leadership, other management and safety teams as well as strong workplace cultures. Workplaces were also asked how often they involved frontline workers in a variety of tasks. The majority of respondents indicated they involved workers in decision making around their job tasks and cultivating workplace culture, whereas fewer organizations indicated involving frontline workers in determining their work schedules or return-to-work processes. Specifically, 47.5% of respondents indicated their frontline workers were not involved in decision making about work schedules, which highlights a possible need for more schedule flexibility for workers within the Pledge community and more input about returning to work after a possible injury. Related, 24.7% of organizations reported not involving their workers in decisions about workflow. Again, if workers are not included in determining their work schedules and workflows, there may be an increased chance of MSDs due to overexertion or fatigue. Respondents indicated involving their frontline workers more in decisions related to workplace culture and job tasks in 2024-2025 than in 2023-2024, signaling at least some positive movement for more participatory working environments. Notably, a [survey](#) conducted by the MSD Solutions Lab revealed that frontline workers consistently reported lower levels of involvement than those reported by organizational leaders who completed the Index.

Consistent with 2023-2024 results, [mental fatigue](#) and individual factors were the most commonly cited non-physical risk factors that could increase the likelihood of an MSD in 2024-2025. [Non-physical risk factors](#) such as these can negatively contribute to an organization's overall culture, including its safety culture. Specifically, [non-physical risks](#) such as low levels of supervisor support, poor collaboration and trust between colleagues, high job demands, burnout, and job dissatisfaction can lead to poor safety performance and safety culture (Andersen et al., 2019; Macfarlane et al., 2009; Melamed, 2009; Yang et al., 2023).

### **Areas of Celebration**

Of respondents, 64.3% currently conduct employee perception surveys, which is comparable to the percentage conducting perception surveys in 2022-2023 (65.4%) and 2023-2024 (68.2%). Such surveys are an effective way to measure workplace safety culture and non-physical MSD risk factors (e.g., job satisfaction, leadership support, job autonomy) that may be impacting workers. Given the importance of these surveys, a majority of Index respondents utilizing them is worthy of recognition. Organizations that conducted employee perception surveys were more likely to receive a higher safety culture result as well ( $r = .47, p < .01$ ).

Organizations that consistently provide workers with appropriate ergonomic tools and equipment were also found to have higher safety culture subsection results ( $r = .60, p < .01$ ). Incorporating human factors design principles into work processes and providing proper ergonomic tools and equipment were correlated with trust between workers and others in the organization ( $r = .31, p < .05$ ;  $r = .40, p < .01$ , respectively) as well as the level of frontline worker involvement ( $r = .85, p < .01$ ;  $r = .52, p < .01$ , respectively). These findings may indicate that when leadership or safety teams put forth the effort to make their organizations safe, such as by providing adequate equipment and thinking about the impact of work and workflows on the workers, workers are more likely to get involved in those processes and trust their leadership.

Additionally, 82.1% of respondents have methods in place for workers to share safety improvement suggestions, mostly through reports to a supervisor or the safety team. As such, organizations that have methods in place for sharing safety suggestions were more likely to receive a higher result on the safety culture subsection ( $r = .77; p < .01$ ). Similarly, the organizations that involved frontline workers in work improvements were more likely to receive a higher result on the safety culture subsection ( $r = .75, p < .01$ ). By [involving frontline workers in safety efforts](#), employers demonstrate that the most impactful risks are being addressed and that their employees' voices are valued.

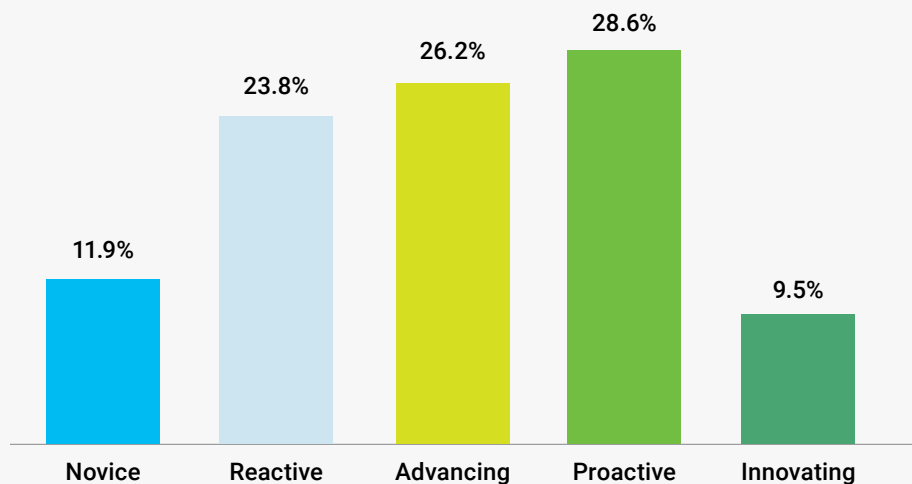
### Opportunities for Improvement

Ninety-eight percent of respondents reported that non-physical risk factors contribute to MSDs in their workplaces. This is up from 2023-2024 and 2022-2023, in which 95% and 84% of respondents indicated that non-physical risk factors contributed to MSDs at their workplaces, respectively. Of those respondents who believe non-physical risk factors contribute to MSDs, 50% could not quantify the impact of these factors, meaning that the presence of the risk factor is not measured or assessed. Pledge members and other organizations can reference assessments for non-physical risk factors for MSDs from the MSD Solutions Lab report [Accounting for Non-Physical Risk Factors in MSD Prevention](#). Other resources, such as a robust [fatigue toolkit](#) or supervisor training, may be beneficial to an organization's resource list as well.

### Innovation and Collaboration

In contrast to safety culture, the innovation and collaboration results were slightly lower than other subsections, with 35.7% of respondents scoring below average (Figure 6). This is an increase in below-average scores in comparison to 2023-2024 results but a decrease compared to 2022-2023, in which 44.3% of organizations scored below average. Based on these insights, Pledge organizations have enhanced their levels of innovation and collaboration since the inception of the MSD Pledge but may need more targeted efforts to sustain these efforts through trialing technology or sharing effective MSD solutions. No relationship was discovered between the innovation and collaboration result and organization size or program tenure. Companies of all sizes and program tenures should embrace strengthening their innovation and collaboration efforts.

**Figure 6.** Percentage of Respondents per Results Category for the Innovation and Collaboration Subsection



Further, the innovation and collaboration subsection results indicated that a majority (94.6%) of organizations are sharing effective solutions to combat MSDs internally through either formal methods such as ergonomics challenges or informal methods such as word of mouth. Moreover, a majority (71.4%) of organizations shared effective solutions to combat MSDs at conferences or through other external communications in 2024-2025. Collaboration both within workplaces and with other workplaces helps the greater community learn what strategies may be beneficial when implementing and refining MSD programs, and such positive findings here are encouraging.

### **Areas of Celebration**

Pledge community efforts in the innovation and collaboration subsection seem promising. Data reveal that 76.2% of respondents are currently involved with MSD prevention technology in some way, with 33.3% currently using technology in their workplaces, 11.9% testing or trialing a technology, and 31% actively researching technology. More organizations in 2024-2025 were actively utilizing technology in comparison to 2023-2024. Yet less companies reported having knowledge of safety technologies and less reported piloting these technologies in 2024-2025 compared to 2023-2024. This suggests a shift toward deeper adoption of safety technologies among fewer, more engaged organizations. As previously stated, the organizations more deeply utilizing MSD prevention technologies are also seeing a better reduction of the burden of MSDs, as exemplified by the correlation between risk reduction scores and technology use ( $r = .52, p < .01$ ).

### **Opportunities for Improvement**

Organizations with knowledge of safety technologies for MSD prevention decreased from 2023-2024, with 23.8% reporting they have little to no knowledge of MSD prevention technology. These results show that organizations appear to function within three major phases of technology implementation: unaware, researching or piloting, or implementing, and there is a relatively even breakdown of organizations within each of these groupings. Efforts to better inform those organizations that state they have little to no knowledge of MSD prevention technology are paramount. Organizations could benefit from finding and utilizing MSD prevention technologies through resources like MSD Solutions Lab [pilot grant opportunities](#), the [Emerging Technologies for the Prevention of MSDs Report](#) and the [NSC TechHub Marketplace](#). Organizations are also encouraged to continue sharing their effective MSD solutions more broadly with external organizations. The MSD Solutions Lab is always available as a partner for publishing [case studies](#) with organizations highlighting their experiences trialing MSD solutions.

## **Practical Implications**

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Year three data from the MSD Pledge Community shows overall positive results in several areas:

- **MSD indicator tracking:** More organizations indicated that they are tracking leading indicators, reflecting a growing commitment to proactive MSD prevention.
- **Organizational safety culture:** High levels of trust between workers and a generally positive perception of organizational culture are indicated.
- **Ergonomics program implementation:** The majority of organizations have adopted ergonomics and/or MSD prevention programs to guide their mitigation efforts.
- **Non-physical risk awareness:** Nearly all organizations recognize that non-physical risk factors are having an impact on their workers, showing sustained increase in awareness from previous years.

While the average overall result for the Index this year was proactive, there remains room for improvement. Key opportunities for organizations include:

- **Quantifying non-physical risk factors:** The vast majority of organizations report that non-physical risk factors contribute to MSDs, but half do not measure those factors, limiting understanding of their prevalence.
- **Piloting and integrating technology for MSD prevention:** Almost a quarter of organizations had little to no [knowledge of MSD prevention technology](#).
- **Implementing MSD interventions at the organizational level:** Compared to years one and two, MSD interventions involving PPE were more common than interventions higher in the Hierarchy of Controls.
- **Developing goals specific to MSD risk reduction:** A lower proportion of organizations reported having measurable goals regarding MSD prevention than in year one.

For organizations more advanced in their MSD reduction and prevention journeys, sharing best practices with the broader community and those newer in their MSD journeys can help improve awareness and the actions taken by organizations to prevent MSDs. This can be done through activities such as:

- Presenting at conferences
- Engaging in benchmarking sessions
- [Capturing experiences in case studies](#)

The National Safety Council is taking the lead on developing MSD resources and offering platforms to share research and insights, engage in discussions, and participate in case studies, regardless of industry type, size, location or Pledge status. Innovating organizations should continue pioneering and sharing their proven processes of tracking, measuring and alleviating physical and non-physical MSD risk factors.

[Creating a culture of safety](#) is also vital to strong MSD prevention efforts and is linked to fewer workplace injuries, safer working operations and more engaged employees (Ellis, 2019; Stemn et al., 2019). For those seeking to enhance their culture, an initial understanding of the workforce's unique needs is a must. This can be achieved through several methods of engagement, including:

- Employee interviews
- Focus groups
- Validated, third-party [employee perception benchmarking surveys](#)

Like any successful safety program, the best approaches to risk reduction are multidisciplinary and involve all levels of an organization. A two-part guide – available in the inaugural [MSD Solutions Index Pledge Community Report](#) – outlines essential components to support a thriving MSD program, including components an organization should have in place and actions to be carried out through said components. What works for one workplace may not work for another, so trial and error should be expected during the development of a robust MSD prevention program.

Finally, organizations are encouraged to participate in the Index annually to gather longitudinal data, assess progress, and continually refine their MSD prevention programs and efforts.

## Conclusion

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Through the MSD Solutions Index, the MSD Solutions Lab received valuable information from 42 Pledge organizations. While many of our respondents are continuing and maturing their MSD prevention efforts, insights show room for improvement. Improvements by those organizations who have completed the Index for three consecutive years, as well as safety culture efforts within the Pledge community, can be celebrated, but more resources need to be devoted to risk reduction, specifically non-physical risk factors, with a secondary focus on innovation and collaboration. Additionally, the importance of goal setting around MSDs is important to ensure MSD mitigation is properly addressed. An emphasis on setting MSD prevention-related goals is an area of potential growth.

Looking forward, innovative and collaborative work should continue in the occupational safety and health community to identify, reduce and prevent MSDs. Importantly, findings suggest that MSD prevention program effectiveness is not solely dependent on the size and tenure of the program but, rather, on factors such as effective communication, worker engagement and sustained leadership support for MSD solutions. The third year of the Index has shown that we need to devote our focus, efforts and resources toward more rigorous interventions outside of PPE, such as engineering controls, technology adoption and non-physical risk factor mitigation. To achieve this, fostering a culture of improvement through goal setting and worker involvement has shown to be beneficial. Valuable insights into the areas of need within the Pledge community have been gained, and the MSD Solutions Lab looks forward to continuing with organizations as they embark on their MSD solutions journeys.

## Authors and Acknowledgments

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# Appendix A

## Correlations of Pertinent Numeric Variables

	Overall	RR	Cul	InnColl	AbPrev	Prog	ProgTen	Meas-RR	RR-Goals	IntType	Hum-Fac	Purch	Tools	Surveys	Meth-Shar	ShareInt	Share-Ext	Tech	Leading	Size	Invol	Cult	
RR	.872**																						
Cul	.911**	.619**																					
InnColl	.598**	.461**	.427**																				
AbPrev	.559**	.394**	.579**	.357*																			
Prog	.543**	.384*	.544**	.388*	.433**																		
ProgTen	.078	.226	-.105	.131	.052	.c																	
MeasRR	.566**	.580**	.468**	.272	.255	.258	.083																
RRGoals	.153	.285	.041	.011	-.047	.127	.043	.571**															
IntType	.524**	.636**	.348*	.246	.327*	.182	.102	.493**	.116														
HumFac	.555**	.395**	.631**	.160	.440**	.409**	-.156	.293	.236	.114													
Purch	.600**	.430**	.627**	.382*	.472**	.336*	.076	.416*	.322	.129	.783**												
Tools	.542**	.291	.597**	.506**	.526**	.415**	-.051	.345*	.019	.179	.549**	.633**											
Surveys	.543**	.532**	.465**	.339*	.311	.360*	.107	.146	-.260	.424*	.054	.217	.212										
MethShar	.702**	.479**	.767**	.410**	.363*	.420**	.047	.459**	-.030	.150	.333*	.458**	.491**	.441**									
ShareInt	.198	.318	.027	.227	.162	-.094	.296	-.015	-.016	.139	-.015	.128	-.074	.156	-.101								
ShareExt	.294	.285	.161	.429*	.210	.170	.390*	.111	-.092	.120	.058	.262	.297	.028	.040	.415*							
Tech	.366*	.524**	.129	.393*	.154	.289	.571**	.230	.289	.305	.211	.221	.186	.216	.047	.187	.129						
Leading	.467**	.428**	.429**	.192	.392*	.319*	.176	.465**	.325	.285	.348*	.484**	.344*	.228	.475**	-.108	-.129	.203					
Size	.176	.346*	-.021	.185	-.174	-.038	.134	.197	.018	.303	-.204	-.178	-.265	.282	.141	.243	-.073	.156	.028				
Invol	.592**	.362*	.747**	.217	.479**	.440*	-.133	.313	.211	-.001	.853**	.740**	.523**	.267	.500**	-.294	-.090	.165	.438*	-.304			
Cult	.735**	.447**	.852**	.353*	.649**	.535**	-.200	.407*	.232	.299	.709**	.693**	.657**	.216	.498**	-.037	.091	.162	.408**	-.269	.705**		
Trust	.376*	.141	.519**	.151	.482**	.085	-.013	.064	-.109	.168	.312*	.320*	.402**	-.102	.288	-.217	.204	-.051	.119	-.269	.339	.601**	

\*\*Significant at the 0.01 level.

\*Significant at the 0.05 level.

## Appendix B

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### Analysis Methodology

After survey closure, collected data were reviewed for completion and cleaned for analysis. Data were cleaned in Excel (Microsoft Corporation, 2016), and statistical analyses were conducted in the Statistical Package for the Social Sciences version 22 (SPSS, Chicago, IL). Analyses conducted included descriptives and Pearson correlations with  $\alpha = .05$  and thematic coding. Scale scores of like items (e.g., items concerning employee trust and items concerning frontline worker involvement) were also calculated. Variables of interest included industry, organization size, use of ergonomic tools and equipment, use of employee perception surveys, involvement of frontline workers in decision making, trust among employees, the presence of an MSD prevention and/or ergonomics program and overall Index and subsection scores.

### Definitions

**Correlation:** A statistical test that determines whether two variables are related. In a positive correlation, as the value of one variable increases, the value of the other variable increases as well. In a negative correlation, the value of one variable increases as the value of the other variable decreases. *Note: A correlation simply reflects the existence of a relationship between two variables rather than cause and effect.*

- **Pearson correlation:** This type of correlation determines a relationship between two numerical variables. The statistical value for a Pearson correlation, denoted as  $r$ , ranges between 1 and -1. A negative  $r$ -value indicates a negative correlation, while a positive  $r$ -value indicates a positive correlation. The closer the value is to -1 or 1, the stronger the correlation (for example,  $r = .7$  is a stronger correlation than  $r = .3$ ).

**Normal distribution:** This is a data pattern that forms a symmetrical, bell-shaped curve on a graph. The curve is centered on the average value for the dataset. Simple normal distribution examples are human height and weight and can be represented by a bell-shaped curve.

**Statistical significance:** This signifies whether the results of a statistical test are likely due to chance or a factor of interest.

- **P value:** The value that denotes statistical significance. This report defines statistical significance as a p-value of .05 or less.

**Leading indicator:** These are proactive, preventive and predictive measures that monitor and provide current information about the effective performance, activities and processes of an environmental, health and safety management system that drive the identification and elimination or control of risks in the workplace that can cause incidents and injuries (Campbell Institute, 2013).