



Trends and Best Practices in Critical Risk Management

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Trends and Best Practices in Critical Risk Management

Sharing with you today.....

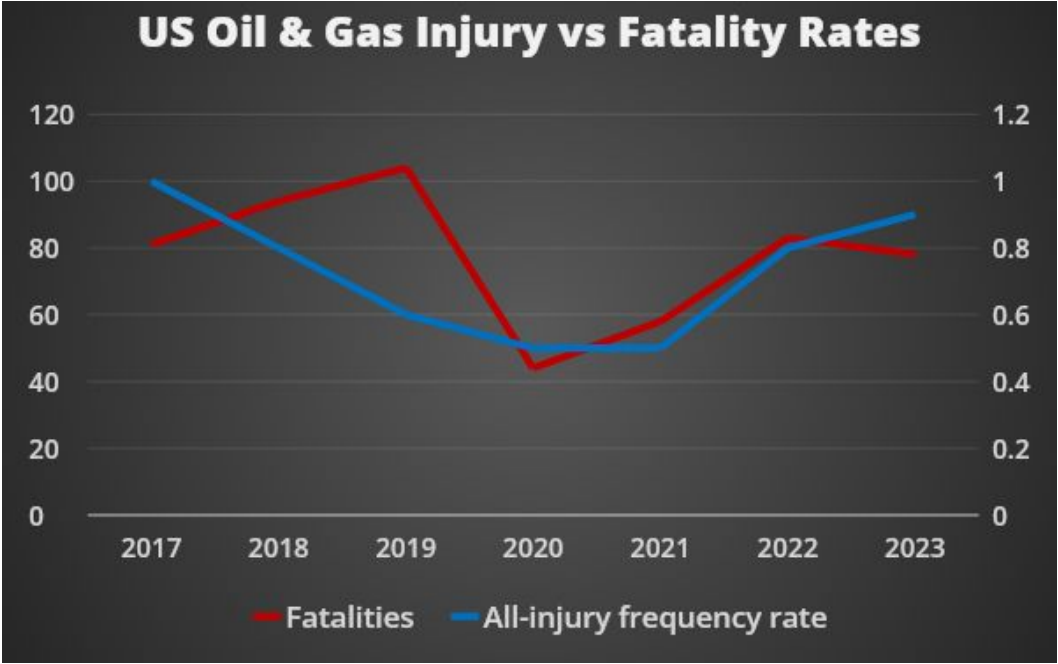
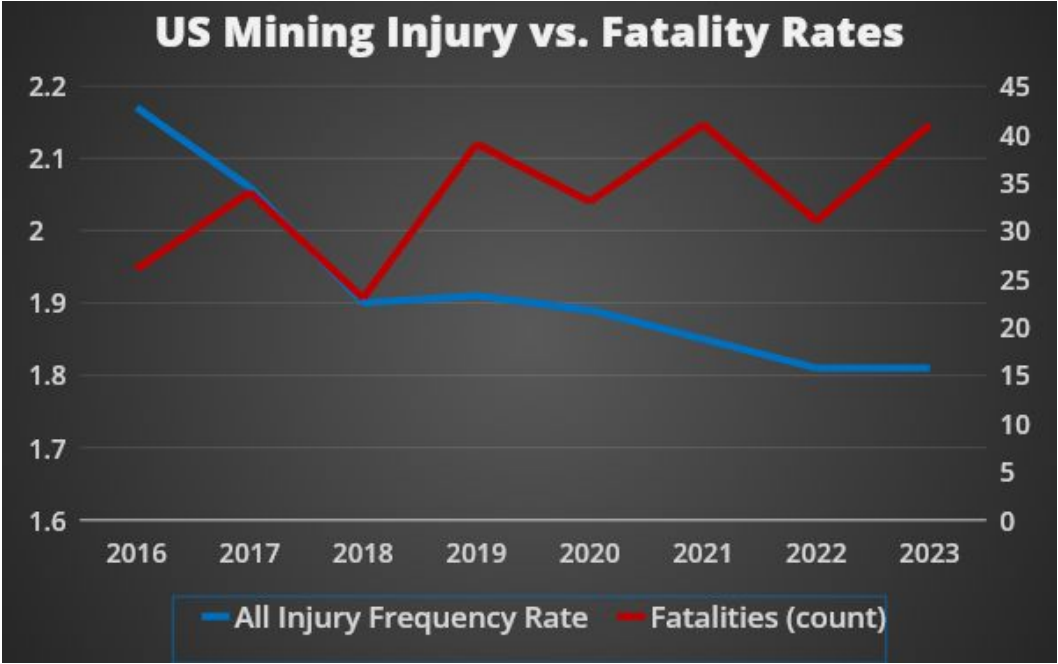
- 1 What is Critical Risk Management
- 2 Best Practices in Critical Risk Management
- 3 Our approach to Transformation
- 4 Key Insights
- 5 CRM Benchmarking Data
- 6 What can be Achieved with Critical Risk Management

What is Critical Risk Management?



While Injury Rates Improve, Fatalities Remain High

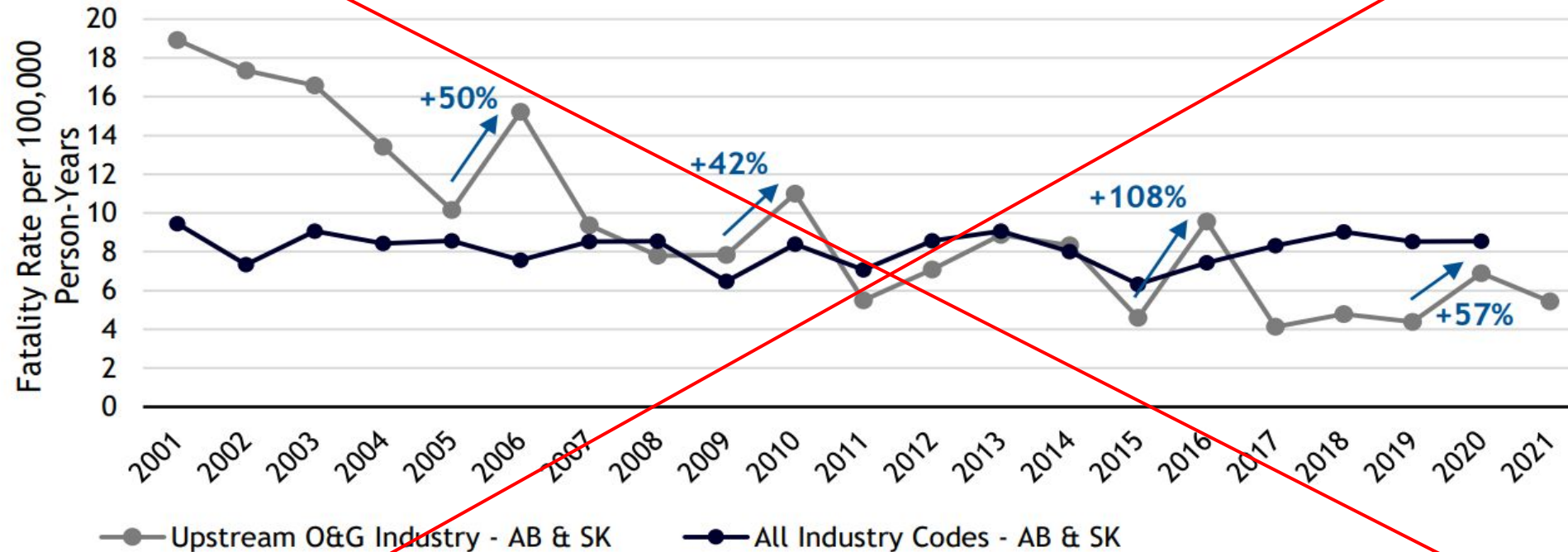
Although injury rates are consistently declining, persistently high fatalities highlight a gap in risk management and the need for targeted strategies to address critical risks.



Overall **injury frequency rates have steadily declined** and stabilized, indicating progress in reducing less severe incidents. However, **fatalities continue to remain high**, highlighting a persistent disparity and ongoing risk.

Occupational Fatalities in Energy Safety Canada Sectors

Dramatic Reduction in Oil and Gas Fatalities Outpaces Other Industries, While Overall Provincial Rates Remain Steady.



"All Industry Codes" data retrieved from AWCBC. 2021 data unavailable.

Oil and gas industry **fatalities have dropped nearly 90% since 2001**, while the **overall fatality rate** for all industries in AB & SK **has remained stable**.

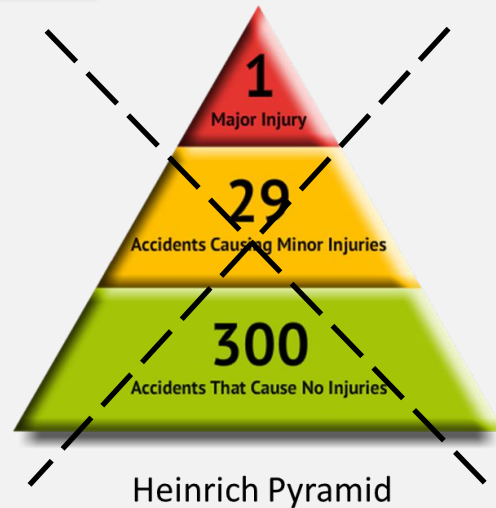
Critical Risks Demand a New Approach

Traditional safety models focus on reducing all types of injuries, whereas Critical Risk Management targets the scenarios most likely to cause serious harm or fatalities, protecting what matters most.

Moving Beyond the Pyramid:

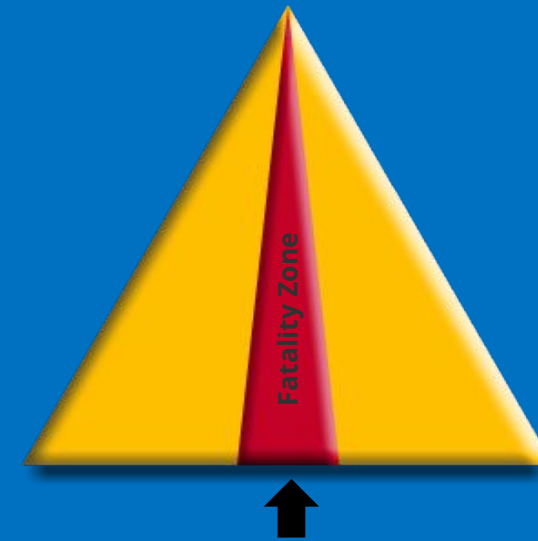
Prioritizing Critical Risks in the Fatality Zone

Old approach¹



Traditional safety efforts aimed to reduce all incidents, assuming fewer minor accidents directly reduce serious injuries or fatalities.

New approach



Critical Risk Management (CRM) targets the Fatality Zone - a distinct subset of accidents involving risks that are potentially fatal.

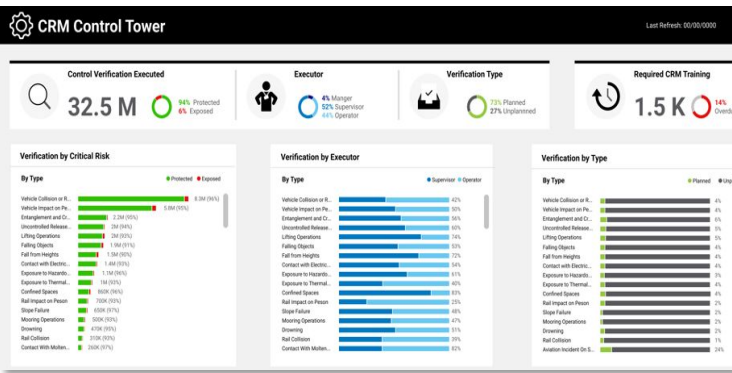
¹Traditional theory has been disproven with data (Dr. Matthew R. Hallowell)

Critical Risk Management Fundamentals

Forwood's CRM offers a comprehensive solution for identifying and managing risks, while enabling robust data collection to drive long-term, sustainable improvements.

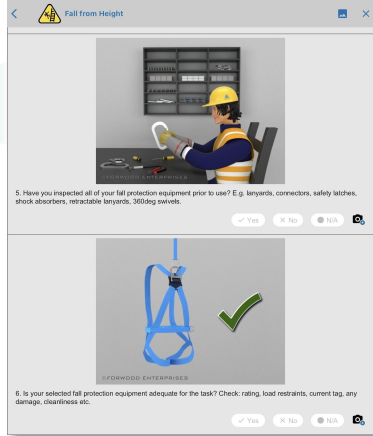
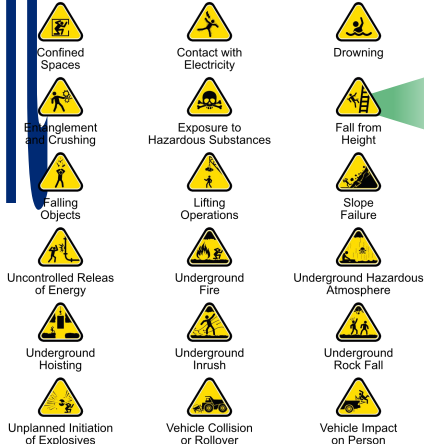
3 Continual Improvement

CRM collects data to inform dashboards and help the organization prioritize efforts to avoid critical risks.



1 Risk and Control Identification

CRM identifies critical risks specific to organizations, and controls to mitigate risks.



2 Multi-layer Verification

CRM takes a three-layer verification approach for testing controls. Different profiles are attributed to each layer.



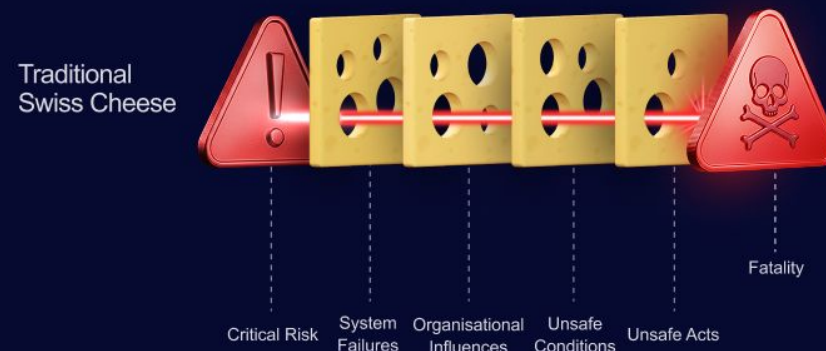
Stop work and “celebrate the red”



Enhancing the Layers of Defense

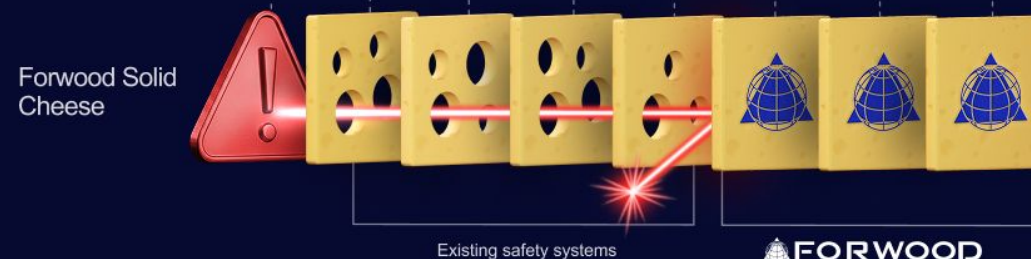
CRM helps organizations transition from traditional safety models by adding multiple, proactive safety layers that anticipate and prevent control failures, providing a more robust defense against critical incidents.

The Traditional Swiss Cheese model represent safety systems aimed at mitigating fatalities



Existing safety systems will inevitably have barriers that can fail and result in a fatality

The Forwood Solid Cheese Model builds on this framework to **add three additional layers of safeguard verification**



The Forwood Model integrates with existing safety systems to **effectively block potential paths to fatal incidents**

What Can Be Achieved with CRM?



Delivering Zero Fatalities

Through Forwood's Critical Risk Management Solution

What Has Been Achieved with Forwood

Tier 1
Global company
85,000
employees/ contractors



Tier 1
Global company
~31,000
employees/ contractors



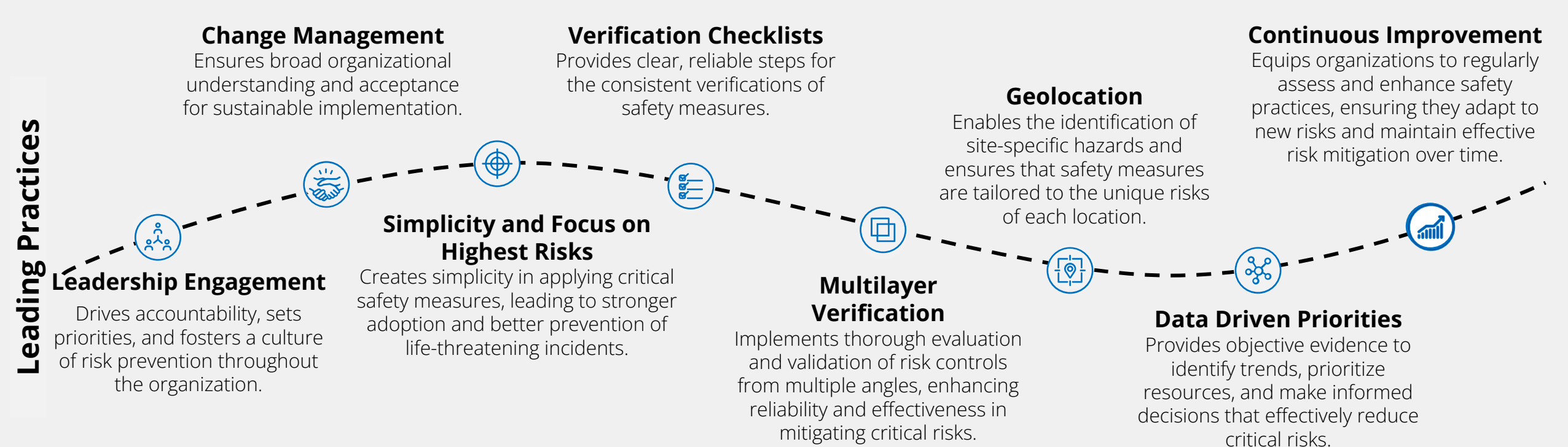
Tier 1
Global company
11,000
employees/ contractors



Best Practices in Critical Risk Management

Keys to Success

Success relies on strong leadership, a focused and embedded safety culture, and the consistent use of proven controls and data to drive continuous improvement.



Together, these key elements form **an integrated framework that drives effective critical risk management** to foster continuous safety improvement.

Leading Practices: Verification Checklists

CRM implements leading practices by requiring the completion of control verification checklists before conducting high-risk activities reducing the likelihood of incidents and supporting a proactive approach to risk management across the organization.

2:05

Lifting Operations

Google

ENERGISED WORK

Are you performing energised work? ☒ No

UNPLANNED WORK

Is this work unplanned? ☒ No

EXPAND ALL QUESTIONS

BARRIERS AND SEGREGATION Show Control

LIFTING PLAN EXECUTION Show Control

MECHANICAL INTEGRITY OF CRANE Show Control

MECHANICAL INTEGRITY OF LIFTING EQUIPMENT Show Control

SAVE

2.0.42+344

2:08

Lifting Operations

BARRIERS AND SEGREGATION Show Control

LIFTING PLAN EXECUTION Mark All N/A

Height Volume Weight

1. Does the lift plan include confirmation of the actual and / or estimated weight of the load before proceeding with the lift?

☒ Yes ☐ No ☐ N/A

Comment

SAVE

2.0.42+344

5:05

Lifting Operations

DESIGN Show all

IMPLEMENTATION Mark All N/A

I1.1 Is there sufficient lighting and ventilation in the area where the inspection is being conducted?

☒ Yes ☐ No ☐ N/A

Comment

I1.2 Has the lifting equipment been inspected as per procedure?

☒ Yes ☐ No ☐ N/A

Comment

I1.3 Have connecting links on the lifting equipment been inspected?

☒ Yes ☐ No ☐ N/A

Comment

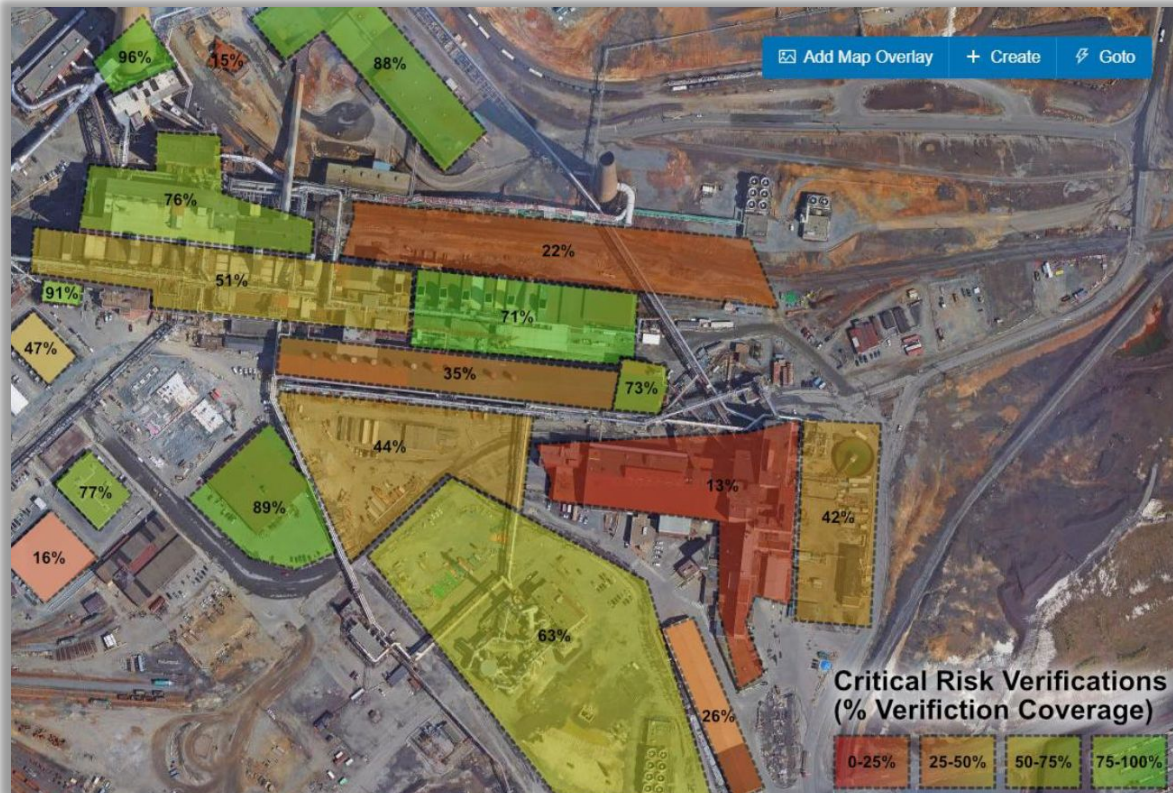
SAVE

2.0.42+344

Leading Practices: Geolocation

CRM uses geolocation technology to pinpoint sites that have low or no rates of control verification and therefore exposed to high levels of critical risk, enabling targeted interventions and more effective allocation of resources to improve safety outcomes.

Use geolocation to identify hot spots in real time...



And Black Spots (No Verification Coverage)

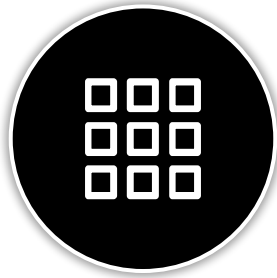




Our Approach to Transformation

Our framework for Critical Risk Management

Safety is more than processes or a discipline, it is a transformation that requires different dimensions to achieve success.



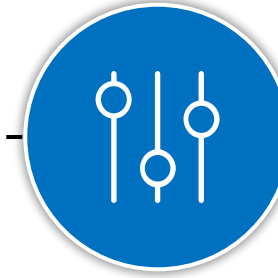
Organize

"Everyone is getting ready to utilize the CRM methodology - **operational and mindset readiness**"



Run

"People are using the CRM and we are capture opportunities and lessons"



Sustain

"CRM is embedded as **part of the routine and culture**, and **everyone is engaged**"



Change and Behaviour



"Key personas aware of desired behaviour's and **making decisions that activate desired behaviour** for a sustainable transformation"



Key Insights



Key Date Driven Insights

As the industry-leading CRM solution trusted by the largest names in mining, Forwood has gathered unparalleled data over its 15+ years of implementation. We have analyzed this data to distill key insights and benchmarks.



15+ Years of Implementations



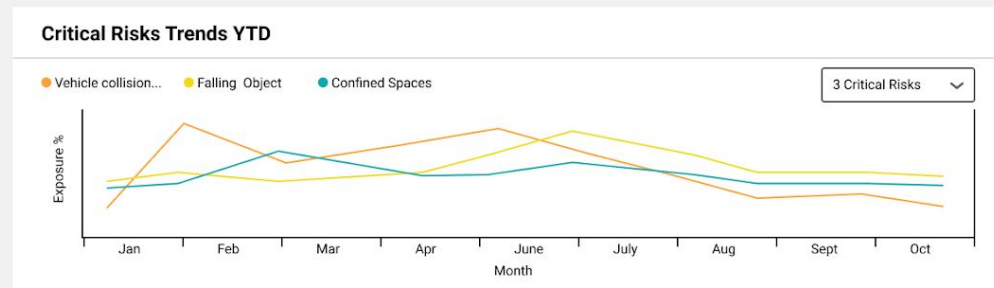
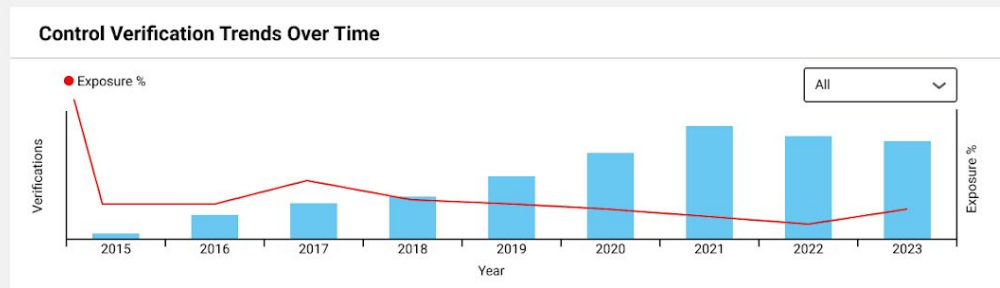
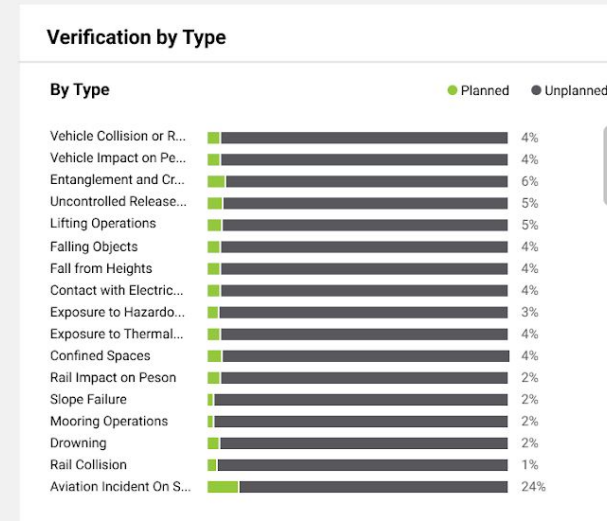
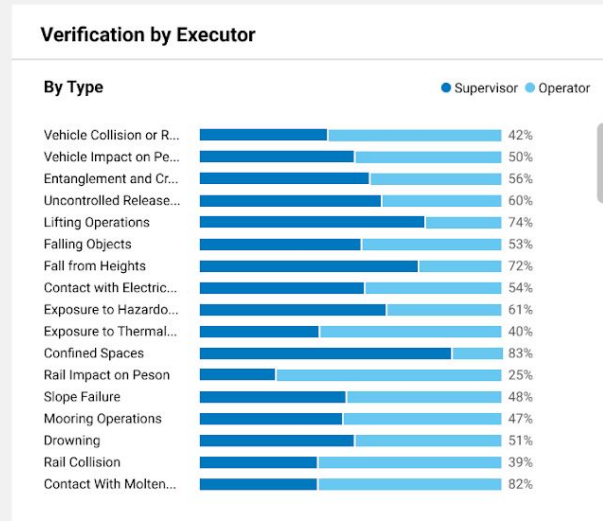
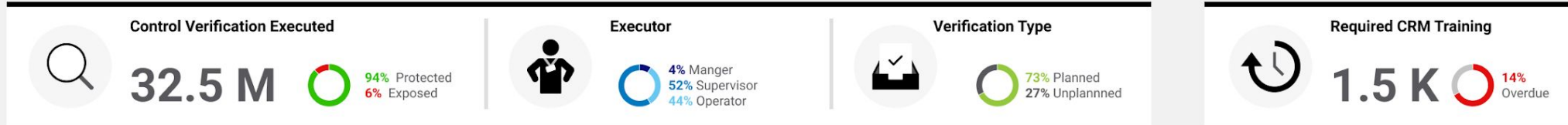
350M+ Data Points



1000+ Locations Deployed

CRM generates large quantities of **leading indicator data**.

Analyzing this data has **allowed us to produce the following insights...**



Filters

Date Range: 00/00/0000 - 00/00/0000

Frequency:

Department:

Location:

Critical Risk:

Verification Type:

Executor:

Control:

Root Cause:

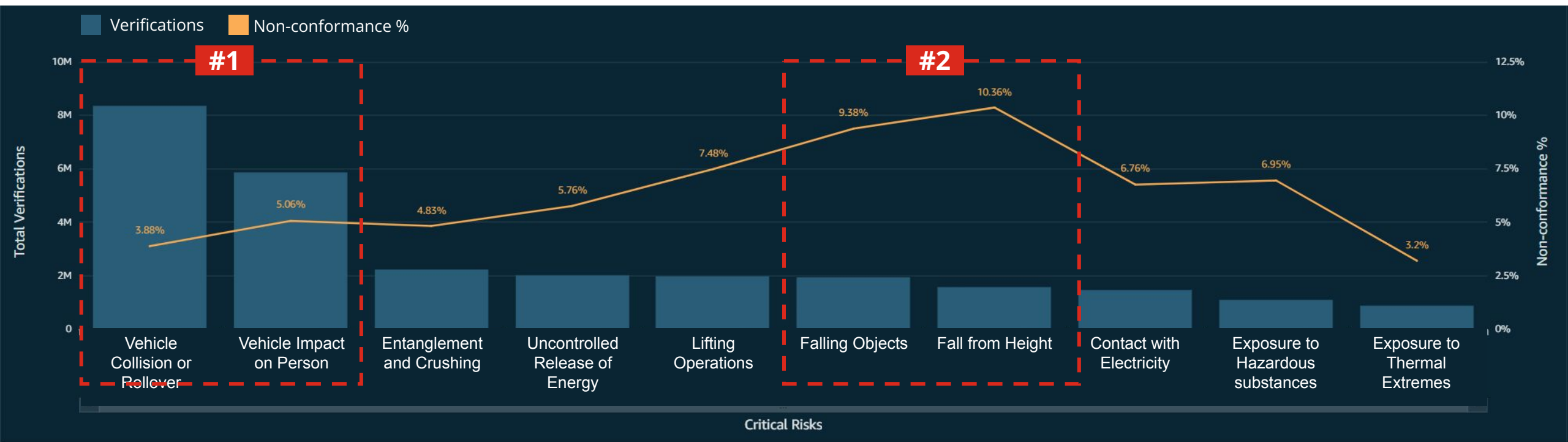
Control Type:

Shift:

Occupation:

Key Insights| Most Common Verifications

The ten most frequently checked critical controls in the industry, along with the average non-compliance rate, and the top ten most executed verifications with their respective non-conformance percentages.

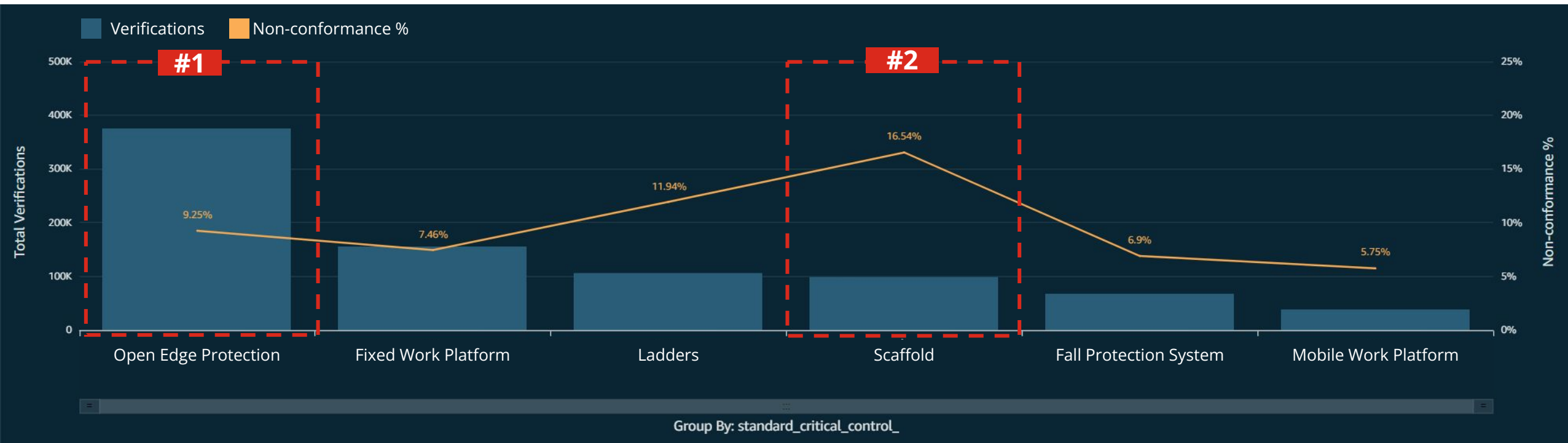


Key Insights

- #1 Although Vehicle Collision verifications are executed the most, they tend to have a lower rate of non-conformance.
- #2 Fall from Heights and Falling Objects have a higher rate of non-conformance when compared to the other critical controls.

Key Insights| Critical Controls

Verifications and non-conformance across critical controls to identify risk exposure.

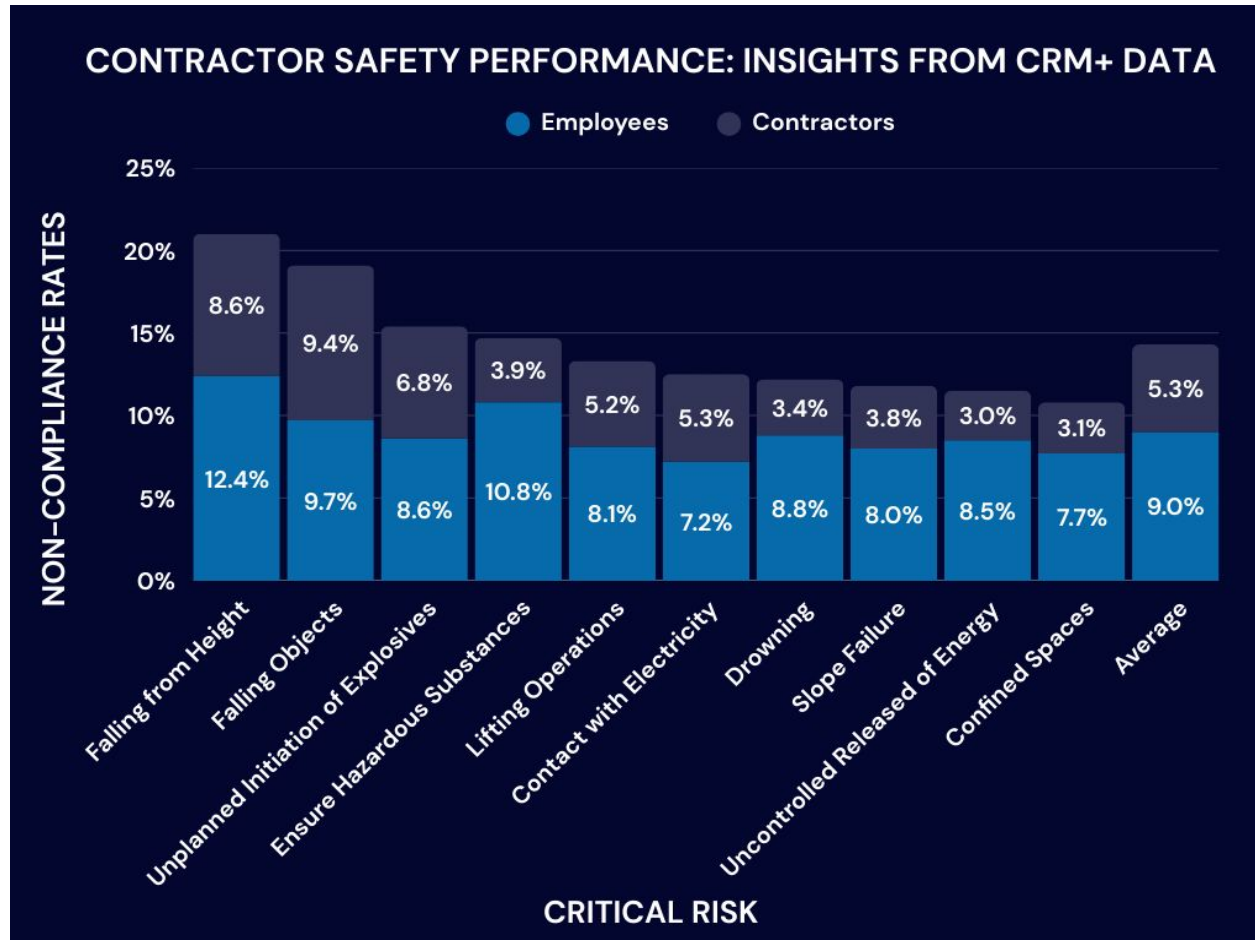


#1 There is a greater amount of exposure to open edge work with a fairly high non-conformance %.

#2 Scaffolding has the highest non-conformance %.

Key Insights| Contractors vs. Employees

Non-compliance rates for control verification are measured across both contractors and employees, providing valuable insights into how consistently safety protocols and procedures are being followed by different groups within the organization.



Key Insights:

#1 Contractors exhibit 5.3% non-compliance in critical controls compared to 9% among in-house employees.

#2 Contrary to the assumption that contractors are less reliable, they perform better than in-house employees at verifying critical controls.

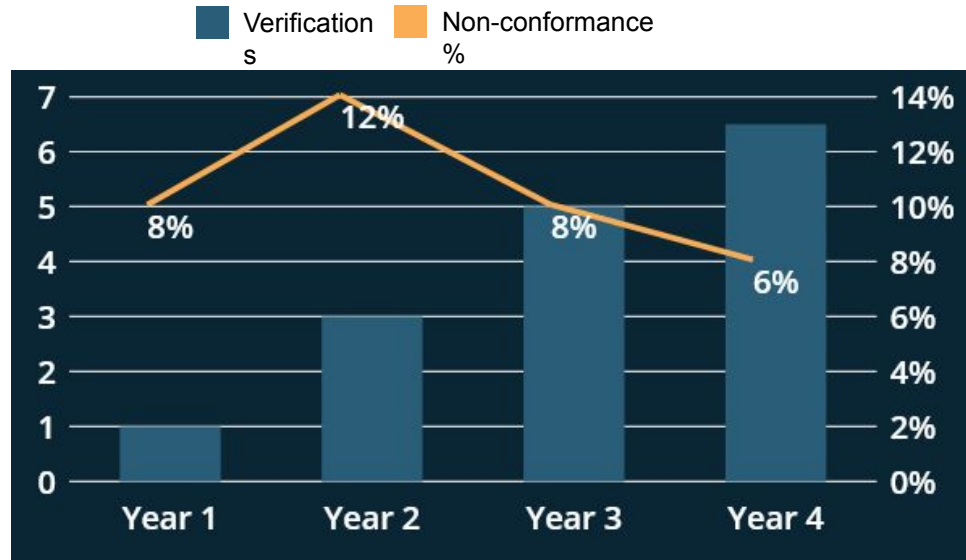
CRM Benchmarking Data



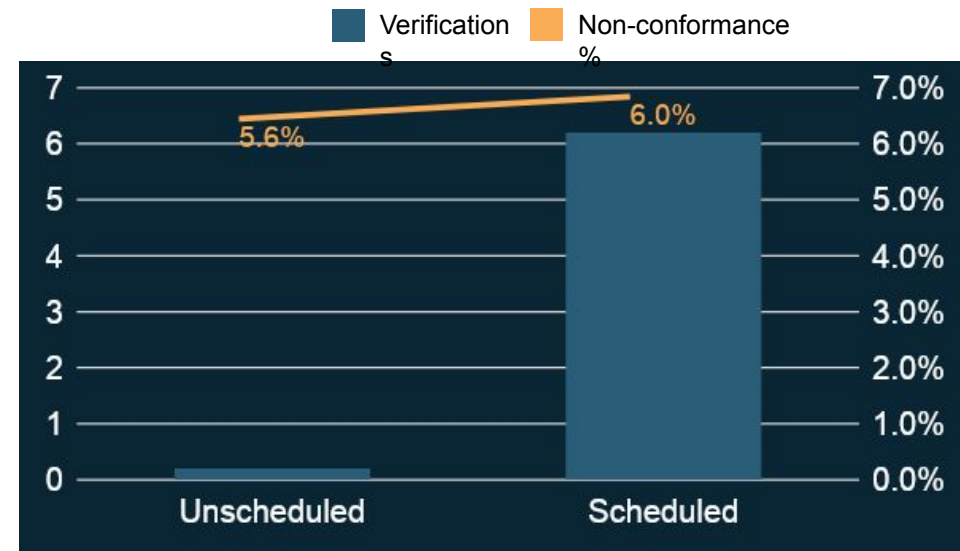
Benchmarking| General

As organizations mature in their critical control verifications, non-conformance trends downward, with contractors showing lower non-conformance rates than employees and no significant difference are observed between scheduled and unscheduled work.

Trend of Non-conformance over time



Unscheduled vs. Scheduled Work



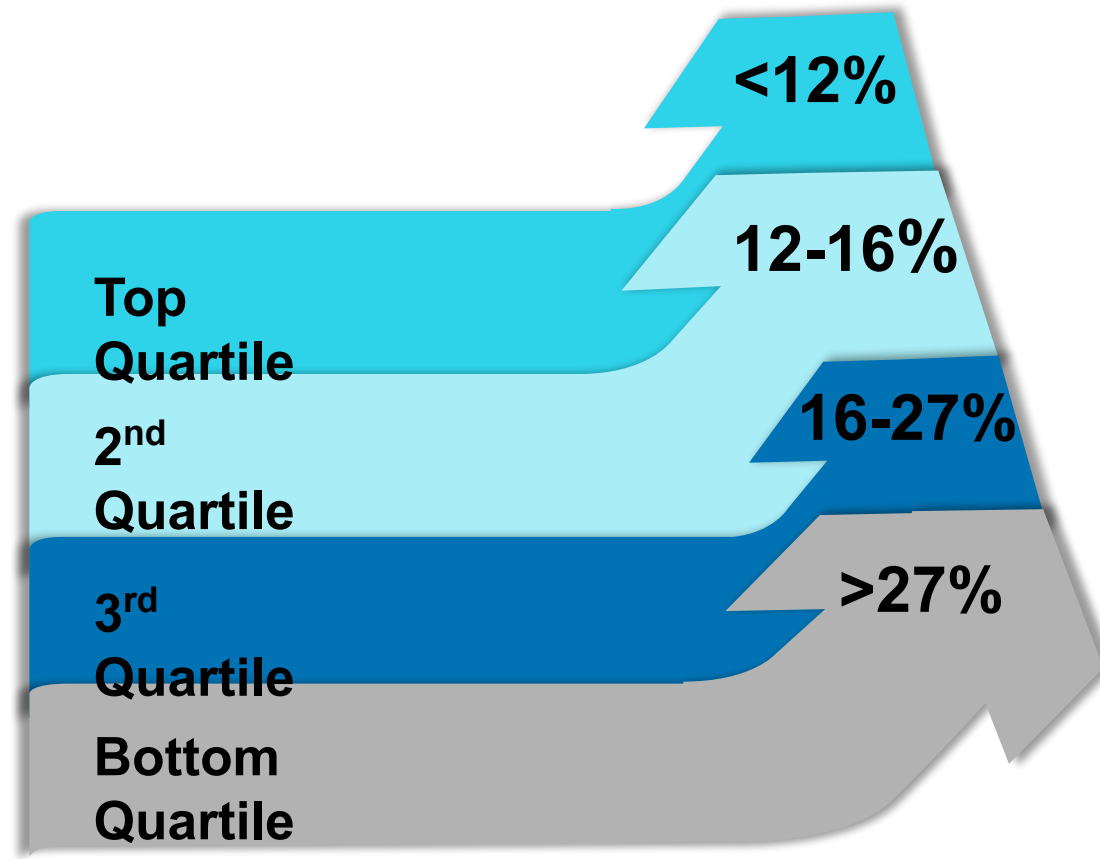
Key Insights

- #1** Non-conformance trends downward as an organization continues to mature with their critical control verifications.
- #2** Verifications done by contractors appear to have a lower rate of non-conformance when compared to employees.
- #3** There is no major difference in the average non-conformance% between Scheduled vs Unscheduled work.

Benchmarking| Performance Quartiles

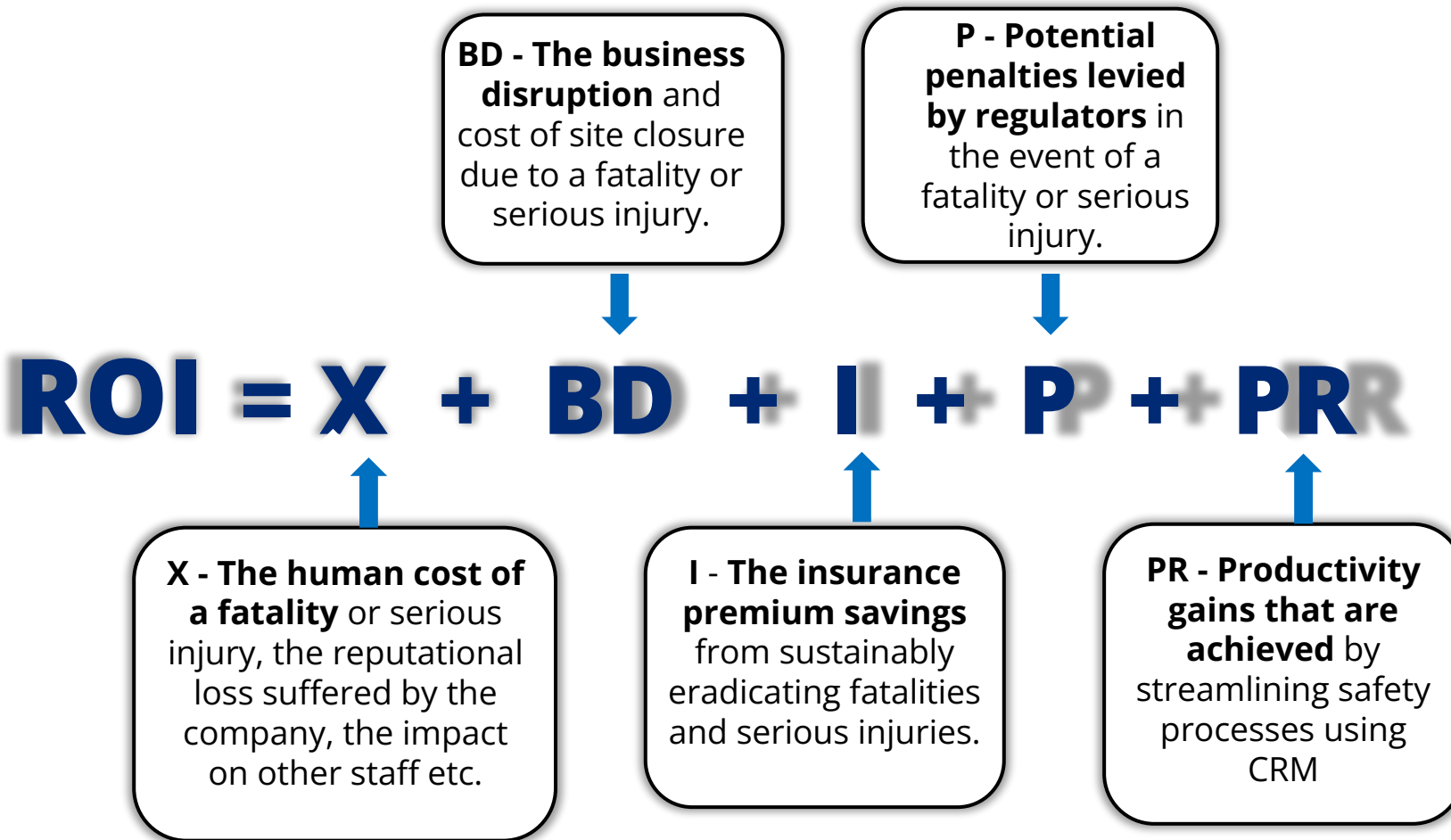
Excellence in CRM is a journey; not all companies are at the same stage, and many factors affect the percentage of non-conformance an organization or site may experience.

Verification Non-Conformance % Quartiles



The ROI Equation

Reducing fatalities and improving efficiency helps prevent loss of life and minimizes hidden costs such as shutdowns, investigations, increased insurance premiums, and process changes.



It's about the dads and
mums who **come
home every night**



Thank you