Research on Predicting Workplace Injuries Reveals 4 “Safety Truths”



Wouldn’t it be easy to protect workers if you could predict how they’re likely to get injured’ After all, if you can predict injuries, you can prevent them.

According to research on predictive analytics, safety professionals actually can predict workplace injuries’and no, it doesn’t involve crystal balls or tarot cards.

The research, which is outlined in a white paper from Predictive Solutions, Inc., was conducted by teams from Predictive Solutions and Carnegie Mellon University. They looked at over 112 million safety observations and their associated safety incidents recorded from over 15,000 individual worksites.

The researchers found that workplace incidents can be predicted with high levels of accuracy’in fact, they developed a number of predictive models with accuracy levels of 80-97% in predicting injuries at actual worksites.

Once the researchers determined that predictive models worked, they then focused on identifying factors that influence incident levels and the steps companies could take to optimize their OHS programs and ensure worker safety.

Their conclusion: Safety inspections provide the raw data

needed to drive the prediction of workplace injuries and safety incidents.

Analyzing this data revealed four ‘safety truths’ that can not only predict incidents but also be used to prevent injuries once a prediction is made.

Safety Truth #1: More Inspections = Safer Workplace

Analysis of the data showed a pattern: the higher the volume of inspections, the fewer injuries and incidents. In specific worksites, the researchers found that as inspections increased, the number of reported incidents went down.

Safety Truth #2: More People Should Be Involved in Safety Inspections

The research also showed that the probability of having an incident decreased as the number and diversity of the people performing inspections increased. In other words, having a large number of diverse inspectors’that is, from outside of the safety function and representing different departments’doing a few inspections is better than a few inspectors, even if they’re trained safety professionals, doing a lot of inspections.

Safety Truth #3: Unsafe Workplaces Have Too Many Inspections with No or Few Identified Hazards

A high number of inspections with no or very few unsafe or at-risk conditions invariably came from some of the most unsafe worksites included in the research. Identifying few or no hazards doesn’t mean the workplace is safe but rather that the inspectors aren’t seeing or reporting these unsafe conditions and behaviours.

The research found that the safest worksites continually find a certain level of unsafe conditions and behaviours and then fix them before they cause incidents or injuries. So ensure

that you train your safety inspectors and reward them for reporting unsafe observations.

Safety Truth #4: Too Many Unsafe Observations Means an Unsafe Workplace

Yes, you should encourage the reporting of unsafe conditions and behaviours. But a persistently high level of unsafe observations is associated with a high level of incidents. Why' Because the unsafe conditions and behaviours being identified aren't being resolved, corrected or addressed. That is, identifying safety hazards isn't enough'you must also take steps to address those hazards.

Bottom line: The research found that worksites that successfully incorporated all four safety truths had two to three times fewer incidents.

OHS Insider Resources

The OHS Insider can help you conduct safety inspections you can then use to predict injuries in your workplace with resources such as these:

- 5 Tips for More Effective Safety Inspections
- A case illustrating why regular inspections are important to proving due diligence
- Information on the JHSC's role in inspections
- Workplace Inspection Worksheet
- A checklist for inspecting your workplace for IAQ problems
- A fire inspection checklist.