

TIPS (trigger an IIF paradigm shift)

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Abstract

Challenge: New Mexico Corporate Services (NMCS) recordable injuries have been averaging 2–4 per year for the last 5 years with no statistical improvement. However, we believe all NM employees must go home incident and injury free every day and just as healthy as they came to work. In addition, we have received feedback from several sources, that indicates some employees are reluctant to report injuries. These indicators showed us that continuing our current strategies, making incremental improvement and changes, would not give us the improvement desired. We needed a paradigm shift to get everyone completely engaged in the IIF (Incident & Injury Free) culture, in order to achieve true IIF results.

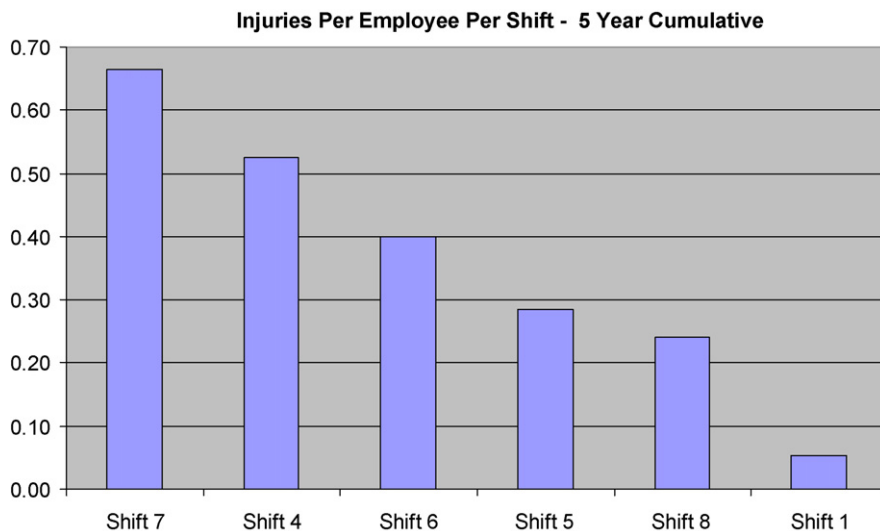
Methods/Strategies: We formed a small (3-person) taskforce consisting of safety representatives from EHS, Site Services and CS Operations. We reviewed 5 years worth of data to determine what was injuring our people. We also decided to review all injuries, not simply those classified as recordable by OSHA standards. First we identified the types of injury information needed to get a true picture of our safety issues. We analyzed IRB (Incident Review Board) data showing us the following factors and whether any of them contributed to the injury: – Date – Incident Description – Severity – Root Cause – Type of Injury – Season – Work Group/Shift – Area – Improper evaluation of hazard – Inadequate work procedures – Incorrect Mental Model – Inadequate PPE Requirement – Failure to Follow or Unaware of PPE Requirement – Shortcut or Schedule Pressure – Last or First Day of Shift or Adjacent to Holiday – OT – Aggravate Existing Condition – Inadequate Training or Passdown – Experience in Task – Corrective Action Taken – Overall Quality of Response. Once this information was collected for all injuries in an Excel file, we graphed it several ways to help reveal trends:

- Shift 7 had double the injuries of shift 5
- Night shift injuries were relatively high but lower than Shift 7
- Shift 5 had no severe (recordable) injuries
- Biggest total injury type was ergonomic
- Biggest recordable injury type (58%) was cuts/lacerations
- Chemical exposure and inhalations resulted in no recordables
- Biggest root cause category was behavioral
- Biggest behavioral root cause was “Failure to Evaluate Hazards”
- Biggest administrative controls root cause was “Inadequate Procedures”
- Biggest engineering controls root cause was “Unrecognized Workplace Hazard”
- Majority of injuries occurred in Spring/Summer which accounted for 86% of recordables
- Response was inadequate or poor for 25% of injuries
- Number of injuries by workgroup were about equal
- Work area injuries were mostly in the CUB and Subfab but CUB injuries favored cuts/lacerations while Subfab favored ergonomic injuries

These learnings and gaps were used to develop our New Mexico Site Safety Action Plan for 2005. It has also been used by individual managers and supervisors in their day-to-day business meetings, activities, and communications, for a more focused IIF message and effort.

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Results:

Conclusions/Recommendations: Challenges are different amongst shifts. Shift culture may be stronger than workgroup culture. Work areas pose different challenges that all should be aware of and prepared for. We should prepare ourselves for challenges posed by the Spring and Summer seasons as well. We should be aware of and prepare for the different challenges and cultures characteristic of each shift. Supervisors need to spend more time in the field with their people to help them address safety issues and help make IIF a more consistent component of daily workgroup culture. Each site should analyze their data and look for their unique safety challenges. This will allow customized, focused action plans that meet the unique needs of each site.

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1. Challenge

Intel's New Mexico Corporate Services (NMCS) has been incurring two to four recordable injuries per year for the last 5 years with no statistical improvement. However, our deeply held belief and intent is that all NM employees should be able to go home IIF (incident and injury free) everyday, just as healthy as they came to work. We have never felt that any level of injury is acceptable. So we listen to our people and look for opportunities to improve.

2. Background

Every year, NMCS participates in an advanced safety self-assessment (ASSA) process that culminates in an audit conducted by a Corp Safety Officer and a couple of site managers from other locations. After reviewing our safety record and interviewing many NMCS employees, the 2004 safety assessment group concluded that "Safety is alive on the NM site. The pieces, parts and spirit are in place [but there's something missing]".

We also received feedback that not all employees consistently adhered to an IIF philosophy. After all, how many of us maintain the same level of safety awareness at home and in our recreational activities that we do at work? An example is the employee that talks a strong safety message at work, but rides off without a helmet on their Harley at the end of the day.

IIF behavior is based on well-developed habits and routines that cannot be switched on and off depending on whether we

are at work or not. So how do we embed the IIF culture in our employees in such a way that it helps drive consistent, safe behaviors without driving injury reporting underground, especially when other feedback revealed that some employees were already reluctant to report injuries?

After our annual ASSA, we incorporate all of the feedback and create a "Site Safety Action Plan" that addresses input from our employees and recommendations from the assessors. The results were typically safety action plans based on incremental change and improvement. This would not do if we planned on improving our safety record. We needed a paradigm shift; a paradigm shift that would nurture a safety culture that embraced a commitment to IIF.

"The Tipping Point", written by Malcolm Gladwell [1], points out that trends often take hold suddenly. All that is needed is a spark to make a trend spread like wild fire. An example Malcolm used is the New York City subway system, which had a huge crime problem until 1984. That was the year the subway authority decided to paint over all graffiti on the subway cars, inside and out. Each night, every subway car was inspected and repainted as necessary—no graffiti was allowed to see the light of day. As a result, psychologists have surmised that criminals felt less and less comfortable committing crimes on pristinely painted subway cars. A "tipping point" had been reached.

NMCS needed a tipping point to help our employees return home uninjured at the end of every shift... trigger an IIF paradigm shift (TIPS) was spawned.

3. Methods/strategies

The TIPS taskforce, a three-person group, consisted of safety representatives from EHS, Site Services and CS Operations. We brainstormed a different approach than we had taken in the past. Our Site Services and Safety Representative, Dick Hickox, brought up the fact that we have been collecting Incident Review Board (IRB) data on all of our first aid and recordable injuries for the last 5 years, but have only focused on the previous 12-month recordable data. If our business culture is the predominant driver of behavior, and cultures have their own inertia, why not mine that long-range data to see what it could tell us about our stubborn injury rates? We could also combine first aid with recordable incident information, to further expand the amount of data available to analyze.

Taking this path, we first identified the type of injury information needed to get a true picture of our safety issues. We analyzed IRB data showing us the following factors and whether any of them contributed to the injury:

- Date;
- Severity;
- Type of injury;
- Work group/shift;
- Hazard evaluation;
- Assumptions;
- Corrective action taken;
- PPE requirements;
- Schedule;
- Last or first day of shift or adjacent to holiday;
- Aggravate existing condition;
- Inadequate training or passdown;
- Overall quality of response;
- Incident description;
- Root cause;
- Season;
- Area;
- Procedure adherence;
- Experience in task;
- OT.

Once this information was collected for all injuries, we graphed it several ways to help reveal trends.

4. Results

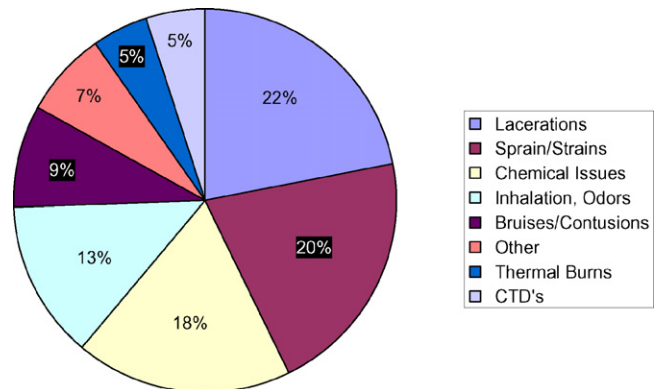
Our findings revealed:

- Biggest total injury type was ergonomic;
- Biggest recordable injury type (58%) was cuts/lacerations;
- No chemical related recordables;

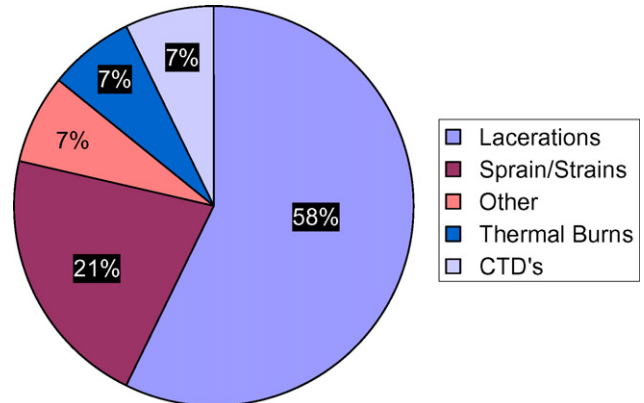
- Biggest root cause category was behavioral;
- Biggest behavioral root cause was “hazard evaluation”;
- Biggest administrative controls root cause was “procedures adherence”;
- Biggest engineering controls root cause was “hazard identification”;
- Majority of injuries occurred in spring/summer which accounted for 86% of recordables;
- Number of injuries by workgroup were about equal;
- Work area injuries were mostly in the central utilities building (CUB) and Subfab (floor below fabrication level) but CUB injuries favored cuts/lacerations while Subfab favored ergonomic injuries;
- Shift 7 had more than double the injuries of shift 5 (shift 5 is a mirror image of shift 7 on the front end of the week while both are day shifts);
- Night shift (shifts 4 and 6) injuries were relatively high but lower than shift 7;
- Shift 5 had no severe (recordable) injuries.

Below is a sampling of the major findings in graphical format:

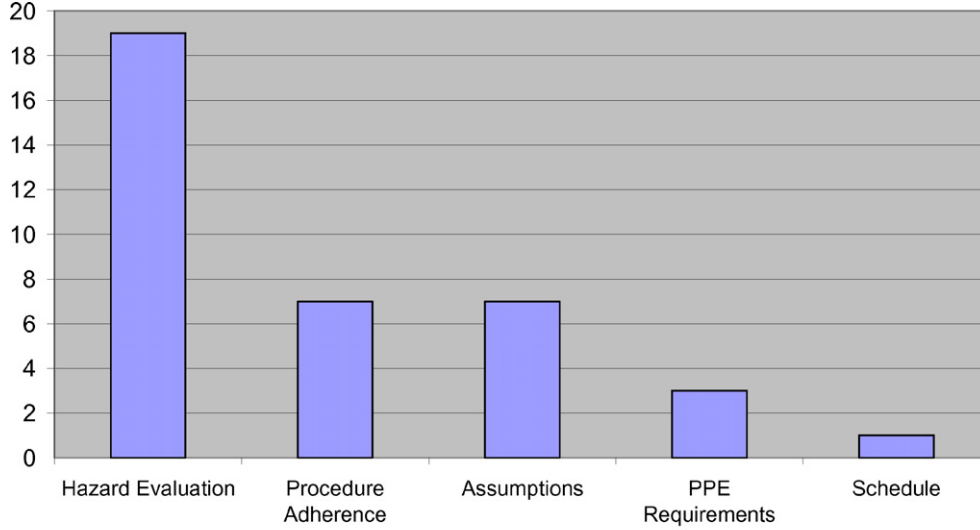
- Total injuries by type—5-year cumulative;



- Recordable injury by type—5-year cumulative;

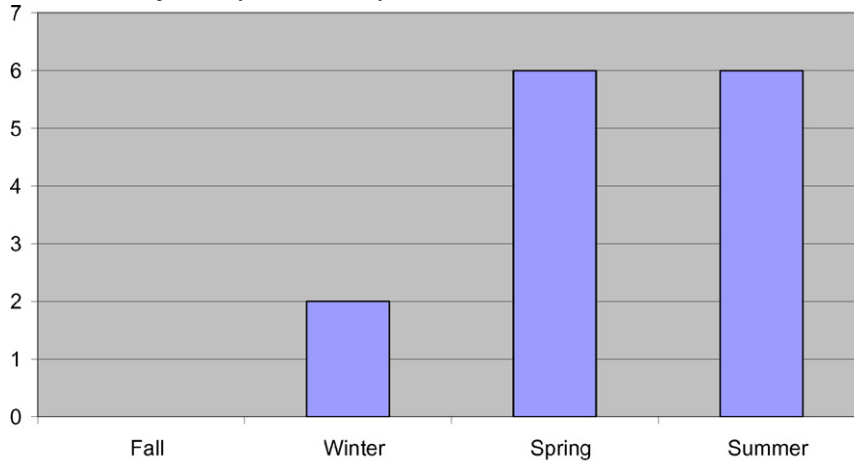


- Behavioral root cause—5-year cumulative;



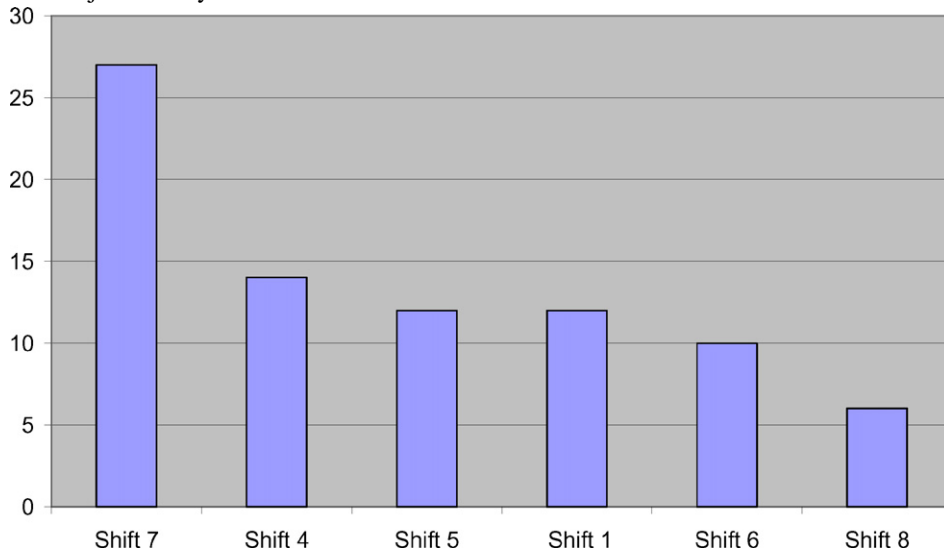
Behavioral Root Cause Categories

- Recordable injuries by season—5-year cumulative;



Season

- Shift injuries—5-year cumulative.



5. Conclusions/recommendations

Ergonomic injuries may be a blind spot (“hazard evaluation”) for our people whereas working with sharp objects, e.g., tools and materials, are causing the bulk of the more severe injuries. Injuries pick up in the spring and remain higher throughout the summer. Increased level of extra-curricular activities may be the driver, as this higher trend follows daylight savings time.

Challenges are different amongst shifts. Shift culture may be stronger than workgroup culture. We should be aware of and prepare for the different challenges and cultures characteristic of each shift. Supervisors need to spend more time in the field with their people to help them address safety issues and help make IIF a more consistent component of daily workgroup culture.

These learnings were used to develop our New Mexico Site Safety Action Plan for 2005—ergonomic awareness has been raised via a 2-h training session that addresses field issues common among our operations personnel. A 12-module ergonomic

awareness program, delivered at shift change, has also been utilized. We have revised our glove policy and found gloves that give more protection while providing needed manual dexterity.

We have focused more management attention by employing more frequent management by walking around’s (MBWA) increasing management face time in the field and helping address issues at the earliest level. In addition, “Stand down for Safety” meetings have been scheduled quarterly that present season-specific issues for a reminder of 24 × 7 safety.

Each site should analyze their data and look for their unique safety challenges. This will allow customized, focused action plans that meet the unique needs of each site, and provide the tipping point necessary to push the safety culture in the direction we all want—incident and injury free.

Reference

- [1] M. Gladwell, *The Tipping Point*, Little Brown & Co., NY, Boston, 2002.