How to Implement an Injury Prevention and Its Impact on Warehouse Operations

National Safety Council - Nebraska
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Objectives

• To present the case for injury prevention programs in the workplace.
• To introduce human factors engineering to safety and EHS professionals.
• To identify the potential return on investments for injury prevention programs.
• To provide EHS professionals with guidance on how to implement an injury prevention program in their organization.
How Are We Measured?

• First Aid Incidents
• OSHA Recordables
• Loss Time Incidents
• Restricted Time Incidents
• Near Miss
• Cost

• How are you measured?
Injury Prevention Programs

What do we currently focus on?

• Job Hazard Analysis
• Ergonomics
• Injury and Illness Reduction Plans
• PPE to Elimination
ACME Corporation Case Study

ACME Corporation Facts

- Fortune 100 retail and supply chain company, located in the Louisville, Kentucky area.
- Employee roster of 3,000 warehouse workers, supporting a 24/7 operation.
- Mixed product line and variations.
- 1.8 million sq. ft. facility (28 football fields on the first floor).
- Onsite medical staff and safety personnel.
ACME Corporation Partnership

• Purpose for partnership with ACME corporation:
  • To support the site’s goal of a reduction of work-related injuries.
  • To decrease the total number of warehouse workers requiring treatment beyond OSHA standards for first aid.
  • To decrease injury trends while maintaining production and quality standards.
  • To transform ACME’s safety culture from reactive to proactive.
What barriers did we come across to start?

- Full autonomy with little resources.
- Limited peer reviewed, evidence based resources for:
  - Industrial athletic training;
  - Injury prevention programming; and
  - Industrial health and wellness.
- Limited buy-in from site leadership.
- OSHA standards for first aid.
Approach to Task

How did we design this program?

• Organizational and cultural evaluation and assessments.
• Injury metric data mining, big data utilization.
• Behavior modification and “behavior based safety”.
• Introduced the term “Industrial Athlete”.
• Evidence based practice research and design.
• Human factors engineering based safety.
What is Human Factors Engineering?

- Ergonomics (frequency, duration, force, vibration, etc).
- Environmental controls (lighting, temperature noise).
  - Lighting example.
- Psychosocial aspect of movement.
- Human movement in relation to process engineering.
- “Fitting the job to the person”.
ACME Corporation Projects

- Cultural Evaluation, Leadership and Warehouse workers.
- Injury metric data mining (OSHA Requirement).
- Stretching program.
- New Hire Orientation program:
  - Biomechanics.
  - Nutrition, hydration, sleep, recovery.
- Train the trainers program.
- Job hazard analysis and continuous improvement engineering.
- Leadership ownership of change and risk mitigation.
Addressing Physical Demands

• Do you know what the physical demand requirements are of your workers?
  • Frequency, Force, Duration….
  • Do you process map?
  • Do you focus risk management by eliminating human movement waste?

• Knowing physical demands directly impacts:
  • Injury trends and actions
  • Restrictive or Loss Time Incidents
  • Reduce human movement waste
ACME Corporation Injury Reduction 2015 (Baseline Year) to 2018
<table>
<thead>
<tr>
<th>Target Objective</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work related injuries</td>
<td>51% Reduction</td>
</tr>
<tr>
<td>New Hire Injuries</td>
<td>56% Reduction</td>
</tr>
<tr>
<td>Productions (Units per Hour)</td>
<td>55% Increase</td>
</tr>
<tr>
<td>Return on Investment (ROI)</td>
<td>821% Direct Cost Savings</td>
</tr>
</tbody>
</table>

Successfully applied to 12 other warehouse organizations with injury reduction ranging from 36 to 71%.
How to Implement an Injury Prevention Program

- Develop an evidence based, data drive injury and illness prevention plan.
- Behavior modification through education: wellness, safety and personal responsibility.
- Drive your culture change through new hire orientation and season veteran buy in.
- Engineer out risk behaviors through process improvement.
- Never stop improving.
Call to Action and Research

• Biomechanic and functional movement research studies related to ergonomic improvements.
• Incorporate injury prevention programs based on your professions statistics.
• Expand on Industrial Athletic Training evidence based resources.
• Add ergonomics and human factors principles into education – vastly growing field.
Questions?

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References