

REAL Leading Indicators

(Hint: Near Miss is not one of them)

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About You

- What kinds of operations?
- What is your role?
- How much experience?
- Perspective on this topic already?
- Any burning questions?



Incident at Browns Ferry (1977) ...

<https://www.imdb.com/title/tt1576692/>

About Me: Kathy J. Malone, CHMM

- Started at mile square auto plant, cast engines one end, drove cars off the other, everything in between
- Soluble oil machining, mineral oil machining, pressed metal operations, plus plating, paint, assembly, etc.
- Plant built in 1918, most recent sewer prints 1930
- Saturn show car facility and Spring Hill Manufacturing



What is different about Leading Indicators compared to Lagging Indicators?

(Discussion)

Has your company used Leading Indicators?

(Discussion)

If yes, describe

What's different about Safety in Metal Fab?

(Discussion)



What are the major injuries in
your facility?

(Discussion)

(Break into groups to discuss
potential Leading Indicators by
injury type)

(Present back to the group)

How can Processes be adapted
to support Leading Indicators?

(Discussion)

(Break into groups to discuss
potential Leading Indicators by
Process Type)

(Present back to the group)

What's different about Safety and Today's Workforce?

- “Below the Cardboard Ceiling” workers
 - Frequently Temp or Seasonal
 - Need the work
 - Don't ask questions
- May not speak the language natively
- Might not read well
- Other cognitive challenges

What does this tell you about this chemical?



Works - Toilet Bowl Clean...



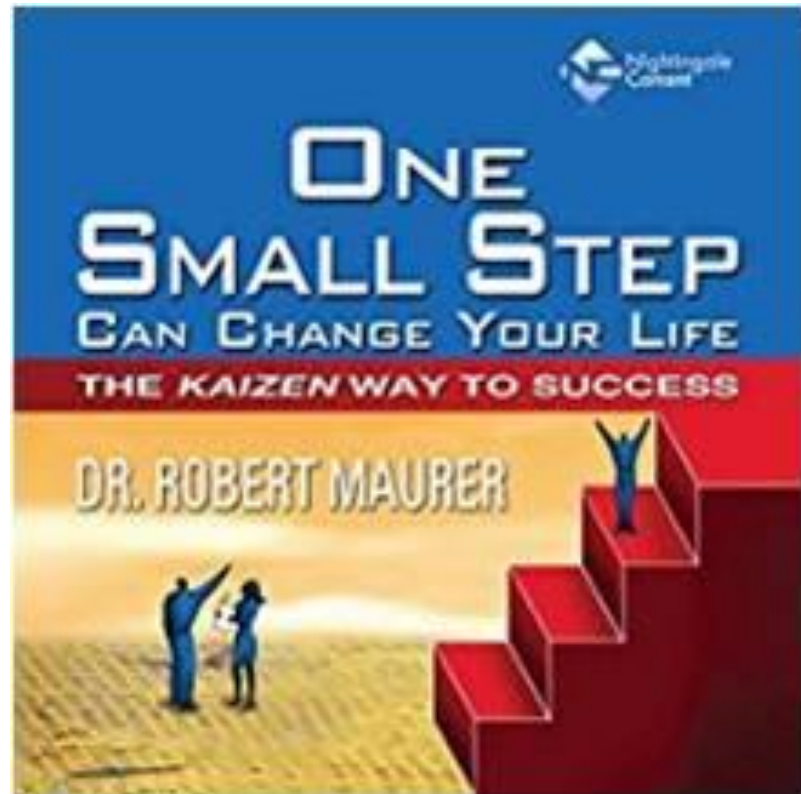
“Confidence is being prepared for the unthinkable” Ray Hunt, Horseman



6 Things

#1 Culture of continuous improvement

- Did you know that the mind cannot refuse a question?
- Ask the same question over and over, your subconscious lobs up answers
- “What’s the smallest change we could make to improve safety/prevent repeat of this Near Miss?”



Error Proofing vs Mistake Proofing: What's the difference?

Error Proofing – the
mistake can't occur

- Mistake Proofing –
you're trying to prevent
the mistake



Leading Indicator :

Error proofing/Mistake proofing: Measurement/Action Items



- How many Error Proofing suggestions did you get?
- How many Mistake Proofing suggestions did you get?
- How long between receiving the suggestion and review?
- How many were implemented / resolved?
- Examples?

6 Things:

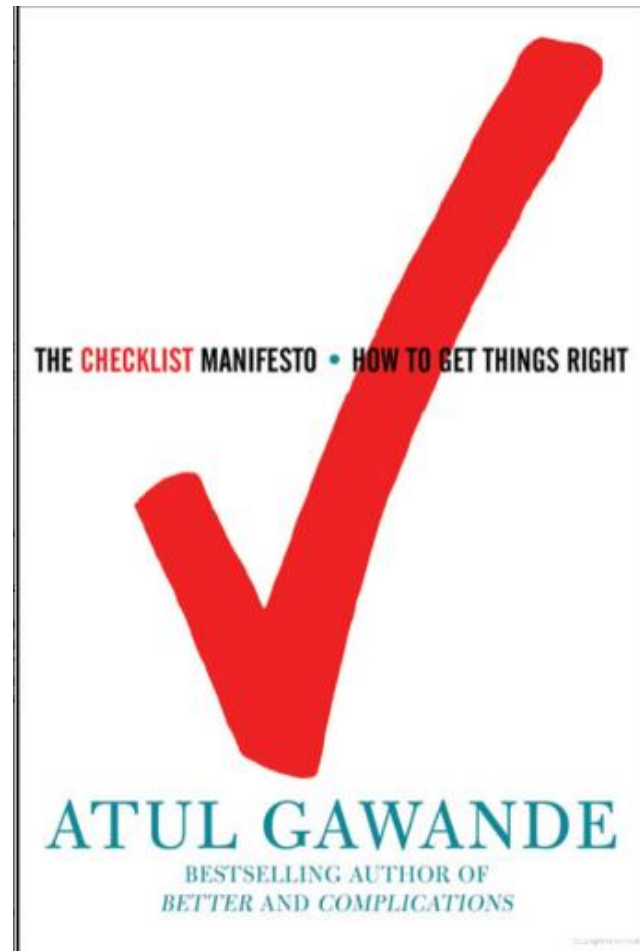
#2 Onboarding / first shift: Communicating the non-negotiables

- Saturn during construction
- MeCl bathtubs



Error Proofing /Mistake Proofing for First shift on the job

- When is worker most likely to get hurt?
- 4 Levels of learning
 - Unconscious incompetence, etc.
 - Change jobs, the level of learning may change
- Different levels of SOPs
 - First shift
 - Familiar with the job, reminder
 - Checklist only



“When it’s time for action it’s too late to
prepare”

Ray Hunt, Horseman



6 Things:

#3 Compensating for Fatigue

- Daily updating
- “Drive in the tracks”
- What has changed since last?

Chapter 5



Why We Ignore
the Obvious at Our Peril

**Willful
Blindness**

MARGARET
HEFFERNAN

<https://www.csb.gov/bp-america-refinery-explosion/>

What is SafeStart 's "4x3+1 for Safety"

- When the chips are down, people revert to their habits
- Have You Built a Culture Where Everyone Is Working on Their Habits?



Figure 2a

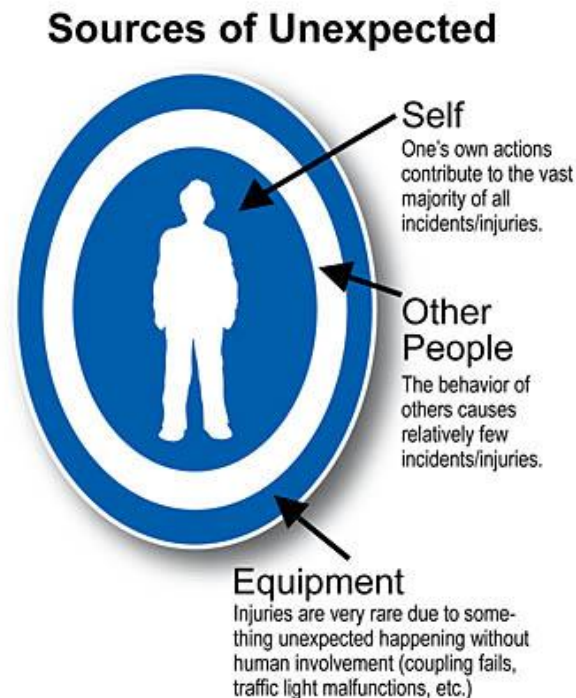


Figure 2b

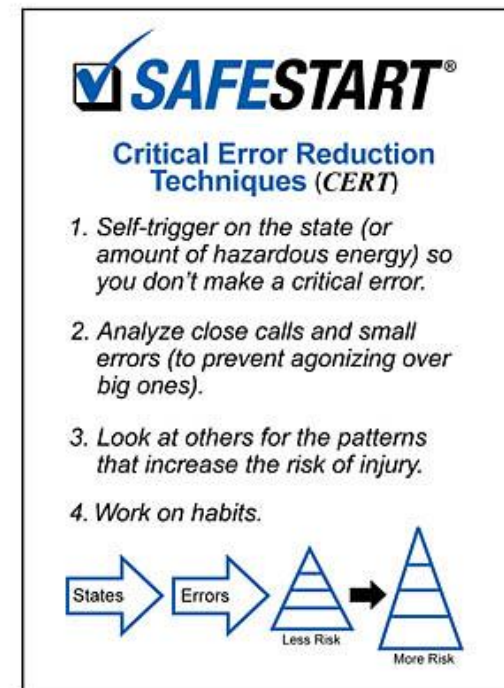


Figure 2c

Training for Adrenaline Induced Stress



OSHA on fatigue

<https://www.osha.gov/worker-fatigue>



The screenshot shows the OSHA website page for worker fatigue. At the top, there is a navigation bar with the OSHA logo, the text "UNITED STATES DEPARTMENT OF LABOR", and social media icons for Facebook, Twitter, Instagram, RSS, Email, and YouTube. Below this is the "Occupational Safety and Health Administration" header with links for "CONTACT US", "FAQ", "A TO Z INDEX", "ENGLISH", and "ESPAÑOL". A secondary navigation bar includes "OSHA", "STANDARDS", "ENFORCEMENT", "TOPICS", "HELP AND RESOURCES", and "NEWS", along with a search box labeled "SEARCH OSHA".

The main content area features a breadcrumb trail: "Safety and Health Topics / Long Work Hours, Extended or Irregular Shifts, and Worker Fatigue". The title "Long Work Hours, Extended or Irregular Shifts, and Worker Fatigue" is prominently displayed above a large image of a woman covering her face with her hands, suggesting stress or fatigue.

On the left side, there is a sidebar menu with the following items: "Hazards", "Prevention", "Limitations on Work Hours", "Additional Resources", and "Workers' Rights", each with a right-pointing arrow.

The main text area is titled "Overview" and contains the following text:

Long work hours and irregular work shifts are common in our society. Many American workers spend over 40 hours a week at work and almost 15 million work full time on evening, night, rotating or other irregular shifts. Work schedules like these may cause worker fatigue.

Shift workers may be scheduled to work days, evenings, nights and/or on a rotating or on-call basis. They may work extended shifts (more than 8 hours long), rotating or irregular shifts, or consecutive shifts resulting in more than the typical 40-hour work week. Long work hours may increase the risk of injuries and accidents and can contribute to poor health and worker fatigue. Studies show that long work hours can result in increased levels of stress, poor eating habits, lack of physical activity and illness. It is important to recognize the symptoms of worker fatigue and its potential impact on each worker's safety and health and on the safety of co-workers.

This web page focuses on worker fatigue and includes information about the impact of demanding work schedules and measures workers and employers can take to prevent worker fatigue and fatigue-related injuries and illnesses by providing or participating in education, training and fatigue management programs.

On the right side, there is an "In Focus" section with a thumbnail image of a coronavirus particle and the text: "OSHA's COVID-19 Safety and Health Topics page provides specific information about protecting workers from coronavirus during the ongoing outbreak." Below this is a "Highlights" section.

6 Things:

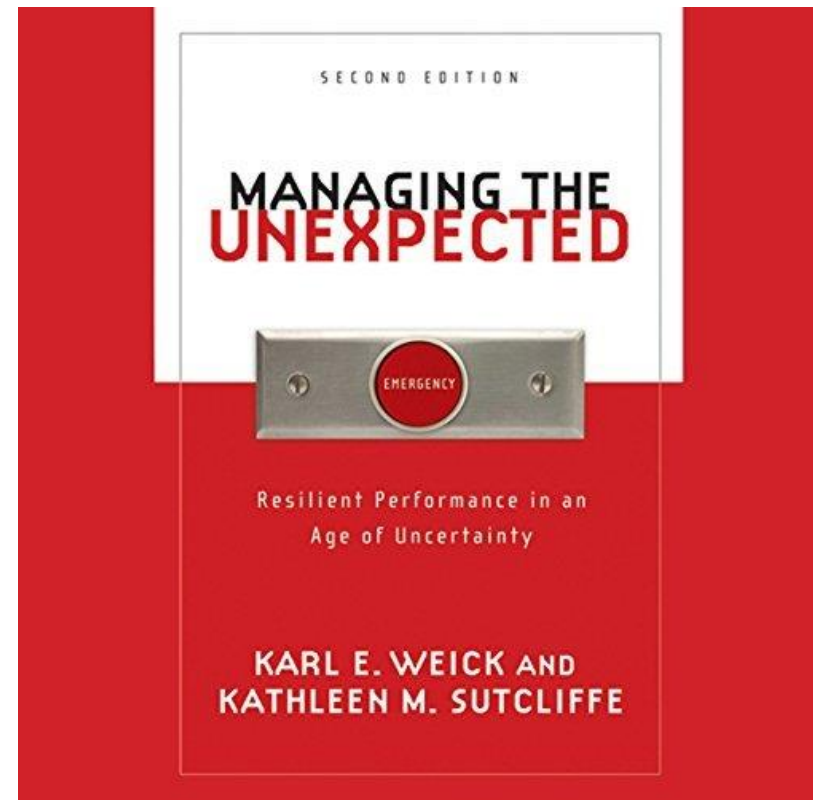
#4 Change Management: What's Different Since My Last Shift?



6 Things:

#4 Change Management

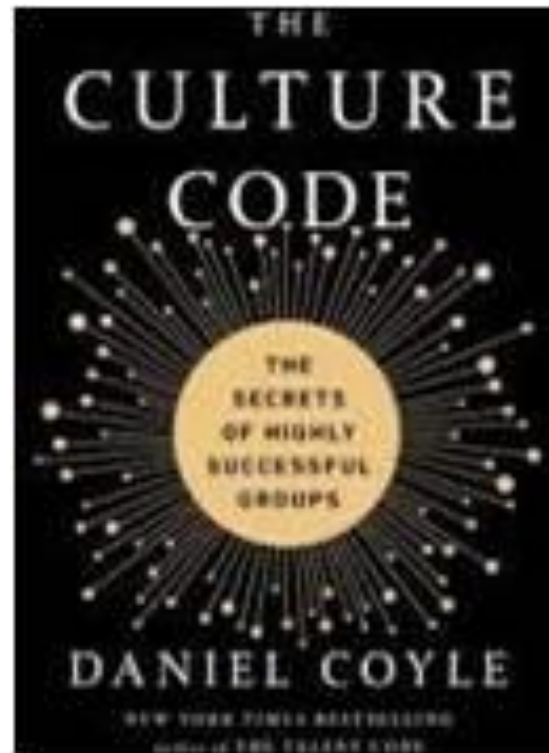
- What has changed since the worker's last shift?
- How is that information conveyed?
- What do High Reliability Organizations do differently?
- Mindset of safety
- Saturn netting under the steel



6 Things:

#5 Culture of Safety

- “We model safety and look out for one another”
- Jackson K Ross vs fixing fence



How do you get your workers more engaged?



- Needs to be OK to be anonymous
 - Index cards at toolbox talks?
 - Phone app?
- “No idea left behind” app so workers can track actions taken on their suggestions
- No action being taken a deterrent “I’ve been suggesting that”

6 Things

#6 “Cheat Sheets”

-Written “cheat sheet” cards / checklists can save you Training Within Industry program (Rosie the Riveter)

- Electronic/Phone?
- 3x5 format or similar
- Print LOTS of them
- Hand them out at training
- Instructions on one side, relevant maps (exits, locations of response equipment) on the other
- They show up when you need them

HOW TO GET READY TO INSTRUCT

Have a Time Table—

how much skill you expect him to have, by what date.

Break Down the Job—

list important steps.
pick out the key points. (Safety is always a key point.)

Have Everything Ready—

the right equipment, materials, and supplies.

Have the Workplace

Properly Arranged—

just as the worker will be expected to keep it.

Job Instruction Training

TRAINING WITHIN INDUSTRY

Bureau of Training

War Manpower Commission

KEEP THIS CARD HANDY

GPO 16-35140-1

Front of the Job Instruction Card

HOW TO INSTRUCT

Step 1—Prepare the Worker

Put him at ease.

State the job and find out what he already knows about it.

Get him interested in learning job.

Place in correct position.

Step 2—Present the Operation

Tell, show, and illustrate one IMPORTANT STEP at a time.

Stress each KEY POINT.

Instruct clearly, completely, and patiently, but no more than he can master.

Step 3—Try Out Performance

Have him do the job—correct errors.

Have him explain each KEY POINT to you as he does the job again.

Make sure he understands.

Continue until YOU know HE knows.

Step 4—Follow Up

Put him on his own. Designate to whom he goes for help.

Check frequently. Encourage questions.

Taper off extra coaching and close follow-up.

16-35140-1

**If Worker Hasn't Learned,
the Instructor Hasn't Taught**

Back of the Job Instruction Card

How do you incorporate Leading Indicators into Operations?

- If it's an extra step, workers are less likely to do it
- There's also the cultural challenge
- Toledo Jeep Plant story



What does safety culture look like to your team members?

- How do we have Team Members take ownership of their own safety?
- How do we track the success of our training or improvements made?



Here's what OSHA has to say about Leading Indicators

- <https://www.osha.gov/leading-indicators> (there's a whole page on it)
- <https://www.osha.gov/leading-indicators/resources> provides additional resources
- https://www.osha.gov/sites/default/files/OSHA_Leading_Indicators.pdf



The screenshot shows the OSHA website page for 'Using Leading Indicators to Improve Safety and Health Outcomes'. The page features a red header with the 'UNITED STATES DEPARTMENT OF LABOR' logo and navigation links for 'CONTACT US', 'FAQ', 'A TO Z INDEX', 'ENGLISH', and 'ESPAÑOL'. Below the header is a navigation bar with 'OSHA', 'STANDARDS', 'ENFORCEMENT', 'TOPICS', 'HELP AND RESOURCES', and 'NEWS' menus, along with a search bar labeled 'SEARCH OSHA'. The main content area has a blue header with the title 'Using Leading Indicators to Improve Safety and Health Outcomes'. Below this, there are two blue buttons: 'DOWNLOAD THE LEADING INDICATORS DOCUMENT' and 'ADDITIONAL RESOURCES'. The text on the page explains that leading indicators play a vital role in preventing worker fatalities, injuries, and illnesses, and that they are proactive and preventive measures. It also mentions that leading indicators can help employers identify potential problems in a safety and health program. A list of benefits is provided at the bottom of the page:

- Prevent workplace injuries and illnesses.
- Reduce costs associated with incidents.
- Improve productivity and overall organizational performance.
- Optimize safety and health performance.
- Raise worker participation.

What else has worked for you?

Questions?

Reflections?

Thank you!

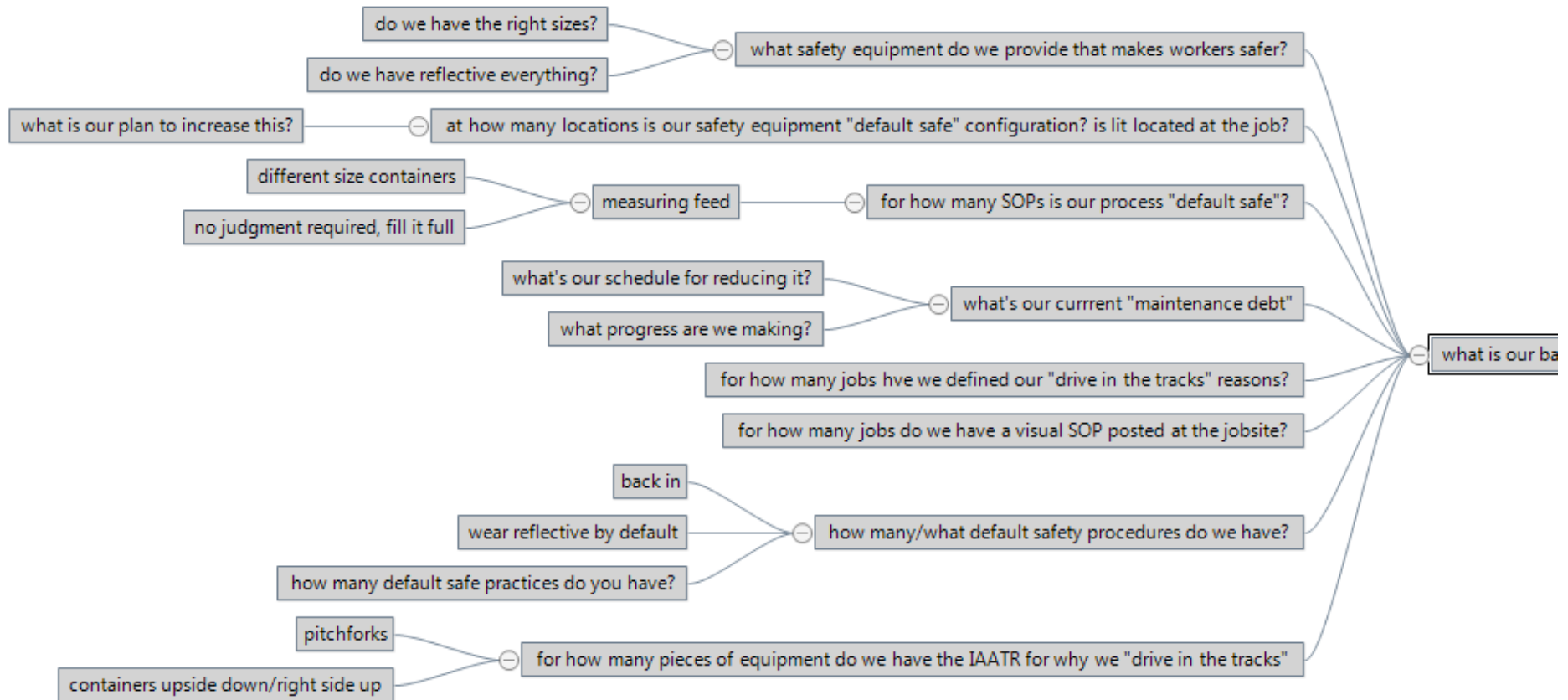
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Beyond Near Miss tracking: What's our Baseline?



Getting a sense of the attendees

Are you in

- Operations
- Safety Dept
- Management
- Consulting
- Other

What kind of
construction?

Do you have responsibility
for

- A single facility
- Multiple facilities
- Multiple clients
- Other

Examples of leading indicators

- How many workers got safety training before starting work their first shift?
- How many of our SOPs Safe Operating Procedures have been updated before the process changed?
How many workers trained?



Near Miss tracking: Is it really a leading indicator?

- Chemical Safety Board recommends investigating every Near Miss as if it was an actual incident
- Near Miss tracking without followup activity is just a “less lagging” indicator—the near miss occurred.

