Workplace Learning System

Weekly Safety Briefings

Week 19 – Monday, May 4 – Friday, May 8

PPE: Last Line of Defense

Introduction

The first two weeks of this series examined how to design safety into the work itself and why procedures sometimes fail. This week we turn to PPE - personal protective equipment - and take an honest look at what it actually is, what it isn't, and how to make PPE programs work in the real world rather than just on paper.

Monday - PPE Is the Last Line - Not the First

Good morning. Let's start this week with some clarity about what PPE is, and what it isn't.
PPE: gloves, glasses, hearing protection, hard hats, respirators, cut-resistant sleeves, steel-toed boots - does something important. When a hazard reaches a worker, PPE reduces the severity of the consequence. It is a real and meaningful layer of protection.

But it sits at the bottom of the hierarchy of controls for a reason: PPE does not remove the hazard. It does not make a pinch point less dangerous. It does not reduce the noise level in the room. It does not prevent chemical exposure from occurring. It reduces injury when exposure occurs. That's a meaningful difference.

PPE also depends entirely on human behavior to work; it has to be worn. It must be worn correctly. It must be in good condition. It must be appropriate for the specific hazard. Every one of those requirements introduces a potential failure point that engineering and elimination controls don't have. This week, we're going to look at PPE honestly as the critical last line of defense it is, while also being clear about why it should never be the only line, and what it takes to make a PPE program actually work.

Real-World Example

OSHA conducted an analysis of hand injury cases filed in the workers' compensation system across multiple states over a five-year period. The analysis found that in cases involving hand injuries, workers were not wearing the required gloves in approximately 70% of incidents. This is often cited as evidence that glove compliance needs to improve. It is. But the same analysis found something equally important: in the remaining 30% of cases where workers were wearing the required gloves, the injury still occurred.

The conclusion isn't that gloves don't work. In many of those 30% cases, the gloves almost certainly reduced severity. The conclusion is that gloves alone are not sufficient protection against the hazards that were present. Many of those facilities had glove programs as their primary, sometimes their only, hand protection strategy.

A metal stamping facility in Ohio used this data to review their own hand protection program after a recordable hand injury occurred despite the affected worker wearing the required cut-resistant gloves. The review found that the gloves in use were rated for cut resistance but not for the crush and pinch hazards present at that workstation. The hazard and the PPE didn't match. The facility conducted a full

hazard assessment of every workstation, matched PPE specifications to actual hazard profiles, and added two engineering controls - a fixed barrier and a light curtain - at the three stations with the highest hand injury history. In the three years following, hand injuries at those stations dropped to zero.

Discussion Prompt

Think about the PPE you wear or are required to wear in your job. Do you know what specific hazard each piece is protecting you from? And do you know if the PPE you have is rated for that hazard? When did someone last verify that match?

Tuesday – Why Workers Don't Wear PPE — The Real Reasons

Yesterday we established that PPE is a critical but imperfect last line of defense. Today we look at something most facilities struggle with - why workers don't wear their PPE consistently, and why the answer is almost never 'they don't care about their safety.'

Research on PPE non-compliance consistently identifies the same reasons. PPE is uncomfortable or causes physical discomfort. PPE interferes with the ability to do the job well - gloves reduce dexterity, hearing protection makes communication harder, respirators cause heat and breathing discomfort. PPE is hard to access - It's stored across the facility, runs out and isn't promptly restocked, or workers have to request it through a process that takes more time than the task itself. PPE is not visibly modeled by supervisors. PPE enforcement is inconsistent, so workers learn it's optional. And in some cases, the PPE simply doesn't fit well. This is a particular problem in facilities that stock primarily sizes designed for average adult male dimensions.

Almost none of these reasons are about worker attitude. They are solvable problems. A PPE program that addresses discomfort, fit, access, and modeling is a fundamentally different program than one that posts a rule, provides equipment, and expects compliance.

Real-World Example

A large food processing facility in California had chronically low hearing protection compliance in their highest-noise areas despite a mandatory policy, regular reminders, and available dispensers at zone entrances. An industrial hygienist hired to evaluate the program spent a week on the floor and produced a finding that surprised leadership: the two most common styles of disposable foam earplugs stocked at the dispensers were rated at a noise reduction rating that brought actual exposure below the action level, but only if inserted correctly - a technique that required rolling, inserting, and holding for approximately 30 seconds while the foam expanded.

Observation data showed that workers were inserting the plugs in approximately three seconds, on average. At that insertion depth, the actual noise reduction was less than half the rated value - not enough to bring exposure below the threshold. Workers weren't skipping hearing protection because they didn't care. They were following the visible behavior they'd learned from watching each other.

The facility made three changes: they replaced foam plugs at high-noise zone entrances with banded canal caps that could be correctly positioned in under five seconds with no insertion technique required; they conducted a 10-minute refresher for workers who preferred foam plugs showing correct insertion; and they added hearing protection use to their monthly supervisor observation checklist, including a check for correct insertion. Audiometric testing data in the following annual cycle showed measurable improvement in noise dose compliance across the affected areas.

Discussion Prompt

What are the real reasons, honestly, that PPE sometimes doesn't get worn in your area? Is it comfort? Fit? Access? Interference with the job? Social norms? If we could fix one of those reasons, which one would have the biggest impact on actual compliance?

Wednesday – Selecting the Right PPE — Matching Protection to Hazard

We've established what PPE does and doesn't do, and why compliance is often a design and systems problem rather than a motivation problem. Today we look at something that sounds straightforward but is frequently done poorly: selecting the right PPE for the actual hazard.

Not all gloves protect against all hazards. A nitrile glove that provides excellent chemical resistance offers minimal cut or puncture protection. A leather work glove that handles abrasion and impact well may absorb and hold chemical contaminants. A cut-resistant sleeve rated A4 protects against a different range of blades than one rated A7.

Not all eye protection is equivalent. Safety glasses protect against large particle impact but offer minimal splash protection. Chemical splash goggles seal around the eye. A face shield protects a larger area but doesn't replace sealed eye protection for chemical hazards.

The starting point for any PPE selection decision is the hazard assessment: what exactly can reach this worker, at what energy or concentration, from what direction, with what frequency? That assessment drives selection. And that selection should be reviewed any time the task, material, equipment, or process changes - not just when something goes wrong.

Real-World Example

A maintenance technician at a beverage manufacturing facility in Florida sustained a chemical burn to one eye despite wearing safety glasses during a routine pipe connection task involving a caustic cleaning solution. The investigation found that the safety glasses in use, standard ANSI Z87.1 impact-rated glasses, were appropriate for the particle and impact hazards in the general maintenance environment but were not appropriate for liquid chemical splash. The glasses had an open frame with no side shields, and the caustic solution had splashed laterally from a loose fitting, contacting the eye from the side.

The hazard assessment had specified 'eye protection' but had not differentiated between impact and splash requirements. Workers and supervisors had interpreted the requirement as met by the general safety glasses already in use.

The facility conducted a task-by-task eye protection assessment for all maintenance and sanitation operations involving liquids. For any task involving chemical liquids above a defined volume threshold, splash goggles were designated as the required protection rather than safety glasses. A designated storage location for splash goggles was added to each chemical storage and use area, separate from the general PPE dispenser.

In the 30 months following the change, no chemical eye injuries were recorded in the maintenance or sanitation departments. The EHS coordinator noted: 'The worker was wearing eye protection. The eye protection just wasn't selected for the actual hazard. Those are two different problems, and we'd only solved one of them.'

Discussion Prompt

Do you know how the PPE you wear was selected for your specific tasks? Was there a formal hazard assessment behind the selection, or was it more of a general facility standard? Is there a task you do where the PPE feels like it doesn't quite match what you are exposed to?

Thursday – Maintenance, Inspection, and the PPE Nobody Talks About

We've covered PPE selection and compliance. Today we address a part of PPE programs that often gets the least attention: the condition of the PPE itself.

PPE that's degraded, damaged, or past its service life may look identical to functional PPE while providing significantly less protection than its rating suggests. A hard hat with an impact crack may look undamaged on the outside. A respirator with a degraded face seal may test well visually but allow significant leakage around the edges. Cut-resistant gloves that have been washed beyond their rated cycle count may have reduced cut resistance in the most-used areas. Chemical-resistant gloves that have been stored improperly or used near incompatible chemicals may have micro-perforations invisible to the eye.

The point isn't to create anxiety about every piece of PPE. It's to establish that PPE inspection and maintenance are not bureaucratic extras — they are the mechanism by which the rated protection is delivered. A PPE program that specifies the right equipment, gets workers to wear it, and then allows that equipment to degrade silently has not actually delivered the protection it promised.

Real-World Example

A construction contractor in the Northeast had been tracking head injury incidents when a safety director noticed a troubling pattern: several incidents involved workers who were wearing hard hats at the time of injury. In two cases, the post-incident inspection of the hard hat found cracking in the shell

that was only visible after the impact — suggesting the hat had been previously struck and retained, in violation of the manufacturer's guidance that hard hats should be replaced after any significant impact. A survey of workers found that most were not aware that hard hats should be replaced after impact, or that UV degradation, chemical exposure, and age could reduce protection even without visible damage. Workers had been keeping and using hard hats for an average of 4.2 years. Most manufacturers recommend replacement every one to five years depending on conditions, and immediately after any significant impact.

The company implemented a hard hat dating and inspection program: every hard hat was marked with a manufacturing date and an in-service date. A color-coded annual sticker system was introduced so supervisors could visually confirm a hat was current during walk-throughs. Workers received a 15-minute briefing on inspection criteria - what to look for, when to replace, how to report a concern. Replacement hard hats were made available at no cost and without requiring supervisor approval. In the two years following implementation, no impact injuries occurred to workers wearing compliant, current hard hats. The safety director said: 'We had a great hard hat program on paper. We just hadn't closed the loop on whether the hats were doing their job.'

Discussion Prompt

When did you last inspect your primary PPE…really inspect it, not just put it on? Do you know what you're looking for? Do you know when it should be replaced? And if you found a problem, do you know how to get a replacement quickly, without it being a process?

Friday – Making the PPE Program Work — Ownership, Fit, and Feedback

We've covered what PPE does, why compliance breaks down, how to select correctly, and how to maintain what's in use. Let's close this week by pulling it together: what does a PPE program look like when it actually works?

A PPE program that works starts with the right hazard assessment and the right equipment selection. It provides PPE that fits - real fitting, not 'we have small, medium, and large.' It stores PPE where workers need it, not across the facility. It makes replacement easy, not bureaucratic. It includes visible modeling by supervisors and leadership. It inspects and replaces equipment on a defined cycle, not when someone notices a problem.

And critically, it involves workers in the selection process. A worker who has worn three different glove styles and chosen the one that provides protection while still allowing them to do their job is fundamentally different from a worker who was handed a glove and told to wear it. The first worker has ownership. The second worker has compliance, maybe.

PPE programs run by safety departments, for workers, tend to struggle. PPE programs built with workers, responding to what workers actually experience, tend to produce equipment people wear because it works for them, not because they're required to.

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Real-World Example

A precision manufacturing facility in Oregon was struggling with hand protection compliance despite a strong stated commitment to it. Cut injuries were their leading injury category. They had a mandatory glove program, a generous replacement policy, and regular reminders. Compliance in supervisor observations averaged 71%.

Rather than adding more enforcement, the EHS manager formed a five-person PPE committee composed entirely of hourly workers from the highest-risk areas. The committee was given a task: evaluate five different cut-resistant glove styles against three criteria — protection rating, dexterity for their specific tasks, and comfort over a full shift. They wore each style for a week and rated them. They were also asked to identify where in their work area a glove was most likely to be removed and why. The committee's findings drove three changes. Two glove styles were eliminated because workers found them significantly less functional for their specific tasks. One new style, not previously in use, was adopted after workers tested it and rated it highest on all three criteria. Glove dispensers were relocated to four new positions identified by workers as the points where removal was most likely and replacement most needed.

Compliance in the six months following the changes averaged 94%. Cut injuries in the following year dropped 62%. One committee member told the EHS manager: 'When you asked us what we actually needed instead of telling us what we had to wear, I knew this was going to be different.'

Discussion Prompt

Weekly Wrap-Up: If you were designing our PPE program from scratch - selection, storage, replacement, inspection, modeling - what's the single biggest thing you would change from how it works today? And what's one step we could take as a team to get there, without waiting for someone else to fix it?