

Developing A Critical Behavior Checklist: Behavioral Risk

The critics of behavior-based safety (BBS) claim injury prevention requires a holistic, system-level approach. Behavioral observation and feedback among line workers is not enough. Moreover, management must not use BBS as an excuse to shirk its responsibilities, such as developing a more user-friendly workplace and maintaining accountability systems that keep safety integral to daily work activities.

Guess what? I agree. Actually, I've never heard a BBS trainer or consultant disagree with the arguments used to criticize or denigrate BBS. In other words, BBS reflects a philosophy and a set of tools that can be used to support any ongoing safety initiative, especially those that are holistic, system-focused, and management-driven.

A Precious Tool

The basic tools of BBS can be applied to improve the behaviors of everyone involved in an organizational process, from the worker performing the hands-on activities to the supervisor overseeing the entire effort. These tools are not limited to safety undertakings, but are pertinent to all aspects of an organization's mission statement.

This is the first of a two-part series on one of the most valuable BBS tools – the critical behavior checklist (CBC). The descriptions and examples given here address safety, but this tool is obviously applicable to everything people do in the workplace. It's vital to increasing one's competence at any task. Performance cannot improve without behavior-based feedback, and feedback is often most informative when linked to observations recorded on a CBC.

Simply put, the CBC consists of a list of some of the specific behaviors required to complete a task effectively. There is also a column to check whether each behavior is performed “competently” or “incompetently.” For safety applications, this column distinguishes between “safe” and “at-risk.” The definitions of “competent” vs. “incompetent” or “safe” vs. “at-risk” are developed through structured group discussions and consensus building.

The process of developing a practical CBC that is acceptable to all potential users is invaluable. If done right, it instills a sense of team ownership, as well as self-efficacy and personal control. These positive person states increase when everyone agrees to use the CBC, and these feelings are integrated into the culture whenever the CBC is used to observe coworkers and provide behavior-based feedback.

I’ve discussed optimal ways to observe others and give interpersonal feedback in prior *ISHN* articles (see, for example, my columns for December 1993, July and August, 1996, and May, 1999). However, I have not previously addressed the challenge of selecting the behaviors for a CBC.

What Are Critical Safety Behaviors?

Obviously, the ability of an observation and feedback process to reduce injuries depends on what behaviors are included in the CBC. When you decide what safety-related behaviors are “critical” for a particular application of the CBC, you define those aspects of a job which require the most attention and mindfulness for injury prevention. These are the behaviors for which people hold each other accountable to perform safely. So the development of a CBC should not be taken lightly.

Sources that can provide information for deciding which behaviors to include on a CBC include: injury records, near-hit reports, job-hazard analyses, standard operating procedures, rules and regulations, the site's medical staff, or anyone else who maintains injury statistics for the organization, as well as the workers themselves. Employees already know a lot about their own safe and at-risk work practices. They know which safety rules they sometimes ignore, and they know when a near-hit has happened to them or to others because of at-risk behavior.

Evaluating relative risk is key to selecting the behaviors for a CBC. This boils down to deciding which behaviors create the most risk for injury. How can we determine the injury-risk of a particular behavior?

Estimating Behavioral Risk

The risk level of a particular behavior varies along three dimensions: exposure, severity, and probability. Discussing each of these dimensions with regard to a certain at-risk behavior facilitates the process of developing and refining a CBC.

Exposure

Every time an at-risk behavior occurs, someone is exposed to potential injury. The more often this behavior occurs and the more people performing it, the greater the exposure. For example, lifting a load greater than 40 pounds might not be very risky in one instance, but multiply this at-risk behavior by numerous employees making several lifts per day and you gain a different perspective.

The duration of a behavior also contributes to risky exposure. The longer one carries a 40-pound load, the greater the exposure. And, the longer one refrains from using personal protective equipment (PPE), the greater the exposure. Conversely, one

brief instance of donning certain PPE, from a hard hat to a vehicle safety belt, reduces risk exposure for the entire duration of usage.

Severity

Behavioral risk also varies according to the severity of possible harm or injury associated with the at-risk behavior. What's the worst imaginable scenario that could occur from a particular at-risk behavior? Is there potential for a fatality? Could the at-risk behavior cause multiple deaths?

Sometimes history provides hard lessons for this judgment. Certain at-risk behaviors, for example, have contributed to plant explosions, vehicle crashes, asphyxiations, and to humans crushed by equipment. These behaviors are usually included on a CBC, unless their occurrence is extremely rare, thereby making the exposure very low.

Probability

Behavioral risk is also influenced by the probability a behavior will result in an injury. This is *subjective* probability and is the most difficult risk assessment to make. For example, consider the at-risk lifting behavior described above. By counting people and daily opportunities to lift per person, you can get a good estimate of exposure. Plus, it's not hard to imagine the worst possible outcome of a severe back injury. You likely know someone who has suffered a slipped or herniated disc.

But what is the probability that lifting a load greater than 40 pounds will cause a back injury of *any* severity? Many factors are relevant for such a judgment, including the age and physical strength of the lifter and various behavioral aspects of the lift. When lifters hold the load close and bend their knees, the probability of a back injury is

greatly reduced. That's why a CBC on lifting behavior includes several behavioral components.

For another example, take the use of fall protection. The severity of a fall from three stories is obvious. And, exposure is easy to estimate by counting the number of people working at this height and multiplying the total by the average duration per employee per day. But what about probability?

The probability of a person falling from a three-story height is determined by numerous factors, including the nature of the work and the physical and psychological state of the worker. Since these factors are impossible to appraise for an individual, it's best to assume the most at-risk level of each relevant factor and use your best judgment. In other words, assume the probability of falling is fairly high for the average worker, and put more stock in your estimates of exposure and severity.

In Conclusion

This presentation focused on a most important tool for continuous improvement – the critical behavior checklist (CBC). The CBC can be used to help achieve any vision of an organization, from quality production to an injury-free workplace. Key to effective application of a CBC is the selection and definition of the target behaviors.

When developing or refining a CBC for safety, it's important to consider behavioral risk. In other words, since only a select number of safety-related behaviors can be included on a CBC, the behavioral risk of checklist candidates needs to be examined. Three characteristics of an at-risk behavior determine its relative risk – exposure, severity, and probability of occurrence. You can remember this as the “ESP approach” to estimating behavioral risk.

Exposure fluctuates according to the frequency and duration of the at-risk behavior for all employees at a work site. It is the easiest of the three risk factors to estimate. Severity is judged by visualizing the worst possible consequence that could result from the at-risk behavior.

Because so many environmental and individual factors influence the likelihood of an at-risk behavior resulting in an injury, risk probability is the most difficult to estimate. As with severity, a conservative approach is recommended. Assume bad luck, meaning all the factors that could increase the possibility of injury are in place, from unfriendly environmental conditions to an individual whose attention periodically deviates from the task.

Next month I'll address another dimension to contemplate when developing or refining a CBC – the relative convenience of the target behavior. This characteristic determines the number of behaviors to include on a CBC and what kind of CBC scores can be expected. Considering this dimension can also lead to constructive discussion and decision-making regarding environmental changes that can make a work setting more user-friendly or ergonomically sound.

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