

# Behavior-Based Safety Coaching

*10 guidelines for successful application*

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WHEN CAREFULLY DESIGNED and implemented, behavior-based safety (BBS) coaching is a practical and effective means of initiating and sustaining safe behavior in a work setting. Without care, however, a BBS process can struggle or even fail. This article outlines 10 guidelines for establishing and sustaining a truly successful BBS coaching process. The case study on pp. 46-47 illustrates how a large worldwide construction firm implemented the guidelines presented here with exemplary success.

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## What Is Behavior-Based Safety Coaching?

BBS coaching is essentially an interpersonal process of one-on-one observation and feedback. One person (the coach) systematically observes the behaviors of another person, then provides constructive feedback related to these observations. Safety coaches support the safe behaviors they see, and offer useful and caring feedback regarding any at-risk behaviors observed. Observational data is periodically collected and compiled. Compiled data are shared with employees, who analyze it to identify behaviors that need special attention. Teams then develop relevant intervention strategies to remove barriers to safe work practices.

Solid empirical evidence suggests that this approach to injury prevention works to maintain safe behavior and prevent workplace injuries [e.g.,

Geller(e); (b); (d); Geller and Williams; Petersen]. Like any initiative, however, a BBS coaching process can only achieve its full potential when given enough time and energy. Sufficient initial training for all employees is required (as detailed in the discussion of Guideline 1). Supplemental training may also be needed on topics such as advanced observation skills (e.g., observing for ergonomics-related behaviors), data analysis techniques and management-support processes.

Time must also be allotted for employees to complete observations. Time requirements vary depending on the structure of the process established. For example, a light manufacturing plant with 150 employees who primarily work on an assembly line has each employee complete a single two- to three-minute observation each day. On the other hand, at an R&D facility, employees complete just one monthly observation, but sessions typically last 30 minutes. Also, time and other resources must be devoted to applying the information gained from the observation data. Employees spend time analyzing the data to determine improvement opportunities; financial resources are often needed to implement some recommendations such as those involving equipment or facility improvement.

Time and money alone do not ensure success. The details of how the process is designed and implemented determine the degree of success the process will achieve. The 10 guidelines presented here were gleaned from more than a decade of the authors' experience helping hundreds of organizations apply BBS principles and technology toward the development and maintenance of an effective observation and feedback process. Principles and procedures of



BBS coaching are described in other publications [e.g., Geller(e); (d); (h); Geller and French], but all 10 guidelines have not been documented together. It should be useful to have all of these in one place, especially since most are relevant for any organizational culture and are applicable for practically all industrial safety processes whose success is contingent on employee involvement.

## **10 Guidelines for Implementing a BBS Coaching Process**

### **1) Teach Procedures with Principles**

A distinction exists between education and training [Geller(e)]. Education explains "why" and training shows "how." Motivation to learn what to do (the procedures) can come from understanding the underlying rationale (the principles). Before people are trained to conduct behavioral observation and provide feedback, they should be educated on the philosophical foundations of BBS [e.g., Geller(f); (c); (d); (h); (a); McSween]. Participants can then appreciate the procedures that make the principles practical.

Of the BBS projects the authors have led, most involve extensive, upfront training and education for employees at all levels of an organization, ranging from an eight-hour workshop for wage employees, a one-and-a-half day workshop for management, and five days or more for steering team members. Participants learn basic principles underlying the observation process as well as skills needed to effectively support it.

There have been, however, a few notable exceptions. Because of schedule constraints, employees of a large distribution center received only a brief one-hour overview, focusing primarily on the mechanics of the process, such as where to pick up and return observation checklists and how to complete the forms. Without continual prompting, participation rates dropped. The checklists contained little insightful information, indicating that few observers looked beyond the obvious. When interviewed during a follow-up assessment, participants admitted to merely "going through the motions" when completing the observations. They did not understand the rationale for the process and perceived it as additional paperwork to be completed.

When participants learn and accept the principles behind a safety initiative, they can help to define and refine tools and techniques applicable for their workgroups. Such involvement in designing process steps facilitates empowerment and ownership—the next guideline.

### **2) Empower Employees to Own the Process**

Genuine empowerment is not given; it is enabled, then released from people when they feel ownership (Blanchard; Byham). Ownership does not come easily nor does it happen overnight. It is not the same as compliance.

Employees often comply with rules, regulations and operating procedures without ownership. In this case, they perform because someone is holding them accountable. Such behavior is *other-directed*

(Watson and Tharp). Ownership, on the other hand, implies internal control, *self-accountability* and *self-directed* behavior.

People who get involved in designing, implementing, evaluating and refining a process acquire a special degree of ownership. Their contributing behaviors are self-directed. These behaviors occur consistently because participants hold themselves responsible, not because someone else is holding them accountable [Geller(c)].

How can this level of ownership be reached? Employees of a large pharmaceuticals manufacturing plant demonstrated how. They elected representatives to serve on their site's BBS steering team—the group of employees charged with overseeing the design, administration and continual improvement of the site's BBS coaching process. The team customized the observation process for the site, allowing some flexibility in how each department implemented the guidelines. The compiled data from employees' completed observations were not only reviewed by the steering committee, they were also forwarded to individual work teams to be analyzed for improvement opportunities. The steering team led a formal assessment of the process on a regular basis, which involved surveying and interviewing employees for improvement suggestions.

The remaining guidelines are key to achieving true employee empowerment. For example, the next implementation principle specifies that participants need to exercise some personal choice throughout a BBS coaching process—from designing and implementing initial procedures to evaluating and refining the protocol for continuous improvement. Ownership implies personal choice; people get more involved in procedures influenced by their personal input.

### **3) Provide Opportunities for Choice**

Choice, involvement and ownership are interrelated. Each supports the other two. More of one influences more of the others. Furthermore, choice is motivating. Research has shown that even insignificant choice benefits commitment and human performance. For example, people have shown improved performance when they select aspects of a task that are actually irrelevant to effective completion of the task (Monty, et al; Perlmutter, et al).

How much choice is optimal? Is it possible to allow too much choice in a BBS process? One systematic evaluation of 20 successful BBS programs indicated that too much choice can be detrimental (DePasquale and Geller). More specifically, these researchers found that BBS programs labeled "completely voluntary" were generally not as successful as BBS programs introduced with the explicit expectation that everyone will get involved to some degree.

Programs that incorporated an accountability system to track involvement obtained the most participation and success. However, the most successful BBS coaching programs included some element of choice throughout process development, implementation and continuous improvement (Geller, et al).

Maintaining an effective balance between external



*Management  
must walk  
the fine line  
between  
supporting  
the process  
and driving  
the process.*

accountability and personal choice is reflected in this general management principle: Provide structure and direction, but accompany advice with opportunities to select among alternative action plans. In other words, management should provide structure, instruction and support for occupational safety, while providing opportunities for employees to develop procedural options and to choose among these. This leads to the next guideline for implementing and sustaining a BBS observation and feedback process.

#### **4) Facilitate Supportive Involvement from Management**

BBS is often described as employee-driven and management-independent. As a result, some organizations have launched BBS tools and methods without active support from management. After arranging for BBS training, the supervisory staff steps back and lets an employee steering committee direct the implementation of a behavioral observation and feedback process (Krause, et al). While this enables substantial perception of choice among line workers, employee involvement is typically not optimal.

Whether considering BBS coaching or another occupational safety program, a "hands off" policy does not work. Simply put, people give priority to those aspects of their jobs that earn attention from supervisors and managers. They do what they believe they must to please those who control their monetary compensation for successful job performance.

Therefore, organizational leaders must walk the fine line between supporting the process and driving the process. This is not easy. Left on their own, individuals often err in one direction or the other. Further, appropriate management support differs from one organization to another. Often, conducting observations is reserved for wage employees only. While such a lack of direct involvement by managers reduces the level of intimidation and, therefore, facilitates acceptance in some situations, in others it signals a lack of management support. Therefore, organizations should develop specific roles and responsibilities for employees at all levels of management.

An example of a large automobile manufacturing plant's list of supervisory behaviors to support its BBS coaching process include:

- Allocate time to discuss process activities and results at group meetings.
- Contribute to group discussions of BBS coaching procedures and results.
- Help schedule and coordinate opportunities for coaching activities, such as observation and feedback sessions.
- Request systematic observation and feedback for certain tasks.
- Use the observation data to identify environmental hazards and barriers to safe behavior.
- Help remove hazards and barriers identified in the observation and feedback process.
- Request periodic briefings on data from the coaching process, such as amount of participation, percent safe behavior, number of coaching sessions

performed, percentage of safety suggestions from BBS coaching actually accomplished and results of special BBS intervention efforts.

- Recognize individuals and teams for notable BBS coaching participation.
- Organize and support group celebrations of special safety achievements.

#### **5) Ensure that the Process is Nonpunitive**

The last two bullets of Guideline 4 refer to the use of recognition and group celebrations to support coaching activities and accomplishments. This guideline specifies the avoidance of negative or punitive consequences. The disadvantages of traditional enforcement procedures are documented elsewhere [e.g., Geller(e); (d); (h); Grote; Sidman]. Here, the critical point is that connecting negative consequences to any aspect of an employee-driven (and management-supported) BBS activity can kill the entire process. Punishment stifles feelings of trust, empowerment, ownership and commitment.

Data from a BBS observation and feedback process reveal at-risk behaviors and environmental hazards that need attention. These data can also demonstrate less-than-optimal participation in a critical safety-related procedure. Such negative results, or specification of improvement needs, can provoke an enforcement mindset and suggest a need for punitive consequences. It is essential to retreat from this traditional approach to safety management.

The authors are not recommending eliminating all punishment or "discipline" applications, although most are not corrective and will likely do more harm than good. Managers who use negative consequences to motivate compliance do so at their own risk. But, an enforcement policy must be administered independently of all BBS coaching activities.

The workforce must believe the data from the coaching process cannot be held against them. In some organizations, this may be more difficult than simply ensuring that observation checklists are anonymous.

In a small power plant suffering from poor union-management relations, BBS steering committee members went to great lengths to assure their peers that the observation process would be nonpunitive. Completed checklists were deposited into locked boxes accessible only by a wage member of the steering committee. The database used to collect and compile observation data was password-protected and accessible by only two wage committee members. And, although no names appeared on the checklists, once they had been entered into the database, they were shredded.

Such measures should not be necessary. Management should realize that finding low participation or at-risk behavior is not cause for punishment; rather it pinpoints opportunities for improvement. Open and frank discussion about areas of concern are much more likely than punishment to increase mindful commitment to change and to activate peer support for specific improvement targets.



## 6) Ensure that the Coach Is Nondirective

At first, peer-to-peer observation and feedback can feel awkward for both the observer and the observee. In fact, the BBS coaching process can seem confrontational, with one person (the observer) assigned to audit another person's work practices, then offer corrective advice for eliminating any at-risk behavior observed. Such a perception of BBS coaching hinders interpersonal trust and stifles involvement, ownership and empowerment.

It must be emphasized from the start that the observer (unlike a typical athletic coach) is not responsible for corrective action. The observer merely completes a critical behavior checklist (CBC), then shows the observee the results. The CBC was developed previously through interactive group discussion among line workers representative of the relevant workforce.

The two workers might discuss environmental or system factors that discourage safe behavior and encourage at-risk behavior. And, they might consider ways to remove barriers to safe behavior. The BBS coach might offer positive words of approval to recognize certain safe behavior, but give no disapproval statements nor directives related to any observed at-risk behavior.

With regard to at-risk behavior, the coach is nondirective (Rogers). In other words, s/he provides specific behavior-based feedback for the observee to consider. There is no pressure to change. The only accountability is self-accountability. Any adjustment in behavior is self-directed, provoked by the results of a nonintrusive and anticipated application of a CBC.

## 7) Progress from Announced to Unannounced Observations

Consider the word "anticipated" in the previous sentence. Taken literally, it means the recipient of an observation and feedback session knows it is coming and can prepare. Consequently, the observations are not random and the results are not really representative of a worker's daily routine. CBC data are biased toward the positive. The "percent safe score" is higher than reality warrants.

The next guideline builds on this point about unrealistic (or invalid) behavioral data. Here, one must consider a justification for announcing the behavioral observations. If making employees aware of the observations leads to overly positive results, why announce them? One way to answer this question is to consider the alternative.

Imagine workers sneaking around and completing CBCs unbeknownst to those being observed. This approach would be viewed by many as a "gotcha program," undermining interpersonal trust, involvement and ownership. The lower "percent safe" scores might be more accurate, but at the expense of the attitudes and person-states needed to achieve the interpersonal cooperation and learning requisite for achieving an injury-free workplace.

Even when they know they are being observed, workers still perform certain at-risk behaviors—behaviors they do not recognize as being dangerous.

These are the work practices that benefit most from behavioral feedback. The observation process holds people accountable to perform their jobs as safely as they know how. When they learn ways to be more safe under these circumstances, workers truly add new behavioral patterns to their knowledge base. This is optimal behavior-based learning.

While this guideline reflects the need to start BBS coaching with announced observations, a transition to unannounced observations is clearly beneficial. Specifically, the organizations most successful at progressing from announced to unannounced behavioral observations. This shift should only occur when workers realize the process is truly for their own benefit. The guidelines presented here help make this happen.

Some companies devise creative ways to facilitate the transition from announced to unannounced observations. For example, one organization incorporated individual choice (Guideline 3) by distributing hardhat stickers that workers could display to indicate their willingness to be observed at any time, without being asked. Workers willing to be the recipient of an unannounced BBS coaching session placed the sticker on their hardhats. Eventually, all employees at this facility voluntarily wore a sticker.

At another facility, employee names were placed in a raffle jar. Employees randomly selected their coaching assignments for the day at the beginning of each shift. Observers would then ask their "picks" for permission to observe them any time during the next eight hours. At a convenient time, observers would inconspicuously approach and observe their coworkers. In each example, people gave permission to be observed when their experience with BBS coaching convinced them this was not the traditional, top-down enforcement approach to occupational safety, but was an interdependent learning process that enabled workers to actively care for the safety and health of team members.

A paper mill in Longview, WA, developed an incentive program that not only increased personal choice and participation, but also added a fun and constructive diversion to the standard work routine. Specifically, about 10 percent of the mill workers volunteer to be "mystery observees" during intermittent promotion periods. They receive a coupon redeemable for a meal for two at a local restaurant that they give to the next person who coaches them for safety. Then this employee becomes a mystery

## Coaching Tips

To maintain a nondirective style, the safety coach avoids absolutes such as must, never and always. For example, instead of saying, "You always ignore the safeguard on that machine," s/he says, "I noticed you were working on that machine without a safeguard. Why?" The coach uses "I" statements instead of "you" statements. For example, "You are being risky" sounds accusatory, where "I think that behavior may be risky" sounds caring. Also, the safety coach focuses on the behavior, not personal attributes of the individual. Instead of saying, "You are irresponsible for not using your PPE," s/he might say, "I see you're working without PPE. Why?"

Other nondirective communication techniques include using safe and at-risk instead of right and wrong, and saying, "There's room for improvement" in lieu of, "That's a poor percent-safe score." Use the terms "areas of concern" or "opportunities" for injuries, instead of "unsafe behaviors" or "negative feedback." And, the effective coach states interpretations as personal opinion, not facts.



## Large-Scale Case Study

Company X is a global engineering construction organization with 44,000 employees who are teamed with customers, partners and suppliers on some 900 projects in nearly 60 countries. The company provides technical, management and direct services to develop, manage, engineer, build and operate installations for customers worldwide. Construction projects include dams, tunnels, airports, smelters, pipelines, highways and transit systems for private companies and governments. Some projects are small, while others are extremely large and complex.

The firm is recognized as a leader in employee safety. Its traditional safety management systems were in place and functioning well (e.g., safety meetings, safety training, incident reporting and analysis, policies and procedures). However, because safety is a key value fundamental to the culture, the company decided to implement a BBS process to take safety beyond "good" to world-class performance. Company X partnered with Safety Performance Solutions to design and customize a BBS process for its various sites. This employee-owned initiative puts the responsibility for changing and eliminating at-risk practices in the hands of the construction workers, with strong support from project management.

The company and consulting firm designed a customized set of modules for educating and training all key groups in the process. Special guides were designed for the project's facilitator and for a craft-based Behavior Observation Team (BOT) to serve as a reference and resource throughout the life of a particular construction project.

The company's process follows the 10 guidelines described in the article for establishing and maintaining an effective interpersonal BBS coaching process for injury prevention. Five critical ingredients of this process are:

1) **Facilitator.** Responsible for guiding, directing and facilitating the BOT and implementing the process.

2) **Administrator.** Responsible for

entering data, producing reports, and recording and distributing BOT meeting minutes and reports. The administrator also prepares the weekly BOT agenda, tracks action items developed and communicates findings from team meetings to project personnel. The administrator receives customized training from one of the company's BBS-certified instructors. The training includes an overview of BBS principles as well as strategies for using the Internet-based data management software.

3) **BBS Champion.** A senior manager (usually the site manager) responsible for supporting the BOT and the BBS process. S/he supports implementation by participating in training, establishing clear expectations and holding supervisors accountable for supporting the observation and feedback process. S/he is optimistic, energetic and inspiring, as well as practical in approaching problem solving. This person reviews observation data and BOT recommendations, and makes decisions necessary to support process improvements.

4) **Behavior Observation Team (BOT).** A team of "natural leaders," usually from those craft employees educated in BBS principles and trained in the observation and feedback process. A team of employees brainstormed to define what was meant by a "natural leader." A natural leader is someone who:

- is responsible and dependable;
- is a good communicator;
- others will listen to and follow;
- buys-in to safety as a value;
- is dedicated to the success of the project;
- can take charge;
- is experienced in his/her craft;
- cares for his/her coworkers;
- is a good observer;
- learns quickly;
- has good ideas;
- is willing to learn;
- is willing to try new ideas;
- is willing to ask questions.

BOT reviews data collected during the interpersonal coaching process (criti-

cal behavior categories include PPE, line of fire, pinch points, tool and equipment use, lockout/tagout procedures, housekeeping and others defined by each observer). The team looks for trends and improvement opportunities, then develops recommendations for improvement.

5) **Project Safety Team.** A team composed of a cross-section of a project, usually led by the site manager. This team reviews data from various sources on the project, including the BOT, and applies continuous improvement principles to make proactive decisions to help achieve a zero-injury philosophy.

Before setting up a coaching process at a construction site, a BBS-certified instructor for Company X spends time with managers, supervisors and foremen to teach them the principles and value of the coaching process. Roles and responsibilities of the site's formal leaders are discussed, as well as the resources needed for BBS to be successful. One essential resource is administrative support to process the data and produce reports. It is important to involve managers/supervisors and craft personnel in the decision to implement BBS.

Once the decision has been made to move forward, a BBS rollout plan is developed, along with guidelines for craft voluntary participation. The rollout plan includes selecting a facilitator and designing a selection process for the BOT.

Next, the company's BBS-certified instructor makes a brief presentation to all craft employees at the site to teach the principles of the coaching process. Key principles are "no name, no blame," and that the process is to help coworkers.

These key principles are emphasized during a role-play demonstration. This step is important in achieving craft employee buy-in and support. Then, when the natural leaders are asked to be on the BOT, they are more likely to agree since they will understand the coaching process.

For a successful implementation, each site selects a knowledgeable facili-

observee, anticipating an opportunity to reward another coworker for completing a one-to-one behavioral observation and feedback session.

Each week, mill employees are asked to complete a CBC on a coworker (with permission), then communicate the results in a positive one-to-one feedback session. Employees know about the mystery observees but do not know who they are. The process gets people talking about the BBS coaching process in positive terms and it rewards the most difficult aspect of this intervention process—interpersonal feedback.

### 8) Focus on Interaction, Not Just Numbers

Objective data obtained from a comprehensive observation and feedback process are a valuable component of the process. Computer software helps organize and summarize the results from behavioral checklists and pinpoints targets for intervention. Using software, various workgroups can be compared on various dimensions of a BBS coaching process and results of consecutive days, weeks or months of behavioral observations can be tracked. Thus, work teams can benchmark objectively with others, and can assess successive attempts to im-



tator who has some expertise in helping organizations learn and improve, and who has been trained in the BBS process. The facilitators help employees determine how to best perform the BBS process for themselves. The BBS-certified instructor is responsible for training the craft-based BOT that develops the checklist, defines critical behaviors, conducts observations and gives feedback, collects checklists, and analyzes the data for trends and concerns. Data are shared with everyone on the site.

BOT training is a three-day workshop that includes field training. It begins with the principles of BBS, followed by procedures of an observation and feedback coaching process. The training also includes how to assess and evaluate data collected with an Internet-based computer program, as well as how to use a particular problem-solving process for intervention testing and improvement [Geller(d)].

Much of the training focuses on how to give coworkers constructive feedback with a nondirective style and a "no name, no blame" process. Once BOT is trained, the BBS coaching process begins. Before conducting a behavioral observation, the observer asks permission to ensure that the coaching process is not a "gotcha process" and, therefore, builds interpersonal trust. Asking permission also helps convince employees they have choice in their participation. Observations are anonymous—who said or did what is never disclosed.

BOT meets biweekly to review data, look for trends or improvement opportunities, and develop recommendations for beneficial change. Often, these recommendations for continuous improvement in safety-related behaviors also benefit elements of the SH&E management system.

Once other employees understand the process, they can volunteer to be trained as a member of the BOT and begin BBS coaching, which is another way of building choice into the obser-

vation process. As new crafts begin working at the construction site, additional observers are trained and added to the team. Also, new hires are given an overview of BBS during their orientation. This training is conducted by BOT members, in conjunction with the site SH&E professionals.

### **The Company's BBS Mission Statement**

*Our mission is to develop a safe workplace for our coworkers and ourselves by identifying safe and at-risk behaviors. We will promote safe acts by commending our fellow craftspeople and expressing concern with at-risk acts. We will provide management with valuable information to take proactive measures to ensure an incident-free workplace. Most importantly, our purpose is to see that everyone returns home safely to his/her family and loved ones.*

### **Recognition & Celebration**

Company X strongly believes in recognizing and celebrating success. Site leaders work with the facilitator and BOT to establish rewards and recognition for accomplishments of the BBS coaching process. Each site was given a budget and developed its own rewards and recognition program. To recognize the BOT members, special clothing was provided.

The company requested that each site use award items related to safety such as safety glasses and special gloves. Instant reward programs or on-the-spot recognition were also developed, such as giving stickers with slogans and small cards to redeem for various prizes.

Performance measures include:

- changes in percentages of safe behavior;
- beneficial change as a result of the BOT's input (e.g., better designed scaffolding, additional training, better locations for ladders);
- number of BBS interventions implemented;
- percentage of employee involvement in BBS coaching.

It is noteworthy that these performance measures focus on the process, not on injury statistics. BOT tracks the top three safe behaviors and the top three at-risk behaviors. They also track team interventions and improvements. Each site reports on the reward and recognition strategies used and lessons learned. Through both surveys and group interviews, each site reports on aspects of culture change.

Company X has experienced great success in lowering its injury numbers. For example, of 14 sites that implemented BBS in 2002, the average recordable rate for 2002 was 1.76 and the average lost-workday case rate was 0.23. Each of these statistics is far lower than the national average among comparable construction companies. Although it is not possible to separate the impact of this process from that of other initiatives in place, it was the only new major initiative implemented during the time. Therefore, this process is likely primarily responsible for the reduction in injury rates.

Company X believes BBS coaching works for many reasons. First, management commitment and employee involvement are built into a system that focuses on understanding why injuries occur—with no blame. Also, the firm's BBS coaching process promotes employees looking out for one another and encourages each employee to meet the challenge of always working safely.

The company continuously looks for ways to improve its BBS process. It recently compiled "lessons learned" from all the sites for the following categories: leader support, training/education, communication, observer selection, checklist design, meeting facilitation, motivation, recognition, support staff and quality control.

prove quantity and quality of participation, as well as the percentage of safe behavior.

The data analysis feature of BBS coaching is critical to its success. Behavioral data enable objective pinpointing of targets for improvement, as well as continuous evaluation of corrective action procedures [Daniels; Geller(d)]. Such data provide objective evidence of accomplishment and, thereby, justify recognition and celebration. Thus, the data available from BBS auditing procedures are invaluable, but it is important to look beyond the numbers [Geller(c)].

It is easy to become over-analytical with the

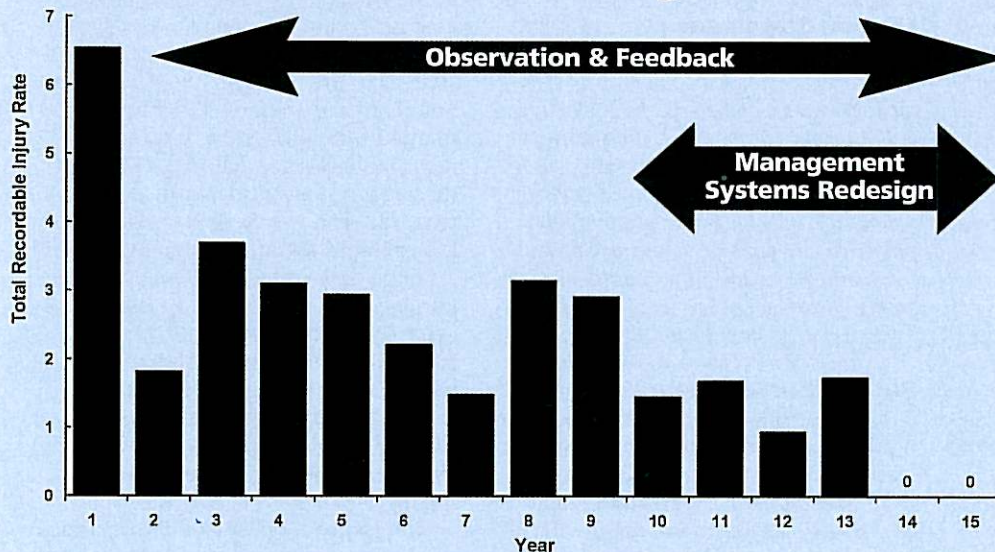
results of BBS observations. The benefits of BBS coaching extend far beyond the evaluation of CBCs. In fact, most records of behavioral observations are likely biased and unreliable; they are typically obtained under unnatural conditions, as when the observations are announced beforehand. In addition, people tend to overlook at-risk behavior, especially when an interpersonal feedback session is expected to follow an observation session.

Thus, data from BBS observation and feedback sessions provide useful comparative information, across sessions within the same workgroup and



Figure 1

## Chemical Plant's Total Recordable Incident Rate, 15-Year History



between different work teams. But the absolute values of these numbers should not be taken too seriously. Above all, consider that the process of interpersonal observation and feedback is more powerful than the numbers with regard to achieving an actively caring work culture and an injury-free workplace. When done well, a structured observation process leads to regular *informal* peer coaching—coworkers giving one another rewarding and corrective safety feedback whenever the opportunity arises.

The communication components of BBS coaching demonstrate the value of peer support, develop interpersonal trust, and help to cultivate the kind of learning-oriented organization that brings out the best in people. In organizations with high illiteracy rates and multiple languages spoken, realizing these benefits may be slower, but not impossible to achieve. In a South African iron ore mine, for example, checklists with pictures illustrating safe and at-risk behaviors were developed to aid the largely illiterate workforce. The pictures also help during one-to-one feedback when coworkers, who collectively speak five languages, rely on nonverbal techniques such as gestures and facial expressions to communicate.

A BBS coaching process teaches workers that they can be “unconsciously incompetent” and that they need feedback from others to improve [Geller(b)]. This leads to an interdependency mindset—a realization that the success of an organization is dependent on systems of people contributing diverse talents and relying on each other synergistically to make the whole greater than the sum of its parts.

### 9) Continuously Evaluate & Refine the Process

Evaluation and refinement have been mentioned throughout this article. No process targeting human behavior is carved in stone. Behavior is dynamic,

continually adjusting to changing demands, expectations and ergonomics. Consequently, CBCs need to be revised periodically, along with adjustments to the procedures used to conduct behavioral observations and deliver feedback.

With experience, BBS coaches become more adept at noticing the subtle features of safe versus at-risk work practices, such as the use of PPE. This continual increase in coaching expertise needs to be reflected in revised CBCs.

In addition, techniques to support BBS principles and procedures (such as incentives, accountability techniques and group meetings) need to be responsive to changes in the workplace, including behaviors, attitudes, management systems and the environmental context in which work is performed.

The bottom line: It is critical to continually assess the behavioral and attitudinal impact of ongoing BBS coaching procedures and to make refinements accordingly. The data analysis referred to in the Guideline 8 provides objective information regarding behavior change. An evaluation of people’s opinions and attitudes about a BBS coaching process requires interpersonal conversations with both participants and nonparticipants. These should occur in both group and individual one-to-one sessions.

Perception surveys can enable a broad sitewide assessment of employees’ feelings about an organization’s safety culture in general and about a BBS process in particular [Geller(g)]. However, a perception survey alone provides no specific direction for procedural refinement. Interviews, focus groups and team discussions should follow the survey. Although this approach takes longer than a simple objective survey, especially if a representative sample is desired, the added benefits far outweigh the costs. While gaining specific recommendations for improvement, opportunities are provided for employee involvement, choice and ownership. (The value of these qualities of the BBS coaching process were discussed in Guidelines 2 and 3.)

### 10) Make the Process Part of a Larger Effort

While this article focuses on BBS coaching as the intervention approach, BBS principles can be applied to many other domains of occupational safety, including ergonomics, training, recognition and celebration, incident analysis, human error prevention, hazard identification and corrective action [Geller(e); (h); McSween; Perdue(a); (b); Roberts]. In each case, BBS reflects a particular approach toward handling the human dynamics of the initiative or



process. Therefore, observation and feedback is not BBS but rather an interpersonal coaching process for improving safety-related behavior that applies certain research-supported principles and tools derived from BBS.

Behavior-based observation and feedback must be viewed as one of many systematic ways to prevent injury in the workplace. Although this intervention approach was developed by behavioral scientists, and it incorporates basic principles and procedures from BBS, it is not BBS. Rather, BBS represents an overall approach toward dealing with the behavioral dynamics of injury prevention [Geller(d); (h); (a); Geller and Williams]. Just like the guidelines presented here are relevant to the development, application and evaluation of more safety programs than an observation and feedback process, the philosophy and technology of BBS are applicable to more occupational safety efforts than an observation and feedback process.

A chemical processing plant of approximately 600 employees had a successful peer observation process in place for a number of years when its incident statistics began trending upwards. Figure 1 shows a 15-year history of the organization's total recordable incident rate. The organization undertook a concerted effort to evaluate and apply BBS principles to other systems, namely revising the firm's incident analysis procedures, developing a safety accountability process and improving supervisors' "safety coaching" skills. After four years of hard work, the firm's efforts paid off when its incident rate reached zero for two consecutive years.

## Conclusion

This article reviewed 10 guidelines or rules for establishing and maintaining an effective interpersonal behavior-based coaching process for injury prevention. The guidelines were not derived overnight, nor were they gleaned from research articles or textbooks. Rather, they were developed from a decade of studying hundreds of actual industrial applications. These guidelines can be considered "lessons learned" from actual experience helping organizations initiate and sustain an effective behavioral observation and feedback process.

This list is certainly not exhaustive, nor is it immutable. It is just the state-of-the-art as the authors see it today. Significant adjustments to this "top 10" list can be expected as the result of continuous learning. Indeed, this is the essence of Guideline 9—continuously evaluate efforts to achieve an injury-free workplace and use the feedback from this process to adjust the next attempt to prevent personal injury. ■

## References

Blanchard, K. "Building Gung Ho Teams: How to Turn People Power Into Profits." Workshop presented at Hotel Roanoke, Roanoke, VA, Nov. 1999.

Byham, W.C. *Zapp! The Lightning of Empowerment*. New York: Fawcett Columbine, 1998.

Daniels, A.C. *Performance Management*. 3rd ed. Tucker, GA: Performance Management Publications, 1989.

DePasquale, J.D. and E.S. Geller. "Critical Success Factors for Behavior-Based Safety: A Study of Twenty Industry-Wide Applications." *Journal of Safety Research*. 30(1999): 237-245.

Geller, E.S.(a) "Behavior-Based Safety for Construction Safety: From Research-Supported Principles to Practical Procedures." *Proceedings of Construction Safety Leadership Symposium*. Des Plaines, IL: ASSE, 2003.

Geller, E.S.(b) "Behavior-Based Safety in Industry: Realizing the Large-Scale Potential of Psychology to Promote Human Welfare." *Applied & Preventive Psychology*. 10(2001): 87-1050.

Geller, E.S.(c) *Beyond Safety Accountability*. Rockville, MD: Government Institutes, 2001.

Geller, E.S.(d) *The Psychology of Safety Handbook*. Boca Raton, FL: CRC Press, 2001.

Geller, E.S.(e) *The Psychology of Safety: How to Improve Behaviors and Attitudes on the Job*. Radnor, PA: Chilton Book Co., 1996.

Geller, E.S.(f) *Understanding Behavior-Based Safety: Step-by-Step Methods to Improve Your Workplace*. 2nd ed. Neehah, WI: J.J. Keller & Assoc. Inc., 1998.

Geller, E.S.(g) "What's in a Perception Survey?" *Industrial Safety and Hygiene News*. 28(1994): 11-12.

Geller, E.S.(h) *Working Safe: How to Help People Actively Care for Health and Safety*. 2nd ed. New York: Lewis Publishers, 2001.

Geller, E.S. and A. French. "Safety Coaching Through Observation and Feedback." *Proceedings of Light Up Safety in the New Millennium: A Behavioral Safety Symposium*. Des Plaines, IL: ASSE, 1998. 123-141.

Geller, E.S. and J.H. Williams, eds. *Keys to Behavior-Based Safety*. Rockville, MD: ABS Consulting, 2001.

Geller, E.S., et al. "Researching Behavior-Based Safety: A Multi-Method Assessment and Evaluation." *Proceedings of the 37th Annual Professional Development Conference and Exposition*. Des Plaines, IL: ASSE, June 1998. 537-559.

Grote, D. *Discipline Without Punishment*. New York: American Management Assn., 1995.

Johnson, S.E. "Behavioral Safety Theory: Understanding the Theoretical Foundation." *Professional Safety*. Oct. 2003: 39-44.

Krause, T.R., et al. *The Behavior-Based Safety Process: Managing Improvement for an Injury-Free Culture*. 2nd ed. New York: Van Nostrand Reinhold, 1996.

McSween, T.E. *The Value-Based Safety Process: Improving Your Safety Culture with a Behavioral Approach*. New York: Van Nostrand Reinhold, 1995.

Monty, R.A., et al. "The Freedom to Choose Is Not Always So Choice." *Journal of Experimental Psychology: Human Learning and Memory*. 37(1979): 170-178.

Perdue, S.R.(a) "Addressing Ergonomic Hazards Through Behavioral Observation and Feedback." *Proceedings of the 38th Annual Professional Development Conference and Exposition*. Des Plaines, IL: ASSE, 1999. 46-52.

Perdue, S.R.(b) "Beyond Observation and Feedback: Integrating Behavioral Safety into Other Safety Management Systems." *Proceedings of the 39th Annual Professional Development Conference and Exposition*. Des Plaines, IL: ASSE, 2000.

Perlmutter, L.C., et al. "Effect of Choice on Paired-Associate Learning." *Journal of Experimental Psychology*. 91(1971): 47-53.

Petersen, D. *Safe Behavior Reinforcement*. Goshen, NY: Aloray Inc., 1989.

Roberts, D.S. "Designing and Modifying Jobs for Error Reduction." *Proceedings of the Human Error in Occupational Safety Symposium*. Des Plaines, IL: ASSE, 2003. 56-72.

Rogers, C.R. *Client-Centered Therapy*. Boston: Houghton-Mifflin, 1951.

Sidman, M. *Coercion and Its Fallout*. Boston: Authors Cooperative, 1989.

Watson, D.L. and R.G. Tharp. *Self-Directed Behavior: Self-Modification for Personal Adjustment*. 8th Ed. Pacific Grove, CA: Brooks/Cole Publishing, 2002.

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