OSHAcademy™
Occupational Safety & Health Training

Safety Management System Evaluation

The Safety and Health Management System is extremely important to the long-term success of an organization. This course will introduce you to the Safety and Health Achievement Program (SHARP) Audit process by discussing an audit process similar to that used by OSHA evaluators. Even if your company doesn't anticipate participating in the SHARP program, the information within this online course is vital in your efforts to improve the quality of your safety management system.

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OSHAcademy Course 716 Study Guide

Safety Management System Evaluation

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Contact OSHAcademy to arrange for use as a training document.

This study guide is designed to be reviewed off-line as a tool for preparation to successfully complete OSHAcademy Course 716.

Read each module, answer the quiz questions, and submit the quiz questions online through the course webpage. You can print the post-quiz response screen which will contain the correct answers to the questions.

The final exam will consist of questions developed from the course content and module quizzes.

We hope you enjoy the course and if you have any questions, feel free to email or call:

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Disclaimer

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Course Introduction

In this course, you will learn how to identify, analyze and evaluate your company's Safety & Health Program. With the advent of the systems approach to safety management, safety professionals are increasingly calling their comprehensive safety program a "safety management system (SMS)." This is the term you will see throughout the course. Any reference to "system" refers to the SMS.

The Safety and Health Management System is extremely important to the long-term success of your organization. This course will show you how to analyze and evaluate your safety management system by discussing the various steps in the process used by OSHA consultants to assess companies participating in the Safety and Health Achievement Program (SHARP) evaluation process. Even if you are company doesn't anticipate participating in this program, the information within this online course may be very helpful in your effort to improve your SMS.

To better understand the concept of "system," we'll review the four primary system components in every system. We'll also examine how an organization's management structure, leadership style and the resulting safety culture impact the seven elements of a safety management system.

Course Goals

1. Understand the following concepts: analysis, evaluation, surface cause, root cause, and system.

2. Gain a better understanding of safety and health programs as systems.

3. Learn about the SHARP evaluation model as a tool to evaluate your safety management system.

Module 1: Safety Management System (SMS) Basics

Introduction

A "*system*" may be thought of as an orderly arrangement of interdependent activities and related procedures which implement and facilitate the performance of a major activity within an organization. (American Society of Safety Engineers, Dictionary of Terms)

   Take a look at Syssie, the cow. Syssie is a system, right? You can tell she's a cow, so she has "structure." She needs food, air, water, a suitable environment, tender loving care, and other "inputs" to function properly. We know she has respiratory, digestion, circulation, and many other "processes" inside. Finally, she produces outputs like milk, waste products, and behavior.

Just like Syssie, all organizational systems are composed of the same four basic components:

1. S tructure

2. I Inputs

3. P Processes

4. O Outputs

If a system does not have adequate structure, inputs, or processes, the outputs will not be those desired. Let's take a closer look at these components as they relate to the safety management system.

All safety management systems have structure.
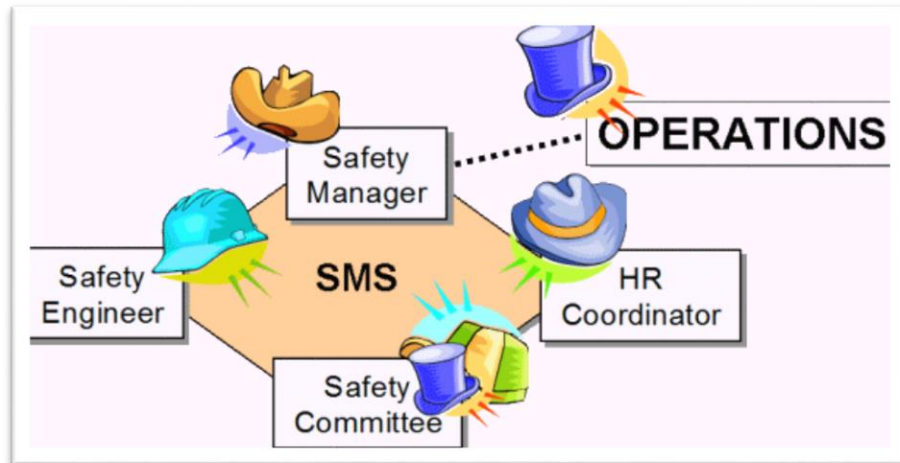
The structure of an SMS can take many forms. All safety management systems function within and support the company's operations system. Remember safety managers and staff exist to help (assist) the line organization, not control it. Safety people are consultants, not cops!

We'll discuss a simple structure that includes four basic positions; safety manager, safety engineer, human resources coordinator, and the safety committee. Actually, there's really no one-fits-all structure. In a small company, one person may fulfill duties in each of the four positions. In larger companies, each position may be filled by an individual.

Where does safety fit in the organization?

It's important to understand where the safety function "fits" in an organization. Some organizations make the "mistake" of thinking safety is primarily a human resource function: It's not. Although HR is an important part of the SMS, it's not the center or hub of the system. Safety is a primary function of operations. It relates directly to the quality of the production/service process within the organization. Therefore, the system usually works best when the safety manager reports to the top operational decision-maker. With this in mind, let's discuss each of these positions.

Safety Manager (SM): The safety manager has overall responsibility for the SMS, but primarily focuses on the physical safety and health of employees through the use of administrative controls to limit exposure to hazards. This position most effectively reports to the head of operations. In larger companies, the safety manager is usually the in-house subject matter expert on mandated OSHA programs. Also, this person will be the primary consultant to the employer on safety-related matters. He or she will also help the safety committee as a consultant. It's usually best if the safety manager is a consultant to, but not a member of, the safety committee. When the safety manager is also a safety committee member, he or she

usually winds up filling the chairperson position, and does "all the work." Typical programs and duties of the SM include:

Programs

- Safety Training Program

- Incident/Accident Analysis Program

- All mandated OSHA programs - confined space, hazard communications, etc.

- Job Hazard Analysis

Duties

- Manages all areas of the SMS

- Conducts inspections and audits

- Ensures compliance with all mandated OSHA programs

- Consults with the Safety committee, safety engineer, and human resources coordinator

- Conducts research, analysis and evaluation to improve the SMS

Safety Engineer (SE): The first question to ask when a hazard is identified in the workplace is, "How can we engineer the hazard out"? The safety engineer usually works in the maintenance or engineering department and is interested in using engineering controls to eliminate or reduce hazards. Consequently, the safety engineer needs additional training in "engineering" topics such as machine guarding, electrical safety and lockout/tagout (See other OSHA Workshops and OSHA Training Institute Region X for more course info). Examples of programs and duties the safety engineer may be responsible for include:

Programs

- Lockout/Tagout

- Electrical Safety

- Walking-Working Surfaces

- Machine Guarding

Duties

- Conducts inspections and audits

- Ensures safety consideration in purchase of tools, equipment, machinery

- Consults with the Safety manager and committee

- Conducts research, analysis and evaluation to improve safety in the workplace

Human Resource Coordinator (HR): This position is primarily interested in the quality of programs that affect the psychological health of employees. Depending on what works best, this person may or may not be a member of the safety committee. Safety- and health-related human resource programs may include:

Programs

- Employee Assistance Program (EAP)

- Drug Free Workplace (DFW)

- Early-Return-To-Work (ERTW - Light Duty)

- Workplace Violence Prevention Program (WVPP)

- Incentives and Recognition Program

- Claims management

- Accountability Program

- New employee orientation

Duties

- Conducts audits of safety- and health-related HR programs

- Designs and implements incentive and recognition programs

- Maintains safety and health records

- Conducts disciplinary actions

- Conducts training on HR-related programs

- Consults with the safety committee on HR-related issues

Safety Committee (SC): In some states employers are required to have a safety committee. Even when safety committees are not required, it's smart business to have one. This in-house consultant team acts as the "eyes and ears," for the SM by collecting data. The committee helps the SM identify, analyze, and evaluate the design and performance of the SMS. The SC provides data to the safety manager, safety engineer and human resource coordinator. The committee usually submits recommendations and reports to the safety manager.

Programs

- Incident/Accident Analysis Program

- Accountability System

- Safety Inspection Program

Duties

- Conducts safety inspections

- Evaluate the accountability system

- Develop incident and accident procedures

- Ensure effective reporting of concerns

- Observe conditions and behaviors

- Conduct surveys and interviews

All systems run processes

Remember Syssie? Well, just like Syssie the cow, the SMS behaves in a way that is unique to each organization. The behaviors occur as individual actions and SMS processes, each with a number of unique set of activities and procedures. A system performance evaluation looks at how well these actions and processes are working. The primary SMS activities and processes include the following:

- Commitment - leading, following, managing, planning, funding

- Accountability – role, responsibility, discipline

- Involvement - safety committees, suggestions, recognizing/rewarding

- Identification - inspections, observation, surveys, interviews

- Analysis – incidents, accidents, tasks, programs, system

- Controls - engineering, management, PPE, interim measures, maintenance

- Education - orientation, instruction, training, personal experience

- Evaluation - judging effectiveness of conditions, behaviors, systems, results

- Improvement - change management, design, implementation

All systems produce outputs

If the system provides quality inputs and effectively performs activities and procedures, the outputs (effects) are likely to be those desired and intended. Remember, quality in likely means quality out. Short-term results are usually specific observable-measurable conditions and behaviors. Long-term outcomes are not so easy to see and effect the entire organization.

- Safe/Unsafe conditions, behaviors - results

- Many/Few incidents and accidents - results

- High/Low accident costs - outcomes

- High/Low productivity, morale, trust - outcomes

What does this principle mean?

You know, every organization has a safety management system. In fact, you cannot NOT have a safety management system.   Any system, whether it's Syssie the cow, or a complex safety management system can get sick if it's not designed properly and deployed effectively. Just like Syssie, your safety management system will produce only what it is designed to produce. It can't produce anything else.   If your safety management system results in symptoms like poor employee safety performance and high accident rates, it's because the safety management system has been, you guessed it, perfectly designed to produce those results.

Bottom line idea: If you properly design the safety management system, the symptoms will not arise!

Module 1 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

1. A _____ may be thought of as an orderly arrangement of activities and related procedures which implement and facilitate the performance of a major activity within an organization.

    a. program
    b. plan
    c. system
    d. process

2. Activities and procedures in a system are _____.

    a. independent
    b. isolated
    c. interdependent
    d. stand-alone

3. According to the text, which of the following is not one of the four basic components of all systems?

    a. Inputs
    b. People
    c. Processes
    d. Outputs

4. The safety and health management system structure discussed all of the following positions, except _____.

    a. safety manager
    b. safety committee
    c. human resource coordinator
    d. insurer

5. **This person is primarily interested in maintaining the physical safety and health of employees by reducing exposure to hazards with management controls _____.**

   a. safety manager
   b. safety committee
   c. human resource coordinator
   d. safety engineer

6. **According to the text, the machine guarding program would be most likely of primary interest to the _____?**

   a. safety manager
   b. safety committee
   c. human resource coordinator
   d. safety engineer

7. **Inspecting hazards in the workplace is considered one of the many SHMS _____.**

   a. structures
   b. inputs
   c. processes
   d. outputs

8. **To determine the "effects" of the SHMS, an evaluator is most likely to look at this component of the system.**

   a. Structures
   b. Inputs
   c. Processes
   d. Outputs

9. **Which of the following most directly describes an effect of a flawed SHMS?**

   a. High accident rate
   b. Low rate of employee compliance
   c. More frequent OSHA inspections
   d. High experience modification rate (MOD)

10. According to the text, the SHMS is likely to be more effective when the safety manager reports to _____.

    a. the human resources manager

    b. OSHA

    c. the operations manager

    d. the maintenance supervisor

Module 2: Analyzing the Safety Management System

Introduction

Improving the SMS is one of the most important safety staff activities. Actually, as in-house consultants, it's the most important goal. To do this, we first need to identify what we have. Next, we need to compare what we have with what we know works best. Once we have this information, we can then make improvements. In this module, we'll study the general steps in the SMS analysis and evaluation process.

> *Not knowing why things get better or worse is always a problem for a business. If it gets better "for no reason," later it will probably get worse "for no reason." "The point is, it's not enough to know that something works. It is vitally important to know why it works. (Aubrey Daniels, Bringing Out the Best in People, p. 14)*

Step One: Analyze the System with a Baseline Survey

Webster defines the term, *analysis* as, "the breaking down of the whole into its constituent parts to determine their nature." In this first step, the objective is to determine the status of the system by determining which components of the SMS are currently in place. We want to know what programs we have, and what programs we don't have.

To do this, conduct an initial comprehensive baseline SMS survey. This baseline survey examines the entire SMS to determine current in-place system components. System components include safety programs, plans, policies, processes, procedures, practices, people involved, and the performance measures. In this course, we'll refer to these eight system components.

Bottom line, if a program doesn't exist, we may have a *system design* problem. If the program does exist, but isn't performing well, we may have a *system performance* problem. To determine this, we need to conduct system evaluation.

Step Two: Narrow the focus - Analyze Each SMS Component

Conducting a baseline survey and basic audit of the SMS tells us what the system generally looks like, but does not tell us enough about *why* the system is working or not.

We need to "dissect" each program within the system through more focused surveys, interviews, observations, inspections and audits to examine each component.

It's important to understand that we need to analyze all apparent positive and negative effects uncovered to know why programs are effective as well as why they are not.

If a program doesn't exist or isn't performing well, it can (and probably will) affect other programs in the SMS. We need to take a closer look at each program by conducting a focused analysis of each SMS program. To do this, we can use several tools such as:

- Employee Surveys to sample a population of employees to identify what they think, feel and believe about the safety program.

- Employee Interviews of individual employees to identify more specifically what they think, feel, and believe.

- Workplace Inspections to identify existing workplace conditions. As an example, safety committees are required to conduct workplace inspections to identify hazards.

- Workplace Observations to identify existing employee behaviors and activities. For example, employees might make a certain number of safety observations each month and report their results for analysis.

- Program Audits to analyze the design and performance of plans, policies, processes, procedures, practices, and people within each program. For instance, safety committees can use the audit process to analyze and evaluate the company's accountability system.

Step Three: Conduct Cause Analysis

What causes accidents?

According to analysis of injury date collected by Oregon's SAIF[*] Corporation, there are three general cause categories for workplace injuries:

1. *Unpreventable acts:* Only two percent of all workplace accidents are thought to be unpreventable. Heart attacks and other events that could not have been known by the employer are examples of unpreventable acts. Unfortunately, some companies try to

place most of their injuries into this category. They justify these beliefs with such comments as: "He just lifted the box wrong and strained his back. What could we do?" Unfortunately, they are excuses for not looking into the "root cause" of the injury.

2. *Hazardous conditions:* Hazardous conditions (OSHA violations) account for only three percent of all workplace accidents. While OSHA rules are valuable, they cannot eliminate the role of human factors in causing accidents. People can interrupt, ignore or implement the rules.

3. *System failure:* SMS failures account for at least 95 percent of all workplace accidents. System failures refer to inadequate design or performance of safety programs providing training, resources, enforcement, supervision, and leadership.

* Reference: SAIF Corporation - Loss Control Approach, Foundation, p. 9

Surface Symptoms

The information uncovered by the baseline surveys and focused program analysis will include:

- individual thoughts, opinions, and beliefs about safety

- feelings about the safety culture, leadership, and management

- safe and hazardous conditions

- safe and unsafe behaviors

These represent the surface symptoms giving clues about underlying root causes. The conditions and behaviors you see are merely the *effects* of these underlying causes. Symptoms are observable, measurable, unique conditions and behaviors. Again, this is important: They represent the effects of less obvious root causes. Remember, every effect has a cause! To eliminate the visible surface symptoms or effects, we need to accurately diagnose and treat the underlying root causes.

Underlying Root Causes

Analysis of the information gathered by the baseline survey and program analysis will also identify possible underlying root causes for the symptoms described above. We will find programs or parts of programs may be missing parts or nonexistent. Generally, we'll uncover the following:

System Design Weaknesses: Design weaknesses are basically a failure to plan the work. They describe the overall "condition" of the SMS. They also represent the "deep" root causes for the symptoms above.

Characteristics:

- Missing or inadequate policies, plans, programs, processes, procedures

- Missing or inadequate resources - money, time, people, materials, etc.

The resulting effects of a system that is not designed adequately are system performance failures. The system fails to "behave" properly. Let's take a look at system performance failures.

System Performance Weaknesses: Performance weaknesses describe a failure to work the plan.

Characteristics:

- Failure to effectively accomplish safety policies, plans, processes, procedures or practices. For instance, supervisors may not be performing safety inspections as required.

- Failure to provide training, resources, enforcement, supervision, and leadership. For example, although it's required by the training plan, written tests are not being administered during lockout/tagout training.

Do you see why conducting the baseline survey and program analysis is so important? These processes are capable of providing a wealth of valuable data that can help safety staff develop solutions and make recommendations that can dramatically improve employee safety. Once again, we cannot emphasize enough how important to understand every cause has an effect. What you see are the effects. What you must uncover are the hidden root causes.

> *Bottom line Idea: If you deal with the causes, the symptoms do not arise.*

Module 2 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

1. **This process breaks down the whole into its constituent parts to determine their nature _____.**

    a. evaluation
    b. analysis
    c. identification
    d. assessment

2. **According to the text, to get a better idea what the SMS looks like, it's a good idea to conduct a _____.**

    a. job hazard analysis
    b. behavior-based safety audit
    c. walk-around inspection
    d. baseline survey

3. **Bottom line, if a program doesn't exist, we may have a _____ _____ problem.**

    a. system process
    b. system design
    c. system performance
    d. system outcome

4. **If a program exists, but people are not following its guidelines, we may have a _____ _____ problem.**

    a. system process
    b. system design
    c. system performance
    d. system outcome

5. **All of the following are mentioned as important methods to take a closer look at each SMS program, except _____.**

   a. interviews
   b. panels
   c. surveys
   d. audits

6. **This very important process is effective in finding out what employees think, feel, and believe about the quality of safety in the organization _____.**

   a. investigation
   b. safety committee panel
   c. employee survey
   d. program audit

7. **Which of the following processes is used to take a close look at a safety program?**

   a. Interviews
   b. Panels
   c. Surveys
   d. Audits

8. **All of the following describe surface effects or symptoms, except _____.**

   a. they are observable and measurable
   b. they are common occurrences
   c. they are unique conditions or behaviors
   d. they are more obvious

9. **Which of the following is not considered a root cause?**

   a. A training plan doesn't include evaluation
   b. Supervisors are not enforcing safety rules
   c. Bob failed to wear ear plugs
   d. The safety committee isn't meeting regularly

10. According to the text, if you deal with the _____, the _____ do not arise.

    a. problems, solutions

    b. causes, symptoms

    c. symptoms, causes

    d. solutions, problems

Module 3: Cause Analysis

There are many tools for SHMS analysis. Document review, employee interviews, and review of site conditions are quite important and provide you with valuable data for analysis. We'll also look at the 5-Why and Fishbone techniques.

Documentation

Every worksite should have, at a minimum, written accident reports and the OSHA 300 Log of injuries and illnesses as required by law. It's a good idea, especially for larger companies, to have written procedures and records of all safety and health programs. A program evaluator should compare the written program with the performance record of the program.

Interviews

In addition to documentation, interviews can be very helpful in establishing what has occurred. There are two kinds of interviews, formal and informal.

- Formal interviews are conducted privately with randomly selected employees who are asked pre-selected questions.

- Informal interviews occur at employee work stations and generally follow a list of topics.

To assess how well the worksite safety and health policy is communicated and understood, and how well the disciplinary system is working, ask the employees to explain them.

To gauge the effectiveness of safety and health training, interview hourly employees and first-line supervisors:

- Ask employees to describe what hazards they are exposed to, and how they are protected.

- Ask employees to explain what they are supposed to do in several different types of emergencies.

- Ask supervisors how they teach, how they reinforce the teaching, how they enforce safety and health rules and safe work practices, and what their responsibilities are during emergency situations.

Interviews with management should focus on its involvement in and commitment to the safety and health program.

- Ask how the policy statement was created, and how that statement is communicated to all employees.

- Ask what information management receives about the safety and health activities, and what action management takes as a result of that information.

- Ask how management's commitment to safety and health is demonstrated to the workforce.

Review Workplace Conditions

Conditions in the workplace reveal much about SMS effectiveness. Workplace conditions can be observed indirectly by examining documents such as inspection reports of hazards, employee reports of hazards, and incident/accident investigations.

Inspections or tours may reveal hazards. Tips include:

- Be careful the inspection does not become routine with emphasis only on hazard correction.

- When a hazard is found, certainly take steps to ensure its correction.

- Ask what management system(s) should have prevented or controlled the hazard.

- Determine why system(s) failed, and either change them or take other appropriate corrective measures.

The "5 Whys" Technique

The "5 Whys" technique is a brainstorming technique that identifies root causes of problems by asking why behaviors occurred or conditions existed. This produces the most direct cause of the event. As the diagram indicates, each *cause* is, at the same time, the *effect* of a deeper cause. For each of these causes, ask why it occurred. Repeat the process for the other events associated with the problem.
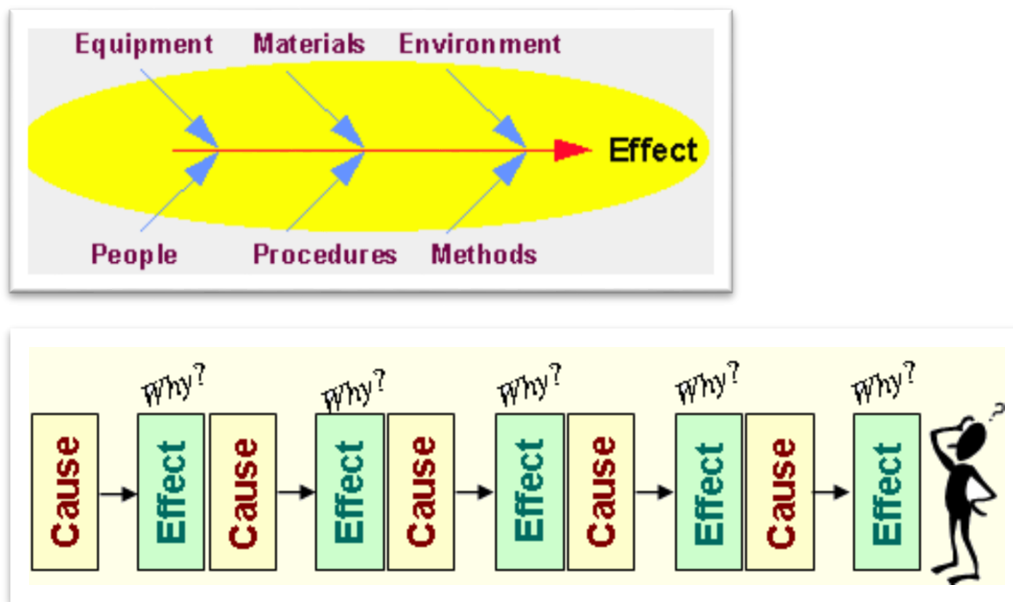
Cause and Effect (Fishbone) Diagram

The cause and effect diagram graphically (right) represents the relationships between a problem (effect) and its possible causes. The problem is stated in descriptive terms that are observable and measurable. Possible causes are listed. The committee or team then assigns priorities to the causes and action plans are developed.

When a cause and effect diagram is constructed, thinking is stimulated, thoughts are organized, and discussions are started. These discussions bring out many possible viewpoints on the subject. The idea is each effect observed is the result of a deeper cause. Once all participants reach a similar level of understanding about an issue, an expansion of ideas can then be examined.

Cause and effect diagrams are developed in a form, commonly referred to as a "fish," where the effect is found in a box to the right which is the head of the fish. The bones of the fish show the organized causes. The effects and causes can be expressed in words or data.

Cause and effect diagrams are used to examine many different topics which include the following:

1. The relationships between a known problem and the factors that might affect it.

2. A desired future outcome and its related factors.

3. Any event past, present, or future and its causal factors.

The technique is also useful in planning activities and brainstorming. The diagram is basically a controlled way of gathering and using suggestions through group consensus.

Procedures: A cause and effect diagram is developed in the following manner:

1. Define the effect as clearly as is possible and place it at the head of the fish. This effect represents the "problem" that is being investigated. As data are collected, the effect can be redefined, if necessary.

2. The group brainstorms the causes and lists them in no particular order. These causes are then studied and the causes that affect these causes are identified. This will continue until no new causes are thought of by the group.

3. Once all causes are identified, list all categories and then display the categories on the diagram.

4. The group then prioritizes the causes by multi-voting. Each member of the group lists the causes in order of significance. Votes are counted and a final list is written.

5. The highest prioritized causes are listed on the diagram as the big bones. The next highest prioritized causes will be listed on the diagram as the medium bones. Finally, the least prioritized causes will be listed on the diagram as the small bones.

6. As categories and causes are included on the diagram, thinking may be stimulated and new causes may be identified.

7. Teams are then formed to research and report on preventive (i.e., proactive) measures.

Module 3 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

1. **A program evaluator should compare the written program with the _____ record of the program.**

   a. historical
   b. performance
   c. safety committee
   d. tracking

2. **This type of interview is conducted privately with randomly selected employees who are asked preselected questions _____.**

   a. formal
   b. informal
   c. confidential
   d. random

3. **To assess how well the worksite safety and health policy is communicated and understood, and how well the disciplinary system is working, ask the employees to _____.**

   a. remember them
   b. recite them
   c. find them
   d. explain them

4. **All of the following are described in the text as important questions to ask to gauge the effectiveness of safety and health training, except _____.**

   a. ask employees to describe what hazards they are exposed to
   b. ask employees to explain what they are supposed to do
   c. ask supervisors how they write lesson plans
   d. ask supervisors how they teach, how they reinforce the teaching

5. **Interviews with management should focus on its _____ in and _____ to the safety and health program.**

   a. involvement, commitment
   b. enforcement, dedication
   c. development, performance
   d. perception, relationship

6. **According to the text, workplace conditions can be observed indirectly by all of the following, except _____.**

   a. examining documents
   b. employee reports
   c. conducting a JHA
   d. incident/accident investigations

7. **The _____ is a brainstorming technique that identifies root causes of problems by asking why behaviors occurred or conditions existed.**

   a. Mind mapping
   b. 5 Whys technique
   c. Fishbone diagram
   d. Cause effect diagram

8. **According to the text, cause and effect diagrams are used to examine many different topics which include all of the following, except _____.**

   a. Employee personal performance value factors
   b. Any event past, present, or future and its causal factors
   c. A desired future outcome and its related factors
   d. The relationships between a known problem and the factors that might affect it

9. **In this technique, the group prioritizes causes by multi-voting _____.**

   a. mind mapping
   b. 5 Whys technique
   c. FMEA analysis
   d. cause effect diagram

10. Bottom line: Each cause is, at the same time, the effect of a _____.

     a. higher cause

     b. employee flaw

     c. deeper cause

     d. employer flaw

Module 4: Evaluating the SMS

What is "evaluation" and what do we "evaluate"

Evaluation defined. Webster defines the term, *evaluate*, as "to judge the worth of." Evaluation is a systematic, objective process for determining the success of a policy or program. It addresses questions about whether and to what extent the program is achieving its goals and objectives. The primary attributes of most SMS evaluations include objectivity, standardization, systematic, and formal. Evaluation has several distinguishing characteristics.

An evaluation:

1. assesses the effectiveness of an ongoing program in achieving its objectives,

2. relies on the standards of project design to distinguish a program's effects from those of other forces, and

3. aims at program improvement through a modification of current operations.

Evaluations are usually carried out by an evaluation team such as members of the safety committee or other safety staff. Team members should assist in developing the evaluation design, developing data collection instruments, collecting data, analyzing data, and writing the report. The evaluation plan is a written document describing the overall approach or design that will be used to guide an evaluation. An evaluation plan should include:

- what will be done

- how it will be done

- who will do it

- when it will be done

- why the evaluation is being conducted.

The purpose of an evaluation

System Evaluations generally have four basic purposes:

Evaluate the design: Examination of the written plans, policies, procedures, and other documents to determine how clearly they are written and if they contain the necessary

information. For instance, during the SMS evaluation, an evaluator would examine the written hazard communications program to make sure it contained the required information.

Evaluate the process: Another primary consideration in an evaluation is to assess the quality of SMS activities. For example, an evaluator might observe trainers using the program and write a descriptive account of how employee respond and then provide feedback to instructors.

Evaluate results: It's important for an evaluation to study the immediate or direct results of the SMS and its programs on employees. For example, the evaluator may conduct a walk-around inspection to determine the safety status of tools, equipment, and materials in the workplace.

Evaluate impact: An effective evaluation looks beyond the immediate conditions and behaviors representing the results of policies, instruction, or services. It also identifies longer-term as well as unintended program effects. It may also examine what happens when several programs operate in unison. For example, an impact evaluation might examine whether a safety program's immediate positive effects on behavior were sustained over time.

Regardless of the primary focus of the evaluation, they all use data collected in a systematic manner. The data may be:

- quantitative, such as counts of safe/unsafe behaviors, or

- qualitative, such as descriptions of the effectiveness of an incentive and recognition program.

Successful evaluations often blend quantitative and qualitative data collection. The choice of which to use should be made with an understanding that there is usually more than one way to answer any given question.

It is not the purpose of an SMS evaluation to place blame

This is important. Do not conduct a SMS evaluation to determine the inherent value of a person. We don't evaluate to find out who is mad, bad, evil, lazy, crazy, stupid, or otherwise flawed. Do not make value judgments that attack a person or group. A key principle to understand, here, is that if you attack people, they attack back.

If the purpose of an evaluation is to "fix the system", playing the "blame game" is not effective because it does not achieve the desired effect. Actually, the evaluation may be counter-productive.

If we evaluate to place blame, we'll stop the process once blame has been determined. As a result, we'll never get past blame to evaluate the system. In an effective SMS evaluation, our objective is to discover the effectiveness of the system.

Our primary question about programs is, "Do they work, or don't they?"

If the purpose is to fix the blame, you are not going to ask this critical question. Why? Because...

When the purpose of a process has been achieved, the process stops!

Safety Committees Should Help Evaluate the SMS

The safety committee can help by evaluating the employer's accident and illness prevention program, and making written recommendations to improve the program where applicable. This best practice emphasizes the fact that a very important safety committee responsibility is to help the employer evaluate the SMS. The safety committee should also be able to write quality recommendations to improve the SMS.

Determine the Benchmark

To conduct an evaluation, we need to take the information gathered from the baseline survey and rate it against an established *benchmark*. A benchmark is a standard by which the system can be measured or judged, for instance, we might say XYZ's SMS is "benchmark of quality" in our industry. In the optional modules of this course (Modules 5-12); you will be introduced to the OSHA Safety and Health Program Assessment Worksheet which may be used as a benchmark. This audit evaluates the same 58 elements of a SMS also used by OSHA to evaluate companies participating in the Safety and Health Achievement Recognition Program (SHARP). You may also be interested in using other evaluation standards as benchmarks such as:

- Voluntary Protection Program (VPP)

- ANSI/AIHA Z10, Occupational Health and Safety Management Systems

Let's take a look at a simple example of how it all works.

Example

Donn and Doff Analyze an Apple

"Hey Donn, what the heck is that bump
on this apple!"

"What's with that, Doff?
Let's take a look."

Identification: Oh, we have a problem.

Don and Doff see an apple in the basket that looks different. It looks like the apple has a bump on it. They identified a possible problem.

Analysis: Hey, what does it look like?

To better understand why the apple looks like it does, they decide to cut it up, take a look at the seeds, the core, the flesh and the skin. They gather the following facts about the apple:

1. The core and seeds look just fine.

2. The bump is "smooshy"

3. There are many little discolored "tunnels" throughout the fleshy part.

4. Flesh surrounding the tunnels appears rotted

5. The apple tastes very good

6. The skin of the apple is discolored in places

Evaluation: OK, how "good" is the apple?

Now that Donn and Doff have gathered information, they are able to evaluate the quality of the apple based on facts. They determine the apple is flawed. Now that they know they have

a real problem, they decide to figure out what the cause is so the rest of their apples don't spoil. They've got to conduct a cause analysis. They understand that everything they've identified so far represent only the observable, measurable effects of some cause.

Cause Analysis: OK, what's the cause?

The question, now, is, "what is the cause." There are two basic types of causes Donn and Doff identify in their analysis: surface and root (very appropriate in our apple example ;-).

Surface causes: It's obvious to Donn and Doff the damage is caused by a bug of some kind. Considering all the information gathered helps them search the internet and determine that an Apple Maggot has deposited eggs under the skin of the apple and fed on the flesh of the apple. They're quite happy about discovering the obvious surface cause, but why is the Apple Maggot causing a problem? It never has before! They've got to figure out the root cause.

Root cause: Donn and Doff know the maggot did its damage, but why? Asking "why" a number of times, will help them eventually determine the less obvious underlying contributing causes of the spoiled apple. During root cause analysis they determine::

- The pesticide used on the apples was not effective against the Apple Maggot.

- The Apple Maggot, which is native to the eastern part of the country, has somehow migrated to the local area.

With this information in hand, they will be able to develop strategies to overcome this infestation.

Evaluating the Safety Management System

The negative effects of a flawed system are often due to inadequate resources, system design, and/or system performance. If one or more of these three system components are flawed, the effect will be flawed conditions and behaviors. Often, management must decide if a flawed condition or behavior is the result of a flaw in the system or a policy violation which may require disciplining the violator.

Management must determine if adequate resources were available, if the system design was adequate, and if the system performance was adequate. If any of the three system components

were inadequate, then the system is at fault and no discipline should be administered. If all three of the system components were <u>clearly</u> adequate, then discipline may be necessary.

If discipline is used despite an inadequate system, employees will feel as though they are being blamed without cause. This can lead to resentment and low morale. It is important to only discipline if the system has been shown to be adequate.

The flowchart (below) can be used as a guide when evaluating the safety management system. If any of the questions can be answered with a "No," then the system is inadequate and must be corrected. It is possible for more than one system component to be inadequate; therefore each component should be evaluated and corrected as necessary.

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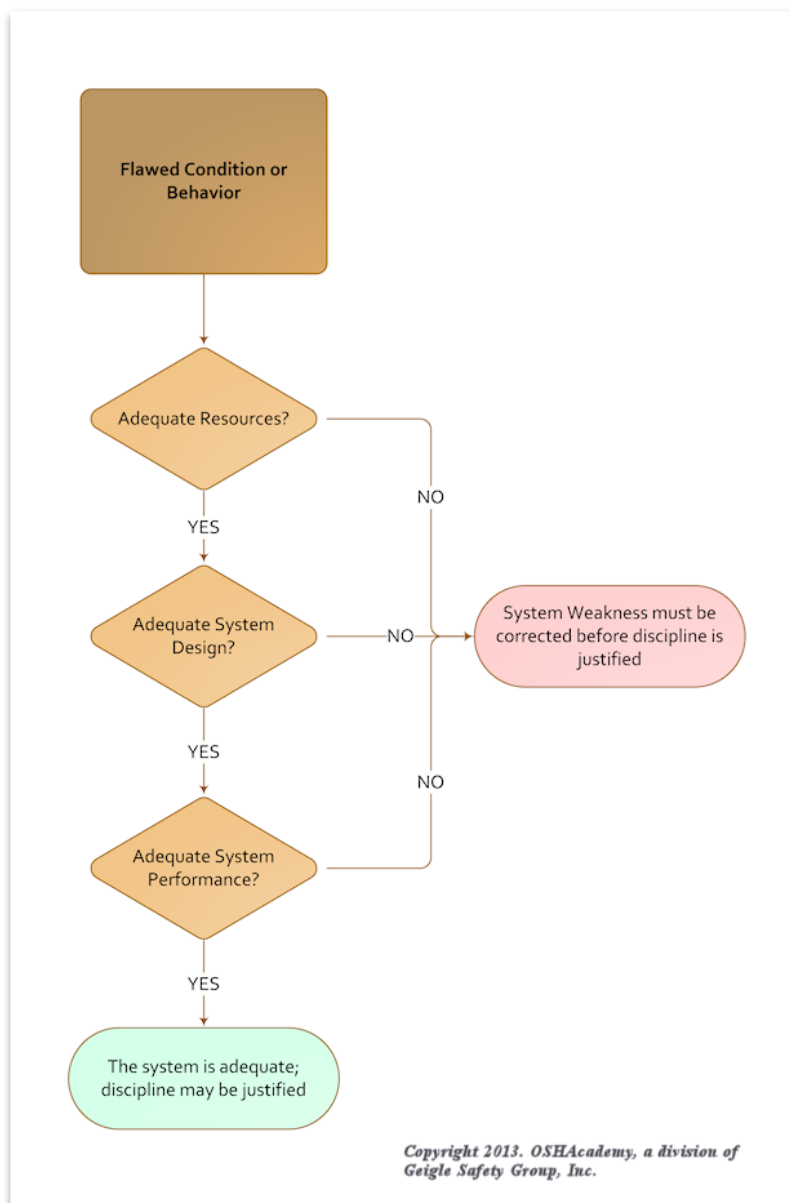
Example

Are any of the system components inadequate?

Bob, a maintenance worker with the company for 10 years, received a serious electrical shock while working on a conveyor belt motor. When Bob was asked why he did not use the company's established lockout/tagout procedures, he replied, "I thought about it, but the procedures were not current since the new equipment had been installed last year." Bob also indicated most of the other maintenance workers usually skipped the lockout/tagout procedures because they are constantly being told to "hurry up" and get the job finished.

1. **Resources:** Did Bob have adequate resources to do the job?

   Yes. Bob did have the necessary resources to use the lockout/tagout procedures.

2. **System Design:** Was the design of the lockout/tagout program adequate?

   No. The procedures were not current. They had not been updated since the installation of new equipment.

3. **System Performance:** Were program policies and procedures being performed adequately?

No. The policy to use lockout/tagout was not being used by other maintenance workers due to the procedural issues and the workers were not given the time necessary to follow proper safety procedures.

In the next module, we'll discuss a few analysis tools and techniques. Remember, all this information on analysis will help you make factual conclusions about the quality of your SMS.

Module 4 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

1. **This process judges the worth or effectiveness of the SMS _____.**

    a. evaluation
    b. analysis
    c. identification
    d. assessment

2. **The purpose of an SMS evaluation is to _____.**

    a. determine fault, liability, and blame
    b. determine personal flaws
    c. fix the system
    d. stay out of trouble with OSHA

3. **When the purpose of a process has been achieved, _____.**

    a. the guilty party can be disciplined
    b. all items may be addressed
    c. the process stops
    d. OSHA posts a red tag

4. **This is a standard by which the system can be measured or judged.**

    a. Apex
    b. Regulation
    c. Final rule
    d. Benchmark

5. **All of the following are mentioned as benchmarks in the text, except _____.**

    a. OSHA Rules
    b. SHARP Criteria
    c. VPP Criteria
    d. ANSI Z10

Module 5: Introduction to SHARP

Introduction

The Safety and Health Achievement Recognition Program (SHARP) recognizes small employers who operate an exemplary safety and health management system. Acceptance into SHARP by OSHA is an achievement of status that will single you out among your business peers as a model for worksite safety and health. Upon receiving SHARP recognition, your worksite will be exempt from programmed inspections during the period that your SHARP certification is valid.

How You Can Participate In SHARP

To participate in SHARP, you must:

- Request a consultation visit that involves a complete hazard identification survey;

- Involve employees in the consultation process;

- Correct all hazards identified by the consultant;

- Implement and maintain a safety and health management system that, at a minimum, addresses OSHA's 1989 Safety and Health Program Management Guidelines;

- Lower your company's Days Away, Restricted, or Transferred (DART) rate and Total Recordable Case (TRC) rate below the national average; and

- Agree to notify your state Consultation Project Office prior to making any changes in the working conditions or introducing new hazards into the workplace.

SHARP Certification and Inspection Exemption

After you satisfy all SHARP requirements, the Consultation Project Manager in your state may recommend your worksite for final SHARP approval and certification. The state and OSHA will formally recognize your worksite at a SHARP awards ceremony.

When you are initially certified as a SHARP site, you will be granted an exemption up to 2 years. After your initial certification, you may request SHARP renewal for up to 3 years, provided that you:

- Apply for renewal during the last quarter of the exemption period;

- Allow a full service comprehensive visit to ensure that your exemplary safety and health management system has been effectively maintained or improved;

- Continue to meet all eligibility criteria and program requirements; and

- Agree, if requesting a multiple year renewal 2 or 3 years, to conduct annual self-evaluations and to submit a written report to your state Consultation Program Manager that is based on the elements of the 1989 Safety and Health Program Management Guidelines and includes OSHA's required injury and illness logs.

Not Quite Ready for SHARP?

If you meet most but not all of the SHARP eligibility criteria and are committed to working toward full SHARP approval, you may be recommended by your state Consultation Project Manager for an inspection deferral of up to 18 months if:

- You have had a complete hazard identification consultation visit at your worksite and you have corrected all hazards;

- You are in the process of implementing an effective safety and health management system; and

- You can meet all SHARP requirements during the deferral period.

It's time to get familiar with the various program elements of the SMS that are evaluated as part of the Safety and Health Achievement Recognition Program (SHARP). Believe me, if you complete and "pass" this evaluation, your SMS is probably designed and performing more effectively than most. The rest of this course will introduce you to 58 elements that are commonly evaluated in a SHARP Audit and offer important suggestions for each element. Relax, though, you are not actually going to have to conduct an audit as part of this course.

The 58-Element Worksheet

As part of the SHARP audit, OSHA consultants use the Safety and Health Program Assessment (SHPA) Worksheet to assess the quality of an SMS. (From here on, we'll refer to it as the "Worksheet.") It is a tool that helps the evaluator objectively review and evaluate the 58 SHARP elements. Each element is considered critical to the effectiveness of one or more programs in the SMS. To arrive at a conclusion about the quality of each element, the evaluator analyzes a number of characteristics or "attributes."

The worksheet included in this course divides the elements into the following seven categories:

1. Hazard Anticipation and Detection: This first category asks what proactive strategies the employer is using to anticipate and identify hazards in the workplace.

2. Hazard Prevention and Control: This category evaluates the organization's ability to use engineering and management strategies to control hazards and exposure.

3. Planning and Evaluation: This category examines the organization's SMS structure and its ability to evaluate that structure.

4. Administration and Supervision: This category evaluates SMS performance in administering safety and health programs and supervising employees.

5. Safety and Health Training: This category examines the SMS training program and the effectiveness of training.

6. Management Leadership: This category uncovers how well management is demonstrating leadership through word and deed.

7. Employee Participation: This final category evaluates the level of employee involvement in the SMS.

Elements and Attributes

Elements - Each of the 58 elements throughout the seven categories is presented as a positive statement about the quality of a specific program. Each statement is a "benchmark" typical of highly effective safety management systems.

Attributes - An attribute is a specific fact or perception used by the evaluator to rate an element. Each attribute describes an *effect*: an observable/measurable condition or behavior which either confirms (supports) or negates (fails to support) the element's statement. Here are a couple of sample attributes associated with Element 1:

a. The surveys are conducted frequently enough to timely and effectively address hazards. (describes an observed activity)

b. The survey results in effective controls for hazards found. (describes an observed condition)

To get a list of the attributes within each of the 58 elements, download the Adobe Acrobat file, or open this web page.

Rating the Elements - Analyzing the Attributes

OSHA consultants use these attributes as part of their SHARP Audit. If a large number of confirming attributes are present, the *cause* is assumed to be the condition or activity described in the associated element. You may want to include other attributes as well those presented in this course. Use these attributes in addition to the "tips" listed under each element within the course.

Take a look at the table below. It shows the rating scale, a definition, and the criteria for the rating. Here's how it works. The evaluator's conclusion is entered as one four numeric ratings (0, 1, 2, or 3). Some evaluators may also use the "NE" or "NA" ratings. However, OSHA evaluator's use only the numeric ratings. To rate an element, the evaluator enters one of the ratings listed below next to the element's statement.

RATING	DEFINITION	CRITERIA
0	No discernible or meaningful indication that the item is even partially in place.	Complete absence of any CONFIRMING attributes. A single confirming attribute prohibits this rating.
1	Some portion or aspect is present, although major improvement is needed.	A greater number of NEGATING attributes than CONFIRMING attributes.
2	Item is largely in place, with only minor improvements needed.	A greater number of CONFIRMING attributes than NEGATING attributes.
3	Item is completely in place.	Complete absence of any NEGATING attributes. A single negating attribute prohibits this rating.
NE	Not Evaluated: Recognizes that comprehensive evaluations can be incremental.	Optional. Not used by OSHA Consultants.
NA	Not Applicable: Must have justification in the comments box why the item is not applicable.	Optional. Not used by OSHA Consultants.

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Notes:

- In reality, there is a very small gap between the 0 (zero) rating and the 1 (one) rating and between the 2 (two) rating and the 3 (three) rating.

- There is a large gap between the 1 (one) rating and the 2 (two) rating. That gap is the difference between mostly no and mostly yes.

- Look for things that are done well and reinforce these things with personnel for their good efforts.

- Encourage small incremental improvements to better manage the "unexpected."

- In the SHARP certification process employers must participate in a complete audit. For a company to qualify for SHARP, it must achieve a rating of at least 2 (the item is largely in place, with only minor improvements needed) on all 58 elements.

- All completed audits should have some justification and/or recommendations under the comment section for questions rated as 0 and 1. All completed assessments should be included and/or referenced in the report sent to the employer.

For a detailed look at each of the 58 Elements, click on the Course Home Page and open Modules 6-12.

You're in luck! There is no review quiz and no questions on the final exam from this module. If you're ready, go to the course home page and take the final exam!