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.
OSHAcademy Course 716 Study Guide

Safety Management System Evaluation

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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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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)

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. **Structure**
2. **Inputs**
3. **Processes**
4. **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.

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
Safety Management Systems 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.

2. All safety management systems function within and support the company's _____.
   a. human resources department
   b. safety department
   c. safety culture
   d. operations system

Safety in an 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 using 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 for which the SM is responsible include:

- Safety Training Program
- Incident/Accident Analysis Program
- All mandated OSHA programs - confined space, hazard communications, etc.
- Job Hazard Analysis

Typical duties that are performed by the SM include:

- 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

3. This person is primarily interested in maintaining the physical safety and health of employees by reducing exposure to hazards using management controls.

   a. Safety manager
   b. Safety Committee
   c. Human resource coordinator
   d. Safety engineer

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 would be responsible for developing engineering controls to eliminate or reduce hazards that might cause serious injuries. Consequently, the safety engineer needs additional training in "engineering" topics such as eliminating hazards associated with machine guarding, electrical, and lockout/tagout.
Examples of programs in which the safety engineer may be involved include:

- Lockout/Tagout
- Electrical Safety
- Walking-Working Surfaces
- Machine Guarding

Examples of duties for which the safety engineer may be responsible for include:

- 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

4. In which program would the safety engineer be responsible for identifying and controlling hazards?

   a. Safety Recognition
   b. Lockout Tagout
   c. Emergency Action Plan
   d. Behavior-Based Safety

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.

Typical programs in which the HR Manager has primary responsibility includes:

- 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

Typical duties assigned to the HR Manager include each of the following:

• 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

5. The Human Resource Manager is primarily all of the following programs, EXCEPT _____.
   a. Electrical Safety Program
   b. Accountability Program
   c. Employee Assistance Program (EAP)
   d. Drug-Free Workplace

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 the safety committee may be involved with include:

• Incident/Accident Analysis Program
• Accountability System
• Safety Inspection Program

Duties the safety committee may be assigned include:

• 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

6. The safety committee acts as _____ within a company.
   a. the facility auditing department
   b. the enforcement wing for safety
   c. an internal consultant team
   d. an internal security team

All Systems Behave

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

<table>
<thead>
<tr>
<th>7. Inspections, observations, surveys, and interviews are activities within the _____ safety management system process.</th>
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</thead>
<tbody>
<tr>
<td>a. analysis</td>
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<tr>
<td>b. identification</td>
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<tr>
<td>c. improvement</td>
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<tr>
<td>d. involvement</td>
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**Quality In: Quality Out**

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. Examples of results and outputs include:

- **Safe/Unsafe conditions, behaviors** – results. An unguarded machine and working at elevation without fall protection.

- **Many/Few incidents and accidents** – results. Incidents and accident results on a construction project.

- **High/Low accident costs** - results. Workers' compensation costs and accident rates.

- **High/Low productivity, morale, trust** - outcomes. Production costs and employee turnover.

- **High/Low employee physical and mental health** - outcomes. Stress and employee violence.

<table>
<thead>
<tr>
<th>8. Which of the following is an example of a long-term failure of the safety management system?</th>
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<tbody>
<tr>
<td>a. An unguarded machine</td>
</tr>
<tr>
<td>b. Horseplay in the maintenance shop</td>
</tr>
<tr>
<td>c. Low morale and productivity</td>
</tr>
<tr>
<td>d. An employee gets injured</td>
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</table>
What does this principle mean?

*Every system is designed perfectly to produce what it produces.*

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: You can uncover the health of your SMS by analyzing the symptoms.*

9. The _____ will not arise if you can eliminate the _____.
   a. symptoms, causes
   b. causes, symptoms
   c. solutions, problems
   d. causes, solutions
Module 2: Analyzing the SMS

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)

1. As in-house consultants, the most important goal of the safety department is to _____.
   a. ensure total compliance for safety
   b. improve the safety management system
   c. enforce safety throughout the organization
   d. keep the company's OSHA citations at a minimum

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 system components as well as others.

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.
2. 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. walkthrough inspection
   d. baseline survey

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 it 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.
3. 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

**Step Three: Conduct Cause Analysis**

We can arrange the causes of accidents into four basic categories: unpreventable acts, hazardous conditions, unsafe/inappropriate behaviors, and system design/performance weaknesses. Studies are all over the map as to the specific percentages for each cause category, so we will generalize the degree to which each category causes accidents in the workplace.

1. **Unpreventable acts**: A very small percentage 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** (surface causes): Hazardous conditions (OSHA violations) account for a larger percentage, but well under 50% of all accidents. Because OSHA rules primarily address preventing hazardous conditions in the workplace with rules, those rules do not have a big impact on decreasing accidents. Rules influence but may not successfully control or eliminate the role of human factors in causing accidents. For instance, employers and employees may choose to can comply with or ignore safety rules.

3. **Unsafe behaviors** (surface causes): Inappropriate or unsafe employer/employee behaviors, by far, represent the most common surface causes for accidents in the workplace. Unsafe behaviors may cause accidents whether workplace conditions are safe or unsafe. Estimates for this category typically range from 80-95%.

4. **System design/performance weaknesses** - (root causes): SMS failures contributing to workplace accidents ultimately account for almost all workplace accidents. System management and leadership failures refer to the inadequate design or performance of
safety policies, programs, written plans, processes, procedures, practices, rules, training, resources, enforcement, and supervision.

4. Which of the following accident cause categories was shown to result in almost all workplace accidents?
   a. Hazardous conditions
   b. System failures
   c. Unsafe behaviors
   d. Unpreventable acts

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

As we mentioned earlier, these surface causes also 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.

5. The surface symptoms uncovered during a baseline survey will give important clues about _____.
   a. the employees to blame
   b. their underlying root causes
   c. who is lacking common sense
   d. the amount of money being spent on safety
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.

System Performance Weaknesses

Performance weaknesses describe a failure to work the plan. The system fails to "behave" properly. The system's behavior is a function of the performance of the people within the system.

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.

6. Failure to conduct safety inspections as required is a good example of _____.
   a. a direct root cause weakness
   b. an indirect surface cause weakness
   c. a SMS performance weakness
   d. a SMS design weakness
Module 3: Cause Analysis

There are many tools for SHMS analysis. For example, reviewing documents, making observations, and conducting interviews and walkthrough inspections are all important methods that can provide valuable data for analysis. In this module, we’ll look at these methods and more.

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.

<table>
<thead>
<tr>
<th>1. A program evaluator should compare the written program with the _____ record of the program.</th>
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<tbody>
<tr>
<td>a. historical</td>
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<tr>
<td>b. performance</td>
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<tr>
<td>c. safety committee</td>
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<tr>
<td>d. tracking</td>
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Interviews

In addition to documentation, interviews can be very helpful in establishing the current status of safety management system design and performance. 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.

**Interviewing employees and supervisors.** 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.

**Interviewing management.** 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.

2. 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

**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.

3. All the following are ways to **indirectly** determine conditions in the workplace, EXCEPT _____.
   a. examining safety committee minutes
   b. looking at accident reports
   c. analyzing hazard reports
   d. conducting walk-around safety inspection

**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.

4. The _____ is a brainstorming technique that identifies root causes of problems by asking why behaviors occurred or conditions existed.
   a. mind mapping
   b. fishbone diagram
   c. cause effect diagram
   d. 5 Whys technique
**Cause and Effect (Fishbone) Diagram**

Within the context of safety, a cause and effect diagram graphically represent the relationships between an accident or problem and possible causes. The accident or problem is stated in descriptive terms that are observable and measurable. Possible surface and root causes can be expressed in words or data.

![Fishbone Diagram](image-url)  
One common cause and effect diagram reminds us of a stylized fish. Reference the diagram to the right. The box represents the head of the fish and the arrows represent the various bones. If the diagram is used to analyze why an accident occurred, the following would apply:

- **The Head**: A description of the accident is placed in a box which is considered the head of the fish. The direct cause of the injury describes the harmful transfer of energy that caused the injury. In this example, the description might be, "Hand cut by rotating table saw blade." To get to the causes, start asking "why."

- **The Back Bone**: The back bone represents the primary surface causes - the hazardous condition and/or unsafe behavior that culminates in the accident. In this example, an employee's gloved hand got caught by and drawn into a rotating table saw blade. To get to the indirect surface causes, again, ask "why."

- **The Ribs**: The bones attached to the backbone represent the many indirect surface causes that fit in the various major categories. These are many unique or individual conditions or behaviors that contributed to the primary surface causes listed in the back
bone. There may be many of these indirect surface causes within each major cause category. For instance, in the "management" category, a supervisor may have ignored the unguarded table saw. Again, ask "why" to better understand by the supervisor ignored the hazard.

- **The Small bones**: Finally, the smaller bones indicated the deeper root causes - the SMS weaknesses. In this case, the supervisor may have ignored the table saw because he was under enormous pressure to meet the work schedule. There likely be many additional levels of root causes (arrows) causing the stress the supervisor was feeling.

5. In a Fishbone Diagram, the bones or arrows represent _____.
   
   a. the acute or chronic result  
   b. the accident or problem  
   c. the direct and indirect causes  
   d. the proximal result

**Cause and Effect Fishbone Diagram Procedures**

A cause and effect diagram to solve problems 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.

6. When solving problems using a cause and effect diagram, a good way to identify the causes is to _____.
   
   a. brainstorm ideas
   b. rely on feeling
   c. determine who is to blame
   d. list approved ideas
Module 4: Evaluating the SMS

What is "Evaluation"

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.
1. **This process judges the worth or effectiveness of the SMS.**
   
a. Evaluation
b. Analysis
c. Identification
d. Assessment

### Focus of an SMS Evaluation

SMS evaluation generally focuses on four aspects of the safety culture and how it affects short-term and long-term results.

1. **Design:** Examination of the written plans, policies, procedures, and other documents to determine 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.

2. **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 employees respond and then provide feedback to instructors.

3. **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.

4. **Impact:** Evaluation also identifies longer-term as well as unintended program effects on safety, production, and business success. 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.

2. Evaluation of the safety management system should include all of the following, **EXCEPT** evaluation of _____.
   a. the longevity
   b. the design
   c. the processes
   d. the impact

**Purpose - Fix the System, Not the Blame**

This is important: Do not conduct a SMS evaluation to place blame or find fault with a person or group. We don't evaluate to find out who is mad, bad, evil, lazy, crazy, stupid, or otherwise flawed. If the purpose of an evaluation is to "fix the system, not the blame." Playing the "blame game" is not effective precisely 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, itself. In an effective SMS evaluation, our objective is to discover the effectiveness of the system.

Our primary question about SMS components: the vision, mission, policies, programs, plans, processes, procedures, practices, rules is, "Do they work, or don't they?"

If the purpose of the evaluation is to fix the blame, be it an accident investigation or a comprehensive SMS evaluation, you are never going to ask important questions about the system, itself. Why? Because...

*When the purpose of a process has been achieved, the process stops!*
3. It’s important to understand that 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

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

We'll look at a simple example demonstrating this works below.
4. This is a standard by which the system can be measured or judged.

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

A Simple Evaluation

Let's have a little fun with a simple example of the analysis and evaluation process. There is a basket of apples on the counter. You see one apple has a bump on it! You have now identified a possible problem.

Analysis: What does it look like?

To better understand why the apple looks like it does, you decide to cut it up, take a look at the seeds, the core, the flesh and the skin. You 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?

Since you have gathered information, you are able to evaluate the quality of the apple based on facts. You determine the apple is flawed. Now that you know there is a real problem, you can then figure out what the cause so the rest of the apples don't spoil. You must conduct a cause analysis. You understand that everything you'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 you identify in your analysis: surface and root causes (very appropriate in our apple example).
• **Surface causes:** It's obvious 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 causes:** You know the maggot did its damage, but why? Asking "why" a number of times, will help you eventually determine the less obvious underlying contributing causes of the spoiled apple. During root cause analysis you can determine that:
  
  o the pesticide used on the apples was not effective against the Apple Maggot
  o 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, you will be able to develop strategies to overcome this infestation.

5. **While conducting an analysis of a barrel of apples, you notice one apple has a large bruise on it. What does the bruise represent?**
   
   a. Too early to tell
   b. A rotten apple
   c. A root cause
   d. A surface cause

**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 clearly 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.
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.
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.

You're in luck! There are no review questions in this module and you won’t find any questions from this module on the final exam either. You can review the information in this module if interested, or you can go back online and take the final exam.

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

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.