FPST 2343
INDUSTRIAL HYGIENE

VIDEO LECTURE

WEEK 3 LECTURE 1

MANAGEMENT

SYSTEMS

Learning Objectives

Describe the basic business activities and tools necessary to implement successful industrial hygiene programs.

Discuss the relationship between quality assurance and industrial hygiene management.

Understand the importance of industry standards and their relevance to industrial hygiene.

Use various business models such as Total Quality Management, *Value Strategy Manual*, and Six Sigma to improve industrial hygiene program management.

The Industrial Hygiene Program (IHP)

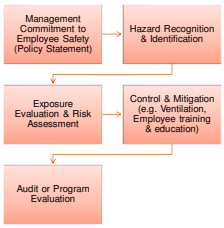
IHP is the culmination of the understanding of the risks and hazards in the workplace, the processes required to control these risks, and the commitment of resources to provide a safe work environment.

In addition to preventing occupational injury and disease, the program also offers benefits to the organization by reducing costs, increasing productivity, and improving employee morale and brand image.

It is important to recognize the need for the right level of skills required to establish an effective program.

Components of an IHP

Traditionally, the program begins with:



Management's Role in Industrial Hygiene

- Supports efficient and effective operations
- Provides sufficient financial resources
- Ensures ethical organizations including protection of financial assets and investments, the environment, and workers
- Clarifies lines of communication and responsibility
- Ensures smooth coordination of integrated company departments
- Promotes a culture of safety in the organization

"If we can't afford to do it safely, we can't afford to do it at all."

Organizational Responsibilities

Top Management	Managers and Supervisors
Top management includes general managers, presidents, chief executive officers, and vice presidents who have the ultimate responsibility for employee safety, including the provision for adequate health and safety resources. They must ensure that their organizations comply with applicable corporate policies and government regulations and may look to industrial hygienists to provide advice and counsel.	Managers and supervisors provide direct oversight over the day-to-day activities and typically control work schedules. They serve an important role ensuring the use and availability of safe work practices and working conditions.

Organizational Responsibilities

Employees

- Every employee has the responsibility to perform work in a manner that ensures their own personal safety as well as the safety of their fellow employees.
- Employee responsibilities include following the health and safety rules, properly using and maintaining personal protective equipment and other safety devices, maintaining their work area in a neat and clean manner, and notifying their supervisor when observing hazardous work conditions, work practices, accidents, and near misses.

Organizational Responsibilities

Health and safety committee

- Health and safety committees are a good way to maintain focus on workplace safety.
- They provide a forum for securing cooperation, coordination, and the exchange of ideas to maintain and improve health and safety. The committee typically has three major functions:
  1. examining company safety and health issues and recommending changes in practices or policies to management
  2. conducting periodic workplace inspections
  3. evaluating and promoting interest in the program

Regulations

Rules, standards, and laws that require certain activities or facilities

Management practices designed to meet and exceed the requirements to find maximum efficiencies and minimize losses

Best practices lead to highest levels of quality and efficiency

Policies

Straightforward and concise management ideals that reflect the company's or organization's goals and objectives

Simple philosophies that guide the direction and future of the organization

State how worker health and safety and environmental protection coordinate with and support the overall institutional objectives and goals

Programs

Address the objectives of the company in specific areas such as functional areas of industrial hygiene, geographical areas of the company, or even departments within the company

Describe the scope of safety in the organization as well as where and when the safety policy is to be applied or adhered to

Example IH Programs

Respiratory Protection 1910.134 / 1926.103

Hearing Conservation 1910.95 / 1926.101

Bloodborne Pathogens 1910.1030

Chemical Hygiene 1910 Supart Z (1910.1450)

Radiation Protection 1910.1096 / 1926.53

Laser Safety 1926.54 /ANSI Z136 (21CFR1040.10-11)

Emergency Management 1910.38 / 1926.35

Asbestos Management 1910.1001 / 1926.1101

Procedures

Provide details for day-to-day operations that support program requirements and describe in a step-by-step, easily understood manner how the job is to be done

Sample Respiratory Protection Procedures

- Job hazard analysis
- Selection and assignment of respirators
- Medical clearance forms
- Respiratory fit testing
- Training
- Respirator decontamination, storage and maintenance
- Record keeping and documentation
- Program evaluation

Quality Assurance

A standard business practice in which an independent oversight body reviews company policies, programs, and procedures to evaluate whether they meet regulatory requirements and company objectives in its day-to-day operations

Quality Assurance (cont.)

Program reviews

Internal Audits

Surveillance

Vendor audits

- special quality assurance activities extended beyond the walls of the organization to materials suppliers and vendors to ensure that materials used in the final product also meet design specifications

New Directions in Management

American National Standards Institute

- Safety colors
- Laser safety
- Safety signs
- Occupational Health and Safety Management Systems

ANSI Z10 – Management Systems

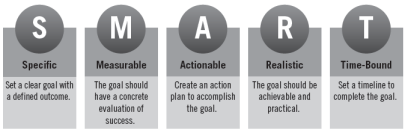


Figure 3–1. SMART Objective approach.

SMART Goals

SMART Goals	Complete 100% of OSHA required training for all 360 employees by the end of the calendar year.	Conduct 52 weekly toolbox talks in individual production crews. Each crew member will be responsible for leading one safety discussion this year.	Conduct Daily Housekeeping inspections at the beginning and end of each shift and correct any hazards noted before continuing work.

Total Quality Management

Seven elements of TQM:

(1) policy, planning, and administration
(2) product design and design change control
(3) control of purchased material
(4) production quality control
(5) user contact and field performance
(6) corrective action
(7) employee selection, training, and motivation

Total Quality Management (cont.)

Essential business principles:

- customer-oriented
- employees are involved
- communications
- process-centered
- integrated systems
- quality control
- systematic approaches
- continuous improvement

Cause and Effect

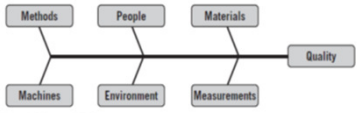


Figure 3–2. Cause and effect.

Plan-Do-Study-Act Cycle

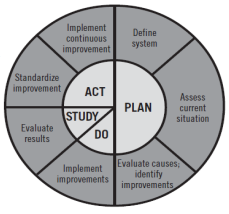


Figure 3–3. Plan-do-study-act cycle.

Six Sigma

Quality improvement program

- uses various management techniques and statistical analyses to evaluate and guide organizational performance
- from the statistical corollary that at six standard deviations from product specifications, there is a 99.9999 percent chance that the product will not have any defects

Six Sigma (cont.)

Progressive management phases

- Define process goals or requirements.
- Measure key aspects of the existing process and collect data.
- Analyze the data to examine and verify cause-and-effect relationships.
- Determine the root cause of the defect under investigation.
- Use the results of data analysis to make changes to improve existing processes.
- Pilot proposed changes and collect new data to ensure feasibility of new processes.
- Continuously reevaluate and monitor the process, and make changes accordingly.

AIHA – Value Strategy Manual

Step-by-step instructions for analyzing risk, identifying alternatives, and quantifying the financial and nonfinancial benefits of making changes or improvements

International Standards Organization

ISO 9001 – Quality Management

ISO 14001 – Environmental Management

ISO 31000 – Risk Management

OSHA Voluntary Protection Program (VPP) Criteria

- Star
  - These companies have exemplary systems for the prevention and control of health and safety hazards. They implement continuous improvement as routine parts of their management programs.
- Merit
  - Organizations at the Merit level have good health and safety management systems but need to complete additional actions to a achieve Star status.
- Demonstration
  - These companies operate effective health and safety programs, but their management systems differ from currently approved VPP approaches.

The Role of Industrial Hygienists in Alternative Solutions

When searching for an alternative to a hazardous process, chemical, or environment, follow these basic steps:

1) Become familiar with processes and hazardous chemicals or agents.
2) Inventory and prioritize the hazards.
3) Identify alternative processes or chemicals.
4) Assess the possible alternatives and impacts of costs, performance, safety.
5) Select the best alternative to pilot in the field, complete evaluation documentation.
6) If the pilot is successful, implement the alternative.

Have a great day!