BASIC ACCIDENT PREVENTION and OCCUPATIONAL SAFETY AND HEALTH

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OBJECTIVES:

At the end of the session, the participants should be able to:

1. Explain the basic principles and practice of accident and disease prevention in the workplace;

2. Express commitment in preventing the occurrence and recurrence of accidents and diseases within their organization.
OUTLINE:

I. Global and local updates
II. Brief overview on
   - Industrial hygiene
   - Safety basics
   - Accident costs and consequences
   - Safety principles in workplaces
Do you know that due to work connected ailments or injuries there is an average of **6,000** people who die everyday equivalent to one every 15 seconds.

Source: ILO Data
2.3 million deaths per year including 651,000 deaths from Hazardous substances and 160 million work-connected diseases each year.

Source: ILO Data 2005
Fatal occupational injuries- total: 355,000

Source: The ILO Programme on Safety and Health at Work and the Environment SafeWork
347,310 work-connected sickness, injury, death claims (2000-2010) or an average of 141,099 cases per year, 386 per day
Local Situational

**BUREAU OF LOCAL EMPLOYMENT AND STATISTICS DATA (BLES)**

39,587 work-connected injuries and deaths in **2009**:

17,713 with workdays lost

113 are fatal cases

Based on 5,126 samples of non-agricultural establishments with 20 or more workers.

Local Situationer

Occupational Accidents and Injuries 2003 - 2009, BLES

113 FATAL CASES, 2009

Accidents and Injuries 2003 - 2009, BLES

### Occupational Diseases 2007 - 2009, BLES

<table>
<thead>
<tr>
<th>Diseases</th>
<th>2007</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Work-related MSD</td>
<td>13,296</td>
<td>28,574</td>
</tr>
<tr>
<td>2. Occupational Asthma</td>
<td>8,759</td>
<td>4,906</td>
</tr>
<tr>
<td>3. Tuberculosis</td>
<td>6,152</td>
<td>9,101</td>
</tr>
<tr>
<td>4. Other Infections</td>
<td>6,517</td>
<td>3,482</td>
</tr>
<tr>
<td>5. Essential Hypertension</td>
<td>5,965</td>
<td>5,644</td>
</tr>
<tr>
<td>6. Occupational Dermatitis</td>
<td>4,135</td>
<td>5,871</td>
</tr>
<tr>
<td>7. Peptic Ulcer</td>
<td>854</td>
<td>767</td>
</tr>
<tr>
<td>8. Cardiovascular Diseases</td>
<td>577</td>
<td>670</td>
</tr>
<tr>
<td>9. Heat stroke, Cramps, Exhaustion, Chilblain, Freezing</td>
<td>284</td>
<td>140</td>
</tr>
<tr>
<td>10. Cataract</td>
<td>192</td>
<td></td>
</tr>
<tr>
<td>11. Acute poisonings</td>
<td>172</td>
<td></td>
</tr>
<tr>
<td>12. Deafness</td>
<td>334</td>
<td></td>
</tr>
<tr>
<td>13. Others</td>
<td>9,306</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>47,235</td>
<td>71,894</td>
</tr>
</tbody>
</table>

Industrial Hygiene
INDUSTRIAL HYGIENE is the science concerned with the anticipation, recognition, evaluation and control of workplace environmental factors or hazards that may affect the health, and safety of the worker.
Workplace Hazards

• Chemical Hazards
• Physical Hazards
• Biological Hazards
• Ergonomic Hazards
Workplace Hazards

- Chemical Hazards
  - Gases
  - Vapors
  - Liquids
  - Aerosols (dusts, fibers, fumes, mists, fogs)
  - Noxious or toxic
  - Corrosive
  - Allergens
  - Irritants
  - Asphyxiants
  - Carcinogens
  - Mutagenics
  - Reproductive Toxicants
  - Systemic Poisons
Workplace Hazards

- Physical hazards
  - Noise
  - Hot or Cold temperature
  - Poor illumination
  - Radiation
  - Vibration

### Examples of Typical Noise Levels

<table>
<thead>
<tr>
<th>Noise Source</th>
<th>dB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumatic chipper at 1 meter</td>
<td>115</td>
</tr>
<tr>
<td>Textile room</td>
<td>103</td>
</tr>
<tr>
<td>Newspaper press</td>
<td>95</td>
</tr>
<tr>
<td>Power lawn mower at 1 meter</td>
<td>92</td>
</tr>
<tr>
<td>Diesel truck 50 km/hr at 20 m</td>
<td>85</td>
</tr>
<tr>
<td>Passenger car 60 km/hr at 20 m</td>
<td>65</td>
</tr>
<tr>
<td>Conversation at 1 m</td>
<td>55</td>
</tr>
<tr>
<td>Quiet room</td>
<td>40</td>
</tr>
</tbody>
</table>
Workplace Hazards

• Biological Hazards

A. Infectious Agents
   - workers in hospitals and laboratories

B. Non-infectious Agents
   - viable organisms
   - biogenic toxins
   - bacteria, molds and toxins that affect workers in cotton mill, sewage and sludge treatment, in silos
   - biogenic allergens
   - workers in agriculture
Workplace Hazards

• **Ergonomic Hazards**

  A. **Physical Ergonomics**
  - working postures, materials handling, repetitive movements, workplace layout
  - work related musculoskeletal disorders (WMSD)

  B. **Cognitive Ergonomics**
  - mental workload, decision-making, skilled performance, human-computer interaction

  C. **Organizational Ergonomics**
  - working time, communication, staff resource management, work design, teamwork, participatory design, community ergonomics, cooperative work, new work paradigms, virtual organizations, and quality management
Workplace Hazards

- Psychosocial hazards
  - Work demands
  - Inter-personal relationship and leadership
  - Work-family conflict
  - Job satisfaction
  - Job insecurity
  - Influence and development
  - Role ambiguity
Control measures

- Engineering Control
- Administrative Control
- Personal Protective Equipment
SAFETY BASICS
What Do We Believe or Perceive?

- Accidents and road deaths are unavoidable
- We very rarely make mistakes
- We exceed company expectations
- We never break the law
What is really happening?

• Accidents can be avoided
• We make many mistakes
• Our work performance can be better
• We don’t follow the road laws - we break the law
What do we have to do?

- We must accept that we need to change
- We have to change how and why we do change

- Mindset change is:
  - accepting there are better ways of doing things
  - accepting that individuals can make a difference
  - accepting that an individual is important
  - accepting that individuals can make a contribution
“Safety is not just signs and handrails, it is in people’s minds.”

Tony Smith
National Safety Council
2006, Turin, Italy
US accident statistics:
- 45% of all accidental deaths are workers
- 4.5% occur in the workplace
- 2.5% occur in non-vehicle work accidents
Accident

- Is an occurrence or event
  - UNEXPECTED
  - UNFORESEEN
  - UNPLANNED
  - UNWANTED

- that
  - interrupts or disrupts the normal and orderly progress of any activity
  - Physical harm
  - Damage to property
  - Delay in operation
“If labor standards are costly, try an accident”

Written comment by an employer
Accident Costs

- Direct Costs
- Indirect Costs
Accident Costs

- Medical Costs
- Insurance Premiums
- Employee Compensation

DIRECT COSTS

INDIRECT COSTS
**Accident Costs**

- **Medical Costs**
- **Insurance Premiums**
- **Employee Compensation**

### DIRECT COSTS
- Medical Costs
- Insurance Premiums
- Employee Compensation
- Inspect/repair/remove/replace damaged or destroyed equipment and materials
- Order replacement parts, materials or entire machines
- Rent temporary replacement machines/tools
- Pay overtime wages
- Absorb possible lost sales

### INDIRECT COSTS
- Hire and train new employee
- Investigate accident
- Complete written reports
- File workers’ compensation or insurance claims
- Clean-up area
- Repair damaged work areas

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EMployees’ Compensation Commission

4th & 5th Floor, ECC Building, 355 Sen. Gil J. Puyat Avenue, Makati City
Accident Consequences

- Near Miss
- Property Damage
- First Aid
- Lost Time
- Fatality
Unit group of 330 accidents of the same kind, involving 1 person

Safety Principles

Foundation of a Major Injury
You only see the tip of the pyramid.
Accidents are due to:

1. Unsafe Conditions
2. Unsafe Practices
Unsafe Conditions

- Inadequate guards or protection
- Defective tools/equipment
- Congestion
- Substandard housekeeping
- Excessive noise
- Inadequate illumination or ventilation
Unsafe Practices

- Operating without authority or permit
- Failure to warn or secure
- Operating at improper speed
- Making safety devices inoperable
- Using defective equipment
- Using equipment improperly
- Failure to use personal protective equipment
- Improper loading or placement
- Improper lifting
- Taking improper position
- Servicing equipment in motion
- Horseplay
- Drinking or drugs
Safe Access
And
Fall Protection

Lifting Techniques
(Ergonomics)
Poorly Designed Work Station

- Awkward reaching creating a possible tipping hazard
- No upper lumbar support on chair could lead to CTD’s

Ergonomically Correct Work Station

- Top of monitor at or just below eye level
- Head and neck balanced and in-line with torso
- Shoulders relaxed
- Wrist and hands in-line with forearms
- Adequate room for keyboard and mouse
- Elbows close to body and supported
- Lower back supported
- Feet flat on the floor
Safe Access

1. Unsafe lift. Blocked view and not using handrail.

2. Trash on stairs.

3. Foot protection. Employees must wear protective footwear when heavy items may fall on the feet.

Fire and Electrical Safety
More workplace accidents that take place result to higher company insurance premium

and

Higher company premiums means lower profit on each product unit sold

Accident COSTS MONEY
Safety SAVES MONEY
Philosophy of Accident Prevention

- Society as a whole has a moral responsibility to prevent needless destruction of life and health, particularly in the workplace.

- The employer is primarily responsible for ensuring a safe, healthy work environment.

- Employees are held accountable for following prescribed safety standards and guidelines.
The Philippine Constitution, 1987
“labor shall be entitled to...humane conditions of work...”

Philippine Labor Code, 1974
Book IV is devoted to prevention and compensation of work-related injuries and illnesses

OCCUPATIONAL SAFETY AND HEALTH STANDARDS
A set of specific rules on OSH
Rules of the OCCUPATIONAL SAFETY AND HEALTH STANDARDS

1000 General Provisions
1010 Other Safety Rules
1020 Registration
1030 Training & Accreditation
1040 Health and Safety Committee
1050 Notification & Keeping of Records of Accidents/Illnesses
1060 Premises of Establishments
1070 Environmental Control
1080 Personal Protective Equipment
1090 Hazardous Materials
1100 Gas & Electric Welding & Cutting Operations
1120 Hazardous Work Processes
1140 Explosives
1150 Materials Handling & Storage

1160 Boiler
1170 Unfired Pressure Vessels
1180 Internal Combustion Engine
1200 Machine Guarding
1210 Electrical Safety
1220 Elevators & Related Equipment
1230 Identification of Piping System
1240 Power Piping Lines
1410 Construction Safety
1420 Logging
1430 Fire Protection & Control
1500 Pesticides & Fertilizers
1600 OH Services
1700 Fees
1800 Authority of LGUs
1900 Final Provisions
Accidents are caused by either one or a combination of 3 factors:

- Unsafe conditions
- Unsafe acts
- Management failure
HEALTH AND SAFETY MANAGEMENT SYSTEM
WHY (MGT.) COMMIT TO SAFETY?

- To fulfill the SOCIAL obligation
- To fulfill the FISCAL obligation
- To fulfill the LEGAL obligation
TO FULFILL LEGAL OBLIGATION

- We must stay out of trouble
- Do only what we have to

This is the least effective strategy
TO FULFILL FISCAL OBLIGATION

- We must save money
- Do what we have to

This is a better strategy
TO FULFILL SOCIAL OBLIGATION

- We MUST save LIVES
- Do whatever it takes

This is the most effective strategy
WHY (MGT.) COMMIT TO SAFETY?

To maintain GOOD EMPLOYER AND LABOR RELATIONS

To maintain GOOD PUBLIC RELATIONS and PUBLICITY
TO MAINTAIN GOOD EMPLOYER-LABOR RELATIONS

We must maintain worker efficiency and productivity
TO MAINTAIN GOOD PUBLIC RELATIONS AND PUBLICITY

We must keep our good reputation and company brand
THE LESSON...

We need to know **WHO** and **WHERE** we are to be more effective at **WHAT** we do.
“If things are done right the first time and every time, we have a safe operation but also an efficient, productive, cost-effective operation.”

W. Edward Deming
author of Total Quality Management
In Summary:

• Millions of work-connected illness, injuries and deaths worldwide each year
• Common health hazards are chemical, physical, biologic and ergonomic
• Hazards are controlled thru engineering, administrative and use of PPE
• Accidents can be avoided, mindset change is needed
• Direct and indirect costs of accidents
• Accidents are due to unsafe conditions and unsafe practices
• Management commit to safety in order to fulfil its legal, fiscal and social obligation
Maraming Salamat!

Have a safe day!