Chemical Safety, Substitution and Management Training for Health Workers

TRAINING SYLLABUS

saicm

KEMI
Swedish Chemicals Agency
MODULE 1
Formation of Chemical Safety and Management Committee

Objectives:
At the end of the course, the trainees are expected to:

1. Establish the formation of their Chemical Safety and Management Committee in their respective health care facilities

2. Identify the function and responsibilities of the members of the Chemical Safety and Management Committee

3. Develop a committee/organizational chart and relate it with the functions of other departments or units in the hospital

4. Include the following in the hospital's manual of operation and/or policies and procedures
   - Chemical Safety and Management Committee composition, function/responsibilities of the committee and members
   - Chemical Safety and Management Committee chart (its relationship with other departments/units in the hospital

Topics:
- Composition and Function of Chemical Safety and Management Committee
- Responsibilities of members of the Chemical Safety and Management Committee

Teaching/Learning Methodology:
- Group Discussion among members of the Chemical Safety and Management Committee
- Documentation of the responsibilities and functions of the Chemical Safety and Management Committee
- Plenary/Presentation of output per hospital on during the actual training

Time Allotted:
- 3-5 hours; own time of participants/members of the Chemical Safety Management Committee

Materials Needed:
- Available references
- Blackboard/whiteboard/manila paper
- Writing pens/chalks
- Bond papers
- Venue for discussion

References:
Workshop output of participating Health Care Facilities
MODULE 2
Documentation and Identification of existing Health Care Wastes and Practices in Handling Chemicals of the Health Care Facility

Objectives:

At the end of the course, the trainees are expected to:

1. Document the volume (milliliters or liters) and/or weight (kilograms) of the following health care wastes generated by the hospital per day for one (1) month:
   a. sharps
   b. infectious wastes – dressings from infected or surgical wounds, wastes from surgeries and autopsies, cultures and stocks from infectious agents from laboratory work, wastes that has been in contact with infected patients (dialysis equipment such as tubings, filters, etc.)
   c. food wastes (biodegradable)
   d. general wastes (non-biodegradable) – plastics, papers, cartons, etc.
   e. pathological wastes – tissues, organs, body parts, blood, placenta and body fluids
   f. chemical wastes – fixers, developers, laboratory reagents
   g. pharmaceutical wastes

2. Identify priority chemicals for substitution in the health care facility considering the following factors:
   a. present use/ function of the chemical disinfectant/ cleaner
   b. present use of medical supply/ies containing hazardous chemicals (i.e. tubings containing PVC, etc.)

3. Refer to the matrix on the next page for proper documentation of health care wastes in the hospitals/health care facilities.

4. Review and discuss the practices in handling chemicals on the following aspects:
   a. segregation
   b. collection and disposal
   c. chemical waste treatment
   d. Safety practices

5. Present results of output for Module 2 during the actual training.

Topics:

- Identification of priority chemicals in the health care facility
- Handling, collection, disposal and treatment of chemical wastes
- Safety practices in handling chemicals

Teaching/ Learning Methodology:

- Documentation and monitoring skills of trainees on weight and volume healthcare wastes, handling of chemicals and safety practices are enhanced

Time Allocated:

- 1 day actual review and discussion on handling of chemicals
- 1-2 days for review of hospital’s record for monitoring the volume of different types of health care wastes

Materials Needed:

- Ordinary weighing scale
- Beaker or graduated cylinder
- Sample Matrix for healthcare waste documentation
- Papers and writing pens
<table>
<thead>
<tr>
<th>Healthcare Wastes</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
<th>Day 5</th>
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<th>Total per week/month</th>
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<td>3. Food wastes</td>
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<td>b. papers</td>
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<td>5. Pathological wastes</td>
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<td>6. Chemical wastes</td>
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<td>7. Pharmaceutical wastes</td>
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**References:**


MODULE 3
Policies and Regulations related to Chemical Safety, Substitution and Management (including local and international regulations)

Objectives:
At the end of the course, the trainees are expected to:

1. Know and understand the different international and local policies related to chemical safety and management.

2. Know and understand the initiatives of the different government agencies with regards to chemical safety and management (i.e., Department of Health, Department of Energy and Natural Resources, local government units, etc.)

3. Know and understand the different components of a Comprehensive Chemicals Policy Program in Health Care:
   - Purpose
   - Long-term goals
   - Principles
   - Benefits

4. Recommend possible policies/law on chemical safety, substitution and management.

Topics:
- Executive Order No. 301 (2004) “Establishing a Green Procurement Program for All Departments, Bureau, Offices and Agencies of the Executive Branch of Government”
- DOH Administrative Order No. 2008-0021 dated July 30, 2008 “Gradual Phase out of Mercury in all Philippine Healthcare Facilities and Institutions”
- Chemicals Convention, 1990 (No. 170)
- Globally Harmonised System for Classification and Labelling of Chemicals (GHS)

Teaching Methodology:
- Lecture-discussion

Time Allotted: 1.5 hours

Materials Needed:
- Writing pens, Papers and Reference materials

References:
MODULE 4
Understanding Chemicals and its Hazardous Effects

Objectives:

At the end of the course, the trainees are expected to:

1. Understand the definition of the following:
   a. Chemicals
   b. Chemical Hazards
   c. Chemical Wastes
   d. Hazardous Chemicals
   e. Waste Reduction/Minimization of Chemicals
   f. Chemical Inventory
   g. Chemical Storage

2. Know the different routes of exposure of chemicals.

3. Identify the two (2) types of Chemical Hazards

4. Identify the different types of chemicals used in the health care facility.

Topics:

- Definition of different types of Chemicals
- Different sources and composition of chemical wastes
- Hazardous Effects of Chemicals
- Handling, Storage, Transport and Disposal of Chemical Wastes

Teaching/Learning Methodology:

- Lecture-discussion

Time Allotted: 1.5 hours

Materials Needed:

- Writing pens
- Papers
- Workshop output from previous modules
- Reference materials

References:

- Health Care Without Harm website
- World Health Organization website
- https://www.osha.gov/dsg/hazcom/msdsformat.html
- www.csooc.org/files/haz_com_training
Objectives:
At the end of the course, the trainees are expected to:

1. Know and understand the importance of chemical management through hazard communication:
   a. Proper labeling
   b. Material Safety Data Sheet (MSDS)
   c. Education and training

2. Identify the components of material safety data sheet (MSDS)

3. Know the components of Chemical Hygiene Plan

4. Know the components of Chemical Substitution Plan

Topics:
- Hazard Communication
- Chemical Hygiene Plan

Teaching/Learning Methodology:
- Lecture-discussion
- Workshop: Develop a Chemical Hygiene and Substitution Plan for your health care facility

Time Allotted: 2 hours

Materials Needed:
- Sample MSDS of a Chemical Disinfectant
- Writing pens, Papers and Reference materials

References:
- http://www.unece.org/trans/danger/publi/ghs/presentation_e.html
- https://www.osha.gov/dsg/hazcom/msdsformat.html
- http://www.mvapmed.com/MSDS_Forms/Cidex%20OPA%2020390.pdf
- www.csooc.org/files/haz_com_training
MODULE 6
Handling, Transport and Disposal of Chemicals in Health Care

Objectives:

At the end of the course, the trainees are expected to:

1. Determine the different impacts on improper disposal of chemical wastes

2. Know and understand the following:
   - √ proper handling of chemicals
   - √ storage of chemicals
   - √ collection and transport of chemicals
   - √ disposal of chemicals

3. Determine the different types of treatment for chemical wastes.

Topics:

- Handling, storage, transport and disposal of chemicals/ chemical waste

Teaching/Learning Methodology:

- Lecture- discussion

Time Allocated: 1 hour

Materials Needed:

- Writing pens, Papers and Reference materials

References:


- http://www.unece.org/trans/danger/publi/ghs/presentation_e.html

- http://www.nptel.iitm.ac.in/courses/IITMADRAS/Environmental_Chemistry_Analysis/Pdfs/7_5.pdf
MODULE 7
Personnel Safety/ Use of Appropriate Personal Protective Equipments

Objectives:

At the end of the course, the trainees are expected to:

1. Know and understand the use of the different personal protective equipments (PPEs) use for handling and transporting chemicals and chemical wastes.

2. Identify and enumerate the general safety rules in chemicals management.

3. Develop a list of PPE materials needed by your health care facility for chemicals management and include the list in your chemicals safety management manual.

Topics:

• Safety of Personnel

• Appropriate Personal Protective Equipments

Teaching/Learning Methodology:

• Lecture

• Workshop

Time Allocated: 1.5 hour

Materials Needed:

• Workshop output from previous modules

References:

• Manual on Health Care Waste Management 3rd edition, Department of Health, December 2011


• Asia-Pacific Bio-safety Training Network


• http://www.unece.org/trans/danger/publi/ghs/presentation_e.html
MODULE 8
Prevention of Chemical Hazards/ Management of Spills

Objectives:
At the end of the course, the trainees are expected to:

1. Identify and respond to the following:
   a. Chemical Spill
   b. Chemical Fire

2. Learn different techniques on how to prevent chemical hazards

3. Demonstrate the procedures on how to respond to the following:
   a. Chemical Spill
   b. Chemical Fire

4. Document/ write the procedure for chemical spill prevention and response

Topics:
- Chemical Hazards
- Management of Chemical Spills

Teaching/Learning Methodology:
- Lecture- discussion
- Demonstration of Management of Chemical Spills
- Return-demonstration
- Workshop: Write the procedure for chemical spill prevention and response for your own health care facility

Time Allotted: 2 hours

Materials Needed:
- Writing pens, Papers
- Workshop output of participants
- Procedure for Chemical spill prevention and response

References:
- Asia-Pacific Bio-safety Training Network
- http://www.unece.org/trans/danger/publi/ghs/presentation_e.html
- http://www.ehs.columbia.edu/ChemicalSpills/Fires.html
MODULE 9
Plan of Action and Implementation

Objectives:

At the end of the course, the trainees are expected to:

1. Develop a plan of action on chemical substitution and management per health care facility considering the following components:
   - Activities
   - Schedule of Implementation
   - Personnel or Department In-Charge
   - Resources Needed
   - Budget

   (Example shown at the bottom of this page)

2. Identify the different components/elements of an effective plan of action to implement an Institutional Chemical Policy
   - Measurable Goals
   - Timeliness, Point People and Scheduled Review of Pilot Results and Planning for Future Actions
   - Education and Capacity Building
   - Labeling and Communication
   - Report on Progress
   - Auditing Information

3. Follow the checklist for Chemicals Policy Implementation so that each health care facility shall effectively execute the plan of action.

Topics:

- Safety of Personnel
- Appropriate Personal Protective Equipments

Teaching/Learning Methodology:

- Lecture
- Workshop

Time Allotted: 1.5 hours

Materials Needed:

- Workshop output from previous modules

References:

- Asia-Pacific Bio-safety Training Network
- http://www.unece.org/trans/danger/publi/ghs/presentation_e.html
<table>
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<tr>
<th>Goals</th>
<th>Activities</th>
<th>Schedule</th>
<th>Personnel or Department In-Charge</th>
<th>Resources Needed</th>
<th>Budget</th>
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<td>1 Develop policies and procedures on Chemical Substitution and Management</td>
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<td>Submission to Hospital Administrator for approval</td>
<td>September 20, 2013</td>
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