ENVIRONMENT OF CARE

HAZARDOUS MATERIALS AND WASTE (HMW) MANAGEMENT PLAN

JANUARY 2013

1. Goal

2. Objectives

3. Scope

4. Responsibilities

5. HMW Management Elements of Performance

 a. Hazardous Materials and Waste Management Plan

 b. Risk Assessment

 c. Risk Management Process

 d. HMW Inventory

 e. HMW Waste Spills or Exposures

 f. Selecting, Handling, Storing, Using and Disposing of Chemicals

 g. Selecting, Handling, Storing, Using and Disposing of Radioactive Materials

 h. Selecting and Using Hazardous Energy Sources

 i. Selecting, Handling, Storing, Using and Disposing of Hazardous Medications

 j. Selecting, Handling, Storing, Using and

 Disposing of Hazardous Gases and Vapors

 k. Monitoring Hazardous Gases and Vapors

 l. Permits, Licenses, Manifests, and Adherence to Other Regulations

 m. Labeling HMW

n. Orientation and Annual Refresher Education and Training Program

 o. Information Collection and Evaluation System

 (1) Reporting and Investigating Accidents, Injuries, Property Damage, Problems, Failures, & Use Errors

 (2) Annual Evaluation

 (3) Safety/EC Committee

 (4) Performance Improvement Activities

1. Goal. This management plan describes the framework used to manage risk and improve performance associated with the selection, handling, storage, use and disposal of HMW. The scope and objectives are consistent with the Command's values, vision, and mission to provide quality healthcare to Soldiers, retirees, and their families.

2. Objectives. The following objectives will protect people, equipment, property, and the environment by safely controlling hazardous materials from acquisition to ultimate disposal–

 a. Effectively manage HMW risks by using best industry practices

 b. Optimize resources by using efficient HMW processes

 c. Improve staff performance through effective HMW education and training

 d. Improve staff and patient satisfaction by providing a safe and secure physical environment

3. Scope. This plan applies to all operations where there is potential for occupational exposure to hazardous chemicals and waste, hazardous drugs, ionizing and non ionizing radiation, and regulated medical wastes (RMW) in this Military Treatment Facility (MTF) and all subordinate MTFs to include (LIST ALL CLINICS AND SATELLITE LOCATIONS SERVED BY THE MTF AND COVERED UNDER THIS PLAN).

4. Responsibilities.

 a. The Environmental Science Engineering Officer (ESEO) is responsible for developing, implementing, and monitoring this plan.

 b. The Organization Chart in Appendix A shows the primary officers, departments, and services that provide input into the development, implementation, and maintenance of this plan.

 c. Service and department chiefs develop and implement department-specific HMW standard operating procedures (SOPs) and carry out the MTF-wide HMW polices and regulations.

 d. All staff, personnel, and volunteers follow HMW procedures, utilizing PPE as required, and reporting/cleaning up hazardous spills.

5. HMW Elements of Performance. The Reference Crosswalk in Appendix B lists the corresponding policies, regulations, SOPs, systems, and databases pertaining to each of these requirements.

 a. HMW Management Plan. The management plan is based on a plan, teach, implement, respond, monitor, and improve framework, and it addresses the processes that are essential for maintaining a safe Environment of Care (EC)/Physical Environment (PE). The structure of the plan incorporates federal, state, local and Department of Army laws and regulations further refined by organizational policies and procedures and department-specific SOPs.

 b. Risk Assessment.

 (1) The Hazard Communication (HAZCOM) Program Manager and the Industrial Hygienist (IH) conduct risk assessments at least annually to identify all hazardous materials used in the facility and to evaluate compliance with the Occupational Safety and Health Administration’s (OSHA’s) HAZCOM and Chemical Hygiene Standards and other safety and health criteria pertinent to the selection and safe storage, handling, and use of hazardous chemicals.

 (2) The ESEO conducts a risk assessment at least annually to identify the various waste streams and to evaluate compliance with the Environmental Protection Agency (EPA) and the Department of Transportation (DOT) regulations pertinent to the disposal of hazardous waste and RMW.

 (3) The Radiation Safety Officer (RSO) and the Laser Safety Officer (LSO) conduct risk assessments at least annually to inventory all ionizing and non-ionizing radiation sources and to evaluate compliance with the OSHA and Nuclear Regulatory Commission (NRC) regulations pertinent to the selection, storage, handling, use and disposal of ionizing and non ionizing radiation sources.

 (4) The IH conducts a risk assessment at least annually to identify staff, personnel, volunteers, patients, visitors, etc. who are or potentially exposed to HMW and to evaluate compliance with safety and health criteria published by the OSHA; the American Conference of Governmental Industrial Hygienists (ACGIH), Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, Latest Edition; AR 40-5 Preventive Medicine; and DA PAM 40-503 Industrial Hygiene Program.

 (5) Management and staff are active participants in these risk assessments.

 (6) Both proactive risk assessments (internal performance improvement data; staff, patient, and family feedback; environmental monitoring; results of failure mode effects analyses; governmental regulation reviews; association, society, and professional literature reviews; spill response drills; preventive maintenance; and design reviews; etc.) and reactive risk assessments (incident investigations; failure investigations involving engineering and administrative controls, work practices, PPE; root cause analyses; etc.) are used to identify trends for which corrective action is needed.

 (7) The risk assessment process is also used to manage “gray areas” that do not have a clear resolution. An example of a “gray area” is deciding the best way to secure sharps in the Emergency Room. “Gray area” issues are brought to the Safety/EC Committee for discussion and resolution.

 c. Risk Management Process.

 (1) Individual experts [e.g. Safety Officer, HAZCOM Program Manager, ESEO, RSO, LSO, IH, Hazardous Drug Officer (HDO), Chemical Hygiene Officer, and Infection Control Officer (ICO)] work with supervisors and staff to determine the engineering and administrative controls, safe work practices, and PPE necessary to eliminate or control HMW risks. Service/department supervisors are responsible for making sure engineering and administrative controls, safe work practices, and PPE are used and effective.

 (2) All HMW risks are evaluated, tracked, and abated on a worst-first basis. Interim measures are implemented when hazards cannot be immediately abated to manage risk and to minimize potential harm to patients, staff, visitors, and the environment.

 d. HMW Inventory.

 (1) Service and department supervisors maintain a hazardous chemical inventory and corresponding safety data sheets (SDSs) for all hazardous chemicals used by their departments. Supervisors update the chemical inventory annually, or as changes occur and forward an updated copy of the inventory to the HAZCOM Program Manager.

 (2) The HAZCOM Program Manager maintains a master hazardous chemical inventory and SDS file for the MTF.

 (3) Logistics makes sure SDSs are forwarded to the user service or department and a copy is sent to the HAZCOM Program Manager.

 e. HMW Spills or Exposures. Emergency procedures for HMW are contained in the MTF policies and regulations and work area-specific SOPs. These policies and procedures address the spill prevention precautions, emergency notification and reporting procedures, and clean-up procedures along with the PPE to be worn when cleaning up a hazardous material or waste spill.

 f. Selecting, Handling, Storing, Using and Disposing of Chemicals.

 (1) Selecting. Before purchasing hazardous chemicals, supervisors, with assistance from the Safety Manager, ESO, IH, ICO, and Occupational Health, use the SDS to assess the health hazards and physical properties of the chemical and determine whether a safer, less hazardous chemical can be used; the appropriate facilities are available for the proper storage of the chemical and the ventilation is sufficient; the proper PPE and safety equipment is on hand for using the chemical; and establish whether the chemical or its end product will require disposal as a hazardous waste.

 (2) Handling and storing. Supervisors order minimum quantities that are consistent with the rate of use. Chemical containers are inspected upon delivery to Logistics/work area. Chemical products or their containers that are damaged or leaking are not accepted. Chemicals, including compressed gas cylinders, which are not properly labeled, are not accepted. Medical Supply receives and distributes chemicals throughout the MTF. If a chemical container is damaged, it is noted on the packing slip and the ordering department is notified. If a spill occurs during transport, spill response is initiated by contacting the Spill Response Team at 911. Chemicals are stored according to manufacturer’s specifications and compatibility requirements. The Safety Manger, IH, and ESEO periodically conduct environmental tours and assess compliance with pertinent safety policies and regulations.

 (3) Using. Staff is trained on proper chemical use and handling at new employee’s orientation, work site specific training, and at annual birth month training.

 (4) Disposing. The ESEO conducts Hazardous Waste Stream determinations throughout the MTF on a regular basis. Hazardous wastes are collected in waste satellite accumulation areas and less than 90 day hazardous waste storage areas. Hazardous waste is collected by the Installation’s hazardous waste contractor weekly, monthly or on as needed basis.

 g. Selecting, Handling, Storing, Using and Disposing of Radioactive Materials.

 (1) Selecting. The RSO, according to license requirements, approves all radioactive material purchases in advance with authorization from the MTF Radiation Safety Committee.

 (2) Use, Handling and Storing. The Radiation Safety Committee oversees the use, handling and storage of radioactive materials. The RSO provides all users with appropriate radiation safety training to make sure that staff knows how to handle and work around ionizing radiation sources. The RSO oversees the staff exposure monitoring program (i.e., personnel dosimetry, ionization chambers, GM monitors) and performs quarterly radiation control area environmental tours. The RSO monitors annual quality assurance (QA) tests on all lead apron shields in use at the MTF. All lead aprons that fail the

X-Ray QA test are removed from service and properly disposed through the Installation’s hazardous waste contractor.

 (3) Transporting. Only properly trained personnel transport radioactive material in the MTF.

 (4) Disposing. Radioactive waste is disposed of in radioactive waste containers. Short lived radioactive waste is allowed to decay in the generator’s storage area or in the RSO controlled Low Level Radioactive Waste Decay Storage Facility in the MTF before proper disposal through a licensed contractor.

 h. Selecting and Using Hazardous Energy Sources.

 (1) Selecting. Before purchasing hazardous energy sources [e.g., X-ray, laser, microwave, ultra sound, Magnetic Resource Imaging (MRI)], supervisors, with assistance from the RSO, LSO, Medical Maintenance, and Facility Manager, assess the physical and health hazards; determine maintenance requirements; staff education and training requirements; whether the appropriate facilities are available for the proper installation/use of the device; and whether the proper PPE and safety equipment is on hand for using the device.

 (2) Using. Before use, staff is trained on proper function and use of the device and emergency procedures.

 i. Selecting, Handling, Storing, Using and Disposing of Hazardous Medications.

 (1) Selecting. Pharmacy, Medical Oncology, and Respiratory Therapy oversee the selection, storage and use of chemotherapeutic agents/aerosolized hazardous drugs.

 (2) Use and Handling. Chemotherapy drugs are prepared in biosafety cabinets located in a negative pressure designed sterile room with limited access. Staff is trained in spill response procedures. Engineering and administrative controls, safe work practices, and PPE are used to prevent occupational exposures to all hazardous drugs.

 (3) Storing. Chemotherapeutic drugs are stored per the manufacturers’ specifications and in designated locations.

 (4) Transporting. Chemotherapeutic drugs are prepared in the Pharmacy. The IV bags and tubing are primed with the diluent solution prior to addition of the active agent. Chemotherapy drugs are hand delivered to the Oncology Ward/Clinic in sealed bags by pharmacy personnel.

 (5) Disposing. Chemotherapy waste regulated as HW is disposed through the installation HW contractor. Non-RCRA chemotherapy waste is placed in designated HD collection containers (chemotherapy containers) for removal via the RMW contract or other designated waste contract when the RMW contract cannot incinerate the waste. The containers are marked to indicate incineration is required.

 j. Selecting, Handling, Storing, Using and Disposing of Hazardous Gases and Vapors.

 (1) Selecting. All hazardous gases are ordered through Medical Supply.

 (2) Storage, Use and Handling. All cylinders are labeled according to Department of Transportation regulations and marked with a tag or label of its contents. All cylinders are stored properly, used upright, and protected from damage/tampering.

 (3) Cylinder Transport. When transporting cylinders throughout the MTF, the protective cap is kept in place and a suitable hand truck is used with cylinders firmly secured.

 (4) Disposing. Cylinders are marked empty and the empty cylinders are placed in empty cylinder holders until they can be returned to Medical Supply. Medical Supply personnel stores empty cylinders in areas designated for empty cylinders prior to returning them to the supplier.

 k. Monitoring Hazardous Gases and Vapors. The IH monitors all areas in which hazardous gases and vapors, such as formaldehyde, glutaraldehyde, nitrous oxide and other waste anesthetic gases, methylene chloride, and xylene are used, and recommends engineering and administrative controls, and safe work practices necessary to contain and remove hazardous gases and vapors from work areas. Staff uses PPE when these controls cannot effectively reduce airborne concentrations to safe levels.

 l. Permits, Licenses, Manifests, and Adherence to Other Regulations. The ESEO monitors the HMW Program for compliance with Federal, state, and local environmental laws at least annually. In addition, the ESEO, Installation Environmental Office, RSO, and Environmental services maintain documentation such as required permits, licenses, hazardous materials and waste manifests.

 m. Labeling HMW.

 (1) The services and departments that handle, store, use and/or generate the HMW are responsible for properly labeling containers according to requirements provided in the HAZCOM, CHP, HMW, RMW, Hazardous Drug, and Infection Control Programs.

 (2) The ESEO, Safety Manager, ICO, Chemical Hygiene Officer (CHO), IH, RSO, Environmental Services, supply personnel monitor compliance with proper labeling requirements and assist supervisors in correcting identified problems.

 (3) Additional monitoring is accomplished through various oversight inspections such as the Command Logistics Review Team.

n. Orientation and Annual Refresher Education and Training Program.

 (1) The orientation and education component pertaining to HMW addresses the following criteria:

 (a) HMW present in the MTF environment and assigned work areas, the safety and health hazards associated with these materials, and the methods for eliminating or minimizing risk

 (b) General safety processes, such as safe work practices regarding the selection, handling, storage, use and disposal of HMW and the selection, storage, use and disposal of PPE

 (c) Emergency processes, such as reporting/cleaning up a chemical or biological spill

 (2) The Chief, Plans, Training, Mobilization, and Security (PTMS) manages the organization-wide New Employee Orientation Program. Generally, new employees are scheduled to attend orientation within 30 days of hire.

 (3) The Chief, PTMS also manages the Annual Refresher Training Program. Generally, all staff and personnel attend annual refresher training during their birth month.

 (4) Supervisors provide worksite-specific orientation and annual refresher training.

 (5) All training is documented in the staff competency folders.

 o. Information Collection and Evaluation System.

 (1) Reporting and Investigating Accidents, Injuries, Property Damage, Problems, Failures, & Use Errors.

 (a) The Incident Reporting/Investigation System covers all accidents, exposures, and spills and releases causing damage to equipment, property, or the environment; occupational illness; and patient, personnel, or visitor injury.

 (b) Anyone can report an exposure incident to the Safety Officer, Patient Safety Officer, Risk Manager, Occupational Health, LSO, or RSO via telephone. Hazardous spills can be reported to the IH, ESEO, RSO or the Spill Response Team via telephone.

 (c) The ESEO, Safety Manager, the Risk Manager, or other MTF representatives as deemed appropriate by the Commander promptly review incident reports to identify trends, determine root cause(s), and suggest corrective actions to prevent recurrence. Summary reports are submitted to the appropriate committee for further review and resolution as needed.

 (2) Annual Evaluation.

 (a) The ESEO keeps the management plan current by reviewing the plan at least annually (i.e., one year from the date of the last review, plus or minus 30 days) and making necessary modifications based on the results of the annual evaluation and changes to policies, regulations, and standards. In performing the annual review, the ESEO uses a variety of sources such as inspection and audit results, accident/incident reports, employee reports of unsafe or unhealthy working conditions, customer satisfaction surveys, suggestion boxes, performance improvement committees, and other statistical information and tracking reports. The ESEO may also use other forms of review and input from relevant sources such as leadership, other EC/PE disciplines, management, staff, personnel, and volunteers.

 (b) The annual evaluation includes an assessment of the plan's:

 (1) Scope. Based on the outcome of objectives assessment, the scope of the plan is expanded, reduced or maintained at its present scope (buildings, equipment, people, operations, services).

 (2) Objectives. An annual assessment is made to determine if the objectives, as outlined in paragraphs 2 (a) through 2 (d) are current.

 (3) Performance. Review of the performance objectives is made to determine the level of performance and whether the level of performance is acceptable.

 (4) Effectiveness. An acceptable level of effectiveness is determined by the achievements related to HMW processes necessary for maintaining a successful HMW program.

 (c) After the Safety/EC Committee approves the annual review, the results are submitted to the Executive Committee for review and approval.

 (d) The annual review is used as an opportunity to develop or modify programs, plans, and policies; identify and implement additional or more effective controls; and enhance the Employee Orientation and Annual Refresher Training Programs.

 (3) Safety/EC Committee. The ESEO is a standing member of the Safety/EC Committee and is responsible for providing recurring reports on the status of the HMW Management Plan to include:

 (a) Annual evaluation of the HMW Management Plan

 (b) Performance improvement standards/initiatives

 (c) Deficiencies, problems, failures, user errors

(d) Spills and releases involving hazardous materials and waste

 (e) Risk assessments

 (f) Environmental tour trends

 (g) Monitoring results/trends to include measuring occupational exposures and function of safety equipment (i.e., biological safety cabinets/chemical fume hoods, scavenging systems) and ventilation systems (i.e., operating rooms and isolation rooms)

 (4) Performance Improvement Activities.

 (a) Performance monitoring is used to–

 (1) Identify areas of concern and strengths in the MTF’s HMW programs

 (2) Identify or determine actions necessary to address areas of concern

 (3) Assess actual compliance with HMW policies, regulations, and standards

 (b) The ESEO–

 (1) Identifies at least one measurable performance improvement standard regarding actual or potential risk related to one or more of the following:

 (a) Staff knowledge and skills

 (b) Level of staff participation

 (c) Monitoring and inspection activities

 (d) Emergency and incident reporting

 (e) Inspection, preventive maintenance, and testing of equipment

 (2) Considers high-risk, high-volume or chronic problems when developing performance standards to better focus limited resources.

 (3) Sets desired goals or benchmarks and develops and implements data collection and reporting procedures.

 (4) Appendix C lists the HMW Performance Measure(s) for this year.

 (c) The EC Committee tracks performance and documents the results in the committee minutes.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Regulation, Policy, or SOP Number** | **Regulation, Policy, or SOP Name** | **Date Published** | **Point of Contact** | **Relevant EC Standard and Element of Performance** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

| **Performance Objective** | **Performance Indicator(s)** | **SMART Performance Measure/****Action Plan** |
| --- | --- | --- |
| Effectively manage HMW risks by using best industry practices. Specifically, implement procedures to make critical information related to the safe use, storage, and disposal of hazardous chemicals are available to staff. (BSC: Internal Processes) | % SDS maintained at work areas | * What is your goal?
* Is it measurable?
* SMART performance measure
* What constraints do you have (time, money, other resources)?
* What are the steps you will take to meet your goal?
* How will you prioritize these steps?
* What data do you need to collect?
* How will you collect and report the data?
 |
| Optimize resources by using efficient HMW processes. Specifically, reduce costs associated with RMW disposal (BSC: Resources) | # pounds RMW generated | * What is your goal?
* Is it measurable?
* SMART performance measure
* What constraints do you have (time, money, other resources)?
* What are the steps you will take to meet your goal?
* How will you prioritize these steps?
* What data do you need to collect?
* How will you collect and report the data?
 |
| Improve staff performance through effective HMW education and training. Specifically, verify that the staff is trained in new SDS formats and labeling procedures (BSC: Learning and Growth) | # staff who satisfactorily complete HAZCOM refresher training | * What is your goal?
* Is it measurable?
* SMART performance measure
* What constraints do you have (time, money, other resources)?
* What are the steps you will take to meet your goal?
* How will you prioritize these steps?
* What data do you need to collect?
* How will you collect and report the data?
 |
| Improve staff and patient satisfaction by providing a safe physical environment. Specifically, reduce the number of staff and patient complaints related to “green” disinfectants (BSC: Customer Satisfaction) | # complaints regarding “green” disinfectants | * What is your goal?
* Is it measurable?
* SMART performance measure
* What constraints do you have (time, money, other resources)?
* What are the steps you will take to meet your goal?
* How will you prioritize these steps?
* What data do you need to collect?
* How will you collect and report the data?
 |