Proper chemical use is everyone's responsibility
Better communication reduces hazards and improves compliance

By Glenn Trout

According to the Occupational Safety and Health Administration (OSHA), hospitals and personal care facilities employ approximately 1.6 million workers at more than 21,000 work sites in the United States.

Hazardous substances, such as disinfectants, lab chemicals, gases and potentially toxic drugs exist in nearly every department within a hospital. Exposure to these hazards extends beyond hospital staff and includes patients, visitors and emergency response teams who come and go on a regular basis.

Today, hospitals must take a cross-departmental view of safety to maximize efficacy, control potential hazards and mitigate risks. Therefore, it’s important for each department to understand hazard communication and why compliance is critical.

This is especially true for materials managers who are the gatekeepers for potentially hazardous materials entering the hospital.

Communicating hazards

In 1986, as a way to lessen potential workplace accidents by ensuring employers and employees understand the proper ways to handle, use and store harmful chemicals, OSHA developed the Hazard Communication Standard, commonly known as HazCom. Within the health care industry, governing bodies such as the Centers for Medicare & Medicaid Services (CMS) and the Joint Commission endorse HazCom as part of the Environment of Care Standard and overall accreditation processes.

In short, HazCom requires hospitals to establish hazard communication programs to disseminate information on chemical hazards through the use of proper container labeling, material safety data sheets (MSDS) and training programs.

Ensuring that hospital employees know the identities and dangers of all the chemicals they handle reduces the likelihood of chemical-related accidents.

Perhaps the most widely discussed components of HazCom are the MSDS requirements. An MSDS is a document authored by a chemical-product manufacturer that includes a product’s chemical properties, health hazards, proper storage and handling, personal protective equipment requirements and vital emergency information such as first aid measures and spill-response procedures. Regulations require hospitals to have an MSDS for all chemical substances used or stored throughout a facility. This not only includes labs and pharmacies, but also departments such as central supply, housekeeping, groundskeeping, maintenance, laundry, etc. (See table to the right for a list from OSHA of the most common hazard risks by department.)

According to OSHA, the chemical manufacturer or vendor must provide an MSDS under the following scenarios:

- With the first product shipment
- Whenever a material change to the chemical formulation has been made
- If an MSDS document has been updated, revised or modified; or
- Whenever requested.
For example, if a lab switches suppliers for toluene, the hospital should receive an MSDS from the new vendor. The MSDS then needs to be maintained in the hospital MSDS inventory and made available to employees.

Understanding the HazCom requirements better enables materials managers to more clearly communicate with facility management, the safety team or administrative staff about potential risks and to preserve compliance.

Cost of noncompliance

Because the MSDS often serves as the foundation of most HazCom programs, a hospital cannot overstate its impact on compliance. An effective chemical hazards training program and direct access to MSDSs can help hospitals avoid costly fines, which can run as high as $30,000 per day. The cost of noncompliance is not limited to just fines and penalties. Failure to comply with regulations can lead to the following:

- Increased employee days away from work
- Higher workers’ compensation claims
- Potential legal and litigation fees
- Joint Commission accreditation roadblocks
- Loss of Medicare certification
- Negative impact on community image.

As reported by OSHA, HazCom was the third most cited violation in 2008. Awareness surrounding MSDS requirements is growing within the health care community. As recently as January 2009, the Joint Commission added frequently asked questions on its Web site (www.jointcommission.org) for when hospitals need to include items on the hazard inventory.

The Web site reinforces the fact that health care facilities must comply with HazCom requirements as outlined by OSHA. The Joint Commission Environment of Care Standard states “that a health care facility must maintain a written, current inventory of hazardous materials and waste that it uses, stores or generates.... Materials that need to be included in the MSDS inventory are those whose handling, use and storage are addressed by law and regulation (e.g., EPA and OSHA).”

Managing MSDSs

Maintaining MSDS information became a U.S. regulatory requirement more than 20 years ago, but many hospitals are not in full compliance, let alone have a system in place to easily access MSDS information. Hospitals that have an organized, accurate and efficient MSDS system are in a better position to ensure compliance and increase the safety of their employees and patients.

As expected, hospitals differ in standard operating procedures regarding MSDS management. Today, there are two methods hospitals use to manage MSDSs: manual paper-based systems and electronic software or Web-hosted solutions.

Selecting the appropriate MSDS system is fundamental to an effective HazCom program because it is a tool that, if implemented effectively, the entire hospital staff will reference.

Paper trail

Until recently, paper filing systems were, and in many case still are, the most common method for maintaining an MSDS inventory. The primary appeal of this method is the minimal investment required to implement. Besides file-cabinet space and a large supply of three-ring binders, there are no real hard costs involved.

Traditionally, a paper system comprises a master MSDS library, which is usually stored in file cabinets and managed using spreadsheets as the index. Sub-libraries, categorized by department or key storage locations, are printed and made available via binders placed throughout the hospital.

Hospitals in particular have sizable chemical inventories that can present a number of MSDS management challenges. Searching for an MSDS can be time-consuming, sometimes taking hours to locate, unless an efficient indexing system is created. Paper documents get damaged, misfiled or misplaced, all of which can lead to productivity issues or, worse, the inability to locate an MSDS during an emergency or an unannounced inspection.

Overall, a paper system is only as reliable as the person dedicated to maintaining it. Unfortunately, in many cases this is a shared responsibility and can expose gaps in communication.
For some small facilities, a paper system may be a reasonable option. In that case, these facilities must take extra care in outlining a specific process for updating and maintaining the paper binders, identifying key responsibilities and determining an escalation plan.

But perhaps the most significant drawback to a paper system is the cost associated with managing the inventory and ensuring compliance.

Estimates range from $25 to $50 per MSDS, per year, in administrative time and labor to maintain a compliant paper system. For a hospital with 1,000 chemicals, that can equate to upward of $50,000 annually.

**Electronic systems**

Today's focus on the bottom line is driving all departments to leverage technology to create efficiencies and reduce costs. Similar to patient record keeping, electronic MSDS management is rapidly gaining popularity within health care.

Web-hosted or on-demand systems are gaining attention, in part because they enable hospitals to centrally manage and access all of their MSDSs from any computer with Internet access.

Moreover, Web-based systems allow for multiple keyword indexing—product name, supplier, Chemical Abstract Registry Number, storage location, etc.—thus enabling quicker search and retrieval. And, unlike hard copy binders, electronic systems do not require physical file cabinet storage space.

At today's dollar-per-square-foot cost, that alone can mean substantial savings. Other key benefits include easier document management and regulatory reporting. Most electronic systems, whether Web-based or software-based, include a wide range of tools that make it possible for the MSDS administrator to more efficiently organize the MSDS inventory, manage versions, flag chemicals with missing or out-of-date MSDSs, identify chemicals on known hazard watch lists and more.

The key benefit, however, is that everyone in the hospital has access to one, easy-to-use system. In addition to simplifying the right-to-know requirements, hospitals can leverage the technology to streamline the entire compliance process across all departments, ultimately saving time and money throughout.

Just as manual systems have drawbacks, so too do electronic systems. Unlike its paper counterpart, an electronic system will require an initial outlay of capital or annual licensing fee.

But, compared with the administrative costs associated with managing paper binders, the return-on-investment time is typically short, and the long-term gains in efficiency make this a worthwhile investment.

Another potential drawback of an electronic system is that it requires a backup so that MSDSs are still accessible in times of power outages or other service interruptions. However, there are several easy ways to address this.

Many electronic system vendors offer fax-back services that can be used as a secondary MSDS access point. Also, most electronic systems enable the administrator to save the library to an alternate medium (e.g., CD/DVD, flash drive, etc.) or batch print a backup library.

When adding the number of hours spent on MSDS inventory maintenance for paper-based systems and converting that into dollars, in most cases, using an electronic system makes the most financial sense.

Hospitals with a large number of beds and/or multiple campuses benefit most from implementing such a system.

**Evaluating the long-term**

It is important for hospitals to look at a long-term plan to decide what is best for the hospital and its employees.

The concern with having a single person dedicated to understanding and maintaining MSDSs is the potential risk of losing that intellectual property if that person is out of the office or leaves the position.

This is why it is crucial for all departments to understand the HazCom program and be able to effectively and efficiently navigate through an MSDS management tool, regardless of whether you are using a paper or electronic system. Performing a proper analysis of the current process will unveil any gaps in efficiencies,
identify the players and serve as a guide for improving future HazCom strategies and planning. Some
questions to ask when analyzing a HazCom program include:

- How many MSDSs does the hospital maintain?
- How much time is spent on maintaining the MSDS inventory?
- How accessible are MSDSs to all employees?
- How often and for how long do employees look for misplaced or non-existing MSDSs?
- Who is the point person to find MSDSs during an inspection?

Materials managers should work closely with facility and safety management to determine the most efficient
process. Selecting an appropriate electronic system requires research.

Chemical manufacturers constantly revise MSDSs, which compounds the difficulty in keeping the most up-
to-date version. Hospitals should be cognizant of the system’s ability to automatically provide updated
MSDSs, quality control and search features, in addition to customized secondary labeling for containers and
fax-back emergency information services.

From an administrative point of view, a Web-hosted system scales easily, requires no additional training and
limits future investments. It also does not require manually installed upgrades or software updates, which will
provide protection from software obsolesce.

No doubt, health care is one of the most scrutinized industries in the country. With such a large number of
workers and worksites in the United States and growing regulatory requirements, hospitals finally have
solutions to help manage the more tedious side of compliance.

These solutions connect hospital departments and help hospitals develop a holistic and integrated approach
to chemical safety.

<table>
<thead>
<tr>
<th>Department</th>
<th>Leading Hazardous Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housekeeping</td>
<td>Soaps, detergents, mixing cleaning solutions with ammonia and chlorine</td>
</tr>
<tr>
<td>Central supply</td>
<td>Unlabeled chemicals used in initial washing process of dirty instruments</td>
</tr>
<tr>
<td>Dietary</td>
<td>Ammonia, drain/oven/grill cleaners, pesticides, disinfectants</td>
</tr>
<tr>
<td>Emergency</td>
<td>Decontaminating patients after chemical spill, exposure to drugs during administration</td>
</tr>
<tr>
<td>Engineering</td>
<td>Paints, adhesives, pesticides, solvents used in maintenance shops, waste anesthetic gases and ethylene oxide if repairing ventilation or exhaust systems that are used to remove these gases</td>
</tr>
<tr>
<td>Laundry</td>
<td>Unlabeled chemicals, soaps and detergents, accidental mixing of ammonia and chlorine solutions</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>Exposure to hazardous chemicals and drugs in quantities larger than a consumer dose</td>
</tr>
<tr>
<td>Surgical suite</td>
<td>Peracetic acid used in cold sterilant machines, methyl methacrylate and waste anesthetic gases</td>
</tr>
</tbody>
</table>

Source: [www.OSHA.gov](http://www.OSHA.gov)

Check out these online resources

More information regarding hazard communication and compliance within the health care industry is available on the following Web sites:

[www.jointcommission.org](http://www.jointcommission.org)
The Joint Commission

[www.OSHA.gov](http://www.OSHA.gov)
Glenn Trout is the president of MSDSonline, Chicago.

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