New Reports from the NIOSH Health Hazard Evaluation Program

With each issue, the *International Journal of Occupational and Environmental Health* publishes a selected set of abstracts of important Health Hazard Evaluations (HHEs) from the National Institute for Occupational Safety and Health (NIOSH) of the US Centers for Disease Control and Prevention. The full HHE reports are available on the NIOSH web site: http://www.cdc.gov/niosh/hhe/.

Evaluation of Exposures to Epoxy Resin while Manufacturing Artificial Floral Arrangements
Carlos Aristeguieta, Manuel Rodriguez

The HHE Program responded to a request from a management representative at a facility that manufactures luxury artificial floral arrangements. The request concerned employees' potential exposure to epoxy resins. The HHE Program investigators observed employees' work practices and use of personal protective equipment. Air samples for volatile organic compounds (VOCs) and amines were collected during the evaluation. Investigators found that employees were exposed to epoxy resin and isopropyl alcohol through skin contact. Data collected during the valuation showed that airborne exposures to selected VOCs, including some amines, were very low. Investigators found that the mixer/pourer wore a respirator, per the company's written procedures, although air sampling results indicated that respiratory protection was not needed. The Program investigators also noted that employees were not wearing eye protection when pouring epoxy resin into vases. Investigators recommended that managers install a dispensing gun that could be used to add epoxy resin to vases and require employees to use eye protection when mixing epoxy resin. It was also recommended that management provide the mixer/pourer with safety glasses, a butyl rubber apron, and butyl rubber gloves (either shoulder or gauntlet length) to wear when handling epoxy resin and isopropyl alcohol. Program investigators recommended that an emergency eye wash station and sink with arm water be installed in the production area for use if employees come into contact with epoxy resin. Investigators also recommended that employees wear appropriate skin and eye protection when mixing and pouring epoxy resin or handling isopropyl alcohol. Employees were encouraged to talk with their supervisor about any workplace health concerns they may have. The final report is available at http://www.cdc.gov/niosh/hhe/reports/pdfs/2007-0355-3102.pdf.

Evaluation of Exposures to Healthcare Personnel from Cisplatin during a Mock Interperitoneal Operation
James Couch, Gregory Burr

The HHE Program responded to a request concerning healthcare personnel's potential exposures to cisplatin, a chemotherapy drug, during a newly proposed medical procedure. Program investigators took wipe samples and area and personal breathing zone samples for cisplatin during pharmacy preparation, a mock interperitoneal procedure, cleaning of the operating room, and sterilization of the equipment. Investigators also checked to see if the gloves worn by employees protected them from cisplatin by analyzing cotton gloves that were worn beneath their chemotherapy-approved gloves. Cisplatin was not found in any of the area or personal breathing zone air samples or on any of the cotton glove samples. Investigators did find cisplatin on one of 15 wipe samples collected during this investigation. This wipe sample was taken from the operating room floor after the mock procedure but before the room was cleaned. No cisplatin was found at the same location after the operating room had been cleaned. Program investigators recommended that hospital management require employees to wear two pairs of chemotherapy protective gloves. It was also recommended that managers train employees on the importance of minimizing cisplatin spills and splashes and how to properly clean up such incidents. The final report is available at http://www.cdc.gov/niosh/hhe/reports/pdfs/2009-0121-3106.pdf.

Evaluation of Methicillin-resistant *Staphylococcus aureus* (MRSA) Cases among Employees at a Workholdings Manufacturing Facility
John Gibbins, Todd Niemeier

The HHE Program responded to a request regarding reports of methicillin-resistant Staphylococcus aureus (MRSA) skin infections among employees at a workholdings manufacturer. Management

submitted the request to determine if these infections were related to workplace exposures. The HHE Program investigators collected bulk metalworking fluids (MWF) from machine reservoirs and swab samples from machine and bathroom surfaces and tested them for the presence of MRSA. Additionally, investigators reviewed the results of chemical and microbiological tests for metalworking fluids that were previously conducted by a third party. Investigators also spoke with employees confidentially about their health and reviewed medical records of employees who reported current or past MRSA infections. Program investigators found that three employees reported MRSA skin infections that were confirmed through laboratory testing, but determined that these infections were not likely related to the workplace. In the bulk MWF or surface samples taken by HHE Program investigators, MRSA was not found but testing previously done by a third party indicated total bacteria levels in the MWF were highly variable and poorly controlled. Program investigators recommended that management evaluate employee exposures to MWF and evaluate the need for engineering controls and enclosures to reduce exposures. It was also recommended that managers ensure custodial staff keep restrooms and hand-washing stations clean and urge employees to keep cuts and wounds covered with dry bandages to prevent the spread of MRSA infections. Investigators also recommended that employees seek prompt medical care for skin infections and maintain good skin health through proper hygiene and use of moisturizers. The final report is available at http://www.cdc.gov/niosh/hhe/reports/pdfs/2009-0098-3103.pdf.

Evaluation of Isocyanate Exposure during Polyurethane Foam Application and Silica Exposure during Rock Dusting at an Underground Coal Mine

Kenneth Fent, Chad Dowell

A union representing employees at an underground coal mine asked the HHE Program to evaluate potential methylene diphenyl isocyanate (MDI) exposure during the application of polyurethane foam, and silica and asbestos exposures during rock dusting. The HHE Program investigators watched employees apply polyurethane foam and spray rock dust and then tested the surface of the foam applicator gun to see if it was contaminated with MDI. Investigators also took samples of rock dust to analyze for silica and asbestos and monitored the rock duster's breathing zone air for respirable silica and dust. Investigators found that the foam applicator gun was not contaminated with MDI after spraying and found that nitrile gloves worn by a bratticeworker while applying foam protected his skin from MDI. Asbestos was not found in the rock dust, but silica was. A rock duster's exposures to silica were below applicable exposure limits, but statistical analysis showed that rock dusters are likely overexposed to silica some of the time. Investigators recommended that bratticeworkers continue to be required to wear nitrile gloves while applying polyurethane foam and that managers ensure that airflow in the mine carries rock dust away from the rock dusters. Program investigators also recommended that the use of respirators at least as protective as a half-mask N95 filtering facepiece be required during rock dusting and that the mine should implement a written respiratory protection program. The final report is available at http://www.cdc.gov/niosh/hhe/reports/pdfs/2009-0085-3107.pdf.