ters employed for any duration at the Oak Ridge Reservation from the mid-1940s to the present were identified. Four hundred living in close proximity to the Reservation were selected to participate in the study. Based on carefully developed institutional history of each building at each operating segment (Y-12, X-10, K-25), memory triggers were designed using (1) photographs, industrial drawings, site maps, and (2) focus groups combined with the photographs, industrial drawings, and site maps. All participants first provided the traditional occupational history, describing each job ever held, the activities and the exposures. One-third repeated the same series of questions 2 months later; one-third was given the groups of triggers in (1) and (2), respectively. Results showed that individual carpenters worked in 20 or more locations in a single year; few nonradiation exposures were reported using the traditional methods, especially prior to 1980 ($p<0.05$). Numbers of work areas recalled increased with memory prompts ($p<0.01$). Assistance in recalling the work areas resulted in documentation of potential exposure to specific solvents (e.g., carbon tetrachloride), metals (e.g., lead, mercury, beryllium) as well as radiation hazards. Detailed history and memory prompt examples are shown. Reconstruction of hazards by location, not job title, provides a useful model for identifying potential exposures among other worker populations.

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HAZARD CONTROL BY USE OF ISOLATION CUBICLES IN HOSPITALS. J. Koehn, Jan Koehn, M.S., CIH, Inc., Houston, TX; G. Yeager, Texas Children's Hospital, Houston, TX

Infection control issues have assumed an increasingly important role in health care institutions. Control of a variety of health-related hazards can be addressed through utilization of isolation cubicles in sensitive hospital work areas. Portable units are used to provide access to above-ceiling work areas for numerous types of projects. Isolation cubicles provide an appropriate environment for addressing asbestos management and infection control concerns. Over the past several years, cubicles have been employed for above-ceiling access for observation or limited repair or removal of asbestos-containing materials. For example, removal of a single elbow or valve of thermal system insulation was accomplished to allow repair and return to normal use. Due to recent infection control concerns including an association of nosocomially acquired fungal infections among immuno-compromised patients and construction activities, strict enforcement of an above-ceiling policy has been implemented for the hospital. This action has resulted in extensive use of isolation cubicles to perform routine work in patient-sensitive areas. For example, in an OR suite, installation of a video camera required access above the ceiling of the critical area to allow routing of a cable. An isolation cubicle unit was used to remove a light fixture and an access panel to allow observation and work in this area. A small pressure differential unit was used to provide proper air filtration and exhaust. Representative air monitoring for both airborne fibers and bioaerosols was conducted as necessary to ensure appropriate project conduct. Therefore, utilization of isolation cubicles has assisted in the conduct of routine work activities within health care institutions by providing a safe hospital environment for personnel through control of existing hazards and limitation of workplace exposures.

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ANTIMICROBIAL PRESERVATIVE TREATMENT OF UPHOLSTERY FABRICS IN A HOSPITAL, A COMPARATIVE STUDY OF FUNGAL COLONIZATION. D. Price, D. Ramey, Interface Research Corp., Kennesaw, GA; D. Ahearn, R. Simmons, Georgia State University, Atlanta, GA

Porous furnishings such as carpets, draperies, and upholstery fabrics can harbor dirt, fungal spores, and other microbial contaminants. Fungal colonization of such materials can cause odors, hypersensitivity reactions, and increase the risk of invasive infections. Immune-suppressed individuals in health care environments are particularly at risk. A 9-month study on fungal colonization of conventional versus antimicrobial treated upholstery fabrics was conducted in an emergency room waiting area of a hospital. New untreated polyester upholstery and used wool upholstery were compared to new polyester upholstery fortified with an antimicrobial preservative (Intersept®). Chair covers were examined for fungal colonization by light microscopy and scanning electron microscopy. Samples were cultured in minimal salts agar and comparisons of cultivable fungi on treated versus untreated upholstery were made. Resistance of each upholstery sample to fungal colonization following elevated relative humidity exposure, as well as emission of volatile organic chemicals (VOCs), also was studied. After 9 months, fungal colonization was observed on the new nonpreserved polyester, as well as on the used wool upholstery, but not on the treated upholstery. The diversity and number of fungi cultured from the untreated polyester and wool upholstery fabrics was greater than those cultured from the antimicrobial treated fabrics. Total volatile organic chemical (TVOC) analysis of the treated samples versus untreated samples indicated that the preservative treated samples had higher total VOCs, while the samples colonized by fungi had lower total VOCs, but with a greater diversity of chemicals present. The colonized wool upholstery fabric emitted a pungent odor following moisture chamber exposure. Antimicrobial preservation of porous furnishing such as upholstery fabrics can reduce fungal contamination and odors that may result from metabolism of adsorbed nutrients.

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LATEX ALLERGY IN WASHINGTON STATE ACUTE CARE HOSPITALS: AN ASSESSMENT OF NEEDS, KNOWLEDGE, AND CONTROLS. M.A. Cohen, J.D. Kaufman, S. Sama, WA State Dept. of Labor & Industries, Olympia, WA

The Washington State Department of Labor & Industries, Safety & Health Assessment and Research for Prevention (SHARP) Program is conducting NIOSH funded surveillance of occupational skin disorders. Based on reports from the workers' compensation system and a network of sentinel health providers, latex gloves are one of the most prevalent source of occupational skin disorders in the state. To better understand the extent of knowledge of the problem and what health care facilities were doing to deal with the problem, questionnaires were distributed to acute care hospitals in Washington State. Employee health and infection control specialists were queried on: the symptoms of latex allergies, the potential causes of latex allergies, whether they felt that their facility had a 'problem' with latex, the number of workers exposed to latex materials in the hospital; the number of employees with a latex allergy; and what, if anything they had done to control the problem, and whether the changes had been effective. With 95 (93%) hospitals returning completed questionnaires, 30% reported having 'problems' with latex allergies among employees in their facility with a median number of between 1 and 2 cases. There was relatively good knowledge about the causes and effects of latex allergies, but definite knowledge gaps existed. More than 60% of the hospitals had made some type of glove alternatives available to affected employees, 4% had designated latex-free zones, 4% had cleaned to remove latex dust, while 7% had done nothing. An information package on latex allergies may be developed and sent to facilities in the health care industry.

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CARBON MONOXIDE EXPOSURES FROM PROPANE-POWERED FLOOR BURNISHERS FOLLOWING ADDITION OF EMISSION CONTROLS. F. Demer, University of Arizona, Tucson, AZ

Previous published work by this author suggests propane-powered floor burnisher use represents a potentially serious health hazard from carbon monoxide (CO) exposures, particularly for susceptible individuals. This earlier study, which assessed custodians' exposures to CO during burnisher use, was repeated using burnishers retrofitted with emission controls consisting of self- aspirating, catalytic mufflers and computerized air/fuel monitors and alarms. Real-time CO detectors with data logging capabilities were placed on the burnishers in the breathing zone of operators during burnisher use. CO levels were recorded every 30 seconds. Ventilation and physical characteristics of the spaces of burnisher use were characterized, as were burnisher maintenance practices. Thirteen burnishing events were monitored under conditions comparable to previously published monitoring. All CO exposures were well below even the most conservative recommended limits from ACGIH. Average maximum peak exposures were reduced 91%, from 235 +/- 106 ppm before emission controls, to 20 +/- 14 ppm. Average maximum short-term, 15 minute exposures, and mean time-weighted average exposures during burnisher use,

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