

an organization. **Objective:** The objective of this study was to provide confirmatory evidence of the causal relationship between safety climate, trust, and perceived risks. **Methods:** Data was collected via a survey from essential personnel from Nassau County, NY. The method of analysis was structural equation modeling using confirmatory factor analysis and latent variable path analysis. **Results:** Results showed that an increase in trust leads to decreased perceived risks, and increasing the perception of safety within an organization leads to increased trust; however, there was not confirmatory evidence supporting a causal relationship between safety climate and perceived risks. **Conclusions:** Although these results are limited to pandemic influenza, management can decrease perceived risks by increasing trust and improving overall safety will lead to increased trust.

142 Pandemic Preparedness and Response in the Albuquerque Area of the Indian Health Service

B. Hroch, DHHS, Albuquerque, NM.

Situation/problem: On 4/23/2009, 7 H1N1 cases were reported in California and Texas. The Indian Health Service, an agency within the U.S. Department of Health and Human Services, provides direct patient and public health services to Native Americans and Alaskan Natives. The Albuquerque Area of the Indian Health Service (AAIHS) has a delivery area that includes New Mexico and El Paso, TX. As with the rest of the world, the evolution of the pandemic and a "year long" flu season threatened Native Americans served by the AAIHS, as well as the AAIHS continuity of operations. **Resolution:** In response to the initial spring H1N1 cases, and due to the proximity to the Mexican border, a phase of increased pandemic preparedness was instituted. This phase included heightened surveillance for: patients meeting the CDC H1N1 case definitions, employee absences, antiviral use, and operational supply levels. Although no H1N1 cases were confirmed through AAIHS healthcare facilities in the spring of 2009, continued increased preparedness was necessary for the potentially severe 2009-2010 flu season. To prepare for this public health threat, collaboration was increased with state health departments, including providing estimates of health

care personnel and at-risk populations for H1N1 vaccine distribution. A health care facility pandemic plan was developed to establish the guidelines necessary to effectively manage a potential pandemic. A table-top exercise was further utilized to prepare health care facilities, which spanned four states. **Results:** The increased preparedness, including communication, surveillance, and infection control practices delayed the occurrence of initial cases, while also decreasing case incidence and severity. **Lessons learned:** The subsequent evaluations demonstrated the need for: improved communications; plan revisions; improving respiratory protection practices; establishing staff education; implementing social distancing through behavioral and environmental controls; and instituting prudent management of human resources. Another complicating factor included the geographically isolated location of many of the health care facilities.

143 Protecting Search and Rescue Dogs from Chemical Exposures

B. Prill, Industrial Safety Professionals Inc., Temecula, CA.

Objective: Search and rescue dogs are used in numerous hazardous environments to sniff out bombs, mold, drugs, bodies, etc., and there is no protection available to the K-9s to protect them against chemical insults while they are doing their job. **Methods:** A protective suit was recently developed and patented to protect our K-9 population from the chemical insults many of them face as they work a scene. **Results:** The suit is shown to protect working dogs from a variety of chemical insults. **Conclusions:** This talk will discuss how the suit works to protect these working dogs as well as how to decon them after they work a potentially hazardous scene.

Podium Session 121

Aerosols

Tuesday, May 25, 2010,

2:00 p.m.–6:00 p.m.

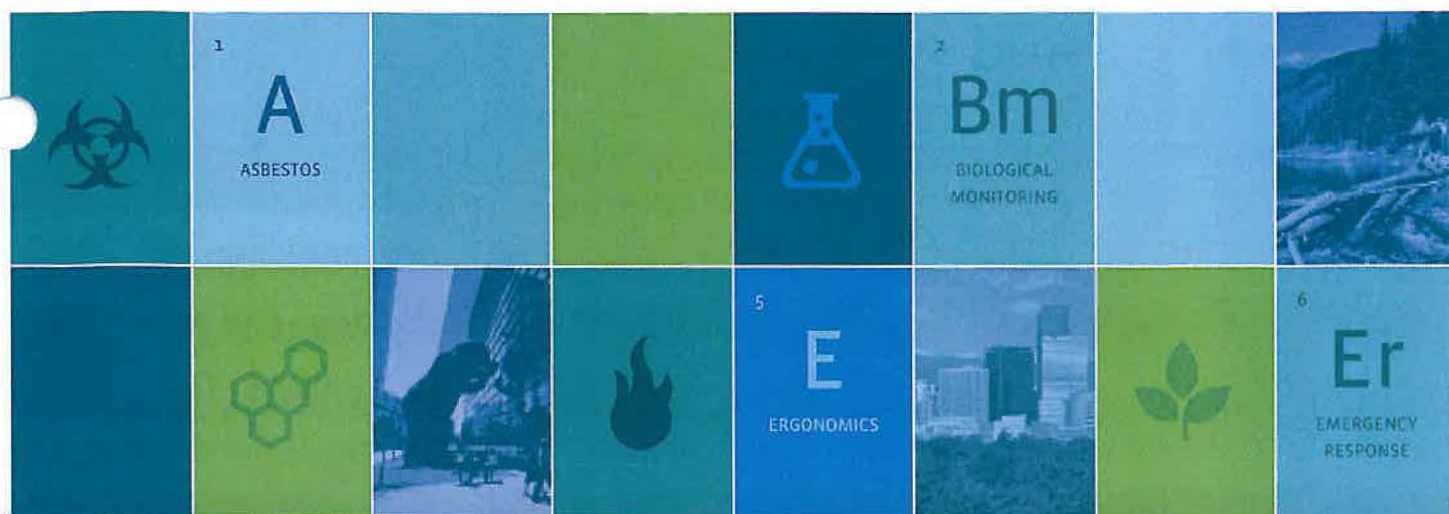
Papers 144–155

144 Characterization and Evaluation of Performance of a Whole-Body Human Exposure Chamber

L. Pieretti, Y. Hammad, University of South Florida, Tampa, FL.

Objective: The purpose of this study is to characterize and evaluate the performance of a whole-body human exposure chamber for controlled test atmospheres of gases and particulates. **Methods:** The chamber is constructed from plexiglass with a volume of 75 ft³, operating at a flowrate of 55 cfm. Both the makeup and exhaust air are HEPA filtered. Fly ash dust is generated using a Wright Dust Feeder. An elutriator is used to eliminate particles larger than 10 µm. Direct-reading instrument Rupprecht and Patashnick PM-10 TEOM is used for determination of particle concentration. Particle size distributions are determined by a QCM cascade impactor. Gravimetric analysis is used to evaluate evenness of dust concentration in the chamber. CO₂ is used as a tracer gas and its concentration was measured using Metrosonics aq-5000. **Results:** The dust concentration inside the chamber was found to be even with a variability of $\pm 5.1\%$. Dust concentration, in µg/m³, at 0.2, 0.4, 0.6, and 1.6 RPMs were 110 ± 3.8 , 175 ± 19 , 387 ± 26 and 538 ± 17 , respectively. For these RPMs, particle size distributions were associated with MMD 1.27 µm and GSD 2.35, MMD 1.39 and GSD 2.22, MMD 1.46 and GSD 2.08, MMD 1.15 and GSD 2.2. A good correlation between RPM setting and dust concentration was obtained with an $R = 0.988$. Concentrations of CO₂ used for evaluation ranged from 6000 ppm to 18,000 ppm. **Conclusions:** The system produced predictable and consistent dust concentrations and particle size distributions. The various particle size distributions were not statistically different. The system can thus be reliably used for inhalation challenge procedures for both particulates and gases.

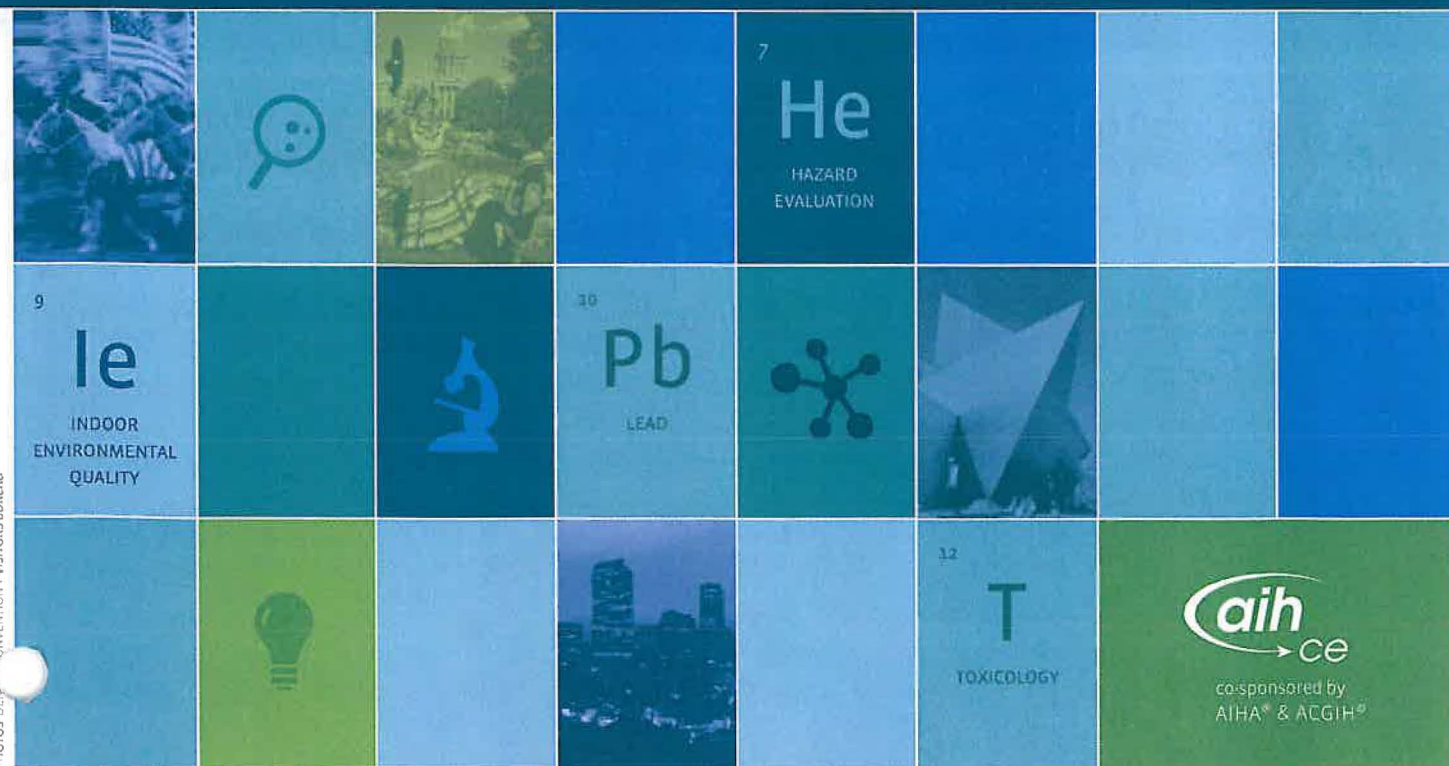
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