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Presented by: Ivory Iheanacho, MS, Graduate Student

Can the NWS Heat Index Substitute for Wet Bulb Globe Temperature for Heat Stress Exposure Assessment

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Keywords: stress, heat index, WBGT; Index; Steadman; occupational exposure limit

Objective: There has been substantial research about the effects of heat stress on human health. Past findings have led to the creation of several heat stress indices and the development of occupational heat exposure limits. The established occupational heat exposure limits currently use the wet-bulb globe temperature index (WBGT). However, Steadman's Heat Index (HI) has high visibility because it is promoted by the National Weather Service. The objective of this study was to determine whether the Heat Index can substitute for the WBGT index.

Methods: Following the methods and data used to establish the WBGT exposure limits and subsequent studies that determined the upper sustainable exposure, WBGT and HI were compared.

Results: While there was a general linear correlation between WBGT and HI, there was a loss of agreement at high and low humidities.

Conclusion: In order to safely use HI in lieu of WBGT, the relationship between the two should be established for a particular workplace of geographical location.

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Abstract #: 259

Presented by: Vikas Jindal, MD, Graduate Student

Hospital Visits and Cost in the U.S. for Firearm-Related Injuries, Over the Last Decade

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Keywords: Gunshot, Firearm injuries related cost, Homicidal, Suicidal, firearm-related hospitalization

Objective: To evaluate hospitalization and cost burden of firearm-related injuries in the United States over the last decade. We explored the following research questions: (1) Is there any increase in prevalence of firearm injuries over the last decade? (2) What is the cost associated with firearm-related hospitalization in the United States? (3) Finally, are their racial/ethnic variations related to these injuries and their costs?

Methods: This is a descriptive cross-sectional study. A stratified sample of 54,875 hospital discharges were extracted from the National Inpatient Sample Database (NIS-HCUP) using E Codes for firearm related injuries. We performed trend analyses to determine the cost and prevalence of the firearm related injuries.

Results: An estimated 268,639 firearm-related hospital discharges were observed from 2001-2009. Homicidal intent was the leading cause of firearm related injuries, followed by accident. Hispanic and blacks are more likely to injure by firearms as compared to white population. Young adults aged 18-34 were more prone to get injured than children and the elderly. Male sex, urban residence and being black or Hispanic were the main risk factors for firearm-related hospitalizations. The average hospitalization cost for firearm-related injuries was \$ 17,700 totaling \$528 million/year. The trend had remained constant over the past decade.

Conclusion: Firearm-related injuries and associated costs remain a major source of hospital-related expenditures in the United States

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