Abstract #: 286 **Presented by: Odalys Cruz Berrios, Graduate Student**

Workplace Violence in Puerto Rico: Recommended Engineering and Administrative Controls

Odalys Cruz Berríos, University of Puerto Rico Medical Sciences Campus, Lida Orta Anés, University of Puerto Rico Medical Sciences Campus

Keywords: Workplace violence (WV); Workplace violence prevention; Engineering and administrative controls

Objective: This research aims to identify the recommended controls to prevent workplace violence related to the highest WV fatal injuries occupations in Puerto Rico.

Methods: This study reports a critical review of the published literature on engineering and administrative/work practices controls recommended address workplace violence.

Results: It was observed that the most recommended controls were: WV preventing trainings and WV written policies and procedures. Two studies recommended engineering controls to prevent workplace violence.

Conclusion: We expect to find that the use of administrative or engineering controls can positively help to reduce the risk of exposure to workplace violence. Also, it is expected that additional research needed to demonstrate the effectiveness of the implementation of controls to further reduce workplace violence.

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Abstract #: 287 **Presented by: Maha Elbadry, PhD, Graduate Student**

Evaluation of Plasmodium falciparum Multi-Drug Resistance -1 Genotypes in Haiti

Maha ElBadry[1],Alexander Existe[2],Yves Victor[3], Gladys Memnon[4], Mark Fukuda[5], Bernard Okech[1, 6§] [1]Department of Environmental and Global Health, University of Florida, Gainesville, FL 32610, [2]National Public Health Laboratory, Ministry of Public Health and Population, Port au Prince, Haiti, [3]Blanchard Clinic - Family Health Ministries Haiti, Terre Noire, Port au Prince, Haiti; [4]Hospital Saint Croix, Leogane, Haiti, [5]Armed Forces Health Sciences Surveillance Center, Silver Spring, MD, [6]Emerging Pathogens Institute, University of Florida, Gainesville, FL 32610 "SERC Invitee".

Keywords: Pfmdr-1, CQ resistance, multidrug resistance

Objective: Resistance to anti-malarial drugs is a major threat to the management and elimination of malaria in endemic countries. In Haiti Chloroquine (CQ) is widely used for malaria treatment, reports of clinical resistance to CQ are absent despite a long history of its use. In this study, we examined mutations in the Pfmdr1 gene that have been shown to correlate with CQ resistance in other parts of the world.

Methods: We amplified the pfmdr-1 gene at five codons namely 86, 184, 1034, 1042 and 1246 using a nested PCR protocol. Products of amplification were then subjected to site-specific restriction enzyme digest to detect polymorphic codons known to confer resistance to CQ. The amplification products were also sequenced by a nested sequencing protocol to confirm the restriction enzyme digest result.

Results: Of the 356 samples obtained and confirmed positive for P. falciparum by microscopy, only 160 samples were able to amplify for the presence of P. falciparum small ribosomal subunit RNA gene. All the codons tested but 184 were wild type with no mutations. However, at codon 184, all the samples had the Tyr to Phe mutation (Y→F) as confirmed by both restriction enzyme digestion and nested sequencing. Thirty eight matched samples amplified at 4 codons (86, 184, 1034 and 1042) indicated the widespread presence of the NFSN haplotype in Haiti.

Conclusion: The study has found the widespread presence of Y184F mutation in P. falciparum parasites in Haiti. This mutation is thought to confer resistance to other antimalarial medications. Therefore, surveillance of changes in prevalence of SNPs in the Pfmdr-1 gene is important and may serve as an early warning for the emergence of P. falciparum resistance to CQ and other antimalarial in Haiti.

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