Get Out Your Wallet: Costs Associated with Gunshot Wounds at an Urban Public Trauma Center
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INTRODUCTION: Firearm-related injuries are a considerable public health issue, with substantial morbidity and mortality as well as expense. These injuries are multifaceted, impacting the patients not only due to direct injury and related expenses, but also due to lost productivity and reduced quality of life. Further economic impact is realized by the treating hospital systems and by taxpayers, as many patients are uninsured. The goal of this study was to quantify the economic costs related to hospitalization for GSWs at a single urban level 1 trauma center.

METHODS: A trauma registry query from a single urban level 1 trauma center identified 946 patients over 57 months treated for GSW. Elements related to hospitalization including length of stay, type and number of surgical procedures, medications and therapies, and subsequent readmission were identified, and costs of care were determined. Costs were inclusive of fixed and variable direct and indirect costs. Costs were classified based on body region injured: abdominal, chest, soft-tissue, extremity or pelvic girdle, head/neck/face, 2 regions, or 3 regions. Using these body regions, costs were extrapolated to a prospectively-acquired cohort, inclusive of all GSW patients presenting to the Emergency Department, including those treated and released from the ED. All costs were adjusted for inflation to 2018.

RESULTS: Mean age was 29.9 (SD=11.1), with 79% male and 85% African American. Most patients (81%) were admitted, and 8% sustained fatal injuries. Overall, 16% were seen previously or subsequently for additional, unrelated GSWs. Average costs per patient were as follows: $58,749 for abdominal GSWs; $3,424 for chest GSWs; $4,331 for external GSWs; $19,294 for GSWs to the extremities; $68,528 for head or neck GSWs, and means of $22,202 for two regions and $23,056 for three regions. Over the prospective period, 941 individuals sustained GSWs (approximately 35 per month). Some 37% were to the extremities, 23% were within the skin/subcutaneous tissue, 7% to the abdomen, 7% to the chest, 6% to the head or neck, and 20% to two or more body regions. Over this 27-month period, the cost of these 941 GSWs was $18.1 million, an average of $671,541 per month (SD = $1.3 million). In total, 55% of the patients had Medicaid, and 33% were uninsured, resulting in substantial uncompensated expenses for the trauma center.

DISCUSSION AND CONCLUSION: Firearm-related injuries and mortalities are a considerable expense within an urban level 1 trauma center. These costs are undeniably underestimated, as there is no assessment of the costs associated with lost economic productivity of patients and caregivers, nor is there objective assessment of the disastrous personal and social impact. Moving forward, interventions to prevent initial injury and recidivism in this high-risk population are necessary.