

Cost analysis of infective endocarditis in the setting of the opioid epidemic

Abstract

Background: In Maine, there has been a perceived increase of infective endocarditis (IE) in the setting of increasing injection drug use (IDU). Several health disparities exist between patients who inject drugs (PWID) and patients who do not inject drugs (non-PWID) who were treated for IE at Maine Medical Center. Furthermore, prior analysis of PWID IE cases has shown that only 12% of PWID were prescribed medication-assisted treatment (MAT) and only 31% received addiction treatment referral prior to their IE admission.¹ Therefore, this study sought to analyze the treatment cost of IE in PWID and non-PWID, in order to better understand the economic burden IE has on our local healthcare system.

Methods: Our study is a retrospective analysis examining the association between IDU and total hospital charges for treating IE. The sample included participants with definite or possible endocarditis on transesophageal echocardiogram admitted to Maine Medical Center from January 1, 2013 - January 1, 2016. Injection drug use was defined as out-of-hospital, opioid self-injection documented in the electronic medical record. Data obtained from the billing department included total charge to the hospital for all parts of patients' stay, what insurance actually paid, patient deductible, and total charge left on patients. Descriptive analyses were performed to analyze the difference in demographics, health characteristics, and health service utilization between groups. Mann Whitney U Tests were performed to analyze association between IDU, cost, and insurance variables. Kruskal-Wallis test was performed to analyze association between length of stays.

Results: A total of 107 participants were identified (PWID n=42, non-PWID n=65). There was no significant difference in total hospital charges for PWID (median \$149,131.16 [range \$16,282.03-\$630,151.2]) and non-PWID \$80,903.13 (\$16,901.96-\$736,327.53), p=0.08. Seventy-one percent of non-PWID had private or Medicare, compared to 16% of PWID, p = 0.001. Sixty percent of PWID had Mainecare and 26% of PWID were uninsured. PWID's insurance paid more for their hospitalization (\$174,573 [\$16,282-\$630,151.20]) compared to non-PWID (\$80,903 [\$16,902-\$736,327]), p = 0.03. Outstanding hospital bills for PWID were higher (0.0 [0.0-\$257,016.22]) than non-PWID (0.0 [0.0-\$104,682.57]), p = 0.03.

Conclusion: The treatment of IE is expensive. Given the expense to the healthcare system, particularly for PWID who often rely on Mainecare as their primary insurance, PWID would benefit from increased access to MAT and addiction treatment referral to help reduce the incidence of IE and costly admissions among PWID.

Limitations: This study's limitations are its small sample size taken from a single study site.

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