



This study aimed to analyze the clinical and economic impact of peripheral intravenous-related complications on hospitalized patients” Lim et al (2019).

Abstract:

The burden of complications associated with peripheral intravenous use is underevaluated, in part, due to the broad use, inconsistent coding, and lack of mandatory reporting of these devices. This study aimed to analyze the clinical and economic impact of peripheral intravenous-related complications on hospitalized patients. This analysis of Premier Perspective® Database US hospital discharge records included admissions occurring between July 1, 2013 and June 30, 2015 for pneumonia, chronic obstructive pulmonary disease, myocardial infarction, congestive heart failure, chronic kidney disease, diabetes with complications, and major trauma (hip, spinal, cranial fractures). Admissions were assumed to include a peripheral intravenous. Admissions involving surgery, dialysis, or central venous lines were excluded. Multivariable analyses compared inpatient length of stay, cost, admission to intensive care unit, and discharge status of patients with versus without peripheral intravenous-related complications (bloodstream infection, cellulitis, thrombophlebitis, other infection, or extravasation). Models were conducted separately for congestive heart failure, chronic obstructive pulmonary disease, diabetes with complications, and overall (all 7 diagnoses) and adjusted for demographics, comorbidities, and hospital characteristics. We identified 588 375 qualifying admissions: mean (SD), age 66.1 (20.6) years; 52.4% female; and 95.2% urgent/emergent admissions. Overall, 1.76% of patients (n

= 10 354) had peripheral intravenous-related complications. In adjusted analyses between patients with versus without peripheral intravenous complications, the mean (95% confidence interval) inpatient length of stay was 5.9 (5.8-6.0) days versus 3.9 (3.9-3.9) days; mean hospitalization cost was \$10 895 (\$10 738-\$11 052) versus \$7009 (\$6988-\$7031). Patients with complications were less likely to be discharged home versus those without (62.4% [58.6%-66.1%] vs 77.6% [74.6%-80.5%]) and were more likely to have died (3.6% [2.9%-4.2%] vs 0.7% [0.6%-0.9%]). Models restricted to single admitting diagnosis were consistent with overall results. Patients with peripheral intravenous-related complications have longer length of stay, higher costs, and greater risk of death than patients without such complications; this is true across diagnosis groups of interest. Future research should focus on reducing these complications to improve clinical and economic outcomes.

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[Peripheral IV catheter failure from 2015](#)

[Peripheral IV catheter failure in 2019](#)

[Infusion therapy standards of practice to improve peripheral IV catheter care](#)

Reference:

Lim, S., Gangoli, G., Adams, E., Hyde, R., Broder, M.S., Chang, E., Reddy, S.R., Tarbox, M.H., Bentley, T., Ovington, L. and Danker, W. 3rd. (2019) Increased Clinical and Economic Burden Associated With Peripheral Intravenous Catheter-Related Complications: Analysis of a US Hospital Discharge Database. *Inquiry*. Jan-Dec;56:46958019875562. doi: 10.1177/0046958019875562.

