

Under Pressure: A Trends Analysis of Pressure Ulcers and Hospital Readmissions

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Background

Pressure ulcers (PUs) are a highly morbid and recurrent problem, particularly for elderly, immobile, and severely ill patients. Furthermore, PUs are a significant burden to the national health system, costing upwards of \$17.8 billion annually to manage.¹ Due to their impact on patient and hospital burden, our study aimed to determine the national trends for readmission in PU patients.

Methods

The 2010-2019 Nationwide Readmissions Database (NRD) was queried for adult patients with an indexed admission including a PU. Readmission was determined as any following admission within 180 days. The primary outcome, conducted with multivariable regression models, was a year-by-year trends analysis of readmissions related to PUs.

Figures

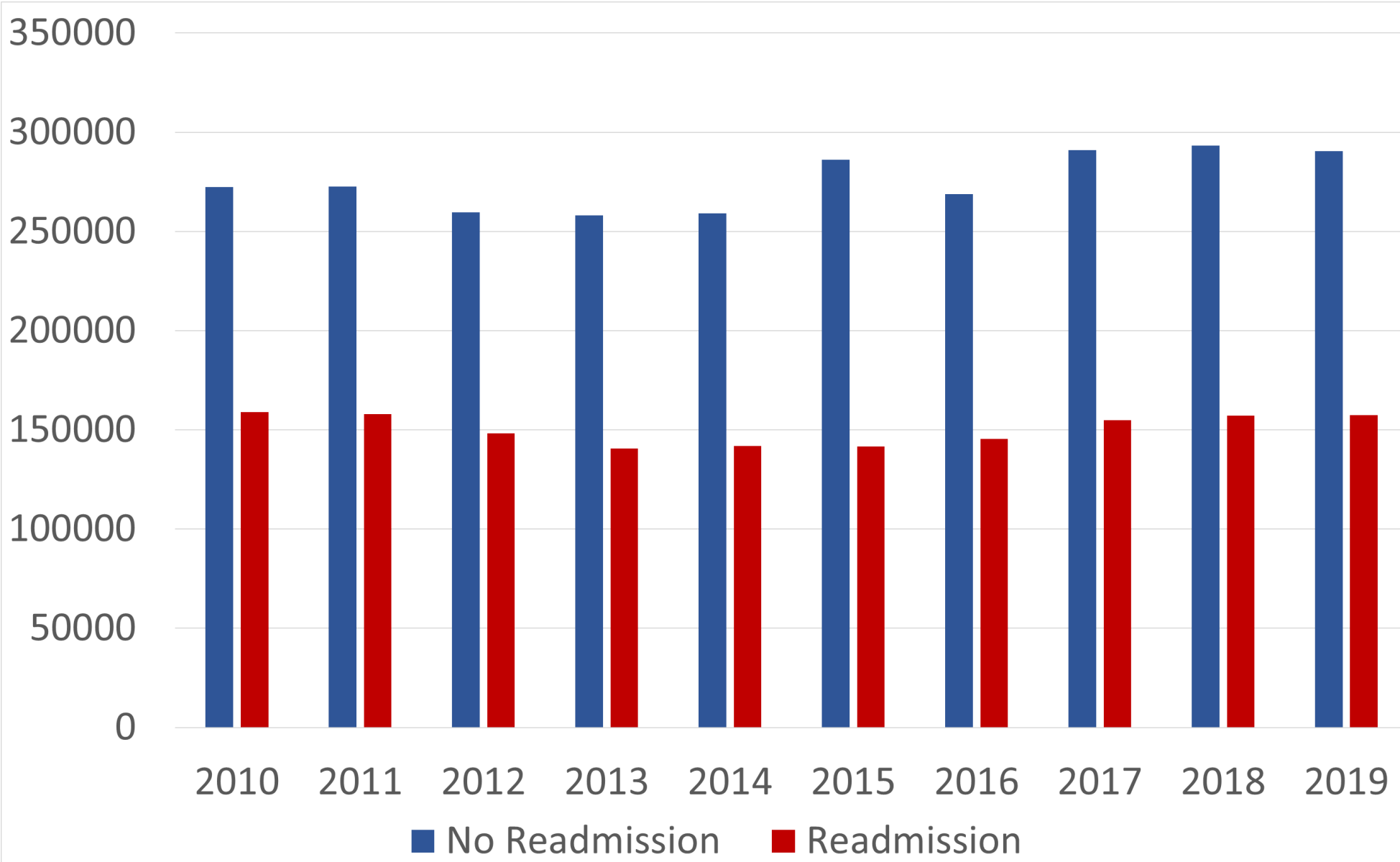


Figure 1: Number of patients with or without readmission after index admission in the NRD.

Figures

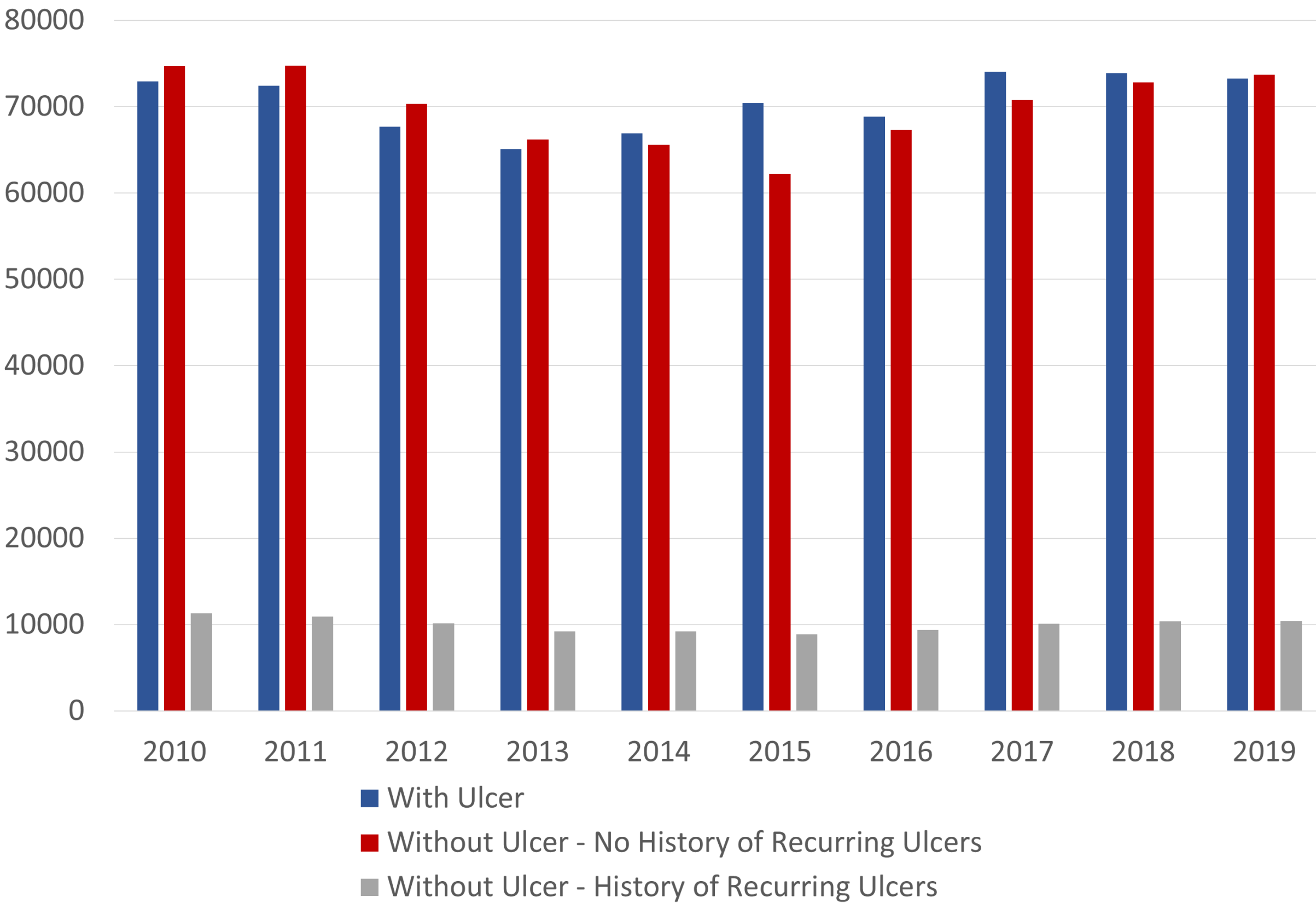


Figure 2: Ulcer status on last readmission for all patients with at least one readmission.

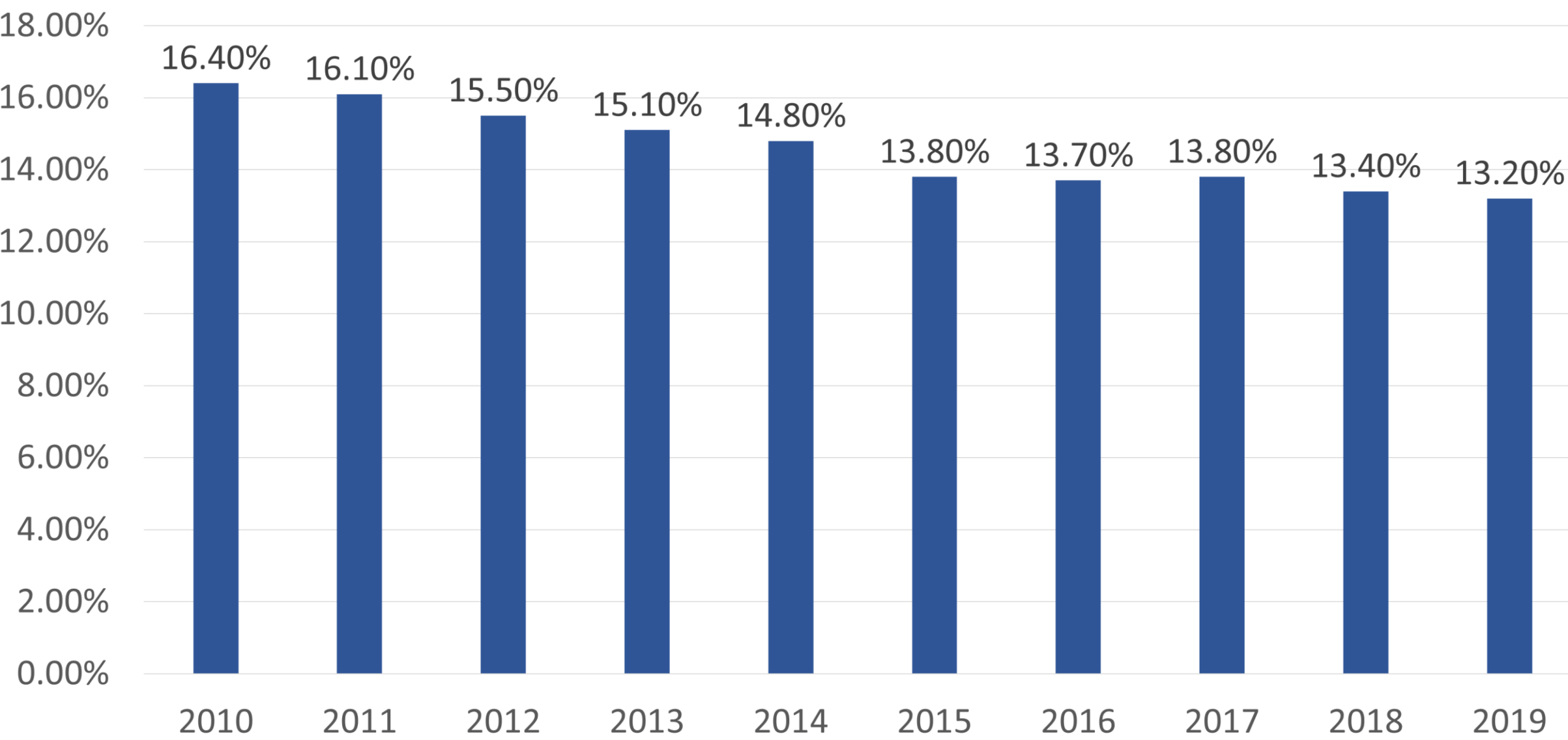


Figure 3: Overall mortality rate by year for PU patients.

Results

A total of 4,255,190 weighted index admissions were identified with PUs, 35.3% were subsequently readmitted within 180 days. Of all admission with a PU patients, 48.2% involved back or sacral ulcers and 21.2% involved lower extremity ulcers. The majority of patients (64.7%) with an indexed admission did not have a readmission; this was broken down year-by-year in Figure 1. Of the 35.3% of patients with a readmission, a year-by-year analysis showed no substantial clinical difference in the proportion of readmissions with PU (Figure 2). Comparison over the years showed a significant decline in the mortality rate from 2010- 2019, dropping from 16.4% to 13.2% ($p < 0.001$). Risk-adjusted analysis showed readmissions were statistically significantly likelier to include a PU as the years advanced, though this was clinically insignificant (OR 1.002, $p < 0.001$, 95% CI 1.001-1.002). The number of readmissions per patient year-by-year declined significantly, but was not clinically meaningful (OR 0.996, $p < 0.001$, 95% CI 0.996-0.996) and ranged between a mean of 0.60 readmissions in 2010 to 0.57 readmissions in 2019.

Conclusions

Over the past decade, mortality rates have significantly improved; however, the proportion of patients with PU that are readmitted have remained relatively unchanged. These results show growing success in reducing mortality in PU patients but emphasize the persistent challenge in managing PU and underscore the need for efficacious interventions in this population.

References

1. Hajhosseini B, Longaker MT, Gurtner GC. Pressure Injury. *Ann Surg*. 2020;271(4):671-679. doi:10.1097/SLA.0000000000003567

