

Comparing inpatient cost and number of readmissions for infections, debridement, and/or dehiscence by severity of illness for 7 admission procedures

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Purpose

- The aim of this study was to improve our understanding of the economic implications related to treating moderate and major severity of illness (SOI) patients for chronic wound infections causing readmissions.

Methods

- Using a retrospective cohort design, this study utilized data from the Centers for Medicare and Medicaid Services Longitudinal Data Set Standard Analytic Files (CMS LDS SAF) from 2017-2022.
- We examined the number and cost of inpatient readmissions to Level 1 Trauma Centers in the United States among patients originally admitted for 7 high-risk surgical site management (SSM: total hip arthroscopy, femoral popliteal bypass procedures, coronary artery bypass graft [CABG] and valve procedures, and spinal fusions) and wound care (WC: diabetic foot ulcers, pressure ulcers, skin grafts, and flaps) reasons, who also had potentially preventable readmissions for infections, dehiscence, or debridement (Table 1).
- Data were disaggregated by SOI (according to 4 measurable classification levels: mild, moderate, major, and extreme) for the initial admission.

Table 1. Absolute number, cost and percentage of infection-related potentially preventable readmissions (PPRs) by disease/surgery type for Level 1 Trauma Centers

	% of Total PPRs due to infection-related events	Total number of infection-related PPRs for patients with moderate or major SOI	% of infection-related PPRs for patients with moderate or major SOI	Total cost for infection-related PPRs for patients with moderate or major SOI	% of total cost for infection-related PPRs for patients with moderate or major SOI
THA	30%	4,599	70%	\$481,806,883.10	71%
CABG	6%	2,019	68%	\$211,578,388.27	65%
Femoral Popliteal Artery Bypass	24%	638	73%	\$46,153,109.32	68%
Spinal Fusion Surgery	21%	1,610	75%	\$183,894,485.82	74%
DFU	24%	11,288	80%	\$769,427,565.84	68%
PI	15%	8,589	65%	\$587,830,879.51	46%
Skin Graft and Flaps	24%	2,625	77%	\$204,447,163.29	66%

CABG: Coronary artery bypass graft; DFU: Diabetic foot ulcer; PI: Pressure injury; SOI: Severity of illness; THA: Total hip arthroplasty

Results

- Of the total number of potentially preventable readmissions (Figures 1 and 2) identified for each high-risk initial procedure, around 25% were for infections or infection-related procedures.
- Outliers were CABG and valve procedures (7%) and total hip arthroscopy (30%).
- For the total inpatient cost of these infection-related admissions moderate+major SOI made up 65-75% of the total cost (Figures 3 and 4) of all infection-related readmission cases except for pressure injuries which were lower at 46%.

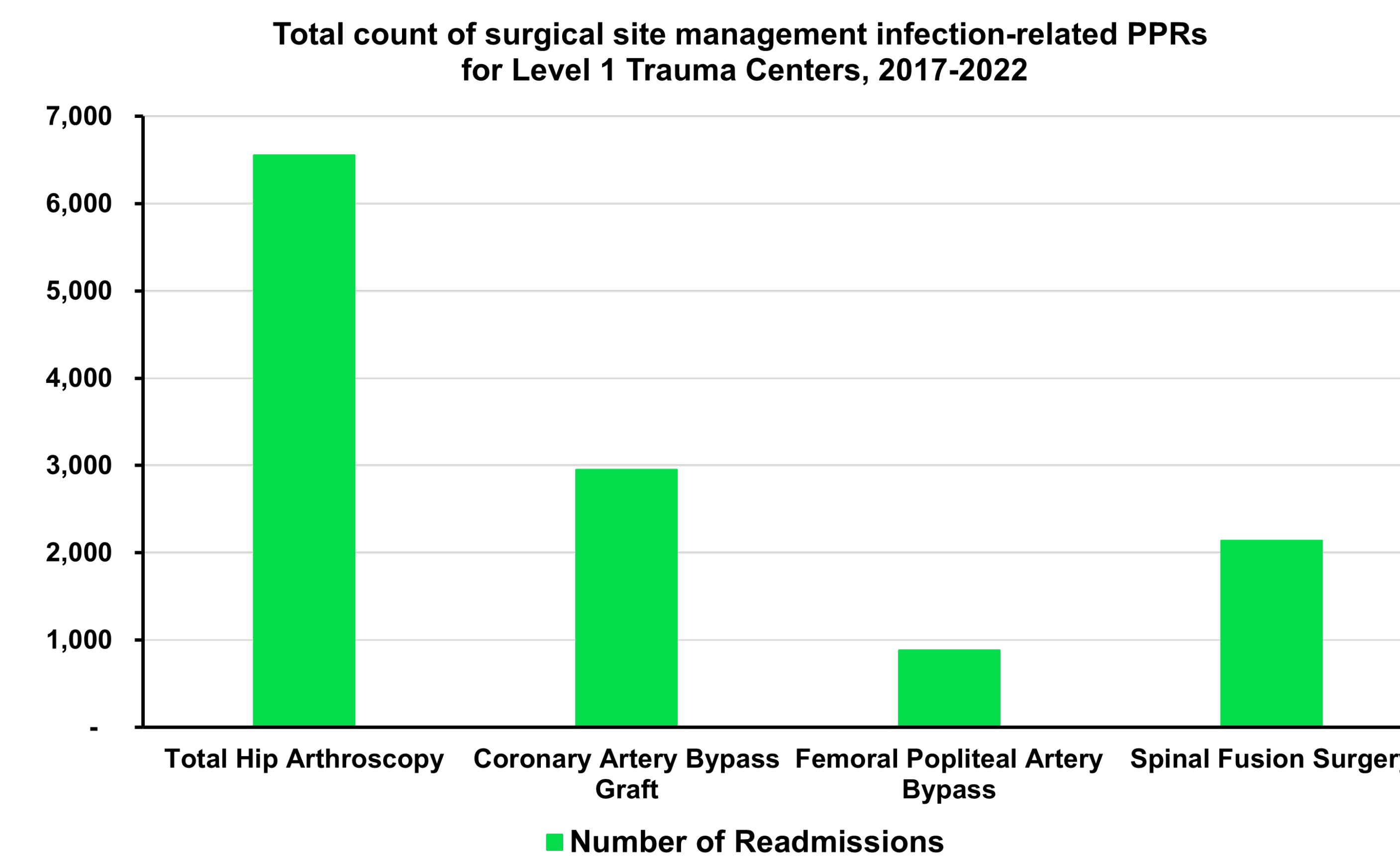


Figure 1. Total count of surgical site management infection-related PPRs for Level 1 Trauma Centers, 2017-2022.

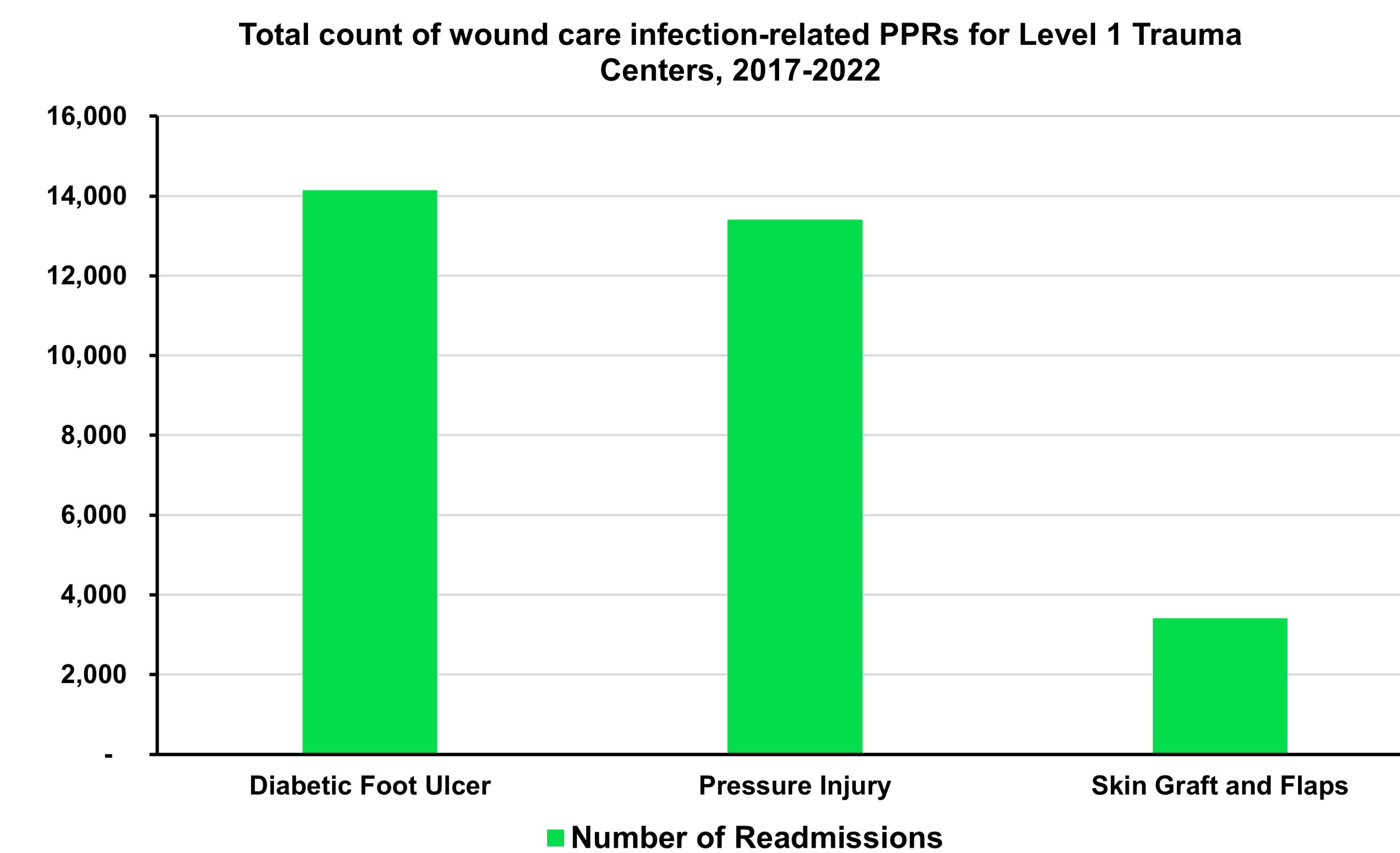


Figure 2. Total count of wound care infection-related PPRs for Level 1 Trauma Centers, 2017-2022.

Conclusions

- Patients in moderate+major SOI categories can make up half to three-quarters of the potentially preventable readmissions after a high-risk procedure.
- Aggressive treatment of these cases could potentially avoid many readmissions and the costs associated with the supplies/labor needed to treat infections, which may present cost savings to health care facilities.

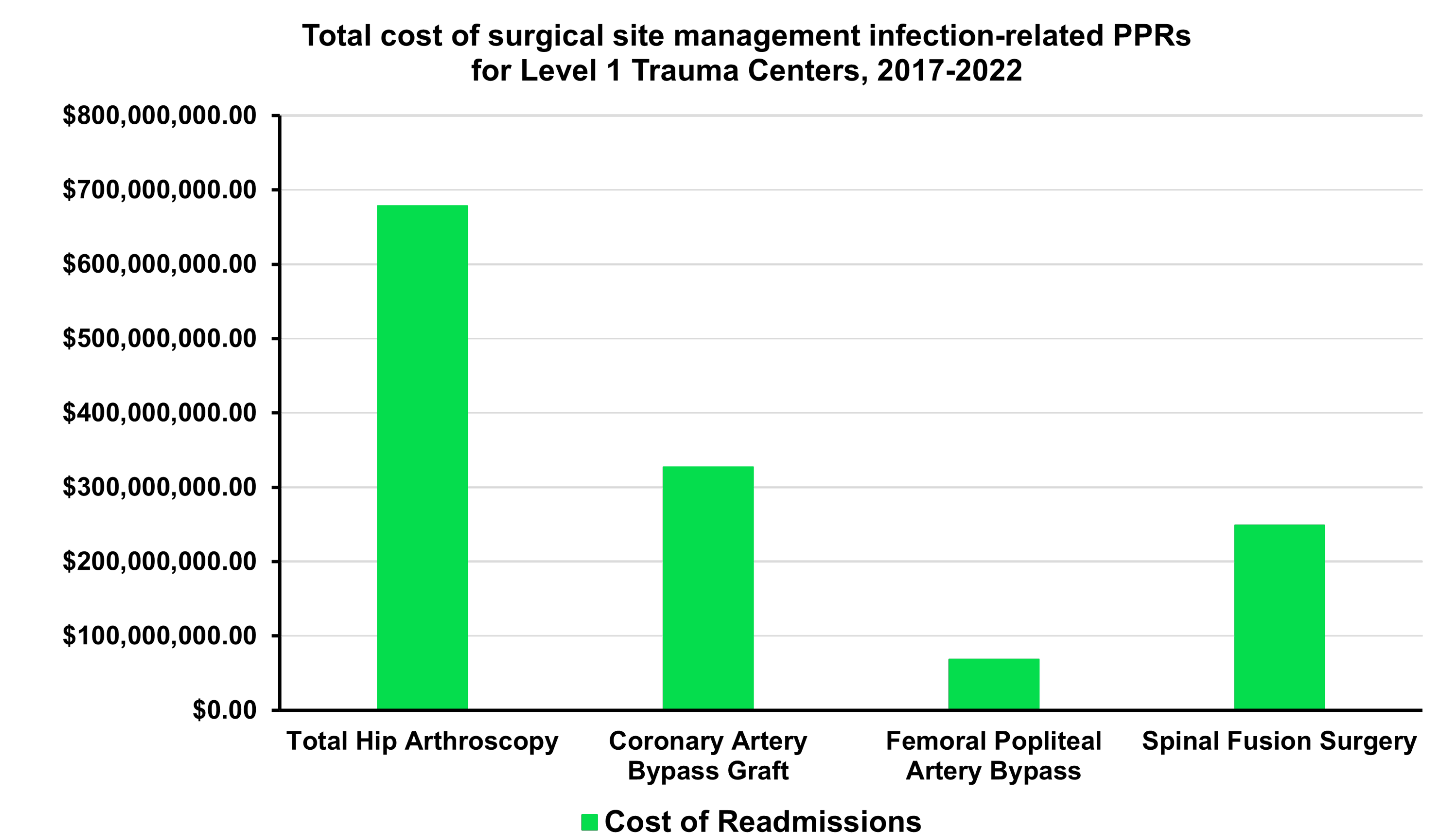


Figure 3. Total cost of surgical site management infection-related PPRs for Level 1 Trauma Centers, 2017-2022.

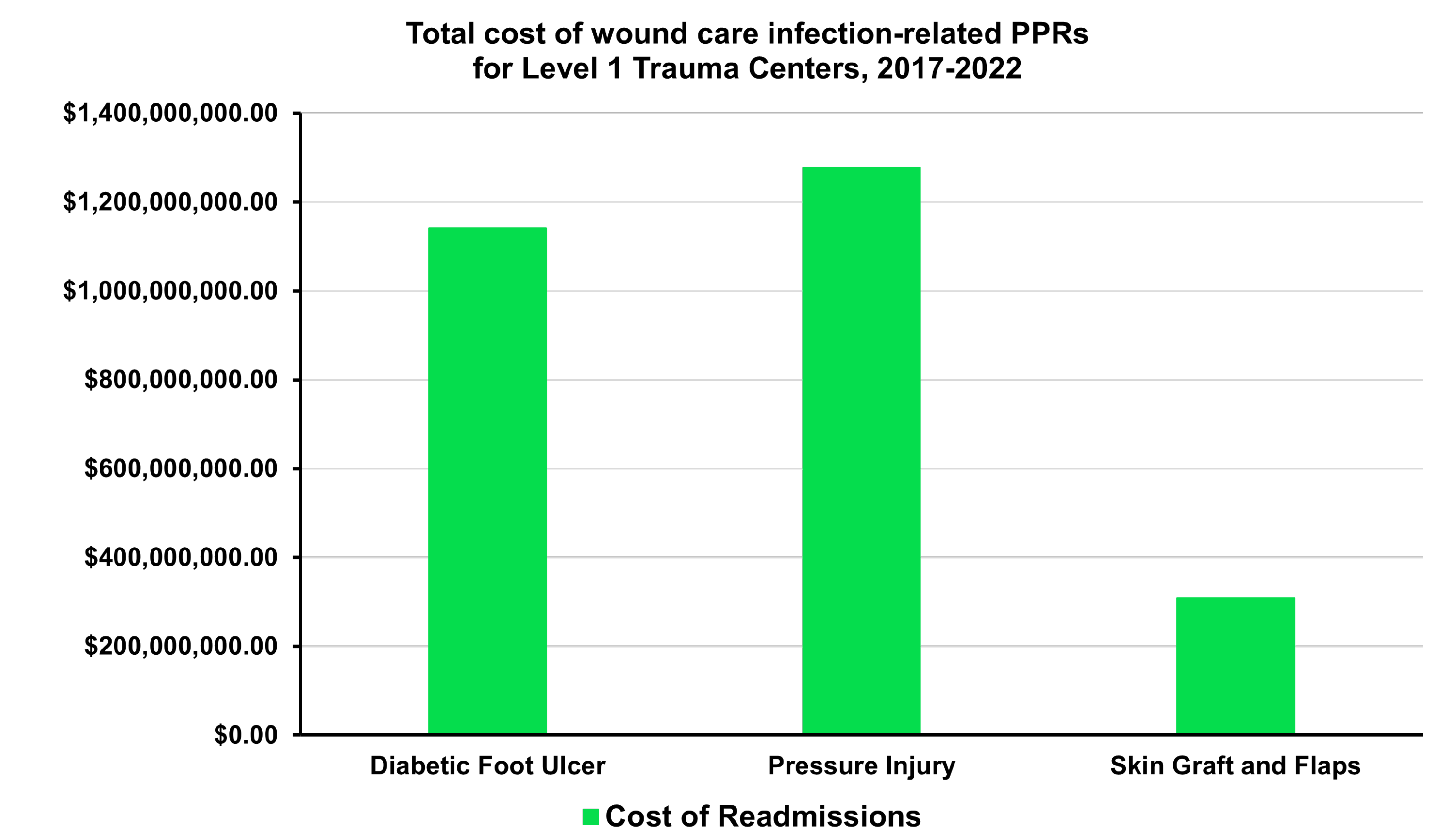


Figure 4. Total cost of wound care infection-related PPRs for Level 1 Trauma Centers, 2017-2022.

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