

## Study Stats



### Economic and Clinical Outcomes for DERMABOND® PRINEO® Skin Closure System vs Skin Staples in Total Knee Arthroplasty (TKA)

**Retrospective, observational study using the Premier® Perspective Hospital Database**

Sutton N, Schmitz ND, Johnston SS. Economic and clinical comparison of 2-octyl cyanoacrylate/polymer mesh tape with skin staples in total knee replacement. *Journal of Wound Care*. 2018;27(Sup4):S12-S22.



#### CONCLUSION

Analysis of data from more than 700 hospitals showed that among patients undergoing TKA, DERMABOND PRINEO System was associated with shorter length of stay, less resource intensive discharge status, and lower all-cause readmission rates compared with skin staples.<sup>1</sup>

N=1,942		DERMABOND PRINEO System	Skin Staples	Reduction	P value
Length of stay (days) <sup>1</sup>		2.8	3.2	12%	0.002*
Discharge to Skilled Nursing Facility (SNF) or other non-home setting <sup>1</sup>		26.4%	38.5%	31%	0.011*
Readmission rates <sup>1</sup>	30-day	1.8%	4.4%	59%	0.006*
	60-day	3.0%	5.4%	44%	<0.001*
	90-day	5.4%	7.4%	27%	0.016*

\*P value of <0.05 denotes statistical significance.



#### Average in-patient daily cost is \$2,338<sup>2</sup>

Reduced length of stay can lead to reduced costs, reduced chance of a patient contracting an infection, increased patient satisfaction, and faster recovery to normal life.

#### Average daily cost of an SNF following orthopaedic surgery is \$393<sup>3</sup>

SNFs and other non-home settings can significantly increase the cost of postoperative care.

#### The mean cost of readmission after TKA was \$11,958 (within 30 days) and \$14,332 (within 90 days) in a large retrospective analysis<sup>4</sup>



Premier® Perspective Hospital Database is one of the largest, statistically certified hospital databases in the world.

- Used in over 350 peer-reviewed publications
- Contains real-world data on hospital resource use, costs, outcomes, and patient/hospital demographics

## SELECTION CRITERIA<sup>1</sup>

- Hospital discharge with a primary International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) procedure code for knee replacement
- Age  $\geq$  18 years
- Principal discharge diagnosis of osteoarthritis
- Elective procedure
- Documented hospital costs

Primary Outcomes	Exploratory Outcomes
Hospital length of stay (LOS)	Operating room time
Hospital costs	Surgical site infections (SSIs)
Hospital discharge status (home/home health vs. skilled nursing facility/other)	Non-prophylactic antibiotic use
	All-cause readmissions within 30, 60, and 90 days post-discharge

## STATISTICAL ANALYSIS METHODS<sup>1\*</sup>

- Propensity score matching (1:1 ratio) was performed
- Patients receiving DERMABOND<sup>®</sup> PRINEO<sup>®</sup> Skin Closure System and patients receiving traditional skin staples were matched based on demographics (ie, age, sex, race), patient comorbidities, hospital characteristics (ie, region, teaching status, bed size, procedure volume), and surgeon specialty
- After matching, multivariable regression analyses controlled for selected characteristics that still differed between groups



Propensity score matching is a statistical technique by which groups are matched to one another to balance and minimize bias.

Multivariable regression analyses control the remaining variables, so outcomes depend solely on skin closure method.

For complete indications, contraindications, warnings, precautions, and adverse reactions, please reference full package insert.

<sup>1</sup>Unmeasurable variables such as provider skill, overall patient health, and other factors may lead to residual confounding after adjusted analyses.

<sup>1</sup>Due to the non-randomized nature of this study, causality cannot be established for the observed relationships.

**References:** 1. Sutton N, Schmitz ND, Johnston SS. Economic and clinical comparison of 2-octyl cyanoacrylate/polymer mesh tape with skin staples in total knee replacement. *Journal of Wound Care*. 2018;27(Sup4):S12-S22. 2. Hospital adjusted expenses per in-patient day. Kaiser Family Foundation website. Available at: <http://kff.org/health-costs/state-indicator/expenses-per-inpatient-day/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>. Accessed January 30, 2019. 3. Herbold, JA, Bonistall K, Walsh MB. Rehabilitation following total knee replacement, total hip replacement, and hip fracture: a case-controlled comparison. *J Geriatr Phys Ther*. 2011;34:155-160. 4. Kurtz SM, Lau EC, Ong KL, Adler EM, Kolisek FR, Manley MT. Which clinical and patient factors influence the national economic burden of hospital readmissions after total joint arthroplasty? *Clin Orthop Relat Res*. 2017;475:2926-2937.