

Cost Effectiveness of a Ceramide Infused Skin Barrier Among Medicare Patients in the United States Who Have Recently Undergone Ostomy Surgery

Poster #24

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Introduction:

- Up to 75% of ostomy patients experience post-operative complications of the skin,¹ most commonly, peristomal skin complications (PSCs).²
- Rates of PSC range from 18%–60%,² and PSCs account for around 40% of all visits to stoma care nurses.³
- Given the prevalence and associated cost of PSCs, instructions to ostomy patients often include strategies to maintain peristomal skin health.

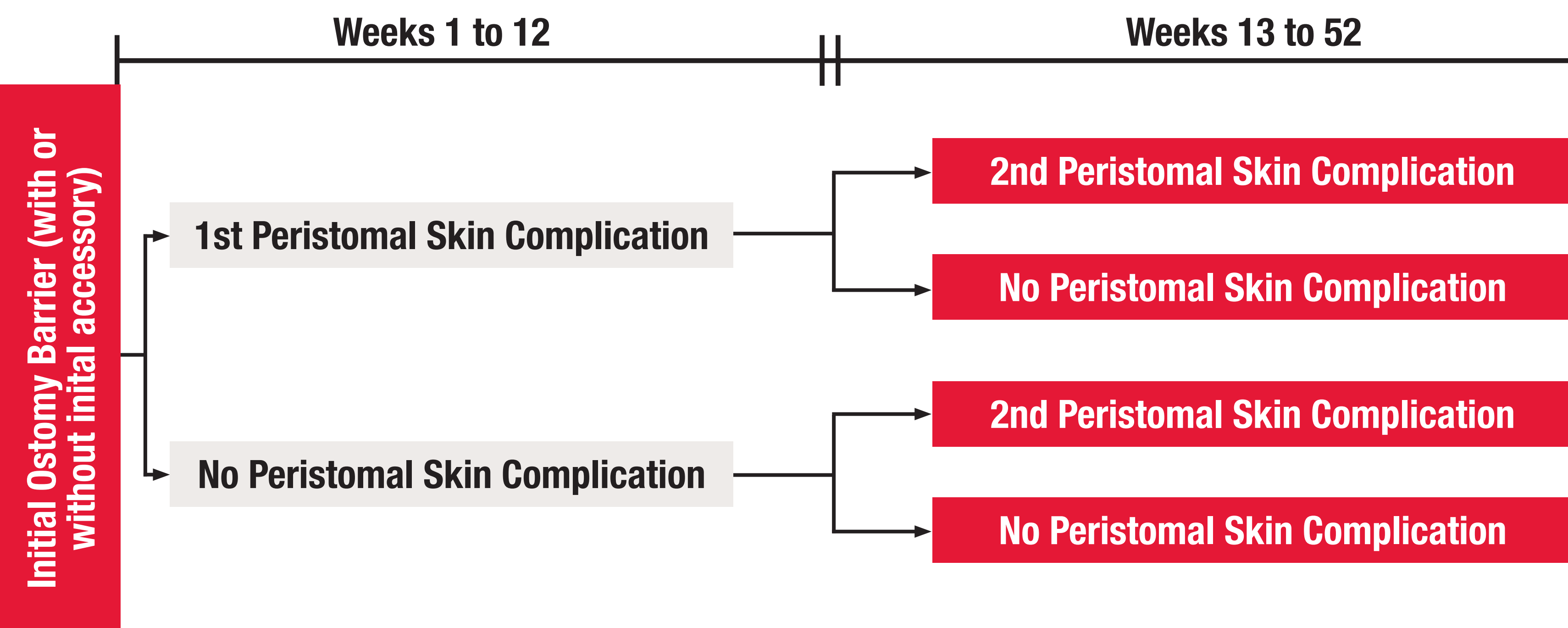
Objective:

- Estimate the cost-effectiveness of a ceramide-infused skin barrier (CIB)⁴ vs. other commercially available, non-ceramide, skin barrier (standard of care [SoC]) among patients who recently underwent fecal ostomy surgery.

Methods:

- A decision-tree model was used to estimate stoma and cost related outcomes incurred in a one-year period following fecal ostomy surgery.
- Patients enter the model post discharge, and are at risk for two PSCs within the year; the first PSC may occur within weeks 1–12 or weeks 13–52. Patients with a PSC within weeks 1–12 are at risk for a 2nd between weeks 13–52.

Figure 1: Timeline for PSC Occurrence



- The model estimates use and cost of the following:
 - » **Uncomplicated ostomy**; the time without PSC to include use of baseplates, pouching supplies, and accessories

- » **PSC**; time with a PSC (mild, moderate, or severe), to include increased use of pouching supplies and accessories, pharmacotherapy, and visits to healthcare professionals.
- Parameter estimates were taken from ADVOCATE(5), a trial investigating stoma-related healthcare costs over 12 weeks in new patients randomized to CIB vs. SoC.
- Incremental costs and quality adjusted life-days (QALD's: CIB vs. SoC)
- The net monetary benefit (NMB) of CIB vs. SoC; $(E * WTP) - C$, where E = effectiveness of CIB, i.e., the incremental QALDs expected with use of CIB (vs. SoC); WTP = willingness-to-pay, defined as \$137/QALD (i.e., \$50,000 per QALY); C = incremental costs expected with CIB (vs. SoC)

Figure 2: Model Inputs

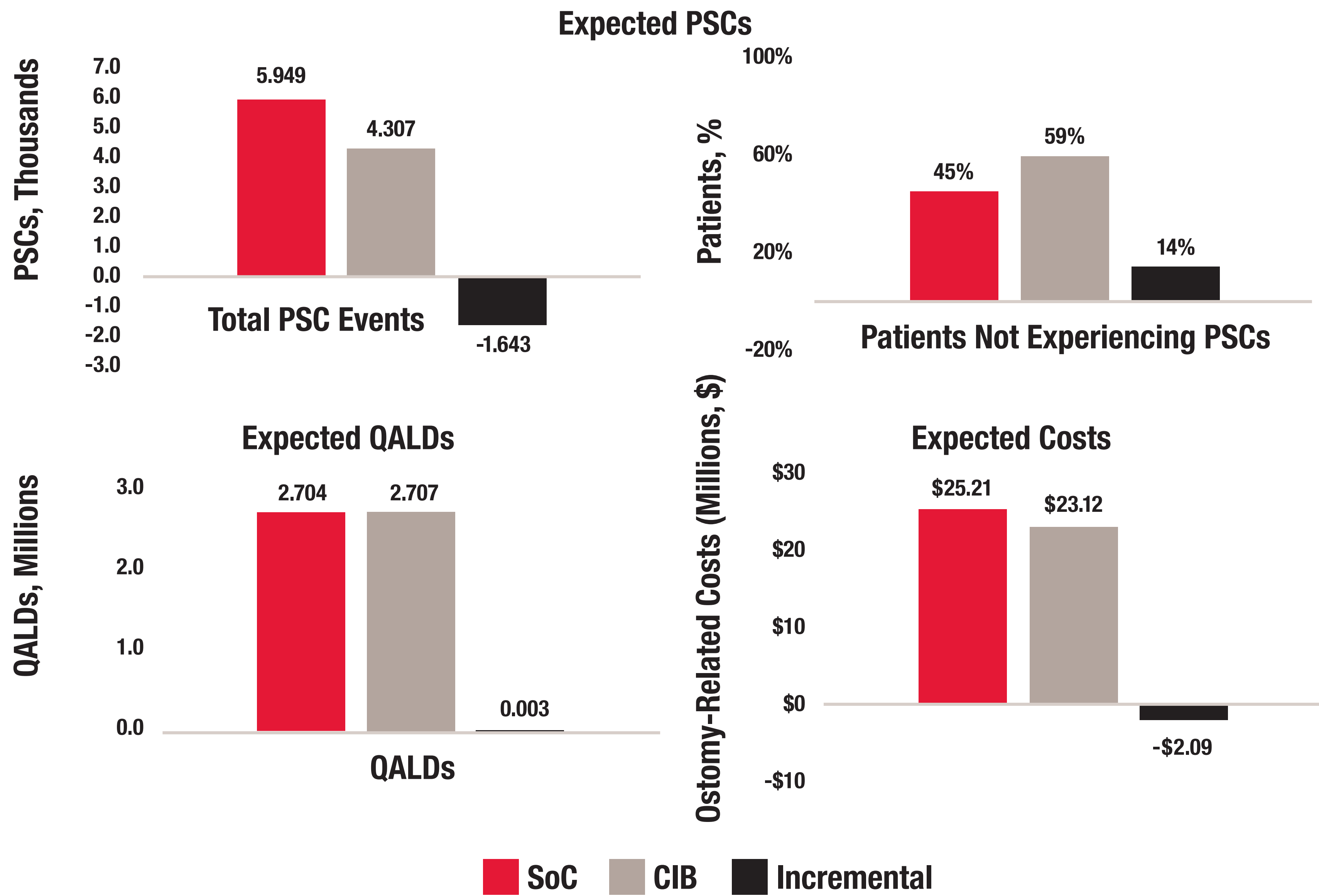
Parameter	SoC	CIB	Parameter	Value
Probability of ≥1 PSCs, % ⁵	41	55	QALD with uncomplicated ostomy ⁷	0.754
Probability of a second PSC, %	15	10	QALD decrement – Mild PSC ⁷	-0.057
Accessory use at model onset, % ⁶	66	73	QALD decrement – Moderate PSC ⁷	-0.107
Daily cost (uncomplicated ostomy), \$	6.13	5.83	QALD decrement – Severe PSC ⁷	-0.165
Cost per mild PSC, \$	527	445	Mild PSC duration, days	17.5
Cost per moderate PSC, \$	536	633	Moderate PSC duration, days	33
Cost per severe PSC, \$	482	571	Severe PSC duration, days	33

CIB = ceramide-infused skin barrier; PSC = peristomal skin complications; QALD = quality-adjusted life-day; SoC = standard of care. Note: Probabilistic and deterministic sensitivity analyses of the model were run 2,000 times.

Results:

- In a hypothetical cohort of 10,000 new stoma patients, use of CIB (vs. SoC) was expected to result in 1,643 less PSCs, 3,471 more QALDs, 1,400 more patients without PSCs, and cost savings of \$2.1M (over one year).
- On a patient basis, expected cost savings were \$210/patient.
- CIB therefore estimated to dominate SoC; expected NMB of \$256/patient.

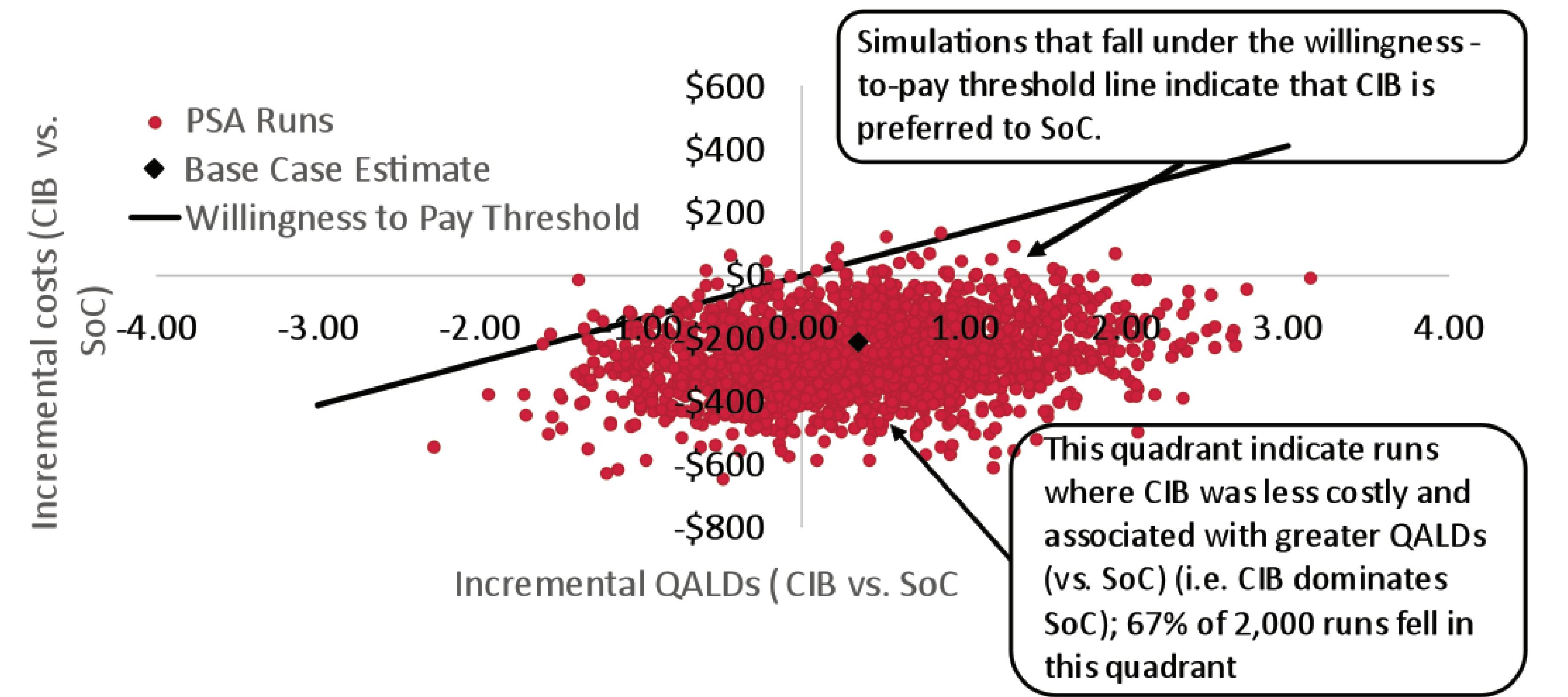
Figure 3: Expected PSCs, QALDs, and Total Ostomy-related Costs Over 1 Year: Base Case



Sensitivity Analyses:

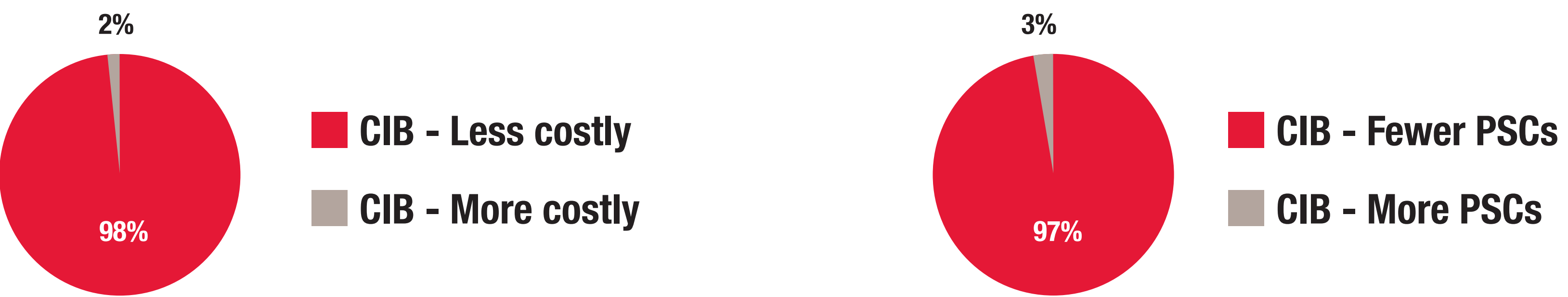
- In PSA, CIB was the preferred option in 98% of the 2,000 simulation runs.

Figure 4: Results of Probabilistic Sensitivity Analyses



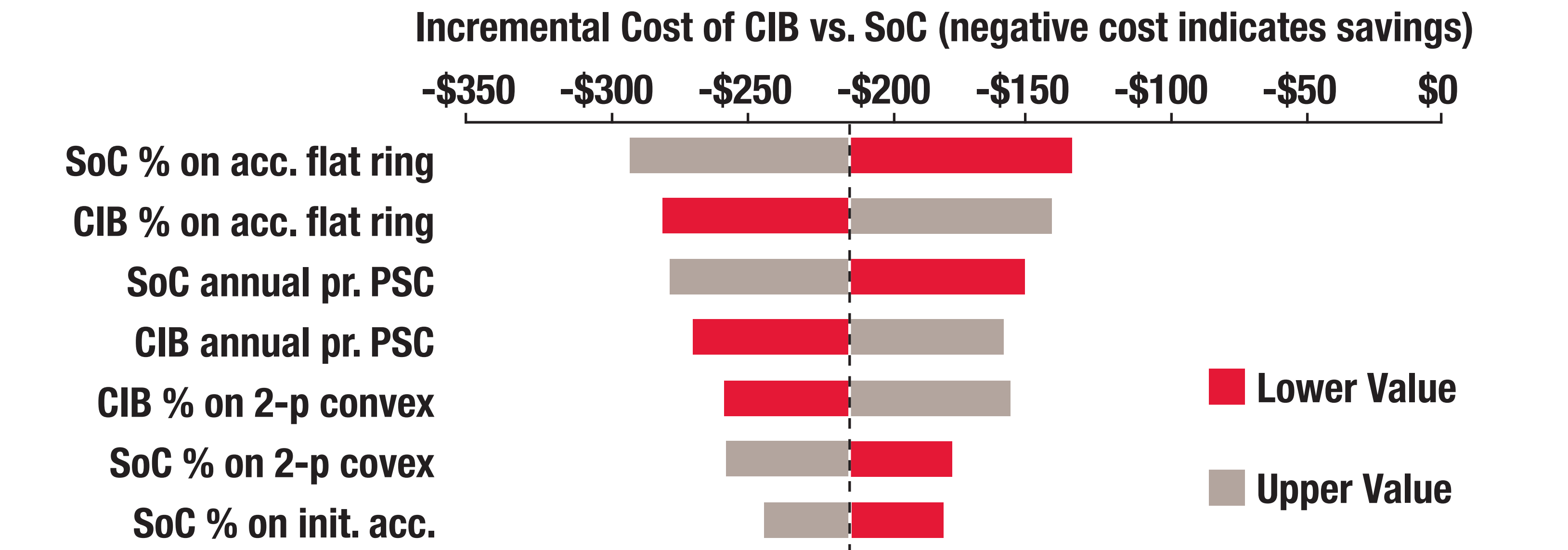
- CIB was the less costly option in 98% of simulations; it also was associated with less PSCs in 97% of runs.
- In nearly all PSA runs, use of CIB in lieu of SoC resulted in lower costs and fewer PSCs

Figure 5: CIB vs. SoC: Costs and Number of PSCs



- CIB was consistently less costly and gained more QALDs (i.e., dominant) (both vs SoC).

Figure 6: Results of Deterministic Sensitivity Analyses



Conclusion:

- CIB resulted in 27% fewer PSCs, 8% lower healthcare costs, and 0.13% greater QALDs (all relative to SoC); findings were robust in sensitivity analyses.
- Our analyses indicated that CIB is a cost-effective option for patients who recently underwent ostomy surgery.

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Brands: Hollister Incorporated, New Image, CeraPlus Controls: Hollister Incorporated, New Image, FlexWear/Flexband