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ENHANCING LIFE THROUGH COLLAGEN

To
Medical Director,
Coverage Policy Committee of Medical Product Insurance

Date: 05/28/2026

Subject: Request for Coverage Evaluation and Reimbursement Consideration of Helicoll® (Q4164)

Encoll Corp. respectfully submits Helicoll® Skin Substitute (HCPCS Q4164) for evaluation and reimbursement consideration. Helicoll® is an FDA 510(k)-cleared, high-purity Type I collagen–based advanced skin substitute indicated for the management of acute and chronic wounds, including diabetic foot ulcers, venous leg ulcers, pressure ulcers, burns, surgical wounds, and partial- and full-thickness wounds.

Helicoll® has demonstrated favorable clinical outcomes in multiple randomized controlled studies, including accelerated wound closure, enhanced granulation tissue formation, and early neovascularization, commonly observed within 4 to 5 days following application. Its non-crosslinked, highly biocompatible high purity Type-I collagen matrix is specifically designed to support tissue regeneration through phosphorylation while preserving native collagen bioactivity.

Available clinical and health economic evidence suggests that Helicoll® may contribute to improved patient outcomes, reduced application frequency, lower complication rates, and decreased healthcare resource utilization, potentially supporting reductions in the overall cost of care.

Enclosed for your review are:

- Clinical evidence summary
- Comparative effectiveness data
- Economic impact analysis
- Physician support letters

The purpose of this submission is to support the assessment of Helicoll® with respect to its clinical utility, healthcare resource utilization, and reimbursement eligibility.

We appreciate your time and consideration and would be pleased to provide any additional information that may assist in your review.

Sincerely,

Subra Guna | PhD
President
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Helicoll® Type-I Collagen Skin Substitute (Q4164)

Executive Summary

Product Overview

Helicoll® high-purity Type I Collagen matrix is a sterile, semi-occlusive, self-adhering skin substitute indicated for the management of acute and chronic skin wounds. Helicoll received FDA 510(k) clearance on August 12, 2004, and approved by Medicare in 2006. It was subsequently recognized by Medicare as a skin substitute under HCPCS Q4164 in 2015 due to its bioresorbability & tissue regenerative capabilities.

Indications

Helicoll is indicated for:

- Diabetic Foot Ulcers (DFUs)
- Venous Leg Ulcers (VLUs)
- Pressure ulcers
- Chronic vascular ulcers
- Skin donor sites
- Second-degree burns
- Surgical wounds
- Trauma wounds
- Partial and full-thickness wounds

Product Characteristics

- **High-Purity Non-crosslinked Type-I Collagen:** Most commercial collagen medical products are not purified type-I collagen and need to reduce their immunogenicity by crosslinking to avoid the rejection of the contaminating molecules like Elastin. Helicoll uses patented high purity Type-I Collagen that maintains the biological recognition by keeping the collagen un-crosslinked for clinically proven ideal outcome.

- **Enhanced Bioactivity:** Helicoll incorporates phosphorylation-based collagen bioactivation to improve cellular signaling, tissue regeneration, and wound healing response.

- **Optimized Porosity:** While most lyophilized collagen matrices exhibit pore sizes of approx. 60 to 600 µm, Helicoll provides a more physiologically favorable organized porosity of approximately 20 µm to support cellular migration and integration.

- **Proof of Helicoll Advantage:** Helicoll has consistently demonstrated early neovascularization and rapid granulation tissue formation within 4 to 5 days, reflecting its exceptional regenerative bioactivity and tissue integration capability. These clinically documented healing characteristics clearly distinguish Helicoll from conventional wound dressings and strongly support its classification as an advanced bioactive skin substitute.

Sizes of Helicoll:

Item Name & Size	Cat/Item #	HCPCS	Pkg Type	UOM
Helicoll 0.5 in dia disc / 1.27 cm dia disc (1 sq cm)	HC0.5dia	Q4164	2 sheets/bx	Box
Helicoll 1.0 in dia disc / 2.54 cm dia disc (5 sq cm)	HC1.0dia	Q4164	2 sheets/bx	Box
Helicoll 0.8 in x 1.6 in / 2 cm x 4 cm (8 sq cm)	HC0.8x1.6	Q4164	2 sheets/bx	Box
Helicoll 1.2 in x 1.6 in / 3 cm x 4 cm (12 sq cm)	HC1.2x1.6	Q4164	2 sheets/bx	Box
Helicoll 1.6 in x 1.6 in / 4 cm x 4 cm (16 sq cm)	HC1.6x1.6	Q4164	2 sheets/bx	Box
Helicoll 2 in x 2 in / 5 cm x 5 cm (25 sq cm)	HC2x2	Q4164	5 sheets/bx	Box
Helicoll 2 in x 4 in / 5 cm x 10 cm (50 sq cm)	HC2x4	Q4164	5 sheets/bx	Box
Helicoll 4 in x 4 in / 10 cm x 10 cm (100 sq cm)	HC4x4	Q4164	5 sheets/bx	Box
Helicoll 8 in x 8 in / 20 cm x 20 cm (400 sq cm)	HC8x8	Q4164	5 sheets/bx	Box

Clinical Evidence Package

Diabetic Foot Ulcer (DFU)[1]

Clinical Outcomes

Multiple randomized controlled clinical studies demonstrated superior and clinically favorable healing outcomes with Helicoll compared with dehydrated human amnion/chorion membrane (dHACM)–based skin substitute therapies.

Key Findings of the Multicenter Study

Endpoint	Helicoll Outcome
Complete wound closure	83.3%
≥50% wound reduction	88.3%
Mean time to closure	~22 days
Mean applications per episode	~2.8 applications
Recurrence rate	Low
Adverse events	Low; no serious adverse events reported

Venous Leg Ulcer (VLU)[2]

Clinical Outcomes

Randomized controlled clinical trial demonstrated superior healing performance of Helicoll compared with dHACM.

Endpoint	Helicoll Outcome
Complete closure rate	70%
Mean wound area reduction	78.9%
Mean time to closure	~42.6 days
Repeat applications required	26.7%
Recurrence	None reported during follow-up

Histological Advantages using specific Metrics

Compared with controls, Helicoll demonstrated:

- 46% higher vascular infiltration
- 64% superior epithelial migration
- 45% higher fibroblast activity
- 65% higher capillary density
- 49% superior collagen deposition
- Reduced inflammatory response

Limb Preservation & Clinical Utility

Clinical findings suggest that faster wound closure and improved tissue regeneration may contribute to:

- Reduced infection risk
- Lower hospitalization rates
- Reduced recurrence
- Potential reduction in amputation risk in diabetic populations.

Pressure Ulcer[3]

Clinical Outcomes

Randomized comparative study demonstrated favorable healing outcomes with Helicoll compared with dHACM and conventional therapies.

Endpoint	Helicoll Outcome
Complete wound closure	75%
Mean wound area reduction	78.5%
Neo-epithelialization	Grade 3 in 70%
Mean reapplications	Fewer than comparator groups
Structural stability of healed wound	60%
Adverse events	Low; no serious adverse events reported

Full Thickness Wounds Using NPWT Comparator[4]

Clinical Outcomes

A comparative clinical study versus Negative Pressure Wound Therapy (NPWT) demonstrated significantly improved wound healing outcomes with Helicoll.

Endpoint	Helicoll Outcome
Wound area reduction at 7 weeks	89.35%
≥50% wound healing	94.23%
Faster neovascularization	Demonstrated by Day 5
Improved capillary density	Superior to NPWT
Pain during dressing changes	0%
Quality of life improvement	Superior EQ-5D-5L scores
Healed wound appearance	Superior Vancouver Scar Scale scores

Helicoll Healing Kinetics & Safety

Rapid epithelialization, accelerated wound healing progression, and robust granulation tissue formation were consistently observed following application. Histological and histopathological analyses demonstrated increased vascular infiltration and neovascularization, enhanced fibroblast activity, improved collagen organization and deposition, faster neo-epithelialization, and reduced inflammatory response compared with dHACM controls and NPWT. Enhanced tissue regeneration was associated with superior healing rates compared with conventional pressure ulcer management approaches, with granulation tissue formation and neovascularization consistently observed within 4–5 days following application.

The treatment demonstrated a favorable safety and tolerability profile, with no serious adverse events, graft rejection, delayed integration, or significant inflammatory reactions reported. Lower dressing-change pain compared with NPWT was observed, while mild local irritation, superficial infection, allergic reactions, and other minor local adverse events were infrequent, manageable, and resolved without intervention.

References:

1. Narayan, N., Shivaiah, R., Kumar, V., Kumar, K. M., Chethan, S., Gowda, S., ... & Manakchand, K. K. (2025). Comparative efficacy of high purity type I collagen-based skin substitute and dehydrated human amnion/chorion membrane in diabetic foot ulcers: a multicentre randomized controlled trial. Cureus, 17(10). https://pmc.ncbi.nlm.nih.gov/articles/PMC12536077/
2. Narayan, N., Shivannaiah, C., Gowda, S., & Chethan, S. (2025). Evaluating the efficacy of high-purity type I collagen-based skin substitute versus dehydrated human amnion/chorion membrane in the treatment of venous leg ulcers: a randomized controlled clinical trial. *Cureus*, *17*(7). https://pmc.ncbi.nlm.nih.gov/articles/PMC12311250/
3. Narayan, N., Ramegowda, Y. H., Raghupathi, D. S., Chethan, S., Gowda, S., Ramegowda, Y., & Raghupathi, D. (2025). Biological skin substitutes in pressure ulcers: high-purity type I collagen-based versus amnion/chorion membrane. Cureus, 17(8). https://pmc.ncbi.nlm.nih.gov/articles/PMC12377520/
4. Narayan, N., Raghupathi, D., Ramamurthy, V., Chethan, S., & Gowda, S. (2025). A comparative analysis in the treatment of full-thickness wounds: negative-pressure wound therapy (npwt) combined with high-purity type I collagen-based skin substitute versus NPWT alone. *Cureus*, *17*(11). https://pmc.ncbi.nlm.nih.gov/articles/PMC12619950/

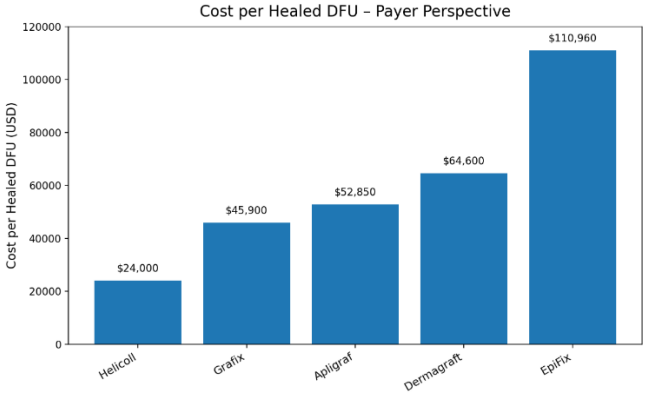
Comparative Economic Package

Published comparative economic modeling demonstrated favorable cost-effectiveness for Helicoll in diabetic foot ulcer management.

Table: Reported Healing Outcomes and Calculated Cost per Healed DFU

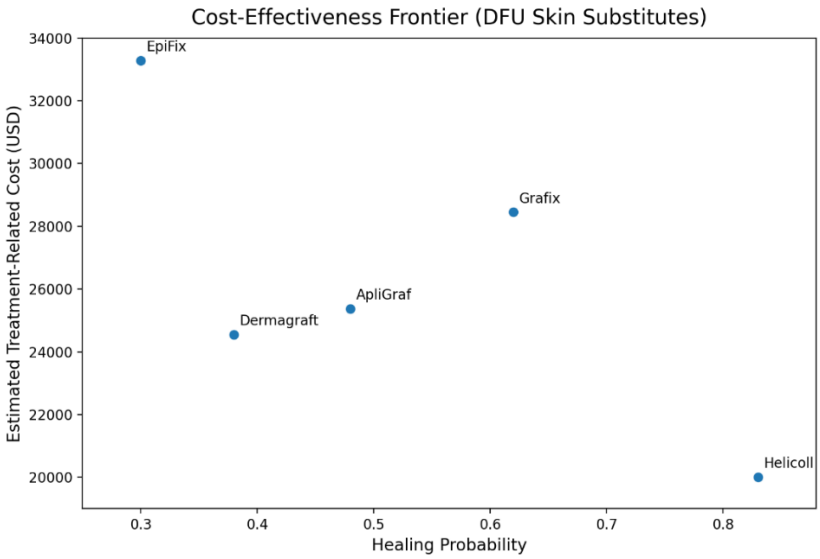
Product*	Estimated Treatment-Related Cost (USD)	Healing Probability	Approx. Cost per Healed DFU (USD)
Helicoll®	$20,000	0.83 at 5 wks	$24,000
Grafix®	$28,449	0.62 at 12 wks	$45,900
Apligraf®	$25,370	0.48 at 12 wks	$52,850
Dermagraft®	$24,552	0.38 at 12 wks	$64,600
EpiFix®	$33,288	0.30 at 12 wks	$110,960

Figure 1. Cost per Healed DFU (Payer Perspective)



Note: Bar chart showing the cost per healed DFU for each skin substitute. Helicoll has the lowest cost compared with other products

Figure 2. Cost-Effectiveness Frontier for DFU Skin Substitutes



Note: Scatter plot of annual cost per patient versus healing probability at 12 for all products except Helicoll at 5 weeks. Treatments in the lower-right quadrant are more cost-effective. Helicoll shows a favorable balance, with high healing probability and the lowest annual cost.

Economic Advantages

- Faster closure may reduce total treatment duration.
- Lower application frequency may improve patient convenience and reduce healthcare utilization.
- Reduced complications and recurrence may decrease long-term healthcare costs

Helicoll Clinical Studies

https://helicoll.com/clinical-studies/

or

SCAN QR CODE

Physician Support Letters

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