CASE STUDY

The Hospital of the University of Pennsylvania implements AI malnutrition screening with HealthLeap

$16M+ annualized impact at a single hospital site due to increased MCC capture and saving over 4812 bed days annually

Q2 FY2026 Results | Penn Medicine | March 2026

$16.1M	4,812	27%
Annualized Impact *at a single hospital site*	**Observed Bed-Days Saved** *annualized*	**MCC Increase** *vs. prior year*

The Challenge

Malnutrition, whether hospital-acquired or present-on-admission, is consistently underdiagnosed in acute care settings (affecting ~20–50% of hospitalized patients but diagnosed only in ~9% of cases). Missed diagnoses directly reduce reimbursement (malnutrition MCCs), and are associated with 1.9× longer length of stay and 3.4× higher mortality, ultimately lowering quality scores.[1]

Traditional manual screening is designed for simplicity over accuracy[2] and is typically administered by nurses only once upon admission.[3] This delays identification by days, leads to false flags, and often misses patients entirely.[4,5]

The Partnership

In June 2025, HUP's Clinical Nutrition Department, who is known for having a strong malnutrition program, partnered with HealthLeap to deploy an AI-driven malnutrition screening model across its inpatient population. The rollout moved quickly: a beta launch with 7 registered dietitians (RDs) in August, a full-team rollout in September, and full implementation by October 1, 2025.

HealthLeap's AI-driven model continuously analyzes EHR data to proactively identify patients at high risk of malnutrition, including those not captured by traditional screening tools. The platform

delivers prioritized patient lists directly in the RDs' workflow, improving team efficiency and enabling earlier clinical intervention. By accelerating assessment, treatment, and diagnosis, HealthLeap supports more timely and clinically appropriate patient care, ultimately improving patient outcomes and malnutrition code capture.

Results: Q2 FY2026 (Oct–Dec 2025)

All impact figures below are annualized from Q2 FY2026 actuals, validated internally by Ed Chen.

Financial Impact

Metric	Projected	Actual (Annualized)	Value
Reimbursement Lift (Malnutrition MCCs)	26% increase	**27% increase**	**$6.3M/yr**
LOS Reduction	Estimated 2.1 days reduction for patients with malnutrition	**2.18 days reduction** for patients with malnutrition (risk-adjusted, O/E-standardized savings) **Annualized 4,812 bed-days** (13.2 beds/day)	**$9.8M/yr**
Quality: LOS O/E Improvement	Suspected, unquantified	**Improved 0.03**	—
Total Financial Impact			**$16.1M/yr**

Patient Health Outcomes

Beyond financial impact, HealthLeap's core value is getting the right care to patients faster. By continuously analyzing the full EHR, not just standard screening inputs, the model identifies patients at risk for malnutrition who would otherwise go undiagnosed and untreated for days, or be missed entirely.

PATIENT STORY: CARDIAC SURGERY

A cardiac surgery patient was identified by HealthLeap on hospital day 1, more than two days earlier than standard screening would have flagged them. The early identification enabled the clinical nutrition team to intervene immediately, diagnose severe malnutrition present on admission, and initiate a targeted nutrition care plan before the patient's surgical recovery was underway.

PATIENT STORY: HEPATOLOGY

A hepatology patient with an extended hospital stay was identified exclusively by HealthLeap on hospital day 10, never flagged by traditional screening tools. The RD team diagnosed severe malnutrition, capturing both a Vizient quality impact and a malnutrition MCC. Without HealthLeap, this patient would have been missed entirely.

PATIENT STORY: ONCOLOGY (ED ADMIT)

An oncology patient admitted through the emergency department was identified by HealthLeap on day 1, enabling the care team to begin nutritional intervention two days earlier than standard workflows. The patient was diagnosed with severe malnutrition present on admission, capturing both a Vizient quality impact and a malnutrition MCC.

Clinical Metrics

Malnutrition diagnoses rose 21% year-over-year *(466 total in Q2: 311 severe, 155 moderate)*. Malnutrition MCCs increased 27% year-over-year across the medical center.

Financial Methodology

Length-of-stay methodology:

LOS impact is calculated as = (days saved X direct variable cost per day) + (days saved X occupancy rate X contribution margin).

Accounted for denials/write-offs, actual occupancy rate, actual payment rates across Medicare, Medicaid, Commercial, etc.

Implementation Timeline

Date	Milestone
July 2025	Partnership signed, technical implementation begins
August 2025	Beta launch with 7 RDs
September 2025	Full team go-live
October 2025	Full implementation; 2 new RDs onboarded*
Oct–Dec 2025	Q2 FY26: $16.1M annualized impact measured

*Baseline clinical nutrition program at HUP efficiently surfaced high rates of malnutrition, and their unique opportunity was to capture additional patients missed by traditional workflows. Staffing ratios stayed constant.

What's Next

HealthLeap and HUP are deepening the partnership across three dimensions:

- **Optimizing impact:** Priority scoring to surface highest-impact patients first; expanded identification of patients deteriorating during their stay.
- **Multi-site expansion:** Scaling HUP's proven model across Penn Medicine to establish a unified malnutrition strategy system-wide.
- **New condition expansion:** Exploring pressure injuries (HAPI), aspiration pneumonia risk, CHF readmission prevention, and hospital-at-home patient identification.

References

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2. van Dronkelaar C, Tieland M, Cederholm T, et al. Malnutrition screening tools are not sensitive enough to identify older hospital patients with malnutrition. Nutrients. 2023;15(24):5126. doi:10.3390/nu15245126.
3. American Society for Parenteral and Enteral Nutrition (ASPEN). Key Nutrition Screening, Assessment, and Malnutrition Diagnostic Processes for Adults. Silver Spring, MD: ASPEN; 2024.
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About HealthLeap

HealthLeap partners with leading health systems to improve clinical outcomes and financial performance by leveraging AI for inpatient screening. Its AI systems continuously analyze the EHR to identify at-risk patients earlier, enabling faster clinical intervention and appropriate capture so that health systems are reimbursed appropriately for the risk in their population and the care they deliver.

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