NU-Core
Northwestern University
Center for Abdominal Core
Health and Hernia Care
stronger core, stronger you

Evaluating the Effects of Surgical Site Infections on Patients with Different Socioeconomnic Statuses: A Mixed-Methods Study

Nancy Ly, MD[1]; Megan Melland-Smith, MD[1]; Courtney Collins, MD[2]; Kun Bai, MS[3]; Michael J, Rosen, MD[1]

[1]Northwestern University Feinberg School of Medicine, Chicago, IL [2]Ohio State University Wexner Medical Center, Columbus, OH [3]Vanderbilt University, Nashville, TN

BACKGROUND

Preoperative optimization is standard practice to reduce complications.

Patients with lower socioeconomic status (SES) face more barriers to optimization.

These barriers may delay access to definitive repair and worsen quality of life.

It remains unclear whether current optimization practices contribute to disparities in outcomes and patient experience.

OBJECTIVE

To evaluate how socioeconomic status influences both surgical outcomes and patient experience following ventral hernia repair.

METHODS: MIXED-METHODS STUDY

Quantitative Arm

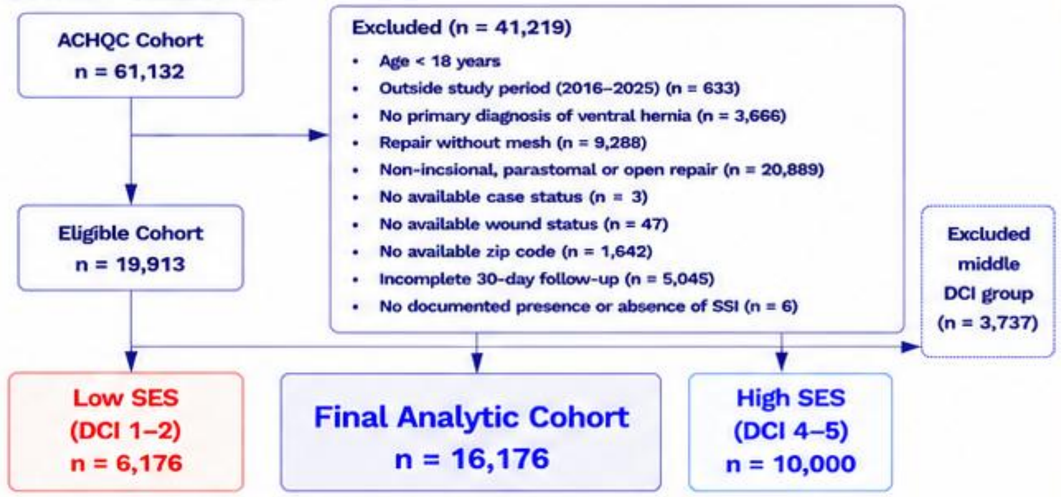
- Retrospective cohort study using ACHQC (2016–2025)
- Adults undergoing open ventral hernia repair with mesh
- SES measured using Distressed Communities Index (DCI)
- Outcomes:
  - Wound morbidity: SSI, SSO
  - Healthcare utilization: LOS, readmission, reoperation
  - Quality of life: HerQLes, PROMIS 3a)

Qualitative Arm

- Semi-structured patient interviews
- Explored barriers to care, optimization experiences, and recovery
- Purposeful sampling across socioeconomic strata
- Target enrollment: n = 20 or thematic saturation
- Enrollment ongoing; emerging themes presented

RESULTS: QUANTITATIVE ARM

COHORT SELECTION



BASELINE RISK & OPERATIVE COMPLEXITY

Characteristic	Low SES (n = 6,176)	High SES (n = 10,000)	P-value
Current Smoking	11%	7%	<0.001
Diabetes Mellitus	23%	17%	<0.001
BMI > 30 kg/m²	65%	56%	<0.001
Contaminated/Dirty Wound	9%	5%	<0.001
Median Hernia Width (cm) ((QR)	8 (5 – 12)	5 (3 – 9)	<0.001

Low SES patients presented with significantly greater optimization burden and operative complexity, and worse baseline quality of life.

WOUND MORBIDITY: UNADJUSTED EVENT RATES

	Low SES (n = 6,176)	High SES (n = 10,000)
SSI	6% (371)	4% (400)
SSO	14% (864)	10% (1,000)

All p-values < 0.001

ADJUSTED ANALYSIS

- Low SES was not independently associated with SSI after adjustment (OR 1.13, p = 0.121).
- Smoking, diabetes, and contaminated wounds remained the strongest predictors of SSI.
- SES differences were more pronounced in optimization burden and baseline quality of life than in adjusted wound morbidity.

RESULTS: QUALITATIVE ARM

EMERGING THEMES FROM EARLY INTERVIEWS

High SES Experience

- Navigated healthcare system to access specialty care
- Advocacy and persistence facilitated eventual access
- Continued pursuing repair despite delays

> *"I kept looking until I found someone who would actually help me."*
> – *High SES Participant*

Low SES Experience

- Faced barriers to care and limited perceived options
- Severe daily symptom burden while awaiting repair
- Prioritized immediate quality-of-life improvement

> *"Living like this every day isn't living."*
> – *Low SES Participant*

CONCLUSIONS

- Low SES patients presented with greater optimization burden, more complex disease, and worse baseline quality of life.
- SES was not independently associated with SSI after adjustment for key clinical risk factors.
- Patients were willing to accept surgical risk--not because they didn't understand the risks, but because their current quality of life was already unacceptable.
- Optimization thresholds may unintentionally contribute to disparities in access and quality of life.

TAKE-HOME MESSAGE: Optimization is essential, but delaying care for those with the greatest need may cause unintended harm.