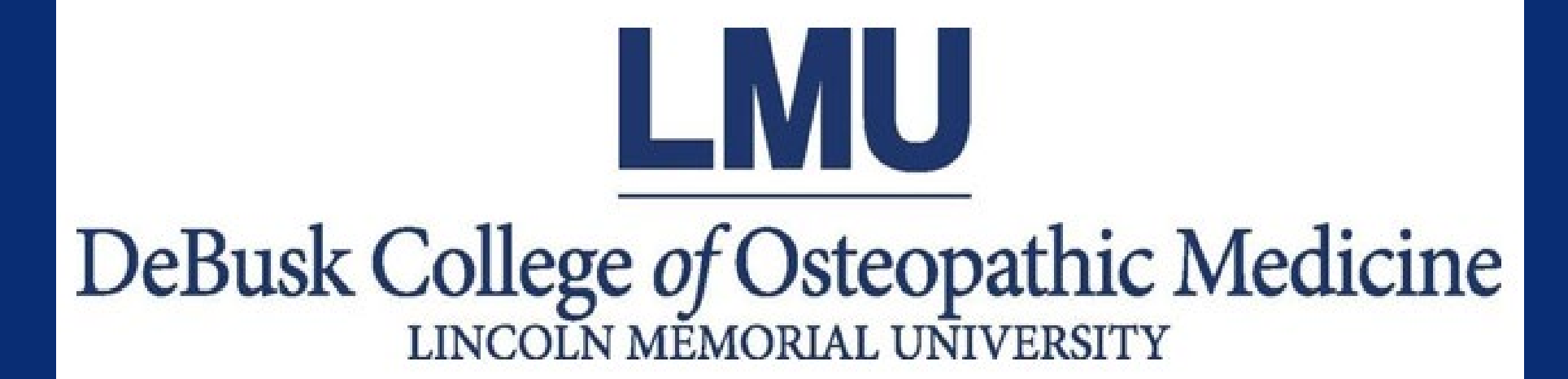


Additional Unmet Medical Needs of Street Medicine Patients in Knoxville, TN



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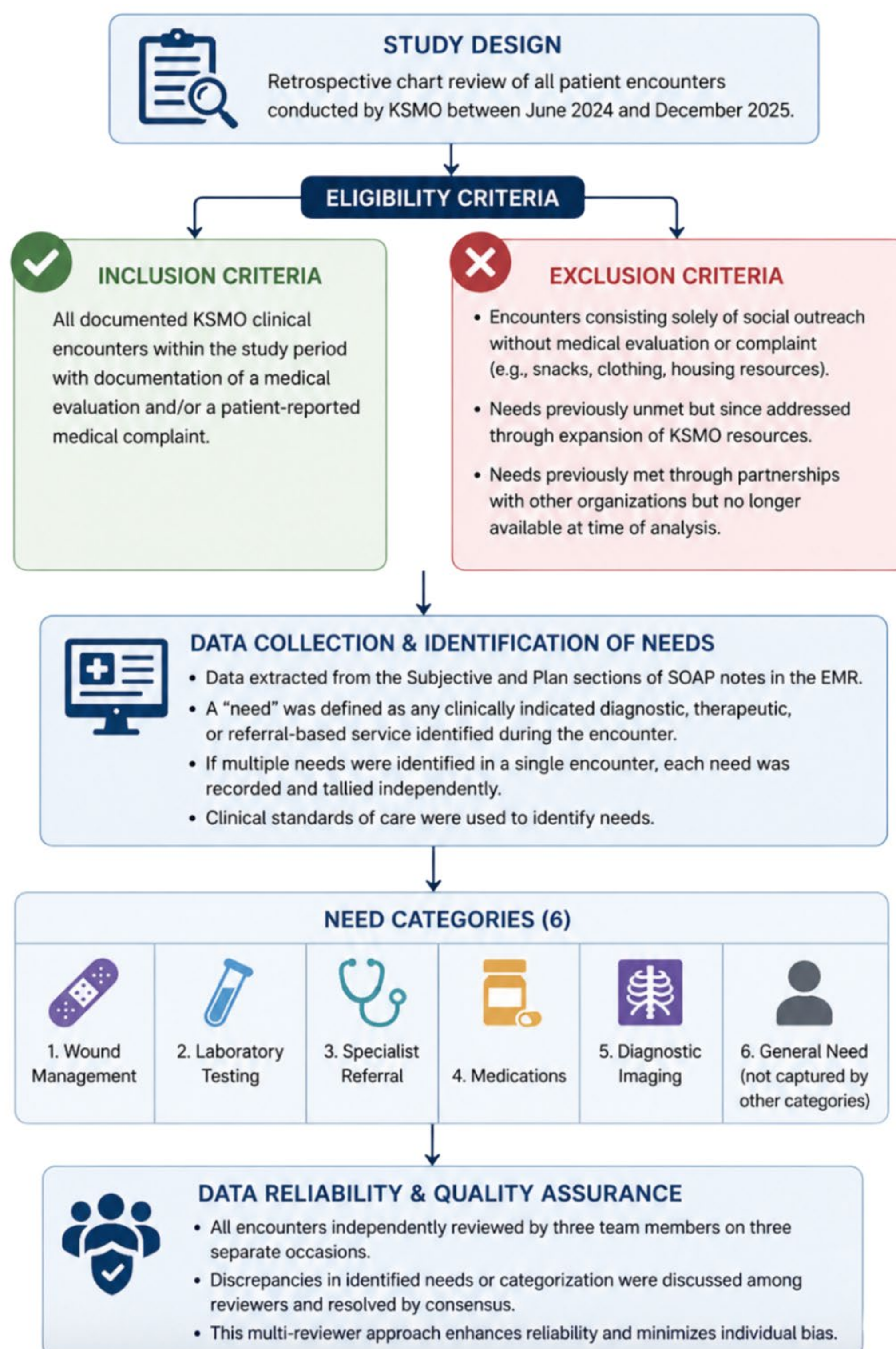


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Introduction

Street Medicine seeks to provide free, low-barrier medical care to unsheltered people by meeting them in locations they occupy, such as encampments, parks, and under bridges. The rise of street medicine over the past three decades has coincided with an unprecedented rise in People Experiencing Homelessness (PEH), defined as individuals living in shelters or unsafe places such as cars, parks, or streets (1). PEH are an especially vulnerable population and have higher all-cause mortality and increased infectious disease prevalence, mental health conditions, cardiovascular and respiratory conditions than their housed counterparts (2). As Knoxville, TN has grown in population, the average number of PEH per night has increased to ~1,929, with 70% experiencing homelessness for more than one year (3,4). Knox Street Medicine Outreach (KSMO) was founded in 2023 to address the healthcare needs of PEH in the Knoxville area through “Street Rounds” (5). Since its inception, they have provided free healthcare to over 500 individuals (5). The purpose of this study was to perform a retrospective chart review of KSMO’s Electronic Medical Record (EMR) to assess met and unmet needs during patient encounters. The results of this study can be used to identify areas of improvement and direct resource allocation.

Methods



Results

Table 1: Chart Review Data

	2024 (6 mo)	2025 (12 mo)	Total
Wound Management	59	63	122
Laboratory Testing	22	35	57
Specialist Referral	18	42	60
Medications	26	14	40
Diagnostic Imaging	5	12	17
General	12	23	35
Met Needs	192	589	781
Total Unmet Needs	142	189	331
% Needs Met	57.49%	75.71%	70.23%

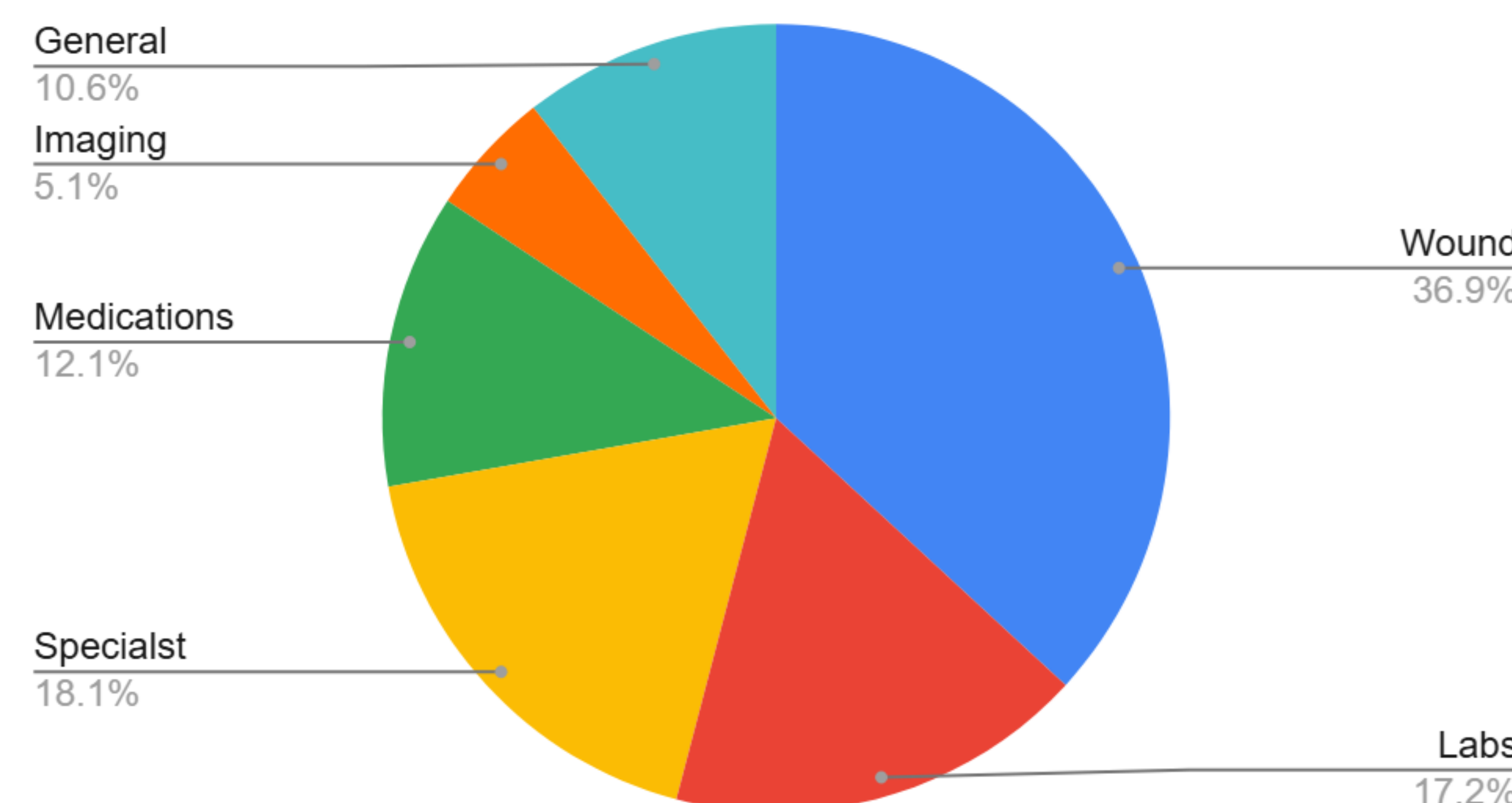
Table 2: Unmet Needs Distribution

	Total	2024	2025	Change over year
Wound Management	36.86%	41.55%	33.33%	-8.22%
Laboratory Testing	17.22%	15.49%	18.52%	3.03%
Specialist Referral	18.13%	12.68%	22.22%	9.55%
Medications	12.08%	18.31%	7.41%	-10.90%
Diagnostic Imaging	5.14%	3.52%	6.35%	2.83%
General	10.57%	8.45%	12.17%	3.72%

Table 3: Patient Analysis

Unique patients	475
Total visits	665
Average visits per patient	1.40
Average needs per visit	1.65
Max visits per one patient	6
Max needs per one visit	5

Unmet Needs



Discussion

The retrospective chart review included 475 individual patients with an average of 1.4 visits per patient, and 1.65 needs per visit.

In 2024, during the earlier stages of the organization’s development, a higher proportion of needs remained unmet, an expected outcome in a newly established, resource-limited program. However, as KSMO expanded throughout 2025, the organization demonstrated a markedly improved ability to address patient needs from only 57% of needs being met in 2024 to 75% being met in 2025. This suggests that program maturation and resource expansion played a critical role in fulfilling the medical needs of PEH.

Analysis of the frequency of specific need categories across each year revealed important trends in patient care demands. Wound care consistently represented the greatest proportion of unmet needs in both years (41.55% and 33.33%, respectively). This can largely be attributed to challenges in establishing reliable longitudinal follow-up. Many chronic wound patients did not have a follow-up visit to assess treatment. This finding underscores a significant gap in care, as effective wound management requires continuity that is often difficult to achieve in unsheltered settings.

Laboratory studies also represented a substantial portion of unmet needs, as the ability to perform diagnostic testing in the field is limited by logistical constraints associated with street-based care. Transporting and operating traditional laboratory equipment during street rounds is often not feasible, and notification of lab results to patients is limited.

Specialist referral showed the largest percentage change increase over the two-year period. While Knoxville has access to low-cost specialist referral through programs such as Knox Area Project Access (KAPA), a lack of reliable communication and transportation limits patient participation.

This study represents data from a single street medicine program in Knoxville, Tennessee, which may limit generalizability to other regions. There was also variability in documentation, particularly during early EMR implementation, which may have influenced the accuracy or completeness of recorded needs. The classification of needs as “met” or “unmet” may also not fully capture the complexity of patient care, particularly for needs that require longitudinal follow-up or partial fulfillment.

Conclusion

This study demonstrates that as street medicine programs grow in funding, partnerships, and infrastructure, their ability to meet the needs of PEH improves. Continued investment in these programs, along with targeted expansion of services, is essential to address persistent gaps in care and improve health outcomes in this vulnerable population.

Identified areas of improvement may include the purchase and implementation of point-of-care diagnostic technologies, such as handheld hemoglobin A1c devices and compact blood chemistry analyzers. These would allow for real-time laboratory assessment in the field, though their cost may limit widespread implementation.

This study also provides insight into broader healthcare system gaps affecting PEH in the Knoxville area. Many of the unmet needs identified, particularly those requiring specialist care or advanced laboratory studies, reflect barriers that extend beyond the capacity of a single street medicine organization. As such, these findings may inform not only internal program development but also system-level collaboration among hospitals, public health agencies, and community organizations to improve access to care for this vulnerable population.

Further research is needed to evaluate the long-term impact of street medicine interventions on patient outcomes, including morbidity, healthcare utilization, and continuity of care. Additionally, future studies should explore scalable models and partnership strategies that can effectively address persistent unmet needs across diverse communities.

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