

Care Across the Miles: Catchment Area of UMCNO for Patients with Amputations

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Introduction

- Lower-extremity amputation is a significant public health issue (~150,000 nontraumatic cases annually in the U.S.).
- Diabetes mellitus and peripheral artery disease are the predominant causes.
- Racial, socioeconomic, and geographic disparities drive higher amputation rates among Black, Hispanic, Native American, and low-income populations.
- Prior studies link low income and high proportions of Black residents to increased limb loss risk.
- However, the effect of physical distance from tertiary referral centers on pre-amputation care and limb preservation remains unclear.
- **Purpose:** To map the UMCNO amputation catchment area and explore associations between patient distance and wound care before amputation.

Objective and Significance

- Quantify the geographic distribution and travel burden of patients undergoing lower-extremity amputation at UMCNO.
- Assess whether greater travel distance correlates with reduced frequency or duration of pre-amputation wound care.
- Identify potential geographic barriers to preventive and limb-salvage care.
- Findings may inform outreach, referral, and resource allocation strategies for at-risk populations.

Methods

- **Study Design:** Retrospective cohort study.
- **Population:** Patients who underwent lower-extremity amputation at University Medical Center–New Orleans (UMCNO).
- **Data Collection:** Demographic and geographic data obtained from EMR.
- **Distance Measurement:** Calculated in miles between patient home address and UMCNO using publicly available mapping tools.
- **Statistical Analysis:** Regression tested association between travel distance, wound care frequency/duration, and surgical indications.
- **Planned Expansion:** Comparison with a cohort of patients with chronic wounds who did **not** undergo amputation.

Results

- **Sample Size:** 25
- **Mean Distance:** 45.1 miles (range: 1.4-250)
- **Median Distance:** 51.6 miles
- **Mode of Distances:** 11.2 miles
- **Findings:**
 - No significant association between travel distance and frequency or duration of wound care before amputation.
 - Catchment area similar between traumatic and non-traumatic amputations.

Geographic Distribution

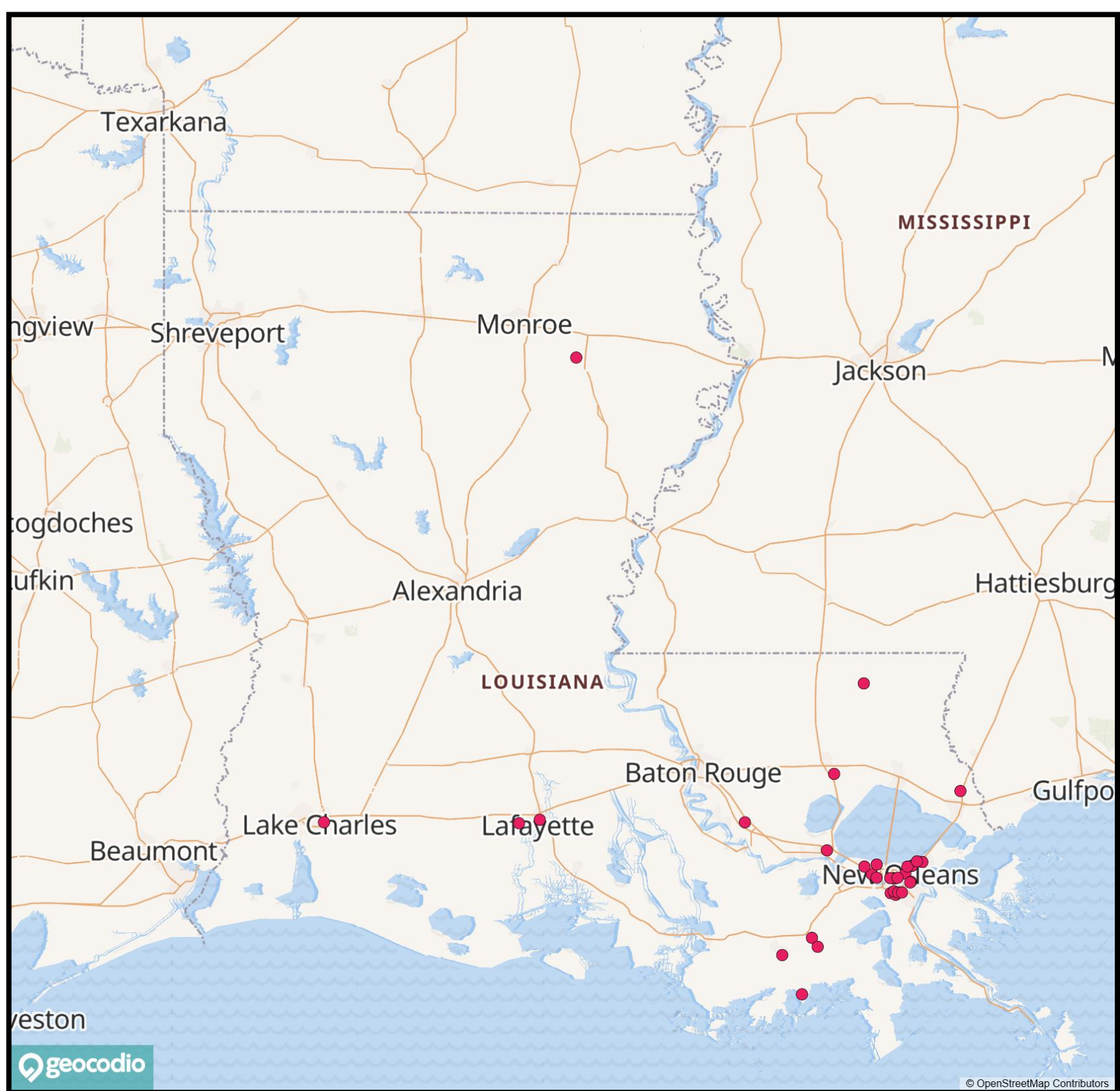


Figure 1 illustrates statewide catchment distribution for amputation patients treated at UMC-NO.

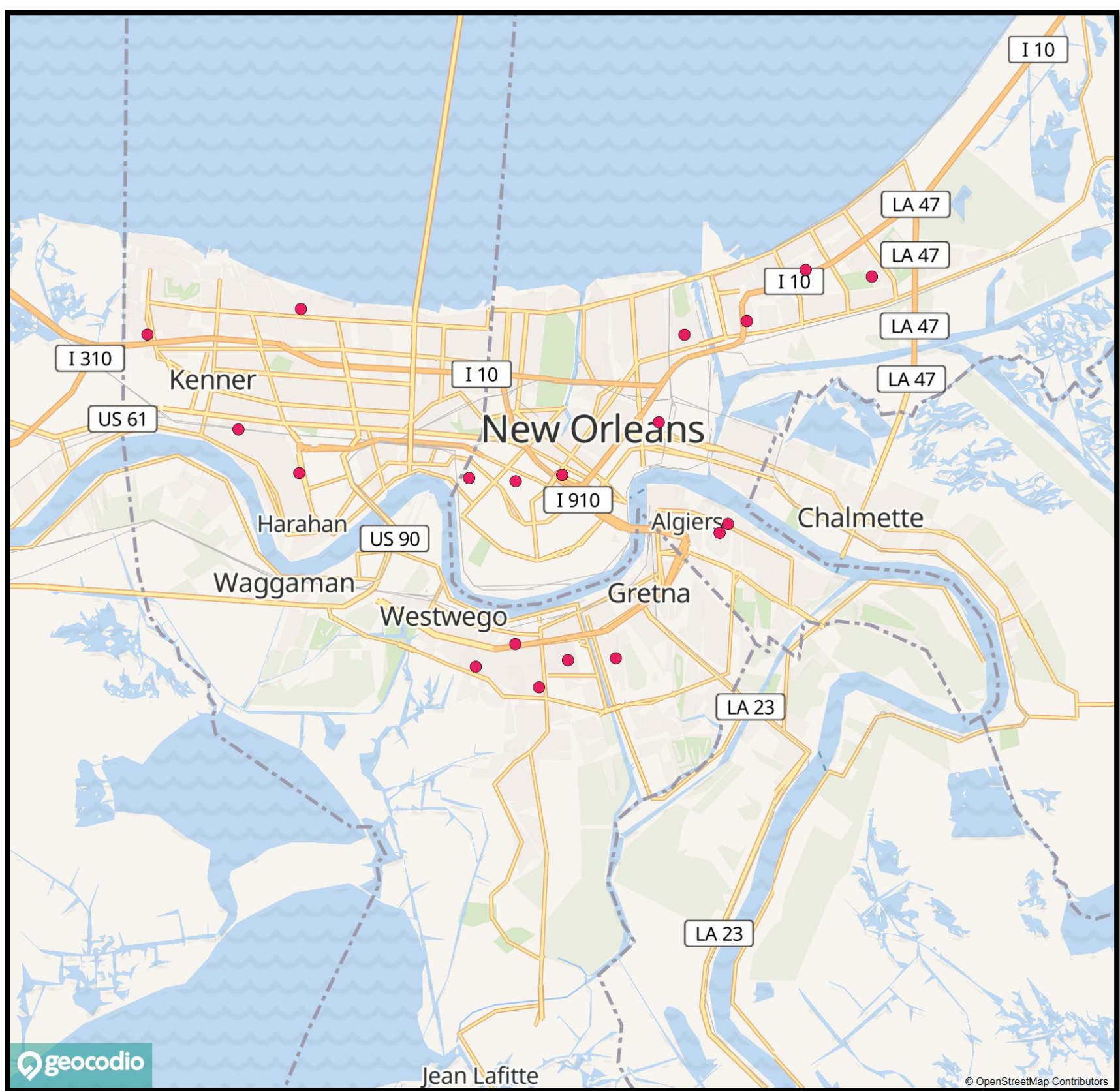


Figure 2 illustrates Orleans Parish area showing patient clustering near major interstates and population centers.

Discussion and Limitations

- Discussion**
- UMCNO serves a large geographic region, underscoring its role as a major referral center.
 - Long travel distances may still pose unmeasured barriers (transportation, socioeconomic status, access to specialty wound care).
- Limitations:**
- Preliminary analysis: small sample size and retrospective design.
 - Lacks control group (planned addition: non-amputation cohort).
 - Geographic distance may not capture travel time or socioeconomic variables.

Conclusion

- Preliminary data reveal a wide catchment area for amputations at UMCNO.
- No current association between distance and wound-care patterns, but additional data needed.
- Future analyses will examine whether geographic isolation affects limb-salvage opportunities and chronic wound management.

References

1. Creager MA, Matsushita K, Arya S, et al. Reducing Nontraumatic Lower-Extremity Amputations by 20% by 2030: Time to Get to Our Feet: A Policy Statement From the American Heart Association. *Circulation*. 2021;143(17). doi:10.1161/CIR.0000000000000967
2. Barnes JA, Eid MA, Creager MA, Goodney PP. Epidemiology and Risk of Amputation in Patients With Diabetes Mellitus and Peripheral Artery Disease. *Arterioscler Thromb Vasc Biol*. 2020;40(8):1808-1817. doi:10.1161/ATVBAHA.120.314595
3. McDermott K, Fang M, Boulton AJM, Selvin E, Hicks CW. Etiology, Epidemiology, and Disparities in the Burden of Diabetic Foot Ulcers. *Diabetes Care*. 2023;46(1):209-221. doi:10.2337/dci22-0043
4. Fanaroff AC, Yang L, Nathan AS, et al. Geographic and Socioeconomic Disparities in Major Lower Extremity Amputation Rates in Metropolitan Areas. *J Am Heart Assoc*. 2021;10(17):e021456. doi:10.1161/JAHA.121.021456
5. Ramadan OI, Yang L, Shultz K, et al. Racial, Socioeconomic, and Geographic Disparities in Preamputation Vascular Care for Patients With Chronic Limb-Threatening Ischemia. *Circ Cardiovasc Qual Outcomes*. 2025;18(1). doi:10.1161/CIRCOUTCOMES.124.010931