

Title: Assessing Urban-Regional Disparities in STEMI Outcomes  
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Introduction: Large rural-urban gaps in the clinical outcomes for acute cardiovascular conditions remain in the United States. This quality improvement initiative aimed to assess differences in mortality rates, cardiology post-hospital discharge follow-up appointment rates, cardiac rehab attendance, and adherence to ACC/AHA guideline recommended medical therapy following STEMI with percutaneous coronary intervention between Monroe County and Regional patients to identify an attainable intervention to improve clinical outcomes, should disparities exist in our population.

Methods: Conducted a review of the electronic medical record and partnered with the UR Medicine Quality Institute to obtain demographic; in-hospital, 30-, 90-day, and >90-day-1 year mortality; cardiology follow-up appointment date, cardiac rehab attendance, and medication data for a sample population of all adult patients admitted to Strong Memorial Hospital (SMH) in 2021.

Results: 369 acute STEMI patients were admitted to SMH in 2021. More than half (58%) lived in regional areas surrounding Monroe County. The less than 1 year mortality rate for patients hospitalized with a STEMI residing in regional areas was 8.2% (18/219), within Monroe County it was 7.3% (11/150), and for residents of the city of Rochester it was 10.2% (9/88). Based on a random sample of 10 patients/month in 2021 (5 regional patients and 5 Monroe County patients), rates of cardiology follow up within 2 weeks of hospital discharge and cardiac rehab attendance were lower for regional patients as compared to Monroe County patients, respectively, cardiology follow up: 49% vs 61% and cardiac rehab: 27% vs 39%. The proportion of patients prescribed comprehensive medical therapy for post-PCI coronary artery disease was at least 83% regardless of stratification by zip code (Monroe County vs. regional areas) or cardiology office location (Rochester area vs. Finger Lakes.)

Conclusion: Our quality improvement study showed disparities in STEMI outcomes between Monroe County and regional area residents, with trends displaying increased mortality for inner-city residents, lower cardiology follow-up rates and cardiac rehab attendance for regional patients, and similar, high rates of post-STEMI medical therapy regardless of geographical location. While these differences could be due to transportation, access, and infrastructure barriers, our study did not consider social determinants of health, which are likely the strongest driver of disparities. While regional systems of care have helped facilitate timely transfer of patients with STEMI from rural hospitals to those with PCI/CABG capabilities, geographically targeted public health strategies are needed to improve care delivery for acute cardiovascular conditions in rural areas.