Exploring the Differences in Healthcare Utilization and Delivery Between English and Non-English Speaking Patient Populations who Accessed an Emergency Department at a Large Hospital System in Kentucky

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PURPOSE OF STUDY

The purpose of this research is to explore and quantify demographic variables and health metrics between English and Non-English speaking patient populations who accessed an emergency department at a large hospital system in Kentucky. This study will allow for better appreciation of these differences at a community level, giving healthcare organizations quantifiable data to support innovation and additional allocated resources for limited English proficiency (LEP) populations.

INTRODUCTION

Evidence has revealed that diversity, equity, and inclusion play a critical role in individual and population health. In the United States, there are differences in healthcare access and overall health status between English speaking and Non-English speaking patients. Non-English speaking patients commonly access an emergency department for healthcare needs due to financial and interpretation barriers, resulting in decreased autonomy [1,2]. Previous research also demonstrates how LEP patients are at higher risk for returning to an emergency room after discharge, leading to decreased patient satisfaction and increased health and disease burden [3,4,5].

Both the Civil Rights Act of 1964 and Executive Order 13166 mandate adequate interpreter and translation services for federally funded healthcare institutions, yet underutilization of these resources persists, leading to medical error and mortality [6]. Effective communication in healthcare is critical, especially in emergency departments where LEP patients are more likely to visit [6,7].

This study examined demographic variables and health metrics of emergency department utilization at a large hospital system in Kentucky, aiming to emphasize the need for tailored resources to meet community needs.
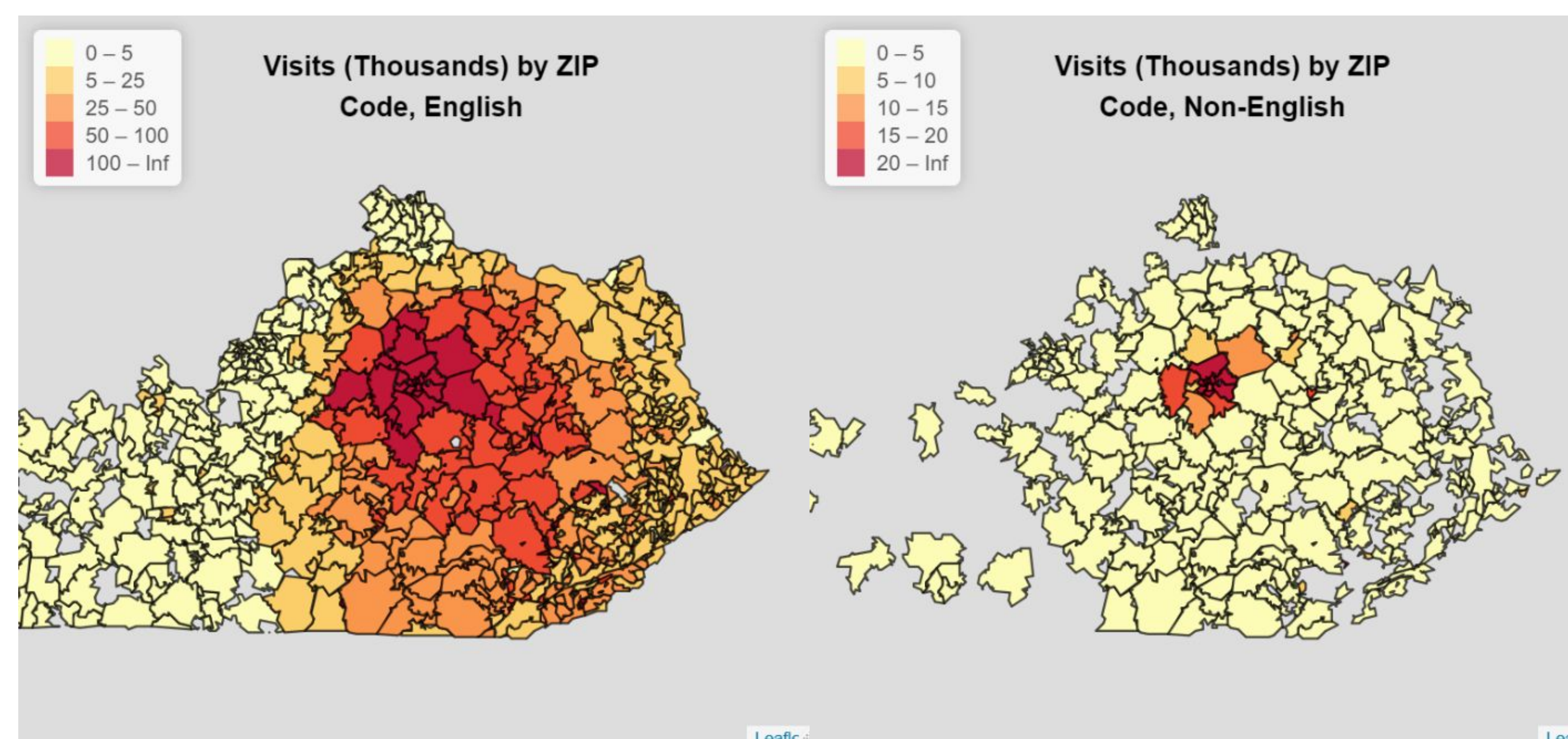
METHODS

- The study used de-identified data from the University of Kentucky Center for Clinical and Translational Science (CCTS).
- This study included all emergency department patients over a four-year period (6/5/2017 – 6/5/2021), excluding prisoners and patients with no primary language selected.
- Metrics included readmission rates and diagnoses, primary language spoken, distance traveled to the emergency department (by zip code), length of emergency department visit, and insurance coverage.
- The Charlson Comorbidity Index (CCI) was used to indicate the risk of mortality and the overall health status of patients.
- A linear regression model was utilized to explore the relationship between the average length of stay in the emergency department and CCI scores while adjusting for differences between English and Non-English speaking patients.
- Across all analyses, a p-value of less than 0.05 was considered statistically significant.

RESULTS

- This study reports **92.8% (n=215161)** of the patient population was **English speaking** and **7.2% (n=16,731)** were **Non-English Speaking**.
- The **top fifteen languages spoken** in the emergency department can be found in **Table 1**.
- The average age for English speaking and Non-English speaking patients was 37.11 and 29.55 respectively.
- English speaking patients had a lower **percentage of uninsured patients** (3.38%) compared to Non-English speaking patients (4.35%), which is noted to be a significant difference.
- The top diagnoses for 90-day readmission for English speaking patients were hypertension, abnormal echocardiogram and examination or observation. The top diagnoses for 90-day readmission for Non-English patients were hypertension, examination or observation, and unspecified abdominal pain.
- The **90-day readmission rate** was significantly higher for English speaking patients (13.27%), compared to Non-English speaking patients (7.31%).
- Patients with higher CCI scores had longer emergency department stays, regardless of their primary language spoken.
- No significant relationship was found between length of emergency department stay and whether a patient spoke English after adjusting for CCI.
- Non-English speaking patients traveled significantly shorter **distances to the emergency department**, with an average distance of 14.92 miles, compared to 29.15 miles for English speaking patients. **(Figure 1)**

Table 1: Top 15 Most Spoken Languages in ED 2017-2021

	Patients	
Language	**No.**	**%**
English	215161	92.79
Spanish	10385	4.48
Unknown	2308	1.00
Nepali	790	0.34
Swahili	774	0.33
Other	667	0.29
Arabic	598	0.26
French	537	0.23
Kinyarwanda	148	0.06
Russian	109	0.05
Chinese	95	0.04
American Sign Language	87	0.04
Japanese	85	0.04
Albanian	54	0.02
Cambodia	50	0.02
Ubu	44	0.02

Figure 1: Total Distance in Miles Traveled by Zip Code to Emergency Department

DISCUSSION

This study identified a variety of languages spoken, with the understanding that the inclusion of "unknown" and "other" as language parameters requires further investigation. It is important to note that the use of interpretation services for patients is not a parameter measured in the hospital system's electronic medical record. Further research should be conducted to better understand interpreter services available in the hospital system and utilization of services in the emergency department. The study also found lower readmission rates for Non-English speaking patients, possibly indicating increased community support and resources. More research should be conducted to better understand these results.

A healthcare system should constantly evaluate its involvement with all members of its community. Intentionally partnering with local and cultural organizations builds trust and increases access to community resources. Establishing authentic engagement within a community allows for a better patient experience and overall better population health. As the data was collected at a hospital system located in central Kentucky, it is not generalizable to the greater population of Kentucky. It is essential to investigate if similar trends and data exist within emergency departments in other regions across the state.

CONCLUSION

The results allow for quantifying differences between English speaking and Non-English speaking patient populations that accessed a Kentucky emergency department between 2017 and 2021. The study found significant differences between the comparison groups, such as the average distance traveled to the emergency department, insurance coverage, and readmission rates.

Understanding each community's health and social needs is only the beginning of gradual innovation in local communities. Healthcare providers should make a conscious effort to understand the populations in which they serve and work with. While existing literature supports disparities in access, health, and resources between English and Non-English speaking populations, this data helps quantify these differences at a local level in central Kentucky.

There is currently limited data in Kentucky available to be able to further support intervention of additional, effective resources for Non-English speaking populations. Healthcare organizations should have effective and measurable translation services for all Non-English speaking patients and should record data to support the utilization and allocation of such resources.

REFERENCES