Analysis of the Proximity of Jails and Hospitals to County Boards of Elections

Mark Salling, PhD, GISP
Senior Research Associate
Maxine Goodman Levin College of Urban Affairs
Cleveland State University

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This study maps the geographic distributions of county boards of elections (BOEs), hospitals, and jails in the State of Ohio and calculates the distances from jails and hospitals to the county’s BOE. These distances are compared. This analysis is meant to address the issue of whether travel by BOE staff to jails in order to acquire election ballots of eligible inmates is more or less burdensome than travel to hospitals in the county to acquire such ballots from hospital patients.

Data and Methods

Geographic Information Systems (GIS) software is used to geocode and map three Excel files, one containing the address of BOEs, a second of hospitals, and a third of jails in the state. The U.S. Census Bureau’s 2010 TIGER data were used as the street reference file for geocoding addresses (i.e., locating them on the reference or base map). In GIS terms, once the addresses have been geocoded, the software, if requested, provides the distance between each jail and hospital and the county’s BOE. An average distance between the BOEs and both jails and hospitals in the county is then calculated.

Since temporary holding facilities (THFs) hold persons for less than six hours, we exclude them in the analysis of jail distances.

Results

Map 1 shows the geographic distributions of BOEs, hospitals, and jails. It also reports the average distance between jails and hospitals in that county’s BOE, which are 5.77 and 5.07 miles, respectively. While the average distance to jails is greater than to hospitals, statistically there is no difference in these means at the 95 percent confidence level.

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1 The analysis was requested by the Ohio Justice & Policy Center and data used in the analysis were supplied by that organization.
2 Nine jails and three hospitals were not able to be geocoded and are excluded from this analysis.
3 The null hypothesis, that there is no difference, cannot be rejected with 95 percent confidence (p = 0.0716).
Figure 1 shows the distribution of hospitals and jails within each mile from the county's BOE. While 14 percent of hospitals are within a mile of the BOE, 24 percent of jails are within that distance (see Figure 2). Thirty-five (35.2) percent of hospitals and 32.8 percent of jails are within two miles of the BOE, a difference of 2.4 percent. This last percentage difference grows as distance from BOEs increases, but it reaches only 8.6 percent at 10 miles from BOEs, i.e., 85.2 percent of hospitals are within that distance, while 76.6 percent of jails are within 10 miles.

It should also be noted that there are significantly fewer jails than hospitals to which BOE staff might have to travel at various distance from the BOE office. See Figures 1 and 3. The aggregate distance from BOEs to hospitals is 1,269 miles; the aggregate distance to jails is 1,108 miles.

Conclusion

Distances from BOEs to jails in the same county in Ohio are not significantly different from distances to hospitals in those counties. Indeed, assuming that all hospitals and jails in this study have equal chances of having eligible voters who have not voted, the relative burden of travel to these facilities is likely less for jails since there are many fewer of them and the aggregate distance to be covered is less.
Map 1: Geographic Distribution of BOEs, Jails, and Hospitals

Locations of Hospitals, Jails, and County Boards of Elections

- Hospitals
- Jails
- BOE

Average distance between a hospital and the county Board of Elections in that county = 5.08 miles.

Average distance between a jail and the county Board of Elections in that county = 5.77 miles.

Prepared by
The Northern Ohio Data & Information Service
NODIS
Maxine Goodman Levin College of Urban Affairs
Cleveland State University
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Figure 1: Number of Hospitals and Jails within Distances to Board of Elections in Same County

Number of Hospitals and Jails within Distances to Board of Elections in Same County

- Jails
- Hospitals

Within Mile

Figure 2: Percentage of Hospitals and Jails within Various Distances of the County Board of Elections in the Same County

Percentage of Hospitals and Jails within Various Distances of the County Board of Elections in the Same County

- Jails

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Figure 3: Number of Hospitals and Jails within Various Distances of the County Board of Elections in the Same County

Number of Hospitals and Jails within Various Distances of the County Board of Elections in the Same County

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