ACCESS TO PHARMACIES IN WESTERN NY BY VETERANS AND THOSE LIVING IN POVERTY

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TOPICS

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➤ About the Region
➤ Pharmacy Characteristics
➤ GIS Analysis
➤ Findings
➤ Web Mapping Application
➤ Limitations
➤ Conclusions
'Pharmacy deserts' were first found to be prevalent in predominately minority communities in Chicago in recent years (Qato, 2014). Access to both medications and free counseling about prescribed and over the counter drug products via community (i.e., retail) pharmacies was called into question by these findings.

To improve Veteran access to care, in May 2016 the US Department of Veterans Health Affairs partnered with CVS Health to begin offering VA-funded care at CVS retail clinics in Palo Alto, California (Joszt 2016).

The purpose of this project was to identify travel times to community pharmacies by pharmacy characteristics (24-hour pharmacist staffing, 24-hour stores, drive-throughs) from neighborhoods of concentrated poverty or Veteran residency.
ABOUT THE REGION

- Monroe County in Western New York includes the city of Rochester. Among cities of similar size, it is the only one in which more than half of children live in poverty. (Doherty EJ, 2015)
- The total Monroe County population was 749,857 in 2013.
  - About 40,341 (5.4%) were Veterans (US Census, 2014 Estimates).
  - 73% of Veterans were aged 55 or older and 23% had one or more military service-connected disabilities.
  - Veteran annual median income was about $37,000.
  - A small percentage of Veterans (n=2,420, 6%) reported incomes below the Federal Poverty Level in the previous 12 months.
  - Concentration of Veterans per Census tract was 1.9% to 12% with the highest concentrations in rural and suburban areas
- There 140 community pharmacies Monroe County Region.
- The number of pharmacies ranged from 0 to 6 per Census tract.
### PHARMACY CHARACTERISTICS

<table>
<thead>
<tr>
<th>Pharmacy Characteristics</th>
<th>n (%)</th>
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<tbody>
<tr>
<td>National Chain (Walgreens, Rite Aid, CVS)</td>
<td>69 (49.3)</td>
</tr>
<tr>
<td>Regional/Local Chain (Kinney, Metcare RX, Medicinne Shoppe)</td>
<td>4 (2.9)</td>
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<tr>
<td>Independent</td>
<td>19 (13.6)</td>
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<tr>
<td>Grocery Store (Tops, Wegmans)</td>
<td>24 (17.1)</td>
</tr>
<tr>
<td>Big Box Store (Target, Sam’s Club, Walmart, Kmart)</td>
<td>21 (0.2)</td>
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<tr>
<td>Community Health Center</td>
<td>3 (2.1)</td>
</tr>
<tr>
<td>Drive-Throughs</td>
<td>51 (36.4)</td>
</tr>
<tr>
<td>24-hour Pharmacist-provided services</td>
<td>2 (1.4)</td>
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<tr>
<td>24-hour store (no pharmacist on duty overnight)</td>
<td>25 (17.9)</td>
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</table>
The GIS Analysis took on a few different tasks

First, all pharmacies were geocoded using the New York State Centerline File.

Some pharmacies were manually placed because of arbitrary addresses.

Using the Census Tiger files (US Census), we combined census tracts with US Census data for percentage of households living in poverty, percentage of Veteran households and pharmacy characteristics.
Network analysis was used to determine walking and driving times to the nearest pharmacy from each census tract.

Using the pharmacies as the center and the road network from the New York State Centerlines, we calculated service areas.

Travel times were defined as 1, 2, 5, 10, 15 and 20 minutes or more.

1, 2, and 5 minute travel times describe 'walkability' to a pharmacy.
TRAVEL TIME TO PHARMACIES

 ➤ Have a good network dataset
   ➤ We used the New York State Centerline file which has turn restrictions and speed limits
 ➤ When configuring the routing network convert length and speed limits to time
 ➤ Once we had the travel time polygons, we did a spatial join to the census data to allow for demographic analysis
 ➤ Also before posting the data onto ArcGIS Online, we simplified the polygons to save on credits
TRAVEL TIME TO PHARMACIES
FINDINGS

➤ All Census tracts in Monroe County, New York were approximately 5 to 20-minutes by vehicle from at least one community pharmacy.
  ➤ Only two pharmacies were staffed 24-hours by pharmacists.
  ➤ 1/3 of all pharmacies had drive-throughs.
➤ Rite Aid and Walgreens stores made up 73.9% of national chain pharmacy stores in the Monroe County region, and represented 36.4% of all community pharmacies.
  ➤ A pending merger may result in the closing of some locations and a reassessment of access.
FINDINGS

➤ Veterans and residents living in poverty appeared to have reasonable access to pharmacy services as measured by drive time from household Census tracts to community pharmacies.
WEB TOOLS

➤ One thing that really brought a lot of this to light was not just the maps, but the ability to explore that data using web GIS.

➤ This allowed for researchers with no GIS skills to interact with the data and explore more attributes than just what was displayed in the published maps.

➤ It also is helping ask new questions that were not even thought of

➤ Is there enough material in particular languages?
WEB TOOLS
LIMITATIONS

➤ Study limitations include the exclusion of extended hours (for example, 7am to 10pm) from our analysis for parsimony.

➤ We only considered access to brick-and-mortar pharmacies and pharmacist-provided services, yet Rite Aid and Walgreens both offer 24-7 access to pharmacists via on-line chat, secure messaging and phone (including TDY for hearing/speech disabled).

➤ These services were excluded from our discussion of access to pharmacies and pharmacy services.

➤ Also we did not look at multimodal means of transportation.

➤ public transportation
CONCLUSIONS

➤ The on-demand and increasingly clinical nature of community pharmacy services paired with patients’ use of self-care as a first strategy for managing most symptoms, suggest that the importance of community pharmacists and pharmacies in the US healthcare system is likely to increase.

➤ As pharmacy chains increasingly seek clinical roles in the healthcare system, substance abuse prevention, screening and treatment referral may be a real possibility.
QUESTIONS?

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REFERENCES


- Joszt L. Minute Clinic-VA Partnership could reduce wait times for Veterans seeking care. AJMC.com. Published on-line May 27, 2016.