

Epidemic Preparedness and Vaccine Equity: Access for All

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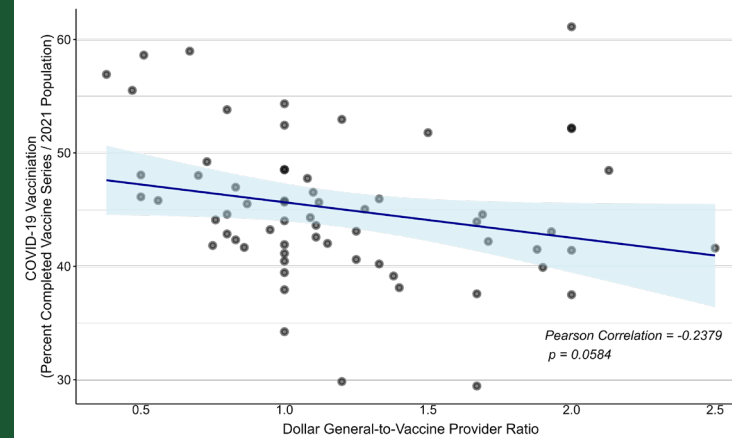
UAB The University of
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Conclusions

- In areas with historically low VR, or limited access to vaccine providers, DGs in these areas provide a scalable solution to expanding vaccine delivery
- In addition to their distribution network, DG creates the point-of-contact needed for vaccine outreach
- The strategic co-location of mobile vaccine initiatives at DGs in vulnerable communities provides a scalable method to achieve geographically equitable vaccine coverage

Figure 1. Linear trend (95% Confidence Interval) between Alabama County COVID-19 vaccination rates and ratio of Dollar General locations to COVID-19 vaccination providers



- (1) Alabama's COVID-19 Vaccine Distribution Dashboard. Final Update, May 11, 2023. Accessed December 8, 2024.
- (2) Vaccines.gov: COVID-19 vaccinating provider locations. Cdc.gov. Published April 28, 2021. Accessed December 8, 2024.
- (3) The Alabama COVID-19 Vaccine Clinic Dashboard. Accessed December 8, 2024. <https://www.arcgis.com/apps/dashboards/2b4627aa70c5450791a7cf439ed047ec>
- (4) Alabama | Dollar General. Dollargeneral.com. Published 2025. Accessed April 23, 2025. <https://www.dollargeneral.com/store-directory/al>
- (5) Social deprivation index (SDI). Robert Graham Center - Policy Studies in Family Medicine & Primary Care. (2018, November 5). Retrieved April 23, 2025

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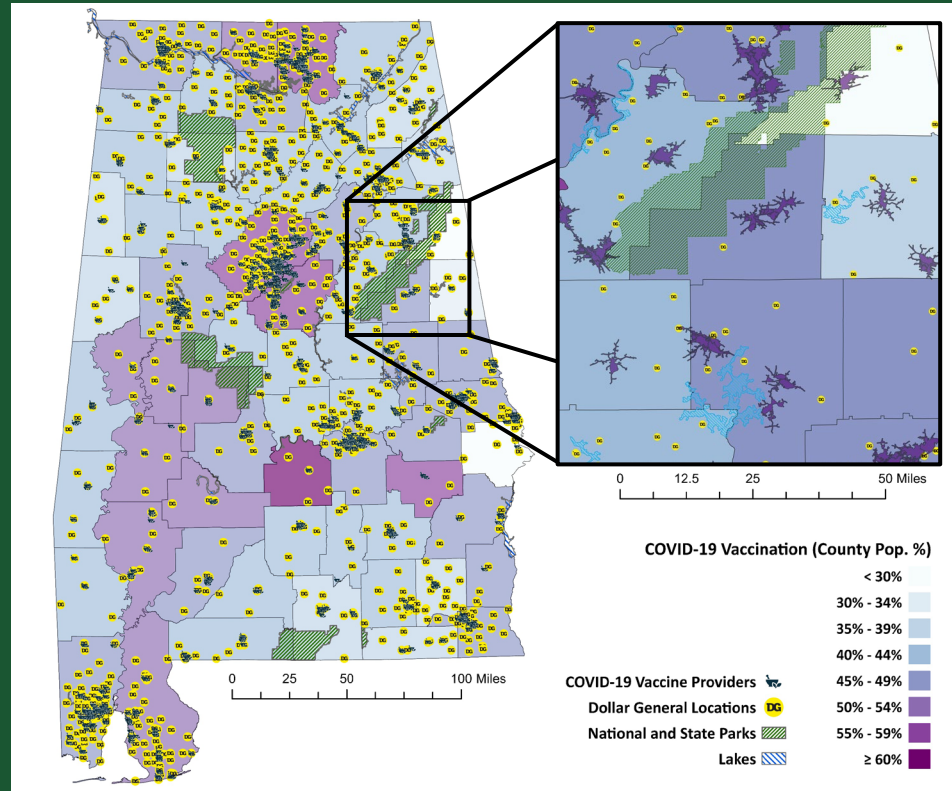
Background

Amidst the vaccination efforts during the COVID-19 Pandemic, rollout was expanded to regional and supermarket pharmacies to ease the burden on traditional deliveries. To address low vaccine uptake, the initiative was expanded to include Black-owned barbershops and hair salons as sources for accurate information and administer vaccines where possible. While the rollout was well intentioned, geographical disparities of vaccination rates (VR) persisted. To address geographic disparities in vaccine access, we investigated the viability of expanding vaccine delivery systems to include Dollar General (DG) locations.

Methods

- County percentages of people who completed the primary series of COVID-19 vaccinations were sourced from the AL Department of Public Health (ADPH) COVID-19 Dashboard¹
- COVID-19 vaccine locations (publicly provided by CDC PLACES and ADPH dashboard)^{2,3} and DG locations⁴ were geocoded and summarized by County, and individual components of the Social Deprivation Index (SDI)
- General linear models were used to assess associations with VR, including a ratio of the number of DGs and vaccination providers
- R and ArcGIS were utilized to geocode all DG and COVID-19 vaccination providers; as well as to create a Shinyapp detailing all locations and relevant choropleths (VR, SDI, Rurality)

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Results

- Among all 67 counties in AL, median VR was 44.1% (IQR: 41.5%, 48.3%)
- Median DG-to-provider ratio was 1.1 (IQR: 0.9, 1.7)
- Lack of education ($p = .002$) and unemployment ($p = .005$) were associated with lower county VR
- While not statistically significant, county VR decreased as the DG-to-provider ratio increased ($p = .058$, Figure 1)
- Four of the five counties with the highest VR ($>55\%$) had DG-to-provider ratio < 1.0

<https://jbassler.shinyapps.io/AL-COVID19-DG/>

