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Utilization of Dental Visits in Emergency Departments - Role of Distance

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Objectives An important predictor of utilization of non-urgent Emergency Department (ED) services is access. The main objectives of our study were to estimate: *i*) the influence of geographic proximity to the nearest ED on utilization of NTDCs and *ii*) variations in the use of ED service for NTDCs as a combined function of distances to the nearest ED, private dental clinics, and urgent care clinics.

Methods We used the State Emergency Department Database and The American Dental Association Data Files for 2017-2021 for the state of Maryland, USA. Using the Dental Quality Alliance (DQA) guidelines, we extracted NTDC visits using ICD-10 diagnoses codes. Using negative binomial regression models, we estimated the ED utilization rate for the overall as well as subsets of populations, specifically racial-ethnic minorities and age-groups. Our main explanatory variable was nearest distance (mean straight line distance) between the zip code and an ED along with that from a dental clinic or urgent care facility.

Results For the overall population, as the distance to the nearest ED increased, the average NTDC utilization rate declined ($\beta=-0.29$; 95% CI: -0.39, -0.18), while distance to a dental clinic was seen to have a positive effect on ED utilization rate ($\beta=0.33$; 95% CI: 0.22, 0.43). When compared across racial and age-groups, Non-Hispanic Blacks ($\beta=-0.40$; 95% CI: -0.51, -0.29) and 19-64 year olds ($\beta=-0.32$; 95% CI: -0.45, -0.19) as compared to Whites ($\beta=-0.15$; 95% CI: -0.28, -0.02) and older adults ≥ 65 year olds ($\beta=-0.22$; 95% CI: -0.31, -0.13) respectively reported a more pronounced negative effect of distance from a nearest ED on the utilization rate. No significant effects were seen with respect to the distance from urgent care clinics.

Conclusions Our findings support the presence of a negative effect of distance on the utilization of the ED for NTDC visits, while also showing a positive effect of distance from dental clinics.