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The Authors Respond

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We thank Dr. Abshire and their colleagues for their letter responding to our recent publication “Outcomes of a Rapid Adolescent Telehealth Scale-up During the COVID-19 Pandemic” [[1]]. The authors raise a very important point regarding the importance of capturing and analyzing geospatial data to identify potential health inequities between youth across the rural–suburban–urban continuum. Although this was not the primary focus of our analysis and our adolescent specialty clinic has primarily served adolescents in a large metropolitan area, we agree that future studies should investigate whether telehealth may alleviate, or paradoxically worsen, health care access across diverse geographic areas.

In response to Dr. Abshire and colleagues’ letter, we have reviewed our original data of scheduled telehealth visits to assess the rural–urban distribution of our patients using Rural Urban Continuum Codes (RUCC), which are on the county level [[2]]. The RUCC provides the most granular data level we are able to reach in assessing degrees of urbanicity. We used patient ZIP codes to identify the home address county of residence and the corresponding RUCC. The majority of patients (89.5%, n = 348) resided in ZIP codes within metropolitan counties with a mean population of >1 million. Only .5% (n = 2) resided in nonmetropolitan areas, with mean population density of 20,000 or more, adjacent to a metro area. These data, demonstrating only a small fraction of rural patients reached, are consistent with the in-person distribution of patients before the COVID-19 pandemic.

To address potential disparities across the continuum of rurality, we recommend that investigators consider collecting geocoded home address–level data when possible because

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rural counties in particular may cover large geographic areas in which there may be variability in service delivery by ZIP code [[3],[4]]. By collecting address-level data, future studies can identify health outcomes and exposures at the census tract or block group level, which provide a finer lens for identifying health disparities that may arise in areas both because of geographic clustering of social disadvantage and distance to health care services. This approach is also more clinically relevant for service and intervention delivery.

We agree with Dr. Abshire and colleagues that it will be critical to assess the impact of telehealth on youth living in rural areas, who already may be disenfranchised from the health care system, given the paucity of adolescent medicine services in rural areas. Similarly, it will be important to address differences in urban and suburban access and outcomes, which was beyond the scope of this initial study. As the COVID-19 pandemic stretches beyond its first 6 months, we encourage health systems with a large rural reach to leverage their telehealth data to assess whether we are meeting the critical health care needs of rural youth. Finally, health systems in large metropolitan areas should consider whether the recent rapid expansion of telehealth in the COVID-19 pandemic may provide a window of opportunity to expand services to address the unmet adolescent health care needs of rural youth.

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References

1. Abshire DA, Graves JM, Amiri S, Mackelprang JL. Scaling-Up Telehealth During the Coronavirus Disease 2019 Pandemic: Missed Opportunities to Leverage Spatial Data to Ascertain the Rural Reach of Services. *J Adolesc Health*. 2020.
2. United States Department of Agriculture. Rural-Urban Continuum Codes. <https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx>. Published 2019. Updated October 25, 2019. Accessed September 2, 2020.
3. Khairat S, Haithcoat T, Liu S, et al. Advancing health equity and access using telemedicine: a geospatial assessment. *J Am Med Inform Assoc*. 2019;26(8–9):796–805. [PubMed: 31340022]
4. Chandak A, Nayar P, Lin G. Rural-Urban Disparities in Access to Breast Cancer Screening: A Spatial Clustering Analysis. *J Rural Health*. 2019;35(2):229–235. [PubMed: 29888497]