A Comparison of Quality Improvement Needs in Urban and Non-urban Home Health Agencies: Facilitating Decision Making by Leveraging Data Analytics

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Introduction: Comparisons of urban versus non-urban home care traditionally examined access to care. Additional quality dimensions, however, have captured widespread attention as the Centers for Medicare and Medicaid Services (CMS) used them in the recently piloted value-based purchasing (VBP) model expected to be in effect by 2022. Organizational quality initiatives in home health agencies (HHAs) and the plans for rewards, penalties, and targeted incentives within VBP can benefit from an understanding of the improvement needs in urban and non-urban HHAs. Accordingly, this study leveraged data analytics to highlight the similarities and differences between the two groups. **Methods:** The quality measures were obtained from the Medicare Home Health Compare Database for each HHA within the following three categories: 1) Twelve rates indicating adherence with clinical processes 2) Seven rates indicating attainment of desirable clinical outcomes, and 3) Two rates indicating utilization outcomes, which are, unplanned emergency room (ER) and hospital admission rates. Each HHA was placed into either urban or non-urban group based on the classification of agency zip code in the Rural-Urban Commuting Codes database. Within each HHA group, each quality measure was ranked within its category of measures according to the median and mean values of the measure calculated by considering all HHAs in the group. The first and last ranks were assigned to the most and least desirable rates, respectively. Mann-Whitney U-test was used for comparing urban and non-urban HHAs with respect to a given measure. **Results:** In Category 1, treating patients for pain ranked the second among urban HHAs but the fifth among the non-urban HHAs; checking for depression ranked fourth among urban HHAs but seventh among non-urban HHAs; checking for fall risks and treating heart failure symptoms were among the top three in both groups; the lowest five compliance areas were the same for both groups with the same ranking orders, which were checking for pneumococcal vaccination, starting care in a timely manner, teaching patients about drugs, foot care for patients with diabetes, and prevention of pressure sores. Non-urban agencies were better in starting care timely and checking for pneumococcal vaccination but urban HHAs were better in teaching patients about drugs. In Category 2, improvement in wounds was the best outcome area in both groups. Going from the worst to best, within both groups, improvement in taking drugs was followed by getting in and out of bed, walking and moving around, and breathing. Non-urban HHAs were better in helping patients getting in and out of the bed and taking drugs. Urban HHAs were better in reducing pain and better in obtaining improvements in bathing. In Category 3, hospital admission rates for were higher than ER admission rates for both groups. Urban HHAs achieved better utilization outcomes. **Conclusion:** There exist both similarities and important differences between urban and non-urban HHAs to be considered in policy and quality-improvement decisions. Future data analytics studies can further explore the associations between quality and various socioeconomic factors.