WORKING PAPER

Estimating and Mapping Health Literacy in the State of Missouri

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RAND HEALTH

Health literacy refers to literacy within a health context and is defined as the "degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions".[1] Findings from the 2003 National Assessment of Adult Literacy (NAAL)[2] paint a grim picture of health literacy in America. About a third (36%) of adults have limited health literacy [3-5] and find it difficult to calculate the appropriate dose of an over-the-counter medication for a child or comprehend a consent form.[6] Of these approximately 80 million adults with limited health literacy, 31 million have difficulty understanding directions for taking medicine.

National, state and local stakeholders seeking to improve health and health care increasingly recognize that low health literacy contributes to poor health and gaps in care. Yet, resources to screen individuals for low health literacy are limited, and individually-tailored interventions may not be feasible or affordable in the long run. We offer an alternative population-based approach to identify geographic areas with a high concentration of individuals with low health literacy (i.e., 'hot spots') where interventions aimed at low health literacy populations might be most effective in improving health and health care quality.

To facilitate efforts to identify hot spots of low health literacy, we developed predictive models using data from the 2003 National Assessment of Adult Literacy (NAAL), an in-person assessment of English language literacy among a nationally representative sample of U.S. adults age 18 and over. We estimated mean health literacy scores as well as the probability of being classified by the NAAL as having 'above basic' health literacy (i.e., health literacy in the 'intermediate' or 'proficient' range). Using these models and information about the demographic makeup of census areas (public use microdata areas (PUMAs) and census tracts), we generated estimates of health literacy for each geographic area. We then mapped the results to identify 'hot spots' of low health literacy across Missouri.

Individuals living in northeast St. Louis and the western part of Kansas City had the lowest estimated average health literacy scores, with one area in East St. Louis having the lowest health literacy in the state (see Fig 1). Most areas of central Missouri and the bootheel region have populations in which 60% to 70% has 'above basic' health literacy (see Figure 2).

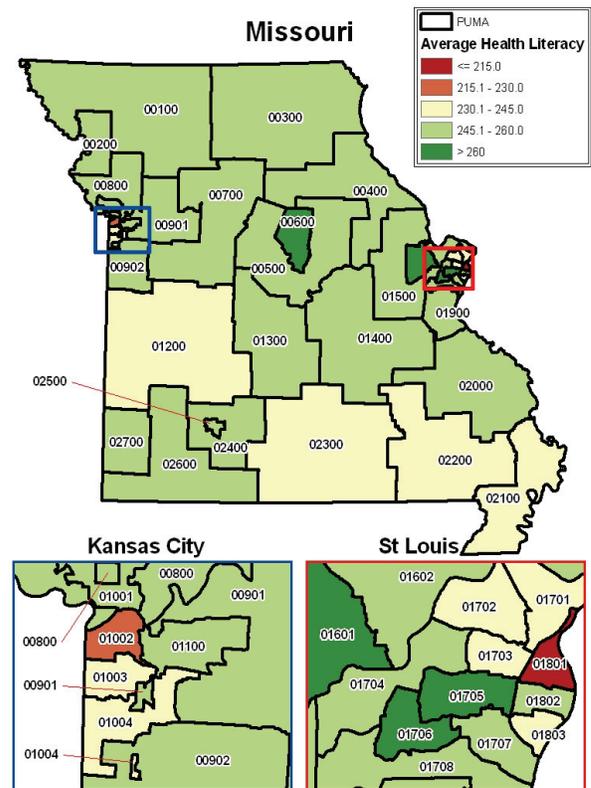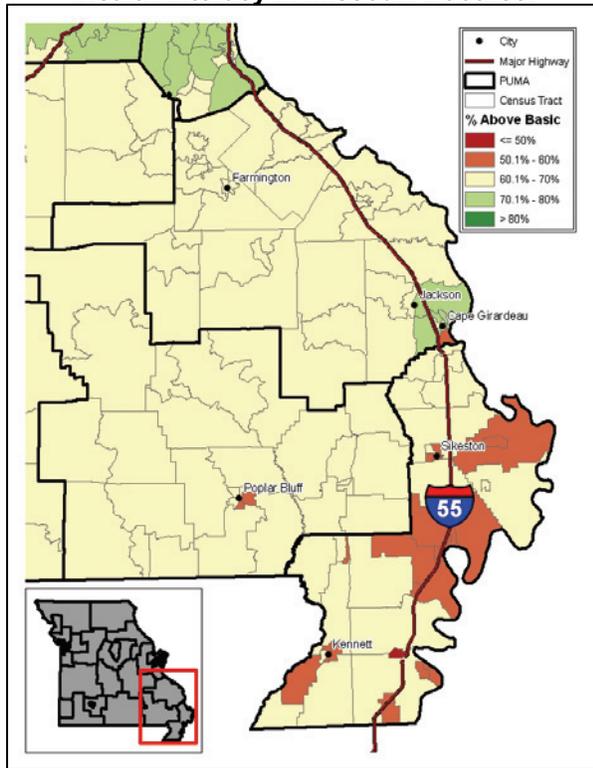**Figure 1. PUMA Estimates of Mean Health Literacy**

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Figure 2. Proportion with Above Basic Health Literacy in Missouri Bootheel

The models and maps presented in this report provide a potential tool to assist stakeholders in the efficient identification of communities with low health literacy and advance action on health literacy in the state of Missouri. The maps provide an easy-to-use resource to identify hot spots of low health literacy within the state so that interventions may be effectively targeted in areas in area of greatest need. The maps may also help foster collaboration with local stakeholders by facilitating dialogue about health literacy in their community. Finally, the maps are readily understandable by community groups and can be used by stakeholders to promote buy-in from community members.