

## Reducing Preventable Hospitalization and Disparity: Association With Local Health Department Mental Health Promotion Activities



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**Introduction:** Serving as the center of community-engaged health programs, local health departments can play a critical role in promoting community mental health. The objectives of this study were to explore the association between local health department activities and (1) preventable hospitalizations for individuals with mental disorders, and (2) associated racial disparities in preventable hospitalizations.

**Method:** Employing the linked data sets of the 2012–2013 Healthcare Cost and Utilization Project state inpatient discharge file of the State of Maryland, the National Association of County and City Health Officials Profiles Survey, the Area Resource File, and U.S. Census data, the authors estimated the association between local health department activities (i.e., provision of mental health preventive care and community mental health promotion) and the reduction of the preventable hospitalizations for ambulatory care–sensitive conditions and coexisting mental disorders. All the data analyses were conducted during September 2016–August 2017.

**Results:** Multilevel regression showed that local health departments' provision of mental health preventive care (OR=0.76, 95% CI=0.63, 0.92) and mental health promotion activities (OR=0.77, 95% CI=0.62, 0.94) were significantly associated with lower rates of preventable hospitalizations for individuals with ambulatory care–sensitive conditions and coexisting mental disorders. Decomposition results suggested that local health departments' direct provision of mental health preventive care could reduce 9% of the racial disparities.

**Conclusions:** Improving care coordination and integration are essential to meeting the growing demands for healthcare access, while controlling costs and improving quality of service delivery. These results suggest that it will be effective to engage local health departments in the integrated behavioral health system.

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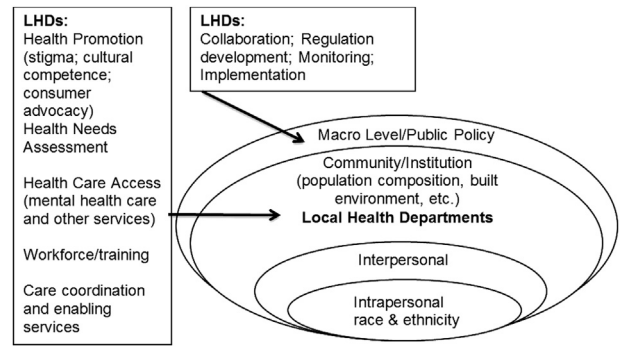
## INTRODUCTION

The cost of mental illness reached \$201 billion in the U.S. in 2013, topping the list of the most costly conditions.<sup>1</sup> Nearly 34 million adults—17% of all American adults—had co-occurring mental and physical conditions.<sup>2</sup> Racial and ethnic minority patients experience disproportionate burdens of common physical health conditions associated with mental illness, largely as a result of lack of healthcare access and social stigma.<sup>3,4</sup> Effectively treating mental illness and associated conditions depends on a culturally tailored and comprehensive infrastructure that crosses health systems.<sup>5,6</sup> However, the current mental health care system works in a silo.<sup>7</sup>

Integration of physical and mental health care has been considered as an effective approach to improving care for individuals with coexisting mental disorders and other physical health conditions.<sup>8,9</sup> Most of the care integration models focus on primary care settings, behavioral health settings, and health homes.<sup>8–10</sup> Examples of successful integration of mental and physical care include the PROSPECT Trial, which has effectively reduced depressive symptoms,<sup>11</sup> and Behavioral Health Associates, operated as part of UCLA Health, which has led to reduction in emergency department use.<sup>12</sup>

Recent research suggests that provision of evidence-based mental health care could be expanded beyond primary care to local health departments (LHDs).<sup>13–17</sup> LHDs function within the Centers for Disease Control's Public Health Model of Practice and are called upon to serve in central roles of public health assessment, policy development, and assurance of service delivery.<sup>13,18,19</sup> Emerging evidence has shown that LHDs have been actively providing healthcare services and population-based interventions to address mental health issue.<sup>13,18</sup> To the authors' knowledge, there is still a lack of evidence directly linking LHDs' activities with community mental health.<sup>20,21</sup>

This study constructed (Figure 1) an ecologic multi-level model to delineate the roles of LHDs to promote mental health and reduce racial and ethnic health disparities.<sup>9,22–25</sup> As the center of community-engaged health programs, and the major source of health care for vulnerable populations, LHDs can promote mental health by providing critical healthcare resources, especially for people with limited healthcare access.<sup>20,21,26</sup> LHDs are well-established organizations within their communities, and this gives them an advantage in terms of cultivating trusting relationships with minorities and low-income residents to improve engagement in health care.<sup>27</sup> Lastly, because assessment of community needs forms the basis for public health practice, LHDs' activities are more likely to reflect community health needs



**Figure 1.** An ecological perspective on local health departments' role in improving mental health.

Note: The model is adapted from the social ecological model (McLeroy et al.<sup>22</sup> and Stokols et al.<sup>24</sup>) and the CDC Public Health Action Plan 2011. LHDs, local health departments.

and values, and thereby provide needed education to target barriers such as stigmatization and negative beliefs about mental health conditions.<sup>28,29</sup>

This present study focuses on the roles of LHDs in reducing preventable hospitalizations for individuals with mental disorders and coexisting chronic conditions. The concept of ambulatory care-sensitive conditions (ACSCs) was used to define preventable hospitalizations.<sup>30</sup> ACSCs are medical problems, such as diabetes and hypertension that can be well managed through routine, ongoing care in an office-based setting. More than 40% of preventable hospitalizations for ACSCs are linked to mental disorders (such as mood, anxiety, schizophrenia, and psychotic disorders).<sup>31</sup> This study hypothesizes that LHD's involvement in the provision of mental health preventive care and health promotion could reduce preventable hospitalizations and reduce associated racial disparities for individuals with coexisting mental and physical conditions.

## METHODS

### Study Sample

Data from the State of Maryland were used to test hypotheses. Specifically, this study employed the linked data sets of the 2012–2013 Healthcare Cost and Utilization Project State Inpatient Databases of the State of Maryland, the National Association of County and City Health Officials Profiles Survey,<sup>32</sup> the American Hospital Directory, the Area Health Resource File, and U.S. Census data. All the data sets are public data files. The analytic sample includes hospital discharges in 2012–2013 for adults aged 18–64 years (N=296,917). All hospitals in this analysis are short-term acute care, voluntary, non-profit hospitals. The American Hospital Directory was used to verify hospital characteristics.

Maryland has 24 LHDs, and the communities they serve vary widely in terms of SES, ethnic and racial characteristics, and behavioral health disorder prevalence. The jurisdiction areas of LHDs are at the county level. The State of Maryland is advancing

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