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TECHNICAL REPORT

# Exploring the Association Between Military Base Neighborhood Characteristics and Soldiers' and Airmen's Outcomes

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## Summary

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Current extended military engagements in foreign nations have taken their toll on U.S. service members and their families. As a result, the services have made renewed commitments to support the needs of the families of military personnel. Quality of life and family programs across the services continue to grow, including recent efforts designed both to support service members and their families across the deployment cycle and to instill resiliency even before they face a deployment. For example, both the Army and the Air Force have adopted community covenants (Donley, 2009; U.S. Army OneSource, undated). Community covenants are designed to develop and foster partnerships between states, communities, and bases in order to improve the quality of life of service members and their families. These covenants reaffirm the services' commitment to family and community well-being and recognize that the success of an all-volunteer force depends on the satisfaction, health, and well-being of service members *and* their families. The services generally rely on surveys, focus groups, service utilization reports, and analysis of recruitment and retention reports to assess service member and family satisfaction with programs and services and, ultimately, family well-being. To our knowledge, none has applied neighborhood studies theory and methods to better understand these military issues.

Neighborhood studies, a well-established field within sociology, assess the association between social and economic characteristics of neighborhoods, demographic characteristics of residents, and indicators of health and well-being. Generally, neighborhoods characterized by high socioeconomic status, that are safe and free of crime, and that offer recreational activities are associated with better mental and physical health among residents. Empirical studies of the neighborhood–health link have demonstrated that the impact of neighborhood characteristics exists regardless of an individual's own characteristics, such as age, race, ethnicity, or gender. Theoretically, neighborhoods are linked to well-being because higher-quality neighborhoods offer more resources and better infrastructure, facilitate social relationships, and contribute little in the way of additional exposure to stress for residents.

Despite the growing body of evidence supporting a link between neighborhood and health and well-being, none of the existing research has examined this association specifically for a military population. Studies of military satisfaction and retention and spouse satisfaction with military service have considered the role of particular characteristics, such as the recreational facilities, the local labor market, and the quality and availability of child care. But the relative quality of military installations and their

surrounding neighborhoods may also be of importance for service member and family health and well-being. Installations, and the communities where they are located, vary in terms of the quality of life they provide inhabitants (e.g., spouse employment opportunities, family programs, child care, recreational facilities). Similarly, the families who live in these communities and who are assigned to these installations also vary in terms of their needs. Given that neighborhood context and family needs vary, a one-size-fits-all approach to base resource allocation and the provision of services, without acknowledging that certain challenges and resources may be geographically dependent, may not be the most effective in fostering health and well-being among service members and their families. Thus, the services may want to use this approach as part of their efforts to identify gaps in support to service members and families so that they can make the necessary adjustments and better compensate where communities are lacking.

This report provides results from a preliminary, proof-of-concept study aimed to provide information the military can use to tailor its efforts to locally support service members and their families based on characteristics of installations and their surrounding neighborhoods. To achieve this goal, we address three broad research questions. First, how do military installations and their surrounding neighborhoods compare with one another in sociodemographic and economic indicators? Second, how are individual health and well-being outcomes associated with military neighborhood profiles? And third, how can the military improve service member and family health and well-being via installation-level resources or support strategies?

This report focuses on two case studies, one utilizing U.S. Army bases and one using U.S. Air Force installations. Using sociodemographic and economic data from the U.S. Census Bureau, we rank geographic areas including and surrounding selected Army and Air Force installations within the continental United States (CONUS), bounded by ZIP Codes. We do so by employing a commonly used methodology that evaluates social indicators of these geographic areas against one another. The result is the military neighborhood ranking index, or MNRI. We then link MNRI scores to personnel outcomes (such as retention and reenlistment), as well as Soldier and Airman health and well-being, using the same neighborhood modeling framework found in the academic literature.

The ranking of military base neighborhoods among both Army and Air Force installations showed that no geographic area, installation size, or installation type was consistently rated higher than others. However, we note that the U.S. Military Academy at West Point and the U.S. Air Force Academy in Colorado Springs, Colorado, were both ranked first in their service's ranking index.

None of the associations between the MNRI and the outcomes in the Army analysis remained significant after controlling for individual, Soldier-level characteristics;

however, body mass index was the only health and well-being measure available to us, and we could not determine from the personnel records whether that score was recent. The other two Army outcomes were attrition and separation from military service.

In the Air Force analysis, however, some of the associations we observed appeared to corroborate the MNRI. Specifically, the results for the rating of the civilian area as a place to live, neighborhood cohesion, and ratings of safety of the Airman's residence and neighborhood and the civilian area around the base were all positively associated with the MNRI. These positive associations reinforce the utility of objective measures of neighborhoods (i.e., Census data) by validating them against Airmen's subjective ratings of the characteristic and qualities of neighborhoods.

The Air Force case study yielded more-significant substantive results than the Army case study primarily because of differences in the nature of the data. We relied on the Total Army Personnel Database (TAPDB), a database of all Army personnel, their demographic characteristics, and their assignment locations, and the Air Force's Community Assessment Survey, a subjective survey of Airman and family well-being and community satisfaction. Survey data may be more fruitful in neighborhood studies given that individual *perceptions* of neighborhood quality may be more influential for self-reported health and well-being than more-objective measures are. Other data limitations may have also affected our ability to detect significant associations between the MNRI and health and well-being outcomes: Our use of ZIP Codes to define installation neighborhoods may have resulted in "neighborhoods" that were too large to influence outcomes; our outcome data may not have been sensitive enough to capture neighborhood effects on health and well-being; and our inability to control for exposure, or duration spent in an installation neighborhood, may have masked any significant associations between the MNRI and outcomes.

Nonetheless, we believe that, with further refinement, the use of neighborhood studies theory and methodology among the military can be useful for installation management charged with allocating resources related to service member and family well-being. The Army and the Air Force cannot control such factors as unemployment or family poverty rates in the neighborhoods surrounding their installations. They can, however, recognize that community resources in the poorest neighborhoods are likely already taxed and less able to support Soldiers and Airmen living in or near those neighborhoods. In those cases, the importance of the availability of installation resources, such as counseling and spouse employment services, may be magnified and even necessary to ensure a comparable quality of life for service members and their families across the various base locations.

One possible policy-relevant example relates to housing. Despite the fact that the basic allowance for housing (BAH) does take the median cost of rentals into account, it does not take the quality of that median rental into account. If a particular installation is

located in an area where a large portion of community members spend more than they can afford on housing (e.g., 35 or more percent of income), it may suggest that affordable, *quality* housing is sparse. In these select areas, the military could consider additional housing subsidies that ensure that families, especially those who may be living at or near the poverty line, can find affordable but also high-quality housing. With more fine-grained data, we expect that additional associations will emerge with more policy implications for how the services address the needs of their families.

Neighborhood factors can inform, but do not determine, base assignment preferences and the design and allocation of installation resources. Service member and family assignment preferences may be completely detached from, or only partially consider, neighborhood quality. Assignment preferences may instead take into account such factors as proximity to friends and family, career opportunities available (such as command or joint assignments), and preferred climate or regional culture. Similarly, the distribution of installation resources ultimately must take into account a range of factors, such as overall budget, operating costs, and usage rates. Thus, neighborhood characteristics are not the only factors that are relevant to consider, but they do complement existing measures and perhaps illuminate gaps not otherwise apparent.