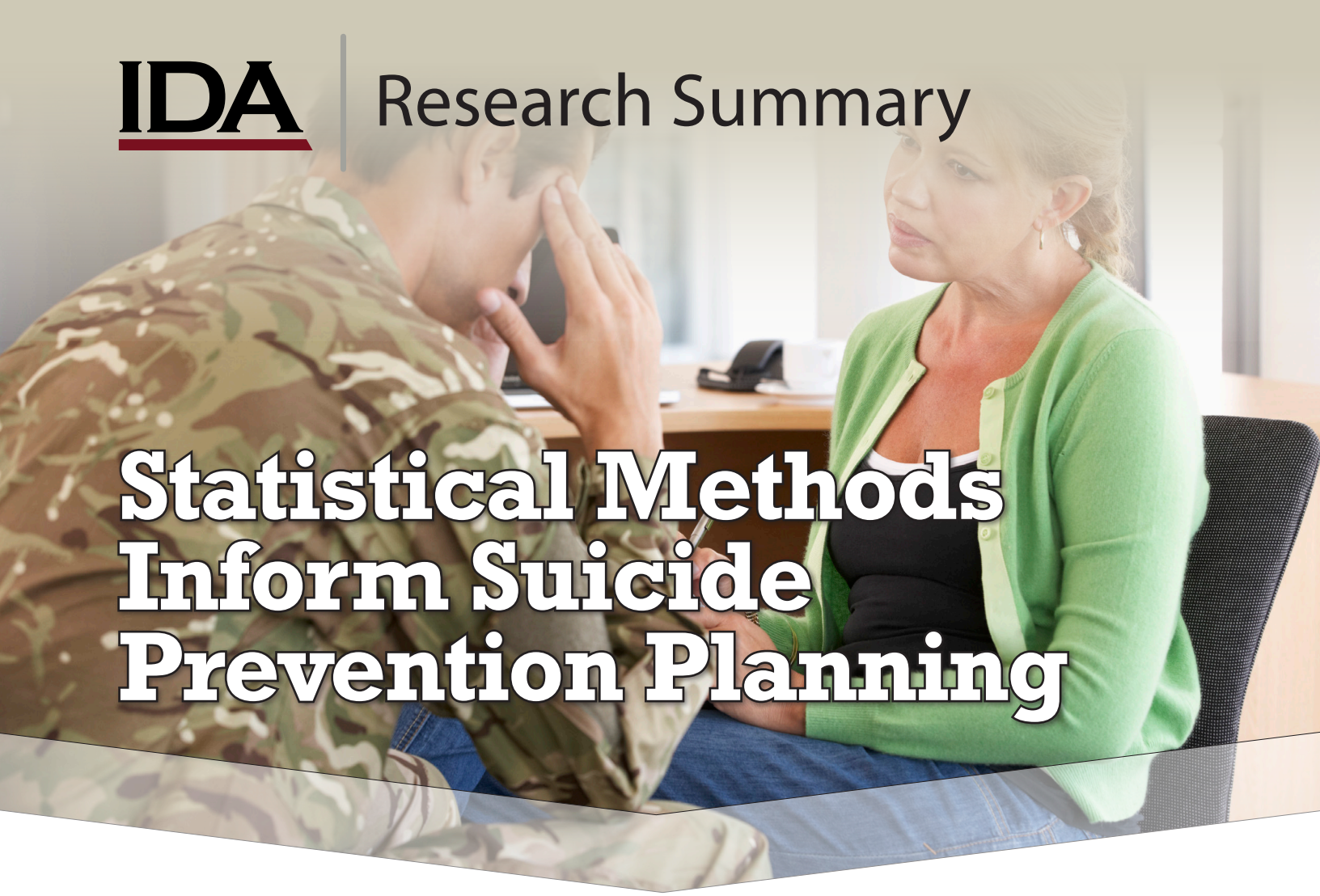
IDA | Research Summary



Statistical Methods Inform Suicide Prevention Planning

To help the National Guard Bureau (NGB) decide how suicide prevention funding and programs would best be distributed among U.S. states and territories, IDA researchers conducted quantitative analyses of suicide rates in the U.S. Army National Guard (ARNG) and the U.S. general population (GP). They discovered that differences in age, sex, and geographic distribution explain much of the higher suicide risk in the ARNG relative to the GP.

ARNG members' risk of suicide is affected by their being uniquely situated at the intersection of civilian and military communities. The NGB wanted to know if ARNG members, who predominantly live in civilian communities and hold civilian employment, are similar to or different from the GP in terms of suicide risk.

A comparison of data from 2010 through 2016 on suicide rates among the ARNG and the GP indicated the odds of dying by suicide were 76% higher for ARNG members than for the GP. After controlling for the relatively higher share of young and male individuals in the ARNG compared to the GP, IDA found the odds of dying by suicide to be 24% higher for ARNG members. Accounting for differences in geographic locations as well as age and sex reduced the odds of dying by suicide for ARNG members to 17% higher than the GP.

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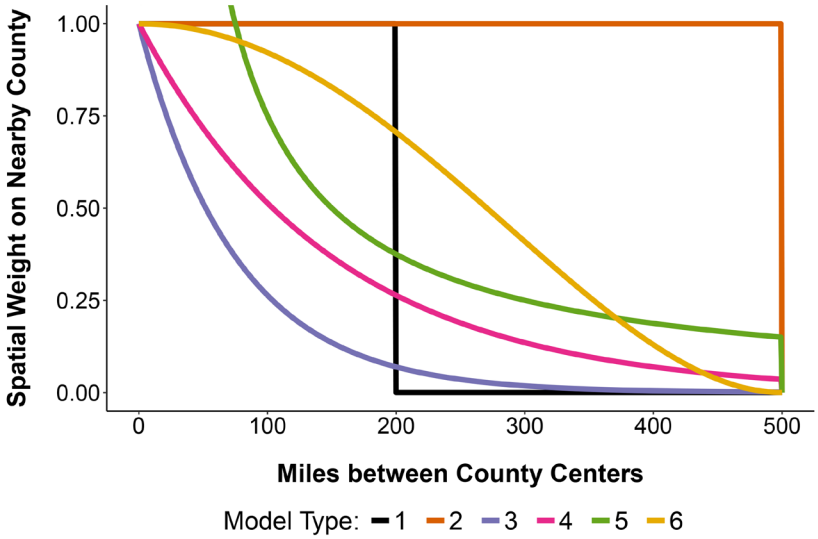
Employing hierarchical Bayesian estimation methods, we found that suicide risk varied similarly for the ARNG and GP:



- Suicide risk estimates mapped at the county level reveal the same geographic patterns for the ARNG and GP.
- Among candidate models that relate county proximity to similarity in suicide risk, the same model (Model 3 in the chart) fit both the ARNG and the GP data best.
- Among 68 county-level factors and their values in neighboring counties, all factors that were significantly correlated with estimated suicide risk in both the ARNG and the GP were correlated in the same direction.
- Among 16 additional ARNG-specific factors, such as median number of deployments, none were significantly correlated with estimated ARNG suicide risk.

Based on these similar patterns in estimated ARNG and GP suicide risk, we recommended that the ARNG consider suicide prevention programs that have evidence of success in the GP, even if they have not previously been considered in a military context. In additional research for the NGB, IDA is helping NGB implement an IDA-developed process for identifying, evaluating, and implementing evidence-based suicide prevention programs.

Our research revealed evidence of differences between the ARNG and GP as well. While ARNG and GP suicide risk varied similarly across counties, ARNG risk varied less. Also, suicide rates among males trended down with age for ARNG members, but up with age in the GP. In particular, suicide rates among males aged 34 and younger were significantly higher in the ARNG than the GP. We therefore recommended that the ARNG seek to understand and address ARNG-specific risk factors for suicide among young males.

Another unique characteristic of the ARNG is the operation of suicide prevention programs at the state and territory level. We collected information from states and territories on ARNG suicide prevention programs and found variation along many dimensions. To facilitate future evaluation of how suicide prevention program characteristics affect suicide rates, IDA recommended that the ARNG continue to gather program information on a yearly or other regular basis.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This summary is based on IDA Paper P-9229, *Geographical Variation in Army National Guard Suicide: Is the Guard Like the General Population?* by J. Bishop, M. Guggisberg, S. Clark-Sestak, J. Du Bois, D. Graham, N. Latshaw, and A. Wang. The research was sponsored by the National Guard Bureau.