# The Needs of the Army: Using Compulsory Relocation in the Military to Estimate the Effect of Air Pollutants on Children's Health

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# Research Question

- What is the effect of air pollution on respiratory hospitalizations for children?

# Contributions

- Identification: leverages random assignment to treatment
- Outcome: hospitalizations instead of mortality
- Method: IDW vs. Kriging, monitor measurement error

# Military Relocation

- Random reassignment at least every three years, no more than once per year (avg: 2.5 yrs)
- Over 20 years, individuals relocate an average of 12 times
- Conditional on rank and military occupation
- This paper shows evidence that randomization is successful

# Identification

- Air pollution differs across bases and over time
- Military children aged 0-5 are exposed, and some may be hospitalized
- Exposure is dependent on the parent's assignment

# Data

- Family location assignments and demographics from the Defense Manpower Data Center (DMDC)
- Hospitalizations at Military Treatment Facilities
- Hospitalizations at other hospitals from Champus/Tricare
- Pollution from the EPA
- Weather data from the National Climactic Center

# Results

- Significant results only for ozone among children aged 2-5
  - 15% increase in ozone $\Longrightarrow$ 8-23% increase in prob. of respiratory hospitalization
- Moving children to low-pollution areas $\Longrightarrow$ 143,100 fewer hospitalizations, 480,000 fewer ER visits, and 3.2 million fewer physician visits per year
- $928m savings in direct medical expenditure