Current Status of Mosquito Control Programs in North Carolina: The Need for Cost-Effectiveness Analysis

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INTRODUCTION
Mosquito control is technically specialized and labor-intensive with mosquito control programs (MCPs) carrying out services at federal, state, and local levels. In the 1970s, the North Carolina (NC) Department of Environment and Natural Resources formed the Public Health Pest Management (PHPM) section to play an active leadership role in training and support for local mosquito control programs across the state. However, PHPM was disbanded in July 2011 due to state budget cuts. The extent to which recent budget shortfalls have impacted services provided by MCPs is unknown. This study assesses the status of mosquito-borne disease surveillance in NC; hence, informing the legislature about potential public health consequences of budget cuts.

OBJECTIVES
1) Assess the current status of MCPs in NC.
2) Evaluate the extent to which the operational status of local MCPs affects public health.
3) Evaluate the impacts of losing the PHPM section in NC.

RESULTS
• Mosquito-borne viruses affecting public health in NC include:
  – Eastern equine encephalitis virus (EEEV)
  – La Crosse encephalitis virus (LACEV)
  – Saint Louis encephalitis virus (SLEV)
  – West Nile virus (WNV)

Study Area
• Three topographical regions in NC: 1) Coastal Plain (eastern), 2) Piedmont Plateau (central), and 3) Appalachian Mountains (western). There are > 60 species of mosquitoes found in NC, though not all act as pathogen vectors.

Survey
• 50-question survey regarding the status of MCPs distributed to departments of public and environmental health, public works, and vector control in all NC counties.

DISCUSSION
It is likely that the disbanding of the PHPM section and recent MCP budget cuts have suppressed mosquito borne disease prevention capabilities in NC. There remains much important work for MCPs, especially with regard to economic evaluations of risk. The disparities in mosquito control budgets across NC may reveal, in part, differences in value placed on mosquito control. Future studies should analyze the socioeconomic costs (including medical expenses due to mosquito-borne diseases such as WNE, LACE, and EEE) of reducing MCP budgets versus the benefits of mosquito control. In addition, more work is needed to assess the relationship between public health and mosquito control. It remains uncertain what future role MCPs will play in NC.

REFERENCES