

Disparities in Arkansas Mandated Immunization Coverage Among Natural Home and Foster-Care Adolescents

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Abstract

Statement of the Problem: Pulaski County, Arkansas adolescent birth cohort (PCABC) reported immunization rates and uptake for routinely required recommended 5 vaccines for school entry (FVSE) were persistently low compared to United States (U.S.) average (CDC,2012).

Background/Purpose: Anecdotal evidence indicated vaccine coverage disparities among foster-care (FCA) and natural-home adolescents (NHA). Arkansas laws require 5 vaccines for school entry (FVSE) to prevent 9 common childhood diseases. The study problem was that Pulaski County, Arkansas adolescent birth cohort (PCABC) immunization rates were low compared to U.S. adolescents for Diphtheria- pertussis-tetanus, Hepatitis B, Measles-mumps-rubella, Poliomyelitis, and Varicella FVSE.

Aim/Objective: This study examined the extent to which (1) PCABC immunization rates were significantly different from those estimated for U.S. adolescents in 2006–2008, (2) NHA and FCA immunization rates were different in 2003–2008; (3) sociodemographic variables mediate associations between home of residence (HOR), NHA or FCA, and up to date (UTD) status for FVSE; and (4) vaccination game theory (VGT) estimated deaths differ between individual-equilibrium and group-optimum behaviors.

Methods: The methodologies applied were direct standardization, χ^2 , multiple logistic regressions, and VGT to analyze PCABC retrospective secondary data from the Arkansas immunization registry.

Results: The results revealed that U.S. adjusted UTD coverage rates for Hepatitis B, measles-mumps-rubella, and varicella were greater than those for PCABC. Race-adjusted FCA

immunization rates were 120% higher than for NHA. Race mediated the association between HOR and UTD FVSE status, and African Americans had 80% greater odds of being UTD with FVSE compared to Caucasians. Group-optimum behavior was associated with fewer estimated deaths than individual equilibrium; thus, it is protective against disease outbreaks.

Conclusions: Positive social change may occur among the PCABC when healthcare providers include these results in communications with parents at FCA and NHA community health clinics. Parental vaccine acceptance for their children may increase vaccinations and improve PCABC health and wellness.

Biography

Dr. Jerome Ngundue's expertise and passion includes vaccine preventable diseases, population immunization, pandemic influenza preparedness, planning, and response. His research areas are Community health, immunizations, and infectious diseases. His research foundations are vaccination theory of game, quantitative methods, and infectious diseases.

Dr. Ngundue is the pandemic influenza and Public Health Preparedness Planner at Arkansas Department of Health. He is also a reviewer for Translational research grants at University of Arkansas Medical Sciences and Conference abstracts for American Public Health Association, APHA. He serves on several advisory boards and committees. Dr. Ngundue has presented at several international scientific conferences, United States National Immunization conference, workshops, and forums. He enjoys discussing his research and community contributions as a public health scholar practitioner

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