

# From sea to shining sea: Force health management of infectious diseases in a cross-global deployment flux toward tropical environments

Joanna Nelms MD, MPH, James Ebert MD, MBA, MPH, FAAP, and Nikki Rogers PhD  
Department of Community Health, Wright State University, Dayton, Ohio, USA



## INTRODUCTION AND PURPOSE

Infectious disease and warfare are inseparable scourges.<sup>1</sup> The purpose of this research was to conduct a historical review of force health management during US military conflict over the last two centuries, focusing specifically on prevention, control, and treatment of infectious diseases. Despite the decrease of infectious disease deaths (Figures 1 & 2), they remain a threat to US force health. The elucidation of historical 'lessons learned', understanding current deficits in deployment medicine, and referencing current public health recommendations allowed identification of the necessary transitions for US force health management to undergo in preparing and protecting a force flux from the deserts of the southwest Asia to more tropical climates.

## METHODOLOGY

This research was accomplished through a literature review on historical deployment health and disease issues in military conflict. To supplement this literature review, a short questionnaire was distributed to a set of six military physicians with international and deployment experiences. The supplement of their personal findings and anecdotes enriched the literature review. These personal accounts also provided a clear picture of issues in some of the most recent US deployment situations and highlighted some important changes that might be needed for optimal force health management in a cross global flux.

## HISTORY OF US WAR CASUALTIES DUE TO DISEASE VS COMBAT

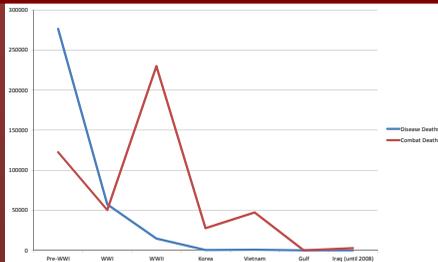


Figure 1. Total deaths from disease and combat injuries in US troops in major military conflicts<sup>2</sup>

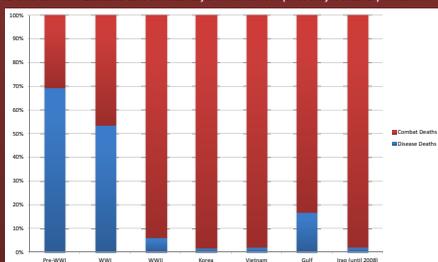
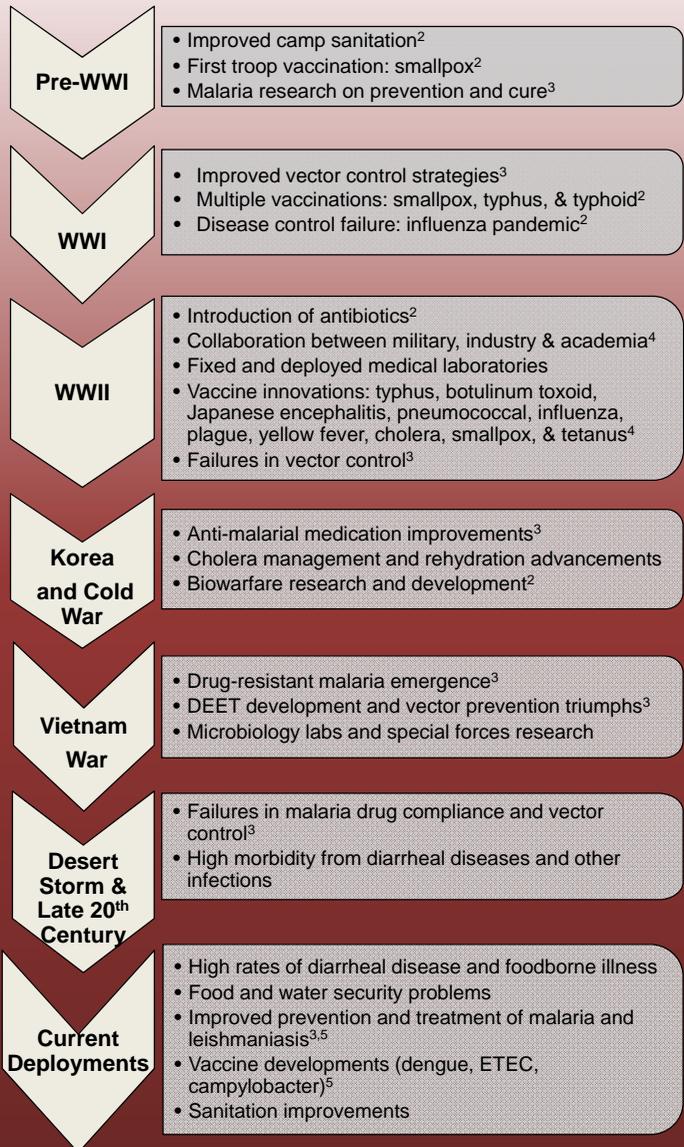


Figure 2. Percentages of deaths from disease versus combat injuries in US troops in major military conflicts<sup>2</sup>

## LESSONS LEARNED AND INNOVATIONS IN INFECTIOUS DISEASE CONTROL, PREVENTION, & TREATMENT



## RECOMMENDED TRANSITION FOR FORCE HEALTH MANAGEMENT

In the case of a cross-global flux of US troop deployment resulting in in distribution to more tropical locations, the military will need to transition current deployment planning strategies in order to prepare. While the large-scale deployment force health protection and planning structure is secure, changes will need to be executed in force health management education, environmental and disease-specific concerns, and biowarfare awareness. Executing this transition will allow more efficient and efficacious force health management and protection for American warfighters across the globe.

### Force Management Education

- Continued improvements of pre-deployment briefing
- Better pre-deployment education of civilians/contractors
- Education of stateside civilian public health offices to facilitate pre-deployment education and health needs
- Continued healthcare and public education on antibiotic resistance
- Education on vaccine safety and efficacy
- Continued improvement of military vaccination programs and tracking
- Physician education on tropical diseases
- Partnerships between US military branches
- Partnerships with academia and medical industry

### Environmental and Disease-specific Concerns

- Continued planning partnerships with military and civilian components
- Increased climate focus on humidity and moisture threats
- Create specific awareness to flora and fauna in tropical locations
- Partnering with local embassies (when available)
- Region-specific infectious disease prevention strategies for every deployment, every location, every time
- Enact plans for emerging or reemerging epidemics

### Biowarfare and Bioterrorism

- Foster awareness of risks and education on signs and symptoms
- Continue education in prevention and countering of attacks

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