# Force Health Protection for Joint Operational Readiness in the Philippines

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RESEARCH & DEVELOPMENT ®

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# Our Reason for Being

*Major Walter Reed, M.D., U.S. Army*

*Panama Canal (1904-1914)*

**Table 3. -Deaths per 1000 US Soldiers per Year of Warfare and Cause of Death•**

| | Deaths per 1000 US So ldiers per Year of Warfare | | | | |
|---|---|---|---|---|---|
| | Battle | | Nonbattle | | |
| | Killed in Action | Died of Wounds | Disease | Injury | Total |
| Mexican-American War | 9.9 | 4.8 | 103.9 | 3.7 | 122.3 |
| US Civil War (North) | 21.3 | 13.6 | 71.9 | 3.4 | 110.2 |
| Spanish-American War | 1.9 | 0.8 | 34.0 | 2.0 | 38.7 |
| Philippine-American War | 2.2 | 0.6 | 12.9 | 2.8 | 18.5 |
| World War I | 12.0 | 4.4 | 16.5 | 1.4 | 34.3 |
| World War II | 9.0 | 1.1 | 0.6 | 2.2 | 12.9 |

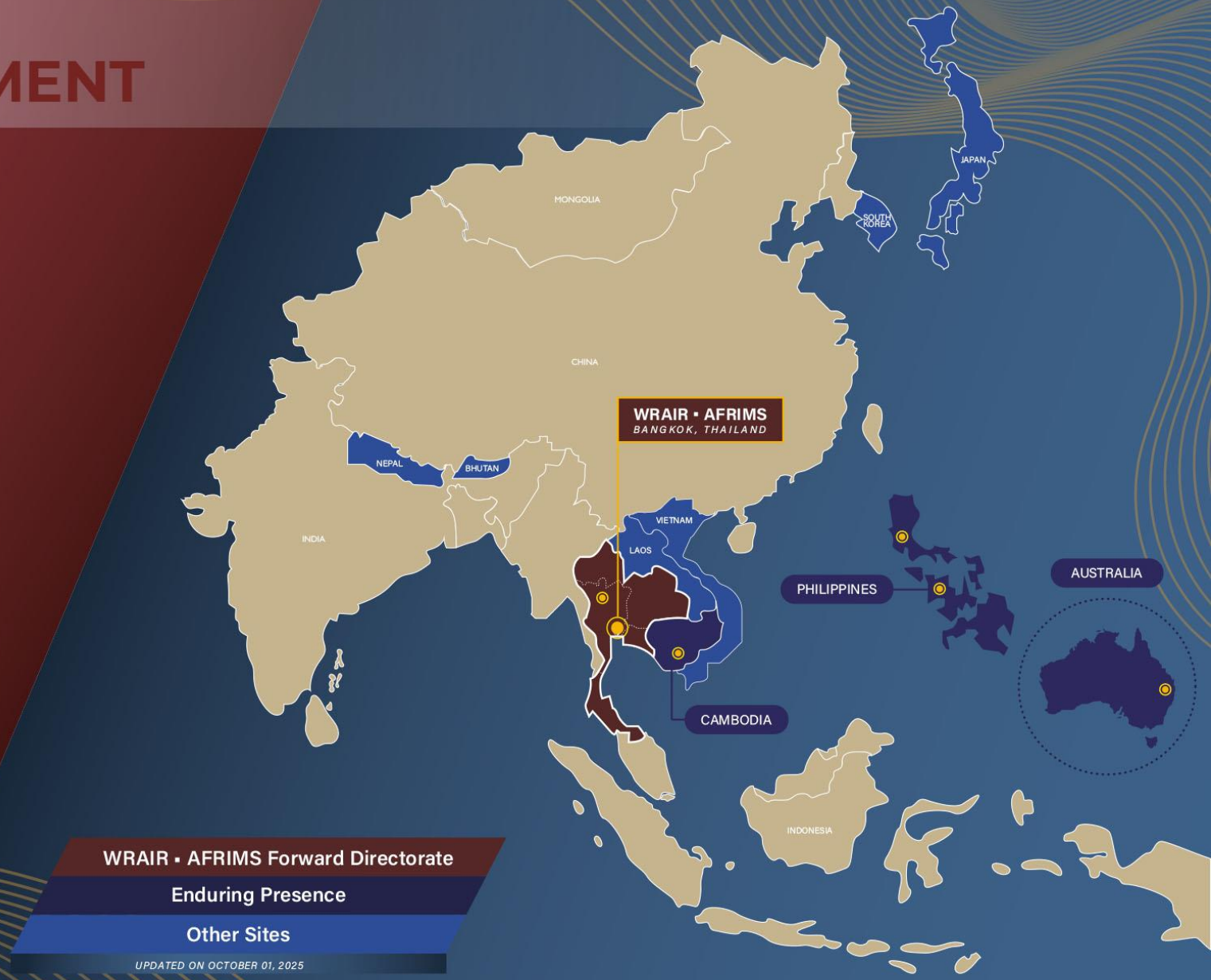
*From Beebe and DeBakey." courtesy of Charles C Thomas Publisher, Springfield, Ill.

https://accessibleecology.files.wordpress.com/2015/02/4-mosquito-brigade-worker.jpg

> *Dysentery has been more fatal to armies than powder and shot*
>
> -William Osler 1892

# AFRIMS
## OPERATIONAL ENVIRONMENT

**THAILAND:**
MIL-MIL · MIL-CIV · Permanent Placement
**PHILIPPINES:**
MIL-MIL · MIL-CIV · Permanent Placement
**AUSTRALIA:**
MIL-MIL · Partnership Exchange
**NEPAL:**
MIL-CIV · Scalable Services
**CAMBODIA:**
MIL-MIL · Scalable Services
**BHUTAN:**
MIL-CIV · Scalable Services
**LAOS:**
MIL-MIL · MIL-CIV · Scalable Services & Expanding
**VIETNAM:**
MIL-MIL · MIL-CIV · Scalable Services
**INDONESIA:**
MIL-CIV · Potential Services




• DEFEAT INFECTION •

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# WRAIR-AFRIMS Philippines

Optimizing military readiness by developing solutions to infectious disease capability gaps through bio-surveillance, medical countermeasures, and strategic partnerships.

VISIT OUR WEBSITE

## Bio-Surveillance Research

- AMR Surveillance
  Respiratory Virus Surveillance
- Febrile & Vector-Borne Disease Surveillance
- One Health based Surveillance

## Medical Countermeasures

- Chikungunya Vaccine Study
- HIV/STI Study
- HIV Remission Trial

## Strategic Partnerships

- Armed Forces Philippines OSTG & MC
- NAMRU-IP
- LANPAC
- PEPFAR

**Exercise Support**: Balikatan


AFRIMS operates lab sites in Manila and Cebu, partnering with the Armed Forces of the Philippines to combat infectious diseases, expand biosurveillance to austere sites, support MIL:CIV-integrated exercises, and deliver actionable FHP data on regional threats.

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# WRAIR-AFRIMS operations in the Philippines

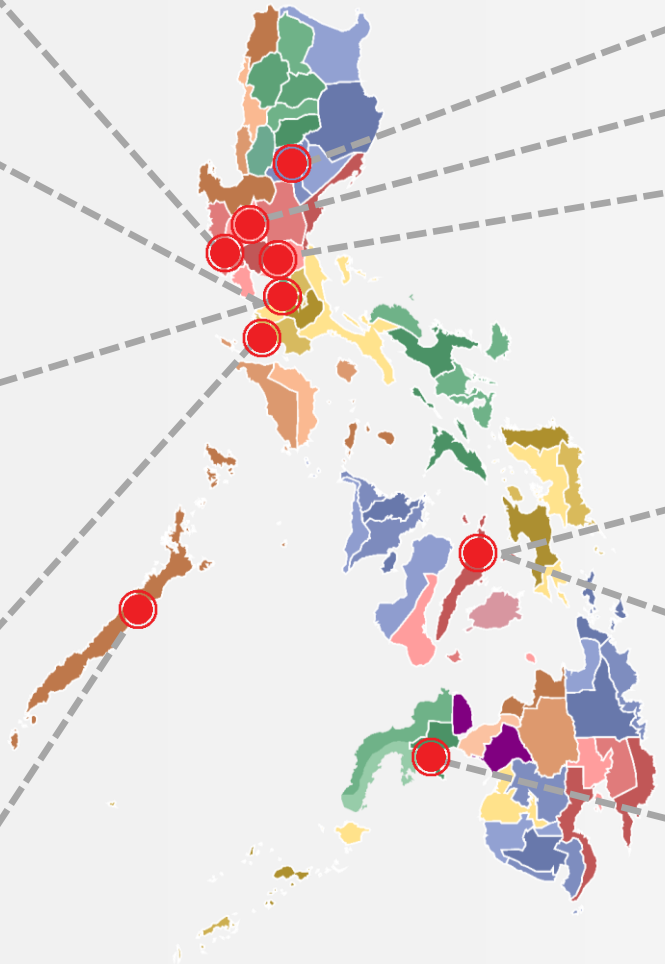
Subic Bay (Balikatan support)

Military Treatment Facilities in the capital:
1. V. Luna General Hospital (VLGH)
2. Army General Hospital
3. Air Force General Hospital
4. Manila Naval Hospital
5. Camp Gen. Aguinaldo Station Hospital
6. Presidential Security Command Station Hospital

AFRIMS Manila lab – AFP medical center/ V.Luna General Hospital

Military Treatment Facility in Cavite: Cavite Naval Hospital

Military Treatment Facility in Palawan: Camp General Artemio Ricarte Station Hospital



Fort Magsaysay (Balikatan support)

Tarlac/ Camp Aquino (Balikatan support)

Clark Air Base (Balikatan support)


Military Treatment Facility in Visayas Region: Camp Lapu Lapu Station Hospital, Cebu

Military Treatment Facility in Mindanao Region: Camp Navarro Station Hospital, Zamboanga

# Resistant Wound Infections → AMR Control

**Problem statement:**

- Battlefield wounds are heavily contaminated.
- Impact during natural disasters.
- Endemic “bad bugs” colonize skin/wounds; standard prophylaxis fails.

**Escalation**

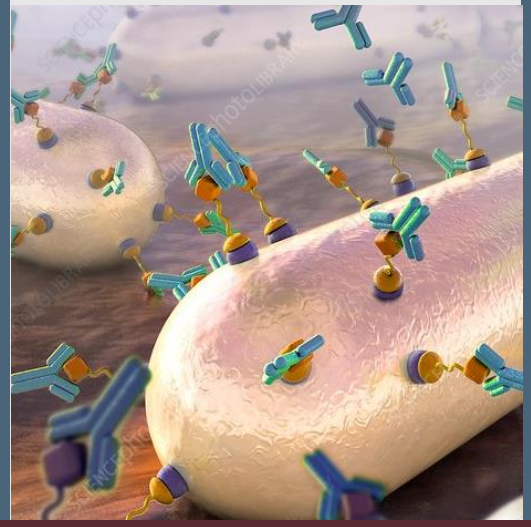
Drug-resistant bacteria emerge during evacuation and treatment → prolonged recovery, limb loss, degraded combat power, impact on civilian population and public health systems.

**AFRIMS Solution:**

- Genomics to track resistance spread.
- Use currently circulating isolates to de-risk new antibiotics, rapid diagnostics, vaccines, and alternatives.

**AFRIMS Solution:**

- IV mAbs from *Klebsiella pneumoniae* convalescent patients target toxins and virulence factors.

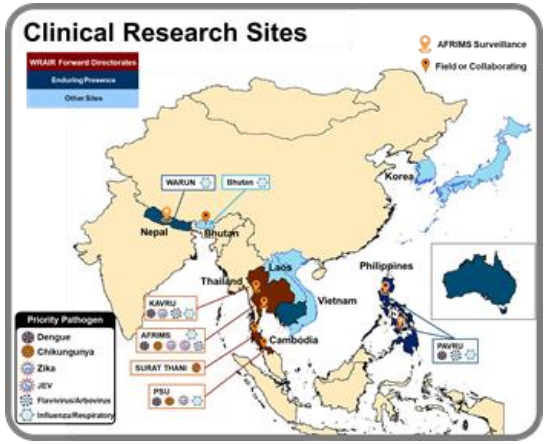


**Outcome**

- Faster, data-driven empiric therapy matched to drug resistance; fewer evacs and amputations.
- Adjunct mAbs improve outcomes in difficult, resistant wound infections.

# Vector-borne viral diseases

- Access and Surveillance
  - Extended Biosurveillance
    - Dengue and Chikungunya
    - Surveillance activities span seven countries across Southeast Asia.
    - Partnership with the Philippines Department of Health (Cebu City Health Department) and the private sector hospitals (Healthway/ Velez group)
    - Sero-surveillance across high diseases burden regions to inform development of medical countermeasures




- Civilian cooperation leading to Force Protection Development
  - Advanced laboratory and animal model capabilities allow for the discovery and evaluation of novel products.
  - Clinical: Dengue and chikungunya vaccines
  - Diagnostic assays
  - Force health protection guidance informed via civilian research

# U.S. INDOPACOM Exercise Support

## PROVIDES DATA TO GUIDE FORCE HEALTH PROTECTION MEASURES


## MISSION

| | |
|---|---|
| *Who:* | *AFRIMS* |
| *What:* | *Infectious disease bio-surveillance* |
| *When:* | *During U.S. INDOPACOM Exercises* |
| *Where:* | *Exercise sites e.g. Cobra Gold and Balikatan* |
| *Why:* | *To improve FHP* |

## END STATE

**INDOPACOM, Exercise Planners, and GEIS are informed and prepared for infectious disease threats to Forces operating in the region**

# Military Exercise Support – potential to inform local public health interventions

## Prevent

Focus: Vector-borne and Environmental infections

End State: Pathogen threat ID (likelihood and severity) prior to operations

Partners: INDOPACOM, US Army Public Health, Partner Health Ministries and Military Medical Centers

## Detect

Focus:  Respiratory and Diarrheal Infections

End State: Real-time bio-sample collection and equipment validation

**Balikatan 2025**: 14,000 troops from the U.S., Philippines, and Australia

**Cobra Gold 2025**: 8,000 troops from 30 Countries (over 6,000 from US)

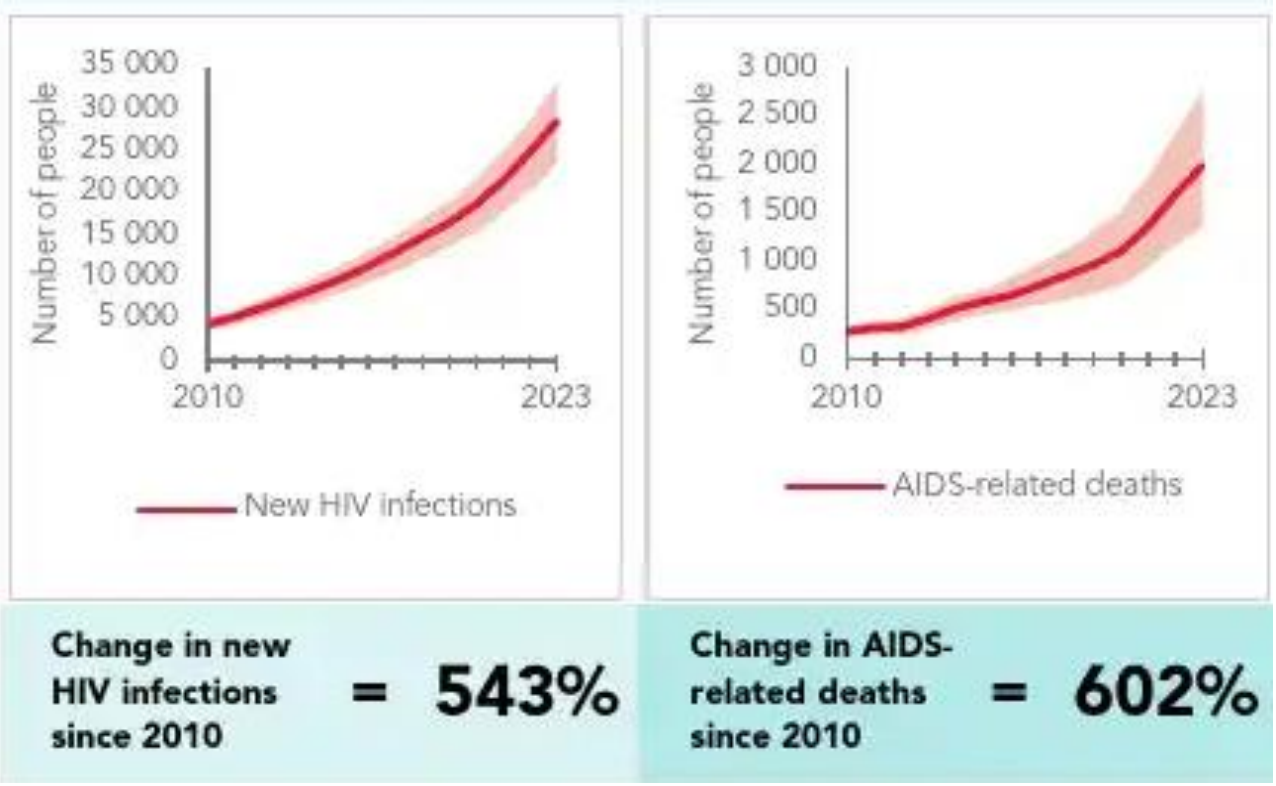
## Inform

Focus: Regional Infectious Disease Threats that inform civilian/ public health systems

End State: Global Emerging Infections Surveillance (GEIS) report to biodefense network and operational unit leaders to influence FHP


# HIV in the military

## HIV Trends in the Philippines




**Change in new HIV infections since 2010** = **543%**

**Change in AIDS-related deaths since 2010** = **602%**

- Rising HIV trends in the Philippines impact military enrollment and retention.
- Combat readiness and force protection implications of rising new infections.
- Military personnel seek health services in the public sector.
- HIV disease burden is directly linked to workforce readiness, productivity, and national security.
- AFRIMS provides TA to support HIV prevention and care services in the Armed Forces of the Philippines ( AFP).
- Military-civilian cooperation is critical for enhanced HIV prevention in the AFP.

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# Mil-Civ cooperation

- Collaboration between AFRIMS, the AFP, public health agencies, and academic partners supports a robust response during routine and public health emergencies.
- Joint infectious disease surveillance and outbreak detection programs between AFRIMS and the Philippines support force health protection and contribute to civilian health response.
- Civilian cooperation is essential for research on emerging infectious diseases, malaria, dengue, and other regional health threats.
- Enhanced military readiness is dependent on supportive public health systems, which is developed through shared expertise and resources.

# QUESTIONS?