

Military Infectious Diseases Research Program



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MIDRP MISSION

To conduct for the Department of Defense, a focused and responsive world class infectious diseases research and development program leading to **fielding of effective, improved means of protection and treatment**

to maintain maximal global operational capability with minimal morbidity and mortality

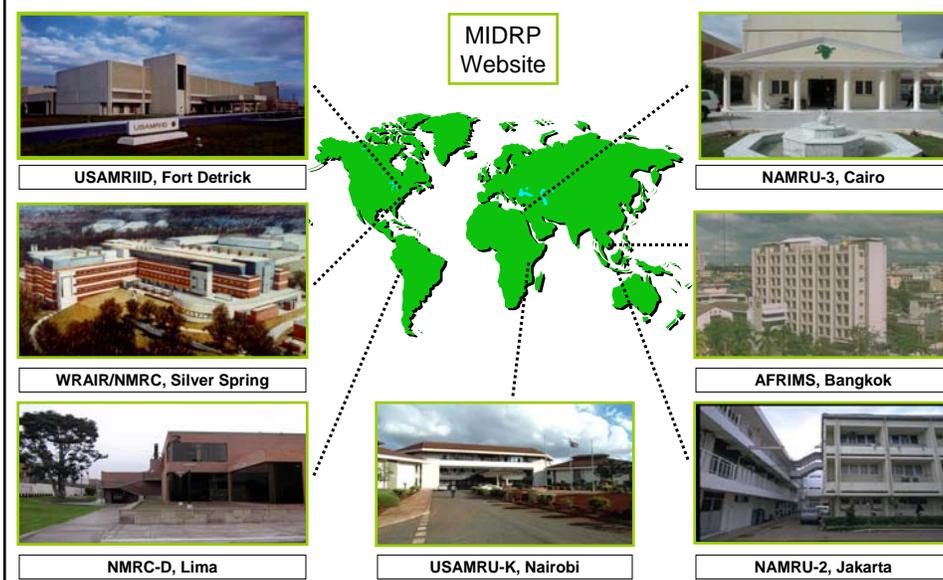


Military Infectious Diseases Research Programs (all of DoD)

- **Military Infectious Diseases Research Program (MIDRP; \$60M in FY04)**
- U.S. Army Medical Materiel Development Activity (USAMMDA; \$10M)
- Congressionally Mandated Programs (\$30M to MIDRP efforts)
- SBIR/STTR (\$3M)
- Outside funding (NIH, NGOs, Industry)
- Other DoD funded programs that leverage the MIDRP
 - Global Emerging Infections Surveillance and Response System (GEIS; \$9M)
 - DoD HIV/AIDS Prevention Program (Life; \$10M)
 - Biological Weapons Defense Program (DTRA; \$99M)
 - Defense Advanced Research Projects Agency (DARPA; \$2.7B; \$133M for BW)



MIDRP Places



MIDRP Research Coordinators

Malaria Drug  Q Dr. Milhous	Malaria Vaccine  F COL Heppner	Malaria Genome  C Dr. Doolan	Diarrheal Diseases  D CAPT Savarino	Flavivirus  S COL Sun	Diagnostics  L LTC Coleman
Insect Vector  U COL Gordon	Rickettsial  J Dr. Richards	Lethal Viruses  T Dr. Schmaljohn	Meningococcal  M Dr. Zollinger	Leishmaniasis  P COL Magill	HIV Research  H COL Birx

- Coordinating the work of approximately 330 Army, Navy, Air Force, DoD civilian and contract scientists located in 8 infectious diseases research laboratories
- Approximately 800 support personnel

Other Assets



Accredited Lab Animal Facilities



Pilot Vaccine Production Facility



Biosafety Level 4 Containment



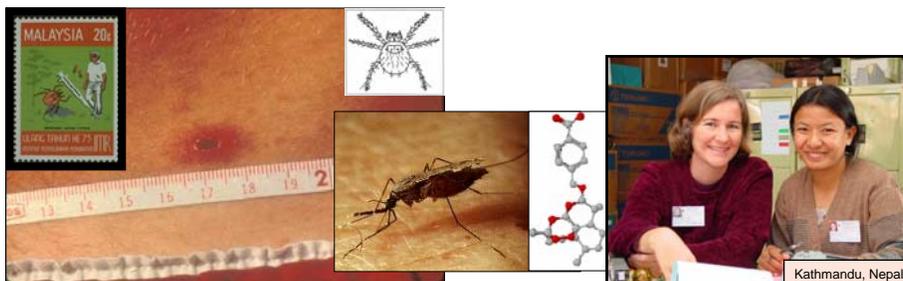
Clinical Trials Units

Military Infectious Diseases Research Program Licensed Products

	<p>Licensed Vaccines</p> <ul style="list-style-type: none"> ✓ Influenza (1942) ✓ Adenovirus 4 & 7 (1980) ✓ Meningococcus (A, C, Y, W-135) ✓ Oral Live Typhoid Ty21A (1990) ✓ Japanese Encephalitis (1992) ✓ Hepatitis A (1995)
	<p>Licensed Drugs</p> <ul style="list-style-type: none"> ✓ Primaquine ✓ Chloroquine-Primaquine Tablets ✓ Sulfadoxine-Pyrimethamine (Fansidar®) ✓ Mefloquine (Lariam®) ✓ Halofantrine (Halfan®) ✓ Doxycycline (Vibramycin®) ✓ Atovaquone/Proguanil (Malarone®)
	<p>Diagnostics And Protectants</p> <ul style="list-style-type: none"> ✓ Scrub typhus diagnostic ✓ DEET-based Standard Insect Repellent ✓ Camouflage face paint-insect repellent

What MIDRP is Doing About Antimicrobial Resistance

- Limited collection and characterization of resistant strains of malaria and diarrhea pathogens largely supported by the GEIS program
- Vigorous program to bring new antimalarial drugs and vaccines to market in partnership with non-governmental organization (NGOs) and industry
- Combat Casualty Care Research is working on antimicrobial peptides and other topical options to reduce wound infections



Issues Related to Antimicrobial Development

- The primary goal of MIDRP research is to prevent rather than to treat disease. Diagnosis and treatment are important secondary goals.
- DoD is not making new antimicrobials for bacterial pathogens, and pharmaceutical companies have slowed development.
- DoD has in place the people, infrastructure, and successful track record for antimicrobial drug development (the malaria drug program).
- How does the problem of microbial resistance to antibiotics compare to the problems of malaria, dengue, diarrhea, the need for improved diagnostics, etc?
- The MIDRP is modestly resourced (\$40M) with a broad research portfolio (11 program areas).
- Drug development costs are large.

What Might MIDRP Offer?

- Continue to partner with GEIS to document developing resistance within current research areas such as malaria, diarrhea, and scrub typhus.
- Possible new efforts:
 - Explore mechanisms of resistance to include bacterial physiology, functional genomics and proteomics
 - Develop resistance-specific bacterial diagnostics
 - Develop vaccines for common wound pathogens
 - Coordinate prospective prophylactic treatment studies in Iraq or in other trauma settings (complicated due to multiple variables and location in a war zone)
 - Develop new antimicrobials (drugs or other treatment approaches)
 - Develop immunomodulatory approaches to disease prevention
- All new efforts require new funding, additional personnel and extensive partnerships between DoD and other federal agencies, universities, and industry.

Conclusions

- The MIDRP contributes to the defense of the United States and to the needs of people living in disease endemic areas and travelers to those areas
 - Drugs, vaccines, diagnostics
 - Better understanding of tropical diseases
 - Science infrastructure improvements in developing countries
- Antimicrobial resistance presents new challenges

