Department Of Defense (DoD) Public Health Laboratory Services. Summary of the Session. CAPT Gregory C. Gray, MC USN. Emerging Illness Division, Naval Health Research Center, San Diego, CA.

Thirty years ago the DoD had a network of infectious disease laboratories that conducted important studies in military populations. Under the Armed Forces Epidemiological Board, the work of civilian and military scientists led to many interventions that are still in use. This program closed in 1971. Other laboratories were lost, and today there is no DoD public health laboratory structure. With new infectious disease threats looming, the DoD is not prepared to detect or prevent epidemics. One objective for this symposium was to identify and evaluate military laboratory resources that might serve these public health needs. DoD medical center and research laboratories, the Armed Forces Institute of Pathology, and deployable field laboratories were considered. No one organization had the broad capabilities of the old laboratory system. However, in the aggregate, their capabilities are considerable and can be merged into a DoD public health laboratory system that responds effectively to emerging infectious disease threats.


AFIP has brokered expertise and information in pathology and laboratory diagnoses of infectious diseases. The AFIP’s vast archives and pathology registries hold records and materials of infectious diseases in military and civilian populations from the Civil War through the present. A tri-service organization, the AFIP monitors vector-borne and zoonotic diseases in humans and animals. The AFIP is experienced in the histologic or cytologic diagnosis of at least 40 of the DoD’s 60 reportable infectious diseases and has immunologic or molecular assays for 20 of them. Use of AFIP resources with the active surveillance of the Department of Defense Global Emerging Infections Surveillance and Response System can provide public health laboratory services in military and civilian populations.

Role of the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID) as a Component of the Military Public Health Laboratory System: A Historical Perspective. George V. Ludwig, PhD, Diagnostic Systems Division, USAMRIID, Fort Detrick, MD.

The mission of the USAMRIID is to develop strategies, products, information, procedures, and training for medical defense against biowarfare agents and naturally occurring agents of military importance that require special containment. In this capacity, USAMRIID has acquired unique expertise for diagnosing diseases and identifying etiologic agents that have special biological containment requirements. USAMRIID also supports outbreak investigations with teams trained and equipped to operate at high levels of biocontainment in the field. This capability has been recognized by both military and civilian organizations, resulting in USAMRIID’s designation as a World Health Organization/Department of Defense Reference center for anthrax, hemorrhagic fever viruses, and arboviruses. USAMRIID’s specialized expertise has helped support numerous civilian and military responses to disease outbreaks. These responses will be described.

Army Public Health Laboratory Services. LTC William F. Nauschuetz, MS USA, Brooke Army Medical Center, Fort Sam Houston, TX.

The Department of Defense has recently committed to performing surveillance for emerging pathogens. This new mission has introduced some lively discussion regarding whether the microbiology laboratories at Army medical centers have the capabilities to fulfill this mission. This presentation will review the structure of U.S. Army Community Hospitals and U.S. Army Medical Centers. Microbiology laboratory capabilities will be discussed, focusing specifically on missions typically seen in civilian public health laboratories, such as testing for sexually transmitted infections, capabilities for diagnosing viral respiratory infections, outbreak investigations, and mechanisms for notifying preventive medicine epidemiologists about reportable infections. This session will also identify additional Army assets available for other public health missions.

Navy Public Health Laboratory Services: The Navy Environmental Health Center (NEHC) and Navy Environmental Preventive Medicine Units (NEPMUs). CAPT [sel] Diana M. Novak, MSC USN. Navy Forward Deployable Preventive Medicine Unit, NEHC, Norfolk, VA.

The NEHC, Norfolk, VA, has NEPMUs in Pearl Harbor, HI; Norfolk, VA; San Diego, CA; and Italy. Staffed with experts in clinical microbiology, parasitology, and environmental sampling, the NEPMUs perform public health laboratory functions. Each has a geographic area of responsibility (AOR). The NEPMUs collaborate with local military medical facilities and civilian health departments on disease outbreaks and provide confirmatory diagnostic laboratory testing. They also offer AOR-specific consultation to military commanders on infectious disease threats and Force Health Protection. The NEPMUs will soon be upgraded to Biosafety Level 3 (BL 3) facilities with capabilities (ELISA and PCR) for detecting and identifying biological warfare (BW) agents. This Navy system always has one rapidly deployable laboratory (a “Forward Deployable Laboratory”), which may be easily tailored to meet specific needs, including advanced BW testing. The NEPMU laboratories are cost effective and adaptable to unique requirements.

Antibiotic Resistance Surveillance Systems. Summary of the Session. CAPT Thad Zajdowicz, MC USN. Navy Environmental Health Center, Norfolk, VA.

The introduction of penicillin in the 1940s was accompanied by reports of resistance to its effects on Staphylococcus aureus within a very short time. Since then, introduction of new antibiotics (needed because of resistance to older drugs) has spurred increasing levels of resistance among bacteria. By the 1990s, recognition of the need to monitor and report emerging trends of antibiotic resistance was clear. Local efforts at the hospital level are useful but highly variable in their application; replicability from institution to institution is also problematic. Such efforts must be standardized, coordinated, and supported by wider geographic surveillance, with rapid communication of results to physicians, pharmacists, and public health officials. Multiple systems for approaching this problem were discussed in this session, including initiatives from government, public health organizations, and private corporations. The need for the U.S. Department of Defense to participate in a global approach to contain antibiotic resistance was emphasized.