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**Bioterrorism, The Course We Never Had  
in Medical School**

Everything changed on September 11, 2001. Our world will never be the same. Did terrorists select this date to mimic our emergency call system? Through the increasing number of news stories, alerts, faxes, e-mails, medical meetings and urgent announcements from medical societies we are all aware of the bioterrorism threats, pranks and successful attacks. As physicians, we must be completely current regarding the implications and effects that bioterrorism has on our patient population.

At the recent Hawaii Medical Association Annual Meeting on Kauai, Richard F. Corlin MD, President of the American Medical Association, noted that a medical textbook on bioterrorism sold out and is no longer available. There is however an excellent electronic textbook on Biological Warfare and its Cutaneous Manifestations by Thomas W. McGovern, MD MAJ MC and George W. Christopher LTC USAF MC, readily available on the Web at: <http://telemedicine.org/BioWar/biologic.htm>.

Anthrax may top the list of biological warfare agents presently, but there are many others including:

Viral agents: small pox, hemorrhagic fever, equine encephalitis

Bacterial agents: plague, glanders, tularemia, brucellosis, Q-fever

Toxins: botulinum, ricin, staphylococci enterotoxin

Physicians realize how vulnerable America and the rest of the world is to bioterrorism. Evidence of this is clearly demonstrated by the number of criminal investigations in the United States related to the use of biological agents as weapons of mass destruction, which more than doubled between 1997 and 1998. In 1997, 30% of terrorism investigations involved biologicals. In 1998, 62% related to these materials.<sup>1</sup> Up to date data are not yet available but since September 11 bioterrorism has dramatically increased.

President George W. Bush is to be congratulated for creating the Office of Homeland Security. World leaders are making positive progress though we are not yet fully prepared. The U.S. Government Accounting Office (GAO) reported in September 2001 that "the coordination of federal terrorism and research, preparedness, and responsible programs thus far has been fragmented."<sup>2</sup>

This is an unprecedented war, but thanks to City, County, State and Federal efforts, with the cooperation of hospitals and physicians, each day we become better educated to combat biological enemies.

**References**

1. U.S. General Accounting Office, *the Department of Health combating terrorism: need for comprehensive threats and risk assessment of chemical and biological attacks*, GAO/NSAID-99-163, Sept. 1999, p. 18
2. U.S. General Accounting Office, *Bioterrorism: Federal Research and Preparedness Activities*, GAO-01-915, Sept. 2001, pp. 15-16

The 145<sup>th</sup> annual meeting of the Hawaii Medical Association was held at the Hyatt Regency Hotel at Poipu, Kauai, Hawaii. Along with the House of Delegates meeting, attendees had the benefit of a large display of exhibits from a multitude of medical companies and agencies which serve Hawaii's physicians. Of greatest importance to the physicians and many visitors was the excellent education program which provided 9.5 hours of category one credit, and provided some extremely useful information for every medical practice.

The first morning was dedicated to Gettin' Old Ain't Easy. Patricia Blanchette, MD, MPH, Professor and Director of the Geriatric Medicine Program for John A. Burns School of Medicine (JABSOM) University of Hawaii, gave a comprehensive overview of Alzheimer's Disease with a careful description of early signs, and progress of the disease. The numerical, social, and financial impact on our society was described as our baby boomer population moves into Medicare years. Included also was a detailed explanation of the amyloid cerebral degenerative changes and the avenues of research for drugs to arrest the degeneration. Also, the effect on caregivers was discussed, and the importance of providing assistance to those obliged to care for an increasingly difficult loved one.

Melvin H.C. Yee, MD, neurologist and Assistant Professor of Medicine at JABSOM, followed by discussing Parkinson's Disease. 80% of the brain's substantia nigra is lost before symptoms of Parkinson's occurs. Dr. Yee emphasized that tremor is not a hallmark, but rather the cogwheel rigidity, abnormal posture and gait, and bradykinesia, reveal the diagnosis. Tremor may or may not be present. Signs of early PD were presented along with a differential diagnosis, including multi-infarct state, hydrocephalus, HIV, basal ganglia tumor, depression, and drug induced parkinsonism. An overview of treatment with various neuroprotective agents and surgical approaches outlined the avenues available for therapy. Transplantation of embryonic tissue shows great promise, but remains an issue of controversy.

Iqbal Ahmed MD, Professor and Vice Chair for Education, Department of Psychiatry JABSOM, talked about Depression in the Elderly. Factors such as poor health, disability, cognitive impairment, psychic pain and drug dependence contribute mightily to late-life depression. The most compelling consequence of depression is increased mortality from both suicide and medical problems. White males are at greatest risk with suicide rising severely after age 65. Most authors believe that there is a relationship between depression and non-suicidal mortality also. Diagnosis is critical because untreated depression is likely to persist in the elderly. The patient and family must be educated about therapy, and pharmacologic agents should start at low doses and gradually increased as necessary. Moreover, maintenance therapy is a requisite because cessation of medicine often promotes relapse. Treatment for at least six months is necessary after remission of the depression, and often a chronic condition requires ongoing drugs.

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