



DEPARTMENT OF DEFENSE
ARMED FORCES EPIDEMIOLOGICAL BOARD
5109 LEESBURG PIKE
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NOV 23 2001

AFEB (15-1a) 02-01

MEMORANDUM FOR The Assistant Secretary of Defense (Health Affairs)
The Surgeon General, Department of The Army
The Surgeon General, Department of The Navy
The Surgeon General, Department of The Air Force

SUBJECT: Prevention/Minimization of Adenovirus Infection

1. On 18 September 2001 the Armed Forces Epidemiological Board (AFEB) was presented with a request from the Assistant Secretary of Defense for Health Affairs (ASD(HA)) to provide recommendations on non-vaccine methods to minimize and control the transmission of adenoviral and other acute respiratory disease-causing agents in the recruit training setting. To assist the Board, the Preventive Medicine officers from the Army, Navy, Air Force, and Coast Guard presented data on respiratory disease incidence at the Service recruit training centers. Dr. Larry J. Anderson from the Division of Viral and Rickettsial Diseases, Centers for Disease Control and Prevention (CDC), presented to the Board CDC's experience with adenovirus outbreaks.

2. The Board continues to be deeply concerned about the loss of adenovirus vaccine for use in the basic training setting and the resultant increase in acute respiratory illnesses (ARI) among basic trainees at several basic training sites across the military services. The rates of ARI and disease impact appear to be uneven from site to site, but sustained increases in disease have been observed since the loss of the adenovirus vaccine at several U.S. Army basic training posts, Great Lakes Naval Training Center, Lackland Air Force Base, and the U.S. Coast Guard Training Center Cape May. Increased ARI in the basic training setting is far more than an inconvenience. It has resulted in increased utilization of outpatient medical care, increased numbers of hospitalizations, one to several missed days of training for affected recruits and resultant "recycling" of some basic trainees, and most tragically, two adenovirus related deaths among U.S. Navy recruits.

3. Recent events in New York, Washington DC, and Pennsylvania, as well as the numerous anthrax cases, carry the potential for a protracted military response over the coming months and years. This may result in increased numbers of basic trainees processing through existing recruit training sites which are already at times overcrowded. This combination of factors increases the likelihood for even greater problems associated with ARI than currently observed, as ARI transmission is enhanced by crowded conditions. ***Therefore, the Board feels that this issue goes beyond traditional public health concerns and should be viewed as having the potential to jeopardize operational military readiness, as it did in the early and mid-20th century.***

4. There appears to be a wealth of historical epidemiologic data, both from studies done in the pre-vaccine era and from studies of more recent outbreaks. In addition, there are intriguing patterns suggesting significant differences in the incidence of ARI across the basic training sites. It is possible that some of these differences are explained by differential case ascertainment and application of case-definition, but these are unlikely to explain the magnitude of the differences. Well designed and executed hypothesis driven research studies examining potential factors associated with endemic and epidemic disease occurrence in some settings, and the lack of epidemic disease in others, clearly need to be performed.

5. Based on currently available information, the Board makes the following recommendations:

a. THE SINGLE GREATEST PRIORITY IS TO REESTABLISH A STABLE SUPPLY OF ADENOVIRUS VACCINE AS SOON AS POSSIBLE. IT IS UNLIKELY ANY SINGLE INTERVENTION OR COMBINATION OF INTERVENTIONS WOULD BE AS EFFECTIVE IN THE BASIC RECRUIT TRAINING SETTING AS THE ADENOVIRUS VACCINE HAS BEEN IN REDUCING ARI. IT IS UNCLEAR TO THE BOARD WHY IT HAS BEEN ESTIMATED TO TAKE AS LONG AS 6-8 YEARS TO ESTABLISH A NEW SUPPLY OF VACCINE, SINCE THE EXISTING VACCINE IS AN ALREADY FOOD AND DRUG ADMINISTRATION APPROVED AND LICENSED PRODUCT.

b. THE BOARD IS CONCERNED THAT AN EXAMINATION OF NON-VACCINE/NON-ANTIMICROBIAL METHODS TO REDUCE ARI TRANSMISSION, WHILE UNDERSTANDABLE IN THE ABSENCE OF ADENOVIRUS VACCINE, MAY RESULT IN A PERCEPTION BY THE MILITARY SERVICES THAT THESE METHODS REDUCE THE URGENCY OF OBTAINING A SUPPLY OF ADENOVIRUS VACCINE, AND MIGHT EVEN SUBSTITUTE FOR IT AND OTHER VACCINES. EVEN FOR THE BEST STUDIED AND MOST WIDELY USED OF THESE PRACTICES - HAND WASHING AND BUNK SPACING - THERE IS LIMITED EVIDENCE THAT NON-VACCINE METHODS ARE EFFECTIVE. MUCH OF THAT EVIDENCE IS OLD AND MAY NOT BE VALID IN THE CURRENT RECRUIT TRAINING ENVIRONMENT. NON-VACCINE METHODS ARE FLAWED BECAUSE THEY ABSOLUTELY DEPEND ON THEIR CONSCIENTIOUS, CONTINUOUS, AND PERSISTENT APPLICATION. THE CULTURE NECESSARY TO ACHIEVE THIS IS EXTREMELY DIFFICULT TO SUSTAIN UNDER THE PRESSURES AND DEMANDS OF RECRUIT TRAINING, AND THE CONTINUOUS TURNOVER OF THOSE WHO CONDUCT THE TRAINING. THEREFORE, THE BOARD EMPHASIZES THAT NON-VACCINE/NON-ANTIMICROBIAL METHODS ARE NEVER A SUBSTITUTE FOR VACCINES AND ARE, AT BEST, A STOP-GAP MEASURE.

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c. RESEARCH EFFORTS SHOULD BE DIRECTED TOWARDS THE STUDY OF ANTIMICROBIAL/ANTIVIRAL COMPOUNDS AND VACCINES OTHER THAN ADENOVIRUS, MENINGOCOCCAL, AND INFLUENZA WHICH MAY BE EFFECTIVE FOR PREVENTION, PROPHYLAXIS OR TREATMENT OF ARI IN THE RECRUIT SETTING INCLUDING DISEASE OUTBREAKS.

d. AMONG ALTERNATIVE COUNTERMEASURES (ADMINISTRATIVE, PERSONAL HYGIENE, ENVIRONMENTAL, AND ENGINEERING), THE TWO THAT APPEAR TO HAVE BEEN THE BEST STUDIED AND HOLD THE MOST PROMISE IN REDUCING THE BURDEN OF ARI ARE HANDWASHING/PERSONAL HYGIENE AND BUNK SPACING. HOWEVER, MANY OF THE STUDIES ON THESE MEASURES TOOK PLACE DECADES AGO, AND IT IS UNCLEAR HOW APPLICABLE THEY ARE TO TODAY'S MILITARY BASIC TRAINING SETTING. A DETAILED REVIEW OF THE HISTORICAL AND CURRENT DATA ON THESE TWO INTERVENTIONS (INCLUDING SPECIFIC STUDIES AND OUTBREAK INTERVENTIONS) SHOULD BE CONDUCTED, SUMMARIZED INTO A SINGLE DOCUMENT, AND PRESENTED TO THE BOARD IN ORDER THAT MORE SPECIFIC RECOMMENDATIONS FOR THEIR APPLICATION IN THE BASIC TRAINING SETTING CAN BE MADE.

e. IF A RECOMMENDATION IN FAVOR OF ANY OF THE ABOVE COUNTERMEASURES IS MADE, THERE MUST BE A MECHANISM AND THE NECESSARY RESOURCES AVAILABLE TO ASSURE THEY ARE APPROPRIATELY ADOPTED AND IMPLEMENTED BY THE VARIOUS SERVICES AND AT ALL MILITARY BASIC RECRUIT TRAINING SITES.

f. PENDING MORE SPECIFIC RECOMMENDATIONS, ALL BASIC TRAINING SITES SHOULD PROVIDE AMPLE OPPORTUNITIES FOR AND ENCOURAGE FREQUENT HAND WASHING (OR COMPARABLE METHODS) AND PERSONAL HYGIENE AMONG BASIC TRAINEES. ALL SITES SHOULD PROVIDE TISSUES TO TRAINEES TO COVER THEIR NOSES AND MOUTHS WHEN SNEEZING OR COUGHING, AND ALLOW TISSUES TO BE CARRIED AS NECESSARY. ATTITUDES AND BARRIERS THAT DISCOURAGE THESE ACTIVITIES SHOULD BE ELIMINATED BY COMMAND POLICY AND COMMAND ENFORCEMENT.

g. OTHER COUNTERMEASURES (E.G. BENZATHINE PENCILLIN FOR CIRCUMSTANCES OTHER THAN CONTROLLING GROUP A STREPTOCOCCAL DISEASE, ENHANCED VENTILATION, ULTRAVIOLET LIGHT) APPEAR TO HAVE BEEN BENEFICIAL IN LIMITED CIRCUMSTANCES OR HAVE NOT BEEN DEMONSTRATED TO BE EFFECTIVE. THE BOARD IS CONCERNED THAT ANY

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APPARENT BENEFIT COULD REPRESENT CONFOUNDING FROM OTHER UNRECOGNIZED INTERVENTIONS AND IS RELUCTANT TO ENDORSE THESE OTHER COUNTERMEASURES UNLESS MORE DEFINITIVE DATA ARE AVAILABLE.

h. THE UNCERTAINTY REGARDING ALTERNATIVE COUNTERMEASURES HIGHLIGHTS THE CRITICAL NEED FOR WELL DESIGNED AND EXECUTED HYPOTHESIS DRIVEN RESEARCH STUDIES OF THEIR IMPACT. CURRENTLY AVAILABLE DATA SUGGEST THAT ARI RATES, AND THE PROPORTION CAUSED BY ADENOVIRUS, VARY WIDELY AMONG THE TEN MAJOR BASIC RECRUIT TRAINING SITES. IN ADDITION, OTHER WESTERN MILITARIES WHICH DO NOT ROUTINELY USE ADENOVIRUS VACCINE APPEAR NOT TO HAVE A PROBLEM OF SIMILAR MAGNITUDE. THE REASONS FOR THESE DIFFERENCES NEED TO BE ELUCIDATED THROUGH WELL-DESIGNED AND EXECUTED EPIDEMIOLOGIC STUDIES.

i. THE LOSS OF ADENOVIRUS VACCINE AND SUBSEQUENT RISE IN ARI MARES IT ESPECIALLY IMPORTANT TO ASSURE A STEADY SUPPLY OF VACCINES FOR OTHER RESPIRATORY DISEASES WHICH HAVE HISTORICALLY BEEN PROBLEMATIC IN THE RECRUIT TRAINING SETTING, PARTICULARLY INFLUENZA AND MENINGOCOCCAL DISEASE. THE BOARD IS CONCERNED THAT EFFORTS TO TRANSITION TO A CONJUGATE MENINGOCOCCAL VACCINE COULD POTENTIALLY DISRUPT VACCINATION EFFORTS IN THE FUTURE, AND RECOGNIZES THE PROBLEMS WITH OBTAINING AN ADEQUATE SUPPLY OF INFLUENZA VACCINE EACH OF THE LAST TWO INFLUENZA SEASONS.

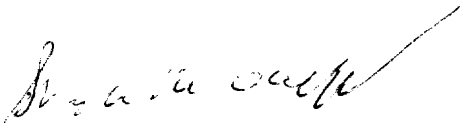
6. For more definitive recommendations to be made on the efficacy of handwashing/personal hygiene and bunk spacing in preventing ARI in the basic recruit training setting, the Board requests that Health Affairs provide a review of historical and contemporary data on efficacy of handwashing/personal hygiene and bunk spacing and a summary of the ARI outbreak investigations that have been performed at the basic recruit training sites at the next meeting of the AFEB. Dr. Anderson from the Division of Viral and Rickettsial Diseases, Centers for Disease Control and Prevention (CDC), has offered to provide an Epidemic Intelligence Service Officer to assist in assessing available data on the differences in site disease occurrence. Additionally, the Board would like a current status report at the next meeting on the adenovirus vaccine issue, particularly the status of vaccine production and projected timelines and an update on research efforts directed towards the study of antimicrobial/antiviral compounds and vaccines which may be effective in prevention, prophylaxis or treatment of ARI in the basic recruit training setting.

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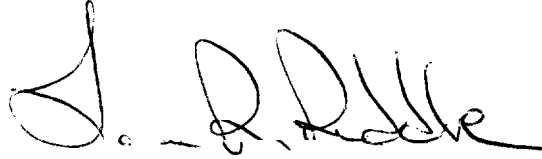
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7. The above recommendations were unanimously approved.

FOR THE ARMED FORCES EPIDEMIOLOGICAL BOARD:



STEPHEN M. OSTROFF, M.D.
AFEB, President



JAMES R. RIDDLE, D.V.M., M.P.H.
Lt Col, USAF, BSC
AFEB Executive Secretary

Encl

ASD(HA) Memorandum dated 8 August 2001

CF:

Board Members and Consultants (w/encl)

USAMRMC (w/encl)

USAMRIID (w/encl)

USD (AT&L) (w/encl)

Joint Vaccine Acquisition Program (w/encl)

J4-MRD (w/encl)



HEALTH AFFAIRS

THE ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D. C. 20301-1200

AUG 8 2001

MEMORANDUM FOR THE ARMED FORCES EPIDEMIOLOGICAL BOARD

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Historically, the Armed Forces Epidemiological Board (AFEB) has been very helpful in making recommendations to the Department of Defense (DoD) and the Services concerning the prevention and/or minimization of diseases. As the Board is well aware, adenovirus vaccines (Type 4 and Type 7) were used in Army, Navy, and Marines Corps recruit training facilities as the primary means of preventing the transmission of adenovirus Types 4 and 7. The Board is also aware that vaccine production was discontinued in 1996, and the DoD subsequently took action to extend the use of remaining vaccines and to find another manufacturer for adenovirus vaccines. It is estimated, however, that it may be several years before the adenovirus vaccines will be available.

Despite these complexities, the Department must continue in its disease control efforts against adenovirus and other acute respiratory diseases. Therefore, I request the assistance of the AFEB in conducting a thorough review of known and suggested non-vaccine methods to minimize and control the transmission of adenoviral and other acute respiratory disease-causing agents in the recruit training setting. This review should address all possible alternative countermeasures, including administrative, personal hygiene, environmental, and engineering methods. This review should conclude with a report on recommendations from the Board on potentially effective non-vaccine methods that may be considered for testing, targeted uses (e.g., seasonally, during outbreaks), or general implementation at recruit training facilities to minimize/prevent the transmission of adenovirus infections.

I request that you address this issue at your next AFEB meeting in September 2001, and provide the results of your review within 75 days of this meeting.

A handwritten signature in black ink, appearing to read "Jarrett Clinton".

J. Jarrett Clinton, MD, MPH
Acting Assistant Secretary