

Mass AIDS tests proved feasible by U.S. military

by Warren J. Hamerman

In October of 1985, the U.S. Department of Defense announced that all military personnel as well as all potential inductees into military service—Army, Air Force, Navy,

and Marines—would be tested for AIDS. At the Third International AIDS Conference June 1-5 in Washington, D.C., Col. Donald S. Burke, Chief of the Department of Virus Diseases at the Walter Reed Army Institute of Research was able to report the following three proven “overview” conclusions of the military testing program:

1) To date over 2.5 million persons have been tested for HIV by the Department of Defense.

2) The feasibility of large-scale yet high-quality HIV testing programs has been demonstrated.

3) Demographic factors currently associated with *HIV infection* may differ substantially from those known to be associated with AIDS.

In his overview presentation Colonel Burke summarized the excellent rationale for the Department of Defense testing program in terms of three categories of benefits.

Benefits to the Department of Defense:

- Fitness for duty of troops
- Safety of battlefield blood supply

FIGURE 1
Department of Defense HIV testing programs 1985-87

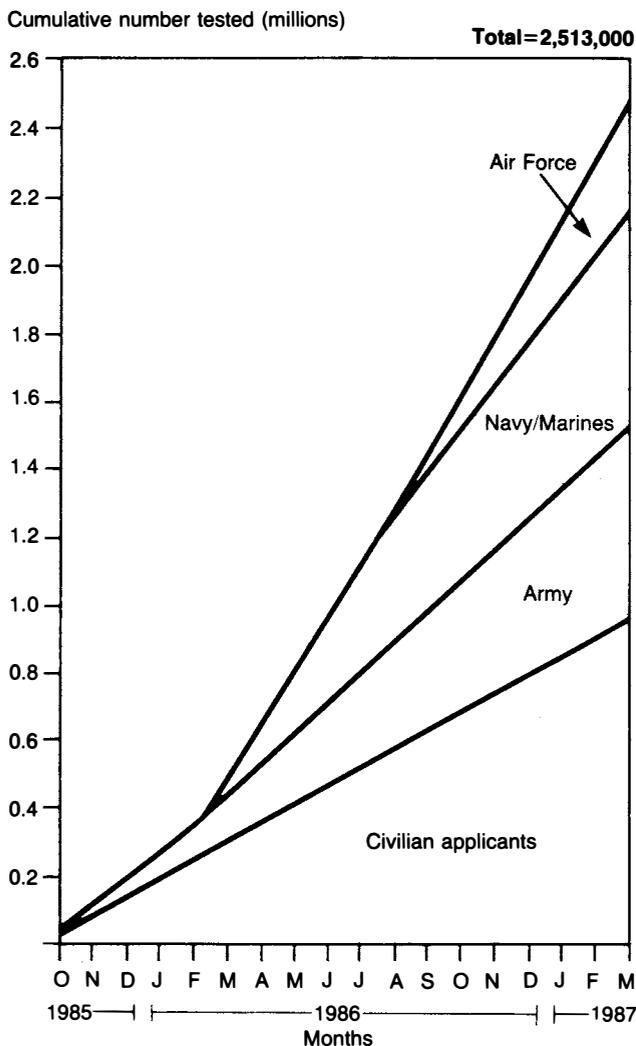


FIGURE 2
Age-specific HIV prevalences, by army service history

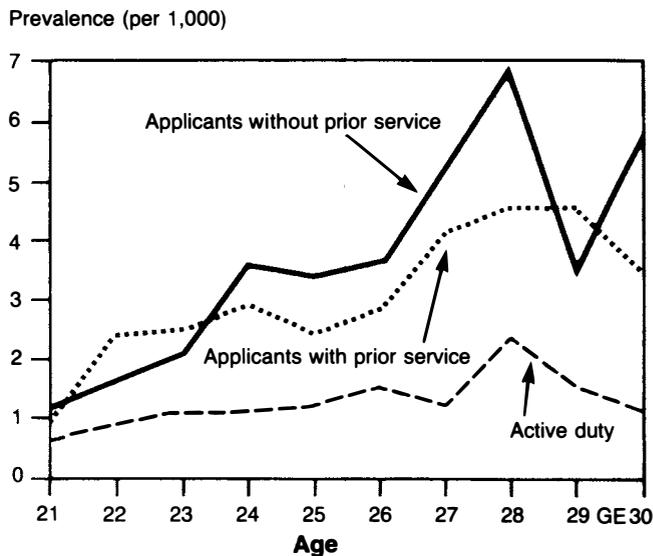


TABLE 1

Department of Defense HIV testing programs: male and female seropositivity rates

Population	Males			Females			M:F ratio
	No. tested	Pos.	Rate	No. tested	Pos.	Rate	
Army	301,775	332	1.1	35,089	16	0.5	2.2
Navy/ Marines	579,587	1,262	2.2	46,925	29	0.6	3.7
Air Force	186,451	219	1.2	31,867	12	0.4	3.1
Active duty totals	1,067,813	1,813	1.7	113,881	57	0.5	3.4
Civilian applicants	831,516	1,371	1.6	121,561	84	0.6	2.6

Source: Department of Defense

Benefits to the individual:

- Limited exposure to live virus vaccines
- Limited exposure to exotic illnesses
- Prompt access to optimal medical care
- Freedom from unwitting transmission of infection

Benefits to society:

- Epidemic control through test-linked counseling of positives
- Epidemic control through limitation of international spread of disease.

The military screen was a multi-phase battery. Everyone who tested positive once to the ELISA antibody test was tested a second time with the same test. If they tested positive twice, they were then given a highly sensitive third test, the so-called Western Blot. If they tested positive on this test, a new blood sample was taken and they were given an entirely new Western Blot test. Thus, for an individual to be classified by the military as a "confirmed HIV positive" he or she would

TABLE 3

Department of Defense HIV testing programs: Demographic factors associated with seropositivity among civilian applicants for military service

Variable (descending order)	Odds ratio (95% CI)
1. Age (per year)	1.10 (1.08 - 1.11)
2. Race/ethnicity	
Black non-Hispanic	2.04 (1.76 - 2.36)
White non-Hispanic	0.56 (0.48 - 0.66)
Hispanic and other	0.87 (0.70 - 1.08)
3. Gender (male)	1.84 (1.51 - 2.25)
4. Endemic AIDS region	1.53 (1.37 - 1.70)
5. Population density (per 1,000/sq. mi.)	1.05 (1.04 - 1.05)
6. Educational attainment	
< high school	0.79 (0.65 - 0.95)
high school	1.19 (1.03 - 1.38)
> high school	1.07 (0.84 - 1.36)

Source: Department of Defense

have to show up positive on two Elisa tests and two Western Blot tests, or four screening tests in succession.

The Department of Defense maintained a strict quality control on the commercial tests they used. Open and blind proficiency test panels were submitted to the testing labs on a monthly basis. Financial penalties would be imposed on the commercial companies for an accuracy score of less than 95 percent.

The results of the first phase in the military screening program are displayed in the tables and figures accompanying this article. The data were compiled and analyzed by a cooperative team from the U.S. Army, the U.S. Air Force, the U.S. MEPCOM, the U.S. Navy and Marines, and the U.S. Department of Defense.

TABLE 2

Department of Defense HIV testing programs: methodological differences between programs

Element	Mepcom	Army	Navy	Air Force
ELISA kit	ENI/DuPont	ENI/DuPont	Abbott/ENI	DuPont
ELISA performed	Damon	Damon*	In-house	Blood systems
Blot performed	Damon	Damon	Biotech	Blood systems
Turn-around (max)	3 days	10 days	10 days	10 days

*In-house for Europe and Korea.

Source: Department of Defense