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# Quadrivalent Human Papillomavirus Vaccine Initiation, Coverage, and Compliance Among U.S. Active Component Service Women, 2006-2011

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Human papillomavirus (HPV) is the most common sexually transmitted pathogen detected among U.S. service members. An estimated 169,682 incident diagnoses of HPV infection occurred between 2004-2009 among active component U.S. service members (rate of 2,306 cases per 100,000 person-years).<sup>1</sup> In 2006, a 3-dose HPV quadrivalent vaccine (HPV4), which protects against common HPV strains (types 6, 11, 16, 18) responsible for about 70 percent of cervical cancers and 80 percent of genital warts, was licensed in the United States.<sup>2</sup> Consistent with the Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices (ACIP) recommendations, the Department of Defense (DoD) has made the HPV4 vaccine available to all eligible service members aged 17-26 years. The ACIP has recommended administration of the second dose of vaccine 2 months after the first dose and the third dose at six months after the first dose.<sup>3</sup>

Despite vaccine availability, utilization of the HPV4 vaccine by active component U.S. service women has been reported to be low. For example, at Womack Army Medical Center in Fort Bragg, North Carolina, 15 percent of eligible service women initiated the series; of these, only 37.4 percent completed the 3-dose series.<sup>4</sup> At the Naval Medical Center San Diego, the 3-dose completion rates were lower among active duty women than other beneficiaries, averaging 16 percent.<sup>5</sup> This brief report quantifies HPV4 vaccine immunization rates in eligible women in U.S. military service. (The results were presented in part at the International Conference on Emerging Infectious Diseases in Atlanta, Georgia in 2012.)

The Defense Medical Surveillance System was used to identify active component service women in the Army, Air Force, Navy, Marine Corps, and Coast Guard

**TABLE.** Initiation, coverage, and compliance rates of HPV4 vaccination among female service members, active component, U.S. Armed Forces, 2006-2011

	No. vaccinated	Population <sup>a</sup>	% total
Initiation rates	60,807	270,257	22.5
Coverage rates			
1 dose	16,507	51,924	31.8
2 doses	11,802	51,924	22.7
3 doses	23,615	51,924	45.5
Compliant by 6 months <sup>b</sup>	7,826	51,924	15.1
Compliant by 1 year <sup>c</sup>	14,964	46,373	32.3

<sup>a</sup>Eligible population is time-dependent

<sup>b</sup>Per recommendations of ACIP<sup>3</sup>

<sup>c</sup>Per vaccine prescribing information<sup>2</sup>

eligible for the HPV4 vaccine during the interval 2006-2011. Records of administration of the HPV4 vaccine were obtained from the immunization data base of the Defense Enrollment Eligibility Reporting System (DEERS). From January 2006 to June 2011, of the 270,257 service women who were in the eligible age range for the HPV4 vaccine, 60,807 (22.5%) received at least one HPV4 dose (Table). Of the 51,924 women who remained in the active component for 6 months or more following their first dose, 16,507 (31.8%) received only 1 dose, 11,802 (22.7%) received only 2 doses, and 23,615 (45.5%) completed the recommended three doses. At the six month target date, 15.1 percent of those initiating the series and still on active service completed the series. Of the 44,062 women who did not receive 3 HPV4 doses within the recommended 6 months, 16.1 percent (7,102) completed the series within 1 year; thus, the one year compliance was 32.3 percent. The median times between the first and second, and first and third doses were 3 months and 8 months, respectively.

In theory, proper timing of the complete series of HPV4 vaccinations is necessary to achieve immunologic protection. The low initiation and series completion rates of HPV4 vaccine in service women

is concerning. Increased education of service women and providers on vaccine benefits may increase coverage, enhance series completion, and extend protection against HPV infection and its clinical effects.

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