

# Burden of Gonorrhea among HIV+ Department of Defense Beneficiaries

Alisson Baya

## Background

### Epidemiology:

HIV-1 prevalence among military population: 350 per 100,000 servicemembers in 2017.

- GC incidence among U.S servicemembers: 29,000 cases.
- STIs impact combat readiness and overall health of the U.S servicemembers.

HIV-GC co-infection:

- HIV facilitates the transmission of GC.

### Don't Ask Don't Tell policy:

- Repealed in 2011.
- Allowed for homosexual men to openly serve on the condition that sexual orientation or preference was not discussed. Violation could result in discharge.
- Through the policy MSM were: banned from engaging in homosexual acts; stating sexual preference; same sex marriage.

### Public Health Implications:

Prior to 2011, service members sought sexual health counsel outside of the DHA.

- Led to gaps in medical history pertaining to sexual and behavioral health.
- Led to incomplete surveillance of HIV and STI among this cohort.

## Project Aims

**Primary Aim:** to assess the burden of general, genital, and extragenital GC infections among male DoD service men and beneficiaries reporting sexual encounters with male partners enrolled in the US military NHS. The study period for this investigation was 2011 to 2017.

**Research Question 1:** What is the prevalence and incidence of GC among MSM enrolled in the NHS?

**The Secondary Aim:** characterizing the sociodemographic and behavioral factors influencing the risk of general, genital, and extragenital GC among MSM.

**Research Question 2:** What are the sociodemographic, behavioral, and clinical risk factors of GC infection among MSM participants enrolled in the NHS?

## Methods

**Study Type:** Retrospective cohort study.

**Study Population:** MSM, servicemen, with lab confirmed HIV-1 contributing to follow-up time after 2011.

### Data Collection:

- Age at initial HIV-1 diagnosis (years); age at genital and extragenital GC diagnosis (years); Race (AA, White, and Other); Branch of military service.
- Laboratory information (HIV viral load and CD4 cell count) from 2011-2017.
- HIV-NHS Risk Behavior Survey: self reported risk behavior survey.

Primary Outcome: HIV-1 and GC co-infection, identification of behavioral risk factors.

### Data Analysis:

Descriptive Statistics: Mean & SD completed for the sociodemographic factors of interest.

Inferential Statistics: 9 Binary Logistic Regression Models developed. OR and 95% CI; p-value < 0.05.

## Results

**Research Question 1:** What is the prevalence and incidence of GC and HIV-1 coinfection among MSM in the US military?

	Frequency	Percent
<b>General GC</b>		
Negative	947	84.8
Positive	170	15.2
Total	1117	100.0
<b>Genital GC</b>		
Negative	1063	95.2
Positive	54	4.8
Total	1117	100.0
<b>Extragenital GC</b>		
Negative	985	88.2
Positive	132	11.8
Total	1117	100.0

**Research Question 2:** What are the sociodemographic, behavioral, and clinical risk factors of GC and HIV-1 coinfection among MSM in the US military?

	Demographic: Age	Behavioral: Drinking patterns	Sexual Behavior: condom use
<b>General GC</b>	0.001	0.033	0.046
<b>Genital GC</b>	0.034	0.0005	0.061
<b>Extragenital GC</b>	0.003	0.0006	0.003

	Demographic: Age	Behavioral: Drinking patterns	Sexual Behavior: condom use
General GC	0.960 (0.937, 0.981)	0.496 (0.004, 0.0944)	2.580 (0.947, 8.743)
Genital GC	0.956 (0.918, 0.997)	0.374 (0.254, 0.930)	0.873 (0.862, 1.252)
Extragenital GC	0.962 (0.962, 0.985)	0.376 (0.227, 0.867)	3.468 (1.081, 5.653)