

Innovative Test Collection to Improve Detection of Chlamydia and Gonorrhea Infections Among Incarcerated Men Who Have Sex with Men



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BACKGROUND

- The Centers for Disease Control and Prevention recommend that men who have sex with men (MSM) receive chlamydia (CT) and gonorrhea (GC) screening at urethral, rectal, and pharyngeal (GC-only) sites.
- Unlike urine, the collection of rectal and pharyngeal specimens may be limited by staffing or by patient acceptability.
- We evaluated the feasibility and yield of non-genital sampling using nucleic acid amplification tests (NAATs) in a population of incarcerated MSM.

METHODS

- February–October 2008, 2289 MSM were admitted to MSM jail unit.
- All inmates were offered a urine test, a pharyngeal swab (collected by a trained community worker), and a self-collected rectal swab.
- Specimens were tested for CT/GC using a previously validated NAAT (Gen-Probe APTIMA COMBO 2). Pharyngeal specimens were tested for GC only.
- McNemar's chi-square statistic was used to compare test results.

RESULTS

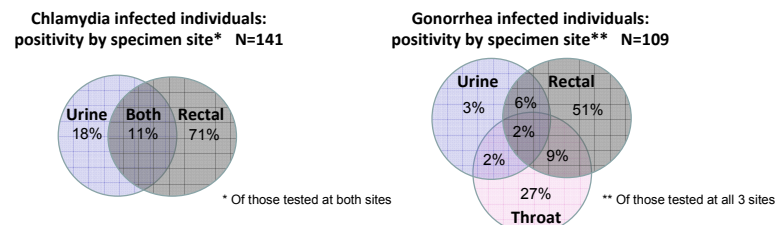
- A total of 2,231 (97.5%) inmates were tested from at least one anatomic site. Table 1 presents the CT/GC testing and morbidity by anatomic site.
- More rectal and pharyngeal specimens were collected than urine specimens.
- Overall CT prevalence was 7.3%. Prevalence of CT was much higher in rectal specimens than urine specimens.
- Overall GC prevalence was 5.5%. Prevalence of GC was much higher in rectal and pharyngeal specimens than urine specimens.
- Among 1,760 individuals tested at all three sites:
 - Rectal testing was more likely than urine testing to detect
 - CT (OR=3.8, p<0.05)
 - GC (OR=13.2, p<0.05)
 - Pharyngeal testing was more likely to detect
 - GC (OR=3.09, p<0.05)
- See Figure 1 for positivity by site and multi-site infection status.
- Urine testing alone missed 100 (70.9%) of 141 CT cases and 95 (87.2%) of 109 GC cases detected.
- Of inmates infected with CT and/or GC who accepted HIV testing, 4% were HIV positive.

Table 1. CT/GC Testing and Morbidity by Anatomic Site among Incarcerated Men who have Sex with Men, Los Angeles County (n=2231), February 2008 thru October 2008.

	CT/GC Tests		CT		GC		Total Individuals Infected (CT/GC) [†]	
	No. of tests	% tested CT/GC	Positive*	(%)	Positive*	(%)	Number	(%)
Overall (by anatomic site)**	2231	100.0%	161	7.2%	122	5.5%	252	11.3%
Urethral	1974	88.5%	50	2.5%	17	0.9%	63	3.2%
Pharyngeal	2149	96.3%	--	--	50	2.3%	50	2.3%
Rectal	2021	90.6%	128	6.3%	79	3.9%	182	9.0%
Anatomic site(s) tested***								
Urethral only	54	2.4%	2	3.7%	1	1.9%	3	5.6%
Pharyngeal only	15	0.7%	--	--	0	0.0%	0	0.0%
Rectal only	9	0.4%	0	0.0%	0	0.0%	0	0.0%
Rectal and urethral	19	0.9%	3	15.8%	2	10.5%	5	26.3%
Rectal and pharyngeal	233	10.4%	10	4.3%	7	3.0%	16	6.9%
Urethral and pharyngeal	141	6.3%	5	3.5%	3	2.1%	7	5.0%
Urethral, pharyngeal & rectal	1760	78.9%	141	8.0%	109	6.2%	221	12.6%
Age (years)								
≤19	51	2.3%	9	17.6%	8	15.7%	14	27.5%
20-29	763	34.2%	87	11.4%	63	8.3%	130	17.0%
30-39	691	31.0%	46	6.7%	38	5.5%	79	11.4%
40-49	583	26.1%	18	3.1%	11	1.9%	26	4.5%
≥50	142	6.4%	2	1.4%	3	2.1%	5	3.5%
Unknown	1	0.0%	0	0.0%	0	0.0%	0	0.0%
Race/ethnicity								
African American (non-hispanic)	437	19.6%	30	6.9%	25	5.7%	49	11.2%
Asian/Pacific Islander	37	1.7%	6	16.2%	4	10.8%	10	27.0%
Hispanic	705	31.6%	64	9.1%	51	7.2%	97	13.8%
Native American	12	0.5%	0	0.0%	4	33.3%	4	33.3%
White (non-hispanic)	333	14.9%	17	5.1%	14	4.2%	28	8.4%
Other/Unknown	707	31.7%	45	6.4%	25	3.5%	66	9.3%

*At least one anatomic site positive **At least one anatomic site tested ***Test site categories are mutually exclusive
[†]Total may not equal sum of individual CT and GC positives due to co-infected individuals
 Note: Pharyngeal test are for GC only. Any CT positive listed under a category with a pharyngeal test is for site(s) other than pharyngeal.

Figure 1



CONCLUSIONS

- Rectal and pharyngeal screening using non-traditional NAAT specimen collection was widely accepted and detected the vast majority of CT and GC in this high risk population.
- Urine screening alone would have missed more than three quarters of all infections.
- CT/GC screening of MSM should routinely include rectal and pharyngeal specimens.
- Non-clinical settings serving MSM need tools such as self-collected specimens.