



Identification of Undiagnosed HIV Infections among Contacts of HIV+ Males Newly Diagnosed with Gonorrhea or Chlamydia, 2005-2015



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Background

The Centers for Disease Control and Prevention recommends all HIV+ persons newly diagnosed with gonorrhea or chlamydia infection receive partner services due to the potential for HIV transmission¹. There are no published evaluations of these investigations' effectiveness in identifying undiagnosed HIV infections among named contacts.

Methods

The study population included males ≥15 years diagnosed with chlamydia (CT) and/or gonorrhea (GC) infection in Texas (original patients) between January 1, 2005 - December 31, 2015 with an HIV diagnosis date ≥30 days prior and who were reported to Texas' HIV and STD surveillance systems. Males with a concurrent diagnosis of syphilis were excluded. The primary outcome evaluated was the Number Needed to Treat (NNT), defined as the number of partner services investigations initiated per new HIV diagnosis among named contacts as a result of partner services. The NNT was calculated by original patient characteristics, year of original patient's CT/GC diagnosis and for high priority risk groups identified by program staff.



Investigations Initiated



HIV Diagnoses Among Contacts

$$\frac{\text{Investigations Initiated}}{\text{HIV Diagnoses Among Contacts}} = \text{Number Needed to Treat (NNT)}$$

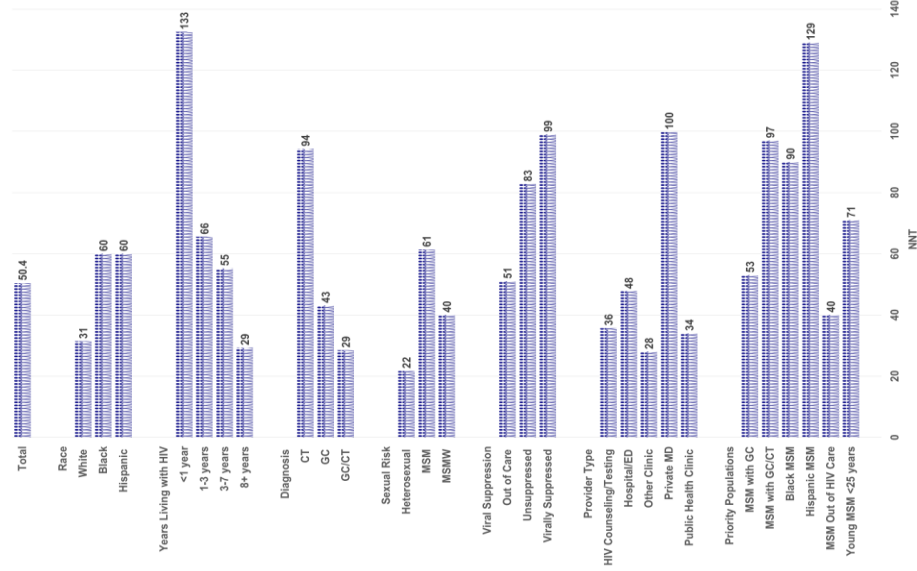
Results

Table 1. Partner Services Outcomes for Males Living with HIV diagnosed with CT/GC infection

	N (%)
Total CT, GC, or CT/GC Diagnoses in Males Living with HIV	13,742
Total Cases Initiated	1,210 (9%)
Initiated Cases Interviewed	1,076 (90%)
Cases with No Contacts Initiated (NCI)	598 (56%)
Total Contacts Initiated	947
Contacts with Previously Diagnosed HIV Infection	326 (34%)
Cases with ≥ 1 New HIV Case Identified Among Contacts	20 (2%)
Total Undiagnosed HIV Cases Identified	24
Number Needed to Treat (NNT)	50.4

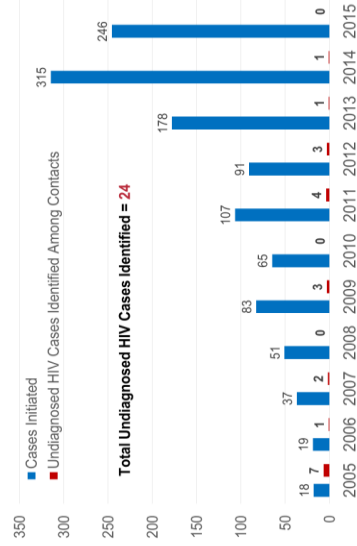
¹Recommendations for Partner Service Programs for HIV Infection, Syphilis, Gonorrhea, and Chlamydia Infection. MMWR Recommendations and Reports, October 31, 2008, vol. 57, no. RR-9.

Figure 1. Number Needed to Treat by characteristics of original patient*



* Numbers of patients in each category is available on the accompanying handout

Figure 2. Cases initiated and undiagnosed HIV cases identified among named contacts as a result of Partner Services by year of original patient's CT and/or GC diagnosis



Discussion

Over the study period, a total of 24 previously undiagnosed HIV infections were identified among contacts to HIV+ males newly diagnosed with CT and/or GC. **This translates to 1 new diagnosis of HIV among named contacts for every 50 CT and/or GC cases in HIV+ males that are initiated for partner services.**

Partner services were more productive in identifying undiagnosed HIV in contacts to HIV+ males who were white, had a dual diagnosis of GC and CT, and who were heterosexual. Partner services for priority populations with high HIV morbidity were no more effective at identifying new HIV diagnoses than the total eligible population, with the exception of MSM out of HIV care (NNT=40).

As the number of eligible cases initiated for partner services increased, the NNT also increased. Additionally, no contacts were elicited in over half of initiated investigations, and over one-third of named contacts had been previously diagnosed with HIV. **This may indicate that expansion of partner services for GC/CT in HIV+ males may not result in increased identification of undiagnosed HIV within their sexual networks.**

However, partner services for CT and/or GC in males with HIV has been a lower priority intervention for Texas' STD programs due to a comparatively high burden of syphilis. The low yield of new HIV diagnoses and poor contact elicitation from CT/GC partner services may be reflective of insufficient resources allocated to conduct these interventions. Programs that prioritize these investigations may more effectively identify contacts and undiagnosed HIV infections.



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Supplemental Table A. Demographics of initiated male HIV cases with GC/CT comorbidity and cases where an undiagnosed HIV infection identified among any named contacts

	Initiated Cases		Cases with undiagnosed HIV infection among contacts	
	Total	%	N	%
Total	1,210	100	20	100
Diagnosis				
Chlamydia	377	31	4	20
Gonorrhea	776	64	14	70
Chlamydia and Gonorrhea	57	5	2	10
Race				
White	283	23	6	30
Black	600	50	10	50
Hispanic	300	25	4	20
Other	23	2	0	0
Unknown	4	<1	0	0
Age at STD Diagnosis				
15-24	262	22	4	20
25-34	488	40	9	45
35-44	272	22	5	25
45+	188	16	2	10
Provider Type				
HIV Counseling/Testing	107	9	3	15
Public Health Clinic	374	31	3	15
Private MD	499	41	2	10
Hospital/ER	143	12	3	15
Other Setting	87	7	9	45
Reported Risk in eHARS				
MSM or MSM/PWID	1,025	85	14	70
PWID	38	3	3	15
Heterosexual	45	4	2	10
Perinatal	7	<1	0	0
No Reported Risk	95	8	1	5
Years Living with HIV				
0-1	265	22	2	10
2-3	262	22	4	20
4-7	331	27	6	30
8+	352	29	8	40
Priority Populations*				
MSM with GC	693	57	9	45
MSM with GC/CT	50	4	2	10
Black MSM	448	37	5	25
Hispanic MSM	257	21	2	10
MSM out of HIV Care	40	3	1	5
Young MSM <25 years	226	19	2	10

*Categories are not mutually exclusive