Linkage, Engagement, and Viral Suppression Rates among HIV-Infected Persons Receiving Care at Medical Case Management Programs in Washington, DC

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Introduction

- The District of Columbia Department of Health (DCDOH) funded 13 facilities for medical case management (MCM) in FY2010.
- The 13 MCM facilities included 1 hospital, 9 community based clinics, and 3 community based organizations.
- MCM services include:
  - Linkage to care
  - Retention and/or re-engagement into care
  - Treatment promotion/adherence
  - Linkage and coordination of specialty care
  - Harm reduction
  - Monitoring patient outcomes
- There were 64 non-MCM funded facilities providing HIV care during FY2010. These facilities include hospitals, community based clinics, and private medical doctors.

Objective

- The objective of this study was to determine whether differences in clinical outcomes existed among HIV-infected persons diagnosed and receiving care at MCM funded facilities vs. non-MCM funded facilities.

Methods

- HIV-infected persons ≥13 years of age at diagnosis were identified from DCDOH HIV/AIDS surveillance data.
- Newly diagnosed HIV cases were defined as those diagnosed between 1/1/09 and 12/31/10.
- Prevalent cases were diagnosed as of 1/1/09, alive as of 12/31/2010, and had at least 1 HIV related lab reported during FY2010.
- Linkage to care was defined as having a CD4 or VL lab reported after initial diagnosis and continuous care was defined as 2 labs (CD4 or VL) within a 12-month period at least 3 months apart.
- Viral suppression was defined as VL < 200 copies/mL.
- Bivariate analyses were performed to identify differences in:
  - Demographics and clinical outcomes of newly diagnosed cases at MCM and non-MCM funded facilities between 2009-2010.
  - Clinical outcomes among prevalent cases receiving HIV care at the 10 MCM funded facilities that provide medical care and 64 non-MCM funded facilities during FY2010.

Results

- 1,549 newly diagnosed HIV cases were identified between 2009 and 2010; 603 (38.9%) were diagnosed at a MCM funded facility.
- 6,140 prevalent HIV cases were receiving care during FY2010; 3,177 (51.7%) were receiving care at MCM funded facilities.

Table 1. Demographics of Newly Diagnosed HIV Cases in Medical Case Management and Non-Medical Case Management Facilities between January 1, 2009 and December 31, 2010

	Medical Case Management n=603	Non-Medical Case Management n=946	Pearson's Chi-square p-value
Continuous Characteristics			
Mean Age at Diagnosis	36.9	40.1	**<0.0001***
Median CD4 Count at Diagnosis	421	337	**<0.0001****
Categorical Characteristics	N (%)	N (%)	
Gender			
Male	434 (72.0)	652 (68.9)	0.2008
Female	169 (28.0)	294 (31.1)	
Race/Ethnicity			
White	60 (10.0)	150 (15.9)	**0.0009**
Black	483 (80.1)	717 (75.8)	**0.0479**
Hispanic	48 (8.0)	53 (5.6)	0.0669
Other	12 (1.9)	26 (2.8)	0.3468
Mode of Transmission			
MSM	274 (45.4)	282 (29.8)	**<0.0001**
IDU	41 (6.8)	45 (4.8)	0.0870
MSM/IDU	13 (2.2)	13 (1.4)	0.2429
Heterosexual	247 (41.0)	240 (25.4)	**<0.0001**
RNI	28 (4.6)	366 (38.7)	**<0.0001**
Insurance at Diagnosis			
Private	69 (11.4)	365 (38.6)	**<0.0001**
Public	276 (45.8)	280 (29.6)	**<0.0001**
Other	122 (20.2)	57 (6.0)	**<0.0001**
None	34 (5.6)	40 (4.2)	0.2045
Unknown	102 (16.9)	204 (21.6)	**0.0250**
Ward of Residence at Diagnosis			
Ward 1	77 (12.8)	87 (9.2)	**0.0259**
Ward 2	35 (5.8)	78 (3.9)	0.0717
Ward 3	16 (2.7)	37 (3.9)	0.1842
Ward 4	60 (10.0)	84 (8.9)	0.4792
Ward 5	84 (13.9)	116 (12.3)	0.3397
Ward 6	54 (9.0)	89 (9.4)	0.7640
Ward 7	76 (12.6)	111 (11.7)	0.6083
Ward 8	120 (19.9)	129 (13.6)	**0.0011**
Homeless/Missing residence at diagnosis	81 (13.4)	215 (22.7)	**<0.0001**

*T-test p-value
**Kruskal Wallis p-value

- Persons newly diagnosed in MCM funded facilities were significantly younger and had higher median CD4 counts at diagnosis (Table 1).
- Those diagnosed at MCM funded facilities were more likely to be black, MSM, heterosexual, publically insured, and living in Wards 1 and 8 (Table 1).
- Although the proportion of cases diagnosed in MCM funded facilities linked to care within 3 months was significantly less, equal proportions were linked to care within 6 months in both settings (Table 2).
- Cases diagnosed in MCM funded facilities were more likely to be engaged in care in the year following linkage to care and were also more likely to achieve viral suppression by December 31, 2011 (Table 2).

Table 2. Clinical Outcomes among Newly Diagnosed HIV cases in Medical Case Management and Non-Medical Case Management Facilities between January 1, 2009 and December 31, 2010

	Medical Case Management n=603	Non-Medical case Management n=946	Pearson's Chi-square p-value
	N (%)	N (%)	
Linkage to Care in 3 months			
< 3 months	431 (71.5)	732 (77.4)	**0.0088**
≥ 3 months	172 (28.5)	214 (22.6)	
Linkage to care in 6 months			
< 6 months	484 (80.3)	780 (82.5)	0.2787
≥ 6 months	119 (19.7)	166 (17.5)	
Engaged in Care			
Yes	272 (45.1)	358 (37.8)	**0.0045**
No	331 (54.9)	588 (62.2)	
Viral Suppression			
Virally suppressed	331 (54.9)	453 (47.9)	**0.0072**
Not virally suppressed	272 (45.1)	493 (52.1)	

- Cases receiving care at MCM funded facilities were more likely to be engaged in care and virally suppressed during FY2010 (Table 3).
- Among those who were engaged in care in MCM funded and non-MCM funded facilities, similar proportions were virally suppressed in both settings (73.9% vs. 73.4% at non-MCM funded facilities, p=0.7637) [data not shown].

Table 3. Clinical Outcomes among Prevalent HIV Cases Receiving Care in Medical Case Management and Non-Medical Case Management Facilities between October 1, 2009 and September 30, 2010

	Medical Case Management n=3,177	Non-Medical Case Management n=2,963	Pearson's Chi-square p-value
	N (%)	N (%)	
Engaged in Care			
Yes	2,298 (72.3)	1,765 (59.6)	**<0.0001**
No	879 (27.7)	1,198 (40.4)	
Viral Suppression			
Virally suppressed	1,984 (62.5)	1,730 (58.4)	**0.0011**
Not virally suppressed	1,128 (35.5)	1,052 (35.5)	0.9996
No viral load data	65 (2.0)	181 (6.1)	**<0.0001**

Conclusions

- Significantly greater proportions of newly diagnosed and prevalent cases receiving care at medical case management facilities were engaged in care and virally suppressed.
- This study provides evidence that medical case management services can lead to improved clinical outcomes among HIV-infected persons living in Washington, DC.
- Further exploration is needed to determine how these services could be scaled-up to include more facilities across the District of Columbia.

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