

Retention in HIV care among a commercially insured population, 2006-2012

Kathy Byrd, MD, MPH

10th International Conference on HIV Treatment and Prevention
Adherence

June 28 – 30, 2015

Introduction

- **The HIV Care Continuum describes the necessary steps to reach HIV viral suppression**
- **Retention in care is a critical component of the Care Continuum**
 - Retained persons have earlier ART initiation, improved viral suppression and decreased morbidity and mortality
- **Retention estimates range from 51% - 89% depending on data source**

Objectives

- **To estimate the proportion of commercially insured persons with HIV who were retained in care, continued in care , had a gap in care and re-engaged in care**
- **To determine factors associated with a gap in care**
- **To estimate the proportion of commercially insured persons with HIV, who were not in care, who continued to receive HIV-related laboratory services**

Study database: MarketScan[®] Commercial Claims and Encounters Database, 2006 - 2012

- **Contains paid, de-identified, patient-level healthcare claims from inpatient, outpatient, and pharmaceutical services**
- **Includes information on conditions diagnosed and services performed**
- **Claims are for active employees, early retirees and COBRA continuers insured by employer-sponsored plans**
- **Every enrollee is assigned a unique identifier that allows tracking of individual patients across different types of claims and over multiple years**

Identification of persons with HIV

- **Identified from inpatient and outpatient service claims in calendar year 2006**
- **One or more ICD-9-CM diagnostic billing codes for HIV**
 - 042; HIV disease
 - V08; asymptomatic HIV infection status
 - 079.53; HIV type 2
 - 795.71; nonspecific serologic evidence of HIV

Study inclusion criteria

- **ICD-9-CM code for HIV/AIDS in 2006 (n = 15,187)**
- **≥18 years of age in 2006**
- **Continuously enrolled in employer-sponsored insurance for at least 10 months out of each 12-month period during the initial 24-month retention period (n = 14,952)**
- **≥ 1 outpatient claim with a physician, nurse practitioner or physician's assistant in the first 6 months of the retention period (n = 7,913)**

Case definitions

- **Retention in care**: ≥ 1 office visit claim during each six-month period of the retention period w/ minimal of 60 days between visits
- **Retention period**: the first 24-month measurement period (months 0–24) from the date of the first service claim containing an ICD-9-CM code for HIV/AIDS
- **Continuation in care**: ≥ 1 office visit claim during each subsequent six-month interval, after the retention period, w/ minimal of 60 days between visits

Case definitions continued

- Gap in care: no office visit claim for >6 months
- Re-engagement in care: ≥ 1 office visit claim after a gap in care
- Out of care: does not meet definition for retained or continued in care

Methods

- **Calculated unweighted proportions**
 - Persons retained in care during the 24 month retention period
 - Persons continued in care after the retention period
 - Persons with a gap in care
 - Persons re-engaged in care after experiencing a gap in care
- **Persons followed for up to 84 months (years 2006 – 2012)**
- **Persons who were no longer enrolled in insurance were censored at the time of disenrollment**

Analysis

- **Multivariable Cox proportional hazards models were conducted to determine factors associated with gaps in care.**
- **Proportion of persons not in care who received HIV-related laboratory tests was also determined**
 - ≥ 2 CD4 and/or viral load tests at least 90 days apart

Cohort characteristics

		n	%			n	%
Total		7,913	100	Age group (median age: 45 years)			
Sex				18 – 39	2,247	28	
Male	6,139	78	40 – 59	5,276	67		
Female	1,739	22	≥60	355	5		
Region			Hepatitis B co-infection		117	2	
Northeast	916	12	Hepatitis C co-infection		269	3	
North Central	1,083	14	Mental illness diagnosis		851	11	
South	4,062	52	Alcohol/substance abuse diagnosis		118	2	
West	1,817	23	Charlson co-morbidities*				
				0	6,045	77	
				≥1	1,833	23	

*Includes 16 co-morbidities (7) and excludes HIV, hepatitis B, hepatitis C, mental illness and alcohol/substance abuse. There are a total of 17 Charlson co-morbidities, including HIV and mild liver disease (which includes viral hepatitis). Since the entire sample was HIV-infected and because we wanted to evaluate hepatitis B and hepatitis C co-infection separately, we removed HIV, hepatitis B, and hepatitis C from the list of Charlson co-morbidities evaluated.

Proportion of persons with HIV who were retained and continued in care, MarketScan® Commercial Claims and Encounters Database, 2006 - 2012

Retention period (0 – 24 mos.)		30 mos.	36 mos.	42 mos.	48 mos.	54 mos.	60 mos.	66 mos.	72 mos.	78 mos.	84 mos.
n = 7,913	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Still enrolled^	---- (100)	5,142 (84)	5,142 (84)	4,317 (71)	4,317 (71)	3,667 (60)	3,667 (60)	3,150 (51)	3,150 (51)	1,950 (32)	1,950 (32)
Retained/continued in care	6,121 (77)	4,874 (95)	4,593 (89)	3,728 (86)	3,529 (82)	2,884 (79)	2,756 (75)	2,271 (72)	2,178 (69)	1,374 (70)	1,258 (65)

^Still enrolled includes those who met continuous enrollment criteria (i.e. had ≥10 months of continuous enrollment in the MarketScan® Commercial claims dataset during each 12 month measurement period). *The denominator for those continued in care, is persons still enrolled in the MarketScan® Commercial claims dataset during the specified time period

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Proportion of persons with HIV who experienced a gap in care and those who re-engaged in care, MarketScan[®] Commercial Claims and Encounters Database, 2006 - 2012

Retention period (0 – 24 mos.)		30 mos.	36 mos.	42 mos.	48 mos.	54 mos.	60 mos.	66 mos.	72 mos.	78 mos.	84 mos.
N = 6,121	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Gap in care*	----	268 (5)	392 (8)	309 (7)	358 (8)	336 (9)	352 (10)	314 (10)	270 (9)	163 (8)	281 (14)
Re-engaged in care*	----	----	157 (3)	178 (4)	189 (4)	154 (4)	190 (5)	143 (5)	171 (5)	101 (5)	79 (4)

*The denominator for gap in care and re-engaged in care is persons still enrolled in the MarketScan[®] Commercial claims dataset during the specified time period.

Gaps and re-engagement in care

- **Median time to first gap in care: 15 months (IQR: 6 – 30)**
- **Median length of gap in care: 3.2 months (IQR: 1.3 – 7.1)**
- **Of the 1,551 persons who experienced a gap in care**
 - 70% (n=1,086) re-engaged in care at least once
 - 22% (n=241) re-engaged more than once
- **Median time continued in care after re-engagement: 17.4 months (IQR: 6.9—31.0)**

Factors associated with a gap in care

Characteristic	Hazard ratio (95% CI)	P-value
≥1 Charlson co-morbidity	0.84 (0.77, 0.92)	<0.001
Age 40 – 59 years	0.86 (1.79, 0.94)	<0.001
Diagnosed with mental illness	0.78 (0.69, 0.88)	<0.001
Diagnosed with alcohol/substance abuse	1.57 (1.13, 2.17)	0.007
North Central region	1.34 (1.20, 1.50)	<0.001

Laboratory tests for persons not in care

Month	<i>n</i>	% who received ≥ 2 CD4/VL tests
24	417	23%
36	190	35%
48	200	37%
60	217	40%
72	208	43%

n includes persons who were continuously enrolled but who did not have ≥ 1 visit claim for each of the six month periods of the specified 12 month interval

Limitations

- **Commercially insured, stably employed population which is not generalizable to entire population with HIV**
- **Office visits claims were not necessarily associated with a claim listing an HIV ICD-9-CM code on the date of the visit; office visits, therefore, may have been for non-HIV related issues**
- **No data available for race/ethnicity**

Discussion

- **High level of retention and continuation in care among this commercially insured population with HIV**
- **Retention estimate was higher than national estimates. Higher estimates may be due to stable employment and better access to care**
- **Gaps in care were common and moderately short and the majority re-engaged in care**

Discussion continued

- **Most factors associated with a gap in care were similar to other studies with the exception of mental illness**
- **Significant proportion of those not in care continued to receive HIV-related laboratory testing indicating some engagement in care. May reflect lengthening of time between clinic appointments for stable patients**

Thank you!

For more information please contact Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30333

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
Division of HIV/AIDS Prevention

