

Discontinuity in Medicaid Coverage Among Young Adults with HIV

Jack C. Rusley, MD, MHS,^{1,2} Anne Monroe, MD, MSPH,³ Pamela Matson, PhD, MPH,¹
Kelly A. Gebo, MD, MPH,⁴ Bareng Aletta Sanny Nonyane, PhD, MSc,⁵
Cynthia S. Minkovitz, MD, MPP,² Allison Agwu, MD, ScM,⁶ Mark Emerson, BS,²
Richard Moore, MD, MHS,⁴ Richard Rutstein, MD,⁷ Judith Aberg, MD,⁸ Ank Nijhawan, MD,⁹
Stephen Boswell, MD,¹⁰ and Renata Sanders, MD, MPH, ScM¹ for the HIV Research Network

To the Editor:

YOUNG ADULTS, aged from 18 to 24 years, with HIV (YHIV) in the United States are less likely to be aware of their HIV status, linked to or retained in care, and virally suppressed than older adults with HIV.¹ Health insurance is an important prerequisite to high-quality, continuous health care services,² especially for young adults,³ and Medicaid is the primary source of insurance for YHIV.⁴

Insurance discontinuity—defined as disenrollment with or without reenrollment—is common among Medicaid enrollees⁵ and is associated with poor health outcomes,² sustained periods without insurance,⁶ and higher costs due to increased utilization and uncompensated care.⁷ Lack of insurance is a barrier to adherence to combination antiretroviral therapy (ART) in persons with HIV.⁸

Twenty-six percent of adults with HIV enrolled in Medicaid experience discontinuity,⁹ but little is known about the rates of discontinuity among YHIV with Medicaid and the factors that may be associated with discontinuity. The objective of this study was to characterize discontinuity in Medicaid coverage among YHIV in the United States before the Affordable Care Act (ACA).

We evaluated YHIV enrolled in Medicaid at 6 sites, with the largest proportion of Medicaid-insured individuals, out of the 21 sites of the HIV Research Network (HIVRN), a federally funded clinical trial network. We merged clinical and demographic data from sites with coverage and eligibility data from the Medicaid Analytic eXtract files using patient identification numbers, as described elsewhere.⁹

Data from 336 participants who enrolled from January 1, 2006 to December 31, 2010 were included. Exposure time

(person years) began at HIVRN enrollment or 18th birthday and ended with death, transfer, loss to follow-up, or 25th birthday. Data were excluded if age was ≤ 17 or ≥ 25 on January 1 of given year, total days of Medicaid enrollment were ≤ 30 , gender was transgender (due to low numbers, $n=5$), or CD4 count was missing in given year.

The primary outcome was incidence of discontinuity, defined as number of days without Medicaid coverage per person year. Age on January 1 was categorized as 18–21 or 22–24. Self-reported race/ethnicity was categorized as non-Hispanic black, non-Hispanic white, or other. Self-reported HIV transmission risk factor was categorized as perinatally HIV infected (PHIV) or nonperinatally HIV infected (nPHIV).¹⁰ First CD4 count in given year was categorized as ≤ 200 , 201–499, or ≥ 500 cells/mm³. On ART was defined as prescription of combination ART at any time in given year. Calendar year was included to assess for secular trends during the study period. Medicaid eligibility type was categorized as disability, low-income, or other.

We calculated proportions for participant characteristics. The outcome had excess zeros because most individuals had no discontinuities; therefore, we applied a zero-inflated Poisson regression model. This two-part model estimates odds ratios (OR) for the binary part of the model (zero discontinuity versus having discontinuity) and incidence rate ratios (IRRs) for the number of discontinuities >0 . We used robust standard errors to account for potential correlation among observations from the same person, and a complete case analysis approach because missing data were likely not missing at random. We conducted sensitivity analysis to determine if categorizing risk differently (e.g., men who have sex with men and IV drug use) changed the

¹Division of General Pediatrics and Adolescent Medicine, Johns Hopkins University School of Medicine, Baltimore, Maryland.

²Department of Population, Family, and Reproductive Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland.

³Division of General Internal Medicine, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland.

⁴Division of Infectious Diseases, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland.

⁵Department of International Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland.

⁶Divisions of Adult and Pediatric Infectious Diseases, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland.

⁷Division of General Pediatrics, Children's Hospital of Philadelphia, Philadelphia, Pennsylvania.

⁸Division of Infectious Diseases, Icahn School of Medicine at Mount Sinai, New York, New York.

⁹Department of Medicine, University of Texas Southwestern, Dallas, Texas.

¹⁰Fenway Health and Department of Medicine, Harvard Medical School, Boston, Massachusetts.

results. Variable inflation factors were used and no covariates were collinear.

We used Stata 13.1 (College Station, TX). IRBs at each site and Johns Hopkins University School of Medicine approved the study.

Our overall sample included 593 person years contributed by 336 YHIV. Most individuals were male (62%), black (66%), nPHIV (61%), 18–21 years (65%), and low-income (56%). Thirty-six percent were disabled. Forty-two percent had CD4 count 201–499, and 63% were on ART (Table 1).

Overall, 120 of the 336 individuals (36%) had a discontinuity. Multivariable analysis of Medicaid discontinuity is shown in Table 2. Incidence of discontinuity was higher among white YHIV [adjusted incidence rate ratio (aIRR) 1.51 (95% CI 1.10–2.06)] and those with higher CD4 counts [CD4 201–499: aIRR 1.54 (1.05–2.28); CD4 ≥ 500: aIRR

1.65 (1.14–2.39)]. Compared to 2006, incidence was lower in 2009 [aIRR 0.62 (0.45–0.86)]. Disabled YHIV had higher odds of having complete coverage, compared with low-income YHIV [aOR 2.18 (1.26–3.78)]. Transmission risk factor was not significantly associated with discontinuity, regardless of dichotomous or categorical definition.

Over one-third (36%) of YHIV experienced a Medicaid discontinuity. Higher CD4 count, low-income eligibility type, and white race were associated with discontinuity.

Young adults with HIV are at risk for poor health outcomes compared with older adults with HIV,¹ and an important driver of this difference may be disparity in discontinuity of Medicaid coverage faced by young adults versus older adults—36% versus 26% in Fleishman et al.⁹

This pre-ACA baseline for comparison can inform future changes to the Medicaid program that account for the dynamics of coverage for YHIV. Post-ACA research is needed to describe the impact of other strategies on discontinuities, such as the Ryan White Program (and its coordination with Medicaid), Medicaid expansion, dependent coverage expansion, and work requirements, especially post-ACA. Medicaid discontinuity can place an already vulnerable population at risk for further barriers to achieving the goal of sustained viral suppression.¹⁰ Unfortunately, private insurance is unlikely to fill the gap for young adults with Medicaid discontinuity, given young adults often work in low wage, entry-level jobs without employer sponsored health insurance.³

This study also identifies possible predictors of discontinuity for YHIV. Compared to disabled eligibility type, low-income was associated with discontinuity; however, states vary with respect to Medicaid eligibility requirements for people with HIV. State-specific analyses are needed to determine how YHIV—who may not have experienced opportunistic infections that many states use as a marker of disability—are affected differently than older adults by eligibility requirements. In addition, those with higher CD4 counts may have less contact with the health care system and may be more susceptible to administrative churning—the frequent exit and reentry of beneficiaries.⁵ Even short periods without insurance coverage may impact access to care for YHIV. Race is another important factor to explore further given its association with income and eligibility type, which impact participation in Medicaid.¹¹

Future research should explore etiologies of discontinuity—such as administrative churning, loss of eligibility, lack of reenrollment, and other factors that may simultaneously impact Medicaid eligibility and discontinuity, such as race, income, and disability. Support from clinic staff may decrease the frequency and impact of discontinuities, but must be delivered in an empowering and patient-centered manner.¹²

Limitations of our study include complete case restriction, exclusion of transgender individuals due to low numbers, imprecise measures of immune status, ART utilization, few measures of social capital such as income, and inability to determine the insurance status (i.e., private or uninsured) of participants during a Medicaid discontinuity. Despite these limitations, the inclusion of multiple sites in multiple states and use of both HIVRN and Medicaid datasets are significant strengths of this work. By drawing from multiple sites caring for YHIV with confirmed Medicaid coverage, we avoided relying on clinic-reported or self-reported insurance status common in clinical databases.

TABLE 1. CHARACTERISTICS OF YOUNG ADULTS WITH HIV AT STUDY ENTRY (N=336)

Characteristics	Individuals, n (col %) ^a
Year	
2006	115 (34)
2007	48 (14)
2008	62 (18)
2009	55 (16)
2010	56 (17)
Gender	
Female	128 (38)
Male	208 (62)
Age (years)	
18–21	217 (65)
22–24	119 (35)
Race/ethnicity ^b	
Black	223 (66)
White	53 (16)
Other	60 (18)
Medicaid eligibility type ^c	
Low income	189 (56)
Disability	120 (36)
Other ^d	27 (8)
Risk category ^d	
nPHIV	205 (61)
PHIV	131 (39)
CD4 count (cells/mm ³)	
≤200	70 (21)
201–499	142 (42)
≥500	124 (37)
On ART ^e	
No	126 (38)
Yes	210 (63)

^aTotals may not add to 100% due to rounding.

^bWhite includes non-Hispanic; black includes African American and Caribbean; and Other includes Hispanic/Latino, Asian, Pacific Islander, American Indian, Unknown, or coded as “Other”

^cOther eligibility type includes foster care, disabled and low income, and those coded “Other”

^dnPHIV includes male-to-male sexual contact, IV drug use, heterosexual contact, transfusion, female sexual contact with females, other, and unknown. PHIV includes those infected at birth.

^eCombination ART.

ART, antiretroviral therapy; nPHIV, nonperinatally HIV infected; PHIV, perinatally HIV infected.

TABLE 2. MULTIVARIABLE ANALYSIS OF FACTORS ASSOCIATED WITH MEDICAID DISCONTINUITY (N=336)

Variable	Incidence of discontinuity		Odds of zero discontinuity	
	IRR (95% CI)	aIRR ^a (95% CI)	OR (95% CI)	AOR ^a (95% CI)
Year				
2006	1.0 (ref)	1.0 (ref)	1.0 (ref)	1.0 (ref)
2007	0.94 (0.61,1.43)	0.97 (0.63,1.48)	1.19 (0.68,2.10)	1.14 (0.63,2.08)
2008	0.89 (0.65,1.22)	0.90 (0.68,1.21)	0.93 (0.53,1.63)	0.93 (0.51,1.69)
2009	0.64 (0.44,0.92)	0.62 (0.45,0.86)	0.95 (0.55,1.66)	0.92 (0.50,1.71)
2010	0.78 (0.56,1.08)	0.74 (0.53,1.03)	1.07 (0.63,1.83)	1.07 (0.58,1.97)
Gender				
Female	1.0 (ref)	1.0 (ref)	1.0 (ref)	1.0 (ref)
Male	0.99 (0.77,1.27)	1.20 (0.95,1.50)	0.66 (0.43,1.03)	0.71 (0.44,1.13)
Age				
18–21	1.0 (ref)	1.0 (ref)	1.0 (ref)	1.0 (ref)
22–24	0.95 (0.75,1.19)	1.02 (0.80,1.31)	0.89 (0.61,1.30)	1.07 (0.66,1.75)
Race/ethnicity ^b				
Black	1.0 (ref)	1.0 (ref)	1.0 (ref)	1.0 (ref)
White	1.19 (0.80, 1.78)	1.51 (1.10, 2.06)	1.16 (0.64, 2.11)	1.83 (0.93, 3.61)
Other	0.93 (0.61, 1.42)	0.99 (0.67, 1.47)	1.55 (0.86, 2.81)	1.44 (0.73, 2.85)
Medicaid eligibility type				
Low income	1.0 (ref)	1.0 (ref)	1.0 (ref)	1.0 (ref)
Disability	0.98 (0.76,1.27)	0.96 (0.75,1.24)	2.25 (1.43,3.57)	2.18 (1.26,3.78)
Other ^c	0.73 (0.50,1.06)	0.91 (0.60,1.40)	0.59 (0.34,1.05)	0.63 (0.30,1.31)
Risk category ^d				
nPHIV	1.0 (ref)	1.0 (ref)	1.0 (ref)	1.0 (ref)
PHIV	0.98 (0.77,1.23)	1.22 (0.92,1.60)	1.46 (0.94,2.25)	1.55 (0.70,3.43)
CD4 count				
≤200	1.0 (ref)	1.0 (ref)	1.0 (ref)	1.0 (ref)
201–499	1.33 (0.95,1.87)	1.54 (1.05,2.28)	0.70 (0.40,1.21)	0.87 (0.49,1.56)
≥500	1.47 (1.04,2.07)	1.65 (1.14,2.39)	0.78 (0.42,1.43)	1.03 (0.53,2.00)
On ART ^e				
No	1.0 (ref)	1.0 (ref)	1.0 (ref)	1.0 (ref)
Yes	0.95 (0.76,1.19)	1.01 (0.82,1.25)	1.20 (0.78,1.84)	1.16 (0.75,1.80)

Results in bold are statistically significant ($p < 0.05$).

^aAdjusted models include site, in addition to variables listed in table.

^bRace/ethnicity: white includes non-Hispanic; black includes African American and Caribbean; and other includes Hispanic/Latino, Asian, Pacific Islander, American Indian, Unknown, or coded as “Other”

^cOther eligibility type includes foster care and those coded “other”

^dnPHIV includes male-to-male sexual contact, IV drug use, heterosexual contact, transfusion, female sexual contact with females, other, and unknown. PHIV includes those infected at birth.

^eCombination ART.

aIRR, adjusted incidence rate ratio; AOR, adjusted odds ratio; ART, antiretroviral therapy; CI, confidence interval; IRR, incidence rate ratio; nPHIV, nonperinatally HIV infected; OR, odds ratio; PHIV, perinatally HIV infected.

Our results demonstrate that many YHIV experienced discontinuity in their Medicaid coverage before the ACA. Those caring for YHIV should anticipate and inquire about discontinuity, and policy makers should consider the impact of discontinuity on YHIV when considering changes to the Medicaid program.

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Address correspondence to:

Jack Rusley, MD, MHS
 Division of Adolescent Medicine
 Rhode Island Hospital
 Brown University
 593 Eddy Street, Potter 200.10
 Providence, RI 02903

E-mail: jack_rusley@brown.edu