Continuum of HIV care among Ryan White HIV/AIDS Program clients, United States, 2010

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ABSTRACT

Background: Engagement in HIV care reduces morbidity and mortality among people living with HIV. The continuum of HIV care focuses attention on health care services delivery at critical points in engagement in HIV care, with viral load suppression as a key goal to improve individual health outcomes and reduce HIV transmission. The Ryan White HIV/AIDS Program (RW) has funded HIV care, treatment and support services for underserved PLWH in the United States since 1990. We report the number of RW clients at each point along the continuum of HIV care in 2010.

Methods: Beginning in 2009, RW grantees began annual reporting of demographic, service, and clinical data into the Ryan White Services Report (RSR) using encrypted unique client identifiers. The RSR 2010 data set was cleaned, de-duplicated using probabilistic records linkage techniques, and merged to create a single record for each client. We calculated the total number of RW clients served, HIV+ and received RW-funded medical care or case management, received medical care and had visit dates available, retained in medical care (≥2 visits ≥90 days apart), were prescribed antiretroviral therapy (ART), and had viral load suppressed (HIV RNA <200 copies/ml) at the most recent test.

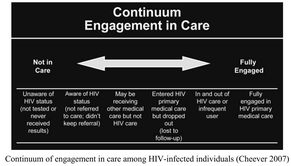
Results: An estimated 546,156 individual clients received RW services in 2010. Of these, 429,881 (79%) had documentation of HIV+ status and received any RW-funded outpatient ambulatory medical care or case management service. 307,562 (56% of RW clients) were seen for at least 1 medical care visit. Of the 291,449 individuals who received RW-funded medical care and had visit dates available, 220,645 were retained in medical care (76%). Retention was highest in those age <13 years, age ≥65 years, privately insured individuals, and females. Of the 261,865 individuals who received RW-funded medical care and had ART data available, 208,808 were prescribed ART (80%). Of the 250,344 individuals who received RW-funded medical care and had viral load data available, 174,114 had viral load suppressed (70%). Viral load suppression was higher in retained patients (75%) compared with patients who were not retained (50%).

Conclusions: The Ryan White HIV/AIDS Program provides services for over half a million individuals living with or affected by HIV in the United States. Rates of retention, ART prescription, and viral load suppression are high compared to CDC continuum data but demonstrate room for improvement. These improvements will help to achieve the goals of the National HIV/AIDS Strategy and improve individual and public health.

BACKGROUND

The continuum of engagement in HIV care is an important framework for understanding the status of HIV care and treatment in the United States (Cheever 2007). An individual person living with HIV (PLWH) may go through several stages and may also return to earlier stages of the continuum throughout his/her life (Cheever 2007). In order to understand how HIV care delivery fits into the continuum of care, Mugavero and colleagues created a framework through which care services can be better understood, with the ultimate goal of viral load suppression (Mugavero 2011). Viral load suppression not only improves individual health, but it also reduces HIV transmission on a population level (Das 2010, Montaner 2010). As there is mounting evidence that treatment of HIV with combination antiretroviral therapy (ART) reduces HIV transmission and HIV incidence (CDC 1994, Cohen 2011, Jia 2012), there has been more of a public health focus on treatment for everyone, and the DHHS guidelines also recently supported this (DHHS 2013). The continuum focuses on several steps of HIV service delivery, including diagnosis, linkage to care, retention in care, ART, and viral load suppression.

The Ryan White Comprehensive AIDS Resources Emergency Act of 1990 created a federal program for care services for PLWH who had no other source of health care financing, and there have been revisions in 1996, 2000, 2006, and 2009 (Title XXVI of the Public Health Service (PHS) Act, as amended by the Ryan White HIV/AIDS Treatment Extension Act of 2009 (P. L. 111-87)). The law created the Ryan White HIV/AIDS Program (RWHAP), which is administered by the Health Resources and Services Administration (HRSA), HIV/AIDS Bureau (HAB). Grantees of this program include individual clinics, community health centers, networks of outpatient clinics, hospital-based clinics, university health systems, AIDS service organizations, cities, states, and territories of the United States. Here we report the number of Ryan White HIV/AIDS Program clients at each stage of the continuum of HIV care for the first time.



Continuum of engagement in care among HIV-infected individuals (Cheever 2007)

METHODS

Since 2009, Ryan White grantees and their funded providers have been required to report client-level data covering demographics, services, and clinical information annually. This data is collected in the Ryan White Services Report (RSR). Each client is identified by an encrypted unique client identifier (eUCI), which is created in a standardized way by each provider and then encrypted prior to submission to HRSA. Data for the prior year are submitted by March in the subsequent year. Because the same client can be reported by more than one provider, the data are de-duplicated using a probabilistic records linkage approach (Fellegi and Sunter 1969).

Data for the 2010 RSR cycle was reported to HRSA between January and March 2011, and data analysis on a preliminary data set began in fall 2012. Descriptive statistics and bivariate analyses were done with SAS version 9.3. The final RSR 2010 data are yet to be released.

Ryan White Services Report (RSR) Data Processing: 12-18 months

- Mandatory annual reporting by all RW grantees
- Client-level data sent electronically in encrypted format to HRSA
- Data validation
- Data cleaning
- Probabilistic records linkage

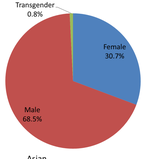
Result: One data set that contains a unique record for each RW client

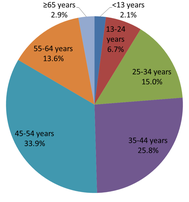
DEFINITIONS

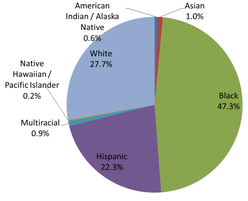
	Numerator Definition	Denominator Definition (for proportion)
RW client	Client received at least 1 RW-funded service in calendar year [Includes HIV+, HIV-negative, HIV-indeterminate]	Not applicable
Received RW-funded medical care or case management and HIV+	Client received RW-funded medical care or case management services and was documented to be HIV+	RW client
RW-funded medical care	Received RW-funded medical care	RW client
Retained in medical care	Attended at least 2 RW-funded medical care visits that were at least 90 days apart	RW-funded medical care and had visit date available
ART	Received ART prescription at any time in the year	RW-funded medical care and had ART data and visit date available
Viral load suppressed	HIV-1 viral load <200 copies/ml for the most recent value reported	RW-funded medical care and had viral load available

RESULTS: DEMOGRAPHICS OF RYAN WHITE CLIENTS

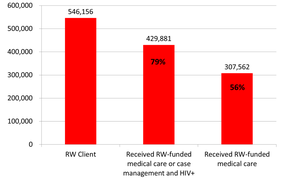
In 2010, the Ryan White HIV/AIDS Program served a total of 546,156 clients. Of all RW clients, there were 68.5% males, 30.7% females, and 0.8% transgender (including male-to-female and female-to-male). Age <13 years accounted for 2.1% of the RW population, followed by age ≥65 years (2.9%), 13-24 years (6.7%), 55-64 years (13.6%), 25-34 years (15.0%), 35-44 years (25.8%), and 45-54 years (33.9%). The racial/ethnic groups represented most commonly include black (47%), white (28%), Hispanic/Latino (22%), and 1% or less for all other racial/ethnic groups.







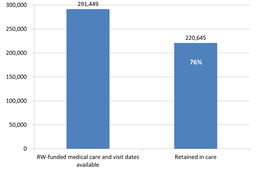
RESULTS: RYAN WHITE-FUNDED MEDICAL CARE



In the RSR, HIV status is reported only for individuals who receive case management or medical care services; therefore, the 429,881 RW clients for whom HIV+ status is documented received either RW-funded medical care or case management services. Of all RW clients, 79% were known to be HIV+, and 56% received at least RW-funded medical care.

RESULTS: RETENTION IN MEDICAL CARE

Of the 291,449 HIV+ individuals who received RW-funded medical care, and had visit dates available, 76% were retained in medical care (at least 2 medical care visits at least 90 days apart).

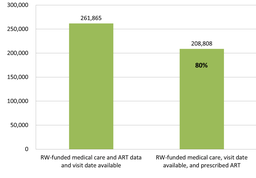


We analyzed the data on retention in medical care by age, race/ethnicity, gender, and insurance status. The age groups with the highest retention were children <13 years (83%), adults ≥65 years (82%), adults ages 55 to 65 years (81%). Individuals with multiple insurance and Medicare also had retention rates ≥80% (83% and 80%, respectively). Retention was <70% for ages 13-24 years (67%) and 25-34 years (69%).

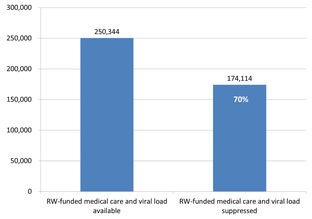
	RW-funded medical care and visit dates available (N)	Retained in medical care (%)	Odds ratio (95% CI)
All	291,449	76%	Not applicable
<13 years	1,578	83%	1.16 (0.99 - 1.34)
13-24 years	17,396	67%	0.47 (0.44 - 0.50)
25-34 years	47,050	69%	0.51 (0.48 - 0.54)
35-44 years	79,597	75%	0.68 (0.64 - 0.72)
45-54 years	99,532	78%	0.81 (0.76 - 0.86)
55-64 years	38,644	81%	0.98 (0.92 - 1.05)
≥65 years	7,635	82%	Reference
American Indian / Alaska Native	1,420	74%	0.86 (0.77 - 0.97)
Asian	3,000	76%	0.98 (0.90 - 1.07)
Black	137,151	75%	0.89 (0.88 - 0.91)
Hispanic	64,227	78%	1.09 (1.06 - 1.11)
Multiracial	2,536	79%	1.15 (1.05 - 1.27)
Native Hawaiian / Pacific Islander	571	71%	0.73 (0.61 - 0.88)
White	78,116	77%	Reference
Female	86,366	77%	1.11 (1.09 - 1.13)
Transgender	2,226	71%	0.80 (0.73 - 0.87)
Male	202,805	75%	Reference
Multiple insurance	31,704	83%	1.32 (1.28 - 1.38)
Medicare only	21,880	80%	1.13 (1.09 - 1.19)
Other insurance	11,204	78%	1.00 (0.95 - 1.06)
Other Public	21,829	78%	0.97 (0.93 - 1.01)
Medicaid only	68,608	75%	0.85 (0.82 - 0.87)
No Insurance	75,744	73%	0.73 (0.71 - 0.76)
Private only	32,548	78%	Reference

RESULTS: ANTIRETROVIRAL THERAPY

There were 261,865 individuals who received RW-funded medical care and had antiretroviral therapy (ART) data and visit date available. Of these, 208,808 (80%) were prescribed ART.



RESULTS: VIRAL LOAD SUPPRESSION



There were 250,344 individuals who received at least one RW-funded medical care visit and had viral load data available. Of these, 174,114 (70%) had viral load <200 copies/ml at the most recent test. Individuals retained in medical care had a higher proportion with viral load suppressed (75%) compared with individuals who were not retained in care (50%).

	Viral load suppressed (<200 copies/ml at most recent test)
Retained in medical care	75%
Received at least 1 RW-funded medical visit but not retained in medical care	50%

CONCLUSIONS

The Ryan White HIV/AIDS Program serves over half a million individuals living with or affected by HIV.

Of the HIV+ Ryan White HIV/AIDS Program clients who received RW-funded medical care:

- **76% were retained in medical care**
- **80% were prescribed antiretroviral therapy**
- **70% had viral load suppressed**

Rates of retention, ART prescription, and viral load suppression are high compared to previously reported CDC continuum data (CDC 2012) but demonstrate room for improvement. These improvements will help to achieve the goals of the National HIV/AIDS Strategy and improve individual and public health.

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