2014 Rhode Island HIV/AIDS Epidemiologic Profile with Surrogate Data

December 2015

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1. Introduction

The Rhode Island Department of Health (RIDOH) HIV Surveillance Program has maintained records on the HIV epidemic since 1982. In Rhode Island, 3,972 cases of HIV/AIDS and 1,679 deaths from HIV/AIDS have been reported as of 2014. Major advances in prevention and treatment have altered the pace and reach of the epidemic, and after a plateau, the epidemic is in a phase of decline.

New information released by the Centers for Disease Control and Prevention (CDC) estimates, based on 2012 data and accounting for reporting delays, that 2,500 persons (95% CI 2,300-2,700) are living with HIV and AIDS in Rhode Island. Continued work is needed to ensure at-risk individuals are tested and all those diagnosed with HIV/AIDS are connected to care and attain a suppressed viral load.

This Epidemiologic Profile provides detailed surveillance data about the current status of the HIV/AIDS epidemic, and presents data trends from the previous five years (2010-2014). This epidemiological profile focuses on data related to persons diagnosed with HIV, persons with HIV who have progressed to AIDS, HIV/AIDS-related deaths, and those populations who are experiencing a disproportionate burden of illness from HIV.

Following the HIV/AIDS surveillance section are overviews of the epidemiology of tuberculosis (TB), sexually transmitted diseases (STDs), and hepatitis C (HCV). The epidemiology of HIV is best understood within the context of TB, STDs, and HCV due to their overlap among the populations impacted by HIV/AIDS. The final sections include: (1) Behavioral Risk Factor Surveillance System (BRFSS) data, (2) descriptive data related to the needle exchange/harm reduction program (ENCORE), (3) data from the counseling, testing, and referral (CTR) programs and, (4) a review of the socio-demographic profile of the population of Rhode Island.

2. Surveillance Methods

Surveillance authority:

Reporting is mandated in accordance with Rhode Island General Laws, Chapter 23 Prevention and Suppression of Contagious Diseases – HIV/AIDS which can be accessed at http://webserver.rilin.state.ri.us/Statutes/TITLE23/23-6.3/INDEX.HTM and the *Rules and Regulations Pertaining to HIV Counseling, Testing and Reporting, and Confidentiality* which can be accessed at http://sos.ri.gov/documents/archives/regdocs/released/pdf/DOH/7132.pdf.

Through this authority Rhode Island has been practicing HIV/AIDS surveillance since 1983 in collaboration with the CDC. AIDS cases have been reported by patient name since reporting became mandatory. Name-based reporting of HIV cases has been required since July 2006.

Case definitions:

In its collection, assessment, and aggregation of HIV and AIDS reports, the Rhode Island HIV Surveillance Program conforms to surveillance case definitions of HIV and AIDS published by the CDC. Case definitions have been nationally published in 1986, 1987, 1992, 1993, 1999, 2008, and most recently in 2014.

- CDC. Classification system for human T-lymphotropic virus type III/lymphadenopathy-associated virus infections. MMWR 1986; 35:334. http://www.cdc.gov/mmwr/preview/mmwrhtml/00033677.htm
- CDC. Revision of the CDC surveillance case definition for acquired immunodeficiency syndrome. MMWR 1987; 36:1-15S. http://www.cdc.gov/mmwr/pdf/other/mmsu3601.pdf
- CDC. 1993 Revised Classification System for HIV Infection and Expanded Surveillance Case Definition for AIDS Among Adolescents and Adults. MMWR 1992; 41(RR-17). http://www.cdc.gov/mmwr/preview/mmwrhtml/00018871.htm
- CDC. Appendix: Revised Surveillance Case Definition for HIV Infection. MMWR 1999; 48(RR13); 29-31. http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4813a2.htm
- CDC. Revised Surveillance Case Definitions for HIV Infection Among Adults, Adolescents, and Children Aged <18 Months and for HIV Infection and AIDS Among Children Aged 18 Months to <13 Years — United States, 2008. MMWR 2008; 57(RR 10); 1-12. http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5710a1.htm
- CDC. Revised Surveillance Case Definitions for HIV Infection – United States, 2014. MMWR 2014; 63(RR 03); 1-10. http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6303a1.htm

It is important to note that revisions in the CDC surveillance definitions of HIV and AIDS may cause discontinuities in trend data. For example, between 1992 and 1993, the number of

AIDS cases in Rhode Island and in the United States as a whole increased dramatically because of CDC's expanded surveillance case definition for AIDS.

Data Repositories

Case surveillance of AIDS was initiated in Rhode Island in 1983, and HIV surveillance began in 2000. These surveillance systems provide information on risk factors, patient demographics, laboratory tests, and the clinical manifestations of disease over time. The present epidemiologic profile relies primarily on these case surveillance data. However, the program utilizes an array of data sources to establish the most complete and accurate picture of HIV and AIDS in Rhode Island and the populations at highest risk for infection. The list below identifies the sources of information used.

HIV/AIDS Reporting System (HARS): Implemented in 1983, this was a repository of all AIDS cases by name (from 1983) and in addition, HIV cases were added to this system in 2000. HARS data was synthesized into a composite database called eHARS in 2008.

***HIV Unique-Identifier Reporting System*:** Implemented in 2000, providers were required to report all cases of HIV infection with a unique patient identifier and *without* names until June 2006. These records were stored in the Unique-Identifier Reporting System database. This provides an unduplicated count of cases from January 2000 to June 2006. Starting in July 2006, HIV cases have been reported *with* names and are stored in the eHARS database described below.

***eHARS** (enhanced HIV/AIDS Reporting System):* Implemented in 2008 as an upgrade of HARS. eHARS is a repository of all AIDS cases reported since 1983 and all HIV cases reported, by name, since 2006. This system has the capacity to store multiple case reports and laboratory reports for each person. Records stored in the Unique-Identifier Reporting System database that were subsequently reported by name have been moved from the Unique-Identifier Reporting System database to eHARS.

***Cerner** (State Health Laboratory Information Management System)*: Includes all positive and negative HIV test results submitted to the RIDOH State Laboratories.

EvaluationWeb: CDC-sponsored database which contains data on all HIV rapid-tests and services provided at RIDOH-funded counseling, testing, and referral (CTR) sites.

BRFSS (Behavioral Risk Factor Surveillance System): A randomized telephone survey which is conducted annually focusing upon Rhode Islanders selected for the sample.

YRBS (Youth Risk Behavior Survey): Focusing on adolescent youth, this survey is

administered at schools for grades 9-12.

***STD*MIS Database*:** A repository of STD reports of chlamydia, gonorrhea and syphilis reports, from the RIDOH STD Program.

NEDSS (National Electronic Disease Surveillance System): Reportable disease database used by the RIDOH TB Program and for other reportable conditions besides HIV and STDs.

***Cancer Registry*:** This reportable disease database is used for identifying individuals with AIDS-defining malignancies.

***Hospital Medical Records*:** Patient medical records are utilized in AIDS validation studies and in the follow-up of previously reported cases.

National HIV/AIDS Surveillance System (NHSS): National surveillance system which compiles reports of HIV/AIDS from all US jurisdictions to inform national trends. Of note, names are not reportable to CDC. Instead, unique codes and Soundex codes are used as identifiers.

Rhode Island Office of Vital Records Database: This database maintains a record of all deaths that occur in Rhode Island. It is used to update vital status for individuals living with HIV.

National Death Index (NDI): Established by the National Center for Health Statistics, the NDI is a national database made up of data from state vital statistics offices. This database is used to update vital status for individuals in eHARS who may have died outside of Rhode Island.

Social Security Death Index: A database containing all deaths reported to the Social Security Administration. This database is used to update vital status for individuals in eHARS who may have died outside of Rhode Island.

Data Limitations

The ideal HIV/AIDS surveillance system should be capable of detecting and accurately detailing all new HIV infections, in order to provide information to HIV prevention programs to accurately reflect the current risk factors. Since 1983, RIDOH has required the reporting of all AIDS cases by name, and since 1989, has required all HIV positive test results to be reported. Initially, HIV-positive test results were collected without names or other identifying information in order to protect the anonymity of patients. However, this "no names/no identifiers" system fostered duplication and incomplete information. As a result, a new HIV reporting system was implemented in 2000 which used a unique-identifier code to maintain patient anonymity and essentially eliminated case duplication which allowed for more complete, accurate and timely reporting and analysis. This new HIV reporting

system greatly improved the ability to conduct HIV surveillance. In 2006, HIV name-based reporting became a federal requirement. Rhode Island, therefore, adopted name-based reporting and as a result, the completeness and accuracy of the data have been enhanced and reflected since 2006.

It is important to note that a newly-reported case of HIV does not necessarily signify a recent infection with HIV. Many individuals are unaware or are unwilling to be tested for HIV, and may be tested and diagnosed long after the initial infection occurred. Moreover, an individual infected with HIV may not progress to AIDS for many years, thereby making AIDS data potentially unreliable for the purpose of detailing current transmission patterns. Providers may see many cases in a period of time which can create the perception of rapidly increasing case numbers. However, that does not necessarily translate into a surveillance measure of increasing incident cases, as many of the cases are importations from prior care in other states or countries, or are returning to care after a period of absence, and are already known to our surveillance system.

Third parties, most frequently healthcare providers, report much of the data needed by the HIV Surveillance Program. As a result, these reports rely on the patients and providers to accurately and completely disclose relevant information pertaining to risk factors, demographic characteristics, and clinical history. Considerable effort is put into de-duplicating cases already in the system. Patient names are not shared with CDC and potential duplicates are identified using the National Archives and Records Administration Soundex methodology. Soundex is a phonetic algorithm for indexing names by sound and allows for de-identified reporting of cases while maintaining the ability to identify potential duplicates. RIDOH staff investigate these potential duplicates through record searches between RIDOH and other jurisdictions semi-annually. The RIDOH HIV Surveillance Program also matches data with State Vital Records, the National Death Index, and the Social Security Death Mater File to ensure complete and accurate vital statistics data for HIV/AIDS cases.

Defining cases of HIV/AIDS in Rhode Island

This Epidemiological Profile reports the number of newly-diagnosed cases of HIV/AIDS during the last five years. These numbers include Rhode Island residents with a documented positive HIV test or diagnosis of AIDS for the first time (based on the case definitions referenced above). These numbers also include foreign-born individuals with known HIV

infection who are establishing United States residency for the first time in Rhode Island. Therefore, through international migration and inter-state migration, not all newly-diagnosed cases of HIV/AIDS indicate active transmission within Rhode Island.

Figures reporting newly-diagnosed cases in Rhode Island do not include previously-identified cases of HIV/AIDS in Rhode Island which may have been reported again during the reporting time period. Lastly, cases that were first diagnosed and reported in another state who have since migrated into Rhode Island are excluded. Information on prior diagnosis is found through initial investigation and through routine interstate duplicate review processes conducted by all reporting jurisdictions across the United States and outlying territories.

3. HIV/AIDS Surveillance Report

A) HIV in Rhode Island: 2014 Highlights

Between January 1, 2014 and December 31, 2014, there were a total of 97 Rhode Island residents newly-diagnosed with HIV and reported to the HIV Surveillance Program. This number provides a minimum estimate of HIV infection, as it does not include HIV-infected individuals who have not been tested yet and those who get tested anonymously (Table 1).

Of the 97 cases diagnosed and reported to RIDOH during this year:

- By Sex:
  - Males accounted for 79% of cases (n=77, 15.1 cases per 100,000)
  - Females accounted for 21% of cases (n=20, 3.7 cases per 100,000)
- By Age:
  - The majority of cases were 20-29 years old (28%, n=27) and 30-39 years old (27%, n=26)
  - The majority of male cases were 20-29 years old (33%, n=25)
  - The majority of female cases were 40-49 years old (40%, n=8)
- By Race/Ethnicity:
  - Among males
    - White, non-Hispanic males accounted for the majority of cases (44%, n=34, 8.8 cases per 100,000) followed by Hispanic males (27%, n=21, 32.6 cases per 100,000) and Black, non-Hispanic males (20%, n=15, 57.7 cases per 100,000)
  - Among females
    - Black, non-Hispanic Females accounted for the majority of cases (40%, n=8, 31.3 cases per 100,000) followed by Hispanic females (30%, n=6, 9.1 cases per 100,000) and White, non-Hispanic females (25%, n=5, 1.2 cases per 100,000)
- By mode of exposure to HIV:
  - Among all cases, men who have sex with men (MSM) was the leading reported transmission category (58%, n=56) followed by heterosexual contact (27%, n=26) and then "no risk reported" (11%, n=11)
  - Among males, MSM was reported by 73% of cases (n=56)
  - Among females, 70% reported heterosexual contact (n=14)
- By county of residence:
  - The majority of cases (84%, n=81) were from Providence county

Note: Rates are based on the 2010 U.S. Census Demographic Profile. Race/ethnicity based on the U.S. Census combined race/ethnicity calculated variable.

B) Five Year Trend Data-HIV in Rhode Island: 2010-2014

In 2014, the number of newly-diagnosed cases of HIV increased after four years of continual reductions (Figure 1). The reasons for this increase are unclear and may represent increased testing across the population or among high risk groups or changes in transmission dynamics. Increases were not seen across all groups, and further research is needed to determine what factors may contribute to this increase.

Figure 1. Newly-Identified Cases of HIV, Rhode Island 2010-2014

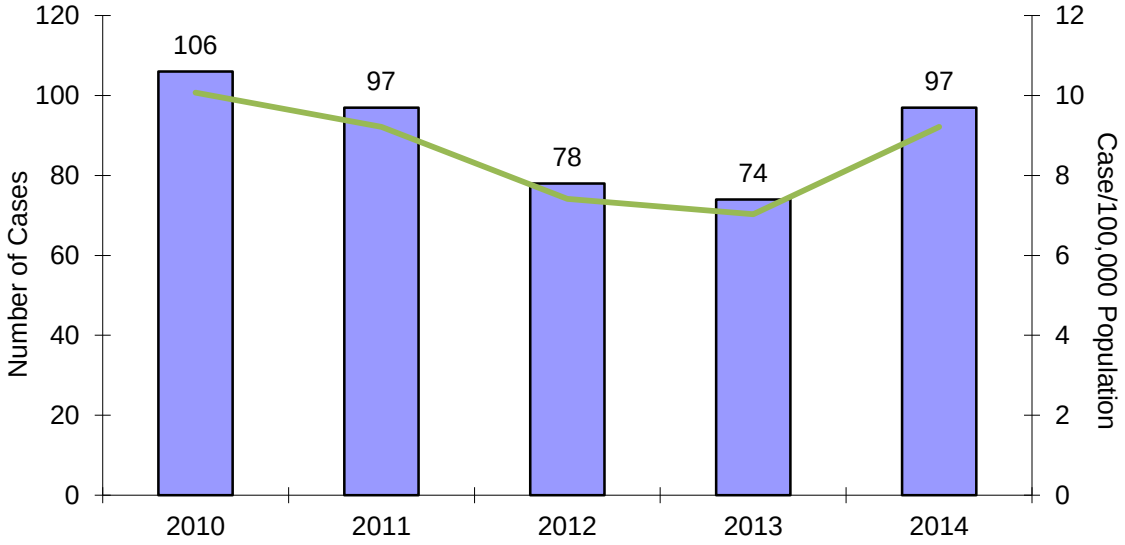


Figure 1. Rates are based on the 2010 U.S. Census Demographic Profile.

Figure 2. Newly-Identified Cases of HIV by Mode of Exposure, Rhode Island, 2010-2014

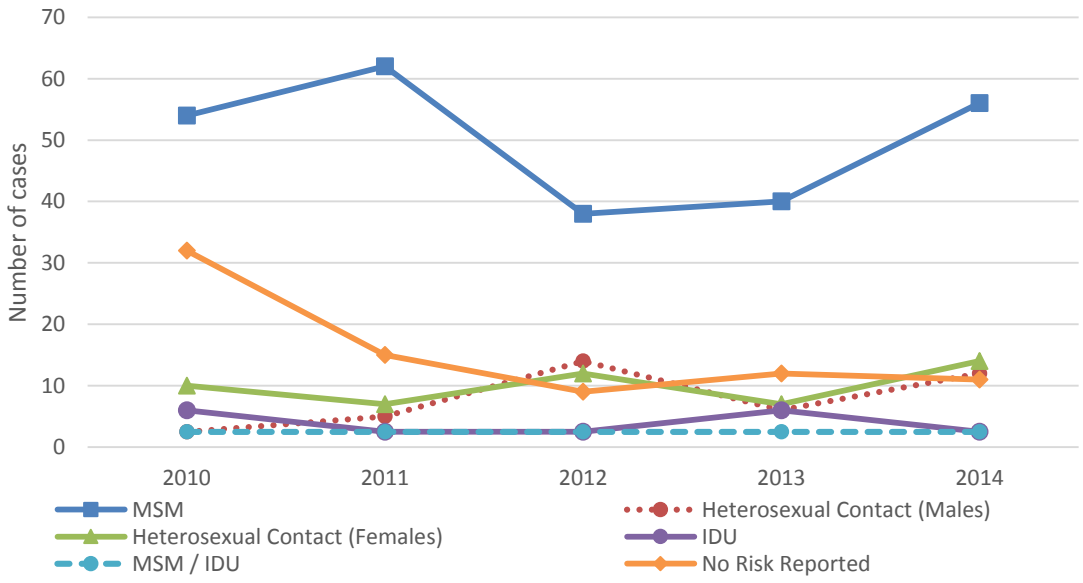


Table 1. Demographic and Risk Factor Characteristics of Newly-Identified HIV Cases, Rhode Island, 2010 – 2014

Year	2010	2011	2012	2013	2014
Sex					
Male	84 (79%)	83 (86%)	61 (78%)	58 (78%)	77 (79.4%)
Female	22 (21%)	14 (14%)	17 (22%)	16 (22%)	20 (20.6%)
Total	106 (100%)	97 (100%)	78 (100%)	74 (100%)	97 (100%)
Age Category					
<13	<5*	<5*	<5*	<5*	<5*
13-19	8 (7%)	<5*	<5*	<5*	<5*
20-29	20 (19%)	24 (25%)	23 (30%)	27 (36%)	27 (27.6%)
30-39	27 (25%)	30 (31%)	21 (27%)	19 (26%)	26 (26.8%)
40-49	27 (25%)	29 (30%)	18 (23%)	13 (18%)	25 (25.8%)
50+	24 (23%)	13 (13%)	15 (19%)	13 (18%)	17 (17.5%)
Total	106 (100%)	97 (100%)	78 (100%)	74 (100%)	97 (100%)
Race/Ethnicity					
White, non-Hispanic	47 (44%)	54 (56%)	38 (49%)	41 (55%)	39 (40.2%)
Black/African American, non-Hispanic	26 (25%)	14 (14%)	17 (22%)	13 (18%)	23 (23.7%)
Hispanic or Latino	27 (26%)	22 (23%)	19 (24%)	16 (22%)	27 (27.8%)
Asian	<5*	<5*	<5*	<5*	<5*
Native Hawaiian/Pacific Islander	<5*	<5*	<5*	<5*	<5*
American Indian / AK Native	<5*	<5*	<5*	<5*	<5*
Multiracial/Unknown/Other	<5*	5 (5.2%)	<5*	<5*	5 (5.2%)
Total	106 (100%)	97 (100%)	78 (100%)	74 (100%)	97 (100%)
Risk Factor					
Men Who Have Sex With Men	54 (51%)	62 (64%)	38 (49%)	40 (54%)	56 (57.7%)
Injection Drug Use	6 (6%)	<5*	<5*	6 (8%)	<5*
MSM and IDU	<5*	<5*	<5*	<5*	<5*
Heterosexual Contact	13 (12%)	12 (12%)	26 (33%)	13 (18%)	26 (26.8%)
Transfusion	<5*	<5*	<5*	<5*	<5*
Mother with HIV / HIV Risk	<5*	<5*	<5*	<5*	<5*
No Risk Reported	32 (30%)	15 (15%)	9 (12%)	12 (16%)	11 (11.3%)
Total	106 (100%)	97 (100%)	78 (100%)	74 (100%)	97 (100%)
County of Residence					
Homeless	<5*	<5*	<5*	<5*	<5*
Bristol	<5*	<5*	<5*	6 (8%)	<5*
Kent	9 (9%)	8 (9%)	6 (8%)	5 (7%)	8 (8.2%)
Newport	8 (8%)	6 (7%)	<5*	<5*	<5*
Providence	81 (77%)	69 (76%)	67 (88%)	59 (81%)	81 (83.5%)
Washington	6 (6%)	<5*	<5*	<5*	<5*
Total	106 (100%)	97 (100%)	78 (100%)	74 (100%)	97 (100%)

** Cell contains fewer than five cases*

C) HIV/AIDS By Sex

More male cases continue to be diagnosed in Rhode Island than females. Rates for both sexes were declining before the increase in 2014. The diagnosis rate for male HIV cases was 15.1/100,000 cases compared to the female HIV diagnosis rate of 3.7/100,000 cases, with an overall rate of 9.2/100,000 for Rhode Island in 2014. MSM remains the greatest risk factor among males, whereas for females it is heterosexual exposure and in many cases "unknown" exposures (Table 2 and 3).

Figure 3. Rates of Newly-Identified Cases of HIV, By Sex, Rhode Island, 2010-2014

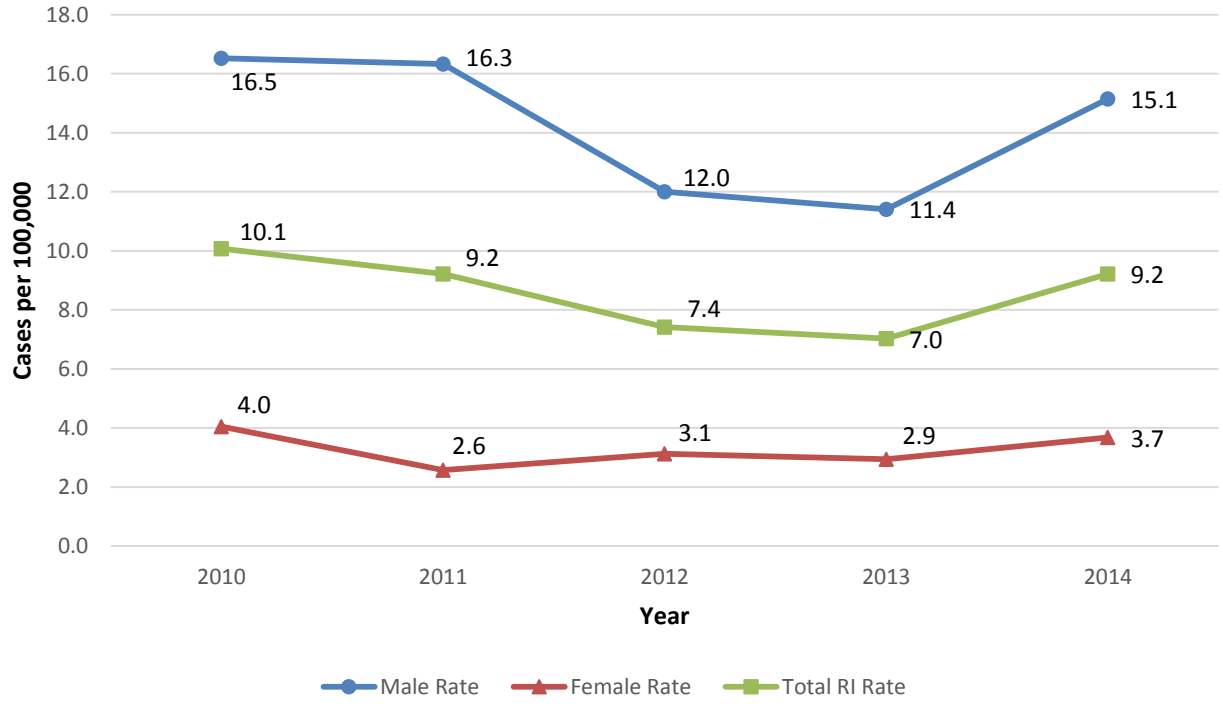


Figure 2. Rates are based on the 2010 U.S. Census Demographic Profile

Table 2. Newly-Identified Male HIV Cases, Demographic and Risk Factor Characteristics, Rhode Island, 2010 – 2014

Year	2010	2011	2012	2013	2014
Age Category					
<13	<5*	<5*	<5*	<5*	<5*
13-19	<5*	<5*	<5*	<5*	<5*
20-29	16 (19%)	22 (25%)	20 (33%)	21 (36%)	25 (33%)
30-39	25 (30%)	25 (30%)	14 (23%)	15 (26%)	20 (26%)
40-49	22 (26%)	25 (30%)	15 (25%)	12 (21%)	17 (18%)
50+	17 (20%)	11 (13%)	11 (17%)	9 (15%)	13 (13%)
Total	84 (100%)	83 (100%)	61 (100%)	58 (100%)	77 (100%)
Race/Ethnicity					
White, non-Hispanic	41 (48%)	50 (60%)	35 (57%)	36 (62%)	34 (44%)
Black/African American, non-Hispanic	16 (19%)	11 (13%)	11 (18%)	6 (10%)	15 (19%)
Hispanic or Latino	21 (25%)	16 (13%)	13 (21%)	12 (21%)	21 (27%)
Asian	<5*	<5*	<5*	<5*	<5*
Native Hawaiian/Pacific Islander	<5*	<5*	<5*	<5*	<5*
American Indian / AK Native	<5*	<5*	<5*	<5*	<5*
Multiracial/Unknown/Other	<5*	5 (6.5%)	<5*	<5*	5 (6.5%)
Total	84 (100%)	83 (100%)	61 (100%)	58 (100%)	77 (100%)
Risk Factor					
MSM	54 (64%)	62 (75%)	38 (62%)	40 (69%)	56 (73%)
IDU	<5*	<5*	<5*	<5*	<5*
MSM and IDU	<5*	<5*	<5*	<5*	<5*
Heterosexual Contact	<5*	5 (6%)	14 (23%)	6 (10%)	12 (12%)
Transfusion	<5*	<5*	<5*	<5*	<5*
Mother with HIV / HIV Risk	<5*	<5*	<5*	<5*	<5*
No Risk Reported	22 (26%)	9 (11%)	5 (8%)	8 (13.8%)	5 (5%)
Total	84 (100%)	83 (100%)	61 (100%)	58 (100%)	77 (100%)

** Cell contained fewer than five cases*

MSM=men who have sex with men; IDU=injection drug use

Table 3. Newly-Identified Female HIV Cases, Demographic and Risk Factor Characteristics, Rhode Island, 2010 - 2014

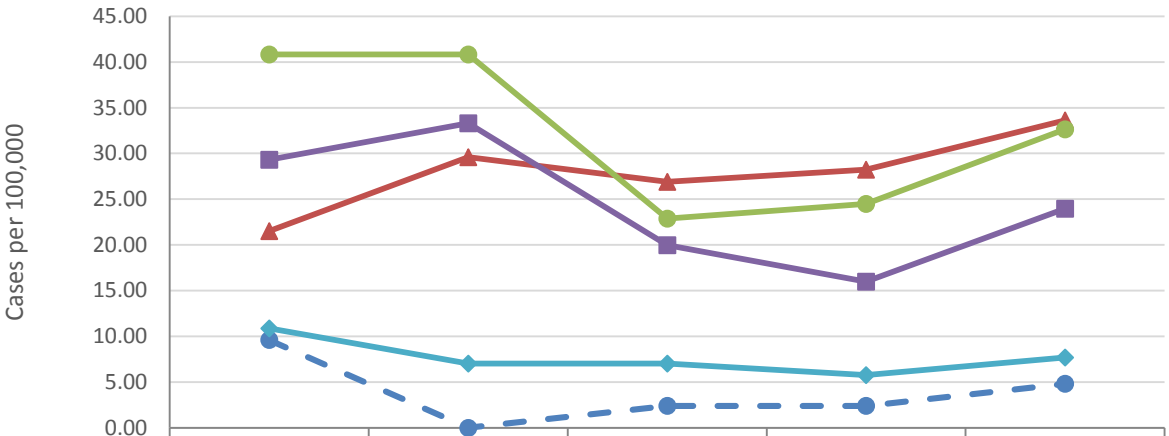
Year	2010	2011	2012	2013	2014
Age Category					
<13	<5*	<5*	<5*	<5*	<5*
13-19	<5*	<5*	<5*	<5*	<5*
20-29	<5*	<5*	<5*	6 (38%)	<5*
30-39	<5*	<5*	7 (41%)	<5*	6 (30%)
40-49	5 (22%)	5 (36%)	<5*	<5*	8 (40%)
50+	7 (31%)	<5*	<5*	<5*	<5*
Total	22 (100%)	14 (100%)	17 (100%)	16 (100%)	20 (100%)
Race/Ethnicity					
White, non-Hispanic	6 (27%)	<5*	<5*	5 (31%)	5 (25.0%)
Black/African American, non-Hispanic	10 (45%)	<5*	6 (35.3%)	7 (44%)	8 (40%)
Hispanic or Latino	6 (27%)	6 (42.9%)	6 (35.3%)	<5*	6 (30%)
Asian	<5*	<5*	<5*	<5*	<5*
Native Hawaiian/Pacific Islander	<5*	<5*	<5*	<5*	<5*
American Indian / AK Native	<5*	<5*	<5*	<5*	<5*
Multiracial/Unknown/Other	<5*	<5*	<5*	<5*	<5*
Total	22 (100%)	14 (100%)	17 (100%)	16 (100%)	20 (100%)
Risk Factor					
IDU	<5*	<5*	<5*	5 (31%)	<5*
Heterosexual Contact	10 (45%)	7 (50%)	12 (71%)	7 (44%)	14 (70%)
Transfusion	<5*	<5*	<5*	<5*	<5*
Mother with HIV / HIV Risk	<5*	<5*	<5*	<5*	<5*
No Risk Reported	10 (45%)	6 (43%)	<5*	<5*	6 (30%)
Total	22 (100%)	14 (100%)	17 (100%)	16 (100%)	20 (100%)

** Cell contained fewer than five cases*
IDU=injection drug use

C) HIV/AIDS By Age

The age distribution of newly-identified HIV cases has changed in the past five years. As seen in Table 1, HIV cases diagnosed between 2010 and 2011 were predominantly in the 40-49 and 30-39 age groups. However, around the same time, HIV cases in the younger age group of 20-29 showed a gradual increase. In 2012 and 2013, the 20-29 age group was the predominant age group among new cases (30% and 36% respectively). In 2014, the 20-29 age group was once again the predominant age group (27.6%) but only marginally higher than cases among 30-39 year olds (26.8%) and 40-49 year olds (25.8%). The distribution of age was more prominent among male HIV cases than females (tables 2, 3). Figures 3 and 4 show the age group distribution for the past five years.

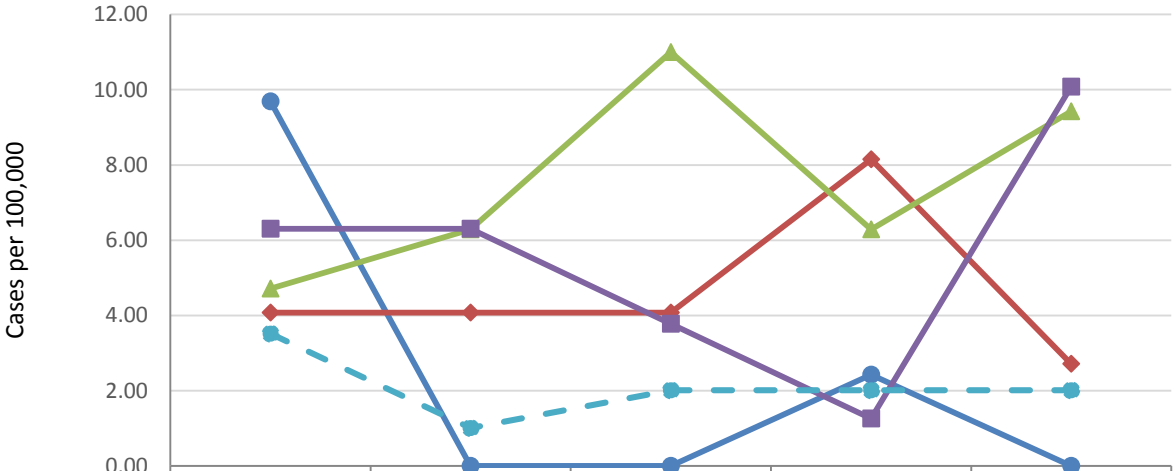
Figure 3: Rate of Newly-Identified Cases of HIV, by Age Group Among Males, Rhode Island, 2010-2014



	2010	2011	2012	2013	2014
13-19	9.60	0.00	2.40	2.40	4.80
20-29	21.52	29.59	26.90	28.24	33.62
30-39	40.82	40.82	22.86	24.49	32.66
40-49	29.31	33.30	19.98	15.99	23.98
50+	10.88	7.04	7.04	5.76	7.68

Figure 3. Rates are based on the 2010 U.S. Census Demographic Profile

Figure 4: Rate of Newly-Identified Cases of HIV, by Age Group Among Females, Rhode Island, 2010-2014



	2010	2011	2012	2013	2014
13-19	9.69	0.00	0.00	2.42	0.00
20-29	4.08	4.08	4.08	8.15	2.72
30-39	4.71	6.28	11.00	6.28	9.43
40-49	6.30	6.30	3.78	1.26	10.08
50+	3.52	1.00	2.01	2.01	2.01

Figure 4. Rates are based on the 2010 U.S. Census Demographic Profile

D) HIV/AIDS By Race and Ethnicity

From 2010 to 2014, the majority of newly-identified HIV cases in Rhode Island have occurred among White non-Hispanic individuals (48.5%), followed by Hispanics (24.6%) and Black non-Hispanic individuals (20.6%). The Black/African American community is experiencing the highest impact of HIV/AIDS. They account for nearly 21% of newly-identified cases but only represent 7% of the state's total population. The diagnosis rate for Black/African Americans has declined but is still greater than all other racial/ethnic groups. The Hispanic/Latino community is also disproportionately burdened by the HIV/AIDS epidemic. They account for nearly 25% of all HIV cases, whereas only 13% of the total population of Rhode Island is Hispanic/Latino. These disparities are present in both the male and female populations in Rhode Island, as shown in figures 5 and 6 below.

Figure 5: Rate of Newly-Identified Cases of HIV, by Race and Ethnicity, Rhode Island, 2010-2014

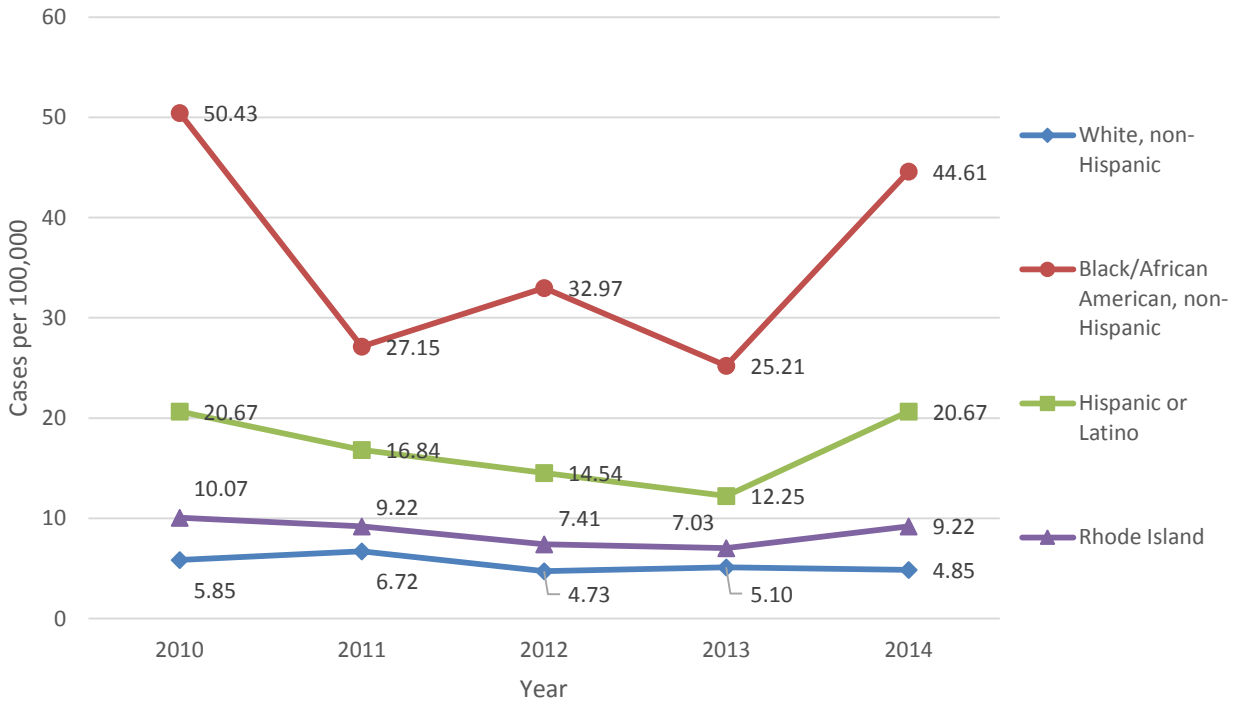


Figure 5. Rates are based on the 2010 U.S. Census Demographic Profile. Analysis conducted using the combined race/ethnicity variable. Rates have been adjusted slightly from previous analyses.

Figure 6: Male Rate of Newly-Identified Cases of HIV, by Race and Ethnicity, Rhode Island, 2010-2014

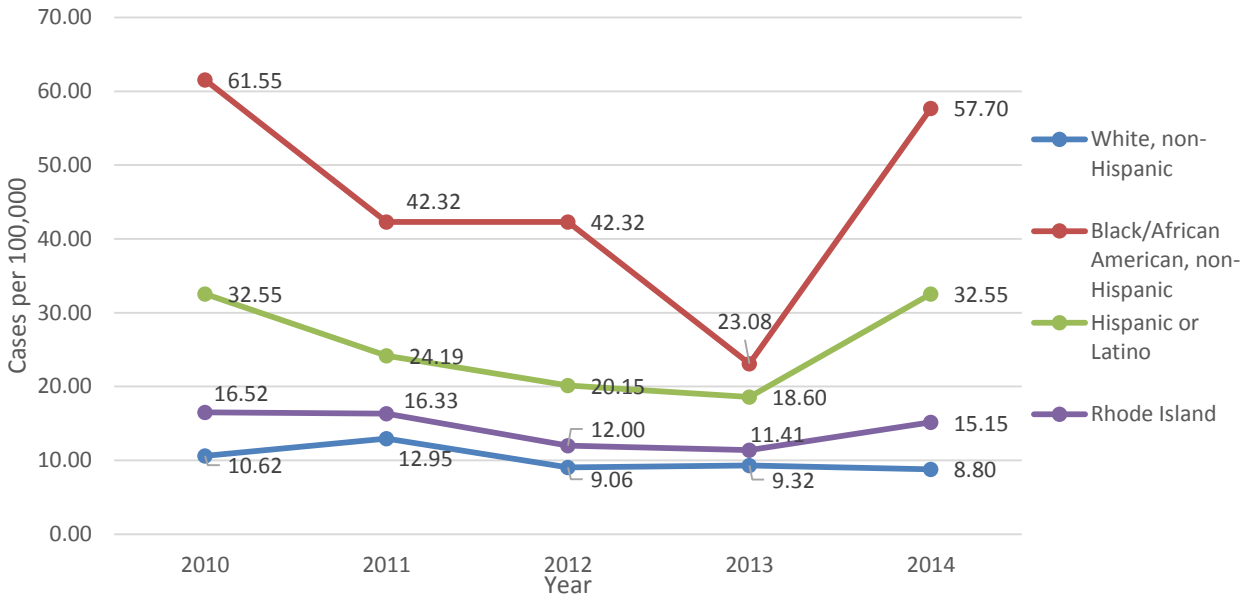


Figure 6. Rates are based on the 2010 U.S. Census Demographic Profile. Analysis conducted using the combined race/ethnicity variable. Rates have been adjusted slightly from previous analyses.

Figure 7: Female Rate of Newly-Identified Cases of HIV, by Race and Ethnicity, Rhode Island 2010-2014

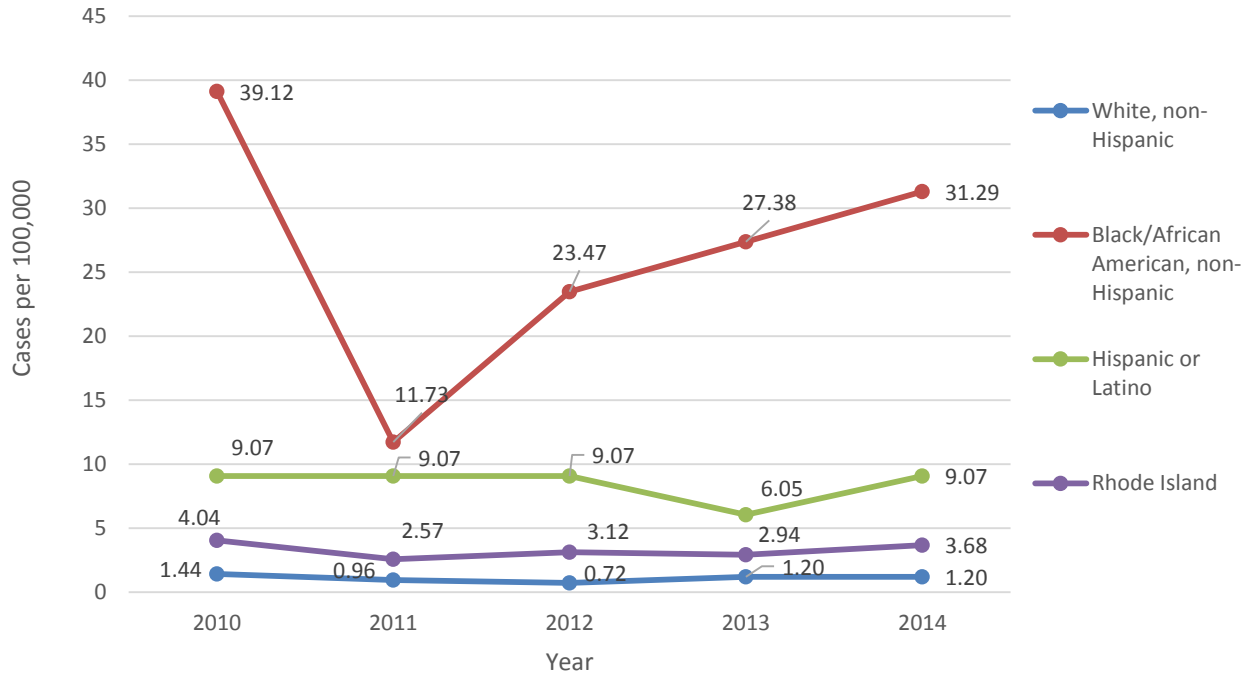
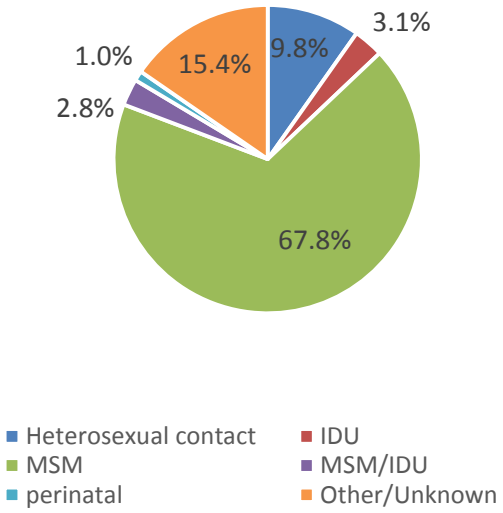


Figure 7. Rates are based on the 2010 U.S. Census Demographic Profile. Analysis conducted using the combined race/ethnicity variable. Rates have been adjusted slightly from previous analyses.

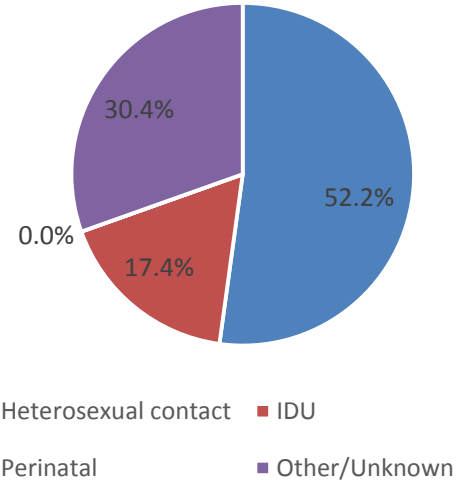
E) HIV/AIDS By Exposure Category

Figures 8 -13: Newly-Identified Cases of HIV, Cases by Sex, Race/Ethnicity, and Risk Factor, Rhode Island, 2010-2014

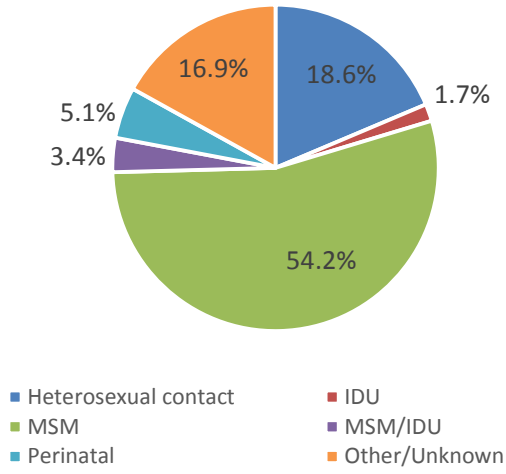
White, non-Hispanic Males (n=196)



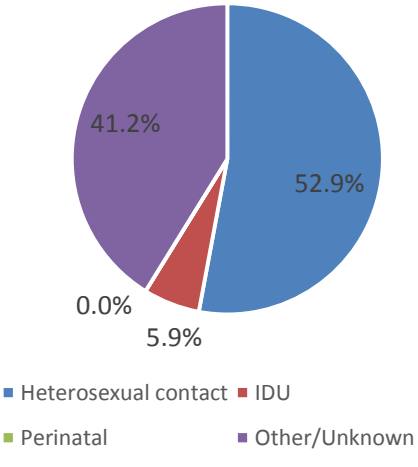
White, non-Hispanic Females (n=23)



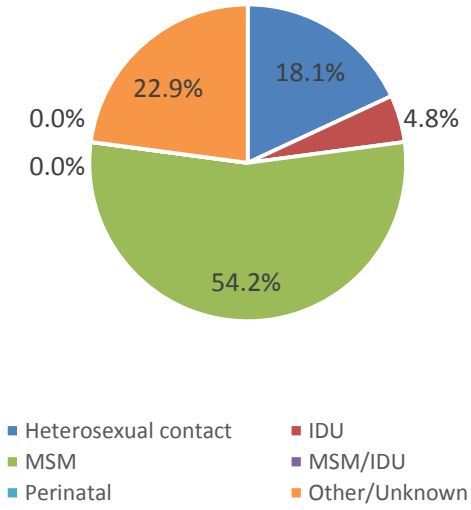
Black/African American, non-Hispanic Males (n=59)



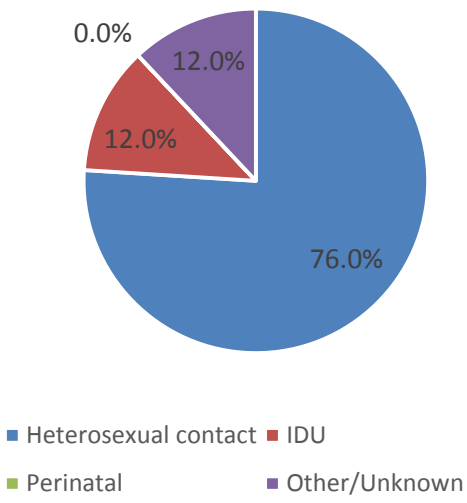
Black/African American, non-Hispanic Females (n=34)



Hispanic or Latino Males (n=83)



Hispanic or Latino Females (n=25)



The number of cases in the MSM population continues to increase and is the predominant exposure category between 2010 and 2014. MSM, as a risk factor, has been reported more frequently than any other risk category by White non-Hispanic, Black/African American non-Hispanic and Hispanic/Latino males. Injecting drug use (IDU)-associated HIV infection has shown a marked decrease and is not a dominant risk behavior. Among women, heterosexual contact is the most commonly reported risk category, followed by "unknown" risk when not enough information was known. Figures 8- 13 show the average distribution of exposure category by gender and race/ethnicity among HIV cases for 2010-2014.

F) Deaths Related To HIV/AIDS

Information on vital status is collected in partnership with the RIDOH Office of Vital Statistics, the National Death Index and the Social Security Death Master File. Annually, each of these resources are used to identify any existing HIV-infected individuals that may have died. Matching with death records is critical to accurately estimate the number of persons living with HIV/AIDS in Rhode Island. Due to matching with national databases, death ascertainment activities are typically completed one year after local surveillance data are analyzed, to account for reporting delays. Therefore, table 4 and figure 14 describe deaths among Rhode Island HIV cases from 2009-2013. From 2009 to 2013, 190 deaths occurred among persons with HIV/AIDS and since 1983, a total of 1,699 deaths have occurred among Rhode Island residents diagnosed with HIV/AIDS. Since the availability of highly active antiretroviral therapy (HAART), the number of HIV/AIDS related

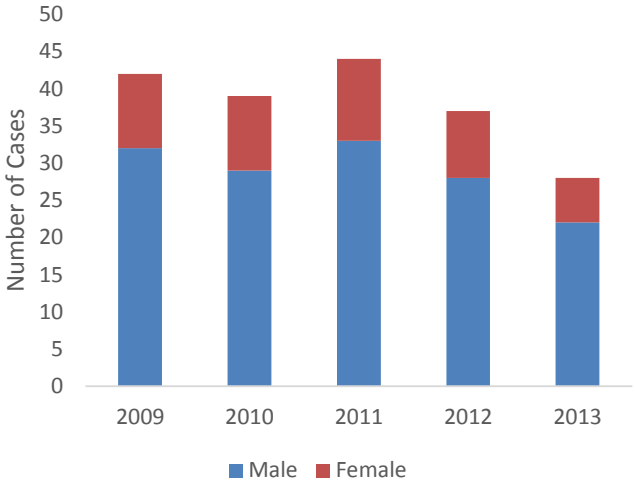
deaths has steadily declined in Rhode Island. Due to advances in clinical therapy and antiretroviral medications, the population living with HIV/AIDS has grown to a much larger size in the past several years. As shown below, there was a higher number of deaths from 2009-2011, as compared to 2012 and 2013. The demographic profile of deaths among HIV/AIDS cases is similar to that of newly identified cases of HIV/AIDS with regard to sex, race/ethnicity, and exposure category.

Table 4. HIV/AIDS Deaths by Demographic Characteristics, Rhode Island, 2009-2013

Demographic Characteristics	Count	Percent
Gender		
Male	144	75.8%
Female	46	24.2%
Total	190	100.0%
Age Group		
20-29	3	1.6%
30-39	15	7.9%
40-49	49	25.8%
50-59	91	47.9%
60-69	27	14.2%
70+	5	2.6%
Total	190	100.0%
Race/Ethnicity		
American Indian/ Alaska Native	1	0.7%
Asian	0	0.0%
Native Hawaiian / Pacific Islander	0	0.0%
Black/African American, non-Hispanic	57	30.1%
Hispanic or Latino	35	18.2%
White, non-Hispanic	92	49.0%
Multiracial/Other/Unknown	5	2.6%
Total	190	100.0%
Country of Birth		
US-Born	148	77.9%
Non-US Born	37	19.5%
Unknown	5	2.6%
Total	190	100.0%

Note: US-Born includes the 50 U.S. States and the District of Columbia. Non-US Born includes foreign countries and U.S. territories

Figure 14: HIV/AIDS Deaths by Sex, Rhode Island, 2009-2013



G) AIDS surveillance trends

Figure 15 shows the number of individuals who progressed to AIDS during 2010-2014. This figure include individuals who were initially diagnosed with HIV and AIDS during the time period, as well as historic HIV cases that progressed to AIDS during the time period. There has been an overall decrease in the number of individuals progressing to AIDS during these years. There has been a more substantial decrease in the number of deaths reported among HIV/AIDS cases.

Figure 15. Cases of HIV progressing to AIDS, Rhode Island, 2010 - 2014

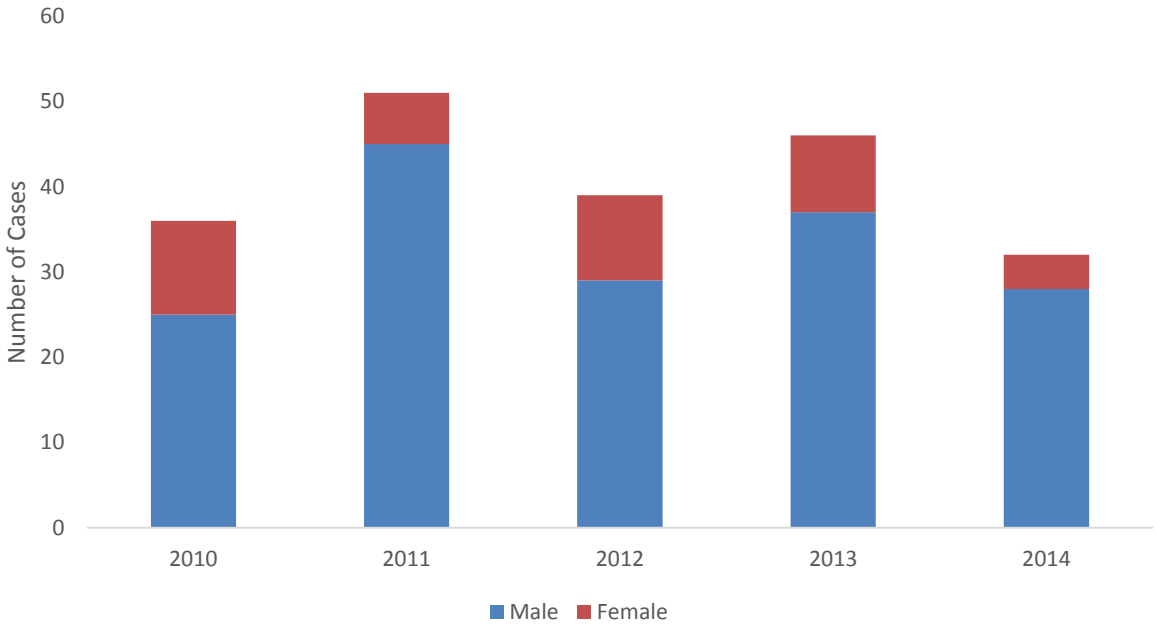


Table 5. Demographic and Risk Factor Characteristics of HIV Cases Who Progressed to AIDS, 2010-2014, Rhode Island

Demographic Characteristics	2010	2011	2012	2013	2014
Sex					
Male	25 (69%)	45 (88%)	29 (74%)	37 (80.4%)	28 (87.5%)
Female	11 (31%)	6 (12%)	10 (26%)	9 (19.6%)	4 (12.5%)
Total	36 (100%)	51 (100%)	39 (100%)	46 (100%)	32 (100%)
Age Group					
<13	<5*	<5*	<5*	<5*	<5*
13-19	<5*	<5*	<5*	<5*	<5*
20-29	<5*	8 (15%)	<5*	6 (13.0%)	6 (18.8%)
30-39	12 (33%)	12 (24%)	13 (33%)	9 (19.6%)	5 (15.6%)
40-49	8 (22%)	23 (45%)	10 (26%)	9 (19.6%)	9 (28.1%)
50+	13 (36%)	8 (15%)	12 (31%)	21 (45.7%)	12 (37.5%)
Total	36 (100%)	51 (100%)	39 (100%)	46 (100%)	32 (100%)
Race/Ethnicity					
Hispanic or Latino	8 (22%)	12 (23%)	13 (33%)	13 (28.3%)	9 (28.1%)
American Indian/Alaska Native	<5 *	<5*	<5*	<5*	<5*
Asian	<5 *	<5*	<5*	<5*	<5*
Black/African American, non-Hispanic	8 (22%)	9 (18%)	9 (23%)	5 (10.9%)	<5*
Native Hawaiian/ Pacific Islander	<5 *	<5*	<5*	<5*	<5*
White, non-Hispanic	18 (50%)	28 (54%)	15 (38%)	27 (58.7%)	16 (50.0%)
Multiracial/Unknown/Other	<5*	<5*	<5*	<5*	<5*
Total	36 (100%)	51 (100%)	39 (100%)	46 (100%)	32 (100%)
Exposure Category					
MSM	15 (41%)	24 (47%)	14 (36%)	19 (41.3%)	19 (59.4%)
IDU	<5*	<5*	<5*	<5*	<5*
MSM and IDU	<5*	<5*	<5*	<5*	<5*
Hemophilia/Coagulation Disorder	<5*	<5*	<5*	<5*	<5*
Heterosexual Contact	<5*	5 (10%)	13 (33%)	9 (19.6%)	8 (25.0%)
Transfusion/Transplant	<5*	<5*	<5*	<5*	<5*
Mother with HIV	<5*	<5*	<5*	<5*	<5*
No Risk Reported	12 (33%)	17 (33%)	5 (13%)	11 (23.9%)	<5*
Total	36 (100%)	51 (100%)	39 (100%)	46 (100%)	32 (100%)

* Cell contains fewer than five cases.
MSM=men who have sex with men; IDU=injection drug use.

H) Special Populations: Pediatric HIV/AIDS Cases

In 2009, the mandatory HIV testing of pregnant women and babies with unknown maternal status during pregnancy was added to the Rhode Island General Law (§ 23-6.3-3). This policy decision has ensured earlier detection of HIV among pregnant women, resulting in appropriate clinical management of the mother and the baby, thus reducing chances of vertical (mother to child) HIV transmission.

Pregnant women who test positive for HIV, as well as HIV RNA testing in infants with potential perinatal exposure, are reportable to the HIV Surveillance Program. The HIV Surveillance program works closely with Rhode Island birthing hospitals to identify HIV-positive pregnant women and infants who were exposed to ensure they are linked to appropriate medical care.

The number of pediatric HIV/AIDS cases identified has remained low during the last five years and almost all of the reported cases result from perinatal exposure. There were zero cases reported in 2013 and 2014. From 2008 to 2012, there were seven cases of pediatric HIV diagnosed and reported to the HIV Surveillance program. Sixty percent (n=3) of these cases were born outside of the United States to an HIV infected mother who moved to Rhode Island. The cases ranged from younger than one year old to 9 years. Fifty-seven percent of cases were male (n=4) and 43% were female (n=3). Seventy-one percent (n=5 cases) were Black/African American. Two were diagnosed with AIDS the same year they were diagnosed with HIV.

I) Special Populations: Men who have sex with men (MSM)

The MSM community continues to experience a disproportionately high burden of HIV diagnosis despite an overall decrease in the number of new diagnoses. Figure 16 shows that although there has been a decrease in male cases over the last five years, there is a continued high percentage of identified cases that report being MSM. Figure 17 shows how the MSM risk group compares to other reported risk groups among the male population. Total case counts among MSM are much higher than other exposure categories. Figure 18 shows this further by describing the rates of disease based on sexual behavior. National research conducted by Lieb, et al. and findings from the Rhode Island BRFSS were used to estimate that 5% of the male population in Rhode Island are gay, bisexual or other men who have sex with men. This estimate has allowed RIDOH to estimate rates of disease among this community and to compare these rates of disease to the state-wide rates of disease as well as rates for heterosexual men and women. Figure 18 shows the high rates of disease among MSM compared to other groups.

Figure 16. Proportion of Newly-Identified Male HIV Cases Who Are MSM, Rhode Island, 2010-2014

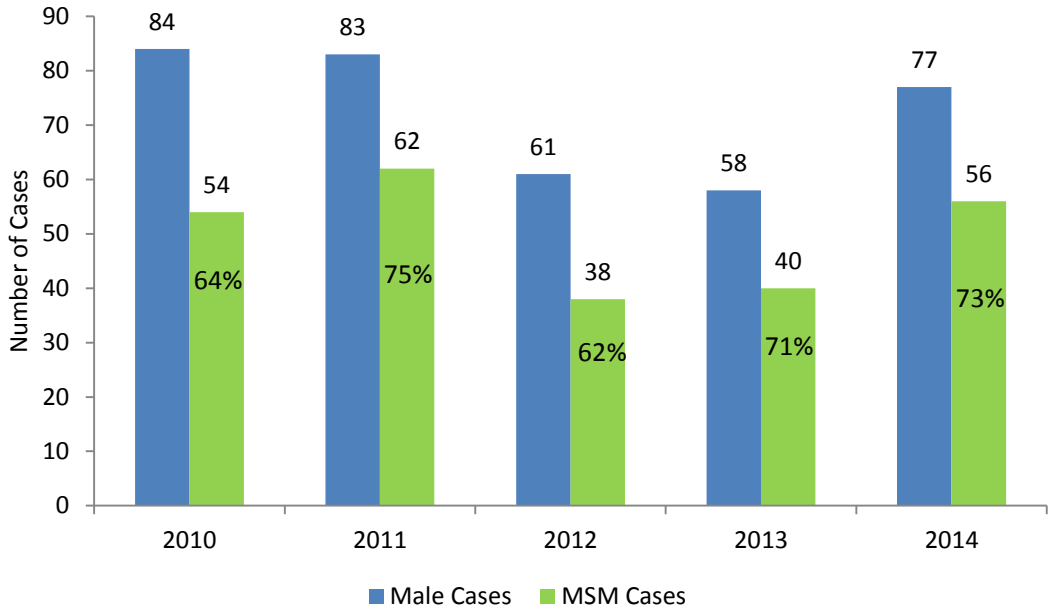


Figure 17. Newly-Identified Male HIV Cases by Risk Category, Rhode Island, 2010 - 2014

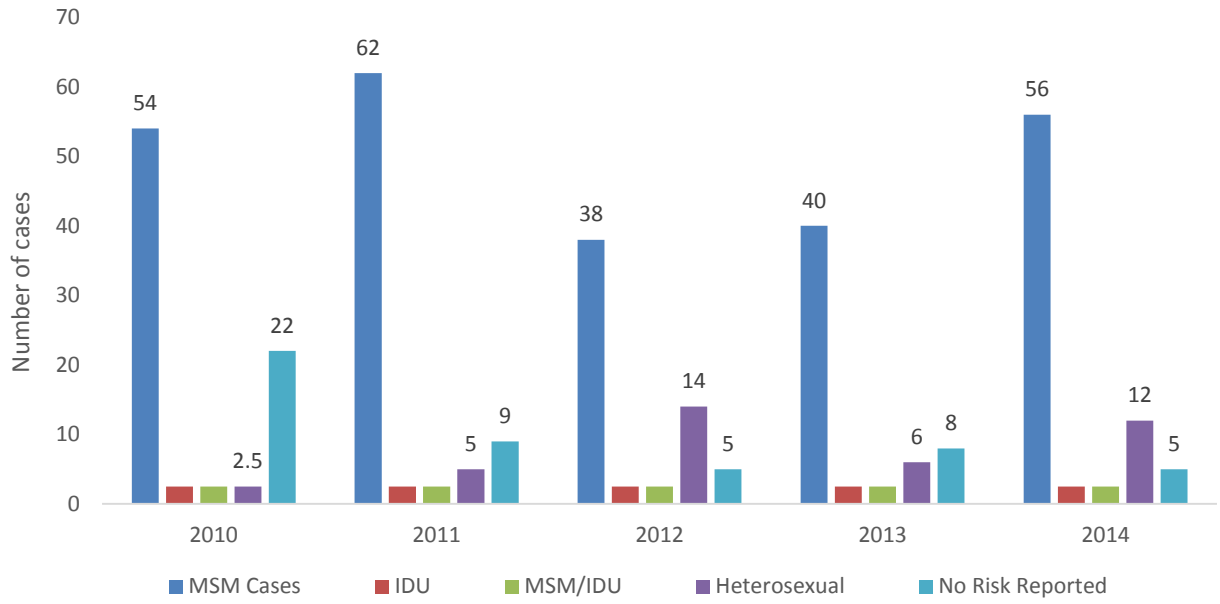


Figure 17. <5 expressed as 2.5

Figure 18. Rates of Newly-Identified Cases of HIV, Among Select Risk Groups, Rhode Island, 2010-2014

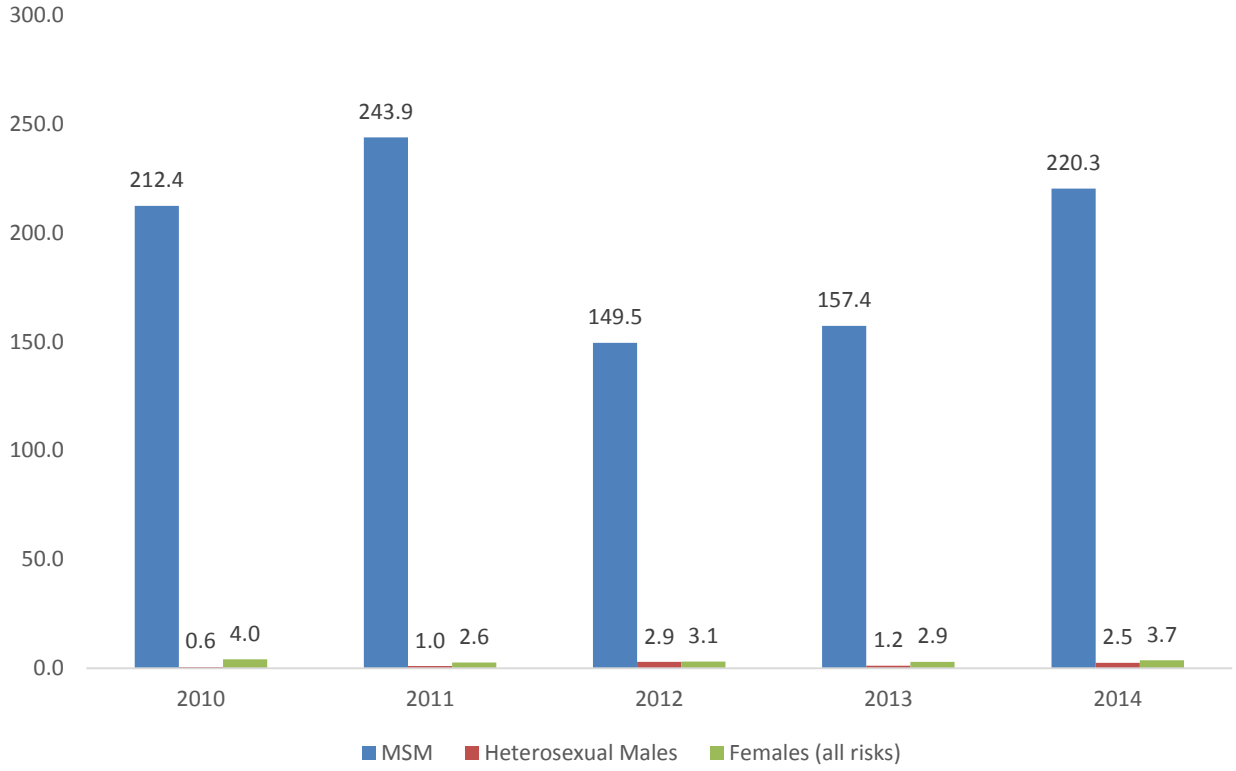


Figure 18. Rates based on 2010 U.S. Census Demographic profile. MSM rate further calculated based on RI-BRFSS data and Lieb, et al (citation in works cited).Female counts include all risk. Male IDU, MSM/IDU, and Male 'no reported risk' not included.

Comparing racial and ethnic groups within the MSM population, White non-Hispanic MSM account for the largest proportion infected with HIV (61% compared to 18% in Hispanic/Latinos and 13% in Black/African American non-Hispanic) (Figure 19). However, the rates of disease among African American and Hispanic populations are much higher. Rhode Island has seen the large disparity in disease rates narrow in the last five years (Figure 20).

Figure 19. MSM HIV Proportions by Race/Ethnicity, Rhode Island, 2010-2014

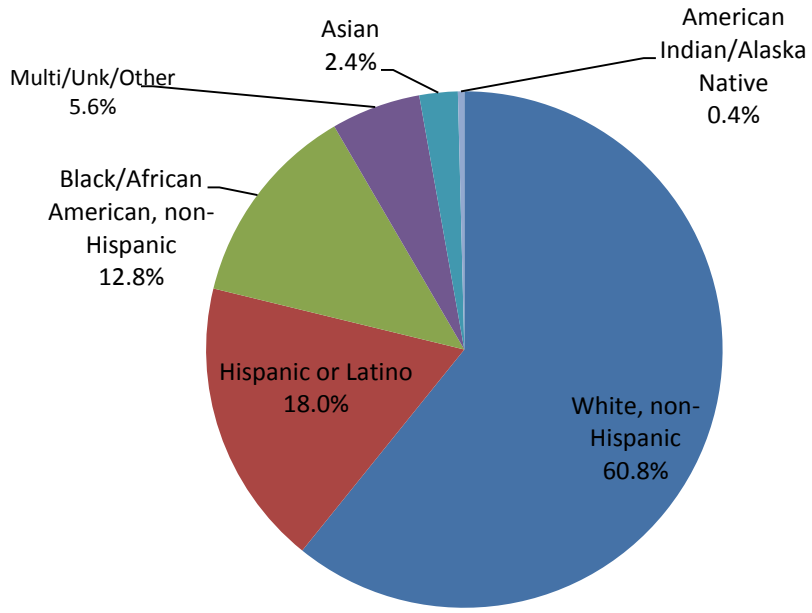


Figure 20. MSM HIV Rates by Race/ Ethnicity, Rhode Island, 2010-2014[1]

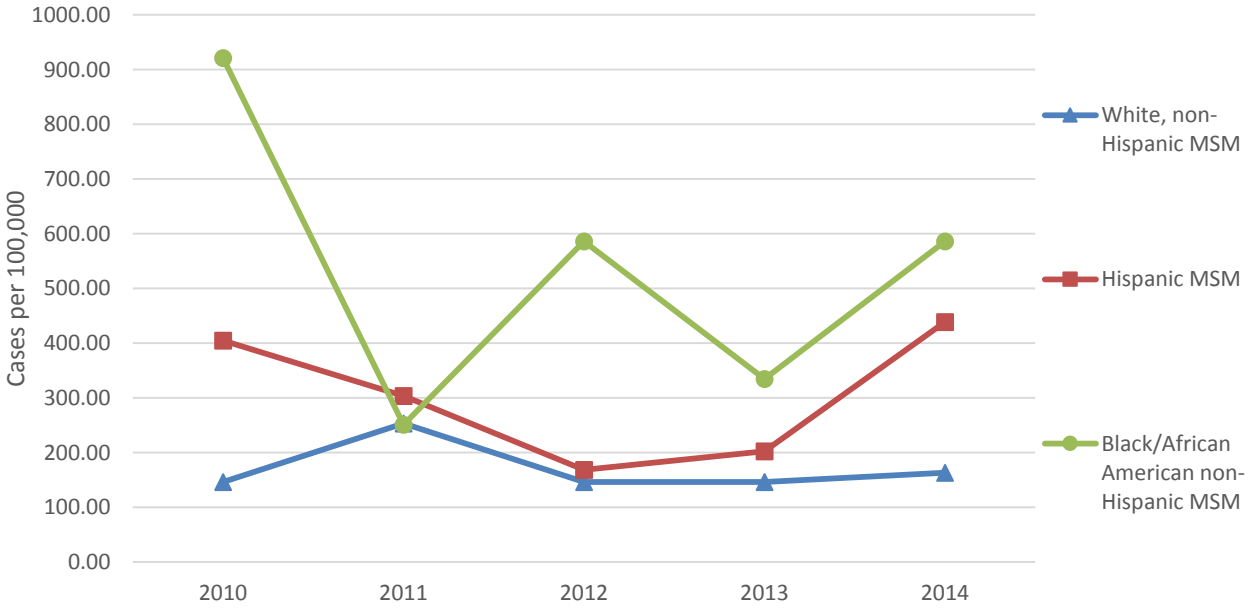


Figure 20. Rates are based on the 2010 U.S. Census Demographic Profile, the RI BRFSS and Lieb et al. (citation in works cited). Analysis conducted using the combined race/ethnicity variable. Rates have been adjusted slightly from previous analyses.

The age distribution of MSM infected with HIV, from 2010-2014, has changed and is similar to the overall HIV epidemic across Rhode Island. Newly-identified cases are increasingly being seen in the younger age categories. Cases under 20 years of age remain rare. Prior to 2009, the 30-39 and 40-49 year old age category saw slightly more cases of HIV than the 20-29 year old age category. This has changed. Prior to 2014, we noted a decrease in the number of cases among the older age categories and a plateau among 20-29 year olds. In 2014, all age categories 20 and older experienced an increase in cases, with 20-29 year olds continuing to have the largest case counts.

Figure 21. Newly-Identified HIV Cases, MSM by Age, Rhode Island, 2010-2014

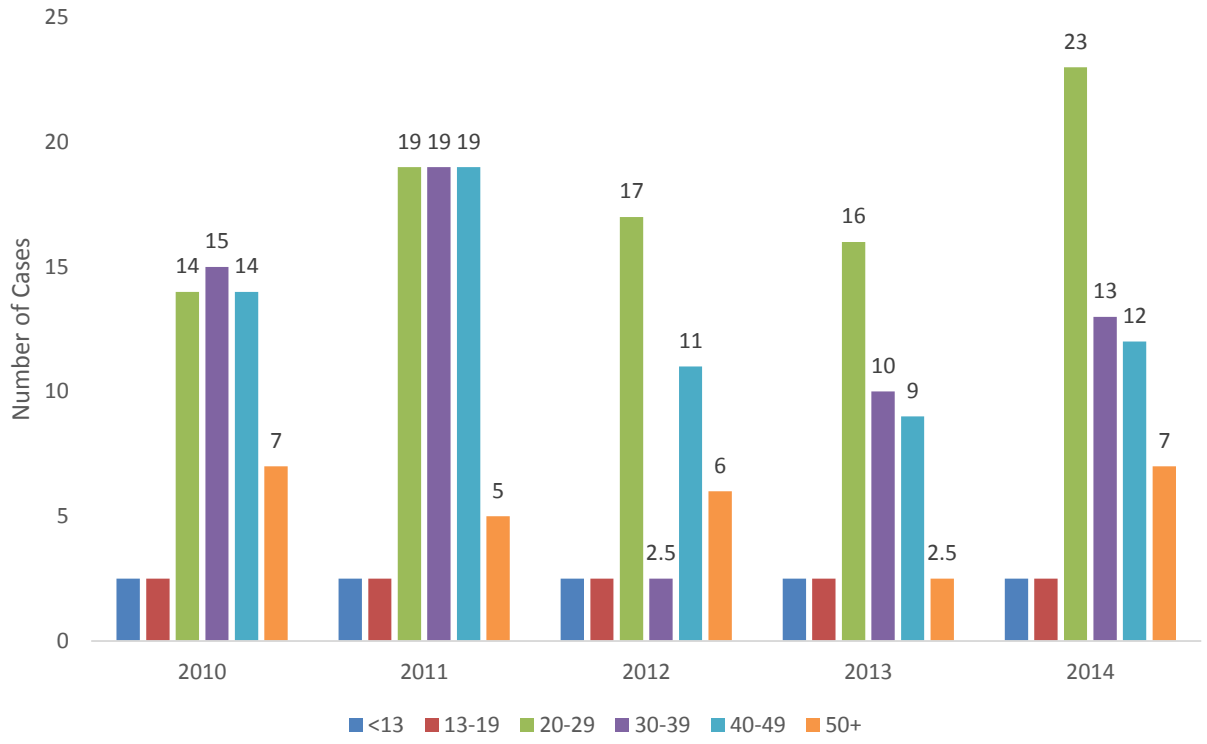


Figure 21. <5 expressed as 2.5

J) Special Populations: Minority Women

Between 2010 and 2014, 89 women were diagnosed with HIV in Rhode Island. The rate of new diagnosis among White non-Hispanic women remained about 1 case per 100,000. For Hispanic/Latinas, the rate of new diagnosis also remained stable at about 9 cases per 100,000. Black/African American non-Hispanic women have experienced an increase in rates of new diagnosis in the last four years, climbing to 3 1 cases per 100,000. The rate of disease in minority populations continues to be disproportionately high (Figure 21). Figure 22 shows the number of newly-identified cases among females by reported risk factor. Heterosexual

contact continues to be the most reported risk factor. In 2013, five cases reported injection drug use, which was the largest number of reports in one year in the previous five-year period. Historically, a large percentage of cases had no risk reported.

Figure 22. Newly-Identified Female HIV Cases, by Race/Ethnicity, Rhode Island, 2010-2014

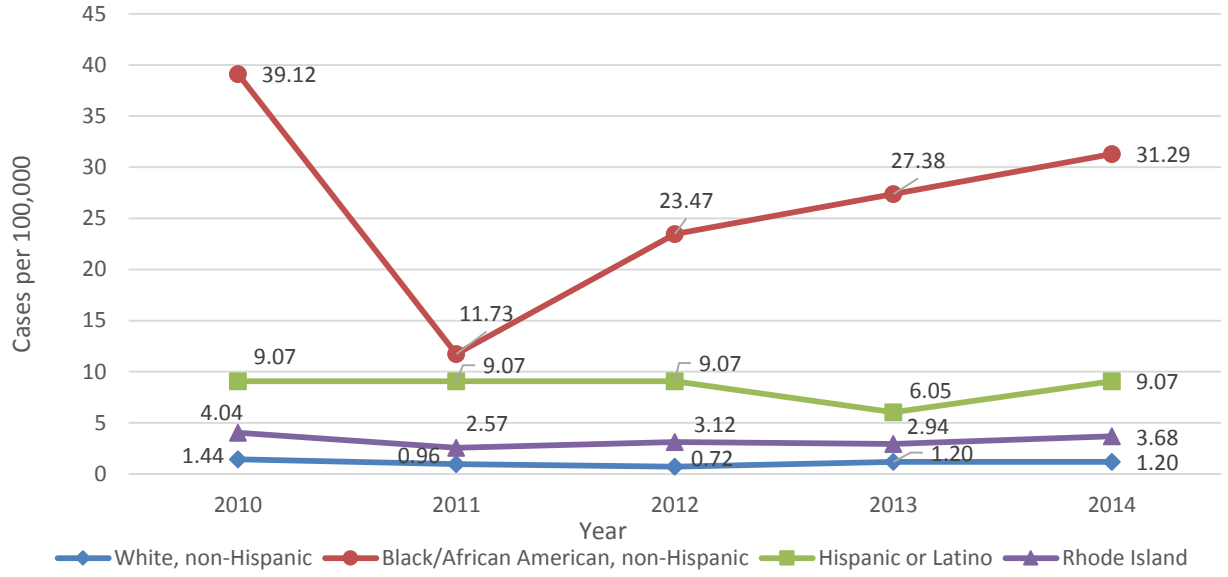


Figure 22. Rates are based on the 2010 U.S. Census Demographic Profile. Analysis conducted using the combined race/ethnicity variable. Rates have been adjusted slightly from previous analyses.

Figure 23. Newly-Identified Female HIV Cases, by Risk Factor, Rhode Island, 2010- 2014

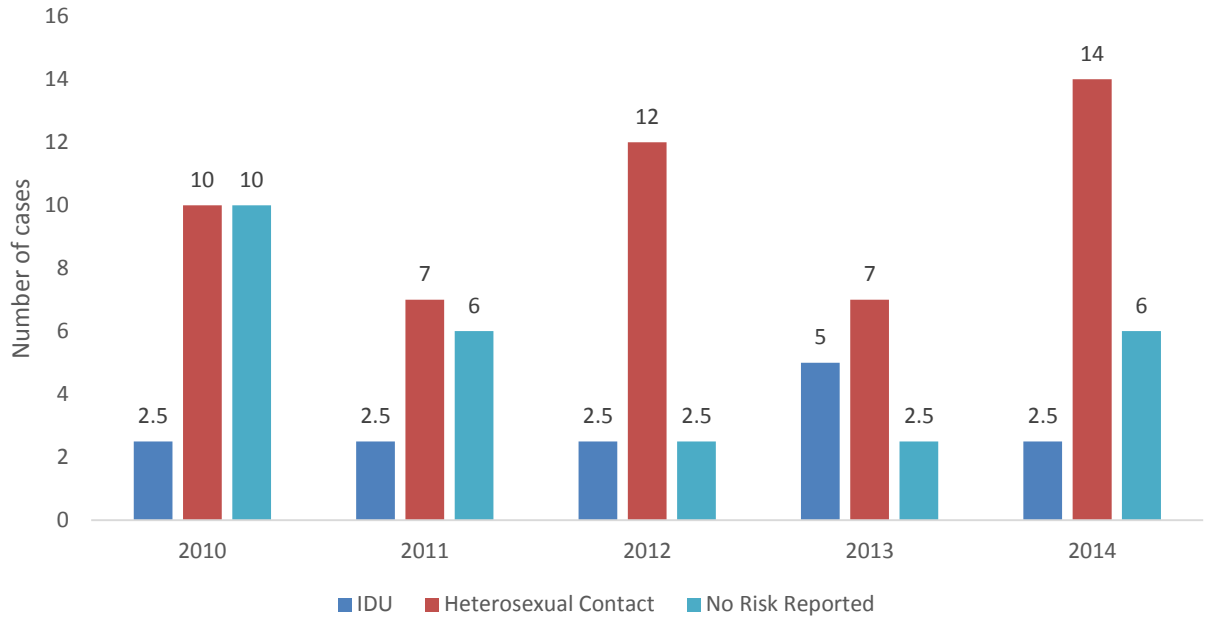


Figure 23. <5 expressed as 2.5

Risks Reported By Women

More detailed information on risk behaviors can be found through HIV Partner Services (PS) interviews with index and partner clients. Through these interviews, RIDOH learn if cases exchange sex for money, drugs, goods, or services; have sex while high or intoxicated; have been forced to have sex involuntarily; have ever been incarcerated; or if they have other factors related to higher risk of acquiring HIV and STDs. In 2014, there were very few cases who reported exchanging sex for money, drugs, goods, or services; having sex while high or intoxicated; or having been forced to have sex involuntarily. No cases reported a history of incarceration. The majority of cases reported engaging in sex without the use of condoms.

K) Special Populations: Persons Unaware of Their HIV Status

The CDC estimates that 11.2% of those infected with HIV in Rhode Island are unaware of their status. This estimate is based on national and local data reported through 2012. Individuals who are diagnosed with AIDS at the same time as being diagnosed with HIV are considered late diagnoses. These cases may be representative of the population that is infected but unaware of their status. Therefore, the number of HIV diagnoses with concurrent AIDS diagnoses is a useful metric for estimating the population of HIV-infected individuals who are unaware of their status. There are several reasons why people may not know their HIV status. Some people do not seek regular medical care, others do not believe that they are at risk, and others may deny they have HIV despite preliminary test results.

From 2010-2014, 127 individuals became aware of their positive HIV status when diagnosed concurrently with AIDS, which is 28% of the 452 individuals diagnosed during the same time period. The majority of individuals diagnosed with AIDS were male (85%). The percentage of males diagnosed with AIDS has continued to increase. The demographics of HIV with concurrent AIDS diagnosis matches the overall epidemic with the majority of cases being White non-Hispanic and the majority being gay, bisexual, or other men who have sex with men.

Table 6. Characteristics of Individuals Diagnosed with HIV alone and Individuals diagnosed with HIV concurrent with AIDS Rhode Island 2010 to 2014

Demographic Characteristics	Individuals Diagnosed with HIV alone	Individuals Diagnosed with HIV concurrent with AIDS**
	2010-2014	2010-2014
Gender		
Male	255 (78.5%)	108 (85.0%)
Female	70 (21.5%)	19 (15.0%)
Total	325 (100%)	127 (100%)
Age Group		
<13	<5*	<5*
13-19	8 (2.5%)	<5*
20-29	98 (30.2%)	22 (17.3%)
30-39	95 (29.2%)	27 (21.3%)
40-49	74 (22.8%)	43 (33.9%)
50+	49 (15.1%)	33 (26.0%)
Total	325 (100%)	127 (100%)
Race/Ethnicity		
White	150 (46.2%)	69 (54.3%)
African American	70 (21.5%)	23 (18.1%)
Hispanic	82 (25.2%)	29 (22.8%)
Asian	5 (1.5%)	<5*
Native Hawaiian/Pacific Islander	<5*	<5*
American Indian / AK Native	<5*	<5*
Multiracial/Unknown/Other	17 (5.2%)	<5*
Total	325 (100%)	127 (100%)
Risk Factor		
MSM	188 (57.8%)	62 (48.8%)
IDU	15 (4.6%)	5 (3.9%)
MSM / IDU	6 (1.8%)	<5*
Heterosexual Contact	59 (18.2%)	29 (22.8%)
Transfusion	<5*	<5*
No Risk Specified	56 (17.2%)	25 (19.7%)
Mother with HIV/HIV risk	<5*	<5*
Total	325 (100%)	127 (100%)

* Cell contained fewer than five cases

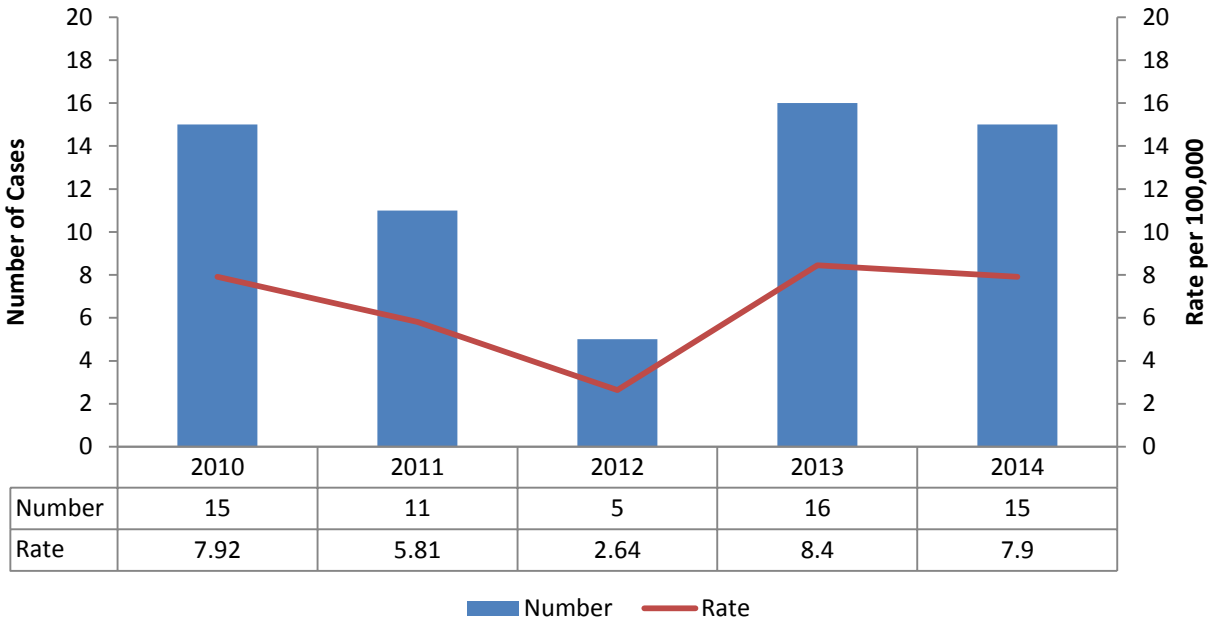
**Concurrent with AIDS defined as AIDS diagnosis within 30 days of HIV diagnosis

L) Special Populations: Youth HIV/AIDS Cases

Persons aged from 13 to 24 years of age at the time of HIV diagnosis are defined as HIV youth cases. About 14% (62 out of 452) of all the HIV cases diagnosed in Rhode Island in the last five years were 13-24 years of age. The number of youth cases declined from 2009 to 2012, but has since increased to 16 cases in 2013 and to 15 cases in 2014. The majority of cases in 2014 were

between 20 and 24 years old, emphasizing the increased burden of disease in that age group. Cases continue to be mostly males and the majority of cases report being gay, bisexual, or other men who have sex with men.

Figure 24. Newly-Identified HIV Cases, Among Youth (13-24 years), Rhode Island, 2010-2014



	2010	2011	2012	2013	2014
Number	15	11	5	16	15
Rate	7.92	5.81	2.64	8.4	7.9

Figure 24. Rates are based on the 2010 U.S. Census Demographic Profile

Of the 62 cases diagnosed among youth during 2010-2014, 51 were male and 11 were female. Youth of racial and ethnic minorities were heavily impacted with 23% of newly-identified youth HIV cases occurring in Hispanic/Latinos and 19% occurring in African American/Black, non-Hispanic youth. Forty-seven percent of youth cases were White. Among male youth, men who have sex with men (88%) was the most commonly reported risk factor. Among female youth, heterosexual contact (82%) was the most commonly reported risk category followed by no reported risk (14.3%). Figures 24 and 25 illustrate these findings.

Figure 25. Newly-Identified Male Youth (13-24 years) HIV Cases, by Risk Factor, Rhode Island, 2010-2014

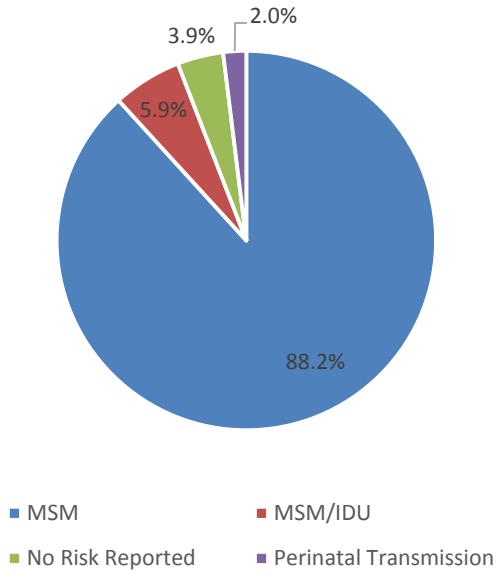
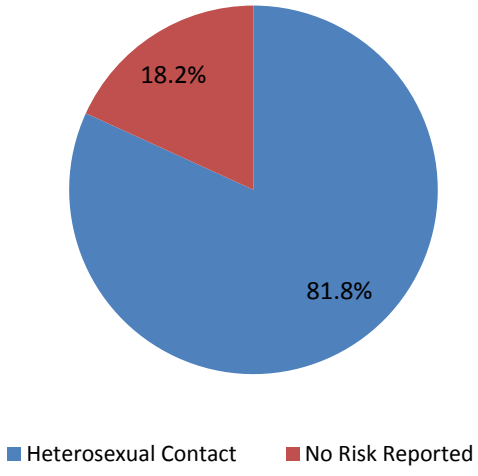


Figure 26. Newly-Identified Female Youth (13-24 years) HIV Cases, by Risk Factor, Rhode Island, 2010-2014



4. Surrogate Data in Rhode Island

A) Rhode Island STD Epidemiology, 2014

In 2014, reports of chlamydia, gonorrhea, infectious syphilis, and late syphilis increased compared to 2013. There were no congenital syphilis cases reported in 2014.

Infectious Syphilis

In 2010, Rhode Island, like many other states, experienced a significant increase in the reports of infectious syphilis (primary, secondary, and early-latent stages), with reports increasing from 34 cases in 2009 to 61 cases in 2010. Most recently, Rhode Island has experienced another significant increase in infectious syphilis cases. Cases nearly doubled from 67 cases in 2013 to 120 cases in 2014. Cases reported in 2014 were distributed throughout the state with most cases among residents of Providence County (80%) and Kent County (10%). This is similar to 2013 when 81% of infectious syphilis cases were among Providence County residents. During 2014, the STD Program staff attempted to interview each case.

While non-Hispanic White males continue to account for the majority (58%) of infectious syphilis cases in Rhode Island, rates remain highest for non-Hispanic African American/Black Males with 39 cases per 100,000 reported in 2014.

Out of 120 infectious syphilis cases reported in 2014, 105 (87.5%) were male and 80 (76%) of the males identified as MSM. Of the 80 MSM, 26 (32.5%) were HIV-positive. Unlike gonorrhea and chlamydia where infection is concentrated in the 15-24 year old population, this age group represents only 21% of the cases of infectious syphilis reported in Rhode Island. Infectious syphilis cases in 2014 had an average age of 28.6 years for females and 34.6 years for males, with individuals older than 30 years accounting for 58% of reported cases.

Chlamydia

Reports of chlamydia in Rhode Island remain high. In 2014, there were 4,349 cases of chlamydia, remaining relatively stable compared to the previous two years (4,312 cases in 2012 and 4,313 cases in 2013). Reported cases of chlamydia remain concentrated in Providence County, which represents 77% of cases reported state-wide in 2014, and remains stable from the reported 79% in 2013. The City of Providence accounted for 37% of chlamydia cases reported throughout the state, which is comparable to 38% of cases observed in the city in 2013.

There was no change in 2014 in the distribution of chlamydia cases by sex when compared to

2013. Males accounted for 30% of reported chlamydia cases (1,267 cases in 2013 and 1,312 cases in 2014), while females accounted for the majority (70%) of reported chlamydia cases (3,045 cases in 2013 and 3,037 cases in 2014). Individuals age 15-24 continue to represent nearly two-thirds of chlamydia cases in Rhode Island, and 93% of all cases are younger than 35 years of age. This trend held steady from 2013 to 2014.

The racial/ethnic distribution of chlamydia cases in 2014 remained consistent with data seen during the previous five years. Non-Hispanic Whites accounted for 30% of reported cases, followed by Hispanics (25%) and non-Hispanics Blacks (14%). In 2014, 25% of the cases were missing race and ethnicity data, which was a decrease from the 29% of cases in 2013 that were missing this data. Race/ethnicity percentages reported in this section are estimated to adjust for unknown and missing data, assuming there is no bias in the reporting of cases for which race/ethnicity are known. From 2008 to 2013, surveillance data has shown that, on average, 6% of males diagnosed with chlamydia each year are MSM. Data from 2014 also shows that approximately 6% of male chlamydia cases were MSM. When reviewing these percentages, it is important to note that, since the RIDOH STD Program does not routinely perform follow-up for chlamydia cases, data on sexual behavior of chlamydia cases is extremely limited and ascertained only from STD Case Report Forms (CRFs) prepared by the provider rather than through interviews with STD Program staff as is standard for gonorrhea and infectious syphilis cases.

Gonorrhea

Reports of gonorrhea in Rhode Island increased in 2014 by 30% from 454 cases in 2013 to 590 cases in 2014. In 2014, when looking at race/ethnicity, the highest percent of cases was reported in non-Hispanic Whites (35%), followed by Hispanics (22%) and non-Hispanic black (21%). Since 2009, case rates have consistently been higher in non-Hispanic blacks than other race/ethnic groups (314.3 cases per 100,000 in 2014).

Geographically, Providence County continues to have the largest proportion of reported cases. From 2010-2013, an average of 88% of reported cases lived in Providence County. Cases reported in the 2014 have held to this trend with 84% of cases reported among Providence County residents. By city, trends are also stable, with 44% of cases residing in the City of Providence.

As previously mentioned, reports of gonorrhea in Rhode Island began to increase in 2011, jumping 24% from the 291 cases reported in 2010 to 360 reported in 2011. Numbers increased another 40% from 2011 to 2012, with reports totaling 507 cases, and decreased in 2013 to 454 cases. Then, in 2014, a 30% increase was seen. This increase was not equal among both males and females, with a

41% increase in male cases and a 14% increase in female cases. Overall, males accounted for 63% of cases and 37% were females. Age distribution among males in 2014 was similar to previous years, with 47% of cases among males 20-29 years old. Among females, however, age distribution has changed slightly. In 2014, females ages 15-24 accounted for 50% of female gonorrhea cases, which is a decrease from the 65% seen among females of this age in 2013. Cases in females 30-34 year olds doubled from 2013 to 2014, accounting for 15% of cases in 2014 (8% of female cases in 2013).

From 2006 to 2013, surveillance data has shown that on average, 30% of males diagnosed with gonorrhea are MSM. In 2014, the percentage increased slightly, with 35% of male gonorrhea cases identifying as MSM. It is important to note that sexual behavior information is not available on 53 (14%) of male cases.

The STD Program has investigated the possibility that the rising number of gonorrhea cases in Rhode Island may be associated with the closing of the state-funded Whitmarsh STD Clinic in 2011. Prior to its closure, the STD Program was able to bring all stakeholders together to discuss the issue and come up with solutions to fill the service gaps that were anticipated. As a result, The Miriam Hospital Immunology Center agreed to host a free and confidential STD clinic one afternoon a week. The clinic is now open three afternoons a week due to its overwhelming success. Beginning in 2014 a RIDOH Disease Intervention Specialist (DIS) has been present onsite at the STD clinic to conduct partner services for identified STD cases. In addition, Planned Parenthood of Southern New England also agreed to take referrals from the STD Program for individuals or partners of cases seeking STD screening and treatment.

STD/HIV Co-infection

In order to estimate STD/HIV co-infection in Rhode Island, gonorrhea and infectious syphilis cases reported to the STD Program are searched in eHARS, in real-time, to determine HIV status. On average, 4% of gonorrhea cases and 33% of infectious syphilis cases reported each year are confirmed co-infections. See the table below for more detail.

Table 7: STD/HIV Co-Infections, Rhode Island, 2010-2014

Category	2010	2011	2012	2013	2014
% of Gonorrhea cases co-infected with HIV	4.5%	3.9%	3.9%	4.8%	3.9%
% of Infectious Syphilis cases co-infected with HIV	36.7%	33.8%	36.7%	33.8%	21.6%

STD Surveillance Risk Factor Data

The STD Program analyzes risk factor data for STD cases on an annual basis for infectious syphilis and gonorrhea cases that were interviewed by STD Program staff. Percentages are calculated based on the number of cases interviewed rather than the number of cases reported. In 2014, 95 of 120 (79%) reported infectious syphilis cases were interviewed, and 496 of 590 (84%) reported gonorrhea cases were interviewed. This represents an increase in the percentage of cases interviewed for both conditions, compared to 2013. Risk-factor information collected includes: gender of sex partners, anonymous partners, sex with IDU, sex while high/intoxicated, exchanging sex for drugs or money, having sex with a known MSM (if female), ever been incarcerated, and places where the case meets partners.

Infectious Syphilis: Among all infectious syphilis cases, anonymous sex was the most commonly identified risk with 54% of interviewed cases indicating that they had engaged in the behavior. Cases of infectious syphilis also reported sex while high (33%) and a history of non-injecting drug use (13%) often. Of individuals reporting use of non-injecting drugs, the majority (90%) identified marijuana as their drug of use. Other drugs included cocaine, crystal meth, and crack. When reviewing this data it is important to note that MSM accounted for 67% of infectious syphilis cases reported in 2014. MSM syphilis cases most commonly reported anonymous sex (62%), followed by sex while high (31%) and non-injecting drug use (16%).

Gonorrhea: Stratification of the risk-factor data on gonorrhea cases by risk groups revealed that three main risk factors (anonymous sex, sex while high, and non-injecting drug use) are common in each of these populations.

- Female cases most commonly reported sex while high (23%) and anonymous sex (13%).
- MSM gonorrhea cases most commonly reported anonymous sex (40%), followed by sex while high (36%) and drug use (22%).
- Heterosexual males reported non-injecting drug use (44.8%) and anonymous sex (46.5%).

Of note, 25% of heterosexual male gonorrhea cases reported they had been incarcerated compared to 13% of females and 5.7% of MSM.

- For all groups, those that reported non-injecting drug use most commonly identified marijuana as the drug of choice (80% of females and 90% of all males). Other drugs identified included cocaine (2% of interviewed males), crack (0.3% of interviewed males), and heroin (0.3% of interviewed males).

B) Integrated HIV/Viral Hepatitis Counseling, Testing, Referral (CTR) Services

Publicly-funded counseling and testing services provided by RIDOH in collaboration with the CDC were initiated in 1985 to provide alternatives to blood donation as a means for high-risk persons to determine their HIV status. These services became an integral part of the HIV prevention program and continue today. Additionally, the HIV Prevention Program has continued to expand its public health efforts by integrating other preventive services, such as rapid HCV testing. HCV remains a disease of relevance to HIV, due to similarities in the populations at-risk and modes of transmission. The Integrated HIV/Viral Hepatitis Counseling, Testing, and Referral System (CTR) provides free, confidential/anonymous, and voluntary services. In 2014, RIDOH provided funds to seven agencies (AIDS Care Ocean State (ACOS), AIDS Project Rhode Island (APRI), MAP Behavioral Health Services, The Miriam Hospital, Amos House/Project Renew, Project Weber, and Sojourner House) to provide prevention services throughout the state. In addition to these agencies, HIV counseling and testing is offered through RIDOH's Partner Services program, specifically for partners of individuals who have been diagnosed with HIV. Staff who conduct HIV or HCV testing are required to achieve certification as a Qualified Professional Test Counselor (QPTC) prior to conducting testing.

In 2014, the CTR system administered 5,004 rapid HIV tests at 49 fixed and mobile sites (Table 8). Fifty-one tests were preliminary-positive, and 28 were confirmed HIV positive cases (positive percentage=0.55%). Of the 28 cases confirmed, all 28 were linked to care within 90 days of their diagnosis and confirmed to have attended their first appointment. Almost all rapid tests (99%) were conducted using OraSure OraQuick ADVANCE® Rapid HIV 1/2 antibody test technology. Men were the most reported users of CTR services (66%) in 2014. Whites represented the largest race group tested, followed by the Hispanic/Latino ethnicity at 24% and Black/African Americans at 15%. Forty percent of the tested population was between the ages of 20 and 29. Most individuals tested identified heterosexual contact (44%) or MSM as their primary risk-factor for contracting

HIV. The percentage of persons with IDU as a reported risk factor remains at 4%. Less than 5% of individuals tested reported other risks that prompted HIV testing (low-risk heterosexual contact or women who have sex with women). Figures 27 and 28 provide additional analysis of the testing population, stratified separately by gender and race.

Figure 27. Distribution of HIV CTR Clients by Gender, Rhode Island, 2014

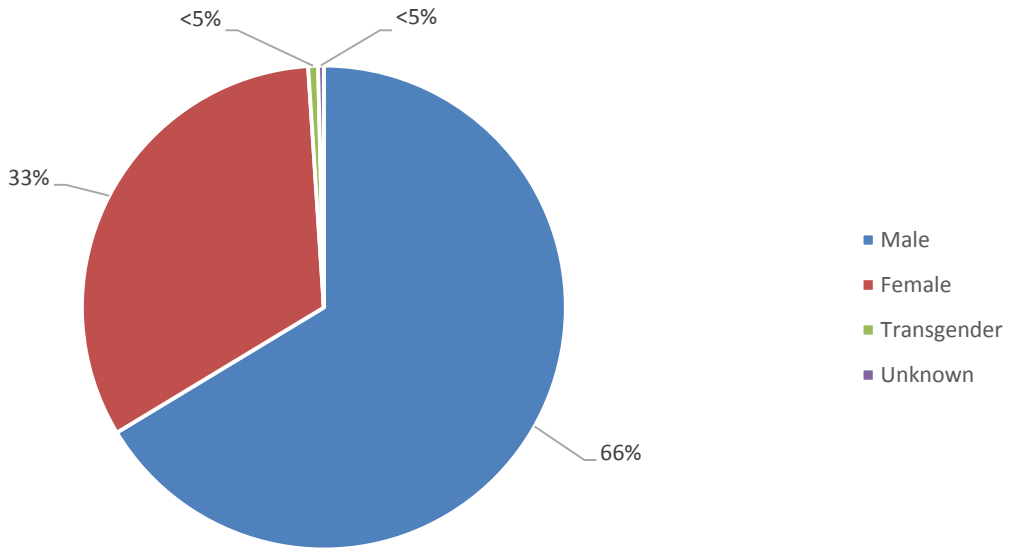
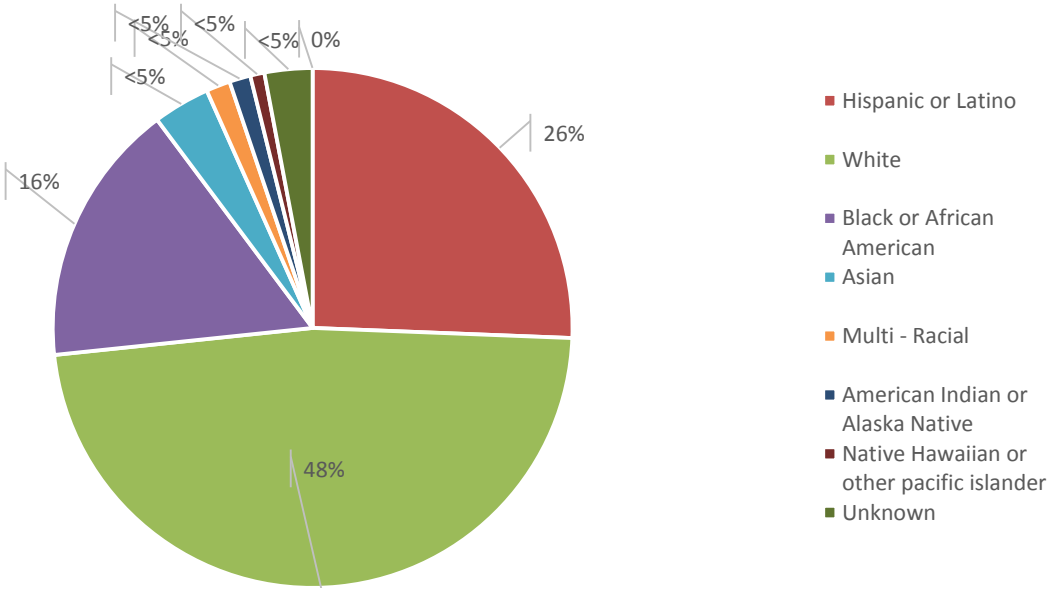


Figure 28. Distribution of HIV CTR Clients by Race/Ethnicity, RI, 2014



***AIDS Care Ocean State**:* ACOS, an AIDS service organization located in Providence, conducted 1,136 rapid HIV tests across 11 satellite sites; one bathhouse; one college; six community organizations; mobile sites in Newport, Woonsocket, Pawtucket/Central Falls, and AIDS Care Ocean State's main office. The majority of individuals who received an HIV test were male (65%) and white (51%). Most tests were conducted among 20-29 year olds. More than 70% of those tested reported high-risk heterosexual contact or MSM as their primary risk factor.

***AIDS Project Rhode Island**:* APRI, an AIDS service organization in Providence, conducted 1,031 rapid HIV tests across 18 satellite sites. Sites included 11 colleges, one bathhouse, three community-based organizations, and the APRI main office. More than 60% of individuals who received an HIV test were male and white. The 20-29 year olds represented the largest age category tested (45%). MSM was the most reported primary risk factor.

***MAP Behavioral Health Services**:* MAP Behavioral Health services, an addiction treatment program in Providence, conducted 706 rapid HIV tests across six sites. Sites included one middle school, one church, one clinic, three community organizations, and two MAP offices. More than half of the individuals that utilized CTR services were of Hispanic/Latino ethnic origin (51%) and 53% were male. Adults ages 30-39 represented the largest age category tested (30%). The largest risk category reported was low-risk heterosexual contact (67%).

***The Miriam Hospital**:* The Miriam Hospital HIV/STD Clinic, located in Providence, conducted 1,585 rapid HIV tests at their North Main Street location. The majority of individuals tested were male (74%) and 49% of all tested individuals were white. Adults ages 20-29 represented the largest age category tested. Fifty-seven percent of individuals tested reported low-risk heterosexual contact as their primary risk factor. The MSM risk category experienced a slight increase, from 22% in 2013 to 27% to 2014.

Amos House/Project RENEW: Project RENEW, a collaborative project that provides clinical and social services to female commercial sex workers, conducted 163 rapid HIV tests in 2014. There was an even distribution of testing across all age groups, from age 20 to age 50. More than 80% of those tested reported low-risk heterosexual contact as their primary risk factor,

and identified either Black/African American or White as their race.

Project Weber: Project Weber is a non-profit organization committed to providing HIV prevention testing and other health and wellbeing services to male commercial sex workers in Providence. This site conducted 248 rapid HIV tests in 2014. The tested population was almost exclusively male (98%). The majority of individuals that received testing from Project Weber were ages 20-29 years (45%), White non-Hispanic (65%) and report MSM as their main risk factor (42%) followed by MSM and IDU (44 percent).

RIDOH Partner Services Program*:* RIDOH's partner services staff conducted 39 rapid HIV tests across the state, reaching partners of newly-diagnosed HIV-positive persons. The majority of individuals tested were male (74%) and White (56%). The largest age category tested was 20-29 year olds (33%). MSM risk was reported in 33% of those tested and 36% were reported as low-risk heterosexual contact.

Sojourner House: Sojourner House, a comprehensive domestic violence agency serving victims of relationship violence, conducted 96 rapid HIV tests. Of the 96 persons tested, more than half identified as heterosexual and female. Forty-nine percent identified as White non-Hispanic, and did not consider themselves to be at high risk for contracting HIV.

Table 8. HIV Counseling, Testing, and Referral Site Client Characteristics, RI, 2014

	Total	APRI	ACOS	MAP	Miriam Hospital	Project Weber	RIDOH PS	Sojourner House	Project RENEW
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Tests									
Tests conducted	5004 (100%)	1031 (100%)	1136 (100%)	706 (100%)	1585 (100%)	248 (100%)	39 (100%)	96 (100%)	163 (100%)
Gender									
Male	3320 (66%)	674 (65%)	743 (65%)	375 (53%)	1167 (74%)	244 (98%)	29 (74%)	14 (15%)	74 (45%)
Female	1632 (33%)	338 (33%)	377 (33%)	327 (46%)	410 (26%)	<5 (<5%)	10 (26%)	80 (83%)	89 (55%)
Transgender	33 (<5%)	<5 (<5%)	16 (<5%)	<5 (<5%)	<5 (<5%)	<5 (<5%)	0 (0%)	<5 (<5%)	<5 (<5%)
Unknown	19 (<1%)	14 (<5%)	0 (0%)	<5 (<5%)	<5 (<5%)	<5 (<5%)	0 (0%)	0 (0%)	<5 (<5%)
Ethnicity									
Hispanic or Latino	1282 (26%)	168 (16%)	264 (23%)	359 (51%)	388 (24%)	33 (13%)	6 (15%)	38 (40%)	26 (16%)
Race									
Am Indian /AK Native	66 (<5%)	10 (<5%)	21 (<5%)	20 (<5%)	<5 (<5%)	<5 (<5%)	0 (0%)	<5 (<5%)	5 (<5%)
Asian	177 (<5%)	54 (5%)	27 (<5%)	57 (8%)	36 (<5%)	<5 (<5%)	0 (0%)	<5 (<5%)	<5 (<5%)
Black/African American	823 (16%)	107 (10%)	201 (18%)	157 (22%)	256 (16%)	36 (15%)	9 (23%)	<5 (<5%)	53 (33%)
Native HI / Pacific Islander	44 (<5%)	0 (0%)	10 (<5%)	28 (<5%)	<5 (<5%)	<5 (<5%)	0 (0%)	<5 (<5%)	<5 (<5%)
White	2388 (48%)	655 (64%)	583 (51%)	77 (11%)	775 (49%)	161 (65%)	22 (56%)	47 (49%)	68 (42%)
Multi-Racial	75 (<5%)	18 (<5%)	23 (<5%)	<5 (<5%)	18 (<5%)	7 (<5%)	0 (0%)	<5 (<5%)	7 (<5%)
Unknown	149 (<5%)	19 (<5%)	7 (<5%)	8 (<5%)	105 (7%)	6 (<5%)	<5 (<5%)	<5 (<5%)	<5 (<5%)
Age									
13-19	345 (7%)	186 (18%)	53 (5%)	23 (<5%)	78 (5%)	<5 (<5%)	0 (0%)	<5 (<5%)	<5 (<5%)
20-29	2005 (40%)	459 (45%)	371(33%)	203 (29%)	777 (49%)	111 (45%)	13 (33%)	37 (39%)	34 (21%)
30-39	1214 (24%)	122 (12%)	312 (27%)	209 (30%)	404 (25%)	81 (33%)	9 (23%)	29 (30%)	48 (29%)
40-49	770 (15%)	125 (12%)	189 (17%)	184 (26%)	175 (11%)	36 (15%)	7 (18%)	17 (18%)	37 (23%)
50+	661 (13%)	135 (13%)	211 (19%)	87 (12%)	150 (9%)	17 (7%)	10 (26%)	7 (7%)	44 (27%)
Risk									
High Risk Heterosexual	156 (<5%)	16 (<5%)	23 (<5%)	52 (7%)	26 (<5%)	8 (<5%)	<5 (<5%)	7 (7%)	20 (12%)
Low Risk Heterosexual	2203 (44%)	178 (17%)	466 (41%)	473 (67%)	897 (57%)	38 (15%)	16 (36%)	51 (53%)	86 (53%)
IDU	232 (5%)	7 (<5%)	120 (11%)	16 (5%)	18 (<5%)	32 (13%)	<5 (<5%)	11 (11%)	25 (15%)
MSM	1502 (30%)	405 (39%)	422 (37%)	125 (18%)	426 (27%)	105 (42%)	13 (33%)	<5 (<5%)	<5 (<5%)
MSM/IDU	86 (<5%)	<5 (<5%)	20 (<5%)	<5 (<5%)	9 (<5%)	50 (20%)	0 (0%)	<5 (<5%)	<5 (<5%)
Other	132 (<5%)	27 (<5%)	39 (<5%)	32 (5%)	27 (<5%)	<5 (<5%)	0 (0%)	<5 (<5%)	<5 (<5%)
Unknown	693 (14%)	395 (38%)	46 (<5%)	<5 (<5%)	182 (11%)	12 (5%)	5 (13%)	24 (25%)	25 (15%)

Rapid HCV testing was conducted by ACOS, Amos House / Project Renew, APRI, MAP, The Miriam Hospital, and Project Weber in 2014. From 2013 to 2014, CTR sites observed an increase in the number of racial/ethnic minorities, young people, and MSM receiving testing, all of which are indicative of the integrated CTR program's ability to target and test high-risk populations. In 2014, state-funded agencies provided 2,207 rapid HCV tests. Eighty-six preliminary-positive individuals were identified. Of all HCV rapid testing clients, 61% were male, 32% were between the ages of 20 and 29, 22% were between the ages of 30 and 39, 39% were Hispanic/Latino, 37% were white, and 20% were black. When asked about their primary risk factors for HCV, the most frequently reported risk factor was sex with multiple partners (66%), followed by unprotected vaginal or anal sex (58%), and tattoos and body piercing (47%). Nine percent of clients reported injection drug use as their primary risk factor.

C) ENCORE: Rhode Island's Needle Exchange Program

ENCORE (Education, Needle Exchange, Counseling, Outreach and Referral) is an anonymous and confidential harm-reduction program, coordinated by the Center of HIV/AIDS, Viral Hepatitis, STDs and Tuberculosis. The purpose of the needle exchange program is to prevent HIV transmission by giving injection drug users the tools (new syringes, bleach, clean cotton, alcohol swabs, condoms, information on skin care, and counseling and/or referrals) to protect themselves from acquiring blood-borne pathogens from contaminated needles and other drug paraphernalia. All new clients take part in a mandatory enrollment interview. The information provided in the interview is helpful in identifying the client's risk behaviors (see Table 9). In 2014, ENCORE enrolled 146 new clients. ENCORE program activities occurred across 11 sites in Providence, Central Falls, Woonsocket, and Newport. In 2014, more than 27,000 used syringes were turned in to the ENCORE program, and more than 80,000 new syringes were distributed.

Of new clients, the majority were male (75%) and white (74%). Adults ages 30-39 represented the largest age category utilizing ENCORE services (34%). Forty-four percent of newly-enrolled clients reported homelessness. Most (76%) had been enrolled in a drug-treatment program at some point in their life. When asked about their primary injecting drug, 84% reported heroin and 17% reported cocaine/crack. Risk for HIV and viral hepatitis varied among new enrollees. For example, most clients (76%) reported they did not share a syringe/works in the past seven days. More enrollees reported using condoms (60%) than not using condoms (40%), although 73% of people

who used condoms did not use them consistently. About half (51%) of new enrollees self-reported themselves to be infected with HCV, and 10% self-reported themselves to be HIV positive. Of new clients who were asked if they would like to be tested for HCV or HIV, most (76%) declined.

Figure 29: Number of New Clients Enrolled to ENCORE, Rhode Island, 2010-2014

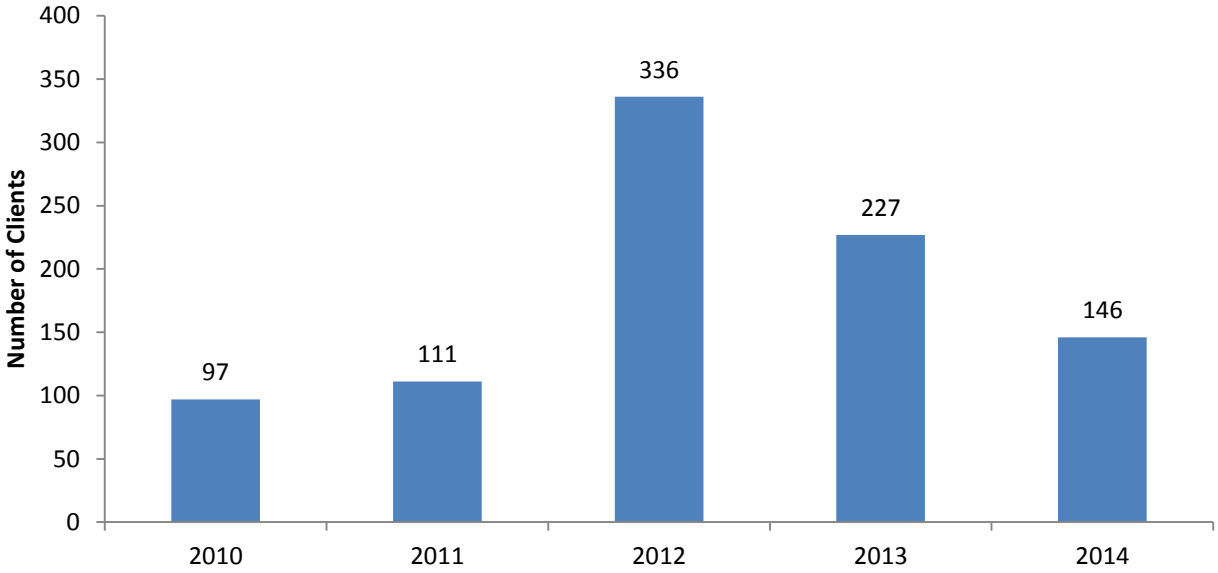


Figure 30: Enrollment of New Clients to ENCORE, by Gender, Rhode Island, 2010-2014

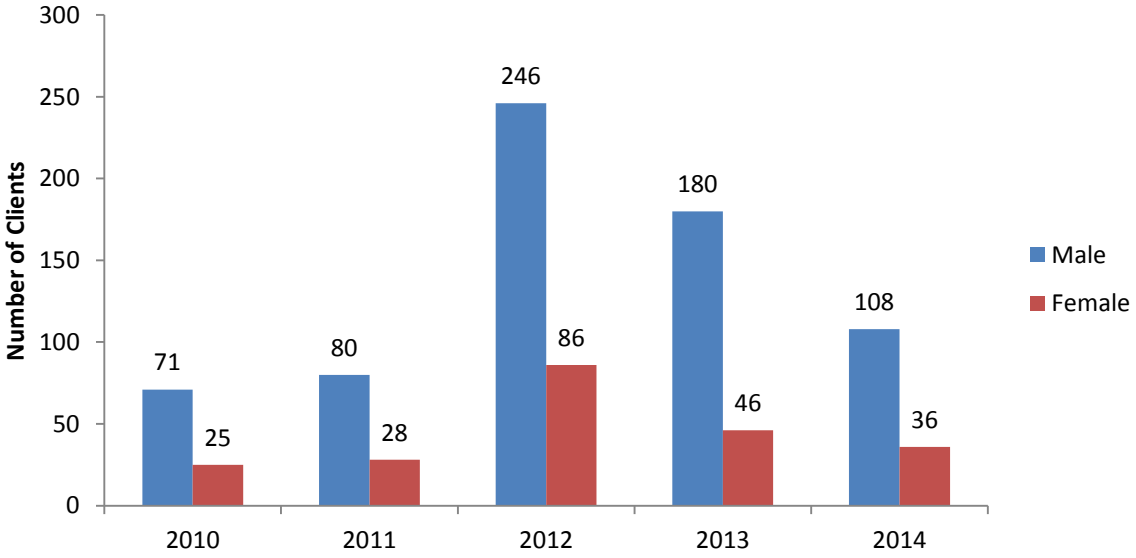
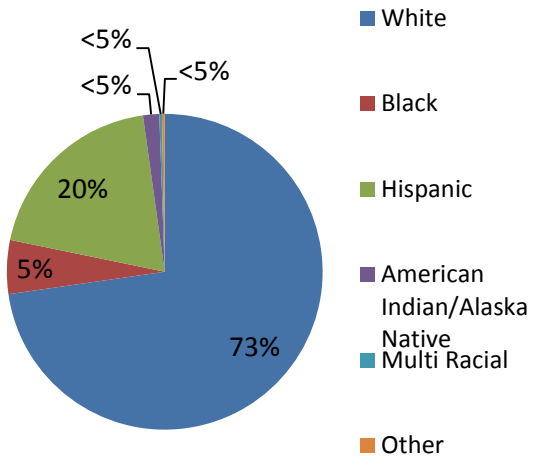


Table 9. ENCORE New Client Enrollment Characteristics, Rhode Island, 2014

Characteristic	N	%
Gender		
Female	36	25%
Male	108	75%
Transgender	<5	<5%
Unknown	<5	<5%
Race/Ethnicity		
Hispanic/Latino	28	21%
White	100	74%
African-American/Black	8	6%
American Indian/Alaskan Native	<5	<5%
Asian/Pacific Islander	<5	<5%
More than one race	<5	<5%
Other	<5	<5%
Age		
Under 20	<5	<5%
20 to 29	44	31%
30 to 39	49	34%
40 to 49	33	23%
50+	18	13%
Sexual Orientation		
Bisexual	21	15%
Gay or Lesbian	8	6%
Heterosexual or Straight	115	80%
City of Residence		
Providence	91	63%
Cranston	5	3%
Central Falls	20	14%
Pawtucket	5	3%
Warwick	4	3%
Woonsocket	3	2%
Other	16	11%

Figure 31: New ENCORE Enrollment by Race/Ethnicity, Rhode Island 2010-2014



D) Active Tuberculosis in Rhode Island

Tuberculosis (TB) is a disease caused by a bacterium called Mycobacterium tuberculosis. The bacteria usually attack the lungs, but TB bacteria can attack any part of the body. TB is spread from person to person through the air, and is particularly dangerous for people who are also infected with HIV. If not treated properly, TB disease can be fatal. TB disease was once the leading cause of death in the United States. Due to the effectiveness of public health programs in the United States, active TB is a relatively uncommon disease. Worldwide, TB continues to be the leading cause of death among people infected with HIV.

- Approximately two billion people (one-third of the world's population) are infected with *M. tuberculosis*, the cause of TB.
- TB is the cause of death for one out of every three people with HIV/AIDS worldwide.
- The spread of the HIV epidemic has significantly impacted the TB epidemic - one-third of the increase in TB cases over the last five years can be attributed to the HIV epidemic (Source: UNAIDS).

Epidemiology of Active TB Cases, Rhode Island, 2014

In 2014, there were 21 cases of active TB reported in Rhode Island and 25 people were investigated for TB and had active disease ruled out. The number of cases in 2014 is a decrease from the 27 cases reported in 2013. Of the 21 cases in 2014, 85.7% were residents of Providence County, 9.5% from Washington County, and 4.8% from Newport County. This proportion for Providence County is comparable to previous years and aligns with what can be expected considering that Providence County is home to more than half of the population of Rhode Island, with the City of Providence accounting for 16% of the state's population.

In 2014, the race/ethnicity of active TB cases was distributed as follows: 11 Hispanic (52.4%), six non-Hispanic Black (28.6%), two Asian (9.5%), and two non-Hispanic White (9.5%). All 21 cases had country of origin information. As is similar to the rest of the United States, Rhode Island typically has more cases in the foreign- born population than the U.S.-born population. In 2014, 76.2% of cases were foreign-born. By region, the largest percentage of foreign-born cases reported in 2014 was from the Caribbean and Africa (31% each), followed by Asia and South America (13% each). Table 10 compares the demographic distribution of active TB cases between 2013 and 2014.

Among cases reported in 2014, the major site of disease was exclusively pulmonary in 62% of the cases and 28.6% had extra-pulmonary involvement exclusively. Cases with both sites of disease represented 9.5% of cases reported in 2014. The percentage of cases with any pulmonary involvement in 2014 (71%) is slightly lower than in 2013 (78%). Clinically, 15 cases reported in

2014 (71%) had an abnormal chest x-ray or chest CT, with 15% (3 of 15) showing cavitary disease. TB risk factors reported among 2014 cases include: diabetes mellitus, contact to an infectious TB case, and immunosuppression (not HIV/AIDS).

Table 10: Demographics of Reported Cases of Tuberculosis, Rhode Island, 2013-2014

	2013		2014	
	No. of Cases	**Percent of Cases**	**No. of Cases**	**Percent of Cases**
Total No. Confirmed Cases	**27**		**21**	
Race/Ethnicity				
Non-Hispanic White	4	14.8%	2	9.5%
Non-Hispanic Black	8	29.6%	6	28.6%
Hispanic	6	22.2%	11	52.4%
Asian/Pacific Islander	9	33.3%	2	9.5%
Am. Indian/Native American	0	0.0%	0	0.0%
Sex				
Female	11	40.7%	12	57.1%
Male	16	59.3%	9	42.9%
County of Residence				
Bristol	0	0.0%	0	0.0%
Kent	1	3.7%	0	0.0%
Newport	1	3.7%	1	4.8%
Providence	25	92.6%	18	85.7%
Washington	0	0.0%	2	9.5%
Country of Origin				
United States	4	14.8%	5	23.8%
Not U.S.	23	85.2%	16	76.2%
Unknown	0	0.0%	0	0.0%
Age Group				
< 5	1	3.7%	0	0.0%
5-14	1	3.7%	0	0.0%
15-24	1	3.7%	4	19.0%
25-44	9	33.3%	7	33.3%
45-64	4	14.8%	5	23.8%
65 +	11	40.7%	5	23.8%

HIV/TB Co-infection

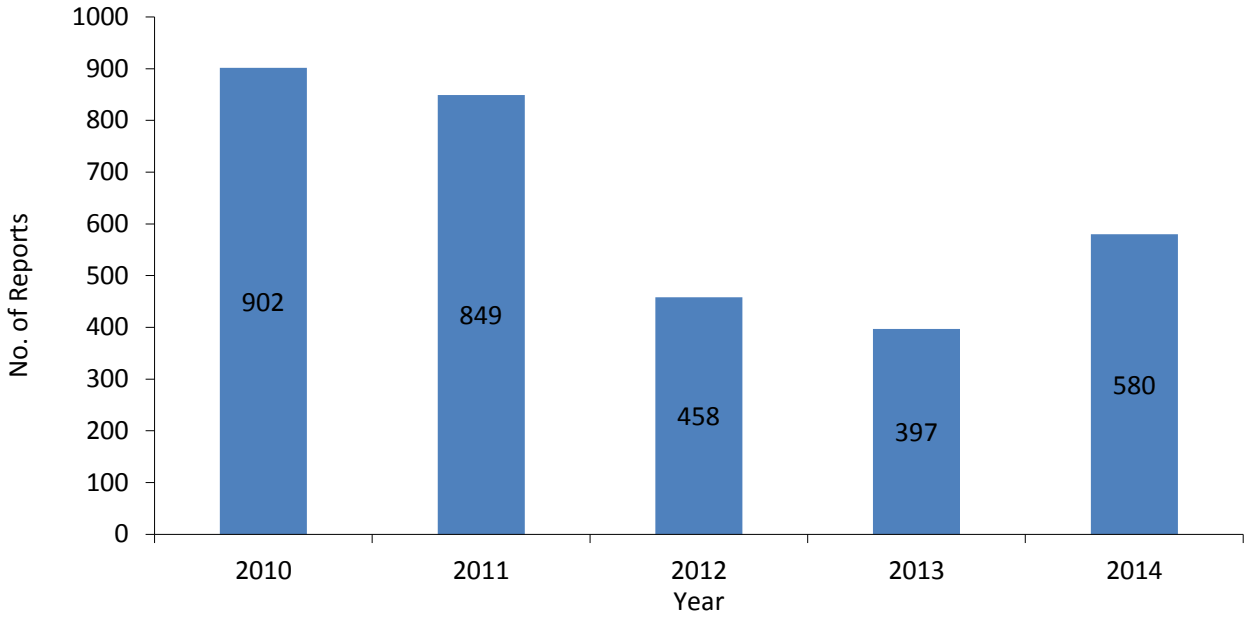
An estimated 10-15 million Americans are infected with TB bacteria and have potential to develop active TB disease in the future. About 10% of these infected individuals will develop TB at some point in their lives. However, the risk of developing TB disease is much greater for those

infected with HIV and living with AIDS. Because HIV infection severely weakens the immune system, people dually infected with HIV and latent tuberculosis infection (LTBI) have a 100% lifetime probability of developing active TB disease and becoming infectious. CDC estimates that 10-15% of all TB cases and nearly 30% of cases among people ages 25-44 are occurring in HIV-infected individuals. This high level of risk underscores the critical need for targeted TB screening and preventive treatment programs for HIV-infected people and those at greatest risk for HIV infection. All people infected with HIV should be tested for TB, and, if infected, complete preventive therapy as soon as possible to prevent active TB disease. (Source: http://www.cdc.gov/tb/publications/factseries/tbandhiv_eng.htm)

Latent Tuberculosis Infection (LTBI) in Rhode Island – Based on a recent National Health and Nutrition Examination Survey data, the RIDOH estimates that 48,123 individuals in Rhode Island currently have LTBI. In 2010, LTBI became a reportable condition to the RIDOH. From 2009-2013, an average of more than 680 cases of LTBI have been reported each year (see Figure 33) with most of these cases being reported by the two TB specialty clinics in Rhode Island. In 2014, only 580 LTBI cases were reported in Rhode Island. The RIDOH TB program believes that underreporting and the utilization of a new blood test (IGRA) to screen for LTBI may play a role in the reduced number of reports of LTBI.

TB Care in Rhode Island – There are currently two state-funded TB specialty clinics in Rhode Island: The Miriam Hospital RISE TB Specialty Clinic and the Hasbro Pediatric TB Clinic. Both clinics are connected to a hospital system and operate as outpatient clinics. All suspect and confirmed cases of active tuberculosis, and most cases of LTBI, are referred to one of these two clinics for specialty care. RIDOH works very closely with these clinics to ensure adequate treatment and completion of therapy. The clinic utilizes an opt-out policy for HIV testing for all of its patients. These clinics manage care for the majority of active TB disease cases in Rhode Island.

Figure 32. Number of Latent Tuberculosis Infection Reports, Rhode Island, 2010 - 2014



Since HIV testing in an integral part of active TB case management, it has been incorporated into the TB Elimination National TB Program Objectives and Performance Targets that the Rhode Island TB Program strives to achieve. The TB Program's 2014 target was for 85% of active TB cases in Rhode Island to have a known HIV status at time of TB diagnosis. As can be seen in Table 11 below, the TB Program met this objective from 2010-2012, and again in 2014.

Table 11: Rhode Island TB Program Progress on HIV Co-infection Testing

Objective: Increase the proportion of TB cases with positive or negative HIV test result reported to 85%.					
Year	**2010**	**2011**	**2012**	**2013**	**2014**
Goal	65%	70%	75%	80%	85%
Results	88%	96%	91%	78%	90%

In order to identify areas for further improvement of HIV testing among diagnosed TB cases, each year, the TB Program investigates any case for which an HIV status is unknown. Review of data from years prior to 2008 indicated that many cases did not have a known status simply because HIV testing was not offered. Close partnership between the TB Program and physicians at the RISE Clinic has aided in improving testing percentages. The clinic utilizes an opt-out policy for HIV testing, however, the clinic continues to offer and encourage HIV testing for all active cases. The medical director of the RISE Clinic advocates for the HIV test to be offered after the client is

acclimated to their directly observed therapy schedule and routine clinical visits. In 2014, there were two cases without HIV testing results. One case was deceased shortly after being diagnosed with TB, and therefore, was not offered testing. The second case was offered, but refused HIV testing.

Table 12: Reasons for Not Obtaining HIV Status in TB Cases, Rhode Island, 2010-2014

	2010		2011		2012		2013		2014	
	#	%	#	%	#	%	#	%	#	%
Total Cases	26	--	27	--	23	--	27	--	21	--
Known HIV Status	**23**	**88%**	**26**	**96%**	**21**	**91%**	**21**	**78%**	**19**	**90%**
Expired before Testing	1	4%	0	0%	0	0%	0	0%	1	5%
Moved before testing	0	0%	0	0%	0	0%	0	%	0	%
Under the care of private provider, unable to obtain information	1	4%	0	0%	0	0%	0	0%	0	0%
Under the care of another jurisdiction	0	0%	0	0%	0	0%	0	0%	0	0%
No HIV Testing Offered	0	0%	1	4%	2	9%	2	7%	0	0%
Refused	1	4%	0	0%	0	0%	4	15%	1	5%

HIV/TB Co-Infection Trends, Rhode Island

Rhode Island follows the national HIV/TB co-infection trends. On average, less than 8% of all TB infections diagnosed in the past five years in Rhode Island were HIV/AIDS-related except in 2010 and 2014, when none of the TB case had HIV/AIDS diagnosis.

Table 13: HIV/TB Co-infection, Rhode Island, 2010-2014

	2010	2011	2012	2013	2014
Number of TB Cases	26	27	23	27	21
Number HIV Positive	0	<5	<5	<5	0
Percent HIV Positive	0%	7%	4%	7%	0%

E) Hepatitis C (HCV) in Rhode Island

Hepatitis C is the most common blood-borne infection in the US. It is estimated that five million Americans are chronically infected[2-4]. Chronic HCV infection increases the risk for hepatitis fibrosis, cirrhosis, and hepatocellular carcinoma and is the leading cause of liver transplantation[5].

Rhode Island is currently experiencing a syndemic of opiate dependence and overdose stemming from heroin use. As found in both Appalachia and in Massachusetts[6], the syndemics of acute HCV, opiate dependence, heroin use, and overdose in Rhode Island are concomitantly increasing and are likely driven by increases in injection drug use. HCV is another infectious consequence of increasing rates of illicit heroin use, and the CDC recommends addressing these syndemics in tandem. However, these syndemics are not well understood in Rhode Island and warrant urgent and immediate public health action. Below, national data are presented based on viral hepatitis surveillance data obtained by the CDC. Historic Rhode Island data have also been described. Nationally, the number of acute cases of HCV reported has increased each year from 2009-2013, and has increased 20% between 2012 and 2013[7]. The national rate of acute cases of hepatitis C increased from 0.3 cases per 100,000 to 0.7 cases per 100,000 in 2013[7]. The increase from 2010 to 2013 is thought to reflect both true increases in incidence and improved case ascertainment. Based on these data and epidemiological studies, new cases of HCV infection are predominately among young persons who are white, live in non-urban areas (particularly in Eastern and Midwestern States), have a history of injection drug use, and previously used opioid agonists such as oxycodone[(8-9)]. Adjusting for under-ascertainment and under-reporting, an estimated 29,718 new HCV infections occurred in 2013.

Mortality among HCV-infected persons, primarily adults ages 55-64, is increasing[(10-11)]. A major public health challenge is to increase the proportion of persons tested and the proportion of those who test positive who are referred to care and treatment.

Figure 33. Reported number of Acute Hepatitis C cases – United States, 2000-2013

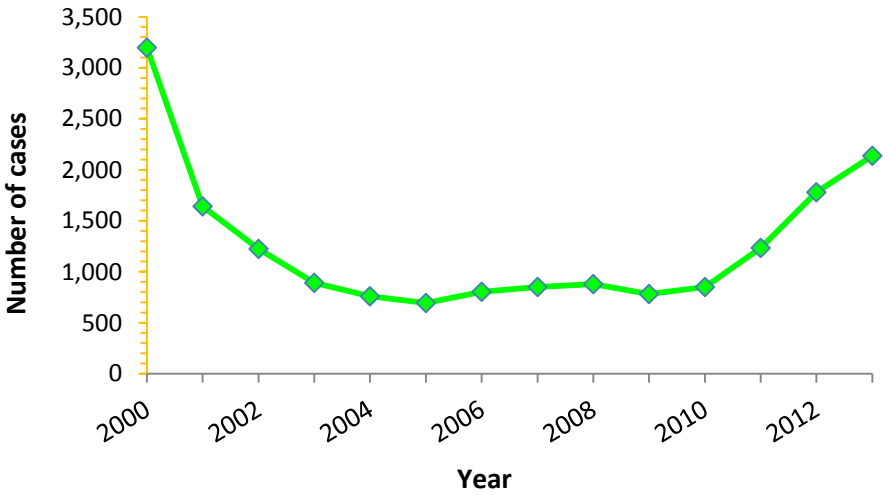


Figure 33. Source National Notifiable Diseases Surveillance System (NNDSS)

Research published in 2014 by researchers from Brown University estimated the true prevalence of Hepatitis C in Rhode Island. Through this research it was estimated that between 16,603 and 22,660 (1.7%-2.3%) persons in Rhode Island have ever been infected with HCV and between 12,286 and 16,768 (1.2%-1.7%) have or are currently chronically infected with HCV12.
Hepatitis C surveillance is also overseen by the Center for HIV, Viral Hepatitis, STDs, and TB. However, due to an absence of state or federal resources to conduct surveillance activities, the current HCV surveillance infrastructure is limited. The Center for HIV, Viral Hepatitis, STDs, and TB continues to collect all positive laboratory reports for HCV and currently store them for potential future analysis. It is estimated that approximately 15% of individuals with HCV will spontaneously resolve their infection without treatment. Without serial viral load testing or easy-to-perform antigen marker tests these individuals may not be recognized as resolved cases and remain in the registry. This limits our understanding of the true burden of chronic disease on the Rhode Island population. Another limitation of current surveillance is that until a second confirmatory test (such as RIBA or PCR) is received for cases, most of them remain in the system as suspect cases and may represent false positives. In 2014, progress was made to improve laboratory testing volume analysis. Multiple commercial laboratories have converted their reporting from paper-based to electronic laboratory reporting. These reports are automatically uploaded to the RIDOH's surveillance system for data analysis. As more laboratories move to electronic reporting, improved surveillance will be possible.
Rhode Island-specific data are shared below and provide some insight into the local HCV epidemic. Laboratory reports from the January of 1992 to September of 2006 give an indication of trends during this time period. The number of positive reports increased significantly, from 182 reports in 1992 to 1,962 reports for the first nine months of 2006. Increased provider and public knowledge regarding HCV can account for a significant percentage of this increase; however, this percentage cannot be determined. The increase may be due to the tendency of positive cases to be identified years after the exposure, and disease trends have suggested that the greatest number of newly-identified cases were infected 10-30 years ago. The following charts show a basic overview of the number of positive lab reports in Rhode Island from January 1992 to September 2006 and by the number of new cases by sex and age-group.

Figure 34. Hepatitis C Positive Lab Reports by Year, Rhode Island, Jan. 1992 – Sep. 2006

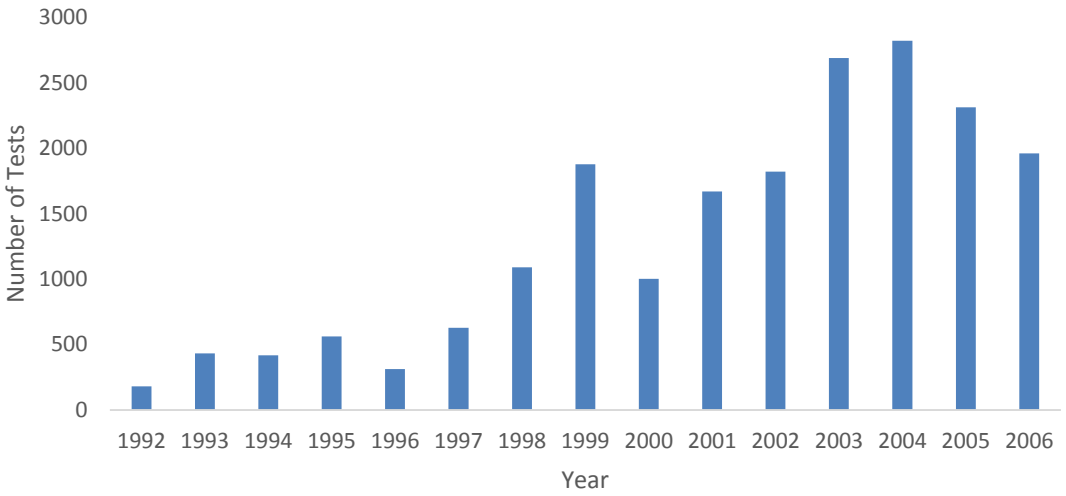


Figure 35. Hepatitis C Lab Reports By Age, Rhode Island Jan. 1992- Sep. 2006

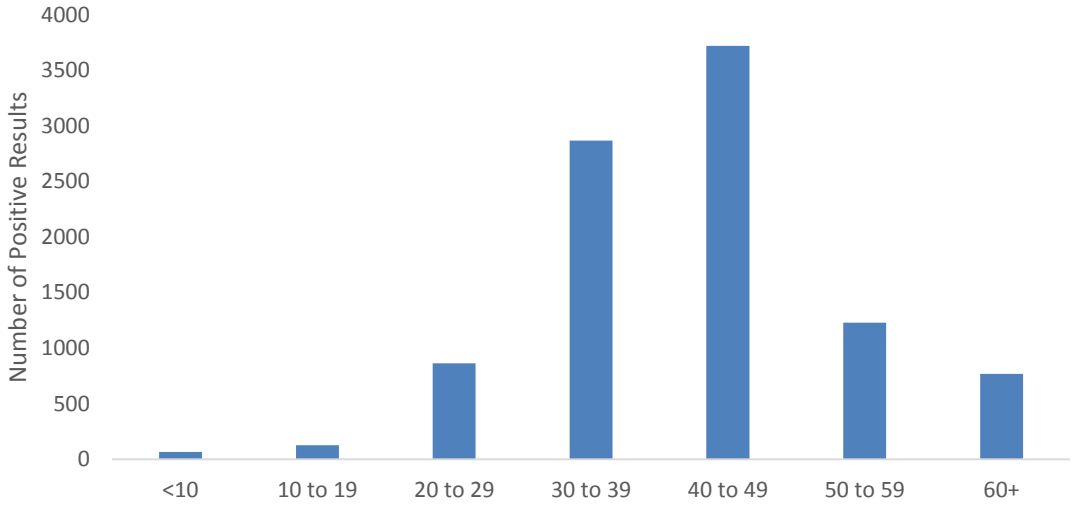


Figure 36. Positive HCV Lab Reports, By Gender, Rhode Island, Jan. 1992 – Sep. 2006

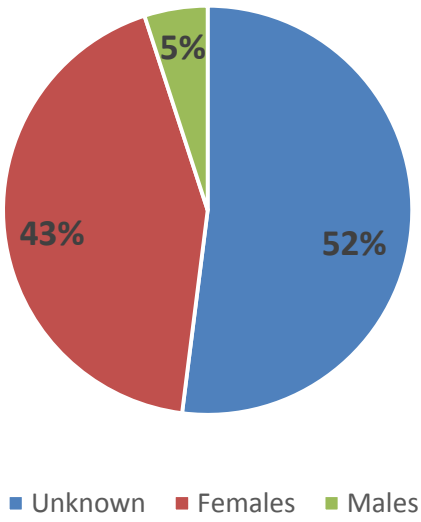


Figure 37. Confirmed Chronic Hepatitis C Cases by Sex and Age, Rhode Island 2008

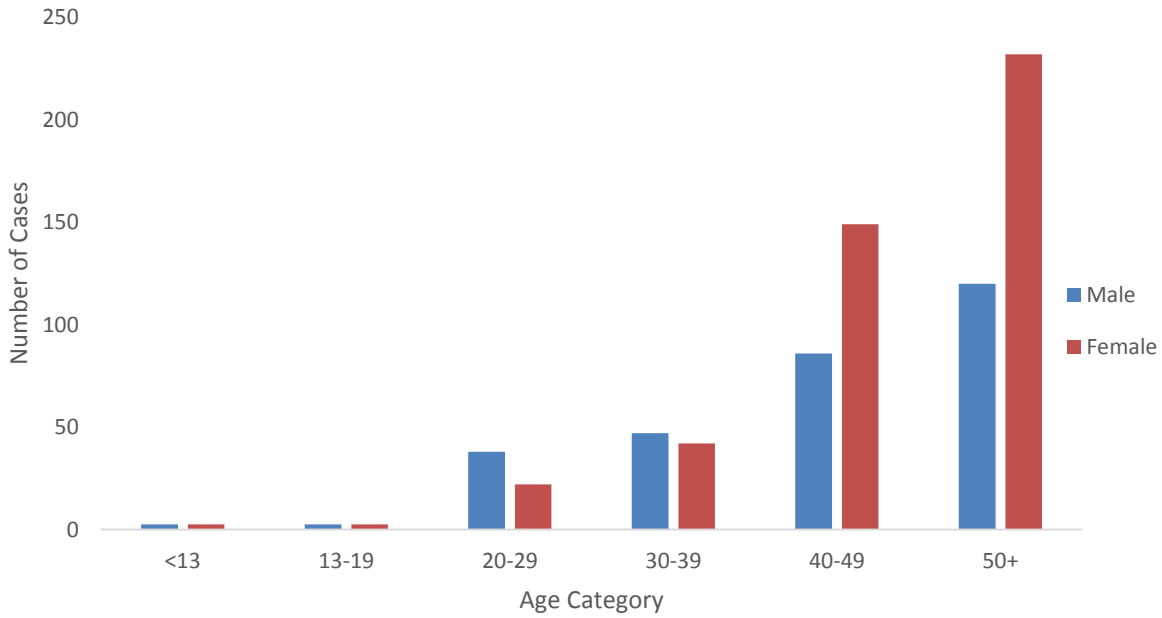


Figure37. <5 expressed as 2.5

HIV and HCV Co-infection

Infection with HCV is the most common co-infection in people with HIV. Of people with HIV in the United States, about 25% are co-infected with HCV13. HCV is one of the most frequent causes of chronic liver disease in the United States and HCV infection progresses more rapidly to liver damage in HIV-infected persons13. HCV infection may also impact the course and management of HIV infection. In response to this and to practice programmatic efficiency, RIDOH has integrated

HIV and HCV prevention and control strategies and messaging. RIDOH's counseling, testing, and referral program is an Integrated HIV and HCV program serving individuals at risk for either HIV or HCV. Funded agencies and their qualified professional test counselors are educated in the biology, prevention, and control of HIV and HCV. Education materials and referrals to additional resources are provided to clients for both HIV and HCV. Further, the ENCORE program provides a clean needles and other supplies to persons who inject drugs who are at risk of HIV or HCV infection through unsafe injection practices.

F) Behavioral Risk Factor Surveillance System (BRFSS)

The BRFSS is an ongoing population-based telephone interview survey, administered and supported by the CDC's National Center for Chronic Disease Prevention and Health Promotion. Surveys are developed and conducted to monitor state-level prevalence of the major behavioral risks among adults associated with premature morbidity and mortality. The information attained from the BRFSS is useful in describing the populations at risk for contracting HIV through their behaviors.

BRFSS surveys are conducted annually and the BRFSS data from the 2011 survey show 40.9% of those surveyed in Rhode Island indicated that they were ever tested for HIV at some point in their life aside from routine screening when donating blood compared to 36% surveyed nationally. Among Rhode Island adults, 3% of adults admitted having a high-risk situation (IDU, treatment for STD, exchanging drugs/money for sex, or anal sex without a condom, any within the last 12 months) in the previous year compared to 6% of adults nationwide.

In 2012, several questions were asked about HIV testing. The percent of Rhode Island adults who were tested for HIV (not including routine screening associated with blood donation) was similar to the U.S. percentage (34% compared to 35%). The prevalence of HIV risk behavior (IDU, treatment for STD, exchanging drugs/money for sex, or anal sex without a condom, any within the last 12 months), among Rhode Island adults was about the same as compared to the national median (3% vs. 4%).

In 2013, similar amounts of Rhode Islanders reported having been tested for HIV (34.8%). The majority of respondents said that they were tested at a private doctors' offices (51.4%), at a clinic (16.4%), or 'somewhere else' (10.6%).

The BRFSS data from 2014 survey shows 35% of those surveyed in Rhode Island indicated that they were ever tested for HIV at some point in their life, aside from routine HIV screening when

donating blood compared to 36% nationally. The majority of tests took place at a private doctors' offices (51.4%), at a clinic (16.4%), or 'somewhere else' (10.6%).

G) Youth Risk Behavior Survey (YRBS)

YRBS is an anonymous and voluntary survey conducted on alternate years among randomly-selected high schools students nationwide. It was developed by the Division of Adolescent and School Health at the CDC. More than 13,000 high school students participated in the 2013 National YRBS. Parental permission was obtained for students to participate in the survey. States and large urban school districts could modify the questionnaire for their own surveys to meet their needs. The 2013 YRBSS report includes National YRBS data and data from surveys conducted in 42 states and 21 large urban school districts.

In 2011 nationwide, 47.4% of the surveyed students ever had sexual intercourse, while 6.2% had sexual intercourse for the first time before age 13. During their life, 15.3% of students had sexual intercourse with four or more persons. About 22% had used alcohol or drugs before their last sexual intercourse and 39.8% of those who are sexually active did not use a condom during their last sexual intercourse.

In 2011 41.7% of Rhode Island high school students reported ever having sexual intercourse compared to 45.5% in 2007. Among those who are sexually active, 40.9% did not use condoms during their last intercourse, a decrease from 66% in 2007. Ten percent of the students had sexual intercourse with four or more partners in 2011, similar to 2007. And 20.8% had used alcohol or drugs before their last sexual intercourse among those who were sexually active, compared to 17.5% in 2007. About 10.5% of Rhode Island youth identified themselves as lesbian, gay, bisexual, or unsure (LGBU), which is also similar to 2007. It was also observed that similar to 2007, LGBU students were more likely to have been forced to have sexual intercourse, have intercourse before age 13, bullied at school, and not use condoms compared to those students who identified themselves as heterosexual or straight.

In 2013, 37.4% of Rhode Island high school students reported ever having sexual intercourse, compared to 46.8% nationwide (Table 14). Additionally, a lower proportion of Rhode Island students reported not using a condom during their last sexual intercourse (32.4%) than nationally. The data also show a lower proportion of Rhode Island students reported multiple partners (four or more in their life) compared to the national estimates.

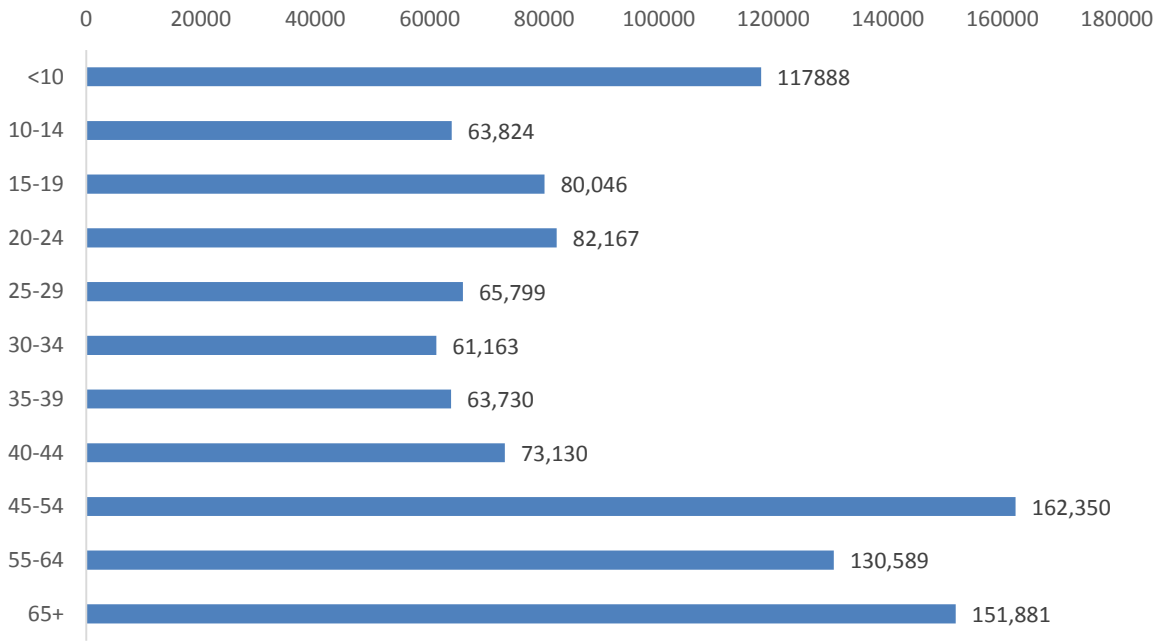
Table 14. Youth Risk Behavior Survey Sexual Health Results, Rhode Island and US, 2013

Question	Rhode Island 2013 (Confidence Interval)	United States 2013 (CI)	p-value
Ever had sexual intercourse	37.4 (31.8–43.4)	46.8 (43.7–49.8)	<.01
Had sexual intercourse before age 13 years (for the first time)	4.1 (2.6–6.5)	5.6 (4.9–6.5)	0.13
Had sexual intercourse with four or more persons (during their life)	7.9 (5.7–10.9)	15.0 (13.6–16.6)	<.01
Were currently sexually active (sexual intercourse with at least one person during the 3 months before the survey)	27.0 (22.1–32.5)	34.0 (31.6–36.5)	0.01
Did not use a condom (during last sexual intercourse among students who were currently sexually active)	32.4 (26.7–38.7)	40.9 (38.1–43.7)	0.01

5. Socio-demographic characteristics of the population of Rhode Island

Rhode Island is a small but densely populated state; it has the distinction of being the fourth most densely populated state in the United States. Data to describe the population of Rhode Island were obtained from the 2012 Population Estimates and 2011 American Community Survey of the U.S. Census Bureau. In 2012, Rhode Island had a total population of 1,050,292. Of these 541,950 (52%) were females and 508,341 (48%) were males. The median age was 39.8 years. Twenty one percent of the population were younger than 18 years of age and 15% were 65 years or older.

Figure 38. Population Distribution, Rhode Island, 2010

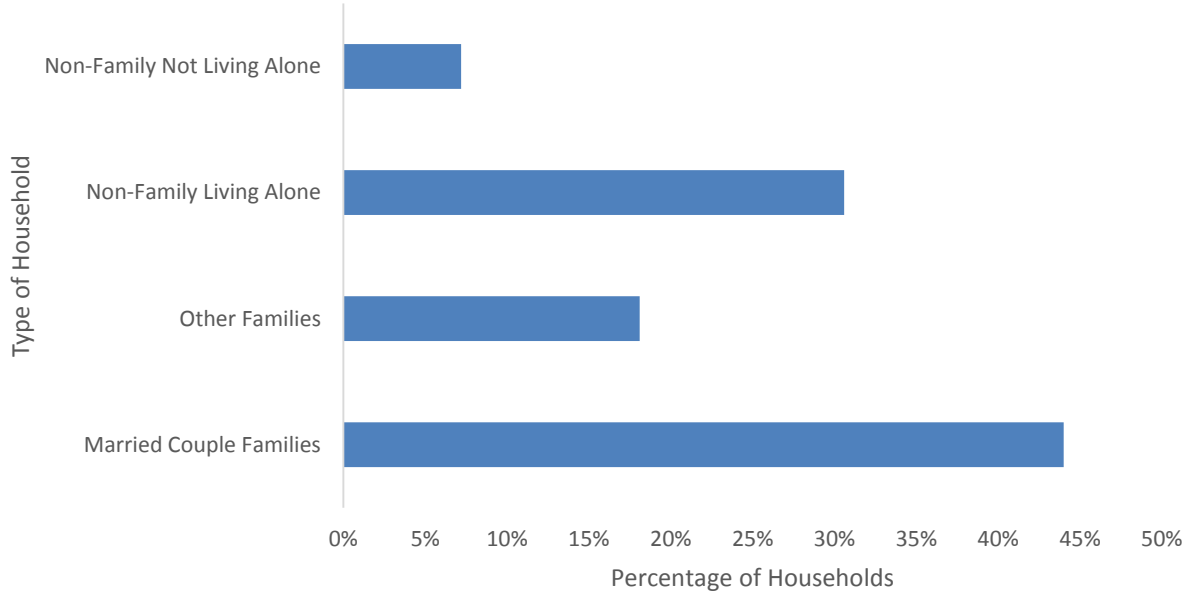


Source: US Census Bureau, 2010 Demographic Profile Population Estimates

Race and Ethnicity: Data on race and ethnicity were obtained from the 2012 population estimates from the U.S. Census Bureau. In 2012, for people reporting one race alone, 86% were White; 7% were Black or African American; less than 1 % were American Indian and Alaskan Native; 3% were Asian; less than 0.5 % were Native Hawaiian and Other Pacific Islander. Thirteen percent of the people in Rhode Island were Hispanic or Latino and 2.5% reported two or more races.

Households and Families: Data on households and families were obtained from the 2011American Community Survey estimates from the U.S. Census Bureau. There were 412,259 households in Rhode Island. Families made up 62% of the households in Rhode Island. This figure includes both married-couple families (44%) and other families (18%). Non-family households made up 38% of all households in Rhode Island. Most of the non-family households were people living alone (80%), but some were comprised of people living in households in which no one was related to the householder. Twenty-one percent of people older than five years of age spoke a language other than English at home.

Figure 39. Types of Households in Rhode Island, 2011

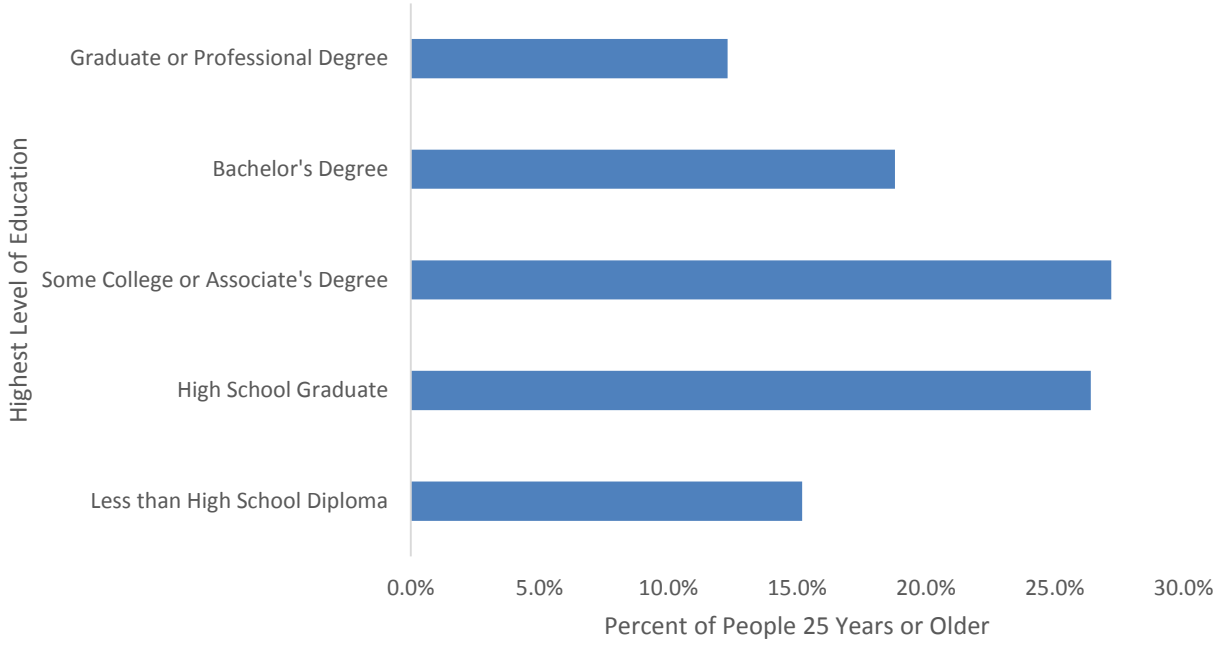


Source: U.S. Census Bureau, 2011 American Community Survey

Place of Birth and Citizenship Status: Data on these variables were obtained from the 2011 American Community Survey. Thirteen percent of people were foreign-born, and 50% of foreign-born people were naturalized U.S. citizens. Of foreign born people, 46% were born in Latin America, 23% were born in Europe, 17% were born in Asia, 11% were born in Africa, 3% were born in North America, and less than 0.5% were born in Oceania (Islands of the tropical Pacific Ocean).

Education: Data on education were obtained from the 2012 Population Estimates and the 2011 American Community Survey. In 2012, 84% of people 25 years of age and older had at least graduated from high school and 31% had a bachelor's degree or higher. The 2011 American Community Survey reports that total school enrollment in Rhode Island was 277,923. Pre-elementary school enrollment was 26,680 and elementary or high school enrollment was 151,190 children. College and graduate school enrollment was 99,774.

Figure 40. The Educational Attainment of People, 25 Years or Older, Living in Rhode Island, 2011



Source: U.S. Census Bureau, 2011 American Community Survey

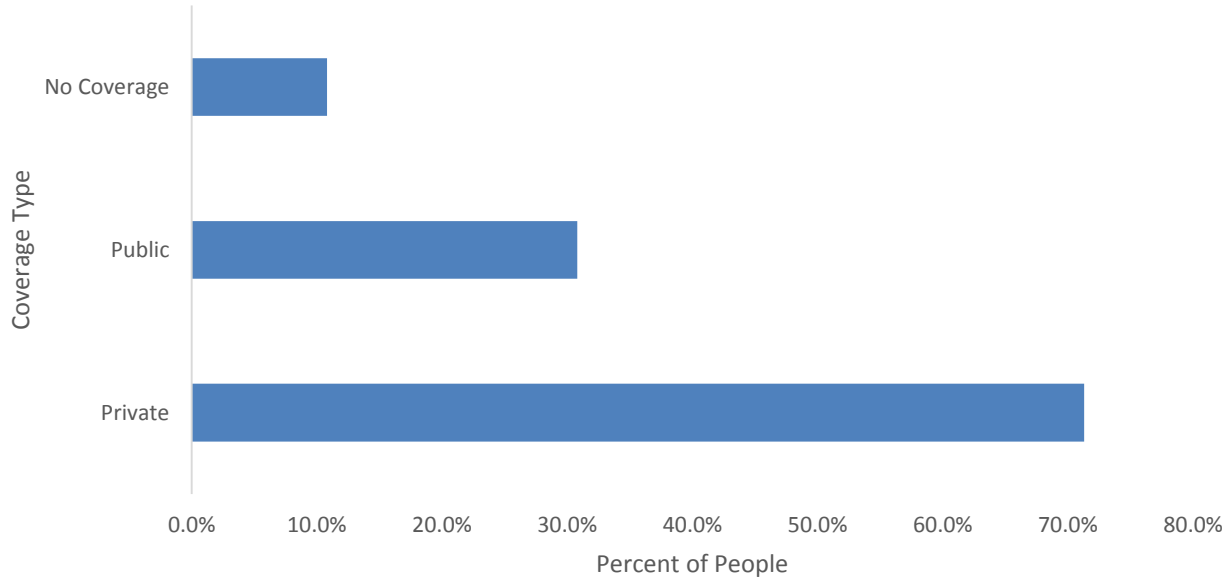
Income: Data on income were obtained from the 2011 American Community Survey. In 2011, the median income of households in Rhode Island was $53,636. Seventy-six percent of the households received earnings and 17% received retirement income other than Social Security. Thirty percent of the households received Social Security. The average income from Social Security was $16,619. These income sources are not mutually exclusive; that is, some households received income from more than one source.

Poverty and participation in Government Program: Data on poverty were obtained from the 2011 American Community Survey. In 2011, 15% of people were below poverty level. Twenty-two percent of related children younger than age 18 were below the poverty level, compared to

10% of people age 65 or older. Eleven percent of all families and 30% of families with a female householder and no husband present had incomes below the poverty level.

Health Insurance Coverage: Data on health insurance coverage were obtained from the 2011 American Community Survey. In 2011, 71% of people had private health insurance and thirty-one percent had public health coverage. Eleven percent of people had no health insurance coverage.

Figure 41: Health Insurance Coverage, Rhode Island, 2011



Source: US Census Bureau, 2011 American Community Survey

Employment Status: Data on employment status were obtained from the 2011 American Community Survey. Of people age 16 or older, 66% were in the civilian labor force and 10% of the civilian labor force was unemployed. Of females age 16 or older, 62% were in the civilian labor force and 10% were unemployed.

6. List of Figures and Tables

Figures:

Tables:

7. Works Cited

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