



UTAH DEPARTMENT OF
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Bureau of Epidemiology
Prevention, Treatment and Care Program

HIV Care Continuum and Linkage to Care Supplemental Report

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The UDOH Prevention, Treatment and Care Program compiled this report. HIV/AIDS and other reportable communicable disease data for Utah are published by the UDOH Bureau of Epidemiology.

Technical Notes

Data from multiple data systems were utilized to compile this report, including HIV surveillance data from the enhanced HIV/AIDS Reporting System (eHARS) and the Utah–National Electronic Disease Surveillance System (UT-NEDSS).

The indicators measured in this report are adopted from the Centers for Disease Control and Prevention’s (CDC) guidance on HIV care continuum. In an attempt to avoid miscount on HIV prevalence (due to late reports on death and change of address), 2016 data was used to measure care continuum indicators. For linkage to care measures of new diagnoses, 2017 data was available. However, due to low counts of new HIV diagnosis each year, data were combined and 5-year (2013–2017) cumulative new diagnosis trends are presented in the linkage to care section of this report.

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Executive Summary

This report highlights notable trends of HIV medical care among persons diagnosed with HIV and whose primary residence was in Utah throughout 2016. It also details linkage to appropriate HIV medical care among persons newly diagnosed with HIV and whose primary residence was in Utah between the years 2013–2017. Data analysis assessed the demographics (e.g., age, race/ethnicity) of the populations mentioned as well as the geographic distribution of newly diagnosed HIV cases. Among the findings, the following are of particular note:

- In 2016, more than six out of ten persons living with diagnosed HIV in Utah received HIV medical care, and more than half of the persons living with HIV achieved viral suppression.
- More than six out of ten people living with HIV in Utah are 45 years of age or older.
- Persons who are Asian had the highest percentage of receiving HIV medical care at 82%. They also had the highest percentage of achieving viral suppression at 79%.
- Male-to-male sexual contact is still the most common mode of HIV transmission for both people living with HIV and newly diagnosed HIV cases in Utah.
- In 2016, persons participating in injection drug use had the lowest percentage of achieving viral suppression among all transmission categories.
- In 2017, Utah had 117 newly diagnosed HIV cases, among whom 85.5% were linked to HIV medical care within 30 days.

Definitions

- Surveillance data: Diagnosed and reported infections of HIV/AIDS
- Gender: Sex at birth
- Transmission Risk: The risk behavior identified as most likely to be the route of HIV transmission
- Local Health District: Utah's 29 counties are organized into 13 local health districts
- Frontier area: Defined as containing six or fewer people per square mile
- Rural area: Defined as containing less than 100 but more than six people per square mile
- Urban area: Defined as containing 100 or more people per square mile
- Receipt of Care: Individual diagnosed with HIV who had at least one CD4, viral load, or genotype sequence in the assessment year
- Retained in Care: Individual diagnosed with HIV who had two or more CD4, viral load, or genotype sequence at least three months apart in the assessment year
- Viral Suppression: Individual diagnosed with HIV who reported a viral load of <200 copies/mL in their latest viral load test in the assessment year
- Newly Diagnosed: Individuals who were diagnosed with HIV for the first time in the assessment year and whose primary residence was in Utah at the time of diagnosis
- Linked to Care: Newly diagnosed HIV case who has had a CD4, viral load, or genotype sequence performed in the assessment period

Acronyms

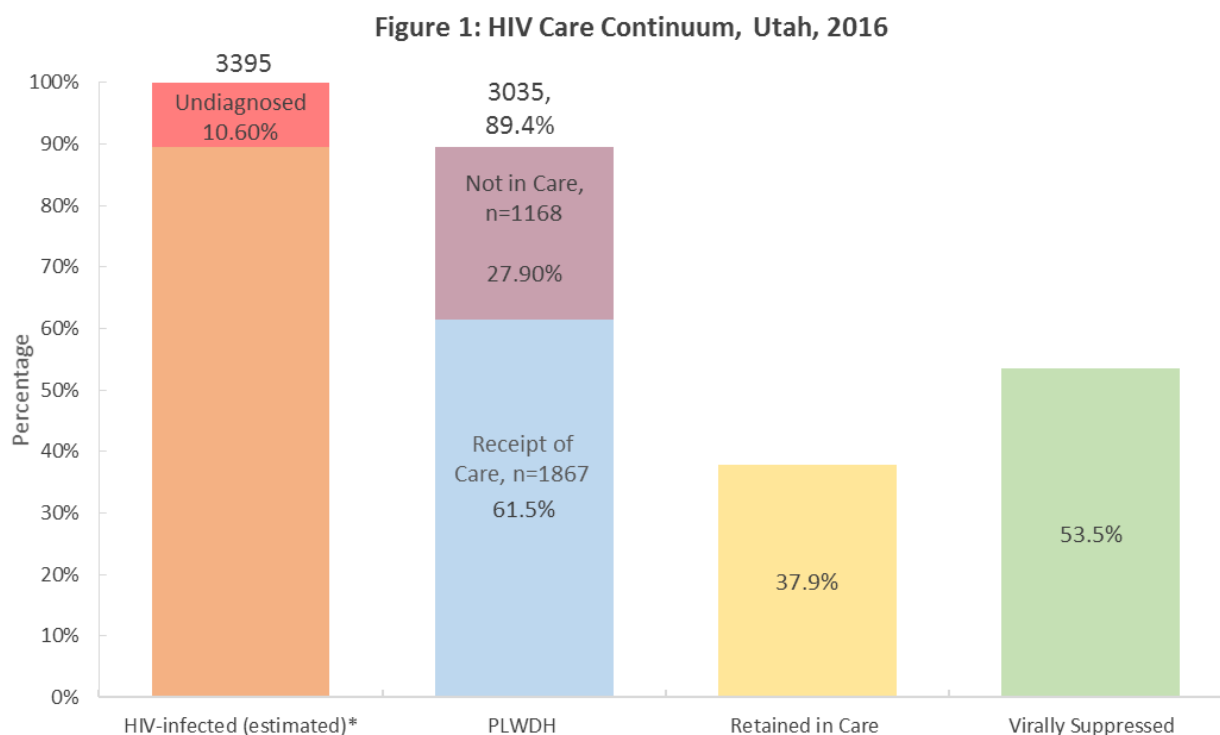
- IDU: Injection drug use
- MSM: Male-to-male sexual contact
- HTC: Heterosexual contact
- NIR/NRR: No identified risk/no reported risk
- ART: Antiretroviral therapy
- NIC: Not in care
- PLWH: People living with HIV
- PLWDH: People living with diagnosed HIV

Section I: HIV Care Continuum

HIV Care Continuum, Utah, 2016

The HIV care continuum (also referred to as the HIV treatment cascade) is a data-driven tool that focuses on the diagnosis and care of individuals living with HIV. Engaging HIV patients in care is critical to both individual health as well as slowing the transmission of the disease. The care continuum is primarily made up of three indicators: receipt of care, retention in care, and viral suppression. People living with diagnosed HIV (PLWDH) and receiving HIV-related medical care (viral load or CD4 labs) at least once throughout the analysis year are in the group of people who received care in the assessment year. PLWDH who have had two or more viral loads or CD4s at least three months apart are in the group of people who have been retained in care. Finally, PLWDH who reported a suppressed viral load (<200 copies/mL) in their most recent viral load test in the assessment year are included in the virally suppressed group of people. These definitions are taken from the CDC's guidance on establishing an HIV care continuum. To learn more about the indicators of HIV care continuum, please visit: [Understanding the HIV Care Continuum](#).

This care continuum (Figure 1) includes individuals who were diagnosed with HIV through 2015 and were living in Utah as of December 31, 2016.



*Estimated by applying Utah's HIV-prevalence estimate (89.4%) to the number of persons diagnosed with HIV infection through December 31, 2015 and alive as of December 31, 2016

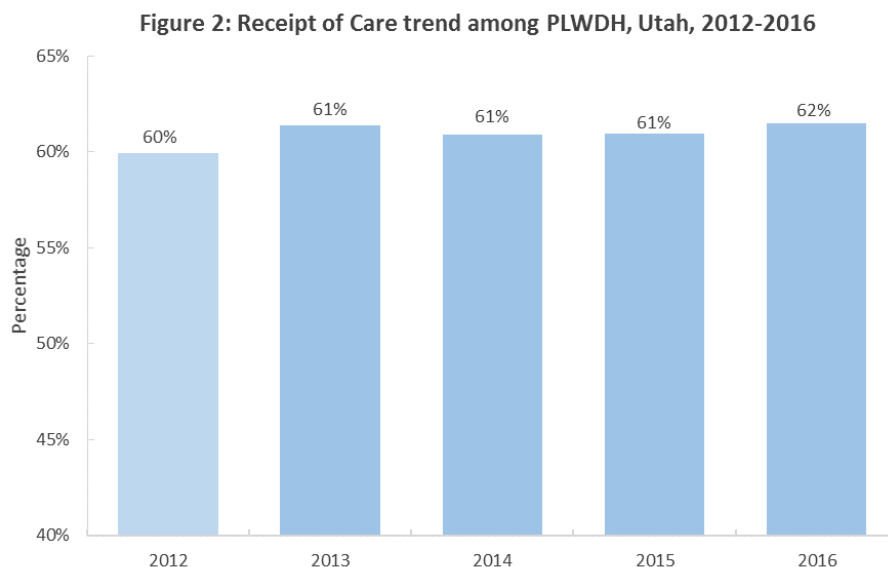
The continuum includes the estimated total count of the HIV-infected (PLWH) population in Utah. This estimate is calculated using the prevalence estimate produced by a CDC-provided back calculation SAS code. It is estimated that, in 2016, approximately 3,395 people were living with HIV infection in Utah. Among them, 89.4% (n=3035) have been diagnosed with HIV in the United States. Slightly more than six out of ten people living with HIV in Utah, received HIV medical care in 2016.

This figure also shows that nearly one-third of the PLWDH in Utah are categorized as not in care (NIC). Currently, NIC cases are defined as, presumed prevalent HIV cases who are living in Utah as of their latest address and UDOH has not received a CD4 or viral load test result or any indication of filling prescription for HIV medication (ART) within the past 12 months (excluding newly diagnosed HIV cases). However, the population of persons categorized as NIC may encompass some persons who are in reality in HIV medical care. Factors that could lead to an individual being miscategorized as NIC include:

- Individuals who have moved out of state but are still listed as living in Utah in the surveillance system. In some cases, individuals may have moved out of country, and it is difficult for the surveillance system to get verification without follow up investigations.
- Individuals who have passed away but the surveillance system has not yet been made aware.
- Individuals who are in care but who did not have a CD4 or viral load test in 2016. With advancements in HIV treatments and greater experience using them, HIV care is evolving and remote care is becoming more common. Long term HIV-positive individuals who have established medical care may only visit their HIV specialist providers once a year. If the visit is delayed for some reason (e.g., transportation, disability), providers may refill HIV medications without obtaining a recent viral load or CD4 test if the patient has a good record of adherence and reports no changes or side effects. This action could result in a patient who is in HIV care being categorized as 'not in care' because of the absence of laboratory evidence.
- Individuals whose permanent residence is in Utah but receive HIV-related care in a neighboring state may be listed as 'not in care' because test results were not automatically reported to Utah.

This large number of NIC individuals could be due to any of the reasons mentioned above or even some other issues the surveillance system has not identified yet. Currently, through re-engagement to care efforts, the HIV surveillance team is trying to locate individuals who are out of care.

Nearly two-fifths (37.9%) of PLWDH in Utah were retained in HIV medical care in 2016, meaning they received two or more viral load or CD4 tests at least three months apart. In addition, more than half (53.5%) of people with diagnosed HIV in Utah were virally suppressed at their most recent viral load in 2016 (regardless of their retention in care status).



Since treatment is vital to maintain good health for people living with HIV, it is crucial to measure the trend of people receiving HIV medical care over a period of several years. Figure 2 explores the trend in receiving HIV care for the last five years (2012-2016) among people living with diagnosed HIV (PLWDH) in Utah. The trend of people receiving HIV medical care has been fairly stable and slowly increasing since 2012. In 2012, six out of ten people diagnosed with HIV and living in Utah had received medical care. This has remained stable with 62% of people living with HIV in Utah receiving medical care in 2016.

It is also important to look at the viral suppression trend over time in Utah. Nationwide emphasis is placed on providing resources to help people living with HIV receive care and achieve viral suppression. Viral suppression not only preserves health of people living with HIV, but also greatly reduces transmission risk. Recent research showed that suppressed viral load (<200 copies/ml) prevents and undetectable viral load (<20 copies/mL of blood) removes any risk of sexual HIV transmission. CDC's current campaign, U=U, focuses on using HIV treatment as prevention since there is effectively no risk of sexual HIV transmission if one's HIV-positive partner maintains an undetectable viral load.

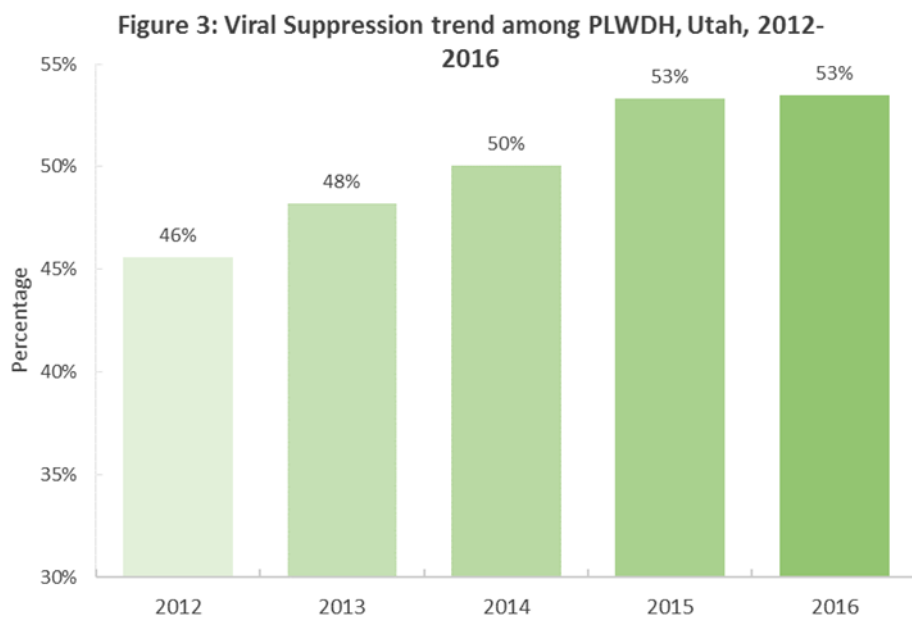
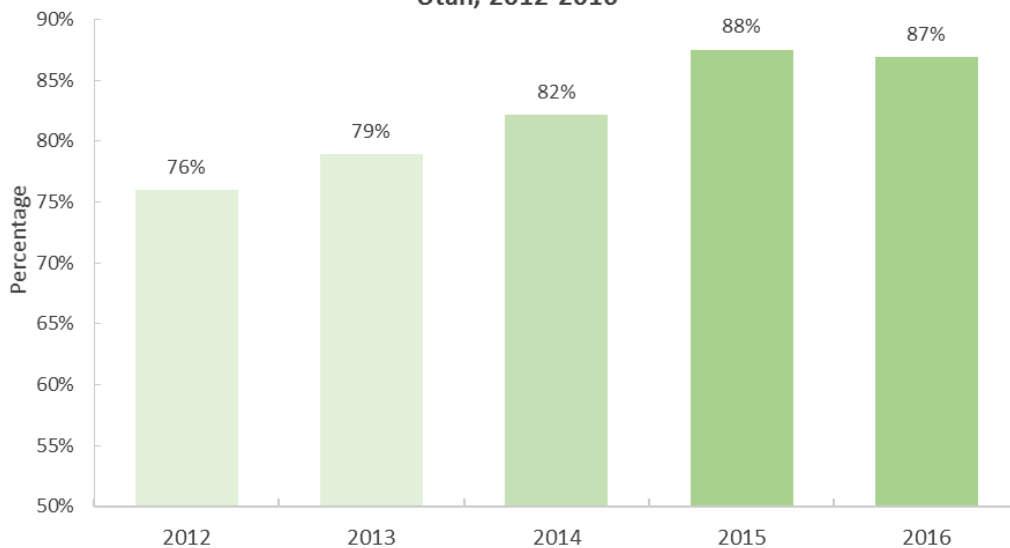


Figure 3 shows the change in viral suppression among people living with diagnosed HIV (PLWDH) between 2012 and 2016. The increase in viral suppression among PLWDH in Utah in the last five years is easily noticeable. In 2012, 46% of PLWDH in Utah achieved viral suppression. This improved to 53% of PLWDH achieving viral suppression in 2016. This represents a 15.2% increase in the number of PLWDH achieving viral suppression. It is speculated that this improvement is likely due to efficient medication, increased access to medical care, and improved services to provide care to vulnerable populations (e.g. The Ryan White HIV/AIDS program).

However, historically, providers are likely to be unaware of the individuals who are not in continuous HIV care in Utah. At times, the large number of 'not in care' HIV population obscures providers' efforts in providing HIV care. Figure 4 demonstrates the viral suppression trend among people who received care in Utah between 2012 and 2016. This figure attempts to show the progress in providing HIV medical care in Utah. In 2012, 76% of persons who received HIV medical care achieved viral suppression. In 2014, the viral suppression rate increased to almost 82% among people living in Utah and receiving care. In 2015

and 2016, nearly nine out of ten (88% and 87% respectively) people living in Utah and receiving care, achieved viral suppression.

Figure 4: Viral Suppression trend among PLWDH who received care, Utah, 2012-2016



Gender and Age

In this section, HIV care continuum is stratified by gender and age group to identify potential barriers or resource gaps that disproportionately impact male or female PLWDH or different age groups. The majority of people living with HIV in Utah are males. This is consistent with the gender distribution of the HIV population in the rest of the nation. In Utah, 85% of people living with HIV were men compared with 15% who were women. As of 2016, there were no reported transgender HIV-positive individuals living in Utah. This may indicate inadequate data collection on change of gender in the surveillance system. However, UDOH constantly tries to improve surveillance data to record updated individuals' demographic changes.

Percentages of receipt in care, retention in care, and viral suppression are similar between male and female PLWDH. In Utah, 62% of diagnosed HIV-positive males received care in 2016 compared with 60% of diagnosed HIV-positive females. Retention in care percentages are exactly the same in both males and females at 38%. However 54% of males living with HIV in Utah achieved viral suppression in 2016 compared with 49% of HIV-positive females in Utah.

Figure 5: PLWDH, by Gender, Utah, 2016

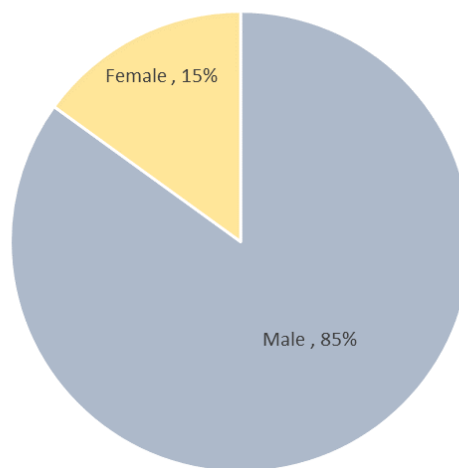


Figure 6: HIV Care Continuum, by Gender, Utah, 2016

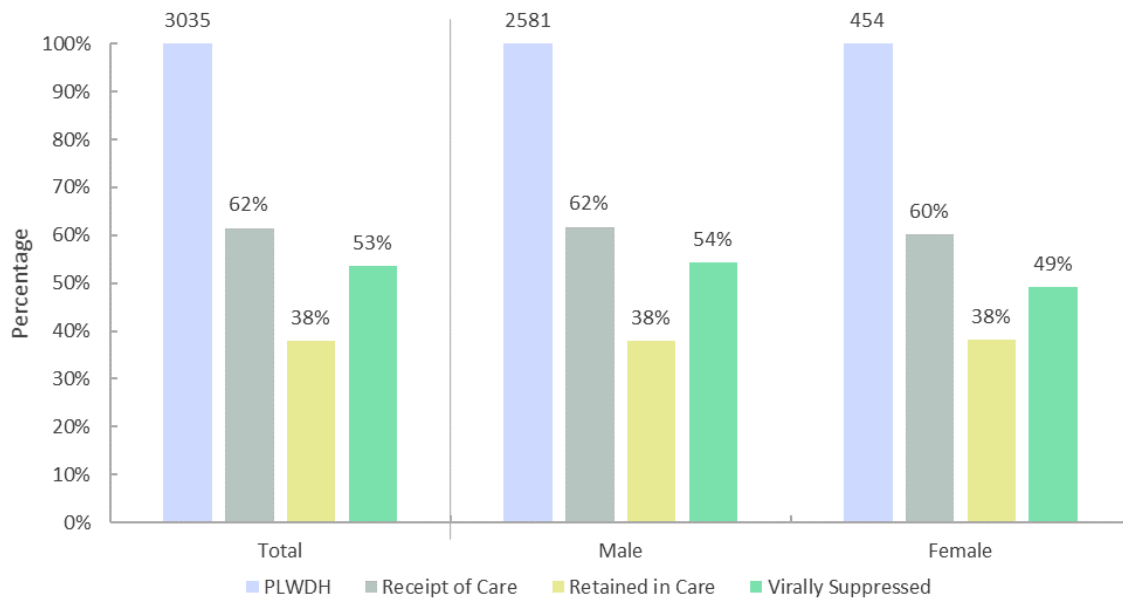


Figure 7 stratifies people living with HIV in Utah in 2016 by age groups. More than 80% of PLWDH in Utah are 35 or older. The smallest group is people who are 24 or younger (2%). People between the ages 25 and 34 constitute 13% of PLWDH in Utah. About 22% of PLWDH are ages 35-44, 32% are ages 45-54 and 30% of PLWDH are 55 or older. The figure also shows that 62% or six out of ten people living with HIV in Utah are 45 or older.

Figure 7: PLWDH, by Age Group, Utah, 2016

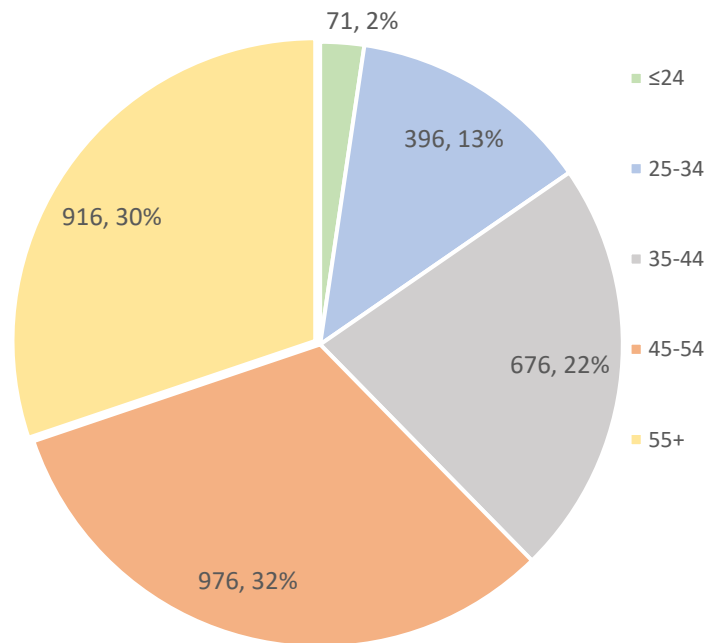
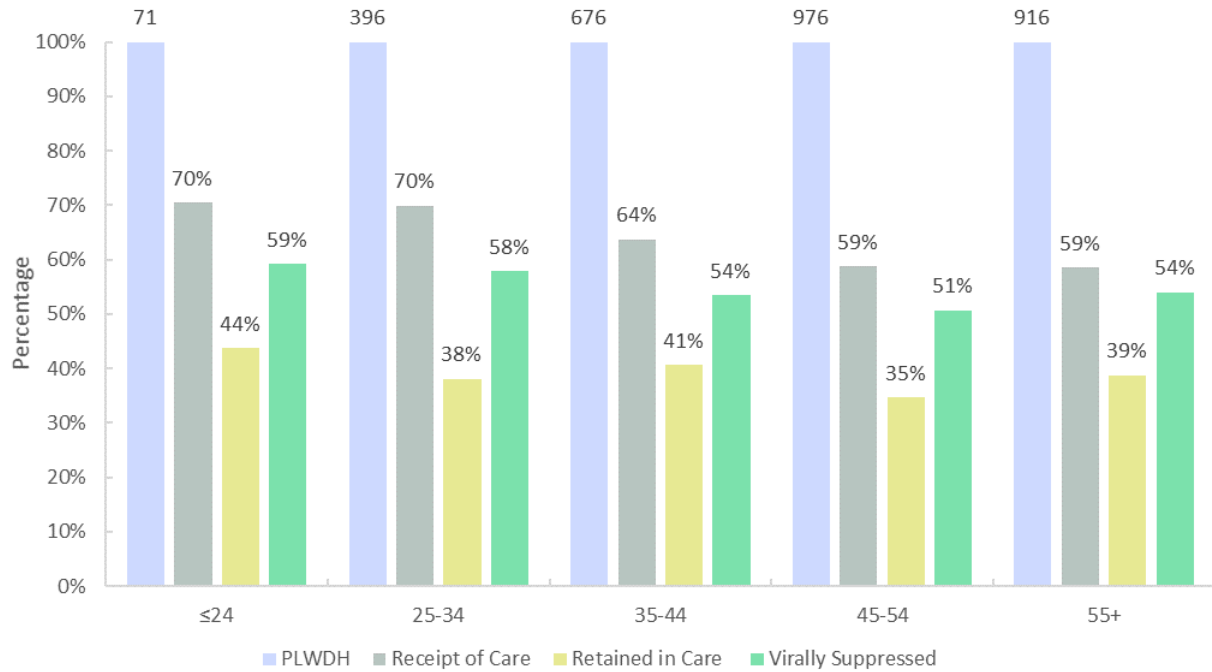


Figure 8 shows the care continuum among different age groups. Individuals who are 34 years or younger have a higher percentage of receiving care than the rest of the age groups. People living with HIV who are 45 years or older had the lowest percentage of receiving HIV care in 2016 despite the fact that the majority of Utah’s PLWDH belong to these age groups. Nearly six out of ten PLWDH 45 years or older received HIV care in 2016 compared with seven out of ten PLWDH younger than 35 years.

Figure 8: HIV Care Continuum, by Age Group, Utah, 2016



The retention in care percentage is lowest among the 45-54 age group at only 35%, and highest among PLWDH who are aged 24 or younger at 44%. The viral suppression percentage is also highest among HIV-positive individuals who are aged 24 or younger at 59% and lowest among the 45-54 age group at 51%. However, percentages of viral suppression among individuals who are in care are higher in 45-54 (86%) and 55 or older (91%) age groups than individuals who are 44 years of age or younger. This indicates that, although people aged 45 or older have a lower percentage of receiving care (perhaps due to lack of recent data or receiving care in a different state), have higher rates of achieving viral suppression when receiving HIV care. Younger people living with HIV (44 years or younger) may have higher percentages of accessing care, but are not as successful in achieving viral suppression when compared with individuals who are aged 45 or older. Figure 8 also indicates that perhaps older PLWDH are having more difficulty in accessing HIV medical care than younger age groups and may need more resources to continue HIV medical care.

Race and Ethnicity

Utah residents living with diagnosed HIV are mainly comprised of people who are non-Hispanic White. In 2016, 65% of the PLWDH were people who are non-Hispanic White. The second largest population among PLWDH is people who are Hispanic at 20%, which translates into two out of ten people living with HIV in Utah. In 2016, 9% of PLWDH were people who are non-Hispanic Black; non-Hispanic Asians, and people who are multiple races comprising 2% each. Only 1% of PLWDH were people who are non-Hispanic American Indian/Alaskan Native.

Figure 9: PLWDH, by Race/Ethnicity, Utah, 2016

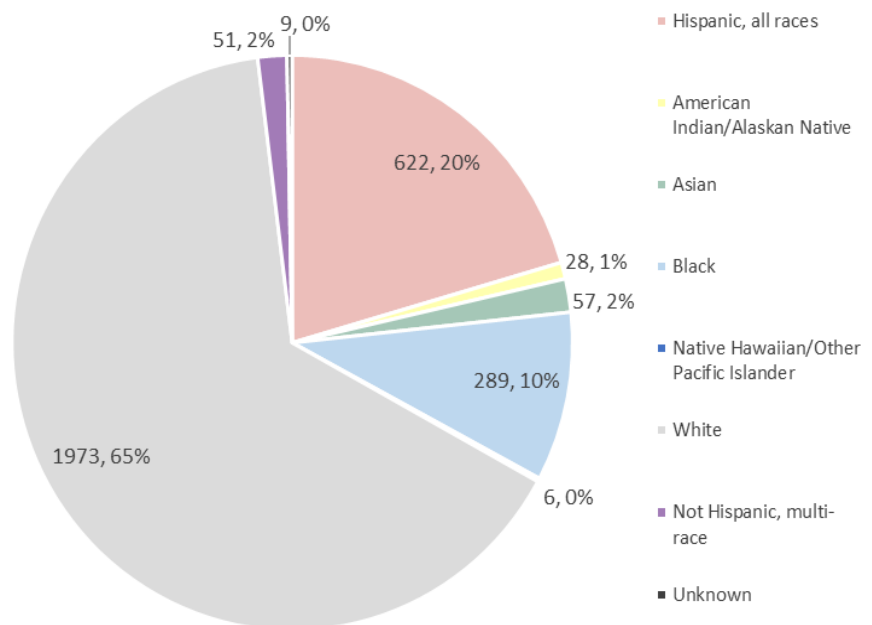
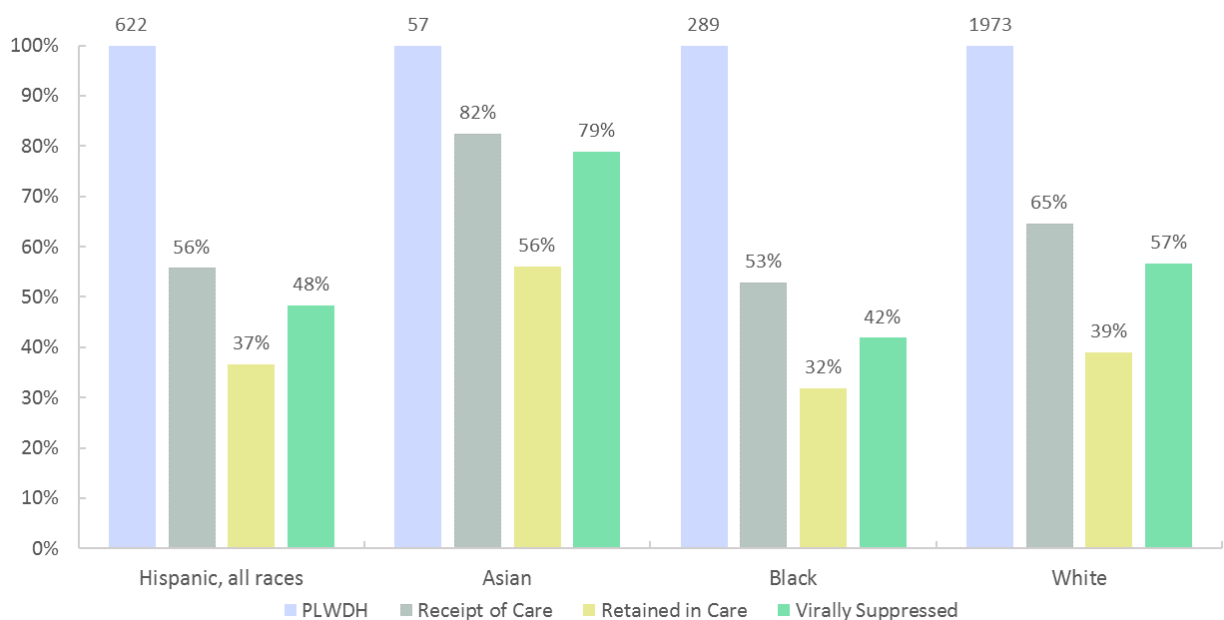


Figure 10 shows the HIV care continuum among people who are Asian, Black, Hispanic, and White PLWDH in 2016. Data for the rest of the racial and ethnic groups have been suppressed due to low case counts which tend to show unstable trends. In 2016, people who are non-Hispanic Asians received the highest percentage of HIV care at 82%, which means that for every ten people who are Asian living with HIV in Utah, more than eight of them received HIV medical care at least once in 2016. People who are Asian have the highest percentage of care retention and viral suppression as well, at 56% and 79%, respectively. In addition, nearly eight out of ten people who are non-Hispanic Asians with diagnosed HIV living in Utah were virally suppressed in 2016. The second highest percentage for receiving care was among people who are non-Hispanic White PLWDH at 65%. Nearly six out of ten (57%) people who are non-Hispanic White living with HIV in Utah were virally suppressed in 2016. Populations of people who are Hispanic and non-Hispanic Black had the lowest percentage of receiving care. This may indicate barriers to care among racial and ethnic minorities. Only a little more than half of PLWDH received care in 2016 among people who are non-Hispanic Black and Hispanic in Utah. Nearly half of people who are Hispanic living with HIV were virally suppressed, whereas less than half (42%) of people who are non-Hispanic Black with diagnosed HIV achieved viral suppression in Utah in 2016.

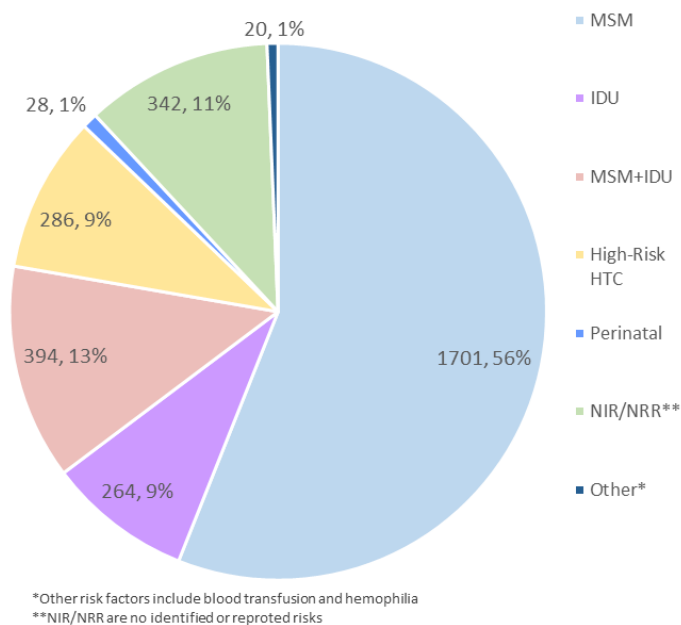
Figure 10: HIV Care Continuum,, by selected Race/Ethnicity, 2016



Transmission Category

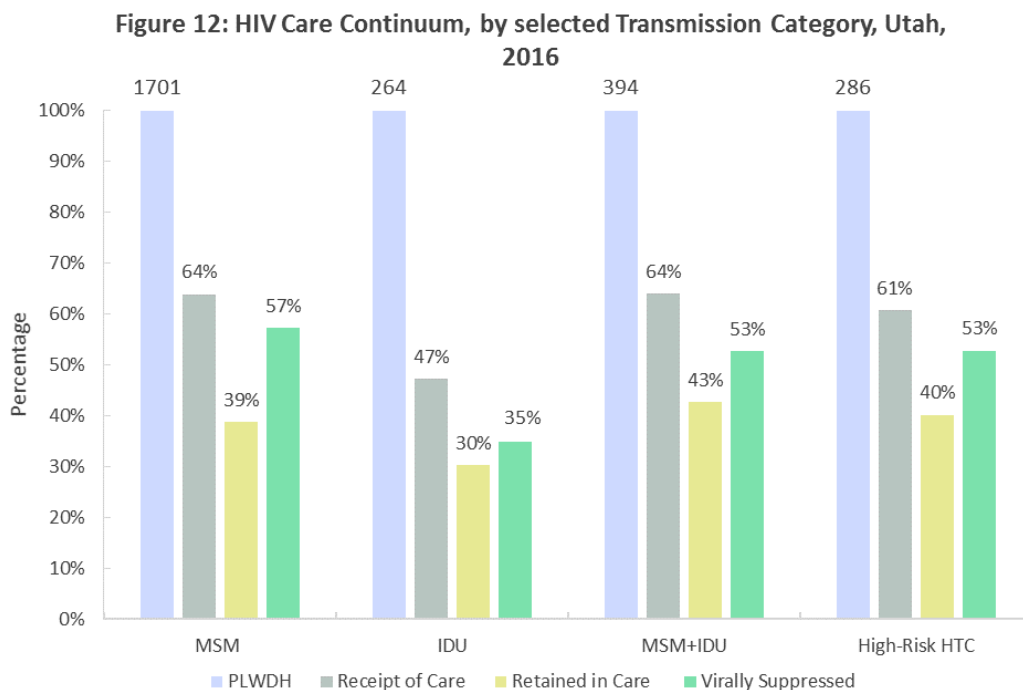
All reported HIV cases are assessed for risk factors to determine the most likely mode of HIV transmission. A transmission category is assigned to the case as the most likely way the person acquired HIV. In 2016, more than half of the HIV-positive population in Utah were men who have sex with men (MSM) at 56%. The second largest group was individuals who are both MSM and engaged in injection drug use (IDU) at 13%. Nearly 11% of PLWDH either did not report a risk category or their reported risk was insufficient to be identified as the most likely route of transmission. These are categorized as NIR/NRR. A majority of the individuals categorized as NIR/NRR is often individuals reporting low-risk sexual activities, such as, both males and females reporting only heterosexual contact (HTC) with partners without any HIV risk. Both IDU and high-risk

Figure 11: PLWDH, by Transmission Category, Utah, 2016



HTC (may have had IDU, bisexual men, or individuals with unknown HIV risk as sexual partners) were at 9%. The fewest number of PLWDH were categorized as perinatal and other risks, both at 1%. Other risks factors included rare transmission risks such as, blood transfusion and hemophilia.

Figure 12 shows the HIV care continuum stratified by selected transmission categories: MSM, IDU, MSM & IDU, and HTC. The remaining risk categories have been suppressed in this figure due to low case counts which may result in unstable trends.



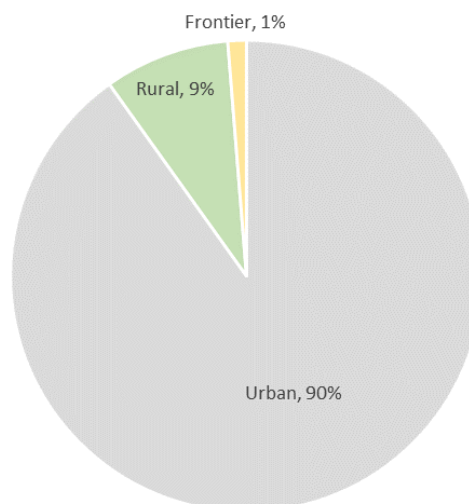
Among MSM, MSM & IDU, and HTC groups, more than six out of ten PLWDH received medical care at least once in 2016 (64%, 64%, and 61%, respectively). Persons who inject drugs with diagnosed HIV have a noticeably lower percentage of receiving medical care at only 47%. Persons who inject drugs with HIV also had the lowest percentage of retention in care and viral suppression at 30% and 35%, respectively. Among MSM, MSM and IDU, and HTC groups, more than half of the PLWDH achieved viral suppression in 2016. Among HIV-positive persons who inject drugs, the viral suppression percentage is at 36%, which demonstrates that only slightly more than three out of ten persons who participated in injection drug use with HIV were virally suppressed in 2016.

Area Type

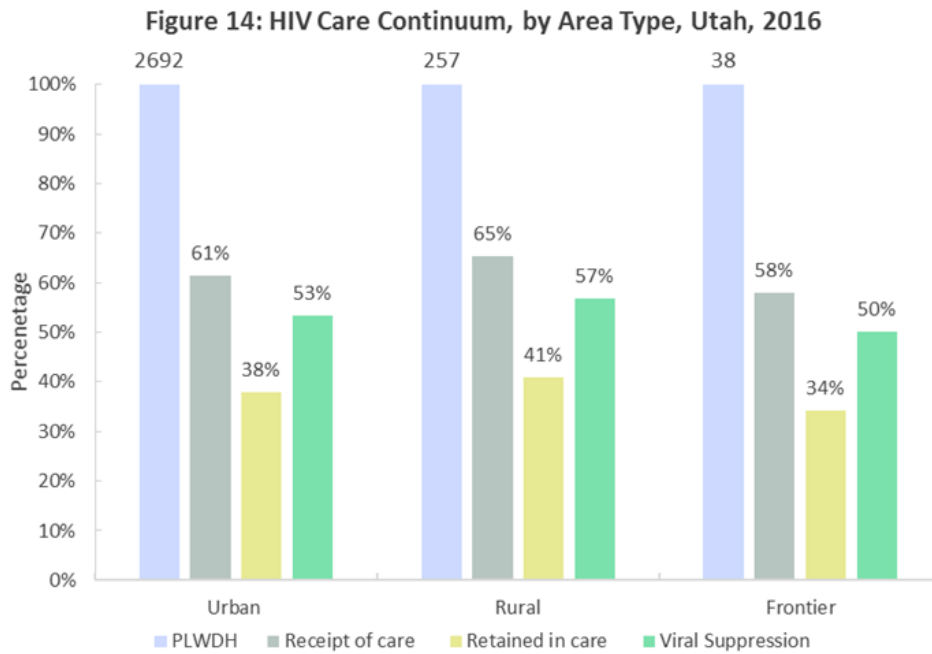
Utah is categorized into three land area definitions according to population density; urban, rural, and frontier. Urban areas are defined as containing 100 or more people per square mile. Rural areas are defined as containing fewer than 100 but more than 6 people per square mile. Finally, frontier areas are defined as containing 6 or fewer people per square mile.

Utah’s HIV surveillance system heavily depends on laboratory reporting for address updates. This data should be interpreted with caution because the surveillance system is not always notified when

Figure 13: PLWDH, by Area Type, Utah, 2016



PLWDH change addresses. In Utah, 90% of persons with diagnosed HIV lived in urban areas in 2016, approximately 9% lived in rural areas, and 1% lived in frontier areas. It is suspected that lower percentages for receipt of care and viral suppression in rural and frontier areas is due to the increase in distance to care facilities and other transportation barriers. However, PLWDH in rural areas had the highest percentage of receiving HIV medical care in 2016 at 65%. PLWDH in urban areas had a slightly lower percentage at 61%. PLWDH in frontier areas had the lowest percentage of receiving care at 58%; however, caution should be used when interpreting this data since low case counts in frontier areas make this estimate more unstable and consequently less reliable. PLWDH in rural areas also had the highest percentages of retention in care and viral suppression at 41% and 59%, respectively. More than half of the people living with diagnosed HIV in all three areas achieved viral suppression, which may indicate that geographic location is not a significant barrier to care in Utah.



Section II: Linkage to Care

Linkage to Care, Utah, 2013-2017

It is crucial to limit the time it takes to link a person newly diagnosed with HIV to HIV medical care to ensure the individual achieves viral suppression and maintains good health. Limiting the time a PLWDH has a detectable viral load also reduces the risk of transmission, slowing the spread of disease in the community. Most newly infected HIV individuals are asymptomatic. Without proper education, counselling, and treatment, an infected individual is less likely to seek care. Linkage to care measures the percentage of people receiving a diagnosis of HIV in a given calendar year who had one or more documented viral load, CD4, or genotype tests done. In this report, linkage to care for 2017 has been measured in three assessment periods: 30 days, 60 days and 90 days. For the cumulative linkage to care trends for 2013-2017, linkage to care trends were only measured utilizing the 30-day period.

In 2017, there were 117 new HIV diagnosis in Utah, among them 100 (85.5%) of them were successfully linked to care within 30 days of diagnosis and 111 (94.9%) were linked to care within 60 days of diagnosis. The number did not change at the 90 day mark, which indicates that the first 60 days are critical for a newly diagnosed HIV-positive individual to get into care. Delay in linkage may be one reason for people who are not in care being lost to follow-up.

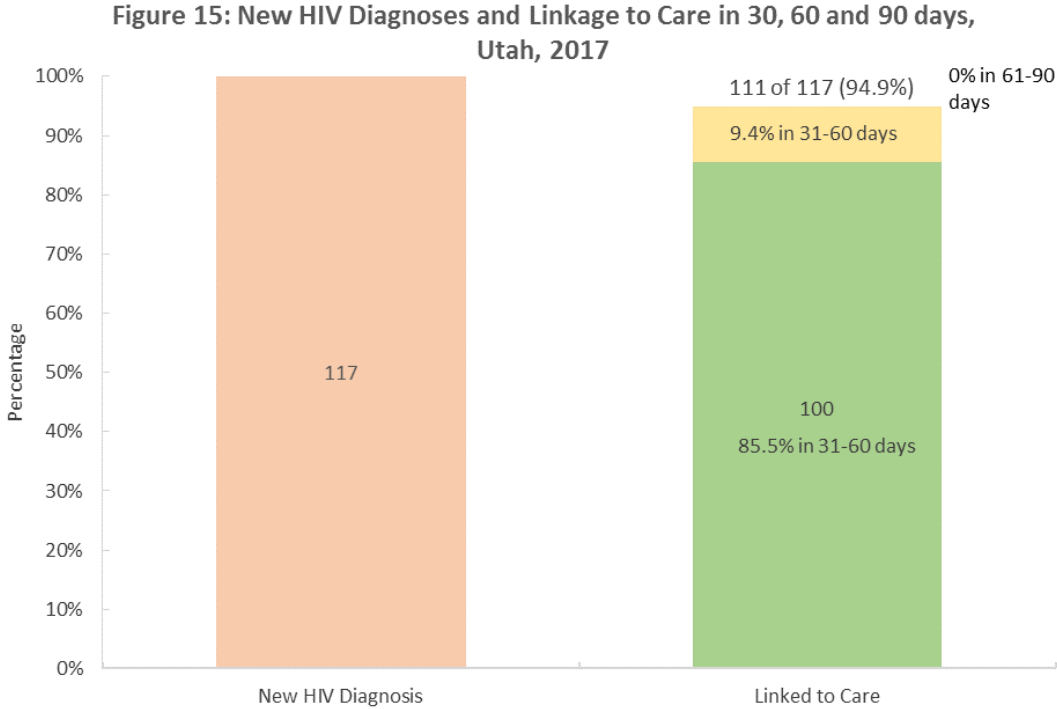
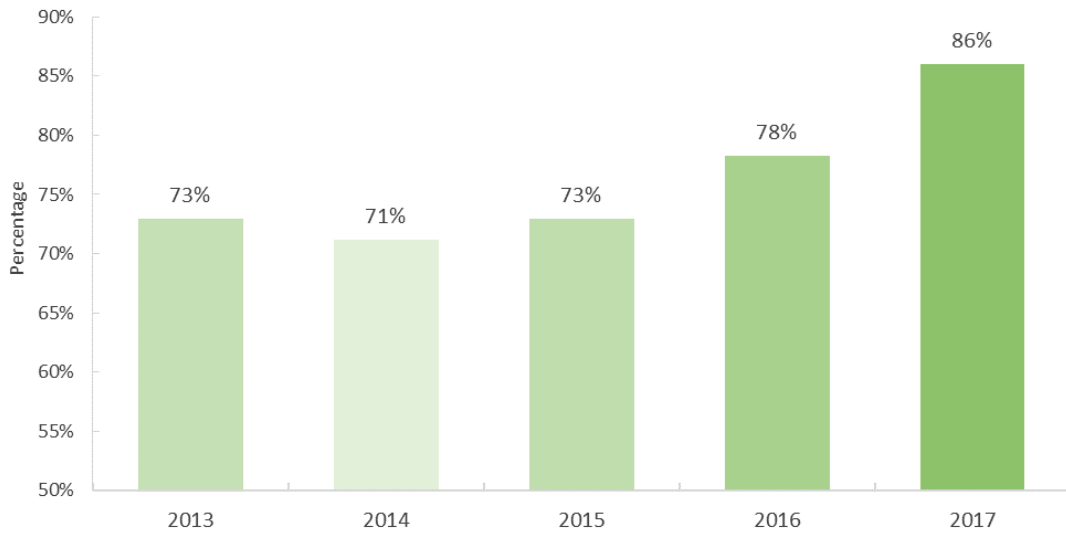


Figure 16 shows a 5-year (2013-2017) trend of linkage to care within 30 days. The linkage to care percentage remained stable at about 73% between 2013 and 2015. In 2016, the percentage of linkage to care jumped to 78% and in 2017, the percentage of linkage to care within 30 days increased again to 86%. Therefore, more than eight out of ten new HIV diagnoses in Utah in 2017 were linked to care within 30 days.

Figure 16: Trend of Linkage to Care within 30 days, Utah, 2013-2017



Due to such low numbers of new HIV diagnoses each year in Utah, new diagnoses from 2013 to 2017 were combined for this analysis in order to provide more stable statistics.

Gender and Age Group

In Utah, most of the HIV new diagnoses are among males, which is consistent with national trends. Among newly diagnosed HIV cases in the past five years, 87% were males and 13% were females (Figure 17).

Between 2013 and 2017 among newly diagnosed HIV individuals, males had a higher percentage of linkage to HIV care within 30 days than females (Figure 18). About 78% of the new diagnoses among males were linked to HIV care within 30 days. For females, 67% of new diagnoses were linked to HIV care within 30 days. It is hypothesized that perhaps females who do not directly participate in high-risk HIV transmission activities lack education and awareness about HIV, thus connecting to HIV medical care takes longer for them.

Figure 17: New Diagnoses, by Gender, Utah, 2013-2017 (Cumulative)

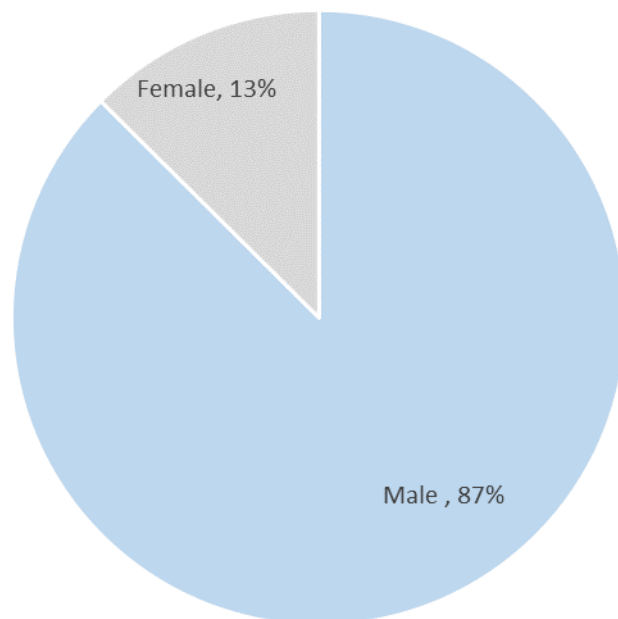
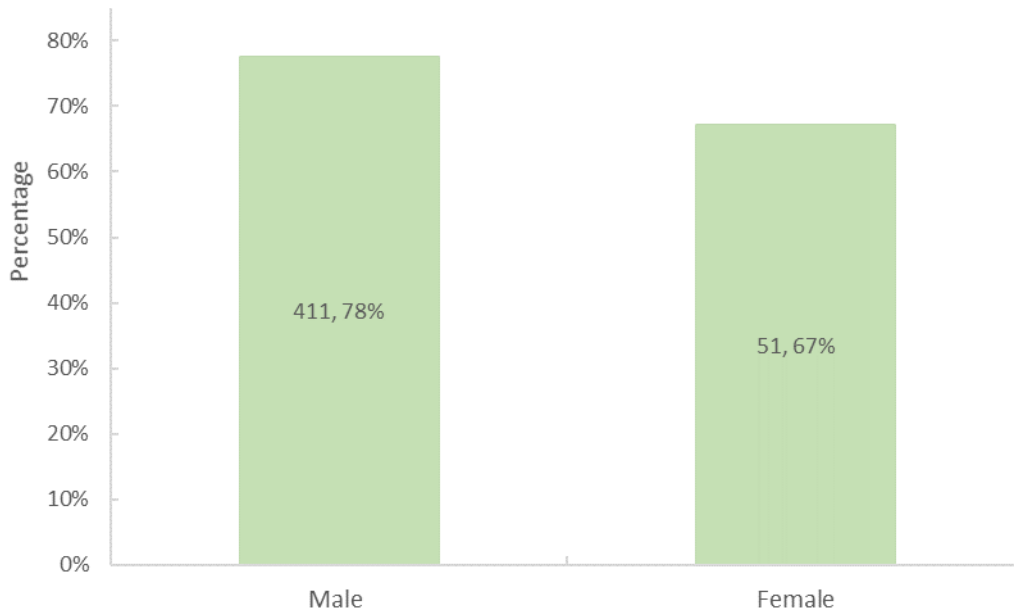


Figure 18. Linkage to Care within 30 days, by Gender, Utah, 2013-2017 (Cumulative)



More than half of the new diagnoses (55%) in the past 5 years were younger than 35 years old at the time of diagnosis. Individuals ages 24 or younger comprised 17% of the new diagnoses in 2017. The largest age group of new diagnoses ranges from 25 to 34 years of age (38%), which means that nearly four out of ten new diagnoses are in this age range. People between 35 to 44 years of age comprised 24% of the new diagnoses. About 13% belonged to the 45-54 age group. The smallest percentage of new diagnoses were in the 55 or older age group at 9%.

Figure 19: New Diagnoses, by Age Group, Utah, 2013-2017 (Cumulative)

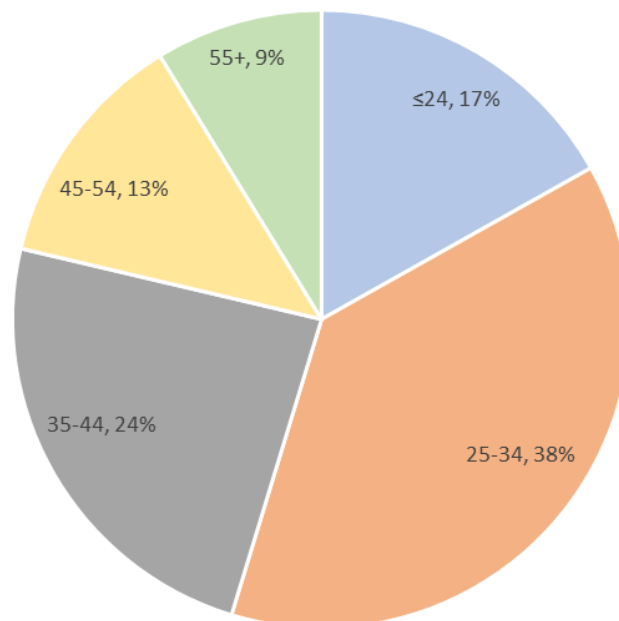
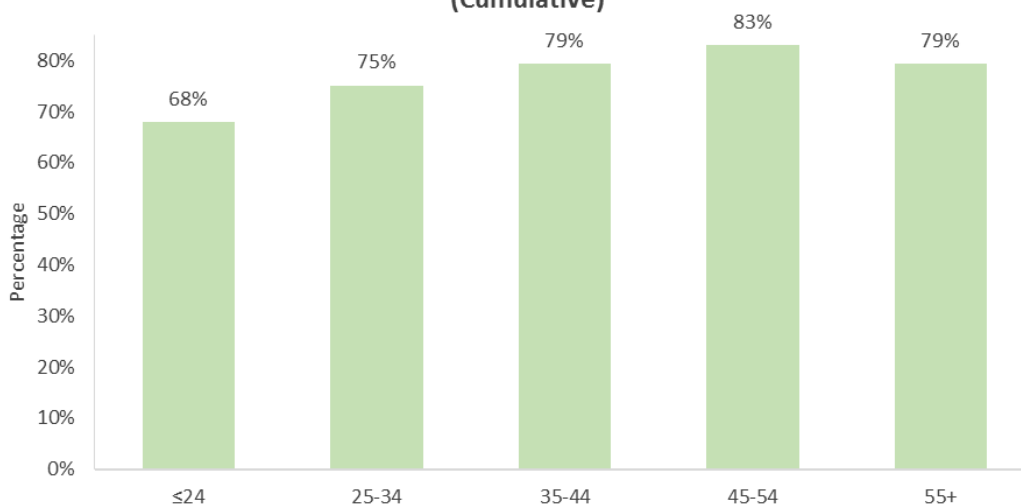


Figure 20 shows that the 24 or younger age group has the lowest percentage of linkage to care within 30 days at 68%. It is hypothesized that this could be due to a lack of awareness and information about HIV among the younger population. This could also be the outcome of the emotional trauma of being HIV-positive, and having limited or no access to health insurance and medical care.

About 75% of new diagnoses who were between the ages 25 to 34 years linked to care within 30 days. Individuals who are 35 to 44 years and 55 years or older age groups were successfully linked to care within

30 days at 79%. Among the various age groups, individuals between the ages of 45 and 54 had the highest percentage of linking to care in less than 30 days. More than eight out of ten newly diagnosed cases in the 45-54 age group were linked to care within 30 days.

Figure 20: Linkage to Care within 30 days, by Age Group, 2013-2017 (Cumulative)



Race and Ethnicity

Among new diagnoses between 2013 and 2017, more than half (55%) were people who are non-Hispanic White and one-quarter (25%) were among people who are Hispanic. The rest of the new diagnoses were comprised of people who are Black (11%), Asian (5%), people with multiple races (1%) and people who are American Indian/Alaskan Native (1%).

Figure 22 shows the trend of linkage to care within 30 days among the largest racial and ethnic groups in Utah. The rest of the racial and ethnic populations were suppressed due to low case counts. People who are Hispanic and non-Hispanic Asians had the highest percentages of being linked to care within 30 days at 82%. Three quarters (75%) of people who are non-Hispanic White individuals, representing the majority of new HIV diagnoses in Utah, were linked to care within 30 days. People who are Black had the lowest percentage of being linked to care within 30 days at only 68%, indicating a need to prioritize this population for enhanced linkage to care services.

Figure 21: New Diagnoses, by Race/Ethnicity, 2013-2017 (Cumulative)

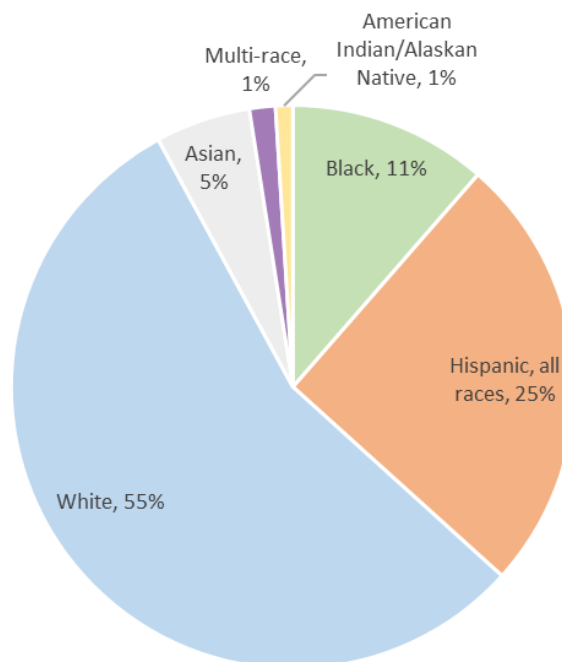
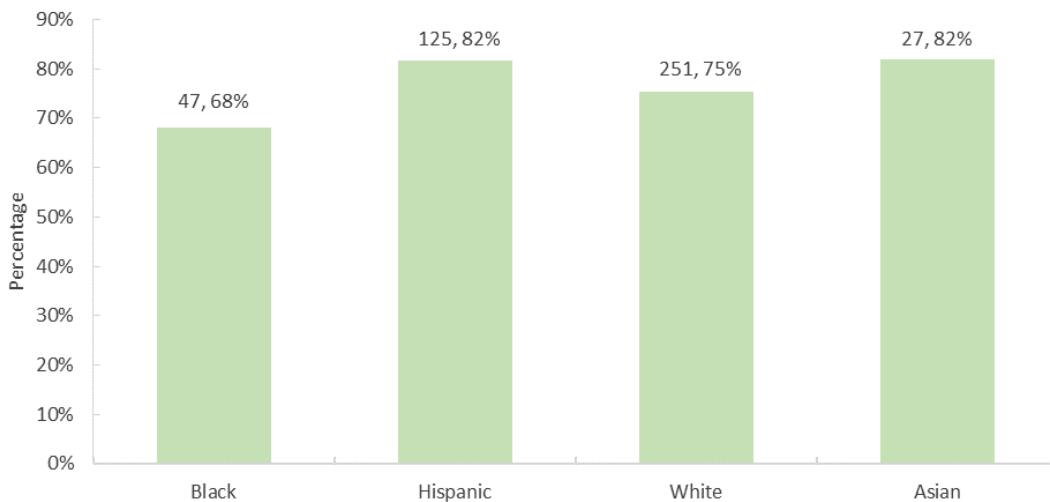


Figure 22: Linkage to Care within 30 days, by selected Race/Ethnicity, Utah, 2013-2017 (Cumulative)



Transmission Category

Among newly diagnosed HIV cases, the majority were identified as men who have sex with men (MSM) at 57%. The second largest group is NIR/NRR, which indicates no identified or reported transmission risk for these individuals. About 11% of the new diagnoses reported being both MSM and engaging in injection drug use (IDU). About 4% of the new diagnoses reported high-risk heterosexual contact (HTC), meaning sex with individuals who participated in injection drug use or had an unknown HIV status, and 3% of them reported using injection drugs only.

Figure 24 includes the most common transmission categories in Utah, which are MSM, IDU, MSM & IDU, and high-risk HTC. Other risk factors such as blood transfusion, hemophilia, and perinatal transmission were suppressed due to low case counts. MSM and MSM & IDU groups have high percentages of linking to care within 30 days at 78%. About 64% of the new diagnosis who were categorized as having high-risk heterosexual contact were linked to HIV care within 30 days. New diagnoses who reported engaging in injection drug use had the lowest percentage of linking to HIV care within 30 days at 52%.

Figure 9: New Diagnoses, by Transmission Category, Utah, 2013-2017 (Cumulative)

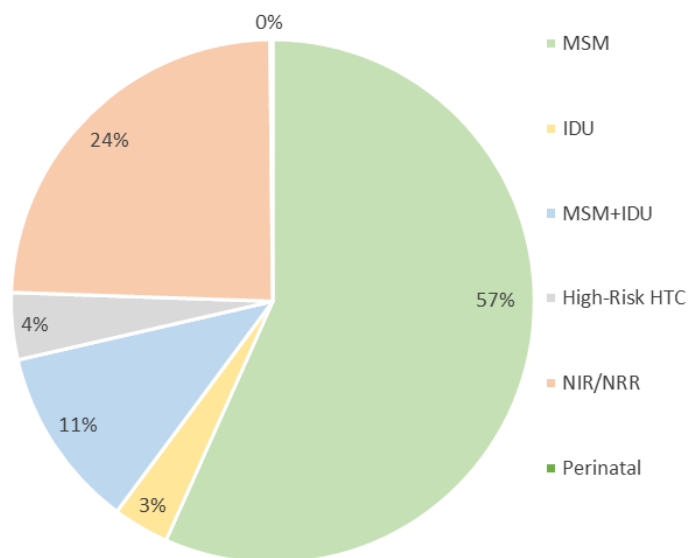
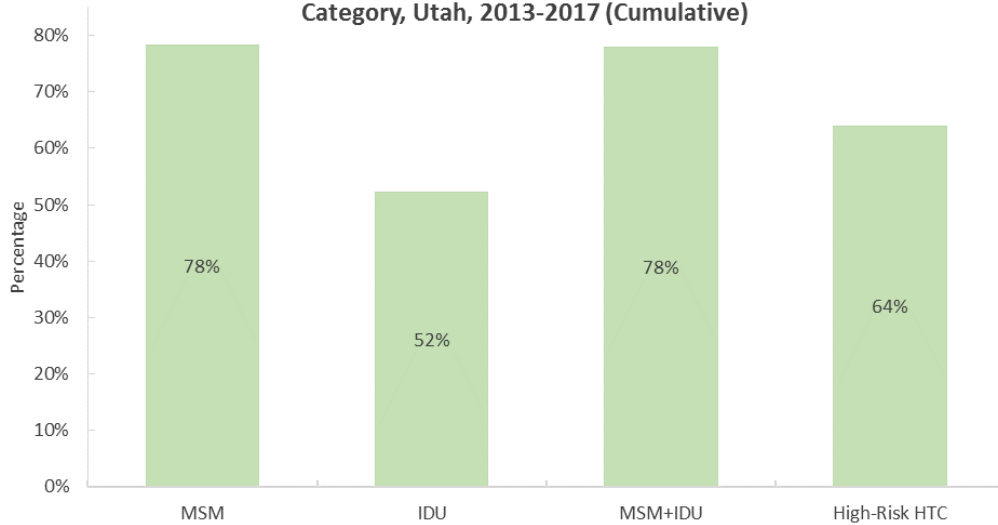


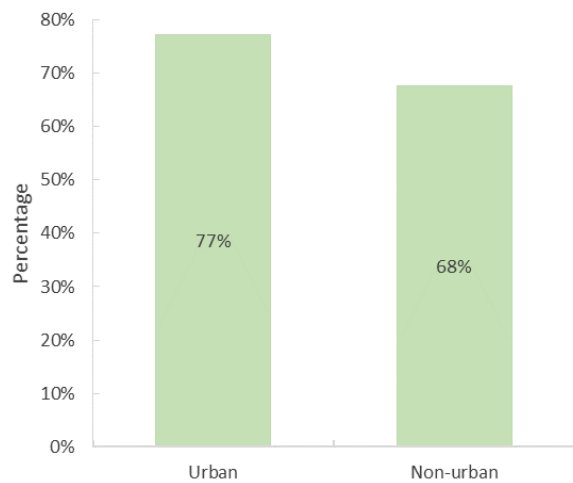
Figure 24: Linkage to Care within 30 days, by selected Transmission Category, Utah, 2013-2017 (Cumulative)



Area Type

As expected, few new diagnoses were reported in rural and frontier areas in the timeframe. Newly diagnosed cases in rural and frontier areas were combined and presented as 'Non-urban' cases to provide more stable statistics. About 77% of the urban newly diagnosed HIV cases were linked to HIV care within 30 days compared with 68% of non-urban cases, however the difference is not statistically significant. Non-urban new diagnoses are hypothesized to experience increased barriers to care including a general lack of resources and/or providers and increased distance from care facilities. UDOH acknowledges these barriers and is working to provide more resources to the areas needing the most support.

Figure 25: Linkage to Care, by Area Type, Utah, 2013-2017 (Cumulative)



Appendix A

Table 1: Counts and Percentages of HIV-infected (estimated), HIV-diagnosed, Receipt of Care, Retained in Care, and Viral Suppression, Utah, 2012-2016

Note: 'HIV-infected' is calculated from prevalence-estimates derived by the CDC back calculation code. Percentages of 'HIV-diagnosed' is calculated by using count of 'HIV-infected' as a denominator. 'Receipt of care,' 'retained in care,' and 'viral suppression' percentages are calculated by using 'HIV-diagnosed (PLWDH)' as a denominator. Please refer to the definitions section for definitions of PLWDH, receipt of care, retained in care, and viral suppression.

| | 2012 | | 2013 | | 2014 | | 2015 | | 2016 | |
|---------------------------------|------|-------|------|-------|------|-------|------|-------|------|-------|
| | N | % | N | % | N | % | N | % | N | % |
| HIV-infected (estimated) | 2910 | 100.0 | 3099 | 100.0 | 3210 | 100.0 | 3291 | 100.0 | 3395 | 100.0 |
| HIV-diagnosed (PLWDH) | 2520 | 86.6 | 2702 | 87.2 | 2812 | 87.6 | 2903 | 88.2 | 3035 | 89.4 |
| Receipt of Care | 1511 | 60.0 | 1658 | 61.4 | 1712 | 60.9 | 1769 | 60.9 | 1867 | 61.5 |
| Retained in Care | 1113 | 44.2 | 1164 | 43.1 | 1123 | 39.9 | 1113 | 38.3 | 1150 | 37.9 |
| Viral Suppression | 1145 | 45.44 | 1302 | 48.2 | 1405 | 50.0 | 1546 | 53.3 | 1623 | 53.4 |

Table 2: Care Continuum Stratified by Gender, Age Group, Race and Ethnicity, and Transmission Category, Utah, 2016

Note: Column titled 'PLWDH' presents the total count for each demographic group and is used as a denominator to calculate receipt of care, retained in care, and viral suppression percentages in each group.

| | PLWDH | | Receipt of Care | | Retained in Care | | Viral Suppression | |
|--|-------|-------|-----------------|------|------------------|------|-------------------|------|
| | N | % | N | % | N | % | N | % |
| Gender | | | | | | | | |
| Male | 8 | 100.0 | 1594 | 61.6 | 977 | 37.9 | 1400 | 54.2 |
| Female | 454 | 100.0 | 273 | 60.1 | 173 | 38.1 | 223 | 49.1 |
| Age Groups | | | | | | | | |
| ≤24 | 71 | 100.0 | 50 | 70.4 | 31 | 43.7 | 43 | 59.2 |
| 25-34 | 396 | 100.0 | 277 | 70.0 | 151 | 38.1 | 229 | 57.9 |
| 35-44 | 676 | 100.0 | 431 | 63.8 | 275 | 40.7 | 362 | 53.6 |
| 45-54 | 976 | 100.0 | 573 | 58.7 | 338 | 34.6 | 495 | 50.7 |
| 55+ | 916 | 100.0 | 536 | 58.5 | 355 | 38.8 | 495 | 54.0 |
| Race/Ethnicity | | | | | | | | |
| Hispanic, all races | 622 | 100.0 | 347 | 55.8 | 228 | 36.7 | 301 | 48.4 |
| American Indian/Alaskan Native | 28 | 100.0 | 9 | 32.1 | 8 | 28.6 | 8 | 28.6 |
| Asian* | 57 | 100.0 | 47 | 82.5 | 32 | 56.1 | 45 | 79.0 |
| Black | 289 | 100.0 | 153 | 52.9 | 92 | 31.8 | 121 | 41.9 |
| Native Hawaiian/Other Pacific Islanders | 6 | 100.0 | 3 | 50.0 | 2 | 33.3 | 3 | 50.0 |
| White | 1973 | 100.0 | 1274 | 64.6 | 769 | 39.0 | 1118 | 56.7 |
| Not Hispanic, Multi-race | 51 | 100.0 | 34 | 66.7 | 19 | 37.3 | 27 | 52.9 |
| Unknown | 9 | 100.0 | -- | -- | -- | -- | -- | -- |
| Transmission Category | | | | | | | | |
| MSM | 1701 | 100.0 | 1087 | 63.9 | 659 | 38.7 | 973 | 57.2 |
| IDU | 264 | 100.0 | 125 | 47.4 | 80 | 30.3 | 92 | 34.9 |
| MSM & IDU | 394 | 100.0 | 252 | 64.0 | 168 | 42.6 | 208 | 52.8 |
| Other** | 20 | 100.0 | 12 | 60.0 | 8 | 40.0 | 10 | 50.0 |
| HTC | 286 | 100.0 | 174 | 60.8 | 115 | 40.2 | 151 | 52.8 |
| Perinatal Exposure | 28 | 100.0 | 18 | 64.3 | 9 | 32.1 | 15 | 53.6 |
| NIR/NRR*** | 342 | 100.0 | 199 | 58.2 | 111 | 32.5 | 174 | 50.9 |

*Asian includes Pacific Islander and other Asians

**Other risks include blood transfusion and hemophilia

***NIR/NRR=No Identified risk/Not Reported Risk

Table 3: Care Continuum Stratified by Local Health Districts and Area Type, Utah, 2016

Note: Column titled ‘PLWDH’ presents the total count for each local health district and area type. This count is used as a denominator to calculate receipt of care, retained in care, and viral suppression percentages in each local health district and area type.

| | PLWDH | | Receipt of Care | | Retained in Care | | Viral Suppression | |
|------------------------------|-------|-------|-----------------|------|------------------|------|-------------------|------|
| | N | % | N | % | N | % | N | % |
| Local Health District | | | | | | | | |
| Bear River | 72 | 100.0 | 49 | 68.1 | 32 | 44.4 | 45 | 62.5 |
| Central | 32 | 100.0 | 16 | 50.0 | 12 | 37.5 | 13 | 40.6 |
| Davis | 195 | 100.0 | 111 | 56.9 | 57 | 29.2 | 96 | 49.2 |
| Salt Lake | 2086 | 100.0 | 1274 | 61.1 | 796 | 38.2 | 1109 | 53.2 |
| San Juan | 5 | 100.0 | 1 | 20.0 | 1 | 20.0 | -- | -- |
| Southeast | 22 | 100.0 | 18 | 81.8 | 12 | 54.6 | 18 | 81.8 |
| Southwest | 123 | 100.0 | 78 | 63.4 | 43 | 35.0 | 64 | 52.0 |
| Summit | 26 | 100.0 | 20 | 76.9 | 17 | 65.4 | 20 | 76.9 |
| Tooele | 32 | 100.0 | 22 | 68.8 | 12 | 37.5 | 18 | 56.3 |
| TriCounty | 24 | 100.0 | 12 | 50.0 | 8 | 33.3 | 10 | 41.7 |
| Utah | 192 | 100.0 | 129 | 67.2 | 78 | 40.6 | 117 | 62.0 |
| Wasatch | 10 | 100.0 | 6 | 60.0 | 2 | 20.0 | 6 | 60.0 |
| Weber-Morgan | 168 | 100.0 | 106 | 63.1 | 68 | 40.5 | 86 | 51.2 |
| Unknown | 48 | 100.0 | 25 | 52.1 | 12 | 25.0 | 21 | 43.8 |
| Area Type | | | | | | | | |
| Frontier | 38 | 100.0 | 22 | 57.9 | 13 | 34.2 | 19 | 50.0 |
| Rural | 257 | 100.0 | 168 | 65.4 | 105 | 40.9 | 146 | 56.8 |
| Urban | 2692 | 100.0 | 1652 | 61.4 | 1020 | 37.9 | 1437 | 53.4 |
| Unknown | 48 | 100.0 | 25 | 52.1 | 12 | 25.0 | 21 | 43.8 |

Table 4: Number of New Diagnoses and Linkage to Care in ≤30 Days, Utah, 2013-2017

Note: Row titled 'New Diagnosis' presents the total count of new diagnoses from 2013 to 2017. This count is used as a denominator to calculate linkage to care in 30, 60, and 90 days for that specific year.

| | 2013 | | 2014 | | 2015 | | 2016 | | 2017 | |
|------------------------------------|------|------|------|------|------|------|------|------|------|------|
| | N | % | N | % | N | % | N | % | N | % |
| New Diagnosis | 111 | 100 | 118 | 100 | 122 | 100 | 138 | 100 | 117 | 100 |
| Linkage to care in ≤30 days | 81 | 73.0 | 84 | 71.2 | 89 | 73.0 | 108 | 78.3 | 100 | 85.5 |
| Linkage to care in ≤60 days | 95 | 85.6 | 95 | 80.5 | 108 | 88.5 | 118 | 85.5 | 112 | 94.9 |
| Linkage to care in ≤90 days | 99 | 89.2 | 99 | 83.9 | 113 | 92.6 | 123 | 89.1 | 111 | 94.9 |

Table 5: Cumulative New Diagnoses and Linkage to Care ≤30 Days Stratified by Gender and Age Groups Utah, 2013-2017

Note: Column titled 'New Diagnosis' presents the total count of new diagnoses in each demographic group for that specific year. This count is used as a denominator to calculate the linkage to care in 30 days percentage for that demographic population.

| | 2013 | | | | 2014 | | | | 2015 | | | | 2016 | | | | 2017 | | | | |
|-------------------|---------------|-----|--------------|------|---------------|-----|--------------|------|---------------|-----|--------------|------|---------------|-----|--------------|------|---------------|-----|--------------|------|--|
| | New Diagnosis | | LTC ≤30 Days | | New Diagnosis | | LTC ≤30 Days | | New Diagnosis | | LTC ≤30 Days | | New Diagnosis | | LTC ≤30 Days | | New Diagnosis | | LTC ≤30 Days | | |
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | |
| Gender | | | | | | | | | | | | | | | | | | | | | |
| Male | 97 | 100 | 68 | 70.1 | 100 | 100 | 71 | 71 | 110 | 100 | 80 | 72.7 | 117 | 100 | 92 | 78.6 | 106 | 100 | 92 | 86.8 | |
| Female | 14 | 100 | 8 | 57.1 | 18 | 100 | 12 | 66.7 | 12 | 100 | 7 | 58.3 | 21 | 100 | 12 | 57.1 | 11 | 100 | 8 | 72.7 | |
| Age Groups | | | | | | | | | | | | | | | | | | | | | |
| ≤24 | 21 | 100 | 10 | 47.6 | 18 | 100 | 11 | 61.1 | 14 | 100 | 9 | 64.3 | 28 | 100 | 20 | 71.4 | 22 | 100 | 17 | 77.3 | |
| 25-34 | 40 | 100 | 29 | 72.5 | 49 | 100 | 32 | 65.3 | 45 | 100 | 30 | 66.7 | 50 | 100 | 39 | 78 | 45 | 100 | 38 | 84.4 | |
| 35-44 | 26 | 100 | 20 | 76.9 | 29 | 100 | 22 | 75.9 | 35 | 100 | 27 | 77.1 | 33 | 100 | 26 | 78.8 | 22 | 100 | 21 | 95.5 | |
| 45-54 | 17 | 100 | 14 | 82.4 | 12 | 100 | 11 | 91.7 | 20 | 100 | 17 | 85 | 18 | 100 | 10 | 55.6 | 9 | 100 | 9 | 100 | |
| ≥55 | 7 | 100 | 3 | 42.9 | 10 | 100 | 7 | 70 | 8 | 100 | 4 | 50 | 9 | 100 | 9 | 100 | 19 | 100 | 16 | 84.2 | |

Table 6: Cumulative New Diagnoses and Linkage to Care ≤30 Days Stratified by Race/Ethnicity and Transmission Category, Utah, 2013-2017

Note: Column titled 'New Diagnosis' presents the total count of new diagnoses in each demographic group for that specific year. This count is used as a denominator to calculate the linkage to care in 30 days percentage for that demographic population.

| | 2013 | | 2014 | | 2015 | | 2016 | | 2017 | | | | | | | | | | | |
|---|---------------|-----|--------------|------|---------------|-----|--------------|------|---------------|-----|--------------|------|----|-----|----|------|----|-----|----|------|
| | New Diagnosis | | LTC ≤30 Days | | New Diagnosis | | LTC ≤30 Days | | New Diagnosis | | LTC ≤30 Days | | | | | | | | | |
| | N | % | N | % | N | % | N | % | N | % | N | % | | | | | | | | |
| Race/Ethnicity | | | | | | | | | | | | | | | | | | | | |
| Hispanic, all races | 21 | 100 | 17 | 81.0 | 30 | 100 | 21 | 70 | 30 | 100 | 25 | 83.3 | 34 | 100 | 28 | 82.4 | 38 | 100 | 32 | 84.2 |
| American Indian/Alaskan Native | -- | -- | -- | -- | -- | -- | -- | -- | 2 | 100 | 2 | 100 | 1 | 100 | 0 | 0 | 3 | 100 | 3 | 100 |
| Asian* | 3 | 100 | 3 | 100 | 8 | 100 | 6 | 75 | 8 | 100 | 8 | 100 | 8 | 100 | 5 | 62.5 | 6 | 100 | 5 | 83.3 |
| Black | 13 | 100 | 7 | 53.9 | 12 | 100 | 7 | 58.3 | 10 | 100 | 6 | 60 | 22 | 100 | 15 | 68.2 | 12 | 100 | 9 | 75 |
| Native Hawaiian/Other Pacific Islanders | -- | -- | -- | -- | -- | -- | -- | -- | 1 | 100 | 1 | 100 | -- | -- | -- | -- | -- | -- | -- | -- |
| White | 69 | 100 | 47 | 68.1 | 67 | 100 | 48 | 71.6 | 71 | 100 | 45 | 63.4 | 70 | 100 | 55 | 78.6 | 56 | 100 | 51 | 91.1 |
| Not Hispanic, Multi-race | 5 | 100 | 2 | 40 | -- | -- | -- | -- | -- | -- | -- | -- | 2 | 100 | 1 | 50 | 2 | 100 | 1 | 50 |
| Unknown | -- | -- | -- | -- | 1 | 100 | 1 | 100 | -- | -- | -- | -- | 1 | 100 | 0 | 0 | -- | -- | -- | -- |
| Transmission Category | | | | | | | | | | | | | | | | | | | | |
| MSM | 60 | 100 | 44 | 73.3 | 57 | 100 | 41 | 71.9 | 76 | 100 | 55 | 72.4 | 75 | 100 | 60 | 80 | 76 | 100 | 65 | 85.5 |
| IDU | 5 | 100 | 2 | 40 | 3 | 100 | 1 | 33.3 | 4 | 100 | 2 | 50 | 7 | 100 | 4 | 57.1 | 2 | 100 | 2 | 100 |
| MSM & IDU | 15 | 100 | 9 | 60 | 16 | 100 | 11 | 68.8 | 13 | 100 | 9 | 69.2 | 14 | 100 | 13 | 92.9 | 10 | 100 | 10 | 100 |
| Other** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Heterosexual Contact | 6 | 100 | 4 | 60 | 7 | 100 | 3 | 42.9 | 9 | 100 | 6 | 66.7 | 3 | 100 | 2 | 66.7 | -- | -- | -- | -- |
| Perinatal Exposure | 1 | 100 | 0 | 0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| NIR/NRR*** | 24 | 100 | 17 | 70.8 | 35 | 100 | 27 | 77.1 | 20 | 100 | 15 | 75 | 39 | 100 | 25 | 64.1 | 29 | 100 | 24 | 82.8 |

*Asian includes Pacific Islander and other Asians

**Other risks include blood transfusion and hemophilia

***NIR/NRR=No Identified risk/Not Reported Risk

Table 7: Cumulative New Diagnoses and Linkage to Care ≤30 days Stratified by Local Health Districts, and Area Type, Utah, 2013-2017

Note: Column titled 'New Diagnosis' presents the total count for each local health district and area type for that specific year. This count is used as a denominator to calculate the linkage to care in 30 days for that specific local health district or area type.

| | 2013 | | | | 2014 | | | | 2015 | | | | 2016 | | | | 2017 | | | |
|-------------------------------|---------------|-----|--------------|------|---------------|-----|--------------|------|---------------|-----|--------------|------|---------------|-----|--------------|------|---------------|-----|--------------|------|
| | New Diagnosis | | LTC ≤30 Days | | New Diagnosis | | LTC ≤30 Days | | New Diagnosis | | LTC ≤30 Days | | New Diagnosis | | LTC ≤30 Days | | New Diagnosis | | LTC ≤30 Days | |
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| Local Health Districts | | | | | | | | | | | | | | | | | | | | |
| Bear River | 4 | 100 | 1 | 25 | 1 | 100 | 1 | 100 | 2 | 100 | 2 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 |
| Central | -- | -- | -- | -- | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 1 | 100 | 2 | 100 | 1 | 50 |
| Davis | 6 | 100 | 2 | 33.3 | 8 | 100 | 3 | 37.5 | 12 | 100 | 3 | 25 | 4 | 100 | 3 | 75 | 8 | 100 | 7 | 87.5 |
| Salt Lake | 78 | 100 | 55 | 70.5 | 88 | 100 | 64 | 72.7 | 77 | 100 | 62 | 80.5 | 103 | 100 | 78 | 75.7 | 83 | 100 | 71 | 85.5 |
| San Juan | 1 | 100 | 1 | 100 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Southeast | 1 | 100 | 1 | 100 | 1 | 100 | 0 | 0 | 3 | 100 | 0 | 0 | 2 | 100 | 1 | 50 | 1 | 100 | 1 | 100 |
| Southwest | 2 | 100 | 1 | 50 | 6 | 100 | 5 | 83.3 | 9 | 100 | 6 | 66.7 | 4 | 100 | 3 | 75 | 7 | 100 | 5 | 71.4 |
| Summit | 1 | 100 | 1 | 100 | 1 | 100 | 0 | 0 | 1 | 100 | 0 | 0 | -- | -- | -- | -- | 2 | 100 | 2 | 100 |
| Tooele | 1 | 100 | 1 | 100 | 2 | 100 | 2 | 100 | 1 | 100 | 1 | 100 | -- | -- | -- | -- | 1 | 100 | 1 | 100 |
| TriCounty | 3 | 100 | 2 | 66.7 | -- | -- | -- | -- | 1 | 100 | 1 | 100 | 2 | 100 | 0 | 0 | -- | -- | -- | -- |
| Utah | 6 | 100 | 4 | 66.7 | 5 | 100 | 4 | 80.0 | 12 | 100 | 10 | 83.3 | 14 | 100 | 12 | 85.7 | 9 | 100 | 9 | 100 |
| Wasatch | -- | - | - | - | - | - | - | - | - | -- | -- | - | - | - | - | - | - | - | - | - |
| Weber-Morgan | -- | -- | - | -- | - | - | - | - | - | - | -- | -- | - | - | - | - | - | -- | - | - |
| Unknown | 8 | 100 | 7 | 87.5 | 5 | 100 | 3 | 60 | 3 | 100 | 1 | 33.3 | 7 | 100 | 5 | 71.4 | 3 | 100 | 3 | 100 |
| Area Type | | | | | | | | | | | | | | | | | | | | |
| Frontier | 1 | 100 | 1 | 100 | 2 | 100 | 1 | 50 | 1 | 100 | 0 | 0 | 2 | 100 | 2 | 100 | 1 | 100 | 1 | 100 |
| Rural | 8 | 100 | 6 | 75 | 9 | 100 | 7 | 77.8 | 16 | 100 | 10 | 62.5 | 7 | 100 | 3 | 42.9 | 12 | 100 | 9 | 75 |
| Urban | 102 | 100 | 69 | 67.7 | 107 | 100 | 75 | 70.1 | 105 | 100 | 77 | 73.3 | 128 | 100 | 99 | 77.3 | 104 | 100 | 97 | 87.5 |
| Unknown | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1 | 100 | 0 | 0 | -- | -- | -- | -- |

