

Background

- SC a predominantly rural state, between 1998 and 2013 consistently ranked in the top ten in the U.S. in the annual AIDS case rate
- SC also ranked first in the rural prevalence of persons living with HIV (PLWHIV)
- Previous studies of the HIV/AIDS epidemic in SC have identified differences between the rural and urban populations with regards to progression to AIDS
- Rural residents living with HIV were more likely to progress to AIDS (CD4 count <200) within a year of diagnosis.

Objectives

- To generate a SC HIV cascade using the metrics adopted in the National HIV Cascade of Care
- To examine at what step along the cascade of care differences between rural and urban PLWHIV occur that may explain the observed disparities

Methods

- The South Carolina Department of Health and Environmental Control (SCDHEC) maintains a database called the enhanced HIV/AIDS Reporting System (eHARS)
- The law requires testing and point-of-care facilities to report information on new HIV/AIDS diagnoses and follow-up to eHARS
- eHARS was used to identify PLWHIV in SC (end of 2011 snapshot of PLWHIV alive at the end of 2012)
- PLWHIV with at least one CD4 count or viral load measurement during 2012 were considered to have received any care
- Those with 2 or more CD4 counts and/or viral load measurements taken at least 3 months apart in 2012 were assumed to be retained in care
- Virologic suppression was defined as a viral load measurement in 2012 of ≤ 200 copies per milliliter
- For PLWHIV newly diagnosed in 2012 linkage to care within 3, 6 or 12 months was defined as at least one CD4 count or viral load measurement within 3, 6 or 12 months of diagnosis respectively
- Rural versus urban was determined for each individual based on their residence (zip-code) at diagnosis

Fig 1: Numbers and Percentages of Persons Engaged in each Step of the Continuum of HIV Care

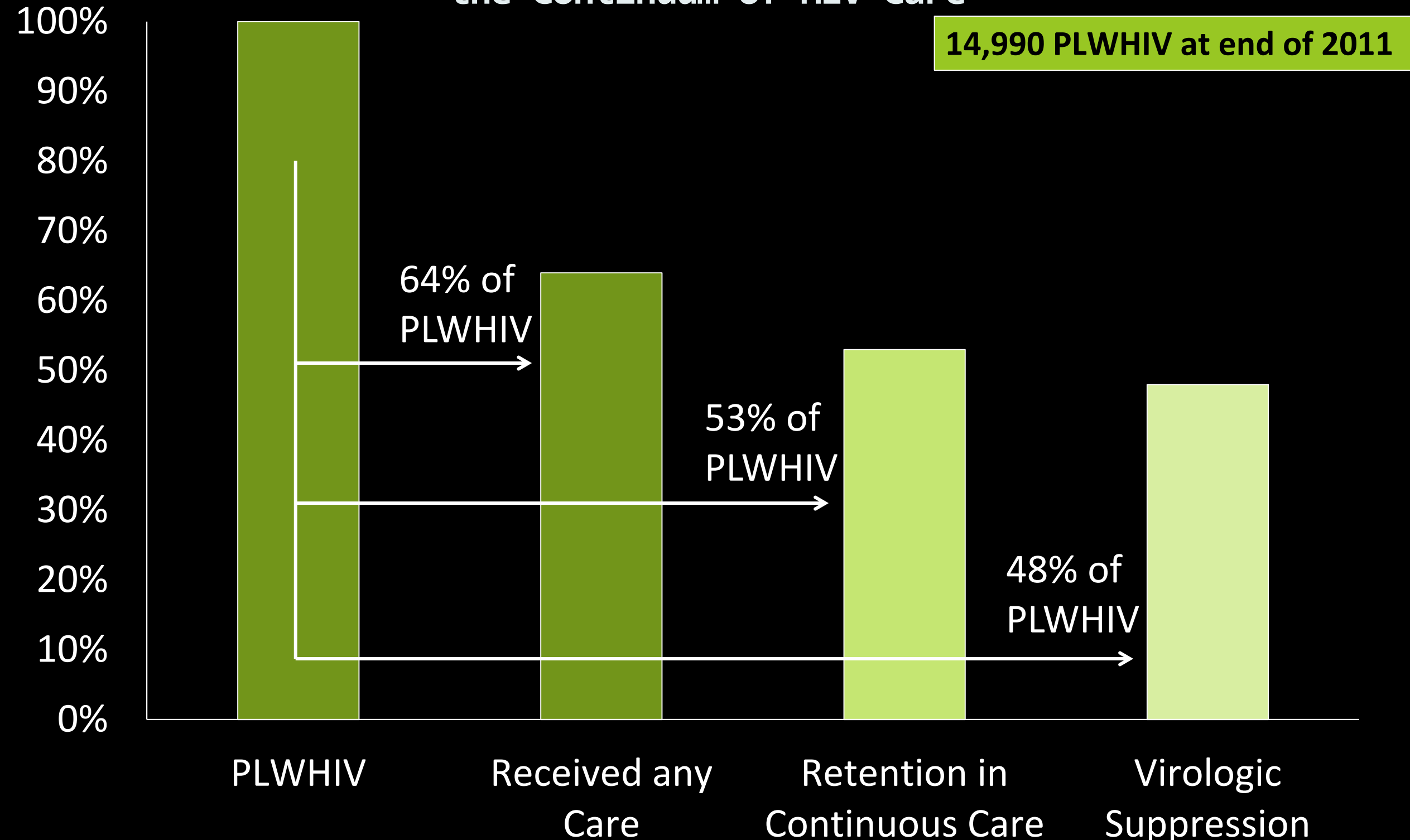
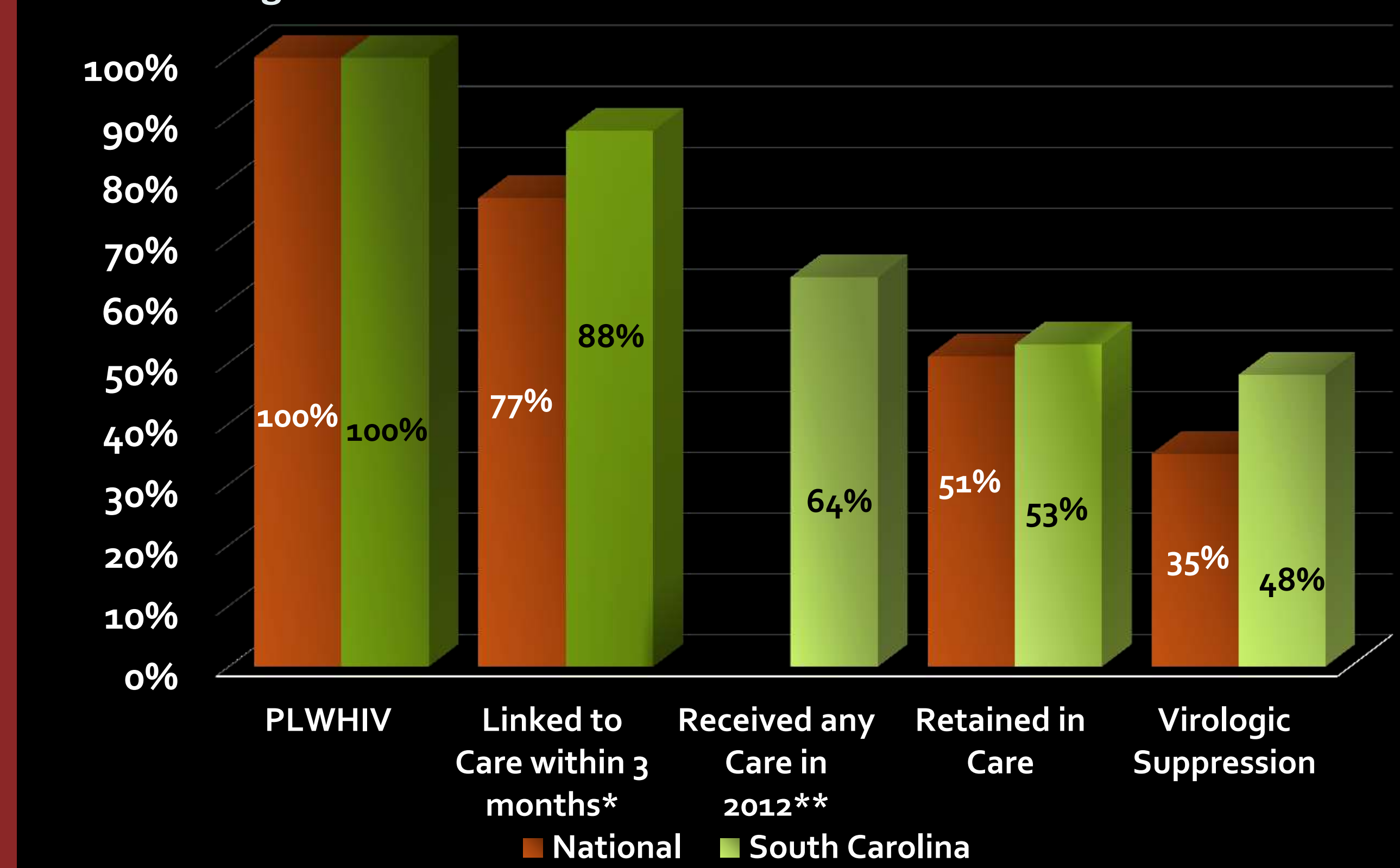


Fig 2: National vs. South Carolina HIV Care Cascades



The U.S. cascade of care was adapted from: CDC. MMWR 2011; 60: 1618-1623
 *US linkage to care estimate is for multiple years; while SC is only for 2012
 **National comparative data are not available

Fig 3: Percentages of PLWHIV Engaged in each Step of the Continuum of Care by Residence at Diagnosis (RUCA Classification)

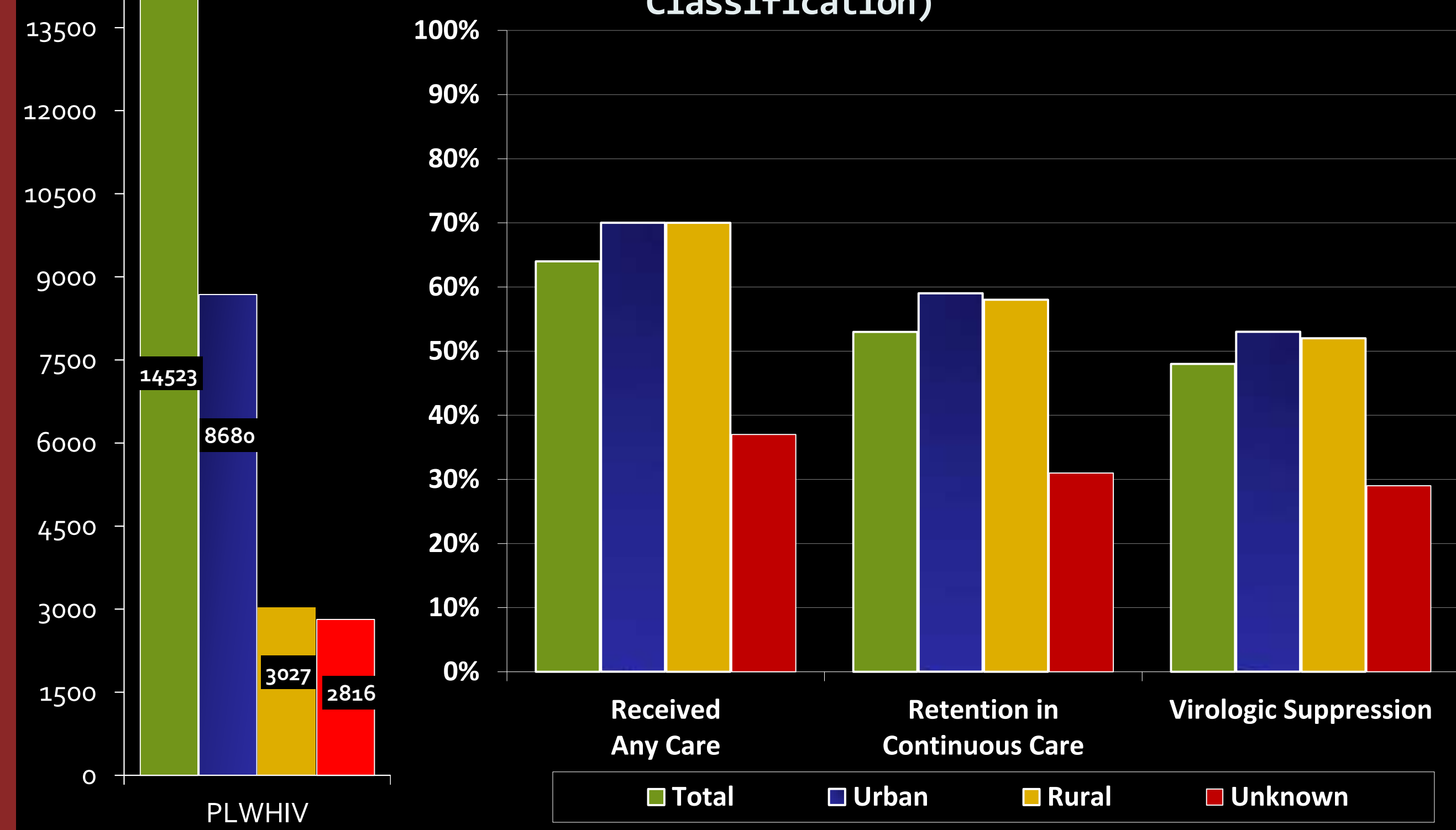


Fig 4: Percentages of PLWHIV Engaged in each Step of the Continuum of HIV Care by Residence at Diagnosis (OMB Classification)

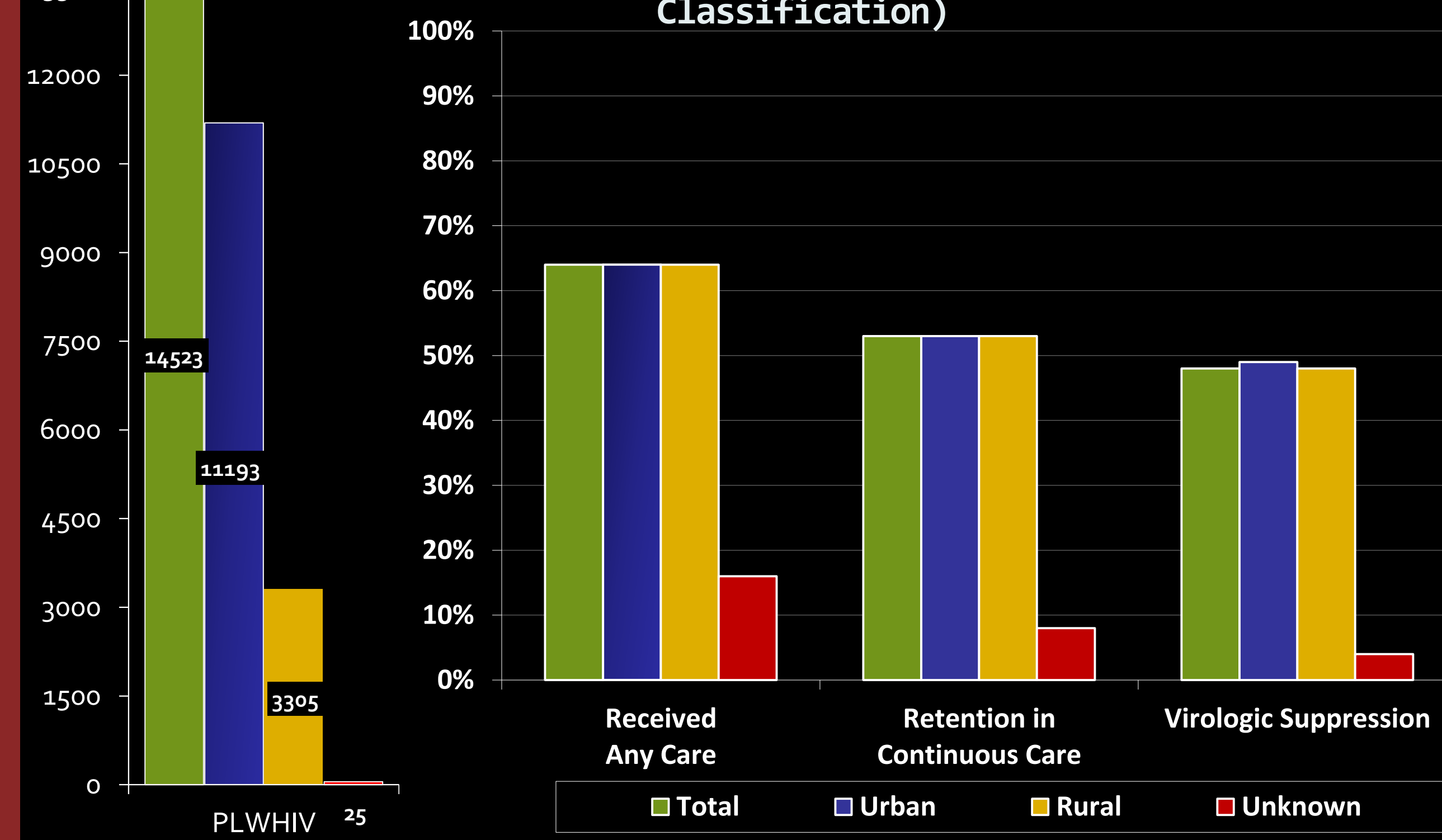


Fig 5: Numbers and Percentages of PLWHIV Diagnosed in 2012 who were Linked to Care within 3, 6, and 12 Months of Diagnosis

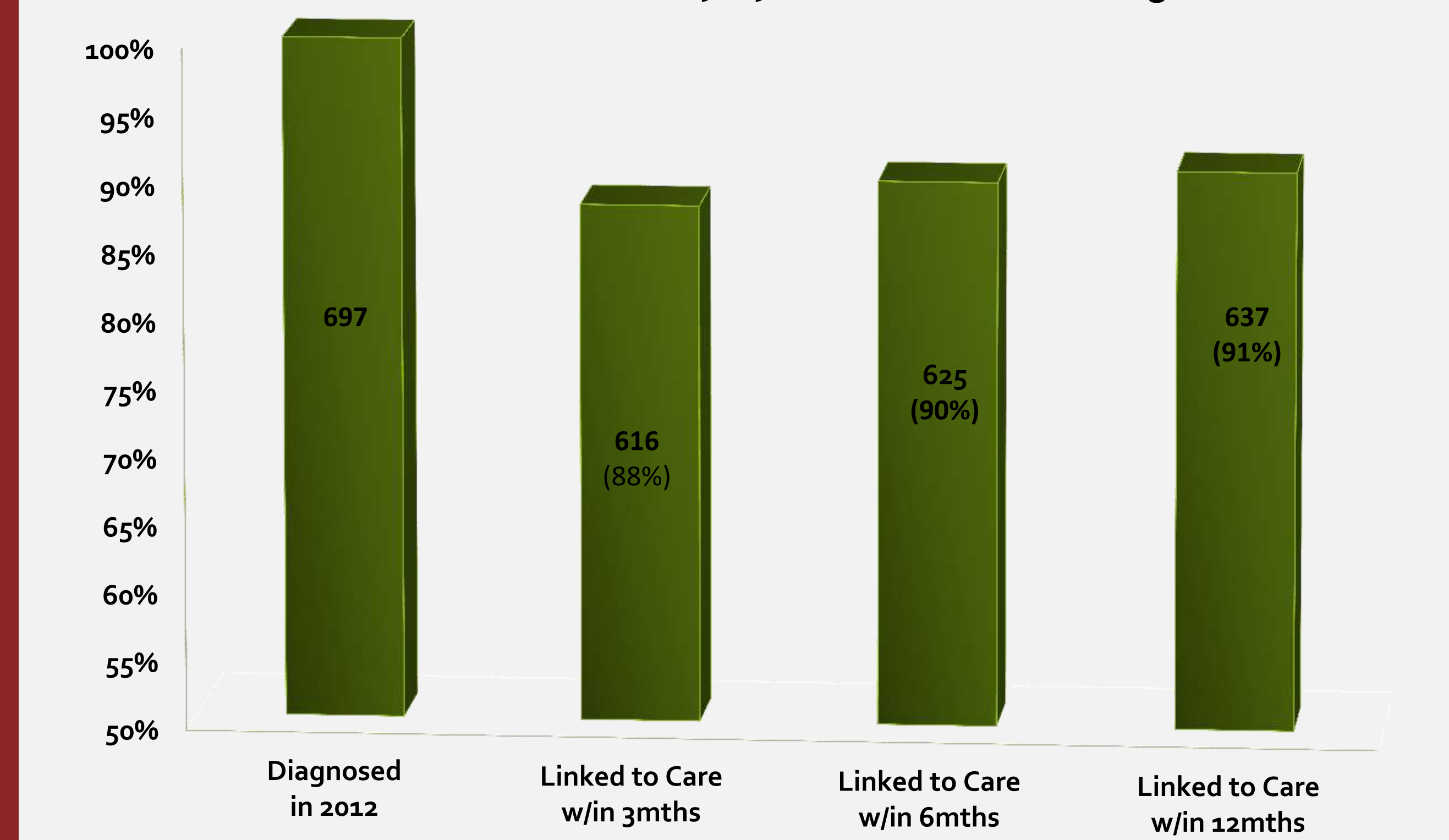
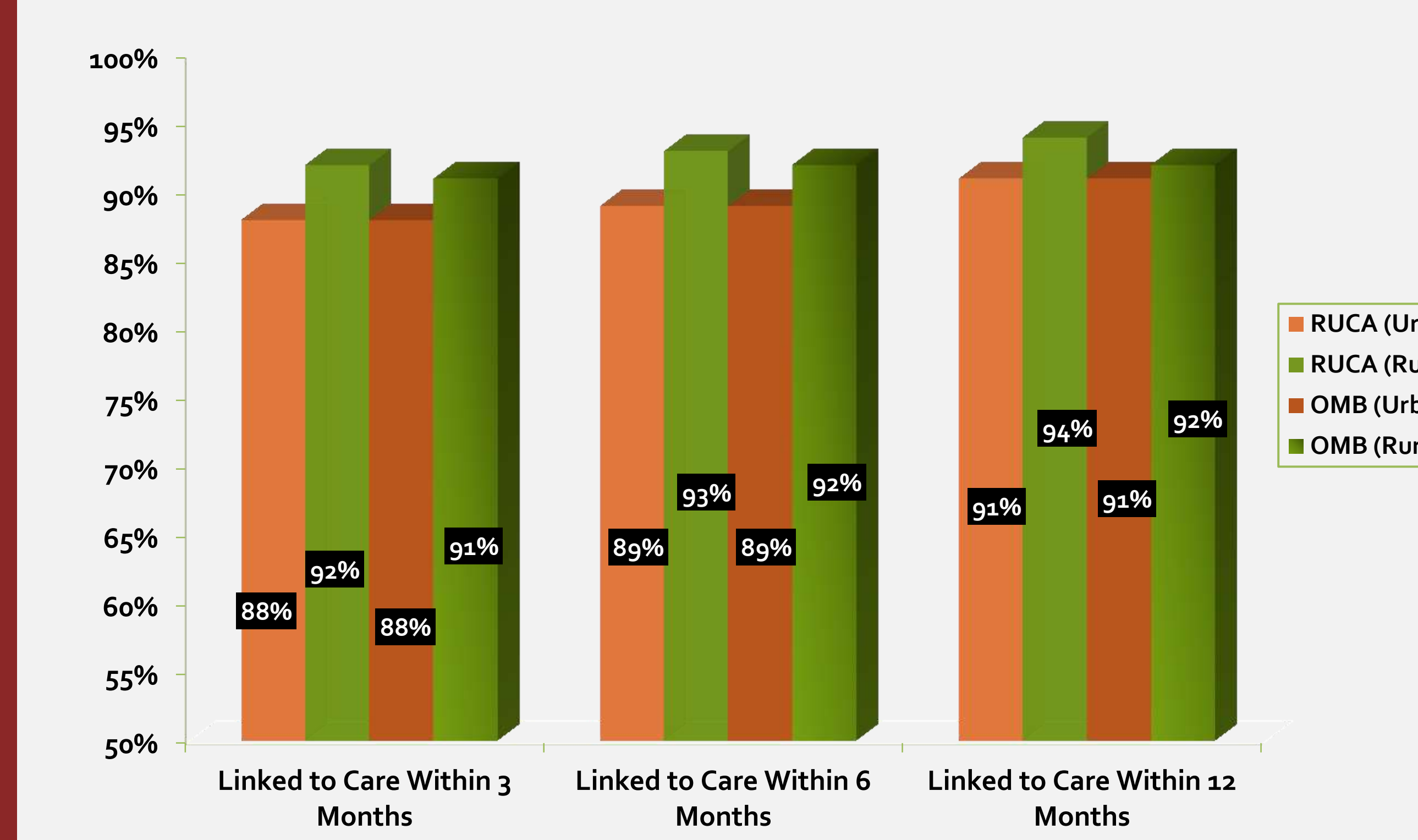


Fig 6: Numbers and Percentages of PLWHIV Diagnosed in 2012 who were Linked to Care within 3, 6, and 12 Months of Diagnosis: Rural vs. Urban



The authors gratefully acknowledge the assistance of the SCDHEC HIV/AIDS surveillance staff in collecting and compiling this surveillance data for use in investigating the HIV epidemic in South Carolina

Results

- By the end of 2011, there were 14,990 PLWHIV aged 13 and older in SC. Of these, 14,523 were alive at the end of 2012 and were included in the analysis. Nearly two-thirds of the sample (n=9,232; 64%) had received any care in 2012; slightly over half (n=7,716; 53%) were retained in care during and 7,023 (48%) were virologically suppressed (Figure 1). Figure 2 provides a visual comparison of the national and SC HIV cascades
- The SC HIV continuum of care was further divided into rural vs. urban using the RUCA classification; 8680 or 60% of were categorized as urban vs. 3027 (21%) as rural (Figure 3). There were no major differences between urban and rural for those who had received any care: 70% vs 70%; retention in care 59% vs 58%; and virologic suppression 53% vs 52% respectively
- Using the OMB classification; 11193 or 77% of PLWHIV in SC were categorized as urban vs. 3305 (22%) as rural (Figure 4). There were no major differences between urban and rural for those who had received any care: 64% vs 64%; retention in care 53% vs 53%; and virologic suppression 49% vs 48% respectively
- Figure 5 shows the time to linkage to care for all individuals newly diagnosed with HIV in 2012. There were 697 PLWHIV aged ≥ 13 years newly diagnosed in 2012; of these 616 (88%) were linked to care within 3 months of diagnosis, 625 (90%) were linked to care within 6 months and 637 (91%) were linked to care within 1 year
- Of the 697 individuals newly diagnosed with HIV in 2012; 143 were diagnosed in rural areas and 554 in urban areas. In the first 3 months after diagnosis 88% of urban vs. 91% of rural residents with a new HIV diagnosis were linked to care. By 6 months 89% of urban vs. 92% of rural residents were linked to care. At one year after HIV diagnosis 91% of urban vs. 92% of rural residents were linked to care (Figure 6)

Discussion

The current study is the first to report the HIV cascade of care in SC and the first to provide a rural-urban comparison.

Using standard metrics the SC data presented compare favorably to national data.

Although previous studies using the same database showed that rural residents with HIV/AIDS living in SC were more likely to progress to AIDS (CD4 count <200) within a year of diagnosis, the standard HIV cascade of care model approach was not able to identify an obvious cause for this disparity.

PLWHIV who could not be categorized into rural or urban using any of the definitions fared worse along the HIV cascade of care. However, according to the OMB classification which defines rural-urban at the county level (>99% of PLWHA had a rural-urban distinction), there still was no difference between rural and urban populations.

Conclusion

The SC rural-urban HIV cascade shows several areas where SC has performed above average with respect to HIV care, but also reveals areas for improvement. Although significant healthcare disparities still exist between rural and urban residents, there were no major differences between rural and urban residents at the various stages of engagement in HIV care using the HIV continuum of care model.