Background

- Georgia is an Eastern European nation formerly part of the Soviet Union.
- A total of 3,225 cases of adult HIV infection were reported since the beginning of the epidemic in 1989.
- 75% of HIV-infected adult individuals died.
- Similar to other Eastern European countries, the HIV epidemic in Georgia had been driven by injection drug use (IDU).

Since 2004, through support from the Global Fund, Georgia became the first country among the newly independent states of Eastern Europe to achieve universal access to ART.

In 2011, Georgia started phased implementation of 2010 WHO ART guidelines to start ART at CD4 count 350, which was completed in 2012.

The objectives of the present analysis were:
- To assess the spectrum of engagement in HIV care in Georgia.
- To identify gaps in the continuum of care that impede realization of treatment as prevention concept.
- To estimate the number of people living with HIV.
- To determine patient-level features driving differential engagement and viral suppression.

Methods

- **Population**: The analysis included all adult (age ≥18 years) HIV patients diagnosed in Georgia from 1989 through June 30, 2012.
- **Data source**: Data were extracted from the National HIV/AIDS Database, which includes information on all reported cases of HIV infection, including demographic, epidemiological, clinical and laboratory data.
- **Database censored on October 1, 2012**.
- **Spectrum/EPP software** was used to estimate the number of people living with HIV.

- **Definitions**:
  - HIV diagnosed was defined as positive result from a screening test for HIV antibodies confirmed by a positive Western blot or nucleic acid-based test.
  - Linkage was defined as at least one CD4 cell count measurement after HIV diagnosis.
  - Retention was defined as at least one CD4 cell count measurement within 12 months prior to date of censoring.
  - Eligible for ART was defined as CD4 cell count <350 cells/mm³ or presence of AIDS-defining illness.
  - ART was defined as combination of at least three antiretroviral drugs prescribed solely for the treatment of HIV infection.
  - Viral suppression was defined as plasma HIV RNA level <400 copies/ml.

Results

**Comparison of Engagement by Sex**

- In multivariable analysis, failure to link to care was associated with history of IDU (RR: 2.16, 95% CI: 1.71-2.72).
- Factors associated with attrition from care included history of IDU (RR: 2.67), and baseline CD4 count greater than 350 cells/ml (RR: 2.16, 95% CI: 1.71-2.72).

**Factors Associated with Failure to Link to Care**

- Age <30 vs. ≥30 years: RR (95% CI) p value
  - Men vs. women: 1.16 (1.06-1.26) 0.01
  - IDU vs. heterosexual contact: 1.44 (1.01-1.97) 0.007
  - MSM/Other vs. heterosexual contact: 1.72 (1.74-2.51) 0.50

**Factors Associated with Attrition from Care**

- Age <30 vs. ≥30 years: RR (95% CI) p value
  - Men vs. women: 1.06 (0.73-1.53) 0.77
  - IDU vs. heterosexual contact: 1.44 (1.03-2.01) 0.03
  - MSM/Other vs. heterosexual contact: 1.27 (0.77-2.10) 0.35

- HIV diagnosis before universal ART: 2.09 (1.63-2.67) <0.0001
- CD4 count >350 vs. <350 cells/ml: 2.16 (1.71-2.72) <0.0001

Discussion

- Majority of diagnosed HIV patients remain in care.
- Major gap is in the percentage undiagnosed (48% of estimated number of people living with HIV).
- The large number of HIV-infected individuals who remain undiagnosed are likely contributing to the majority of new HIV infections.
- IDUs are less likely to engage and retain in care, and achieve viral suppression.
- Earlier initiation of ART may improve retention.

Conclusion

- The cascade of care after HIV diagnosis holds the promise of realizing the concept of "Treatment as prevention" in Georgia.
- Reduction in the number of HIV-infected persons unaware of their infection is critical to achieve maximum individual and public health benefits of ART.

Acknowledgement

This analysis was supported in part by the Global Fund program 7GEO-H-GPIC, subcontract # 09/641/SR-VI and NIH/FIC programs (Emory AIDS International Training and Research Program award # D43TW01042 and New York State International Training and Research Program award # D43TW00233).