Introduction
Retention in care is an essential component of achieving the third “90” of the UNAIDS “90-90-90” HIV treatment targets—i.e., patients who disengage from care have an increased risk of poor health outcomes, transmitting HIV to others, and developing drug resistance, thereby undermining overall program impact and the public health goal of ending the HIV epidemic.

Site: Khayelitsha township, Cape Town, South Africa (population ~500,000). Data were used from all 15 public sector clinics: three provincially run and 12 run by the City of Cape Town. More than 50,000 patients have received ART here since 2001, and the current patients on ART in Khayelitsha make up 17.5% of the total number of patients on ART in the Western Cape Province.

Methods
We conducted a retrospective cohort study of all patients ≤10 years of age who visited one of the 13 Khayelitsha ART clinics from 1 Jan 2013 – 31 Dec 2014 regardless of the date of the first ART clinic visit. The database was closed on 30 June 2015 to ascertain this outcome for all patients. The database was imputed to account for missing data, which necessitated dropping particular variables and performing a multiple imputation analysis. This is somewhat mitigated by the large size of the dataset collection of data. The multiple imputation analysis was performed using the multivariable Cox proportional hazards model.

Results

Figure 1. Cohort selection

Figure 2. Cumulative incidence (competing risk analysis) of disengagement, transfer (including silent transfers), and mortality, as estimated by a flexible parametric survival model based on time to disengagement from ART start (as early as 2001) during the two-year window of analysis (Analysis 1)

Figure 3. Initial outcomes for patients who disengaged, until 30 June 2015 (Analysis 2)

Table 1. Patient characteristics

Table 2. Multivariable Cox proportional hazards model for disengagement, with multiple imputation analysis (Analysis 1)

Table 3. Cumulative incidence (competing risk analysis) of disengagement, transfer (including silent transfers), and mortality (as estimated by a flexible parametric survival model) for patients who disengaged before 30 June 2015 (Analysis 2)

Table 4. Hazard ratios and corresponding (95% confidence interval) for key factors associated with disengagement (Analysis 2)

Figure 4. Map of Western Cape Province indicating clinics where silence transfers and patients who disengaged returned to care until 30 June 2015

Acknowledgments
We would like to acknowledge Michael Schomaker at UCT, who was instrumental in completing the multiple imputation analysis.

Key Findings
Almost one quarter (22.6%) of patients disengaged from ART care at least once from 2013-2014, and an additional 9.7% were “silent transfers” (Table 1). Cumulative incidence of disengagement from care was 25.1% by five years on ART and 37.7% by ten years on ART estimated from time contributed in the study window (Figure 2).

Limitations
We included only patients from 2013-2014 which introduced a survival bias, as those who died or disengaged prior to 2013 were not included. We had a very short period for follow-up, and our results reflect only short-term mortality. Finally, we recognize the non-uniform collection of data, which accidental dropping particular variables and performing a multiple imputation analysis. This is somewhat mitigated by the large size of the dataset and length of the analysis.

Conclusions and Next Steps
Although the majority of the large proportion of patients who disengaged either subsequently returned to care or remained alive after hospitalization, a challenge to meeting the 90-90-90 HIV treatment targets is developing, testing, and implementing program designs to target mobile populations and retain them in lifelong care. This should be guided by risk factors for disengagement observed in this and other studies.

References

Abstract #990

Contemporary Disengagement from Antiretroviral Therapy in Khayelitsha, South Africa
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1Note: “Alive as of 30 June 2015” refers to patients who had valid national identification numbers but were not found in care anywhere in the Western Cape nor were they found to be dead. Therefore, “alive” is the only outcome we could ascertain.

*Percentages reflect proportions of patients with complete data.

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