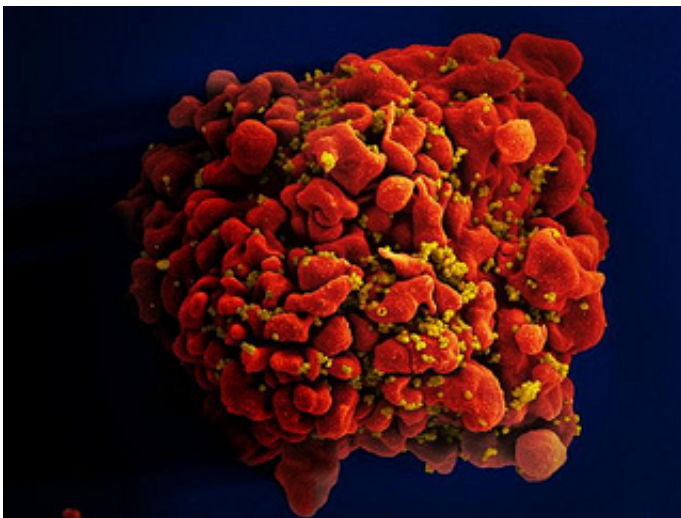


## After two years on antiretroviral therapy, survival in South African patients meets rates from North America

September 9 2014

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Scanning electron micrograph of an HIV-infected H9 T cell. Credit: NIAID

Provided that therapy is started promptly, South Africans with HIV have chances of remaining alive beyond 2 years on antiretroviral therapy (ART) that are comparable to those of North American patients, according to new research in *PLOS Medicine* by Andrew Boulle of the University of Cape Town and colleagues.

The researchers compared survival data from 4 cohorts in South Africa (30,467 adults), 6 in North America (7,160 adults), and 9 in Europe (29,727 adults) in which individuals were followed for up to 4 years

after starting ART. After correcting for under-ascertainment of [mortality](#) in patients who were lost to cohort follow up in South Africa through linkage to a population register, the researchers found that South African cohorts had higher mortality (9.7%, 95% confidence interval [CI]: 9.2%, 0.1%) than North American (4.6%, 95% CI: 4.0%, 0.1%) or European (2.0%, 95% CI: 1.8%–2.2%) cohorts after one year on treatment, possibly because the immune systems of South African patients had sustained more HIV-induced damage, as evidenced by lower CD4 T-cell counts, by the time patients started treatment.

However, between 2 and 4 years on ART, mortality rates in North America were comparable to or higher than those for South Africa. After statistical adjustment for differences in baseline characteristics such as gender and stage of HIV disease, the researchers estimated mortality rate ratios to be 0.46 (95% confidence interval [CI] 0.37.58) comparing Europe to South Africa, and 1.62 (95% CI 1.27.05) comparing North America to South Africa between 24 and 48 months on ART.

The authors note that factors affecting survival on ART differ between settings: "for example [hepatitis C] infection may impact later mortality in the North America cohorts in this study," while in South Africa "those accessing care may have been exceptionally motivated citizens, especially in the early years of the programs when treatment availability was more limited."

In an accompanying Perspective, Agnes Binagwaho of the Ministry of Health of Rwanda and colleagues, who were not involved in the research, discuss the implications of the study's results for people with HIV in both high- and low-income countries. The Perspective authors point out that "disparities of access and outcome that are both regional and intensely local in nature warrant a substantial increase in attention in each of the settings studied."

**More information:** Boulle A, Schomaker M, May MT, Hogg RS, Shepherd BE, et al. (2014) Mortality in Patients with HIV-1 Infection Starting Antiretroviral Therapy in South Africa, Europe, or North America: A Collaborative Analysis of Prospective Studies. *PLoS Med* 11(9): e1001718. [DOI: 10.1371/journal.pmed.1001718](https://doi.org/10.1371/journal.pmed.1001718)

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