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INYUVESI YAKWAZULU-NATALI

NATIONAL HEALTH LABORATORY SERVICE

Surveillance of ARV resistance in KwaZulu-Natal

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(Clinical Virologist)

AWACC
28th – 30th October 2026

Outline of Talk

Part 1:

- ARV resistance among children and adolescents in KZN
- Public-sector healthcare facilities
- 2018-2022

Part 2:

- ARV resistance among all patients in KZN
- Public-sector healthcare facilities
- 2025-2026

Research aims and objectives

- Assess the trends and geographic distribution of HIVDR in KZN among children and adolescents failing ART.
- Characterise drug class mutation patterns among children and adolescents failing ART, prior to and during the early phase of dolutegravir (DTG) rollout in South Africa.
- Use database knowledge to advise on the use of health resources for HIV-1 prevention and treatment services.



Kiepiela P, Manasa J, Moosa MY, et al. HIV drug resistance patterns at the epicentre of the HIV-1 epidemic in Kwazulu-Natal, South Africa 2003-2013. *J AIDS Clin Res*. 2014;5(5):299

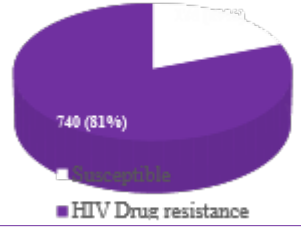
Methods

HIVDR data were obtained from the National Health Laboratory Service Central Data Warehouse, for the period January 2018 - June 2022, for children and adolescents (0-17 years) with virological failure.



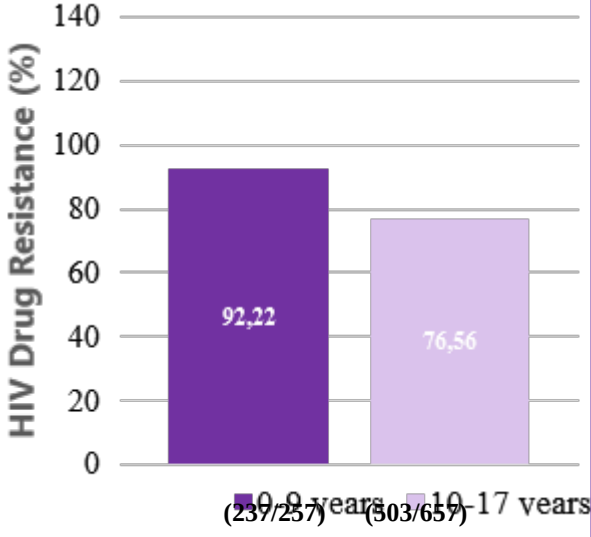
Results

Proportion of HIV-1 drug resistance (n=914)



2 (0.2%)

HIV-1 drug resistance by age category



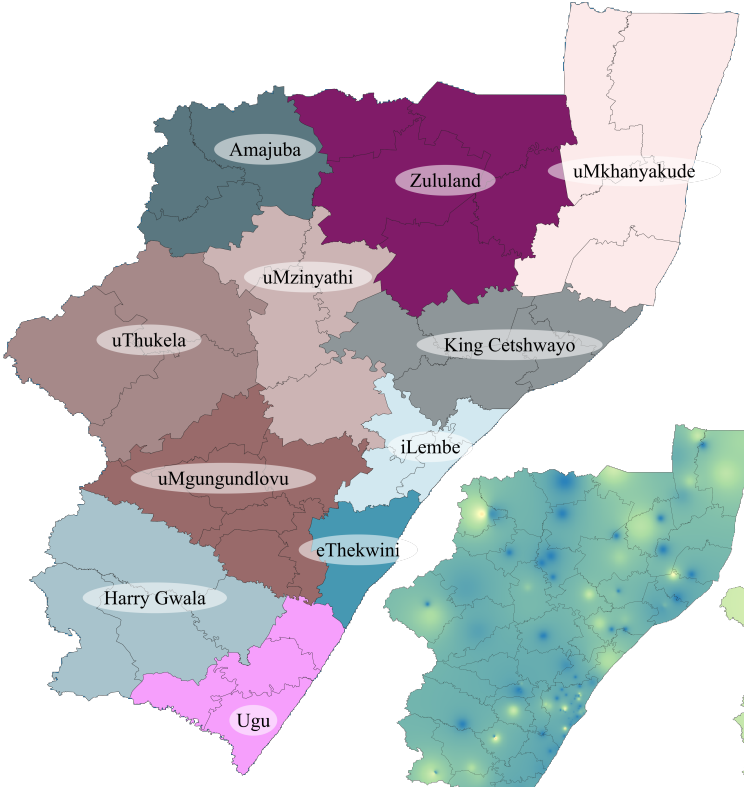
(237/257) (503/657)

(OR = 3.63, 95% CI: 2.22-5.93, p<0.001)

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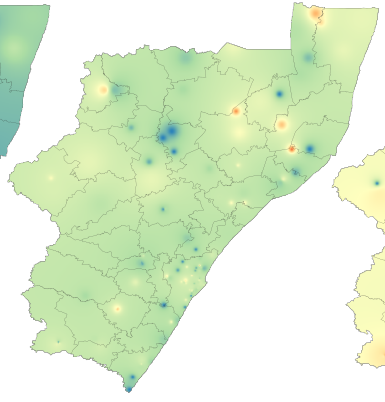
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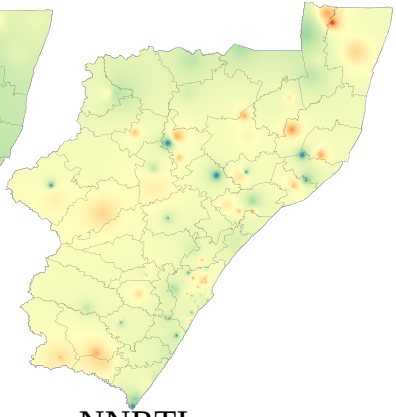
Level of drug susceptibility

- Susceptible
- Potential low-level resistance
- Low-level resistance
- Intermediate resistance
- High-level resistance

PI



NRTI



NNRTI

Basemap of KZN province was republished under a CC BY license with permission obtained from Carto Builder user Lilishia Gounder, original copyright 2024. Available at: https://pinea.app.carto.com/map/4d4c56c1-f82d-4409-b190-ea9ced309005

Key Messages

- By integrating routine HIV-1 GRT records with GIS analysis, we found that HIVDR levels remain high among children in KZN, South Africa.
- More resistance seen in younger (<10 years) children, need priority care.
- Strengthen HIV-1 GRT services for children with virological failure, especially in northern KZN where there is a higher burden of high-level resistance.
- Regular monitoring of HIVDR among ART-experienced children is essential as children continue to transition to DTG-based ART.
- Use of geospatial analysis to inform data-driven public health decision-making.

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communications medicine

Article | Open access | Published: 07 July 2026

Geospatial analysis reveals similar HIV-1 drug resistance patterns among antiretroviral therapy-experienced children and adolescents (0-17 years) of South Africa

Lilishia Gounder, Moherndran Archary, Aabida Khan, Kerusha Govender, Raveen Parboosing, Kogieleum Naidoo & Benjamin Chimukangara

Communications Medicine (2026) | Cite this article

HIVDR in KZN 2025-2026[08]

Genotypic Resistance Tests (GRTs) processed: N=389

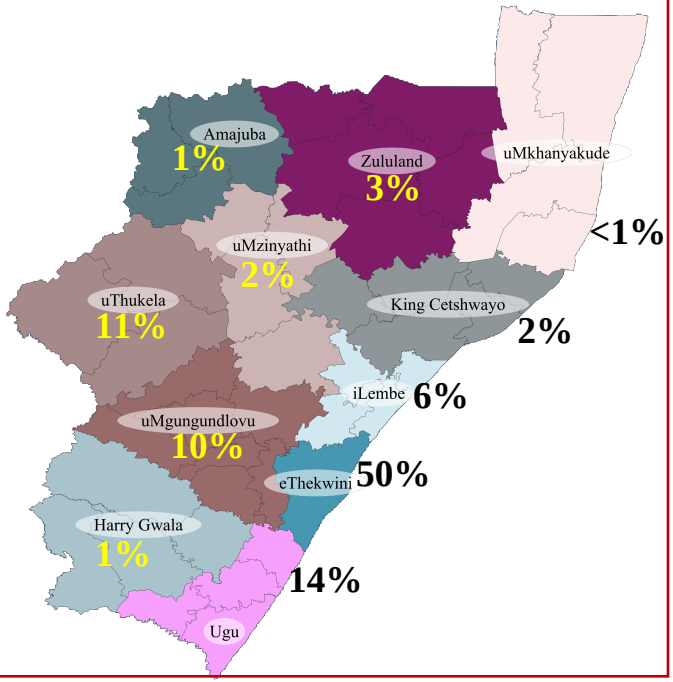
2025	2026
n=254 GRTs	n=135 GRTs
Average age: 34 years	Average age: 37 years
Female: 171	Female: 92
DTG-based ART: 196	DTG-based ART: 102
PHC Facilities: 54	PHC Facilities: 37

HIVDR in KZN 2025-2026[08]

Genotypic Resistance Tests (GRTs) processed: N=389

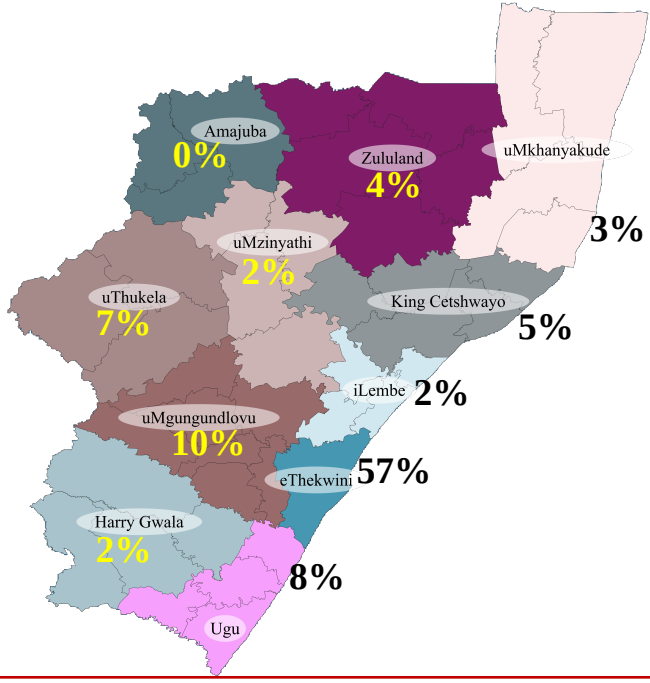
2025: n=254 GRTs

Jan-Aug 168/389 (43%)



2026: n=135 GRTs

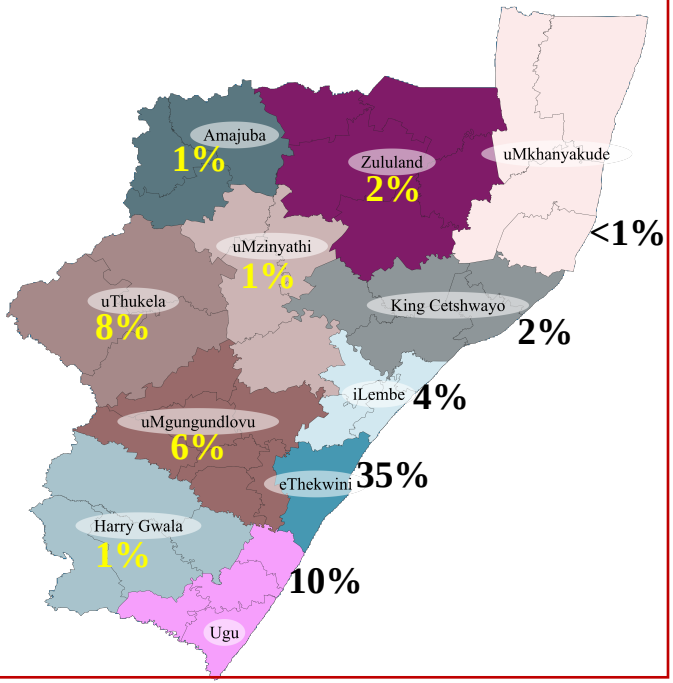
Jan-Aug 135/389 (34%)



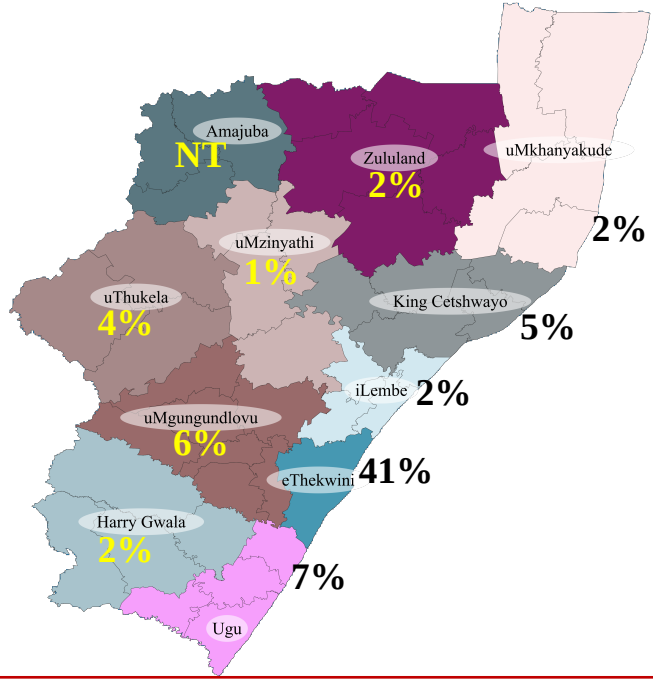
HIVDR in KZN 2025-2026[08]

GRTs with resistance detected: 279/389 (72%)

2025: 179/254 (71%) with resistance detected



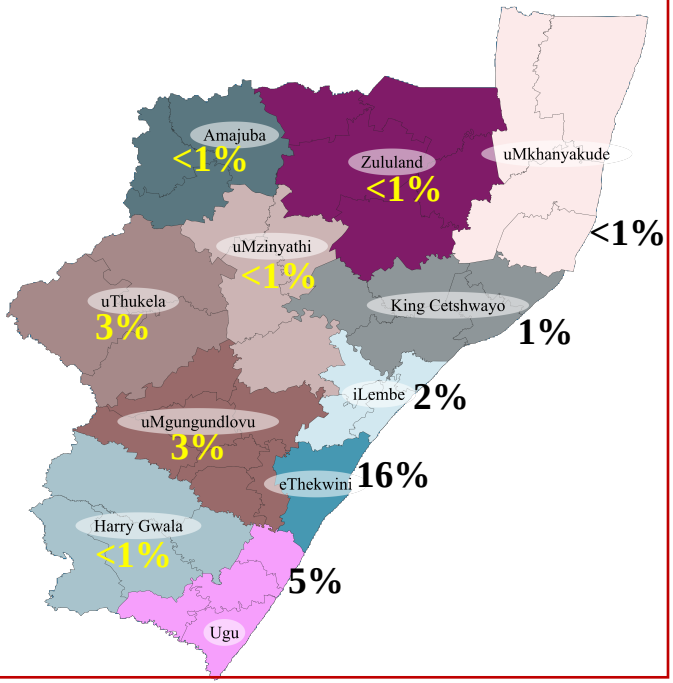
2026: 100/135 (74%) with resistance detected



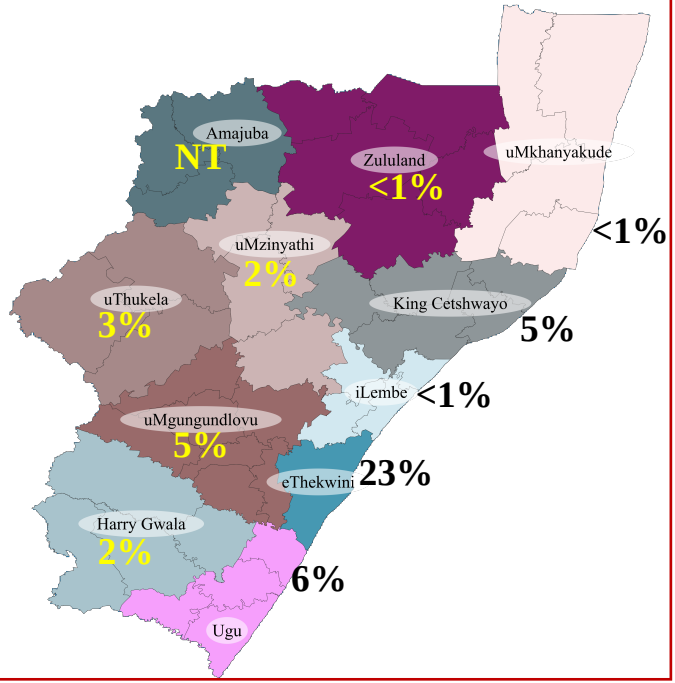
HIVDR in KZN 2025-2026

GRTs with INSTI resistance detected: 142/370 (38%)

2025: 79/238 (33%) with INSTI resistance detected



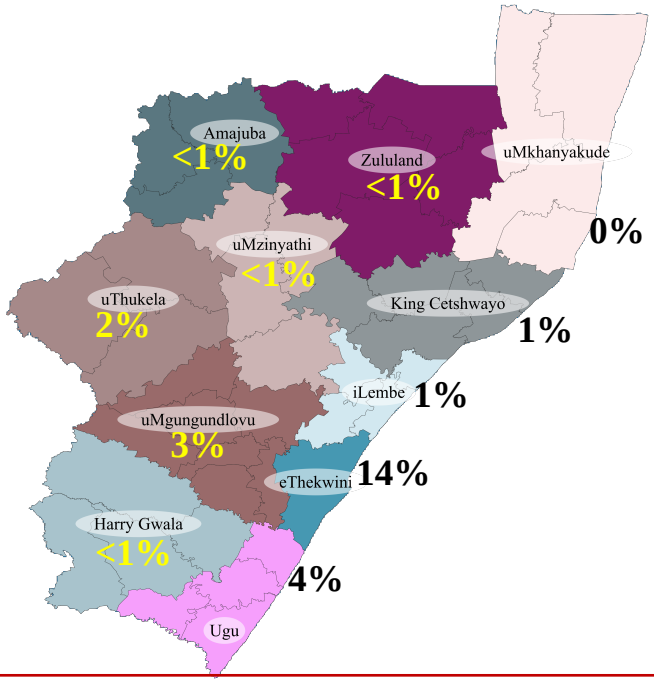
2026: 63/132 (48%) with INSTI resistance detected



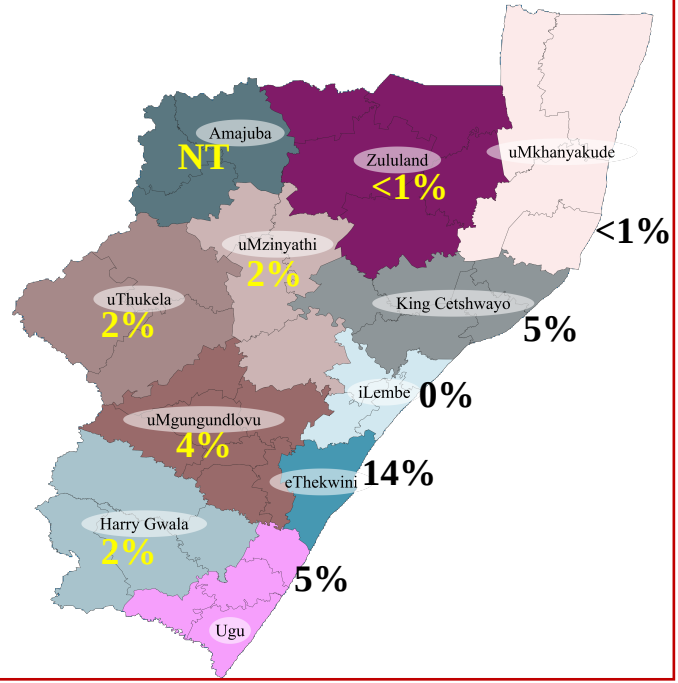
HIVDR in KZN 2025-2026[08]

GRTs with DTG resistance detected: 117/370 (32%)

2025: 69/238 (29%) with DTG resistance detected



2026: 48/132 (36%) with DTG resistance detected



HIVDR in KZN 2025-2026 08

Key Messages

- ARV surveillance needs to be strengthened, even more so 6 years post-DTG rollout in South Africa.
- HIVDR test requests have reduced by 9% in 2026 – no testing does NOT mean no resistance.
- Not all districts in KZN are testing – HIVDR undiagnosed, grows.
- HIVDR INSTI testing is available. Virology advisory services are available. If healthcare worker suspects HIVDR in an adherent patient with persistent trends of low-level viraemia (~500-999), contact Department of Virology to discuss HIVDR testing.

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