

Adoption status is not associated with long-term immunological and virological outcomes in perinatally HIV-infected children in the Netherlands

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Conclusions

- Long-term virological and immunological outcomes suggest to be independent of adoption status and geographical origin in perinatally HIV-infected children (PHIV) in the Netherlands (NL).
- For PHIV who entered care between 2007 and 2017, under-18 mortality was zero and CDC-rate was low.
- Ritonavir-boosted PI-based regimens were most commonly prescribed in these children.

Background

- As a result of successful prevention of mother-to-child transmission of HIV, the demographics of the population of PHIV has changed over the last decade.
- Currently, the majority of PHIV children living in NL were born outside NL, and were either adopted by Dutch adoptive parents or entered NL as migrants together with their biological parents.
- Whether the demographic change comes together with a change in long-term outcomes remains unknown.

Aims of this study:

- 1) To provide an overview of the demographics, treatment characteristics and long-term outcomes of HIV-1 infected PHIV in NL
- 2) To specifically investigate whether outcomes differ by children's adoption status.

Methods I

We used data from the AIDS Therapy Evaluation in the Netherlands (ATHENA) cohort.

We included data since 2007 in view of a sharp increase in the number of adopted HIV-1 infected children since that year. We used data from participants until eighteen years of age, loss of follow-up, death or database closure on 31st December 2017.

Outcomes: all-cause mortality, ART prescription, Centers for Disease Control and Prevention (CDC)-defined opportunistic events, suppressed plasma viraemia (HIV-RNA viral load <200c/mL) and CD4+T-cell Z-score.

Methods II

We categorized PHIV children according to their country of birth and adoption status into the following groups: 1) adopted and born outside NL, 2) non-adopted and born in NL, and 3) non-adopted and born outside NL..

We investigated trends in ART prescriptions among all PHIV children by using July 1st as reference date for each year between 2007 and 2017.

We investigated opportunistic events, virological and immunological outcomes in PHIV children who had an ART prescription for a minimum of one year and who had at least had six months of follow-up.

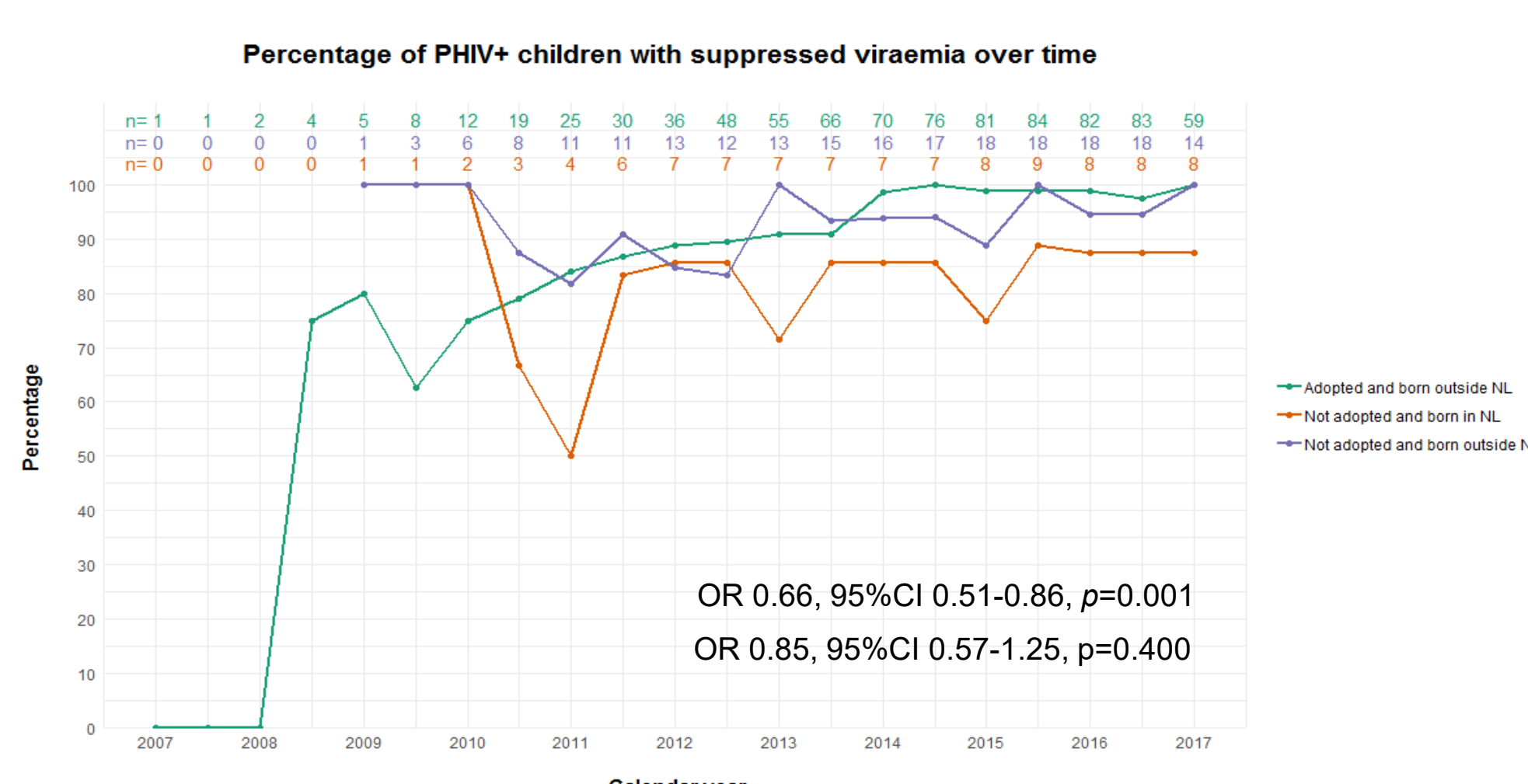
We compared the proportion with suppressed plasma viraemia and CD4+T-cell count over time between groups using generalized estimating equations and linear mixed effects models

Patient characteristics

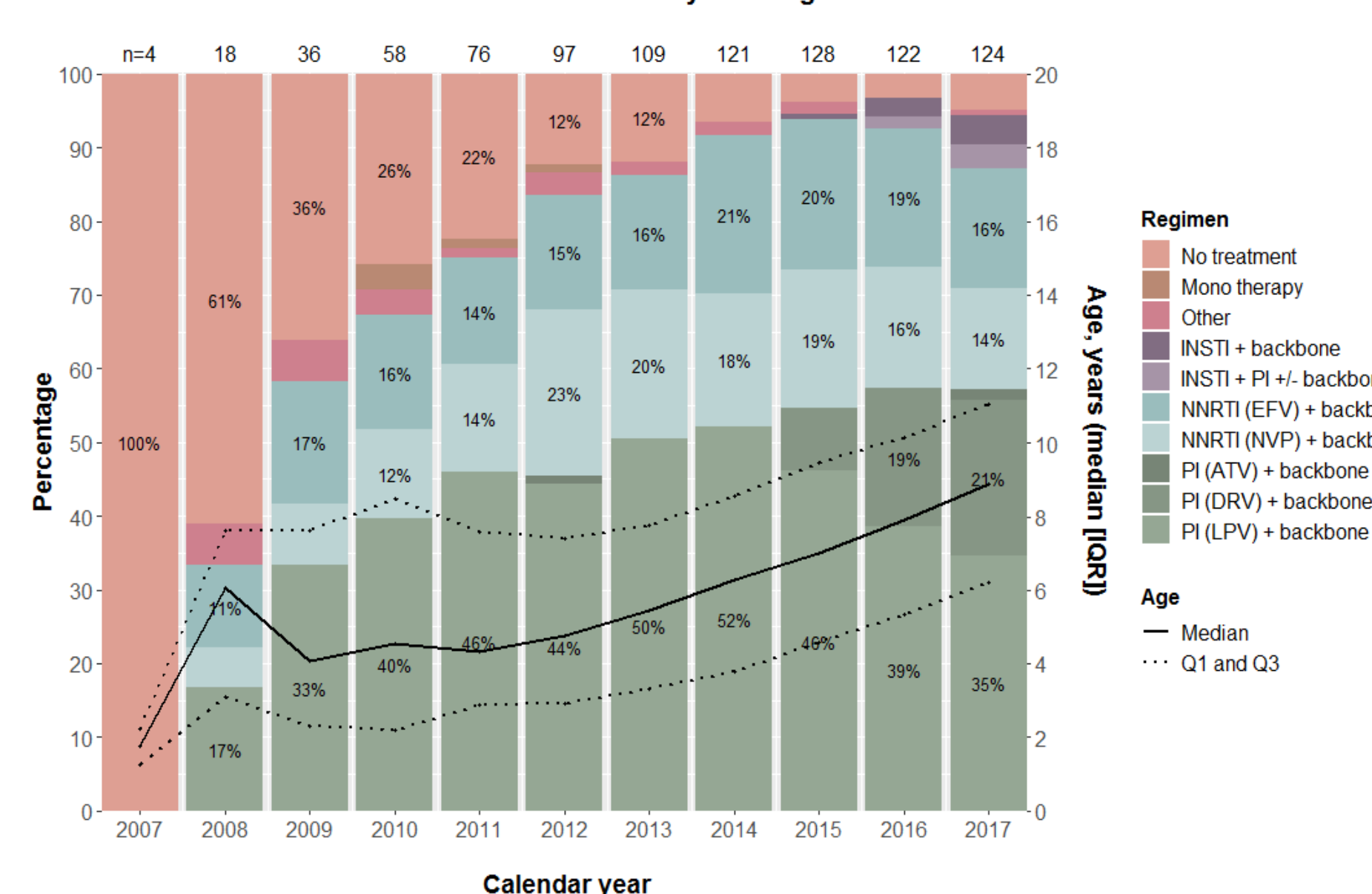
We included **148 children**. Mean follow-up time 5.6 years (SD 2.6), for a total of 827.5 person years. **106 children (72%)** had been adopted by Dutch parents, and had been born outside NL. **10 children (6%)** were non-adopted and born in NL and **32 children (22%)** were non-adopted and born outside NL.

Non-adopted children born outside NL received HIV diagnosis at **median of 5.8 years** (IQR 2.7-8.5), compared to 0.4 (IQR 0.1-1.7) and 0.3 (0.1-1.6) in adopted and non-adopted born in NL, respectively.

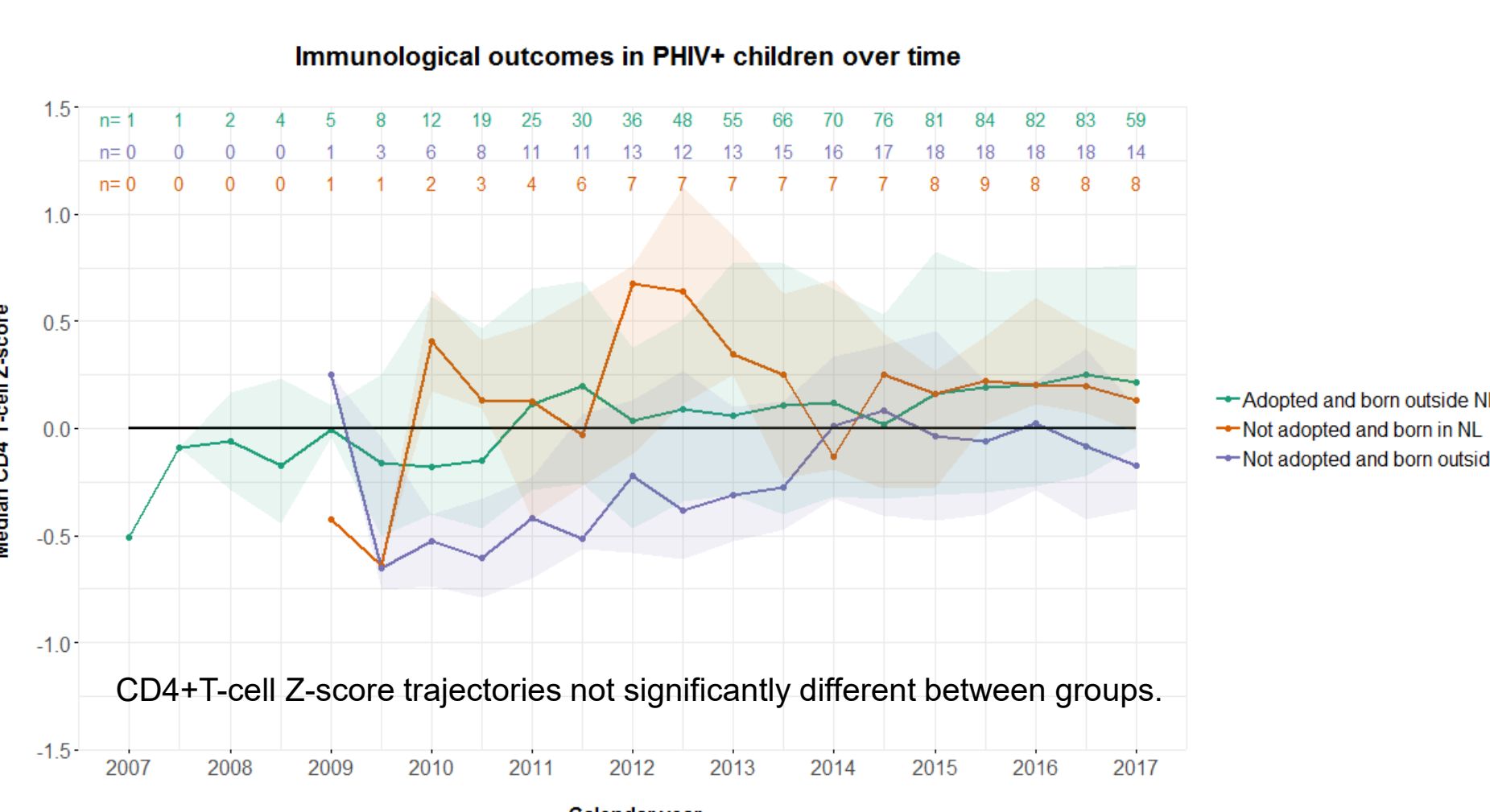
Socioeconomic status was higher in those who had been adopted and were born outside NL compared to both non-adopted groups.



ART in PHIV+ children in the Netherlands newly entering care since 2007



Antiretroviral therapy use and composition in perinatally HIV-infected children (PHIV) in the Netherlands per calendar year. Figure shows data of PHIV children who entered HIV care since 2007. Dual axis chart shows 1) the percentage of children on ART and using a particular regimen (left y-axis) represented by different colored stacked bars, and 2) the median age (right y-axis, solid black line) and interquartile range (dotted black lines) of the cohort of PHIV children in care in each calendar year. The number of children in care in each calendar year are provided on top of each bar. 'Mono' represents NNRTI and PI monotherapy. 'Other' represents regimens without a NNRTI backbone (1 NRTI + 1 NNRTI + 1 PI), or NRTI-only regimens (dual or triple NRTI therapy).



CD4+T-cell Z-score among PHIV children in the Netherlands over time. Figure shows the data of PHIV children who entered HIV care since 2007 and who have been prescribed at least one year of antiretroviral therapy (ART). We generated Z-scores out of absolute CD4+T-cell counts using age-related reference values. Different groups of geographical origin and adoption status are represented by green (adopted and born outside the Netherlands (NL)), red (not adopted and born in NL), and purple (not adopted and born outside NL). The shaded areas in the corresponding colors represent the interquartile range.

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