



Assessing clinician compliance with national guidelines for pediatric HIV care and treatment in Rwanda

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Abstract

Children infected with HIV in resource-limited settings such as Rwanda do not fare well; it is estimated that, without treatment, more than half of HIV-infected children in sub-Saharan Africa will die before age two. Over the past decade, Rwanda has made great strides in increasing access to antiretroviral therapy (ART), however, obstacles remain, particularly for children, including difficulties with early HIV diagnosis, commencement of a treatment plan, and retaining children in long term care. A retrospective cohort of 932 pediatric patients (<15 years old) who commenced ART between 2007 and 2009 were analyzed for adherence to National HIV Treatment Guidelines, specifically whether standard protocols were followed for: recording weight before and during ART treatment; prescribing Bactrim prophylaxis to all; screening and providing treatment of tuberculosis (TB); meeting eligibility criteria for starting ART; and whether the correct ART regimen was prescribed. 90% compliance with these measures is the minimum expected threshold for providers in the country. While 97.1% of patients had their weight checked at ART start, only 47.5% had their weight checked at every subsequent visit (i.e., 6, 12, 18, and 24 months and the most recent visit). For Bactrim prophylaxis, 94.8% of patients were correctly prescribed medication, but 3.0% did not have documentation. 92% of children were screened for TB at ART initiation. Of those that screened positive, 25.1% were treated for TB and 15.2% did not have any documentation. Overall, only 73.4% of patients met all of the eligibility criteria for starting ART according to the national guidelines. Of those that did not meet the criteria, 79.0% started ART early and 21.0% did not have documentation. Additionally, only 67.0% of ART regimens were correctly prescribed based on national guidelines. Of the patients co-infected with TB, only 53.5% received the correct medication regimen. Although Rwanda has surpassed many other sub-Saharan African countries for scaling up ART, further efforts focused on educating providers about current national protocols will be necessary to obtain the best HIV-related outcomes for the population.

Significance

There are many gaps in knowledge regarding best practices for pediatric HIV care. Firstly, doses for children are often extrapolated from adult doses because data on proper dosing for children is limited.³ Secondly, ART dosing must be constantly re-evaluated at each visit based on the new weight of the growing child. Lastly, scaling up of HIV ART access in resource limited settings has been challenging, and it is unclear if national and international guidelines have been met⁵. Appropriate compliance with national guidelines (>90%) indicates that patients are receiving what the government considers ideal care. Fully understanding how successful Rwanda was with achieving compliance with its national guidelines between 2007-2009 would allow the country to focus on areas that need improvement and provide better care to pediatric patients in the future.

Methods

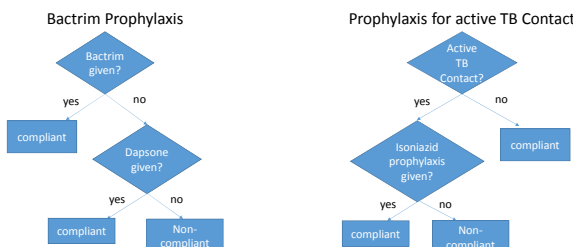
A retrospective cohort of 932 pediatric patients (<15 years old) who commenced ART between 2007 and 2009 were analyzed. Data analysis included Boolean logic and if-then statements to determine the proportion of each metric that met the standard national guidelines. Rwanda's 2007 national guidelines included:

- Weight must be recorded at every clinical visit
- Bactrim prophylaxis must be given for every child. If Bactrim is not given, Dapsone is an alternative.
- All patients must be screened for TB
 - If screened positive, there must be further documentation (options: treated for TB, TB infection not suspected, or follow-up)
 - If at the start of ART, the child had an active TB contact, then isoniazid prophylaxis must be given
- May start ART initiation if:
 - World Health Organization (WHO) Stage III or IV
 - Age < 12 months: CD4 < 25% or < 1500 cells/mm³
 - 12 months ≤ Age < 36 months: CD4 < 20% or < 750 cells/mm³
 - 36 months ≤ Age < 60 months: CD4 < 15% or < 350 cells/mm³
 - 60 ≤ Age: CD4 < 15% or < 200 cells/mm³
 - If there is no documentation, then guidelines were automatically not met
- ART Regimen
 - First line ART: 2 nucleoside reverse transcriptase inhibitors (NRTI) and 1 non-nucleoside reverse transcriptase (NNRTI)
 - Different medication regimens for a child co-infected with TB (weight-dependent)

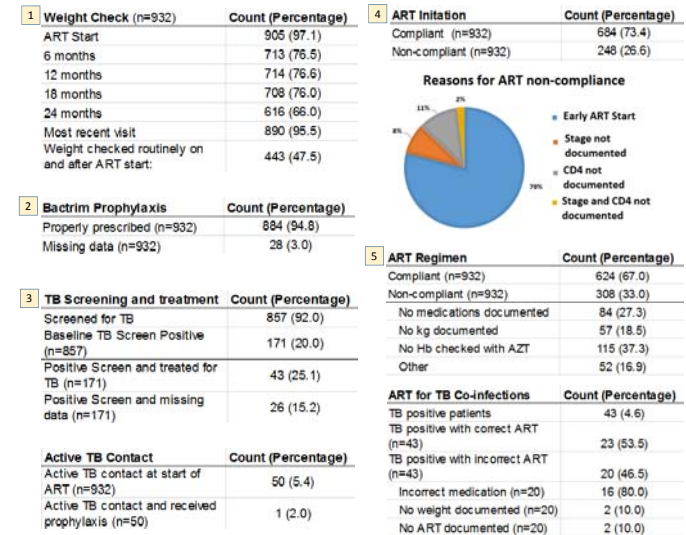
TB negative	
D4T + 3TC + NVP	AZT + 3TC + NVP (if hemoglobin > 8)
TB positive	
< 10 kgs	≥ 10 kgs
(AZT or D4T) + 3TC + (ABC or NVP x 130%)	2NRTI + EFV

Abbreviations		
3TC	Lamivudine	NRTI
ABC	Abacavir	NRTI
AZT	Zidovudine	NRTI
D4T	Stavudine	NRTI
EFV	Efavirenz	NNRTI
NVP	Nevirapine	NNRTI

Example Decision Trees:



Results



Discussion

Over 90% of patients received guideline-compliant care for most parameters, including weight check at ART initiation, Bactrim prophylaxis, and screening for TB. When guidelines became more complex, such as ART initiation or ART regimen, compliance decreased significantly. In some instances, however, the deviance from recommendations would seem to benefit the patient; the main reason for ART initiation non-compliance was due to starting the regimen too early. In the future, Rwanda should focus on correctly following national guidelines for ART initiation, ART regimen (especially for patients co-infected with TB) and properly documenting all health information.

References

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