Paediatric HIV diagnosis in non-PMTCT (prevention of mother-to-child transmission) settings: a systematic review

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Introduction
Children with HIV infection may not present to care via prevention of mother-to-child transmission (PMTCT) and most remain undiagnosed. Testing in non-PMTCT settings must be considered. We conducted a systematic review investigating paediatric HIV case-finding in lower and middle-income countries in paediatric inpatients, paediatric outpatients, essential programmes for immunisation (EPI), and nutrition centres.

Methods
We searched PubMed, EMBASE, MSF, Cochrane, Web of Science, and Lilacs for studies reporting on paediatric HIV prevalence in the specified settings published January 2004–September 2014. The primary outcome was HIV prevalence; secondary outcomes were acceptability and feasibility of testing according to health worker uptake, caregiver acceptance, and retention in care. Primary outcomes were age-disaggregated (0-5, >5 to <12 years) and weighted averages determined by country and setting. Selected MSF field programmes were contacted to assess implementation of paediatric HIV testing outside PMTCT.

Results
Of 2890 studies identified, 38 reported primary outcomes and 21 of these secondary outcomes. Most (34) were conducted in sub-Saharan Africa, most commonly Malawi (9) and South Africa (7). The most common setting was paediatric inpatient (26) followed by paediatric outpatient (6), nutrition centres (4), and EPI (3). Overall mean HIV prevalence for under-5s was 19.0% (95%CI 5.3-64.7); prevalence per setting was 18.7% (0.0-64.7) inpatients, 0.8% (0.0-1.8) outpatients, 7.7% (3.0-22.5) nutrition centres, and 3.8% (1.9-9.2) EPI. Acceptance by caregivers (mean 90.9% [range 48.5-100]) was the most commonly reported secondary outcome (13 studies). Four studies reported qualitative data: barriers to retention in care included premature hospital discharge, transport costs, inadequate patient tracking, poor parental understanding of needs of chronically ill children, and weak relationships with community health workers; and one reported that health-worker acceptance necessitated repeated sensitisation activities. MSF implementation of paediatric HIV testing outside of PMTCT will be presented.

Conclusions
Our findings show high rates of paediatric HIV prevalence in key non-PMTCT settings, particularly inpatient locations, and suggests integration of HIV testing in non-PMTCT settings be prioritised. High acceptance rates by caregivers provide additional evidence to pursue this strategy. As most of MSF’s work with paediatric groups occurs outside PMTCT settings, incorporation of early infant diagnosis into alternative settings would be beneficial in MSF programmes. These findings will inform the revision of WHO’s consolidated guidelines on HIV prevention, diagnosis, treatment and care for key populations.