Protocol

Task shifting for delivery of antiretroviral therapy to children: a systematic review

1. Background

Significant progress has been made in the scale up of antiretroviral therapy (ART) in resource-limited settings over the past decade. However, most HIV-infected children below 14 years of age who are eligible for ART are still not being treated and ART coverage in children lags significantly behind adults, at 28 % versus 57 % globally in 2011.

Part of the explanation for insufficient access to ART, for both adults and children, is the lack of qualified and trained health providers able to initiate ART and provide follow up for patients already on ART. For adults, delegation of responsibility for ART initiation and maintenance from clinicians to lesser trained health staff – also known as task shifting – has enabled ART scale up even in some of the most remote areas of sub-Saharan Africa.

Such task shifting is all the more important for paediatric care, where paediatricians and other specialists are even more scarce. While task shifting of ART care in adults has been assessed through several systematic reviews, but the corresponding evidence for children has, to date, not been formally assessed.

2. Methods

2.1. Search strategy
See appendix

2.2. Databases
- MEDLINE via PubMed
- EMBASE
- Current Controlled Trials (www.controlled-trials.com)
- All International AIDS Society conferences
- All Conferences on Retroviruses and Opportunistic Infections

2.3. Restrictions
None

2.4. Inclusions and exclusions
2.4.1. Types of studies
- Randomized and quasi-randomized trials
- Comparative prospective or retrospective cohorts

- Non comparative prospective or retrospective cohorts
- Qualitative studies
- Cost-effectiveness studies

2.4.2. Types of participants

- Children, defined as aged 14≤ years, or otherwise as defined by the studies

2.4.3. Types of interventions

- Initiation or maintenance of antiretroviral therapy by a non-physician (nurse, midwife or medical assistant)
- Maintenance of antiretroviral therapy by a non-physician

2.4.4. Types of comparator

- Initiation or maintenance of antiretroviral therapy by a physician or specialist (eg pediatrician or obstetrician)

2.4.5. Types of outcomes

Primary:

- Mortality
- Loss to follow up

Secondary:

- Virological suppression/failure
- CD4 gain
- New AIDS illness
- Development of resistance mutations
- Time to initiation
- Cost
- Patient/provider satisfaction

2.5. Data synthesis

Point estimates and 95% confidence intervals (95% CI) will be calculated for the frequency of occurrence of different types of outcomes and where appropriate pooled using random effects models. For randomized trials and comparative cohorts, relative risks and 95%CIs will be calculated and data pooled using random-effects methods.

2.6. Heterogeneity

If appropriate and feasible, meta-regression and/or subgroup analyses will be undertaken to determine the potential influence of the following covariates on the primary outcomes of mortality and virological suppression: location, study design, provider, average age, and cohort size.

Annex: Search strategy

	Query
#5	#1 AND #2 AND #3 AND #4
#4	Search **infant[mh] OR infant*[tiab] OR toddler*[tiab] OR child*[tiab] OR child, preschool[mh] OR preschool*[tiab] OR pre-school*[tiab] OR paediatric*[tiab] OR pediatric*[tiab] OR newborn*[tiab] OR neonate*[tiab] OR baby[tiab] OR babies[tiab]**
#3	Search **task* OR task-shifting OR referr* OR referral and consultation[mh] OR role* OR nurse OR midwife**
#2	Search **Antiretroviral Therapy, Highly Active[MeSH] OR Anti-Retroviral Agents[MeSH] OR Antiviral Agents[MeSH:NoExp] OR ((anti) AND (hiv[tw])) OR antiretroviral*[tw] OR ((anti) AND (retroviral*[tw])) OR HAART[tw] OR ((anti) AND (acquired immunodeficiency[tw])) OR ((anti) AND (acquired immuno-deficiency[tw])) OR ((anti) AND (acquired immune-deficiency[tw])) OR ((anti) AND (acquired immun*) AND (deficiency[tw]))**
#1	Search **HIV Infections[MeSH] OR HIV[MeSH] OR hiv[tw] OR hiv-1*[tw] OR hiv-2*[tw] OR hiv1[tw] OR hiv2[tw] OR hiv infect*[tw] OR human immunodeficiency virus[tw] OR human immunedeficiency virus[tw] OR human immuno-deficiency virus[tw] OR human immune-deficiency virus[tw] OR ((human immun*) AND (deficiency virus[tw])) OR acquired immunodeficiency syndrome[tw] OR acquired immunedeficiency syndrome[tw] OR acquired immuno-deficiency syndrome[tw] OR acquired immune-deficiency syndrome[tw] OR ((acquired immun*) AND (deficiency syndrome[tw])) OR "sexually transmitted diseases, viral"[MESH:NoExp]**

Table S1. Qualitative assessment of included studies.

Study	Study design	Adjusted Analysis	Patient level data	Objective outcomes	Published	Comparative
Bolton-Moore et al. 2007	Prospective cohort	-	✓	✓	✓	-
Van Greviensen et al. 2008	Retrospective cohort	-	✓	✓	✓	-
Cohen et al. 2009	Retrospective cohort	-	✓	✓	✓	-
Janseen et al. 2010	Prospective cohort	-	✓	✓	✓	-
Fayorsey et al. 2013	Retrospective cohort	-	-	✓	✓	✓
Nyathi et al. 2013	Retrospective cohort	-	✓	✓	-	-
Patel et al. 2013	Retrospective cohort	-	✓	✓	✓	-
Weigel et al. 2012	Prospective	-	-	✓	✓	✓