

## Assembling an effective paediatric HIV treatment and prevention toolkit

The world has woken up to the importance of antiretroviral treatment and HIV prevention for children and adolescents. There is a clear need to expand access to paediatric treatment and prevention by building clinical delivery mechanisms. But stand-alone clinical services are insufficient: uptake of antiretroviral therapy (ART) and adherence remain suboptimal, and adolescent HIV incidence remains high.

To improve paediatric survival, several psychosocial and economic barriers to treatment and prevention must be overcome. Such barriers include depression and stigma, which inhibit treatment adherence;<sup>1</sup> psychological and community barriers to the prevention of vertical transmission;<sup>2</sup> and severe poverty and child abuse, which are risk factors for transactional sex in adolescent girls.<sup>3</sup>

Until now, we have lacked substantive evidence of effective interventions to overcome these barriers. But the past 18 months have seen a body of new randomised trials and cohort studies that demonstrate the effectiveness of combination approaches.

In 2013–14, new studies showed that addition of care and support interventions to clinical services maximises ART treatment outcomes. A cluster randomised trial<sup>4</sup> in Malawi found that women's support groups reduced perinatal mortality (odds ratio 0.67, 95% CI 0.50–0.88), neonatal mortality (0.59, 0.40–0.86), infant mortality (0.72, 0.56–0.94), and maternal mortality (0.26, 0.10–0.70). In a multicentre cohort study in South Africa,<sup>5,6</sup> psychosocial support reduced paediatric mortality (adjusted hazard ratio 0.39, 95% CI 0.15–1.04), increased virological suppression (odds ratio 1.60, 1.35–1.89), and increased retention in ART services (adjusted hazard ratio 0.57, 0.35–0.94). Also in

South Africa, two randomised trials<sup>7,8</sup> of maternal peer mentoring increased height-for-weight Z-scores of HIV-infected and exposed infants (odds ratios 3.32 and 0.09, respectively). The trials also tested augmentation of clinical prevention of parent-to-child transmission (PPTCT). The first trial improved adherence to infant ART (odds ratio 1.72, 95% CI 1.04–2.86), maternal ART (odds ratio 0.44, 0.26–0.74), and single feeding method after birth (1.72, 1.08–2.75).<sup>7</sup> The second increased exclusive breastfeeding (relative risk 1.92, 1.59–2.33).<sup>8</sup>

New evidence shows that interventions to mitigate socioeconomic adversity have HIV-prevention effects. In 2012, a cluster randomised trial in Malawi<sup>9</sup> showed that cash transfer provision reduced HIV incidence (odds ratio 0.36, 95% CI 0.14–0.91). In 2013, national child-focused government grants in South Africa reduced adolescent girls' transactional sex (0.49, 0.26–0.93) and age-disparate sex (0.29, 0.13–0.67).<sup>10</sup> A propensity-matched study in South Africa and a cluster randomised trial in Kenya in 2014 both showed delayed sexual debut among adolescents receiving grants.<sup>11,12</sup> A further study tested augmentation of grants with social support from parents or teachers: "cash plus care" was more effective than cash alone, reducing HIV-risk behaviour incidence for boys (0.50, 0.31–0.82) and girls (0.55, 0.35–0.85).<sup>13</sup>

The evidence suggests that insufficient programming for psychosocial care and economic support of AIDS-affected children is detrimental to successful treatment and prevention. A strength of our HIV community has been its swift use of new evidence to improve clinical outcomes. To close the treatment gap for children and adolescents, we must be equally swift in using the latest evidence on care and support. Only when effective treatment and prevention are combined with psychosocial care and economic support will we close the gap and progress towards an AIDS-free generation.

We declare that we have no competing interests.

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