

Effects of interventions to improve linkage to care for newly diagnosed HIV positive individuals: an overview of systematic reviews.

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Background: This overview aims to identify the interventions most effective in linking HIV-positive people to appropriate treatment and care, which is a vital step in the HIV care cascade.

Methods: The Cochrane and Campbell Libraries, Pubmed, Cinahl, Scopus and Prospero were searched without any limits on November 2016 to identify systematic reviews (SR) investigating any interventions aimed at improving linkage to HIV care in HIV-positive individuals. Assessment of methodological quality of included SRs (using AMSTAR tool) and data extraction (from SRs and relevant primary studies) was done independently and in duplicate. Data on the proportion of HIV-positive individuals initiating ART (ART initiation rate) and engaging in pre-ART care (pre-ART engagement) was meta-analysed using Revman 5.3. Risk ratio and 95% confidence interval (CI) represent the estimate of effect. GRADE was used to determine the quality of the evidence.

Findings: Our search identified 1444 records. Fourteen RCTs and cluster RCTs (N=31 876) were identified for further interrogation from the seven SRs included in the overview. Moderate quality evidence: point-of-care (POC) CD4 testing compared to standard referral for CD4 testing probably improves antiretroviral (ART) initiation (risk ratio, (RR) 1.39 95%CI: 1.13 to 1.72; 4 studies; N=2716; $I^2 = 70\%$), but probably makes little or no difference on the proportion of HIV-positive individuals engaging in pre-ART care (RR 1.21 95%CI: 0.84 to 1.74; 3 studies;

N=2339; $I^2 = 91\%$). Home-based ART initiation, compared with facility-based ART initiation, probably improves ART initiation (RR 2.97 95%CI: 2.23 to 3.95; N=16 660). While providing additional counselling and support to facilitate linkage to care probably makes little or no difference to ART initiation rate (RR 1.05 95% CI: 0.88 to 1.26; N=3188; $I^2 = 55\%$), it increased the proportion of HIV-positive individuals engaging in pre-ART care (RR 1.19 95% CI: 1.09 to 1.30; N=3093; $I^2 = 80\%$). Task shifting, compared to standard of care, probably slightly increases the proportion of HIV-positive individuals initiating ART (after adjusting for clustering RR 1.24 95% CI: 0.88 to 1.73 N=9252). Low quality evidence: Compared with no incentives, providing incentives in the form of food vouchers to HIV-positive drug users may improve the proportion of HIV-positive individuals initiating ART (RR 1.69 95% CI: 1.02 to 2.79; N=120) or engaging in pre-ART care (RR 1.53 95% CI: 1.17 to 2.00; N=120).

Interpretation: In conclusion, the findings in this overview show that providing POC CD4 testing, with or without additional counselling and support, home-based ART initiation, task shifting of HIV/AIDS care to adequately trained primary care nurses and providing incentives (food vouchers) are promising interventions to improve the linkage of HIV-positive individuals to pre-ART care and ART initiation. Future research needs to focus on the interventions aimed at key populations. More robust study designs need to assess the effect of integration of antenatal and tuberculosis care with HIV services.