Table S1: Assessment of individual studies by outcome.

Study Characteristics				Key Findings (Magnitude of effect (HR[b], OR[c], RR[d], RD[e] & 95% CI[f]) or other description)	Quality of evidence for individual studies			Evidence from Economic Evaluation (e.g., cost-effectiveness	Comments
					External and Internal Validity *(1=Good; 2=Fair; 3=Poor)*		Overall Quality of Evidence Rating* **(1=Strong 2=Medium 3=Weak)*		
Citation	**Study Design (e.g. RCT[a])**	**Study Period, Country**	**No. Parti-cipants**		**Internal Validity** (Bias)	**External Validity** (General-izability)			
Morbidity									
Rates of cervical abnormality by visual inspection with acetic acid (VIA); test performance									

Kuhn et al. 2010[1]	Secondary analysis	January 2000–December 2002 South Africa	956 HIV+ 5596 HIV-	Among HIV+ women randomized to VIA[g] arm, VIA positive =30%. Sensitivity of VIA to detect CIN2+[a] through 36 months: HIV+=63.9%; HIV-=47.8%.	Good	Good	Medium	No	Detection of histologically-confirmed CIN2+[h] through 36 months post-cryotherapy. Participants previously unscreened. Study conducted prior to routine availability of ART[i]. Data from large RCT of safety and efficacy of HPV[j]-based vs. visual inspection with VIA-based "screen-and-treat" approaches vs. delayed control group.

Firnhaber et al. 2013[2]	Cross-sectional	November 2009–August 2011 South Africa	1193 HIV+	VIA positive=45%. Sensitivity: VIA=65.4% (nurse interpretation); 76% (with physician quality assurance review); Papanicolaou (Pap) smear=75.8%. Specificity: VIA=68.5%; Pap smear=83.4%. VIA sensitivity similar but specificity lower among women with CD4 counts ≤200 cells/μL versus >350 cells/μL.	Good	Good	Medium	No	Comparison of test performance of three screening methods for detection of histologically-confirmed CIN2+. 93% on cART[k], of whom 83% with HIV viral load ≤400 copies/ml.

Sahasra-buddhe et al. 2012[3]	Cross-sectional	September 2006–February 2007 India	303 HIV+	VIA positive=27.7%. Sensitivity: VIA=80%. Specificity: VIA=82.6%. VIA higher sensitivity than cytology (Pap smear) at all three cytology positivity cutoffs (ASCUS[l], LSIL[m], HSIL[n]), although statistically significant only for cytology at HSIL or greater cutoff. VIA significantly higher specificity than cytology at ASCUS or greater and LSIL or greater cutoffs; however cytology significantly higher specificity than VIA at HSIL+ cutoff.	Fair	Good	Medium	No	Comparison of test performance for VIA and cytology at all three cytology positivity cutoffs (ASCUS, LSIL, HSIL) at the CIN2+ threshold. Detection of CIN2+ by colposcopically- and/or histologically-confirmed diagnosis. Subjects previously unscreened. 26% on ART.

Balandya et al. 2011[4]	Cross-sectional	November 2009–February 2010 Tanzania	316 HIV+	VIA positive=42.4%. Agreement between VIA versus cytologic "CIN2+" threshold: Kappa statistic=0.6.	Poor	Poor	Medium	No	Comparison of test performance of VIA with cytologic screening methods. No histopathologic confirmation. 89% on cART.
Akinwun-tan et al. 2008[5]	Cross-sectional	November 2006–March 2007 Nigeria	205 HIV+	VIA positive=22.9% Sensitivity: VIA=76.0%; Pap smear=57.0%. Specificity: VIA=83.0%; Pap smear=95.0%. Agreement between VIA and CIN: Kappa statistic=0.383 (p=0.000).	Poor	Poor	Medium	No	Comparison of test performance of VIA with cytologic screening methods for detection of histopathologically-confirmed CIN. No patient with biopsy with histopathology worse than moderate dysplasia (CIN 2).

Mabeya et al. 2012[6]	Cross-sectional	No dates reported Kenya	150 HIV+	VIA positive =55.3% Sensitivity: VIA=69.6%; Pap smear=52.5%. Specificity: VIA=51.0%; Pap smear=66.3%.	Fair	Fair	Medium	No	Comparison of test performance of VIA with cytologic screening methods for detection of histologically-confirmed CIN2+. "Very few" previously screened with a Pap smear, 67.1% on cART.
Recurrence									

Kuhn et al 2010[1]	Secondary analysis	January 2000–June 2006 South Africa	105 HIV+ 386 HIV- (VIA/ cryo-therapy group)	Recurrence CIN 2+ by 36 months: HIV+=4.8% versus HIV-=2.8% (p=0.43). Reduction of risk of CIN2+ among HIV+ versus unscreened (RR=0.51; 95% CI, 0.20–0.89). Using VIA and cryotherapy "screen and treat" approach, for every 100 HIV+ women screened estimated 7.4 cases CIN2+ prevented.	Good	Good	Medium	No	Systematic sample of RCT (see above description) participants followed up at 12-, 24-, and 36 months post-cryotherapy treatment (included all women with initial screening positive and subset of those screening negative). Endpoint histologically-confirmed CIN2+.

Lima et al. 2009[7]	Prospec-tive cohort, compari-son study	January 1999– May 2004 Brazil	94 HIV+ 107 HIV-	Recurrence of CIN: HIV+=33.0%; HIV-=8.4% ($p<0.01$). Multivariate analysis: Increased recurrence with CD4≤200 versus CD4 >200, (RR 2.9; 95% CI, 1.30-6.43).	Fair	Fair	Medium	No	CIN recurrence (residual or recurrent lesion) after LEEP[o]; mean follow-up 18.5 and 20.2 months, HIV+ and HIV-, respectively. Predominance of CIN1 on original LEEP histology seen in HIV+ versus HIV- group (52.1% versus 21.5%). Independent predictors of recurrence: HIV+ status, glandular involvement, and affected margins on LEEP.

Chirenje et al. 2003[8]	Secondary analysis	April 1997– May 1998 Zimbabwe	109 HIV+ 38 HIV-	Persistent or recurrent disease at 12 months after treatment for CIN2/3 among HIV+ versus HIV- women. Treatment method: Cryotherapy: HIV+=40.5% versus HIV- =15.8% (p = .057). LEEP: HIV+=14% versus HIV- =0% (p = .328).	Fair	Fair	Medium	No	Failure (persistent or recurrent disease) at 12 months after treatment for histologically-confirmed CIN2/3. No information about stage of HIV disease. Study conducted before ART available. Data from 147 (the subset tested for HIV-1) of 400 participants in RCT of cryotherapy versus LEEP study.

Kietpeerakool et al. 2006[9]	Matched case-control	May 1998– June 2004 Thailand	60 HIV+ 60 HIV-	Disease-free rate among HIV+ at 6 and 12 months after LEEP, 97.1% and 88%, respectively.	Fair	Fair	Medium	No	Study undertaken to report post-LEEP complications among HIV+ women (versus HIV- women) but some data on recurrence by 12 months after LEEP for abnormal Pap smear (ASCUS, LSIL, HSIL, SCCA[p], AIS[q]). Data from hospital medical records during study period. HIV+:HIV- matched 1:1 on cervical cytology, age, length of time since treatment. 30% of HIV+ subjects on ART. Follow up information only available on 42% of HIV+ participants at 12 months post-LEEP. No information on disease-free rate among HIV- patients after LEEP.
Complications									

Kuhn et al. 2010[1]	Secondary analysis	January 2000–December 2002 South Africa	252 HIV+ 696 HIV-	Cryotherapy complications minor, except hemorrhage requiring transfusion in one HIV+ woman ~1 week after treatment. Complication rates not different between HIV+ and HIV-.	Good	Good	Medium	No	As above.
Sutthichon et al. 2009[10]	Case series	October 2004– December 2008 Thailand	81 HIV+ 776 HIV-	LEEP complications not different between HIV+ and HIV- women (OR 0.46; 95% CI, 0.19–1.10).	Fair	Fair	Weak	No	Data from hospital LEEP database; consecutive women who underwent primary LEEP for cytology suggesting high-grade cervical dysplasia or cancer during study period.

Woo et al. 2011[11]	Secondary analysis	April 2008– December 2010 Kenya	180 HIV+	2.8% rate of complications after LEEP in HIV+ women, none severe.	Fair	Fair	Medium	No	Data from prospective cohort study to evaluate recurrence after LEEP treatment of CIN2 or 3. Safety, tolerability, and acceptability of LEEP based on questionnaire administered at 4-week visit asking about severity of pain and bleeding symptoms.
Kietpeerakool et al. 2006[9]	Matched case-control	May 1998– June 2004 Thailand	60 HIV+ 60 HIV-	No difference in overall LEEP complication rate between HIV+ and HIV- controls ($p < 0.24$); however, 2 cases cervical stenosis in HIV+ women at 6-months follow-up. No difference in LEEP complications between HIV+ women with and without ART ($p < 0.85$).	Fair	Fair	Medium	No	As above. Overall complication rate analyzed.

Pfaendler et al. 2008[12]	Retro-spective, descript-tive	January 2006– October 2007 Zambia	465 HIV+ 116 HIV- 167 HIV status unknown	Complication rates low in HIV+, HIV-, and HIV-unknown patients.	Fair	Fair	Weak	No	Description of women complications of women who underwent LEEP in population-based secondary prevention program. No analysis comparing difference in complications between HIV+ and HIV- patients.
Programmatic									

Parham et al. 2010[13]	Retro-spective, descript-tive	January 2006– December 2008 Zambia	6572 HIV+	VIA positive 3523 (54%). Of these: Cryotherapy-eligible (n=2061): • 78% treated; • 22% declined or did not return. Referred for evaluation (n=1462): • 25% loss to follow-up prior to evaluation. > 80% screened failed to return for recommended follow up visit, either at 6 months after treatment or 1 year after VIA-negative screening.	Fair	Fair	Medium	No	Description of data from population-based cervical cancer prevention program. 3% previously screened with Pap smear.

Huchko et al. 2011[14]	Retro-spective, descriptive	October 2007– October 2010 Kenya	3642 HIV+	Colposcopy for 531 women (15%) for either positive or unsatisfactory VIA. CIN2/3 was diagnosed and histologically-confirmed in 259 women (7.1%). 243 LEEPs performed. No serious adverse events requiring treatment or referral.	Fair	Fair	Weak	No	Description of data from HIV Care and Treatment clinic setting. Algorithm used VIA, on-site colposcopy/biopsy if VIA positive, on-site LEEP for histologically-confirmed CIN 2/3. 0.1% invasive cervical cancer diagnosed.

[a]	**RCT**	Randomized controlled trial
[b]	**HR**	Hazard ratio
[c]	**OR**	Odds ratio
[d]	**RR**	Relative risk
[e]	**RD**	Relative difference

[f]	**CI**	Confidence interval
[g]	**VIA**	Visual inspection with acetic acid
[h]	**CIN2+**	Cervical intraepithelial neoplasia grade 2 or greater
[i]	**ART**	Antiretroviral therapy
[j]	**HPV**	Human papillomavirus
[k]	**cART**	Combination antiretroviral therapy
[l]	**ASCUS**	Atypical squamous cells of undetermined significance
[m]	**LSIL**	Low-grade squamous intraepithelial lesion
[n]	**HSIL**	High-grade squamous intraepithelial lesion
[o]	**LEEP**	Loop electrosurgical excision procedure
[p]	**SCCA**	Squamous cell carcinoma
[r]	**AIS**	Adenocarcinoma *in situ*

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