

Table 5. Current data and methods to characterize the role of sex work in HIV epidemics

System	Estimate	Approach	Number of generalized HIV epidemics in SSA ² with recent data, of 39 countries (years)	Median values (range)	Concerns/Issues	Sources
HIV burden						
Routine surveillance	HIV prevalence, FSWs	Household Demographic Health Surveys ¹ of adult females	1 (2002-2013)	---	Social desirability bias	UNAIDS Country Reports 2012
		FSW bio-behavioural surveys	23 (2002-2013)	23.1% (7.2-70.7)	Sampling frames often not based on pre-sampling enumeration; adjusting estimate based on sampling design	UNAIDS Country Reports 2012; Systematic reviews
	HIV prevalence, clients	Household Demographic Health Surveys ¹ of adult males	23 (2002-2013)	4.7% (0.43-32.0)	Social desirability bias	UNAIDS Country Reports 2012
Intermittent Surveillance and Research	HIV prevalence, FSWs	Programme or clinic-based, intervention trials; FSW bio-behavioural surveys	21 (2002-2013)	22.8% (0.9-69.8)	Sampling frames often not based on pre-sampling enumeration; adjusting estimate based on sampling design; definition of sex work varies	Systematic reviews[22 44, 81]
	HIV incidence, FSWs	Programme-based cohorts; intervention trials	6 (2002-2013)	2.9 (0.9-7.6) per 100-person years	Selection bias and frailty effect; high attrition (loss to follow-up); missing early period of sex work (25-60% of FSWs already infected with HIV before enrollment in cohorts)	Systematic reviews[44 118]
	HIV prevalence, clients	Client bio-behavioural surveys	8 (2002-2013)	2.9% (0.42-6.8)	All convenience samples	Systematic reviews[44
	HIV incidence, clients	None	None	---	---	Systematic reviews[44
Population at risk (FSW, client population size)						

Intermittent Surveillance and Research	FSW population size; % of adult females engaged in sex work	Several enumeration methods	23 (2002-2013)	1.8% (range, 0.25-11.5%)	Each enumeration approach has pros & cons[70]; estimates from general population surveys subject to social desirability bias (especially those conducted via face-to-face interviews); definition of sex work varies	UNAIDS Guidelines on Enumerating Key Populations; Systematic Reviews[44, 119]
	Client population size; % of adult males engaged in sex work	Household Demographic Health Surveys ¹ or general population surveys of adult males	32 (2002-2013)	3.0% (range, 0.025-19.8%)	Estimates from general population surveys subject to social desirability bias	Systematic reviews[44 120]
	Client population size; % of adult males engaged in sex work	Indirect method by triangulating FSW population size, and FSW/client behavioural survey data	2 (2002-2013)	7.2-30.0%	Requires FSW data and behavioural data on clients	Systematic reviews[44
Examples of HIV risk factors & characteristics of sex work						
Intermittent Surveillance and Research	Duration engaged in sex work	Behavioural surveys & Programme-based cohorts	5 (1987-2011)	FSWs: 5.5 years (range, 0.6,6.0) Clients: 4.6-5.2 years	Cross-sectional and censored data; no incidence of sex work cessation rate data; no re-entry into sex work	Systematic Reviews[121, 122]
	Sexual partnership types and periodicity of sexual acts by partner	Behavioural surveys & Programme-based cohorts			Often doesn't differentiate between regular clients, new clients, and non-paying partners	
	% of FSWs reporting condom-use with last client	Behavioural surveys in major cities	10 (2012)	91% (32-98)	Not part of routine surveillance	UNAIDS Epidemic Update 2013
	Active syphilis prevalence	Bio-behavioral surveys in major cities	10 (2010)	2.4% (0,19.6)	Not part of routine surveillance	UNAIDS Epidemic Update 2011
	Unprotected anal sex (ever)	Behavioural surveys & Programme-based cohorts	7 (1985-2011)	0.0-80.0%	Very little data on frequency of unprotected anal sex	Systematic Review[123]
HIV engagement, prevention, and care continuum						

Routine surveillance	% of FSWs who know where to access HIV testing AND received condoms in last 12 months	Behavioural surveys in major cities	17 (2010-2012)	56.3% (1.5,89.9)	Not indicative of the extent to which FSWs' HIV risk is addressed and reduced; misleading 'coverage' without representative sampling & enumeration	UNAIDS Country Reports 2012
	HIV programmes available to FSWs	Survey of country-offices for HIV control	36 (2010)	---	Not part of routine reporting; no data on uptake of services or FSW coverage	UNAIDS Epidemic Update 2011
Intermittent Surveillance and Research	Community-mobilization	Behavioural Surveys	1 (2014)	aOR 2.39 (1.36-4.02) for increased condom use	Complex study designs needed since benefits are mediated by increased condom use during commercial sex	Systematic Reviews[87]
	Structural interventions	Programme-based cohorts, Mathematical Models	1 (2014)	Avert 17% (1,31) of incident infections in Kenya over 10 years	Effects are mediated over long	Mathematical Model[95]
	HIV testing (tested for HIV in last 1 year and received results), FSWs	Behavioural surveys in major cities; Programme-based registry data	26 (2010-2012)	64.1% (6.5,93.7)	May decline over time as known HIV-infected FSWs no longer in the denominator; selection bias and non-representative sampling	UNAIDS Country Reports 2012[30]
	Duration in sex work when registered in FSW programmes	Behavioural surveys & Programme-based cohorts	11 (1987-2013)	2.6 years (0.7,5.1)	Reflects time to reach FSWs after entering sex work; selection bias and non-representative sampling	Systematic Reviews[124, 125]
	Age when registered in FSW programmes	Behavioural surveys & Programme-based cohorts	8 (1987-2013)	26.8 years (24,31.5)	Reflects time to reach FSWs after entering sex work; selection bias	Systematic Reviews[124, 125]
	ART coverage & HIV care continuum among HIV-infected FSW	Research cohorts & cross-sectional surveys	2 (2002-2013)	ART coverage (among HIV-infected FSWs): 0.4%-47.5% Retention on ART: 90-97%	Restricted to research settings and may not be representative of HIV care continuum among FSW	Systematic Review[105]

Impact of FSW/client intervention on wider community

Research	Condom-based education	Community-randomized control trial	1 (2000-2003)	No significant reduction in HIV incidence in the wider community	HIV incidence in the FSW/client population not measured; unclear scope and coverage of FSW interventions	[126]
	Various interventions	Dynamic mathematical modelling studies	5 (2000-2013)	Range of impact (see Table 3) based on time-horizon and outcome measure	Not all models calibrated to FSW HIV data; no systematic evaluation of the same FSW intervention across settings	Updated systematic review[13, 24, 46]

¹Country-wide, household-based, face-to-face interviews.

²Sub-Saharan Africa (SSA).