Supplementary tables (for online access)

Table S1. Study characteristics (17* studies)

Author, year, location	Study design (year)	Study population (sampling)	N	PPT regimen*	Other interventions	Quality assessment	Included in meta-analysis
Randomised controlled trials							
Kaul, 2004, Kenya (Nairobi)	RCT Individual-randomized 1998-2002	Cohort recruited through outreach, consecutive recruitment	466	AZI 1G + CFX 400mg	Counseling, condoms, SCM, syphilis testing	Block randomized in groups of 50. Intervention provider blinded, but not stated if outcome assessor blinded. High levels of follow-up. Intention to treat analysis.	Yes (RCT)
Cowan, 2005, Zimbabwe (rural)	RCT Individual-randomized Study year not specified	Cohort recruited through outreach, consecutive recruitment	363	AZI 1G + MTZ 2G +/- CPR 500mg one time only	SCM	Allocation concealment: consecutively numbered opaque envelopes, labelled and assembled centrallyaccording to computer-generated random code in blocks of 4. Blinding procedures not reported. Did not report if randomisation led to balanced groups.	No (lacking placebo control, incomplete outcome data)
McKormick, 2007, Bangladesh (Dhaka)	RCT Individual-randomized 2005-6	Clinic-based following outreach to hotels, 'take all'	549	AZI 1G + CFX 400mg + MTZ 2G monthly	Counseling, condoms	Only 45% completed the planned 9 months follow up. No information about blinding or allocation concealment	Yes (in cohort analysis, not RCT, due to lack of placebo control)
Delany 2011 (unpublished) Vickerman 2006, South Africa (Johannesburg)	RCT Cluster-randomised 2000-1	Cohort recruited through outreach to 12 hotels, consecutive recruitment	546	AZI 1G monthly	SCM, syphilis testing, counseling and condoms	Allocation concealment and level of blinding not described. Sub-optimal retention of participants	No (but included in assessment of publication bias for RCT)
Labbé 2011 (unpublished, submitted) Benin and Ghana	RCT Cluster-randomised	Cohort recruited through outreach	Not specified	AZI 1G (months 1,4,7) + CPR (months 2,3,5,6,8,9)	SCM, NG culture, counseling, condom distribution	Insufficient information available to assess study quality	No (insufficient outcome data)

Cross-sectional studies (adjusted for confounding)							
Reza-Paul, 2008, India (Mysore district)	Adjusted cross-sectional 2004, 2006	Population-based sample, probability-based time-location cluster sampling	429 (2004) 425 (2006)	AZI 1G + CFX 400mg every 3-6 months	Peer outreach, condom promotion, SCM, speculum exam, syphilis screening	Study not designed primarily to address review question, systematic sampling done	Yes (cross-sectional)
Ramesh, 2010, India (Karnataka state)	Adjusted cross-sectional 2004, 2009	Population-based sample, probability-based cluster, time location sampling	2312 (2004) 2400 (2009)	AZI 1G + CFX 400mg every 3-6 months	Peer outreach, BCC, condom promotion, SCM, speculum exam, syphilis screening	Study not designed primarily to address review question, systematic sampling done.	Yes (cross-sectional)
Majid, 2010, Indonesia (10 cities)	Adjusted cross-sectional 2007	Population-based sample, probability-based time-location cluster sampling	4324	AZI 1G + CFX 400mg monthly for 3 months	Not reported	Study not designed primarily to address review question, systematic sampling done	Yes (cross-sectional)
Magnani, 2010, Indonesia (10 cities)	Adjusted cross-sectional 2007	Population-based sample within 6 months of PPT intervention, probability-based time-location cluster sampling in 4 cities	3291 (NG) 3316 (CT)	AZI 1G + CFX 400mg monthly for 3 months (18.9% received at least one PPT dose)	Not reported	Study not designed primarily to address review question, systematic sampling done	No (data on association of NG/CT with PPT not disaggregated)
Time series (cohort and serial cross-sectional)							
Holmes, 1996, Philippines (1 site)	Serial cross-sectional 1967	Clinic-based, 'take all'	2640	AMP/PRO or TCN (once)	NG screening (culture)	Authors note inconsistencies in laboratory testing procedures between study sites. For some outcomes only percentage reported, numerator and denominator not provided	Yes (cohort)
Steen, 2000, South Africa (mining area)	Cohort 1996	Cohort recruited through outreach, 'take all'	408	AZI 1G monthly	Outreach, condoms, SCM, syphilis screening	Sub-optimum retention of cohort participants. Survey in client groups increases ability to attribute effects noted to intervention	Yes (cohort)
Behets, 2003, Madagascar (2 cities)	Cohort 1999	Cohort recruited through outreach, 'take all'	980	AZI 1G + CPR 500mg	Condoms, SCM, screening for syphilis and trichomoniaisis	Study not designed primarily to assess review question. Follow-up data available for >90% of women enrolled	Yes (cohort)

Williams, 2003, South Africa (mining area)	Serial cross-sectional 1989, 2000	Small convenience sample	121 (baseline), 93 (follow-up)	AZI 1G monthly	Outreach, condoms, SCM, syphilis screening	Small sample, no systematic sampling, Level of exposure of sampled sex workers to PPT intervention unknown	No (uncertainty due to sampling)
O'Farrell, 2006, Laos (3 sites)	Serial cross-sectional 2004	'Service women' contacted though outreach, 'take all'	442 (baseline) 419 (90 days later)	AZI 1G 3 doses, 1-2 months apart over 3 months)	Not reported	Substantial proportion of study population had not received PPT intervention by study end (90 days)	Yes (cohort)
Wi, 2006, Philippines (1 city)	Serial cross-sectional 2001	Entertainment workers systematic sampling by outreach and clinics	499	AZI 1G one-time	Outreach, condoms, SCM, syphilis screening	High proportion of total sex worker population sampled. Survey in client groups increases ability to attribute effects noted to intervention	Yes (cohort)
Bollen, 2010, Indonesia (2 districts)	Serial cross-sectional 2008-2009	Brothel-based sex workers attending STI clinic, probability-based time-location cluster sampling	364	AZI 1G + CFX 400mg at baseline, 1, 2 and 15 months	SCM, condom promotion and supply	Half the sex workers received only one round of PPT	Yes (cross-sectional)
Bruce, 2011, Papua New Guinea	Cohort 2003-4	Not specified	129	AZI 1G + AMO/PRO/CLA every 3 months	Tinidazole was administered once	Retention 55% at 9 months	Yes (cohort)

One modeling study not included

* AZI=azithromycin; CFZ=cefixime; CPR=ciprofloxacin, MTZ=metronidazole; TCN=tetracycline; AMO/PRO/CLA=amoxacillin/probenecid/clavulanic acid.

Table S2. Principle outcomes (14 published studies included in meta-analyses)

Study	Duration of total follow-up	Percent follow-up (follow-up period in cohort analysis)	Outcome measure	STI prevalence at baseline	STI prevalence at follow-up	Condom use
Randomised controlled trials						
Kaul 2004 (Kenya)	2 years	NA (RCT)	Adjusted risk ratio (incidence)	(PPT / control) NG: 10.0% / 9.3%, CT: 9.6% / 9.0%; TP: 4.4% / 3.8%	Not reported	Condom use with all clients increased from <20% to >50%
Delany (unpublished)	12 months	NA (RCT)	Adjusted odds ratio (per participant analysis)	(PPT / control) NG: 12.2%/17.2% CT: 14.6%/14.2%	(PPT / control) NG: 6.0%/9.4% CT: 4.95%/11.8%	Self-reported condom use with clients at baseline was >90%
Cross-sectional studies (adjusted for confounding)						
Reza-Paul 2008 (India)	2 years	NA (cross-sectional)	Prevalence (NG, CT)	NG 5.4% CT 10.8% TP 24.7% TP(>1:8) 14.8%	NG 2.4% CT 4.7% TP 12.0% TP(>1:8) 3.1%	Increased condom use at last sex with occasional clients (65% to 90%); repeat clients (53% to 66%); regular partners (7% versus 30%)
Ramesh 2010 (India)	NA (one-time cross-sectional survey)	NA (cross-sectional)	Prevalence (syphilis, RPR>=1:8)	NG 3.5% CT 6.5% TP 10.2% TP(>1:8) 5.9%	NG 2.5% CT 5.6% TP 8.7% TP(>1:8) 3.4%	Condom use at last sex increased for repeat clients (66.1% vs 84.1%) and occasional clients (82.9% vs 88.0%), remained stable for regular partners (32%)
Majid 2010 (Indonesia)	NA	NA (cross-sectional)	Prevalence (NG, CT)	TP 11.1% (5.6% high-titre)	NA (one-time cross-sectional survey)	Condom use with last client 68% (no trends reported)
Magnani 2010 (Indonesia)	15 months	NA (cross-sectional)	Prevalence (NG, CT)	NG 14.0%-42.7%; CT 28.2%-50.2%	NA (one-time cross-sectional survey)	Condom use with last client 66.4% (no trends reported)
Time series (cohort and serial cross-sectional)						
Holmes 1996 (Philippines)	1 week	NA (cross-sectional)	Prevalence (NG, CT)	NG 4.0%	NG 1.6%,	Not reported

Study	Duration of total follow-up	Percent follow-up (follow-up period in cohort analysis)	Outcome measure	STI prevalence at baseline	STI prevalence at follow-up	Condom use
Steen 2000 (South Africa)	9 months	64% (1 month)	Prevalence (NG, CT, GUD)	NG 17.3%, CT 14.3%, NG/CT 24.9% GUD 6.4%	NG 8.3% CT 4.0% NG/CT 12.3% GUD 1.5%	Condom use all clients last working day from 2.0% to 7.4%, 27.6%, and 33.3% (visits 1, 2, 3, 4)
Behets 2003 (Madagascar)	2 months	95% (2 months)	Prevalence (NG)	NG 23.2% CT 16.4% NG/CT 30.4% TP 29.4%	NG 18.2% CT 9.1% NG/CT 21.9% TP 11.6%	Not reported
O'Farrell 2006 (Laos)	9 months	NA (cross-sectional)	Prevalence (NG, CT)	NG 14.9% CT 26.0% NG/CT 32.4%	NG 7.9% CT 12.3% NG/CT 18.0%	100% condom use (last 30 days) increased from 66.8% (day 0) to 71.4% (day 90)
Wi 2006 (Philippines)	1 and 7 months	NA (cross-sectional)	Prevalence (NG, CT)	NG 18.3% CT 28.6% NG/CT 36.7%	NG 11.9% CT 18.1%; NG/CT 22.1%	No significant change for most groups, moderate increase in one
McKormick 2007 (Bangladesh)	9 months	46% (9 months)	Prevalence (NG, CT)	NG 32.6% CT 27.8% NG/CT 41% TP 4.2%	NG and CT decreased 83% from 41% to 7% over 9 months.	Decrease from 60% to 54% over 9 months (p=0.12). (PSA results suggest increase in condom use from 56% to 61%)
Bollen 2010 (Indonesia)	15 months	NA (cross-sectional)	Prevalence (NG, CT)	NG 29.3% CT 30.1%	NG 7.3% CT 12.7%	Consistent condom use increased (Bintan: 22.2% to 41.6%; Salatiga: 19.8% to 42.1%)
Bruce 2011 (PNG)	10 months	55% (9 months) (subgroup with full follow-up at 9 months used in analysis)	Prevalence (NG, CT)	NG 56% Ct 38% TV 63%	NG 23% CT 16%; TV 30%	Reported condom use ‘always’ with clients increased from 33% tp 41%