**Table S1**. Selected characteristics of included studies

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| --- | --- | --- | --- | --- |
| **Study location** | **Year(s) of data collection** | **Study population** | **Brief sample description** | **Prevalence (%)** |
| **North America** | | | | |
| **General population** | | | | |
| Michigan, United States (1s) | 1998 | 496 women ages 18-40 attending a routine gynecological exam at one of three clinics (county health department, university health center, Planned Parenthood clinic). Response rates across the sites ranged from 83% to 86%. 71% of participants were white, 19% were African-American, and 5% were Hispanic. | Clinic-based | 24.0 |
| Michigan, United States\* (1s) | 1998 | 350 white women ages 18-40 attending a routine gynecological exam at one of three clinics (county health department, university health center, Planned Parenthood clinic). | \* | 20.0 |
| Michigan, United States\* (1s) | 1998 | 94 African-American women ages 18-40 attending a routine gynecological exam at one of three clinics (county health department, university health center, Planned Parenthood clinic). | \* | 37.2 |
| Michigan, United States\* (1s) | 1998 | 25 Hispanic women ages 18-40 attending a routine gynecological exam at one of three clinics (county health department, university health center, Planned Parenthood clinic). | \* | 40.0 |
| United States (2s) | 1999-2000 | 1,938 women ages 17-33 entering recruit training for the United States Marine Corps and completing a pelvic exam within two weeks of training initiation. Response rate of 94%. 56% of participants were white, 16% were African-American, 3% were Asian, 20% were Hispanic, and 2.3% were Native American. | Population-based | 27.0 |
| United States\* (2s) | 1999-2000 | 1,092 white women ages 17-33 entering recruit training for the United States Marine Corps and completing a pelvic exam within two weeks of training initiation. | \* | 24.7 |
| United States\* (2s) | 1999-2000 | 306 African-American women ages 17-33 entering recruit training for the United States Marine Corps and completing a pelvic exam within two weeks of training initiation. | \* | 32.0 |
| United States\* (2s) | 1999-2000 | 63 Asian women ages 17-33 entering recruit training for the United States Marine Corps and completing a pelvic exam within two weeks of training initiation. | \* | 11.1 |
| United States\* (2s) | 1999-2000 | 387 Hispanic women ages 17-33 entering recruit training for the United States Marine Corps and completing a pelvic exam within two weeks of training initiation. | \* | 32.0 |
| Birmingham, Alabama, United States (3s) | 1999-2002 | 3,077 non-pregnant women ages 15-44 presenting for routine medical care at one of 12 clinics and enrolling in the Longitudinal Study of Vaginal Flora. 81% of participants were African-American. Women with antibiotic use in the 30 or more consecutive days prior to specimen collection were excluded. | Clinic-based | 40.0 |
| United States (4s) | 2001-2004 | 2,334 women selected in stratified multistage probability sampling design to be representative of the United States civilian non-institutionalized female population ages 20-49 as part of the National Health and Nutrition Examination Survey. | Population-based | 30.2 |
| **Pregnant women** | | | | |
| Gainesville, Florida, United States (5s) | 1991-1992 | 390 pregnant women in labor with a previously uncomplicated pregnancy, enrolled from a University hospital serving a predominantly rural and indigent patient population. Women with antibiotic use in the two weeks prior to specimen collection were excluded. 61% of participants were white. | Clinic-based | 30.0 |
| Gainesville, Florida, United States\* (5s) | 1991-1992 | 237 pregnant, white women in labor with a previously uncomplicated pregnancy, enrolled from a University hospital serving a predominantly rural and indigent patient population. Women were excluded if they had received antibiotic treatment in the two weeks prior to enrollment. | \* | 25.0 |
| Edmonton, Alberta, Canada (6s) | 1994-1995 | 2,047 pregnant women attending antenatal care services at three private obstetrical offices, a hospital-based obstetrical office, or the University of Alberta Hospital prior to 20 weeks’ gestation. Antenatal care recipients were consecutively invited to participate. Response rate of 91.5%. 78% of participants were white, 2% were African-American, 9% were Asian, and 5% were Native American. | Antenatal care-based | 17.0 |
| North Carolina, United States (7s) | 1995-1997 | 1,257 pregnant women ages 16-44 participating in the multisite Pregnancy, Infection, and Nutrition Study. Recruitment sites were predominantly suburban. Women taking antibiotics in the two weeks prior to specimen collection were excluded. 57.6% of invited participants agreed to participate. 47% of participants were white and 47% were African-American. | Clinic-based | 17.8 |
| Philadelphia, Pennsylvania, United States (8s) | 1999-2001 | 1,485 pregnant women attending their first antenatal care visit at public health clinics. Antenatal care recipients were consecutively invited to participate. Response rate of 87.3%. 13% of participants were white, 62% were African-American, 3% were Asian, and 16% were Hispanic. | Antenatal care-based | 47.5 |
| Philadelphia, Pennsylvania, United States\* (8s) | 1999-2001 | 195 pregnant, white women attending their first antenatal care visit at public health clinics. Women were consecutively invited to participate in the study. | \* | 28.7 |
| Philadelphia, Pennsylvania, United States\* (8s) | 1999-2001 | 900 pregnant, African-American women attending their first antenatal care visit at public health clinics. Women were consecutively invited to participate in the study. | \* | 54.3 |
| Philadelphia, Pennsylvania, United States\* (8s) | 1999-2001 | 42 pregnant, Asian women attending their first antenatal care visit at public health clinics. Women were consecutively invited to participate in the study. | \* | 31.0 |
| Philadelphia, Pennsylvania, United States\* (8s) | 1999-2001 | 232 pregnant, Hispanic women attending their first antenatal care visit at public health clinics. Women were consecutively invited to participate in the study. | \* | 42.7 |
| United States (9s) | 2001-2002 | 148 HIV-negative, pregnant women ages 17 or older presenting for antenatal care at one community-based and three hospital-based clinics with fewer than 15 weeks’ gestation. All women were screened for eligibility. Response rate of 21.7%. Women with recent antibiotic exposure were excluded. 85% of participants were African-American. | Antenatal care-based | 43.9 |
| North Carolina, United States (10s) | 2001-2003 | 792 pregnant women enrolled in the Pregnancy, Infection, and Nutrition study. Women ages 16 and older were recruited at fewer than 20 weeks’ gestation from University of North Carolina hospitals. 68% of participants were white, 22% were African-American, and 10% were Asian and/or Native American. | Clinic-based | 13.0 |
| North Carolina, United States\* (10s) | 2001-2003 | 535 pregnant, white women ages 16 and older enrolled in the Pregnancy, Infection, and Nutrition study. Women were recruited from University of North Carolina hospitals with fewer than 20 weeks’ gestation. | \* | 9.0 |
| North Carolina, United States\* (10s) | 2001-2003 | 173 pregnant, African-American women ages 16 and older enrolled in the Pregnancy, Infection, and Nutrition study. Women were recruited from University of North Carolina hospitals with fewer than 20 weeks’ gestation. | \* | 34.1 |
| North Carolina, United States\* (10s) | 2001-2003 | 81 pregnant, Asian women ages 16 and older enrolled in the Pregnancy, Infection, and Nutrition study. Women were recruited from University of North Carolina hospitals with fewer than 20 weeks’ gestation. | \* | 12.3 |
| Philadelphia, Pennsylvania, United States (11s) | 2001-2004 | 1,916 pregnant women in their first trimester presenting for their first antenatal care visit at two obstetrical offices, one public and one private. Greater than 95% of women attending were invited to participate in the study. 72% of participants were African-American. | Antenatal care-based | 40.0 |
| Baltimore, Maryland, United States (12s) | 2001-2004 | 438 pregnant, African-American women of low socioeconomic status receiving antenatal care at one of three Johns Hopkins clinics with 22-28 weeks’ gestation. Response rate of 68%. | Antenatal care-based | 25.0 |
| Philadelphia, Pennsylvania, United States (13s) | 2004-2007 | 1,453 pregnant women enrolled in the multicenter Periodontal Infection and Prematurity Study. Women were recruited from three antenatal clinics with 6-20 weeks’ gestation. 84% of participants were African-American. | Antenatal care-based | 54.5 |
| Philadelphia, Pennsylvania, United States\* (13s) | 2004-2007 | 1,216 pregnant, African-American women enrolled in the multicenter Periodontal Infection and Prematurity Study. Women were recruited from three antenatal clinics with 6-20 weeks’ gestation. | \* | 56.0 |
| Philadelphia, Pennsylvania, United States (14s) | 2008-2010 | 682 pregnant women with fewer than 16 weeks’ gestation. Study participants were predominantly African-American. | Convenience | 74.0 |
| **HIV-positive women** | | | | |
| Five United States cities (15s) | 1997-1998 | 297 HIV-positive, non-pregnant women ages 18-45 participating in the Division of AIDS Treatment Research Initiative 009. 21% of participants were white, 60% were African-American, and 17% were Hispanic. | Convenience | 38.1 |
| **Women who have sex with women** | | | | |
| United States (16s) | 2004-2007 | 335 women who have sex with women ages 16-30 recruited via advertisements, media, and community referral. BV was diagnosed by Amsel’s criteria. 76% of participants were white, 5% were African-American, and 6% were Hispanic. | Convenience | 35.6a |
| United States\* (16s) | 2004-2007 | 16 African-American women who have sex with women ages 16-30 recruited via advertisements, media, and community referral. BV was diagnosed by Amsel’s criteria. | Convenience | 59.3a |
| **Europe and Central Asia** | | | | |
| **General population** | | | | |
| Gothenburg, Sweden (17s) | 1992-1996 | 142 premenopausal women ages 33-58 undergoing hysterectomy for benign reasons. Women with antibiotic use in the month prior to surgery were excluded. | Clinic-based | 17.6 |
| Denmark (18s) | 1993-1994 | 447 women ages 15-45 attending a suburban family practice. Consecutive women presenting with genito-urinary symptoms or for a routine check-up were invited to participate. | Clinic-based | 21.7 |
| Azerbaijan (19s) | 2001 | 200 premenopausal women ages 18-48 attending reproductive health fairs sponsored by a local non-governmental organization in rural Azerbaijan. | Convenience | 35.0 |
| London, England (20s) | 2004-2006 | 2,378 non-pregnant, sexually active women younger than 27 years of age recruited from University campuses to participate in the Prevention of Pelvic Infection chlamydia screening trial. | Convenience | 20.4 |
| Belgrade, Serbia (21s) | Pre-2010 | 96 non-pregnant women of reproductive age | Convenience | 21.0 |
| **Pregnant women** | | | | |
| Barcelona, Spain (22s) | 1995-1996 | 301 pregnant women ages 18-43 attending routine antenatal care services at a large urban hospital serving a predominantly middle-lower income patient population. | Antenatal care-based | 7.5 |
| United Kingdom (23s) | Pre-1997 | 88 pregnant women attending their first antenatal care visit at a district general hospital. | Antenatal care-based | 9.1 |
| Barcelona, Spain (24s) | Pre-1998 | 635 pregnant women less than 35 weeks gestation attending their first antenatal care visit enrolled in a prospective study of spontaneous recovery of bacterial vaginosis. Women with subsequent termination of pregnancy were excluded. | Antenatal care-based | 19.6 |
| London, England (25s) | 1998-2000 | 1,201 pregnant women ages 16-48 with less than 10 weeks’ gestation receiving services from one of 34 general practices and five family planning clinics. Consecutive attendees were recruited to participate in the study; women with pregnancy termination intentions were excluded. | Clinic-based | 14.5 |
| France (26s) | 2004-2005 | 341 pregnant women with between 15 to 33 weeks’ gestation receiving services at one of three private and public health centers. 86% of women invited to participate in the study participated. | Clinic-based | 9.0 |
| Vienna, Austria (27s) | 2005-2014 | 8,490 pregnant women presenting for antenatal care services between 10 to 16 weeks’ gestation. Samples were collected as part of a routine national antenatal infection screen-and-treat program. | Antenatal care-based | 8.7 |
| Nord-Pas-de-Calais, France (28s) | 2006-2008 | 1,334 pregnant women ages 18 and older with less than 13 weeks’ gestation. Women presenting for laboratory testing services at one of 160 medical laboratories were invited to participate. 99% of invited women agreed to participate. | Clinic-based | 7.1 |
| Belgrade, Serbia (21s) | Pre-2010 | 428 pregnant women | Convenience | 33.8 |
| **Latin America and Caribbean** | | | | |
| **General population** | | | | |
| Lima, Peru (29s) | 1997 | 1,252 sexually active, non-pregnant women ages 15-37 attending one of four family planning clinics as new or continuing patients. Women within 42 days postpartum and women within 15 days post-abortion were excluded. | Clinic-based | 20.1 |
| Merida, Venezuela (30s) | Pre-1999 | 92 women ages 15-45 attending family planning services. Women with antibiotic use in the 8 days prior to specimen collection were excluded. | Clinic-based | 30.0 |
| Chile (31s) | 2006 | 100 non-pregnant women ages 15-49 attending family planning services. Women with antibiotic use in the 30 days prior to specimen collection and/or immunosuppression were excluded. | Clinic-based | 32.0 |
| Peru (32s) | 2006 | 6,322 women ages 18-29 selected via multistage cluster random sampling in 20 Peruvian cities. | Population-based | 23.7 |
| **Pregnant women** | | | | |
| Kingston, Jamaica (33s) | 1997 | 261 pregnant women ages 14-40 in their second or third trimesters attending their first antenatal care visit at one of four antenatal clinics. | Antenatal care-based | 44.1 |
| Botacatu, Brazil (34s) | 2006-2008 | 289 pregnant women ages 14-43 attending antenatal care services at primary care public clinics. Women with antibiotic use in the 30 days prior to specimen collection were excluded. | Antenatal care-based | 20.7 |
| Comarca Ngäbe-Buglé, Panama (35s) | 2010 | 210 pregnant women ages 13-44 with greater than five weeks’ gestation attending services at one of 14 health centers within two hours walk of residence. Response rate of 99%. | Clinic-based | 60.0 |
| Chile (36s) | 2013 | 46 pregnant women attending family planning services in a metropolitan area were recruited via consecutive sampling. Women with antibiotic use in the month prior to specimen collection were excluded. | Clinic-based | 10.9 |
| **Postpartum women** | | | | |
| Comarca Ngäbe-Buglé, Panama (35s) | 2010 | 79 postpartum, lactating women ages 13-44 attending services at one of 14 health centers within two hours walking distance of residence. Women were within 6 months postpartum. Response rate of 100%. | Clinic-based | 63.3 |
| **East Asia and Pacific** | | | | |
| **General population** | | | | |
| Hai Phong Province, Vietnam (37s) | 1998 | 197 women ages 18-49 living in a rural village were randomly selected from a list of participants in a previous behavioral survey. Response rate of 70%. | Convenience | 27.4 |
| Manado, Indonesia (38s) | 1999 | 357 women attending family planning services and participating in a screen-and-treat program for sexually transmitted infections and bacterial vaginosis. | Clinic-based | 32.5 |
| Cambodia (39s) | 2000-2001 | 480 women ages 15-49 attending one of 17 maternal and child health clinics, 8 urban health centers, and 9 rural health centers for antenatal care, family planning, or consultations for their children. Health center attendees were consecutively invited to participate. The final sample included 49% rural residents. | Clinic-based | 14.2 |
| Vientiane, Laos (40s) | 2000-2001 | 1,125 non-pregnant women ages 15-49 attending a first visit at the gynecology outpatient department of an urban hospital. Women with antibiotic use in the 2 weeks prior to specimen collection were excluded. | Clinic-based | 24.5 |
| **Adolescent girls and young women** | | | | |
| Australia (41s) | 2007-2008 | 1,093 sexually active, non-pregnant adolescent girls and young women ages 16-25 attending one of 29 primary care clinics providing general practice, family planning, and sexual health services. Women were recruited consecutively. Response rate of 66%. | Clinic-based | 11.8 |
| Melbourne, Australia (42s) | 2008 | 528 adolescent girls and young women ages 17-21 attending the University of Melbourne. Women were recruited via announcements in the university orientation handbook and posters placed throughout the university. | Convenience | 4.7 |
| **Pregnant women** | | | | |
| Hokkaido, Japan (43s) | 1995 | 549 pregnant women ages 14-46 attending their first antenatal visit at the Department of Obstetrics and Gynecology of an urban hospital at which approximately 50% of infants in the city are born. | Antenatal care-based | 15.1 |
| Japan (44s) | Pre-1996 | 118 pregnant women ages 21-37 attending antenatal care services. Women with antibiotic use in the two weeks prior to specimen collection were excluded. | Antenatal care-based | 13.6 |
| Thailand (44s) | Pre-1996 | 208 pregnant women ages 15-40 attending antenatal care services. Women with antibiotic use in the two weeks prior to specimen collection were excluded. | Antenatal care-based | 15.9 |
| Hokkaido, Japan (43s) | 2000 | 1,058 pregnant women ages 14-46 attending their first antenatal visit at the Department of Obstetrics and Gynecology of an urban hospital at which approximately 50% of infants in the city are born. | Antenatal care-based | 21.3 |
| Nghe An Province, Vietnam (45s) | 2003-2004 | 505 pregnant women living in one of 10 suburban communes. Women were recruited via community health center lists of pregnancy registrations, as well as announcements from the women’s union and people’s committee. 86% of participants were recruited from lists of registered pregnancies. | Convenience | 7.0 |
| Hokkaido, Japan (46s) | 2005-2006 | 132 pregnant women ages 15-44 attending routine antenatal care services at a hospital. | Antenatal care-based | 9.8 |
| Amakusa, Kumamoto, Japan (47s) | 2007-2008 | 720 pregnant women attending their first antenatal care visit | Antenatal care-based | 13.9 |
| Hitoyoshi-Kuma, Kumamoto, Japan (47s) | 2007-2008 | 373 pregnant women attending their first antenatal care visit | Antenatal care-based | 19.0 |
| Anhui Province, China (48s) | 2012 | 793 pregnant women 18 years and older attending antenatal care services with fewer than 13 weeks’ gestation. | Antenatal care-based | 15.8 |
| **Postpartum women** | | | | |
| China (49s) | 2007 | 560 postpartum women ages 20-39 receiving services at one of seven hospitals. | Clinic-based | 31.2 |
| Beijing, China (50s) | 2010 | 209 postpartum women between 6 to 8 weeks postpartum receiving services at a university hospital. | Clinic-based | 3.9 |
| **South Asia** | | | | |
| **General population** | | | | |
| Delhi, India (51s) | 1996-2000 | 301 ever-married women ages 15-45 living in a slum characterized by a migratory population of low socioeconomic status. All ever-married women ages 15-45 living in the slum were invited to participate. Response rate of 67%. | Population-based | 34.2 |
| Delhi, India (52s) | 2002 | 213 non-pregnant women ages 15-49 selected via multistage cluster random sampling. Communities were randomly selected, and include two urban slums, one urban middle class area, and one rural area. Women with antibiotic use in the four weeks prior to specimen collection were excluded. Response rate of 91%. | Population-based | 32.8 |
| Chennai, India (53s) | 2002 | 487 HIV-negative, non-pregnant women ages 18-40 of low socioeconomic status living in slum areas. | Convenience | 25.0 |
| Mysore, India (54s) | 2005-2006 | 897 sexually active, non-pregnant women ages 15-30 were recruited from two hospitals to participate in a prospective study of bacterial vaginosis and herpes simplex virus-2 acquisition. Participants were recruited consecutively. Response rate of 90%. | Clinic-based | 22.1 |
| India (55s) | Pre-2006 | 200 non-pregnant women ages 21-45 of low socioeconomic status attending the gynecology outpatient department of a maternity hospital. | Clinic-based | 5.7 |
| Mumbai, India (56s) | Pre-2009 | 510 women ages 19-47 attending for obstetric and gynecology services, including infertility, recurrent spontaneous abortion, symptoms of lower genital tract infection, pregnancy, and routine receipt of services. | Clinic-based | 14.1 |
| Surat, India (57s) | Pre-2009 | 102 non-pregnant women ages 15-49 selected via multistage cluster random sampling from both rural and urban areas. Women with antibiotic use in the two weeks prior to specimen collection were excluded. | Population-based | 24.5 |
| India (58s) | Pre-2012 | 264 married women ages 21-35 presenting at a tertiary care facility for intrauterine contraceptive device insertion or removal or services related to any complaint. Women who had used medication to treat any infection in the month prior to specimen collection were excluded. | Clinic-based | 25.0 |
| **Pregnant women** | | | | |
| Dhaka, Bangladesh (59s) | 2000 | 282 pregnant women ages 15-45 attending an urban maternal and child healthcare clinic with 16-24 weeks’ gestation for routine antenatal care. Women were recruited consecutively. Women with antibiotic use in the two weeks prior to specimen collection were excluded. | Antenatal care-based | 17.7 |
| Karachi, Pakistan (60s) | 2001 | 614 healthy pregnant women with 13-17 weeks’ gestation attending antenatal care services at one of three hospitals. All women meeting eligibility criteria were invited to participate. | Antenatal care-based | 16.9 |
| Bangladesh (61s) | 2003-2007 | 1,462 pregnant women living in rural Bangladesh participating in a randomized trial of beta-carotene supplementation. Bacterial vaginosis was assessed prior to supplementation. 99.5% of women participating in the trial contributed a baseline specimen for assessment of BV. | Convenience | 7.6 |
| Mysore, India (62s) | 2007-2010 | 1,407 pregnant women ages 14-40 attending for services from mobile medical vans in rural communities. 98% of women receiving services from the vans provided a specimen for assessment of BV. | Clinic-based | 9.9 |
| India (58s) | Pre-2012 | 263 pregnant women ages 21-35 presenting at a tertiary care facility for antenatal care or services related to any complaint. Women who had used medication to treat any infection in the month prior to specimen collection were excluded. | Antenatal care-based | 12.9 |
| Sylhet District, Bangladesh (63s) | Pre-2015 | 3,166 pregnant women participating in a population-based cohort in which all eligible women were screened for abnormal vaginal flora. | Population-based | 8.6 |
| **Women living with HIV** | | | | |
| Delhi, India (64s) | 2010-2011 | 60 HIV-positive women ages 18-49 receiving services at an Integrated Counseling and Testing Center. | Clinic-based | 15.0 |
| Delhi, India (65s) | Pre-2011 | 40 HIV-positive women ages 21-43 receiving services from a hospital-based antiretroviral therapy clinic. | Clinic-based | 50.0 |
| **Middle East and North Africa** | | | | |
| **General population** | | | | |
| Ismalia, Egypt (66s) | 2008-2009 | 71 women ages 21-44 presenting for the first cycle of intracytoplasmic sperm injection at a general hospital. | Clinic-based | 36.6 |
| Zanjan, Iran (67s) | Pre-2009 | 500 non-pregnant, married women ages 15-45 recruited via random selection from five primary healthcare centers. | Clinic-based | 16.2 |
| **Pregnant women** | | | | |
| Zanjan, Iran (68s) | Pre-2014 | 204 pregnant women with less than 20 weeks’ gestation seeking care at a hospital-based clinic. Response rate of 99%. | Clinic-based | 26.9 |
| Annaba, Algeria (69s) | 2014-2015 | 15 pregnant women ages 19-35 attending hospital-based gynecologic services. Women with current use of antibiotics or other prescribed therapies were excluded. | Clinic-based | 26.7 |
| **Sub-Saharan Africa** | | | | |
| **General population** | | | | |
| Hlabisa, South Africa (70s) | Pre-1997 | 189 women attending a hospital-based family planning clinic in a rural area. | Clinic-based | 15.0 |
| Mbeya, Tanzania (71s) | 2000 | 600 women ages 16-35 working in bars, guesthouses, and hotels in one of 17 communities in a region with high connectivity via international highways. | Convenience | 40.2 |
| Rakai, Uganda (72s) | 2001-2003 | 255 post-menarchal women ages 13-39 from randomly selected households in 24 community clusters. Women ages 13-19 years were oversampled relative to women ages 20-39. | Population-based | 47.6 |
| Bangui, Central African Republic (73s) | Pre-2002 | 275 women ages 15-48 consecutively enrolled from the Centre National de Reference des Maladies Sexuellement Transmissibles et du SIDA, which offers reproductive health services as well as sexually transmitted infection services. | Clinic-based | 60.0 |
| Ouagadougou, Burkina Faso (74s) | 2003 | 883 women ages 15-49 selected via multistage cluster random sampling. | Population-based | 7.5 |
| Benin City, Nigeria (75s) | Pre-2005 | 241 healthy, premenopausal women ages 16-48 attending reproductive healthcare services. | Clinic-based | 14.2 |
| Ouagadougou, Burkina Faso (76s) | 2009 | 200 non-pregnant, HIV-negative women ages 27-45 attending Centre Medical San Camille for gynecological services. | Clinic-based | 5.5 |
| Benin City, Nigeria (77s) | 2012 | 67 premenopausal women ages 16-45. Women with current antibiotic use were excluded. | Convenience | 13.4 |
| Tiko, Cameroon (78s) | 2014 | 100 sexually active women ages 15-45 attending a CDC-funded clinic. | Clinic-based | 38.0 |
| **Adolescent girls and young women** | | | | |
| Maputo, Mozambique (79s) | 2002-2003 | 433 adolescent girls and young women ages 15-24 attending the Adolescent and Youth Friendly Service clinic of the Department of Obstetrics and Gynecology in a hospital. | Clinic-based | 12.9 |
| Mombasa, Kenya (80s) | 2010-2011 | 30 non-pregnant, HIV-negative, ever-sexually active adolescent girls ages 16-17 attending youth centers and youth-friendly family planning clinics. | Clinic-based | 16.7 |
| Johannesburg, South Africa (80s) | 2010-2011 | 30 non-pregnant, HIV-negative, ever-sexually active adolescent girls ages 16-17 attending youth centers and youth-friendly family planning clinics. | Clinic-based | 40.0 |
| Siaya County, Kenya (81s) | 2012-2013 | 156 post-menarchal adolescent girls ages 14-16 who participated in a randomized controlled pilot study of menstrual product dissemination in rural primary schools. | Convenience | 20.5 |
| Mwanza City, Tanzania (82s) | Pre-2015 | 403 adolescent girls ages 17-18 attending secondary school. | Convenience | 25.0 |
| **Pregnant women** | | | | |
| Gabarone, Botswana (83s) | 2000-2001 | 703 pregnant women ages 15-43 attending one of 13 antenatal care services. | Antenatal care-based | 38.0 |
| Western Cape, South Africa (84s) | 2002-2003 | 343 pregnant women attending for antenatal care services with 16-23 weeks’ gestation. Women with prior or current complicated pregnancies were excluded. | Antenatal care-based | 32.1 |
| Burkina Faso (85s) | 2003 | 2,018 pregnant women ages 15-49 attending for antenatal care services in primary healthcare facilities. | Antenatal care-based | 6.5 |
| Entebbe, Uganda (86s) | 2004 | 247 pregnant women ages 15-40 attending a first antenatal care visit at a district hospital in a semiurban area. | Antenatal care-based | 47.7 |
| Mombasa, Kenya (80s) | 2010-2011 | 30 HIV-negative pregnant women with fewer than 14 weeks’ gestation attending family planning and antenatal clinics and women’s groups. | Antenatal care-based | 26.7 |
| Johannesburg, South Africa (80s) | 2010-2011 | 30 HIV-negative pregnant women with fewer than 14 weeks’ gestation attending family planning and antenatal clinics and women’s groups. | Antenatal care-based | 29.0 |
| Osogbo, Nigeria (87s) | 2011-2012 | 100 pregnant women ages 21-39 attending antenatal care services at a tertiary care facility. | Antenatal care-based | 38.0 |
| Addis Aababa, Ethiopia (88s) | 2011-2012 | 252 pregnant women ages 18-40 attending antenatal care services at a university hospital. Women with antibiotic use in the two weeks prior to specimen collection were excluded. | Antenatal care-based | 19.4 |
| Pretoria, South Africa (89s) | 2012 | 220 pregnant women ages 18 and older attending antenatal care services at an academic hospital. Women using antibiotics in the 30 days prior were excluded. | Antenatal care-based | 17.7 |
| Lagos, Nigeria (90s) | 2012-2013 | 246 pregnant, HIV-negative women ages 20-44 attending a first antenatal care visit with 14-36 weeks’ gestation. | Antenatal care-based | 26.0 |
| Nchelenge District, Zambia (91s) | 2013-2014 | 1,086 pregnant women attending antenatal care services with fewer than 32 weeks’ gestation. Women with antibiotic and/or antimalarial medication use in the 4 weeks prior to specimen collection were excluded. | Antenatal care-based | 48.3 |
| **Postpartum women** | | | | |
| Mombasa, Kenya (92s) | 2006 | 447 postpartum women attending an immunization and acute care pediatric clinic at a provincial hospital. Women were between 4 weeks and 1 year postpartum. Response rate of 64%. | Clinic-based | 31.5 |
| **Women living with HIV** | | | | |
| Nairobi, Kenya (93s) | 1999-2002 | 441 HIV-positive, pregnant women ages 18 and older attending antenatal clinics with fewer than 32 weeks’ gestation. | Antenatal care-based | 37.0 |
| Blantyre and Lilongwe, Malawi; Dar es Salaam, Tanzania; Lusaka, Zambia (94s) | 2001-2003 | 2,248 HIV-positive, pregnant women participating in a randomized controlled trial of prevention of mother-to-child transmission of HIV. | Convenience | 47.8 |
| Ouagadougou, Burkina Faso (76s) | 2009 | 251 non-pregnant, HIV-positive women ages 28-44 attending Centre Medical San Camille for gynecological services. | Clinic-based | 25.9 |
| Kigali, Rwanda (80s) | 2010-2011 | 30 non-pregnant, HIV-positive women recruited from public HIV treatment clinics. Women had a minimum of six months of antiretroviral treatment and had a CD4 count of greater than 350 cells/µl. | Clinic-based | 43.3 |

a Prevalence estimates obtained by methods other than Nugent criteria are adjusted according to the sensitivity and specificity of the utilized method relative to Nugent criteria.

\* Study population is a subset of the study population of another included study.

**Table S2**. Proportion of bacterial vaginosis-positive women with symptoms of BV. Population-based samples only are included.

|  |  |  |
| --- | --- | --- |
| **Region** | **Percent symptomatic (95% confidence interval)** | **Study population** |
| All regions | 34.9 (17.7, 54.5) | |
| Sub-Saharan Africa (72s) | 6.3 (2.9, 12.6) | 255 post-menarchal women ages 13-39 from randomly selected households in 24 community clusters in Rakai, Uganda. Self-collected vaginal swabs were obtained weekly from 2001-2003. Symptomatic defined as participant’s self-report of vaginal discharge in the previous week. |
| North America (4s) | 14.6 (12.1, 17.5) | 2,334 women representative of the United States female population ages 20-49. Participants are from survey years 2001-2004 of the National Health and Nutrition Examination Survey. Symptomatic defined as participant self-report of vaginal symptoms in the previous month. |
| North America (2s) | 33.4 (29.4, 37.7) | 1,938 women ages 17-33 entering the United States Marine Corps. Vaginal swabs were obtained at a routine pelvic examination within two weeks of arrival for recruit training. Symptomatic defined as participant’s self-report of vaginal discharge. |
| Latin America and Caribbean (32s) | 42.2 (39.7, 44.7) | 6,322 women ages 18-29 selected via multistage cluster random sampling in 20 Peruvian cities. Symptomatic defined as abnormal vaginal discharge or vaginal discharge with bad odor. |
| South Asia (51s) | 86.7 (78.2, 92.4) | 301 women ages 15-45 living in an urban slum area in India. All female residents ages 15-45 of the defined study area were invited to participate. Symptomatic defined as participant self-report of thin vaginal discharge. |

**Table S3.** Prevalence of bacterial vaginosis by region and sub-population. Sub-populations hypothesized *a priori* (including women living with HIV and women who have sex with women) to have BV prevalence different from the general population are excluded.

|  |  |  |  |
| --- | --- | --- | --- |
| **Region and subpopulation** | ***n*** | **Prevalence (95% confidence interval)** | ***p* for subgroup differences** |
| **North America** | **5** |  |  |
| General population | 3a | 27.4 (24.3, 30.6) | < 0.001 |
| Pregnant women | 2b | 15.1 (11.4, 19.2) |
| **Europe and Central Asia** | **13** |  |  |
| General population | 5c | 22.8 (18.3, 27.7) | 0.001 |
| Pregnant women | 8d | 12.9 (9.5, 16.8) |
| **Latin America and Caribbean** | **9** |  |  |
| General population | 4e | 24.2 (20.6, 28.0) | < 0.001 |
| Pregnant women | 4f | 33.2 (14.8, 54.7) |
| Postpartum women | 1g | 63.3 (52.3, 73.6) |
| **East Asia and Pacific** | **17** |  |  |
| General population | 4h | 24.2 (17.1, 32.1) | 0.023 |
| Adolescent girls and young women | 2i | 8.0 (2.5, 16.2) |
| Pregnant women | 9j | 14.5 (11.4, 17.9) |
| Postpartum women | 2k | 15.0 (0.0, 49.7) |
| **South Asia** | **14** |  |  |
| General population | 8l | 28.7 (21.2, 36.8) | < 0.001 |
| Pregnant women | 6m | 11.7 (9.0, 14.7) |
| **Middle East and North Africa** | **4** |  |  |
| General population | 2n | 25.1 (8.2, 47.3) | 0.865 |
| Pregnant women | 2o | 26.3 (20.5, 32.6) |
| **Sub-Saharan Africa** | **27** |  |  |
| General population | 9p | 24.6 (12.0, 40.0) | 0.179 |
| Adolescent girls and young women | 5q | 21.2 (13.9, 29.5) |
| Pregnant women | 11r | 29.1 (16.9, 43.1) |
| Postpartum women | 1s | 31.5 (27.3, 35.9) |

Citations corresponding to each group of estimates are listed below.

a 9, 1s, 2s; b 6s, 10s

c 17s, 18s, 19s, 20s, 21s; d 21s, 22s, 23s, 24s, 25s, 26s, 27s, 28s

e 29s, 30s, 31s, 32s; f 33s, 34s, 35s, 36s; g 35s

h 37s, 38s, 39s, 40s; i 41s, 42s; j 43s, 44s, 45s, 46s, 47s, 48s; k 49s, 50s

l 51s, 52s, 53s, 54s, 55s, 56s, 57s, 58s; m 58s, 59s, 60s, 61s, 62s, 63s

n 66s, 67s; o 68s, 69s

p 70s, 71s, 72s, 73s, 74s, 75s, 76s, 77s, 78s; q 79s, 80s, 81s, 82s; r 80s, 83s, 84s, 85s, 86s, 87s, 88s, 89s, 90s, 91s; s 92s

**Table S4.** Prevalence of bacterial vaginosis among women living with HIV

|  |  |  |  |
| --- | --- | --- | --- |
| **Region and subpopulation** | ***n*** | **Prevalence (95% confidence interval)** | ***p* for subgroup differences** |
| **South Asia** |  |  |  |
| General population | 8a | 28.7 (21.2, 36.8) | 0.890 |
| HIV-positive | 2b | 30.8 (3.9, 67.9) |
| **Sub-Saharan Africa** |  |  |  |
| General population | 9c | 24.6 (12.0, 40.0) | 0.16 |
| HIV-positive | 4d | 38.0 (27.2, 49.4) |
| **Pooled regions** |  |  |  |
| General population | 35e | 25.6 (22.6, 28.7) | 0.054 |
| HIV-positive | 6f | 35.6 (25.7, 46.2) |

Citations corresponding to each group of estimates are listed below

a 51s, 52s, 53s, 54s, 55s, 56s, 57s, 58s

b 64s, 65s

c 70s, 71s, 72s, 73s, 74s, 75s, 76s, 77s, 78s

d 76s, 80s, 93s, 94s

e 9, 1s, 2s, 17s, 18s, 19s, 20s, 21s, 29s, 30s, 31s, 32s, 37s, 38s, 39s, 40s, 51s, 52s, 53s, 54s, 55s, 56s, 57s, 58s, 66s, 67s, 70s, 71s, 72s, 73s, 74s, 75s, 76s, 77s, 78s

f 64s, 65s, 76s, 80s, 93s, 94s

**Table S5**. Incidence of bacterial vaginosis in included studies

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Study location** | **Year(s) of data collection** | **Study population** | **Diagnostic method** | **Incidence rate (per 100 woman-years)** |
| Pittsburgh, United States (95s) | 1998-2001 | 773 BV-negative, non-pregnant, sexually active women ages 18-30 attending the University of Pittsburgh Student Health Clinic or the Family Health Council of Aliquippa. Women with current antibiotic use were excluded. BV acquisition defined as change from Nugent score 0-6 at enrollment to Nugent score 7-10 at any of the 4-, 8-, or 12-month visits. 70% of participants were white, 26% were African-American, and 4% were Hispanic, Asian, Native American, or multiethnic. | Nugent score | 31.8 |
| Australia (41s) | 2007-2008 | 1,093 sexually active, non-pregnant adolescent girls and young women ages 16-25 attending one of 29 primary care clinics providing general practice, family planning, and sexual health services. Women were recruited consecutively. Response rate of 66%. | Nugent score | 9.4 |
| Melbourne, Australia (96s) | 2008 | 413 women ages 17-21 attending the University of Melbourne. Incident BV defined as change from Nugent score 0-6 at enrollment to Nugent score 7-10 at any quarterly follow-up assessment for BV over one year, obtained via self-collection of vaginal swabs. | Nugent score | 1.6 |
| Australia (97s) | 2010-2013 | 298 non-pregnant women ages 19-49 who have sex with women and with 3 consecutive weekly vaginal smears negative for BV. Incident BV defined as change from Nugent score 0-6 at enrollment to Nugent score 7-10 at any quarterly follow-up visit over two years. | Nugent score | 9.8 |
| Anhui Province, China (48s) | 2012 | 668 pregnant women attending prenatal care with fewer than 13 weeks’ gestation. Incident BV defined as change from Nugent score 0-6 at enrollment to Nugent score 7-10. BV was assessed in each trimester. | Nugent score | 74.2 |

**Table S6**. Cost per treated case of bacterial vaginosis.

|  |  |  |
| --- | --- | --- |
| **Region** | **Cost (2017 USD)** | **Description of components included in cost estimate** |
| North America (98s) | 2.23 | Cost includes medication only (500 mg of oral metronidazole twice daily for seven days). |
| North America (99s) | 16.72 | Cost includes diagnostic test (wet mount) and medication (500 mg of oral metronidazole twice daily for seven days). |
| North America (98s) | 29.17 | Cost includes medication only (Metrogel Vaginal applied vaginally twice daily for five days). |
| North America (100s) | 90.47 | Cost includes the diagnostic test (vaginal Gram stain), office visit, and medication (500 mg of oral metronidazole twice daily for seven days). |
| Europe and Central Asia (101s) | 27.13 | Cost includes clinician time, diagnostic test, and medication (400 mg of metronidazole twice daily for seven days). |
| Europe and Central Asia (102s) | 42.14 | Cost includes diagnostic test (wet mount) and medication (2% clindamycin vaginal cream applied for three to seven days). |
| Europe and Central Asia (103s) | 48.94 | Cost includes diagnostic test (vaginal Gram stain), nurse salary, telephone costs, treatment for yeast infection, and bacterial vaginosis treatment (seven-day course of clindamycin). |
| East Asia and Pacific (104s) | 1.21 | Cost includes diagnostic test (vaginal Gram stain) and treatment (single dose of 2 grams of metronidazole). |
| Sub-Saharan Africa (105s) | 0.03 | Cost includes medication only (single dose of 2 grams of metronidazole). |
| Sub-Saharan Africa (105s) | 0.07 | Cost includes medication only (500 mg of oral metronidazole twice daily for seven days). |
| Sub-Saharan Africa (105s) | 0.11 | Cost includes medication only (single dose of 2 grams of tinidazole). |
| Sub-Saharan Africa (106s) | 11.73 | Cost includes medication (metronidazole and clotrimazole) and a visit to a primary healthcare center. |

**Table S7.** Cost per sequelae of bacterial vaginosis

|  |  |  |  |
| --- | --- | --- | --- |
| **Sequelae** | **Region** | **Cost (2017 USD)** | **Description of components included in cost estimate** |
| Per preterm birth (107s) | North America | 7,960.48 | Cost includes the direct medical costs of preterm labor and preterm delivery (defined as labor and delivery prior to 37 weeks gestation). The cost is estimated as the mean of the cost of preterm labor and delivery per vaginal delivery and the cost of preterm labor and delivery per cesarean delivery, weighted according to the relative proportion of vaginal and cesarean deliveries. |
| Per preterm birth (103s) | Europe and Central Asia | 23,460.87 | Cost includes the direct medical costs of preterm birth with neonatal intensive care. The cost is estimated as the mean cost per preterm birth in each birthweight category, weighted by the relative proportion of each birthweight category in the Finnish Perinatal Statistics. |
| Per preterm birth of a low birthweight infant (107s) | North America | 36,222.56 | Cost includes direct maternal and pediatric medical costs of preterm birth of a low birthweight infant (defined as birth of an infant less than 2500 grams prior to 37 weeks gestation). The cost is estimated as the mean of the cost of a low birthweight infant per vaginal delivery and the cost of a low birthweight infant per cesarean delivery, weighted according to the relative proportion of vaginal and cesarean deliveries. |
| Per preterm birth of a low birthweight infant (108s) | Europe and Central Asia | 87,644.42 | Cost includes the direct medical costs of preterm birth of a low birthweight infant (defined as birth of an infant less than 1900 grams prior to 37 weeks gestation) and follow-up medical care for the first six years of the infant’s life. |
| Per preterm labor (107s) | North America | 4,722.08 | Cost includes the direct medical costs of preterm labor (defined as labor prior to 37 weeks gestation) as the mean of the cost of preterm labor per vaginal delivery and the cost of preterm labor per cesarean delivery, weighted according to the relative proportion of vaginal and cesarean deliveries. |
| Per premature rupture of membranes (107s) | North America | 4,146.56 | Cost includes the direct medical costs of premature rupture of membranes (PROM) as the mean of the cost of PROM per vaginal delivery and the cost of PROM per cesarean delivery, weighted according to the relative proportion of vaginal and cesarean deliveries. |
| Per amniotic-fluid infection (107s) | North America | 3,542.88 | Cost includes the direct medical costs of amniotic-fluid infection as the mean of the cost of amniotic-fluid infection per vaginal delivery and the cost of amniotic-fluid infection per cesarean delivery, weighted according to the relative proportion of vaginal and cesarean deliveries. |
| Per case treated of pelvic inflammatory disease (109s) | Sub-Saharan Africa | 8.75 | Cost includes diagnostic test, medications, and personnel. |
| Per case treated of gonorrhea (109s) | Sub-Saharan Africa | 11.11 | Cost includes diagnostic test, medications, and personnel. |
| Per case treated of gonorrhea (101s) | Europe and Central Asia | 85.78 | Cost includes clinician time, diagnostic test, medication (single dose of 250 mg ciprofloxacin), and a clinical visit to a genitourinary medicine clinic. |
| Per case treated of chlamydia (109s) | Sub-Saharan Africa | 40.28 | Cost includes diagnostic test, medications, and personnel. |
| Per case treated of chlamydia (101s) | Europe and Central Asia | 104.14 | Cost includes clinician time, diagnostic test, medication (100 mg twice daily of doxycycline for seven days), and a clinical visit to a genitourinary medicine clinic. |
| Per case treated of HIV (110s) | North America | 25,990.00 | Cost includes annual average direct medical costs associated with HIV care in the era of antiretroviral treatment. |
| Per case treated of endometritis (107s) | North America | 5,779.84 | Cost includes the direct medical costs of endometritis. The cost is estimated as the mean of the cost of endometritis per vaginal delivery and the cost of endometritis per cesarean delivery, weighted according to the relative proportion of vaginal and cesarean deliveries. |

**Table S8**. Annual economic burden of bacterial vaginosis-associated preterm births among white and African-American women in the United States

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Race** | **Cost per preterm birth** | **Annual cost of BV-associated preterm births  (95% confidence interval) (millions of 2017 USD)** | | |
| White | $31,402.23(107) | 1,630 | (740, | 2,529) |
| African-American | $31,402.23(107) | 1,036 | (911, | 1,147) |

**Table S9**. Annual economic burden of bacterial vaginosis-associated HIV cases among white and African-American women in the United States

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Race** | **Annual cost per HIV case** | **Annual cost of BV- associated HIV cases  (95% confidence interval) (millions of 2017 USD)** | | |
| White | $25,990(110) | 156 | (129, | 183) |
| African-American | $25,990(110) | 760 | (672, | 845) |

**Table S10**. Measures of association of bacterial vaginosis and adverse outcomes from included studies

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Study location** | **Year(s) of data collection** | **Study population** | **Outcome** | **Measure of association (95% confidence interval)** |
| Blantyre, Malawi (111s) | 2003-2005 | 787 non-pregnant, HIV-negative women attending postpartum and family planning clinics in the Queen Elizabeth Central Hospital or two health centers in Blantyre and enrolling in a clinical trial of intermittent metronidazole gel use for BV prevention. Follow-up in three-monthly intervals for 12 months. Cox proportional hazards model adjusted for treatment arm, age, and contraceptive method. | HIV acquisition | HR 2.52 (1.07, 5.94) |
| Western Kenya (112s) | 2011-2013 | 1,296 pregnant, HIV-negative women ages 14 years and older accessing antenatal care services and enrolling in a prospective cohort study. Women were followed throughout pregnancy and 9 months postpartum. Cox proportional hazards model adjusted for partner age difference, lifetime number of partners, chlamydia, syphilis, and yeast infection. | HIV acquisition | HR 2.14 (0.90, 5.10) |
| Uganda and Zimbabwe (113s) | 1999-2004 | 4,439 non-pregnant, sexually active, HIV-negative women ages 18-35 attending family planning and general health clinics and enrolling into prospective cohort study Hormonal Contraception and the Risk of HIV acquisition. Women were followed for two years. Cox proportional hazards model adjusted for condom use, STI history, site, age, living with partner, yeast, and incidence STI. | HIV acquisition | HR 2.12 (1.50, 3.01) |
| Kenya (114s) | 1999-2002 | 463 pregnant women living with HIV followed biweekly throughout pregnancy. Infants becoming HIV-positive *in utero* were compared to infants infected at other time points and infants remaining HIV-negative at 12 months in multivariate logistic regression models adjusted for plasma HIV viral load, CD4, zidovudine use, and illness during pregnancy. | *In-utero* mother-to-child HIV transmission | OR 3.0 (1.0, 7.0) |
| Pittsburgh, United States (115s) | 1998-2000 | 670 non-pregnant, HSV2-negative women ages 18-30 recruited from one of three health care clinics. Women with antibiotic or douche use in the prior 24 hours were excluded. Follow-up in three four-monthly intervals. 73% of study participants were white, 23% were African-American, and 4% were Hispanic, Asian, Native American, or multiethnic. Pooled logistic regression model estimates risk of incident HSV2 comparing Nugent score at visit prior to incident HSV2 of 7-10 relative to 0-3, adjusted for education and new sex partner. | Herpes Simplex Virus Type 2 acquisition | HR 2.1 (1.0, 4.5) |
| Birmingham, Alabama (116s) | 1999-2002 | 3,620 women ages 15-44 years accessing routing care at one of 12 clinics and enrolling in the Longitudinal Study of Vaginal Flora. 17% of study participants were white and 82% were African-American. Pooled logistic regression model estimates risk of incident gonorrhea comparing Nugent score at visit prior to incident gonorrhea of 7-10 relative to 0-3, adjusted for age, race, number of sex partners, condom use, medication use, vaginal douching, and STI at prior visit. | Gonorrhea acquisition | HR 1.43 (0.98, 2.08) |
| Birmingham, Alabama (116s) | 1999-2002 | 3,620 women ages 15-44 years accessing routing care at one of 12 clinics and enrolling in the Longitudinal Study of Vaginal Flora. 17% of study participants were white and 82% were African-American. Pooled logistic regression model estimates risk of incident chlamydia comparing Nugent score at visit prior to incident chlamydia of 7-10 relative to 0-3, adjusted for age, race, number of sex partners, condom use, medication use, vaginal douching, and STI at prior visit. | Chlamydia acquisition | HR 1.75 (1.37, 2.23) |
| Birmingham, Alabama (116s) | 1999-2002 | 3,620 women ages 15-44 years accessing routing care at one of 12 clinics and enrolling in the Longitudinal Study of Vaginal Flora. 17% of study participants were white and 82% were African-American. Hazard ratio estimates risk of incident trichomoniasis comparing Nugent score at visit prior to incident trichomoniasis of 7-10 relative to 0-3, adjusted for age, race, number of sex partners, condom use, medication use, vaginal douching, and STI at prior visit. | Trichomoniasis acquisition | HR 1.95 (1.48, 2.57) |
| Three US sites (117s) | pre-2011 | 663 non-pregnant, sexually active women ages 18-40 enrolled in a trial of a group B *Streptococcus* vaccine. Nugent score of 7-10 was compared relative to 0-3 in Cox proportional hazards models, adjusted for race, age, incident *Trichomonas vaginalis*, genital herpes, and two or more male sex partners since previous visit. | Streptococcus pseudoporcinus acquisition | HR 2.0 (1.0, 4.0) |
| Nairobi, Kenya (118s) | 1999-2002 | 413 women living with HIV with 28 or more weeks’ gestation attending antenatal care services. Model compares outcome among HIV-negative infants in a logistic regression adjusted for body mass index. | Small for gestational age | OR 3.2 (1.4, 7.4) |
| Nairobi, Kenya (118s) | 1999-2002 | 413 women living with HIV with 28 or more weeks’ gestation attending antenatal care services. Model compares outcome among HIV-negative infants in an unadjusted logistic regression. | Delivery of low birthweight infant | OR 2.1 (0.78, 5.6) |
| Lagos, Nigeria (90s) | 2012-2013 | 246 healthy pregnant women ages 20-44 attending a first antenatal care visit between 14-36 weeks’ gestation. Risk ratio estimated in unadjusted models, comparing women with Nugent score 7-10 to women with Nugent score 0-6. | Delivery of low birthweight infant | RR 3.2 (1.29, 7.9) |
| Barcelona, Spain (24s) | Pre-1998 | 635 pregnant women with fewer than 35 weeks’ gestation attending a university hospital. Risk ratio estimated in unadjusted models, comparing women with Nugent score 7-10 to women with Nugent score 0-6. | Premature rupture of membranes | RR 3.3 (2.0, 5.6) |
| Lagos, Nigeria (90s) | 2012-2013 | 246 healthy pregnant women ages 20-44 attending a first antenatal care visit between 14-36 weeks’ gestation. Risk ratio estimated in unadjusted models, comparing women with Nugent score 7-10 to women with Nugent score 0-6. | Premature rupture of membranes | RR 6.8 (3.1, 14.7) |
| Montreal, Canada (119s) | 1999-2004 | 2,204 pregnant women ages 18 and older attending prenatal care services in the first two trimesters. BV was assessed at 24-26 weeks’ gestation. Logistic regression models were adjusted for douching, high vaginal fetal fibronectin, and inflammation. | Preterm premature rupture of membranes | OR 0.9 (0.3, 2.4) |
| Barcelona, Spain (24s) | Pre-1998 | 635 pregnant women with fewer than 35 weeks’ gestation attending a university hospital. Risk ratio estimated in unadjusted models, comparing women with Nugent score 7-10 to women with Nugent score 0-6. | Preterm labor | RR 3.2 (1.8, 5.7) |
| Jakarta, Indonesia (120s) | 1989-1990 | 490 pregnant women accessing prenatal care services at one of three hospitals. Women with medical conditions associated with preterm delivery were excluded. BV assessed at 16-20 weeks’ gestation. Logistic regression model compared Nugent score 7-10 relative to Nugent score 0-6, adjusted for age, education, smoking, and *Trichomonas* infection. | Preterm delivery | OR 2.0 (1.0, 3.9) |
| Jakarta, Indonesia (120s) | 1989-1990 | 490 pregnant women accessing prenatal care services at one of three hospitals. Women with medical conditions associated with preterm delivery were excluded. BV assessed at 28-32 weeks’ gestation. Logistic regression model compared Nugent score 7-10 relative to Nugent score 0-6, adjusted for age, education, smoking, and *Trichomonas* infection. | Preterm delivery | OR 1.5 (0.7, 3.0) |
| Barcelona, Spain (24s) | Pre-1998 | 635 pregnant women with fewer than 35 weeks’ gestation attending a university hospital. Risk ratio estimated in unadjusted model, comparing women with Nugent score 7-10 to women with Nugent score 0-6. | Preterm delivery | RR 3.1 (1.8, 5.4) |
| Lagos, Nigeria (90s) | 2012-2013 | 246 healthy pregnant women ages 20-44 attending a first antenatal care visit between 14-36 weeks’ gestation. Risk ratio estimated in unadjusted model, comparing women with Nugent score 7-10 to women with Nugent score 0-6. | Preterm delivery | RR 2.7 (1.44, 4.98) |
| Nord-Pas-de-Calais, France (121s) | 2006-2009 | 1,334 pregnant women ages 18 and older with less than 13 weeks’ gestation. Logistic regression model compared women with Nugent score 7-10 to women with Nugent score 0-6, adjusted for maternal education level and smoking status. | Preterm delivery | OR 1.6 (0.90, 2.60) |
| Nairobi, Kenya (118s) | 1999-2002 | 413 women living with HIV with 28 or more weeks’ gestation attending antenatal care services. Model compares outcome among HIV-negative infants in an unadjusted logistic regression. | Preterm delivery | OR 2.1 (0.97, 4.40) |
| Montreal, Canada (119s) | 1999-2004 | 2,204 pregnant women ages 18 and older attending prenatal care services in the first two trimesters. BV was assessed at 24-26 weeks’ gestation. Logistic regression model adjusted for douching, high vaginal fetal fibronectin, and inflammation. | Preterm delivery | OR 1.4 (0.5, 4.1) |

**Table S11.** PRSIMA Checklist

|  |  |  |  |
| --- | --- | --- | --- |
| **Section/topic** | **#** | **Checklist item** | **Reported on page #** |
| **TITLE** | | |  |
| Title | 1 | Identify the report as a systematic review, meta-analysis, or both. | 1 |
| **ABSTRACT** | | |  |
| Structured summary | 2 | Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number. | 3, 4 |
| **INTRODUCTION** | | |  |
| Rationale | 3 | Describe the rationale for the review in the context of what is already known. | 5, 6 |
| Objectives | 4 | Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS). | 6 |
| **METHODS** | | |  |
| Protocol and registration | 5 | Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number. | 6 |
| Eligibility criteria | 6 | Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale. | 7 |
| Information sources | 7 | Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched. | 6, 7, Suppl. Text S1 |
| Search | 8 | Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated. | Suppl. Text S1 |
| Study selection | 9 | State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis). | 7 |
| Data collection process | 10 | Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators. | 7 |
| Data items | 11 | List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made. | 6, 7 |
| Risk of bias in individual studies | 12 | Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis. | 7 |
| Summary measures | 13 | State the principal summary measures (e.g., risk ratio, difference in means). | 7, 8, 9 |
| Synthesis of results | 14 | Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I2) for each meta-analysis. | 8, 9 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Section/topic** | **#** | **Checklist item** | **Reported on page #** |
| Risk of bias across studies | 15 | Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies). | NA |
| Additional analyses | 16 | Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified. | NA |
| **RESULTS** | | |  |
| Study selection | 17 | Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram. | Figure 1 |
| Study characteristics | 18 | For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations. | Suppl. Table 1 |
| Risk of bias within studies | 19 | Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12). | Suppl. Table 1 |
| Results of individual studies | 20 | For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot. | Figure 1, Suppl. Figures S1, S2 |
| Synthesis of results | 21 | Present results of each meta-analysis done, including confidence intervals and measures of consistency. | 10, 11, 12, 13 |
| Risk of bias across studies | 22 | Present results of any assessment of risk of bias across studies (see Item 15). | NA |
| Additional analysis | 23 | Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]). | NA |
| **DISCUSSION** | | |  |
| Summary of evidence | 24 | Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers). | 13, 14, 15, 16 |
| Limitations | 25 | Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias). | 16 |
| Conclusions | 26 | Provide a general interpretation of the results in the context of other evidence, and implications for future research. | 13, 14 |
| **FUNDING** | | |  |
| Funding | 27 | Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review. | 2 |

**References**

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