| Parameter | Value | Source |
| --- | --- | --- |
| **Sexual behavior parameters** |  |  |
|  |  |  |
| Average partner change rate, per year | 1.15 | [1] |
| Relative partner change rate by age (women, men) |  | [2, 3] |
| 15–19 | 0.81, 0.10 |  |
| 20–24 | 1.41, 0.76 |  |
| 25–29 | 1.55, 1.87 |  |
| 30–34 | 1.24, 2.18 |  |
| 35–39 | 0.80, 1.49 |  |
| 40–44 | 0.43, 0.69 |  |
| 45–49 | 0.21, 0.23 |  |
| 50–54 | 0.09, 0.06 |  |
| Relative partner change rate by sexual activity level (women, men) |  | [4, 5] |
| Least | 0.33, 0.01 |  |
| Low | 0.63, 0.32 |  |
| Medium | 1.45, 3.88 |  |
| High | 114.23, 13.54 |  |
| Proportion of individuals initially in each sexual activity level (women, men), % |  |  |
| Least | 10.4, 8.0 | [1] |
| Low | 38.6, 35.5 | Calculated |
| Medium | 0.8, 5.2 | [1, 6) |
| High | 0.2, 1.4 | [7, 8] |
| Average duration of female sex work, years | 2.7 | [9) |
| Assortativity of sexual mixing by sexual activity level | 0.43 | [2] |
| Assortativity of sexual mixing between men and women of the same age | 0.30 | [2) |
| Assortativity of sexual mixing between younger women and men five years older | 0.76 | [2] |
| Number of sexual acts per regular partnership\* | 115 | [10-12) |
| Number of sexual acts per casual partnership\* | 12.4 | [4] |
| Number of sexual acts per short partnership\* | 3.3 | [4) |
| Condom use |  |  |
| Effectiveness of condoms for HIV prevention, % | 90 | [13] |
| Year that condom use starts to increase | 1999.3 | [14) |
| Year that condom use stabilizes | 2006.5 | [14] |
| Condom use frequency in regular partnerships\* (initially, after increase), % | 2, 46 | [1, 14] |
| Condom use frequency in casual partnerships\* (initially, after increase), % | 13, 52 | [1, 14] |
| Condom use frequency in short partnerships\* (initially, after increase), % | 34, 64 | [1, 14] |
|  |  |  |
| **Epidemiological parameters** |  |  |
| Epidemic start date | 1982 | Assumed |
| HIV transmission probability, % per sexual act |  |  |
| Acute infection | 1.395 | [15-19] |
| Chronic infection  | 0.247 | [15-18, 20] |
| AIDS  | 0.489 | [15-18, 20] |
| HIV disease progression |  |  |
| Duration of acute infection pre-seroconversion, weeks | 3.01 | [21, 22] |
| Duration of acute infection post-seroconversion, weeks | 9.50 | [21, 22] |
| Time from onset of chronic infection until CD4 ≤ 500 cells/µL, years | 1.01 | [23] |
| Time from CD4 ≤ 500 cells/µL until CD4 ≤ 350 cells/µL, years | 3.00 | [23] |
| Time from CD4 ≤ 350 cells/µL until CD4 ≤ 200 cells/µL, years | 3.75 | [23] |
| Time from CD4 ≤ 200 cells/µL until death, years | 3.32 | [24] |
|  |  |  |
| **Demographic parameters** |  |  |
| Initial population size (simulation begins at 1978) | 2,466,000 |  |
| Initial population age distribution, % |  | [25] |
| 15–19 | 19 |  |
| 20–24 | 18 |  |
| 25–29 | 16 |  |
| 30–34 | 13 |  |
| 35–39 | 11 |  |
| 40–44 | 9 |  |
| 45–49 | 8 |  |
| 50–54 | 6 |  |
| HIV-unrelated mortality rates (women, men), per year |  | [26] |
| 15–19 | 0.00076, 0.00179 |  |
| 20–24 | 0.00129, 0.00370 |  |
| 25–29 | 0.00182, 0.00480 |  |
| 30–34 | 0.00250, 0.00574 |  |
| 35–39 | 0.00313, 0.00687 |  |
| 40–44 | 0.00444, 0.00930 |  |
| 45–49 | 0.00572, 0.01161 |  |
| 50–54 | 0.00958, 0.01690 |  |
| 55+ | 0.04694, 0.05828 |  |

Behavioral and epidemiological parameter values were calibrated via Bayesian melding as described in detail elsewhere [27, 28]. Prior distributions on these inputs were informed by the sources listed.

\* Partnerships are categorized as “regular” if at least one partner is in the least or low sexual activity level, “short” if both partners are in the high sexual activity level, and “casual” otherwise.

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