**Cost-Effectiveness of Alternative Strategies for Provision of HIV Pre-Exposure Prophylaxis for People Who Inject Drugs**

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**SUPPLEMENT**

**Table S1. Values and Sources for Model Parameters\***

| **Parameter** | **Value** | **Range** | **Source** |
| --- | --- | --- | --- |
| **Demographics** |  |  |  |
| Number of male PWID | 5,000 | -- | Assumed |
| Number of female PWID | 3,503 | -- | Calculated |
| Annual entry rate | 0.012 | -- | [[2](#_ENREF_2)] |
| Non-HIV annual mortality rate |  |  |  |
| PWID not on OAT | 0.011 | -- | [[3](#_ENREF_3), [4](#_ENREF_4)] |
| PWID on OAT | HR 0.39 | -- | [[2](#_ENREF_2), [3](#_ENREF_3)] |
| **Initial HIV conditions** |  |  |  |
| HIV prevalence | 9.8% | -- | [[5](#_ENREF_5)] |
| Fraction aware of HIV status | 69.9% | -- | [[5](#_ENREF_5), [6](#_ENREF_6)] |
| Initial ART enrollment given aware | 40.9% | -- | [[7](#_ENREF_7), [8](#_ENREF_8)] |
| **HIV health states (average duration)** |  |  |  |
| Acute HIV | 12 weeks | -- | [[9](#_ENREF_9), [10](#_ENREF_10)] |
| Asymptomatic HIV | 5.3 years | -- | [[10-12](#_ENREF_10)] |
| Symptomatic HIV | 7.1 years | -- | [[10-12](#_ENREF_10)] |
| Symptomatic HIV on ART | 20.0 years | -- | [[10](#_ENREF_10), [13](#_ENREF_13), [14](#_ENREF_14)] |
| AIDS | 1.7 years | -- | [[10](#_ENREF_10)] |
| AIDS on ART | 5.3 years | -- | [[10](#_ENREF_10), [13](#_ENREF_13), [14](#_ENREF_14)] |
| **ART** |  |  |  |
| Transmission reduction if injecting partner is on ART | 59% | -- | [[15](#_ENREF_15), [16](#_ENREF_16)] |
| Transmission reduction if sexual partner is on ART | 90% | -- | [[10](#_ENREF_10), [16](#_ENREF_16), [17](#_ENREF_17)] |
| **PrEP** |  |  |  |
| Weekly infection reduction | 48.9% | 10%-90% | [[15](#_ENREF_15)] |
| Screening frequency | 3 months | -- | [[18](#_ENREF_18)] |
| **Injecting behavior** |  |  |  |
| Long-term needle-sharing partnership duration | 36 months | -- | [[19](#_ENREF_19), [20](#_ENREF_20)] |
| Long-term partnership distribution |  |  | [[21](#_ENREF_21)] |
| 0 partners | 64% | -- |  |
| 1 partner | 21% | -- |  |
| 2 partners | 11% | -- |  |
| 3 partners | 3% | -- |  |
| 4 partners | 1% | -- |  |
| Distribution of long-term sharing frequency |  |  | [[22](#_ENREF_22)] |
| 1 time per month | 38% | -- |  |
| 1 time per week | 45% | -- |  |
| 1 time per day | 17% | -- |  |
| One-time sharing frequency | 0.14 times/week | -- | Estimated\*\* |
| Transmission rate per injection |  |  |  |
| Asymptomatic HIV | 0.05% | -- | [[10](#_ENREF_10), [23](#_ENREF_23)] |
| Symptomatic HIV | HR 2.85 | -- | [[10](#_ENREF_10), [23](#_ENREF_23)] |
| AIDS | HR 7.10 | -- | [[10](#_ENREF_10), [23](#_ENREF_23)] |
| Acute HIV | HR 24.50 | -- | [[9](#_ENREF_9), [10](#_ENREF_10), [23](#_ENREF_23)] |
| **Opioid agonist therapy** |  |  |  |
| Initial PWID enrollment | 25% | 25%-60% | [[6](#_ENREF_6), [24](#_ENREF_24), [25](#_ENREF_25)] |
| Percent of PWID who quit annually | 31.5% | -- | [[24](#_ENREF_24)] |
| **Sexual behavior** |  |  |  |
| Percent of male PWID having a regular sex partner | 58% | -- | [[21](#_ENREF_21)] |
| Percent of female PWID having a regular sex partner | 82% | -- | Calculated |
| Partnership duration |  |  |  |
| Regular sex partner | 24 months | -- | [[26](#_ENREF_26)] |
| Casual sex partner | 6 months | -- | Estimated\*\* |
| Concurrent sexual partnership distribution, male and female |  |  | [[21](#_ENREF_21)] |
| 0 partners | 26%, 15% | -- |  |
| 1 partner | 51%, 48% | -- |  |
| 2 partners | 17%, 12% | -- |  |
| 3 partners | 6%, 25% | -- |  |
| Transmission rate per coital act |  |  |  |
| Asymptomatic HIV | 0.06% | -- | [[27](#_ENREF_27)] |
| Symptomatic HIV | HR 2.85 | -- | [[10](#_ENREF_10), [23](#_ENREF_23)] |
| AIDS | HR 7.10 | -- | [[10](#_ENREF_10), [23](#_ENREF_23)] |
| Acute HIV | HR 24.50 | -- | [[9](#_ENREF_9), [10](#_ENREF_10), [23](#_ENREF_23)] |
| Transmission reduction due to condom use | 80% | -- | [[28](#_ENREF_28), [29](#_ENREF_29)] |
| Fraction of coital acts with consistent condom use |  |  |  |
| Regular partnership | 16% | -- | [[26](#_ENREF_26), [30](#_ENREF_30), [31](#_ENREF_31)] |
| Casual partnership | 50% | -- | [[32](#_ENREF_32)] |
| Relative risk of condom use, HIV aware | 1.66 | -- | [[25](#_ENREF_25)] |
| **Annual costs (2016 US dollars)** |  |  |  |
| Healthcare for uninfected PWID | 3,000 | -- | [[2](#_ENREF_2), [24](#_ENREF_24)] |
| Opioid agonist therapy | 7,000 | -- | [[2](#_ENREF_2), [24](#_ENREF_24)] |
| PrEP drug | 10,000 | 4,000-10,000 | [[33-36](#_ENREF_33)] |
| PrEP screening services§ | 800 | -- | [[33](#_ENREF_33), [37](#_ENREF_37)] |
| ART | 15,000 | -- | [[12](#_ENREF_12), [16](#_ENREF_16), [37](#_ENREF_37), [38](#_ENREF_38)] |
| HIV care |  |  |  |
| Asymptomatic HIV | 4,000 | -- | [[12](#_ENREF_12), [16](#_ENREF_16), [24](#_ENREF_24), [37](#_ENREF_37), [38](#_ENREF_38)] |
| Symptomatic HIV, not on ART | 7,000 | -- | [[12](#_ENREF_12), [16](#_ENREF_16), [24](#_ENREF_24), [37](#_ENREF_37), [38](#_ENREF_38)] |
| Symptomatic HIV, on ART§§ | 6,500 | -- | [[12](#_ENREF_12), [16](#_ENREF_16), [24](#_ENREF_24), [37](#_ENREF_37), [38](#_ENREF_38)] |
| AIDS, not on ART | 20,040 | -- | [[12](#_ENREF_12), [16](#_ENREF_16), [24](#_ENREF_24), [37](#_ENREF_37), [38](#_ENREF_38)] |
| AIDS, on ART | 10,000 | -- | [[12](#_ENREF_12), [16](#_ENREF_16), [24](#_ENREF_24), [37](#_ENREF_37), [38](#_ENREF_38)] |
| Annual discount rate | 3% | -- | [[39](#_ENREF_39), [40](#_ENREF_40)] |
| **Additional PrEP program parameters** |  |  |  |
| PrEP coverage level (percent of eligible PWID) | 25% | 5%-50% | Assumed |
| Cost of contact tracing (2016 US dollars) | 400 | 0-1000 | [[41](#_ENREF_41)] |
| Success rate of contact tracing | 30% | 10%-100% | [[41](#_ENREF_41)] |
| Cost of partnership information, per person (2016 US dollars) | 0 | 0-600 | Assumed |
| **Quality-of-life multipliers** |  |  |  |
| PWID | 0.90 | -- | [[16](#_ENREF_16), [42](#_ENREF_42)] |
| PWID on opioid agonist therapy | 0.95 | -- | [[2](#_ENREF_2), [24](#_ENREF_24), [42](#_ENREF_42)] |
| Asymptomatic HIV | 0.94 | -- | [[16](#_ENREF_16), [43](#_ENREF_43)] |
| Symptomatic HIV | 0.81 | -- | [[16](#_ENREF_16), [43](#_ENREF_43)] |
| AIDS | 0.7 | -- | [[16](#_ENREF_16), [43](#_ENREF_43)] |
| ART multiplier | 1.15 | -- | [[12](#_ENREF_12), [16](#_ENREF_16), [33](#_ENREF_33), [42](#_ENREF_42)] |

\* ART = antiretroviral therapy, HR = hazard ratio, OAT = opioid agonist therapy, PWID = people who inject drugs

\*\* Estimated through calibration

§ Individuals on PrEP are screened for HIV every three months

§§ Disease costs while on ART exclude cost of ART

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