Supplemental materials

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| Characteristics at time of sampling | Clustering within thetransmission network |
| Study population | clustered  | Not clustered | Odds Ratio(95% confidenceinterval) | P valueif <0.05 |
| N (%) | 119 (100%) | 24 (20.2%) | 95 (79.8%) | ----- | ----- |
| Risk | MSM | 56 (47.1%) | 15 (62.5%) | 41 (43.2%) |  4.02 (1.24-13.02) | **0.009** |
| FSW | 45 (37.8%) | 3 (12.5%) | 42 (44.2%) | ----- |  |
| FSW Clients | 18 (15.1%) | 6 (25%) | 12 (12.6%) | 3.0 (1.52-5.92) | **0.013** |
| Age | <=24 years old | 32 (26.9%) | 5 (20.8%) | 27 (28.4%) | ----- |   |
| 25-29 years old | 31 (26.1%) | 8 (33.3%) | 23 (24.2%) | 1.34 (0.79-2.26) | 0.246  |
| 30-34 years old | 22 (18.5%) | 5 (20.8%) | 17 (17.9%) | 1.29 (0.63-2.67) | 0.376  |
| >35 years old | 34 (28.6%) | 6 (25%) | 28 (29.5%) | 1.07 (0.59-1.95)  | 0.544  |
| Gender | Male | 74 (62.2%) | 21 (87.5%) | 53 (55.8%) | 1.57 (1.24-1.98) | **0.004** |
| Female | 45 (37.8%) | 3 (12.5%)  | 42 (44.2%) | ----- |   |
| Education | Never attended/some primary school | 36 (30.2%) | 11 (45.8%) | 25 (26.3%) | 1.71 (0.98-2.95) | 0.063  |
| Secondary school or higher | 81 (68.1%) | 13 (54.2%) | 68 (71.6%) | ----- |   |
| Marital Status | Single | 77 (64.7%) | 14 (58.3%) | 63 (66.3%) | ----- |   |
| Other (Married, Living with partner) | 39 (32.8%) | 10 (41.7%) | 29 (30.5%) | 1.32 (0.75-2.32) | 0.241  |
| Number of sex partners in the past 6 months | 5 or less | 83 (69.7%) | 19 (79.2%) | 64 (67.4%) | 1.15 (0.90-1.47) | 0.232  |
| more than 5 | 34 (28.6%) | 5 (20.8%) | 29 (30.5%) | ----- |   |
| Time on ART | 6 months or less | 41 (34.4%) | 9 (37.5%) | 32 (33.7%) | ----- |   |
| more than 6 months | 74 (62.2%) | 12 (50.0%) | 62 (65.3%) | 1.35 (0.62-2.94) | 0.301  |
| DRM | Yes | 70 (58.8%) | 15 (62.5%) | 55 (57.9%) | 1.08 (0.76-1.54) |  0.433 |
| No | 49 (41.2%) | 9 (37.5%) | 40 (42.1%) | ----- |   |

**Table S1.**  Factors associated to clustering within transmission network. Abbreviations; MSM: Men who have sex with men, FSW: Female sex workers, DRM: Drug resistance mutations; ART: Antiretroviral therapy; -----: Reference category

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| --- | --- |
| Characteristics at time of sampling | Clustering within theDrug resistance transmission network |
| Study population | Clustered | Not clustered | Odds Ratio(95% confidenceinterval) | P valueif <0.05 |
| N (%) | 70 (100%) | 15 (21.4%) | 55 (78.6%) | ----- | ----- |
| Risk | MSM | 21 (30%) | 8 (53.3%) | 13 (23.6%) | 4.70 (1.39-15.82) | **0.012** |
| FSW | 37 (52.9%) | 3 (20%) | 34 (61.8%) | ----- |   |
| FSW Clients | 12 (17.1%) | 4 (26.7)  | 8 (14.5%) | 1.38 (0.91-2.08) |  0.544 |
| Age | <=24 years old | 8 (11.4%) | 2 (13.3%) | 6 (10.9%) | ----- |   |
| 25-29 years old | 14 (20%) | 3 (20%) | 11 (20%) | 0.95 (0.59-1.55) |  0.620 |
| 30-34 years old | 18 (25.7%) | 4 (26.7%) | 14 (25.4%) | 0.96 (0.60-1.54) |  0.622 |
| >35 years old | 30 (42.9%) | 6 (40%) | 24 (43.6%) | 0.94 (0.60-1.45) |  0.547 |
| Gender | Male | 33 (47.1) | 12 (80%) | 21 (38.2%) | 4.48 (1.58-14.42) | **0.007** |
| Female | 27 (38.6%) | 3 (20%) | 34 (61.8%) | ----- |   |
| Education | Never attended/some primary school | 27 (38.6%) | 9 (60%) | 18 (32.7%) | 2.28 (0.91-5.67) |  0.065 |
| Secondary school or higher | 41 (58.6%) | 6 (40%) | 35 (63.6%) | ----- |   |
| Marital Status | Single | 44 (62.8%) | 8 (53.3%) | 36 (65.4%) | ----- |   |
| Other (Married, Living with partner) | 23 (32.8%) | 7 (46.7%) | 16 (29.1%) | 1.18 (0.87-1.59) |  0.201 |
| Number of sex partners in the past 6 months | 5 or less | 45 (64.3%) | 11 (73.3%) | 34 (61.2%) | 1.41 (0.50-3.93) |  0.368 |
| more than 5 | 23 (32.9%) | 4 (26.7%) | 19 (34.5%) | ----- |   |
| Time on ART | 6 months or less | 20 (28.6%) | 4 (26.7%) | 16 (29.1%) | ----- |   |
| more than 6 months | 47 (67.1%) | 9 (60.0%) | 38 (69.1%) | 1.04 (0.36-3.0) |  0.590 |

**Table S2.** Factors associated to clustering within drug resistance mutations transmission network. Abbreviations; MSM, men who have sex with men, FSW: female sex workers, DRM: drug resistance mutations; ART: Antiretroviral therapy; -----: Reference category



**Figure S1** Number of clusters and size of clusters across increasing TN93 genetic distance threshold.



**Figure S2** HIV drug resistance transmission among genetically linked individuals.

Individuals (nodes) are shaped as square (men) and circle (women). Nodes are coloured according to risk factors: blue for men having sex with men (MSM), orange for female sex workers (FSW), green for FSW clients and yellow for multiple risks (MSM and FSW client). Shared drug resistance mutations (DRM) are showed in red edges. All edges represent a genetic distance ≤3% separating nodes.