**Supplementary Figure 1**

**Inclusion Flow Diagram**

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**Supplementary Table 1. Patient characteristics**

|  |  |
| --- | --- |
| Characteristic | N (%) |
| Total patients | 668,138 (100.0) |
| Sex |   |
| Female | 413,895 (61.9) |
| Male | 254,243 (38.1) |
| Age, median (IQR): | 32 (26-40) |
| <15 | 25,100 (3.8) |
| ≥15 | 643,038 (96.2) |
| 15–24 | 97,994 (14.7) |
| 25–34 | 264,345 (39.6) |
| 35–44 | 175,511 (26.3) |
| 45–54 | 74,668 (11.2) |
| ≥55 | 30,520 (4.6) |
| Year of ART initiation |   |
| 2016 | 67,696 (10.1) |
| 2017 | 65,346 (9.8) |
| 2018 | 60,526 (9.1) |
| 2019 | 76,232 (11.4) |
| 2020 | 204,110 (30.5) |
| 2021 | 172,745 (25.9) |
| 2022 | 21,483 (3.2) |
| Total number of VL results after ≥24 weeks of ART |   |
| 1 | 187,321 (28.0) |
| 2 | 248,483 (37.2) |
| 3 | 119,187 (17.8) |
| 4 | 67,412 (10.1) |
| ≥5 | 45,735 (6.8) |
| Regimen exposurea |  |
| NRTI exposure |  |
| TDF plus emtricitabine or lamivudine | 649,865 (97.3) |
| Zidovudine plus lamivudine | 17,693 (2.6) |
| Abacavir plus lamivudine | 21,026 (3.1) |
| NNRTI exposure |  |
| Efavirenz | 116,522 (17.4) |
| Nevirapine | 19,683 (3.0) |
| INSTI exposure |  |
| TLD | 633,736 (94.8) |
| Other INSTI | 17,807 (2.7) |
| Protease inhibitor exposure |  |
| Ritonavir-boosted lopinavir | 10,985 (1.6) |
| Ritonavir-boosted atazanavir | 3,200 (0.5) |

aMeasured as cumulative exposure (i.e., all documented regimens received)