# Time to Antiretroviral Initiation Among Transgender Women Living with HIV in France (1997-2022).

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https://anrs-co4.fhdh.fr/

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## BACKGROUND

Transgender women (TW) are particularly vulnerable to HIV infection. Cross-sectional studies have shown that they experience a lower rate of antiretroviral therapy (ART) uptake. However, no longitudinal study has studied time interval between care entry and ART initiation, nor its evolution over time. This study aims to :

- Describe the **evolution of time intervals** between the 3 stages of the continuum of care: care entry, initiation of ART, and achievement of an undetectable viral load (VL <200 copies/mL).
- Assess factors associated with **time to ART initiation after care entry**.

## METHODS

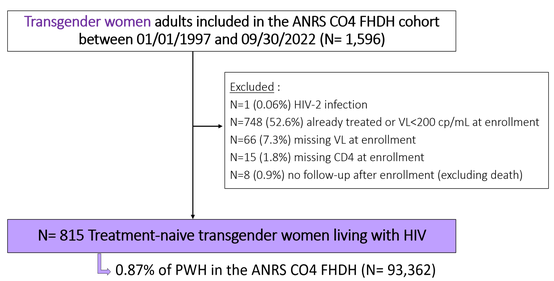
### Data source

**French Hospital Database on HIV** (ANRS CO4 FHDH)

- Prospective multicentric cohort with ongoing enrollment since 1989.
- N=172 hospitals in France ; >105 000 PWH followed in 2022.
- Representative of PWH (people with HIV) receiving care in France[4].

**Population selection :** Treatment-naive transgender women (TW) living with HIV-1, enrolled between 1997 and 2022.

**Figure 1. Flow chart of the population**




### Statistical Analysis

- Factors associated with the time to ART initiation after enrollment in FHDH (care entry) were estimated using a Cox model for each of the following period : 1997-2004 ; 2005-2012 ; 2013-2022.
- Adjusted for age, geographic origin, time between diagnosis and care entry, immuno-virological status, and year of enrollment.

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**Transgender women born outside of France are less likely to start ART soon after care entry compared to those born in France.**

## RESULTS

**Table 1. Characteristics at enrollment in the ANRS CO4 FHDH, by calendar periods**

| | 1997-2004 N=207 | 2005-2012 N=258 | 2013-2022 N=350 | P-value* |
|---|---|---|---|---|
| **Age** | 32 (27 – 36) | 31 (26 – 36) | 31 (27 – 37) | 0.7218 |
| **Geographic origin** | | | | 0.4661 |
| Latin America | 145 (70.1) | 177 (68.6) | 230 (65.7) | |
| France | 39 (18.8) | 57 (22.1) | 73 (20.9) | |
| Africa | 7 (3.4) | 13 (5.0) | 20 (5.7) | |
| Other | 16 (7.7) | 11 (4.3) | 27 (7.7) | |
| **Included in Paris region** | 164 (79.2) | 180 (69.8) | 234 (66.9) | 0.0071 |
| **Sexual HIV acquisition with a cis-man** | 206 (99.5) | 258 (100) | 348 (99.4) | 0.4911 |
| **Status at care entry** | | | | 0.0005 ↘ |
| <200/mm³ CD4 or AIDS | 64 (30.9) | 50 (19.4) | 77 (22.0) | |
| 200-350/mm³ CD4 | 52 (25.1) | 56 (21.7) | 57 (16.3) | |
| >350/mm³ CD4 or primary infection | 91 (44.0) | 152 (58.9) | 216 (61.7) | |
| **Viral load (cp/mL)** | | | | 0.0064 |
| [200 - 5 000[ | 30 (14.5) | 40 (15.5) | 43 (12.3) | |
| [5 000 – 100 000[ | 97 (46.9) | 143 (55.4) | 153 (43.7) | |
| ≥100 000 | 80 (38.7) | 75 (29.1) | 154 (44.0) | |
| **HBs Ag+** | 13 (6.3) | 8 (3.1) | 8 (2.3) | 0.0433 ↘ |
| **HCV+** | 10 (4.8) | 5 (1.9) | 6 (1.7) | 0.0594 ↘ |
| **Duration of follow-up in years** | 20 (16 – 22) | 12 (10 – 14) | 4 (2 – 6) | <.0001 |

*N (%) ; median (Q25 – Q75). *Chi square or Kruskal–Wallis tests.*

In 2013-2022 :
- Peru : 55%
- Brazil : 26%
- Colombia : 4%
- Argentina : 4%
- Venezuela : 4%
- Others : 7%

**Table 2. Evolution of time intervals between stages of the continuum of care**

| | 1997-2004 N=207 | 2005-2012 N=258 | 2013-2022 N=350 | P-value* |
|---|---|---|---|---|
| **Time intervals in months between:** | | | | |
| HIV diagnosis – enrollment in FHDH | 1.8 (0.3 – 21.7) | 1.1 (0.3 – 20.6) | 0.4 (0 – 4.4) | <.0001 ↘ |
| Enrollment in FHDH – ART initiation | 3.5 (0 – 28.2) | 4.6 (0.9 – 20.7) | 0.5 (0.2 – 1.4) | <.0001 ↘ |
| ART initiation – VL <200 cp/mL | 4.6 (2.4 – 15.1) | 3.7 (1.9 – 7.1) | 1.7 (1.0 – 4.3) | <.0001 ↘ |

*Median (Q25-75). *Kruskal–Wallis test.*

**Figure 2. Time to ART intiation after enrollment in FHDH, by calendar periods**

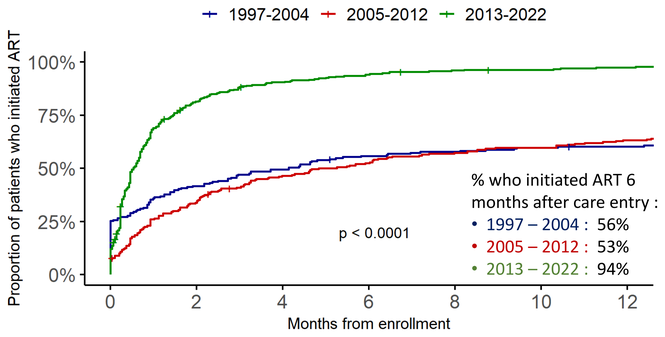



**Table 3. Factors associated with time to ART initiation after care entry, by calendar periods**

| | 1997 – 2004 N= 202 (196/6*) | | 2005 – 2012 N= 253 (245/8) | | 2013 – 2022 N= 335 (325/10) | |
|---|---|---|---|---|---|---|
| | HR | P-value | HR | P-value | HR | P-value |
| **Year of enrollment** | 0.94 (0.87 - 1.01) | 0.0877 | 1.12 (1.05 - 1.19) | 0.0003 | 1.16 (1.11 - 1.21) | <0.0001 |
| **Age** | | 0.0456 | | 0.0247 | | 0.7717 |
| 18-29 | 0.72 (0.52 - 0.99) | | 0.70 (0.52 - 0.93) | | 0.96 (0.74 - 1.24) | |
| 30-39 | ref | | ref | | ref | |
| >40 | 1.18 (0.74 - 1.90) | | 1.02 (0.68 - 1.53) | | 1.08 (0.78 - 1.50) | |
| **Origin** | | 0.0202 | | 0.4163 | | 0.0111 |
| France | ref | | ref | | ref | |
| Latin America | 0.66 (0.44 - 0.98) | | 0.81 (0.58 - 1.13) | | 0.69 (0.51 - 0.92) | |
| Others | 1.16 (0.67 - 2.03) | | 0.93 (0.57 - 1.54) | | 0.58 (0.39 - 0.87) | |
| **Status at care entry** | | <0.0001 | | <0.0001 | | 0.6355 |
| <200/mm³ CD4 or Aids | 4.57 (2.99 - 6.97) | | 4.12 (2.77 - 6.14) | | 0.94 (0.69 - 1.26) | |
| 200-350/mm³ CD4 | 2.56 (1.75 - 3.74) | | 2.57 (1.81 - 3.67) | | 1.12 (0.81 - 1.55) | |
| >350 CD4/mm³ or primary infection | ref | | ref | | ref | |
| **Time diagnosis – care entry** | | 0.3950 | | 0.1764 | | 0.6189 |
| <1 month | ref | | ref | | ref | |
| 1-3 months | 1.07 (0.69 - 1.66) | | 1.49 (0.97 - 2.27) | | 0.93 (0.62 - 1.38) | |
| >3 months | 0.83 (0.60 - 1.15) | | 1.13 (0.85 - 1.50) | | 0.88 (0.66 - 1.15) | |
| **Viral load at enrollment** | | 0.0065 | | <0.0001 | | 0.0071 |
| <100,000 copies/mL | ref | | ref | | ref | |
| ≥100,000 copies/mL | 1.59 (1.14 - 2.23) | | 2.00 (1.44 - 2.77) | | 1.42 (1.10 - 1.84) | |

Multivariable Cox model adjusted for all covariates above, for each period.
*(Number of events/number of censored).

Started ART earlier.
Started ART later.

**The factors associated with the time to ART initiation changed over time:** the immunovirological status was significantly associated in the 1997-2004 and 2005-2012 periods, but was no longer associated in 2013-2022.

In 2013-2022, the factors associated with time to treatment were **viral load at enrollment** and **geographic origin**:
- TW with VL ≥100,000 cp/mL were 42% more likely to start treatment earlier compared to those with VL <100,000 cp/mL.
- TW born in Latin America or in other countries were less likely to start treatment earlier compared to those born in France (reduced by 31% and 42%, respectively).

## CONCLUSIONS

In Transgender women followed in France, there has been an :
- Overall reduction in the time intervals between the 3 stages of the continuum of care since 1997.
- Until 2013, the delay in initiating treatment depended mainly on immunovirological status. Since the "*treat all*" policy, time to ART initiation have shortened, but disparities based on **geographic origin** persist, still hindering rapid access to treatment.

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