

# TasP Statistical Report

*prepared by Joseph Larmarange*

*19 January 2015 - datasets version 3.5*

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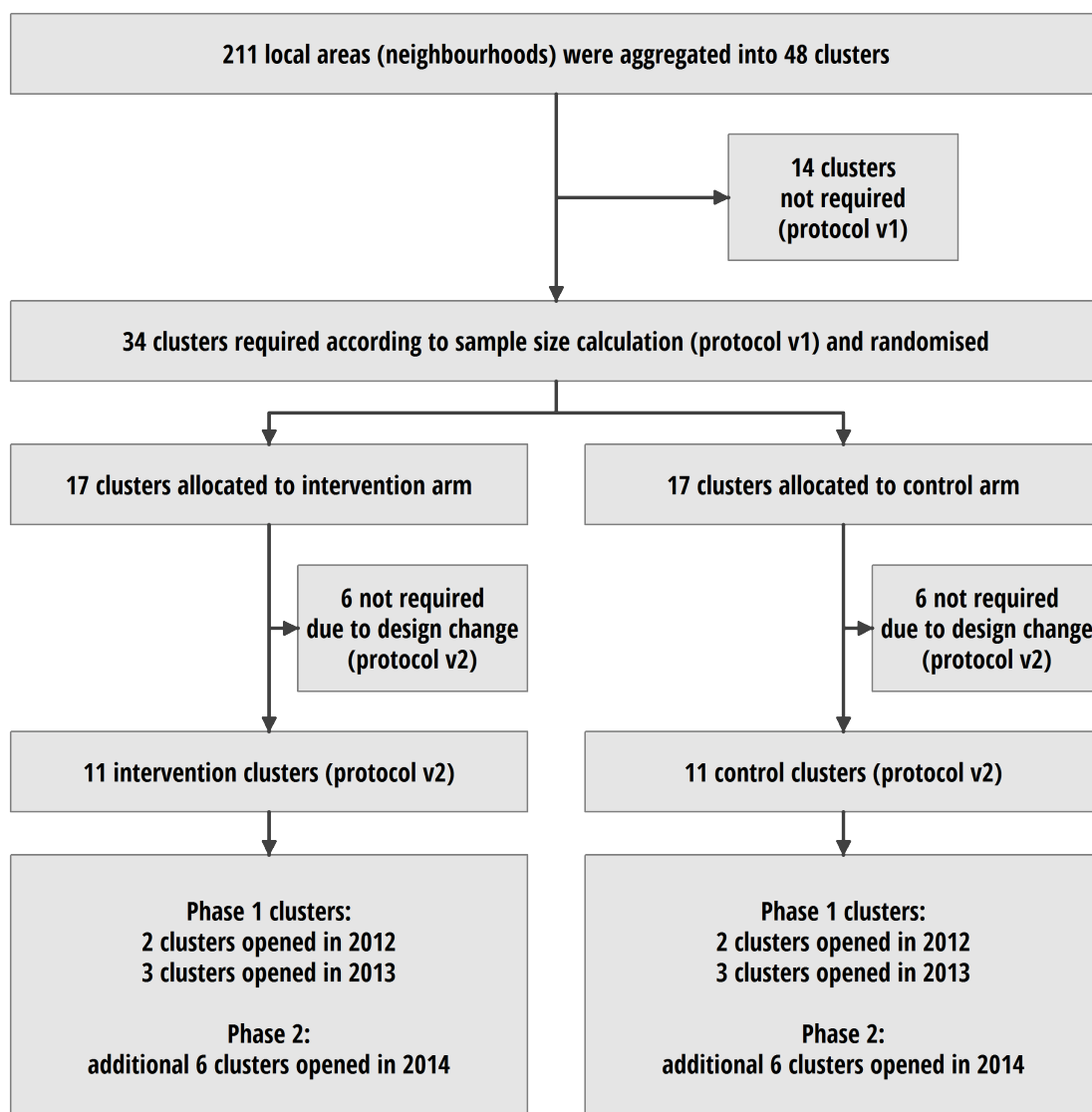
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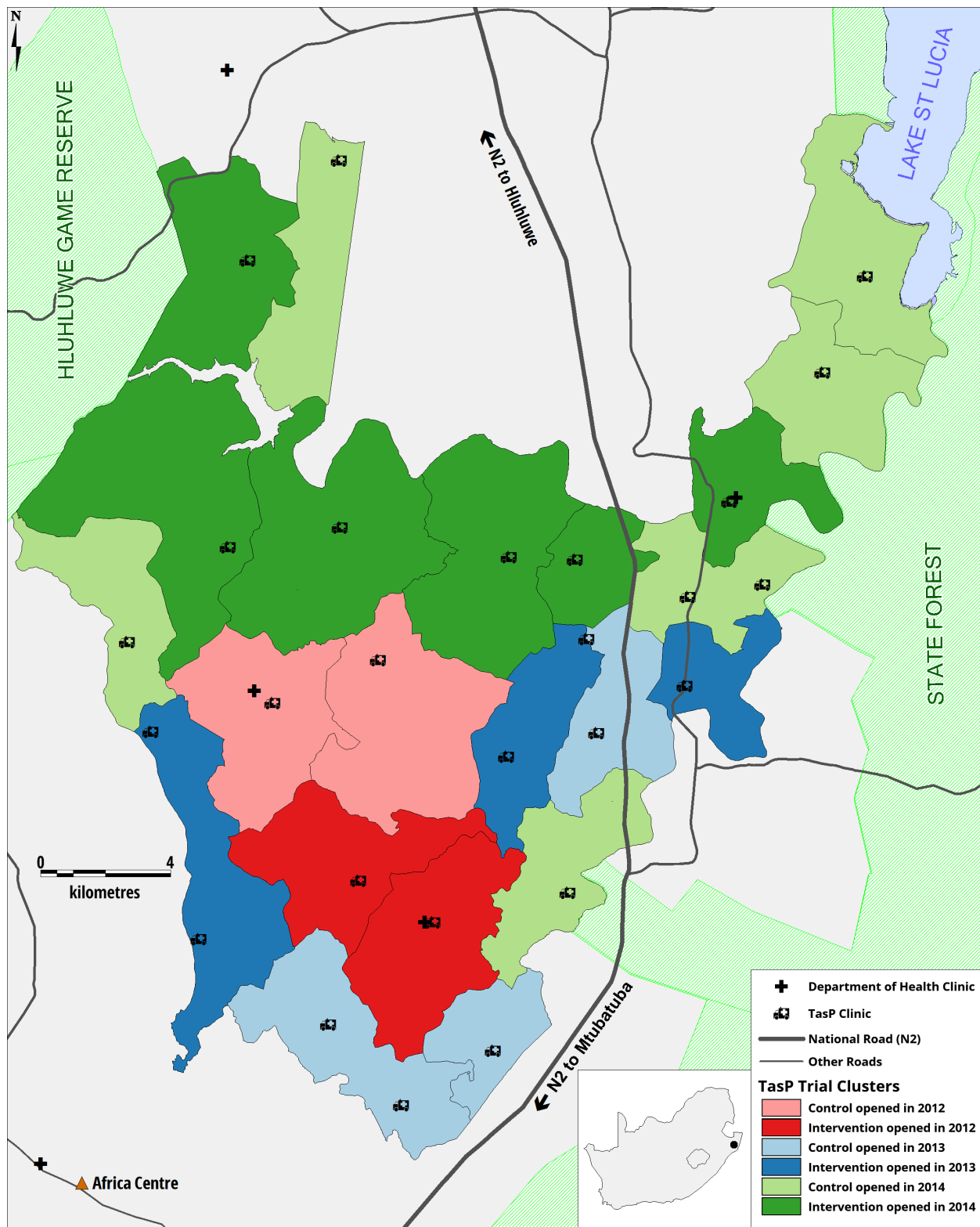
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**Notes:**

- Each indicator is defined in *TasP Definitions* document.
- End of phase 1 is defined as the 31<sup>st</sup> of May 2014.

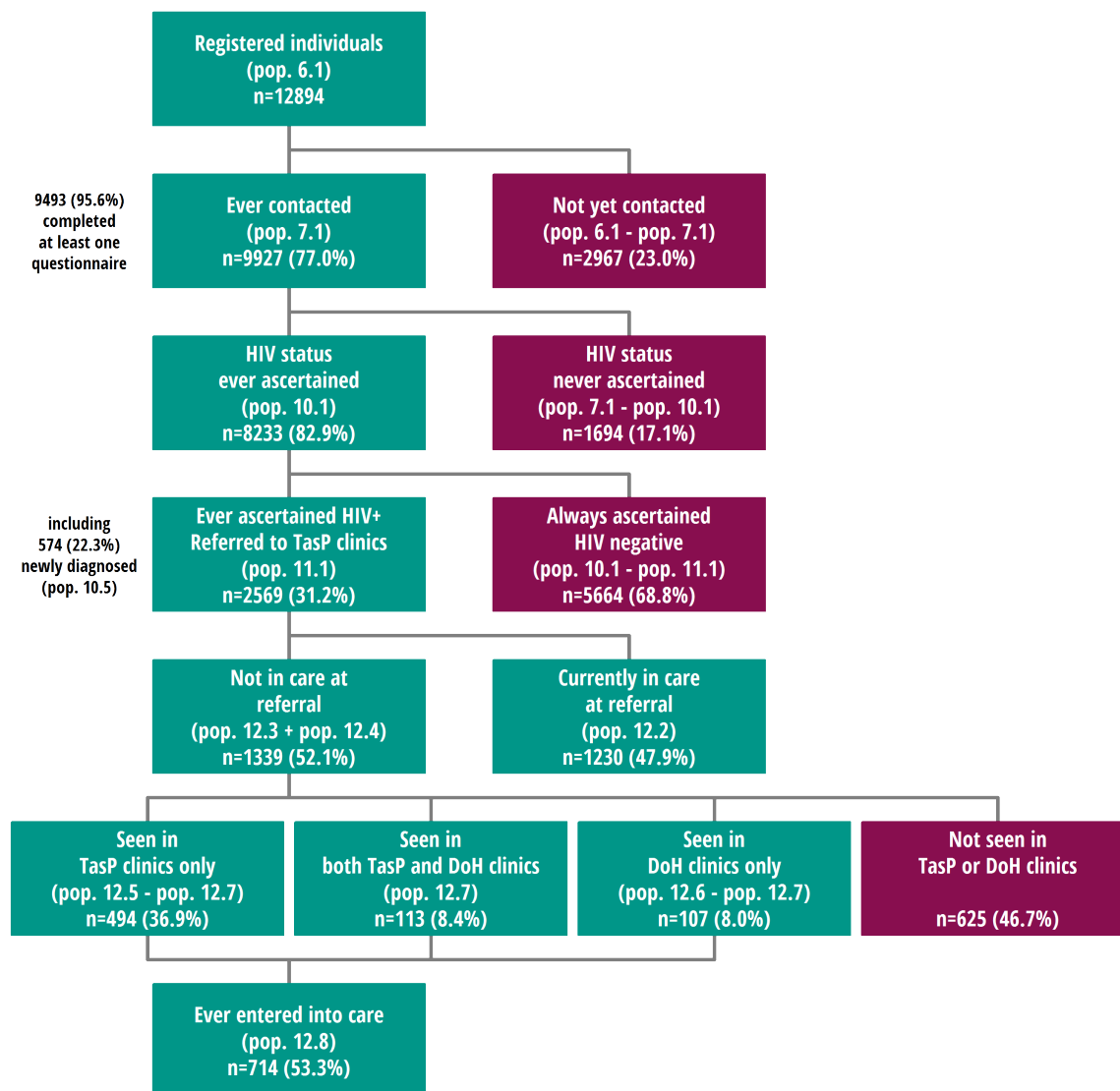
## 1 Trial clusters





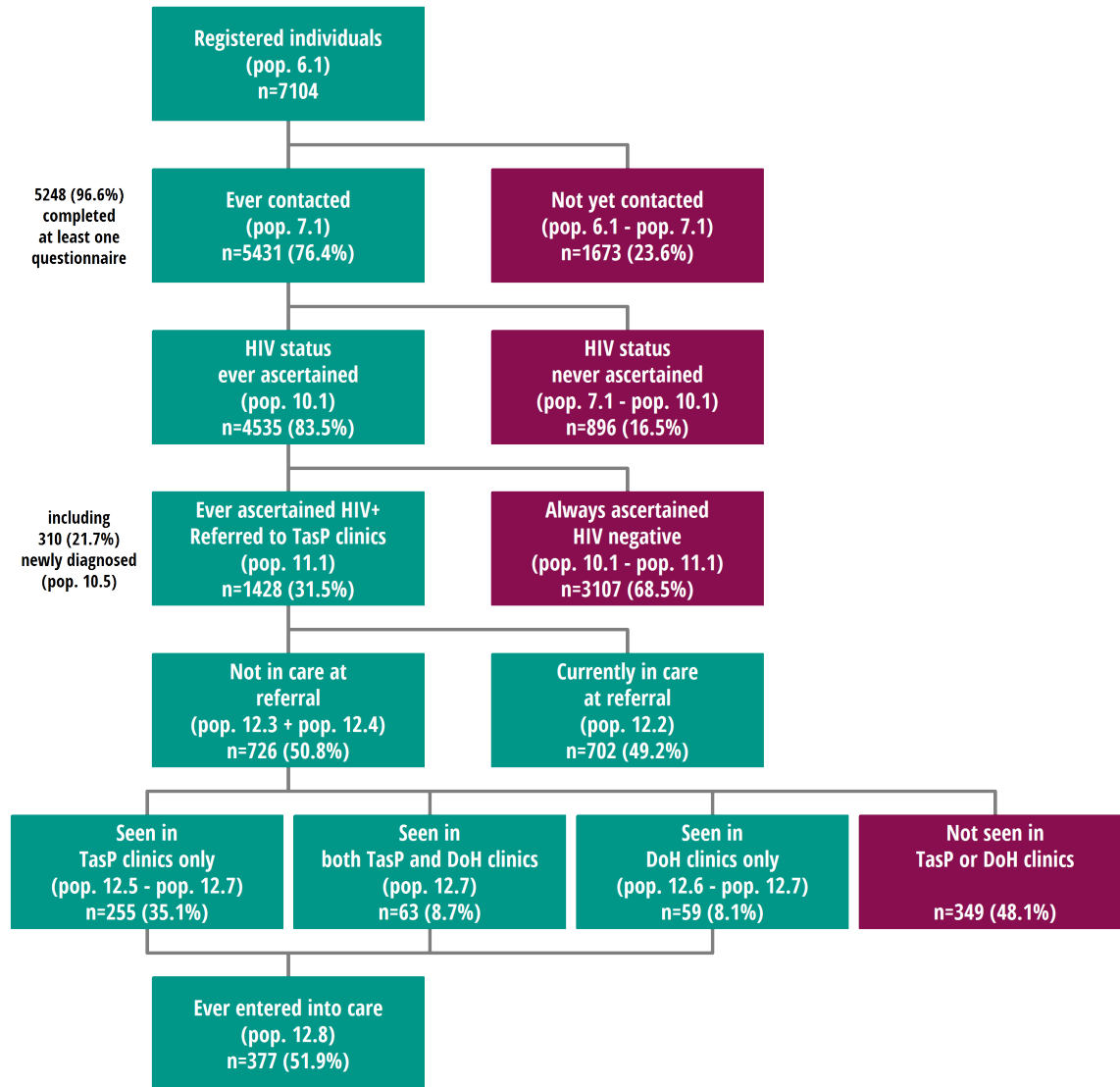
## 2 Global flowchart

### 2.1 Overall



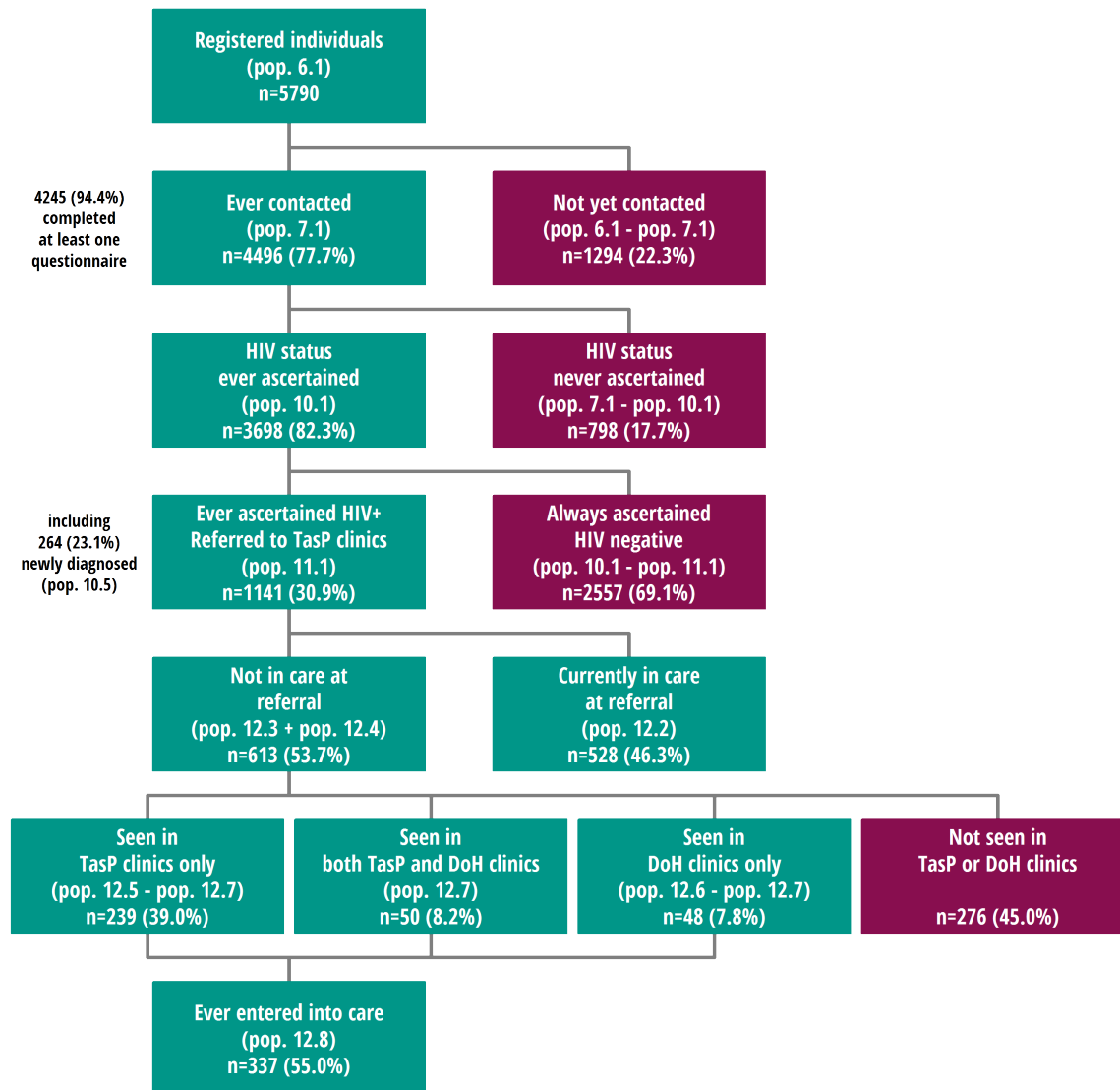
Note: this flowchart is not appropriate to estimate linkage to care as all referred individuals are taken into account, regardless of the date they have been referred. Therefore, it includes some individuals who have been referred only few weeks before the database was frozen and individuals who exited just after having been referred. For more accurate indicators, please see the *engagement with care* section.

## 2.2 Control clusters



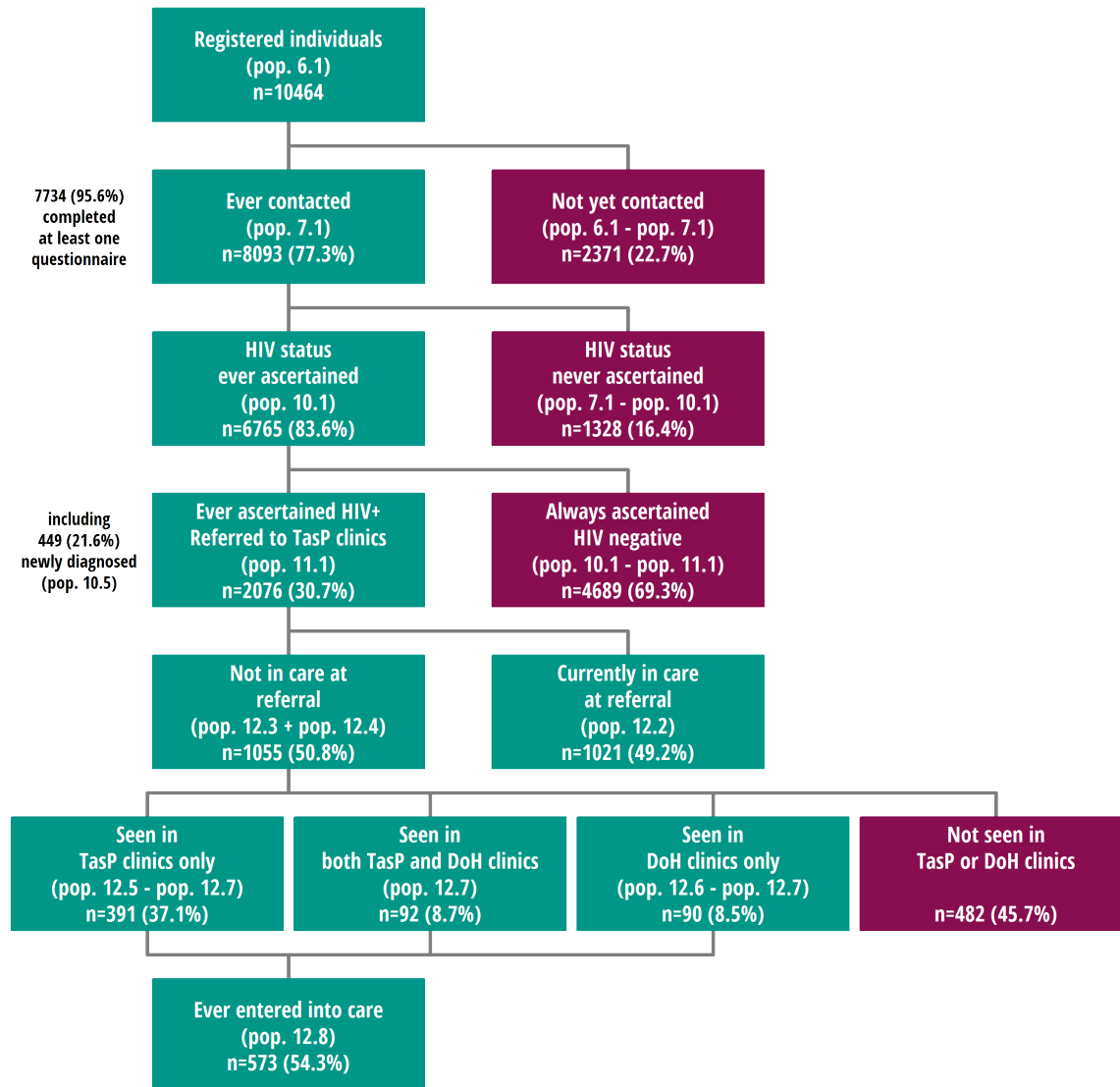
Note: due to internal migration, 1 individual(s) moved from a control cluster to an intervention cluster. We used here the type of cluster at registration.

## 2.3 Intervention clusters



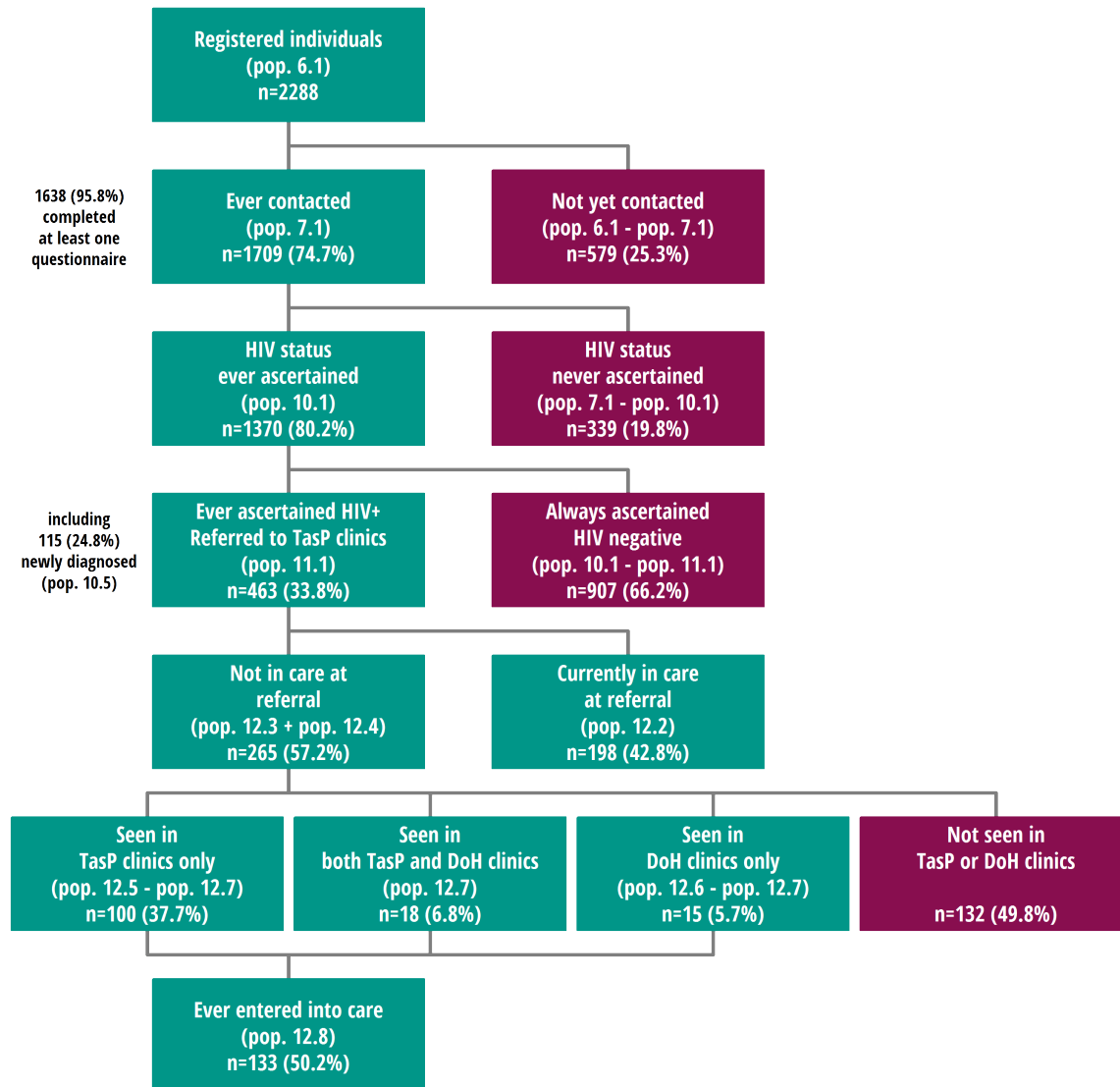
Note: due to internal migration, 5 individual(s) moved from an intervention cluster to a control cluster. We used here the type of cluster at registration.

## 2.4 Among individuals registered in first calendar round

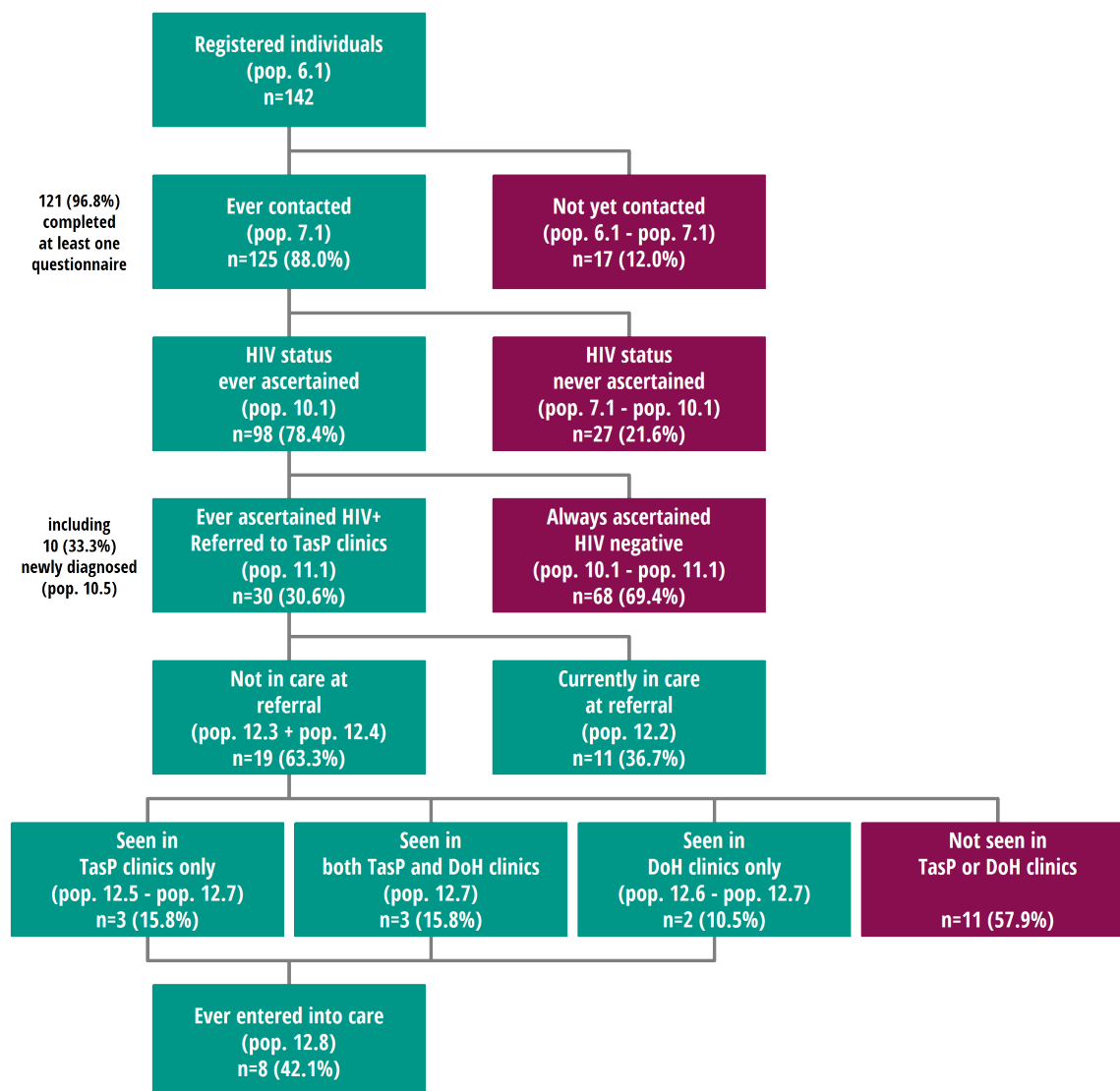




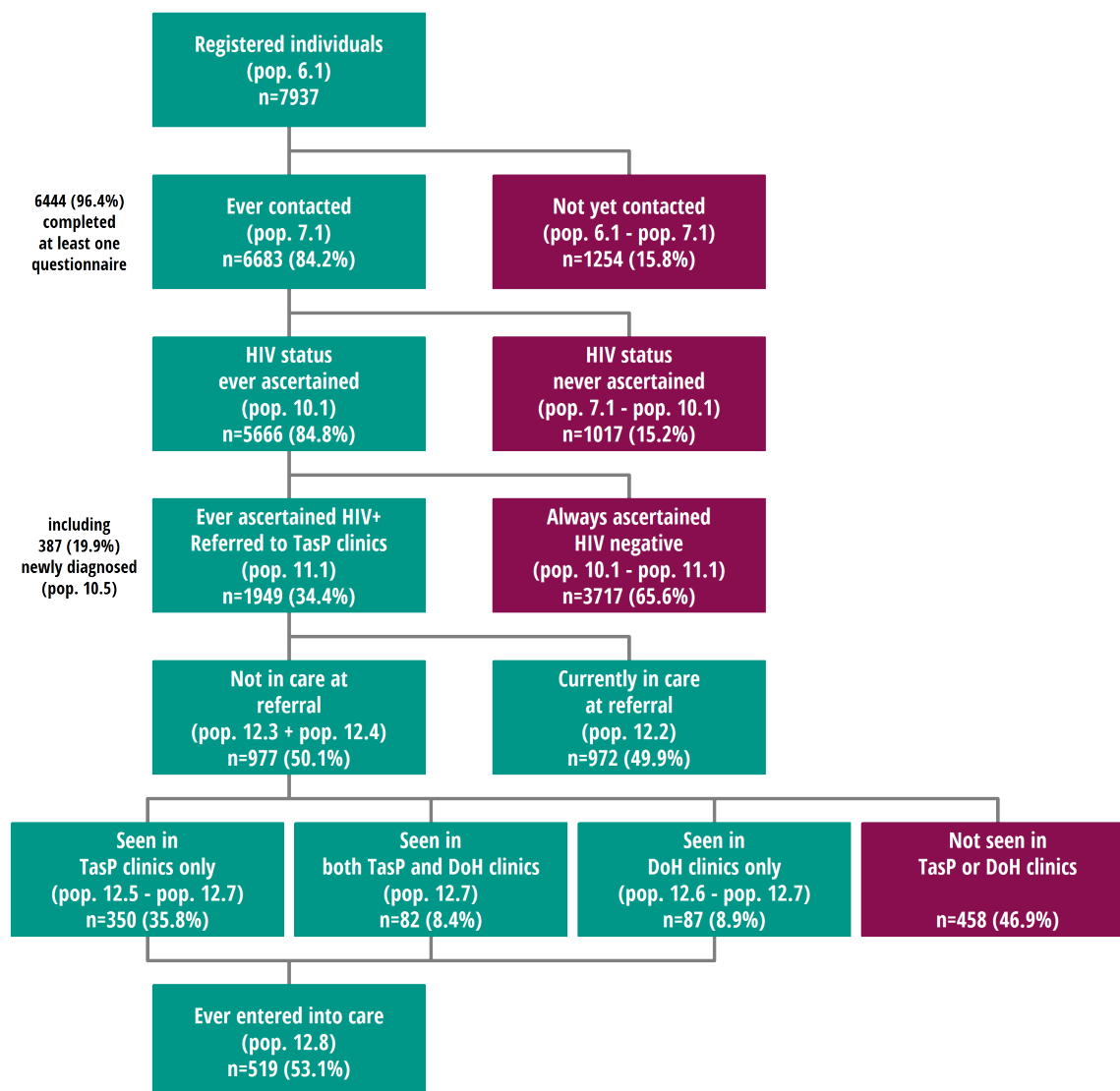
## 2.5 Among individuals registered in second calendar round



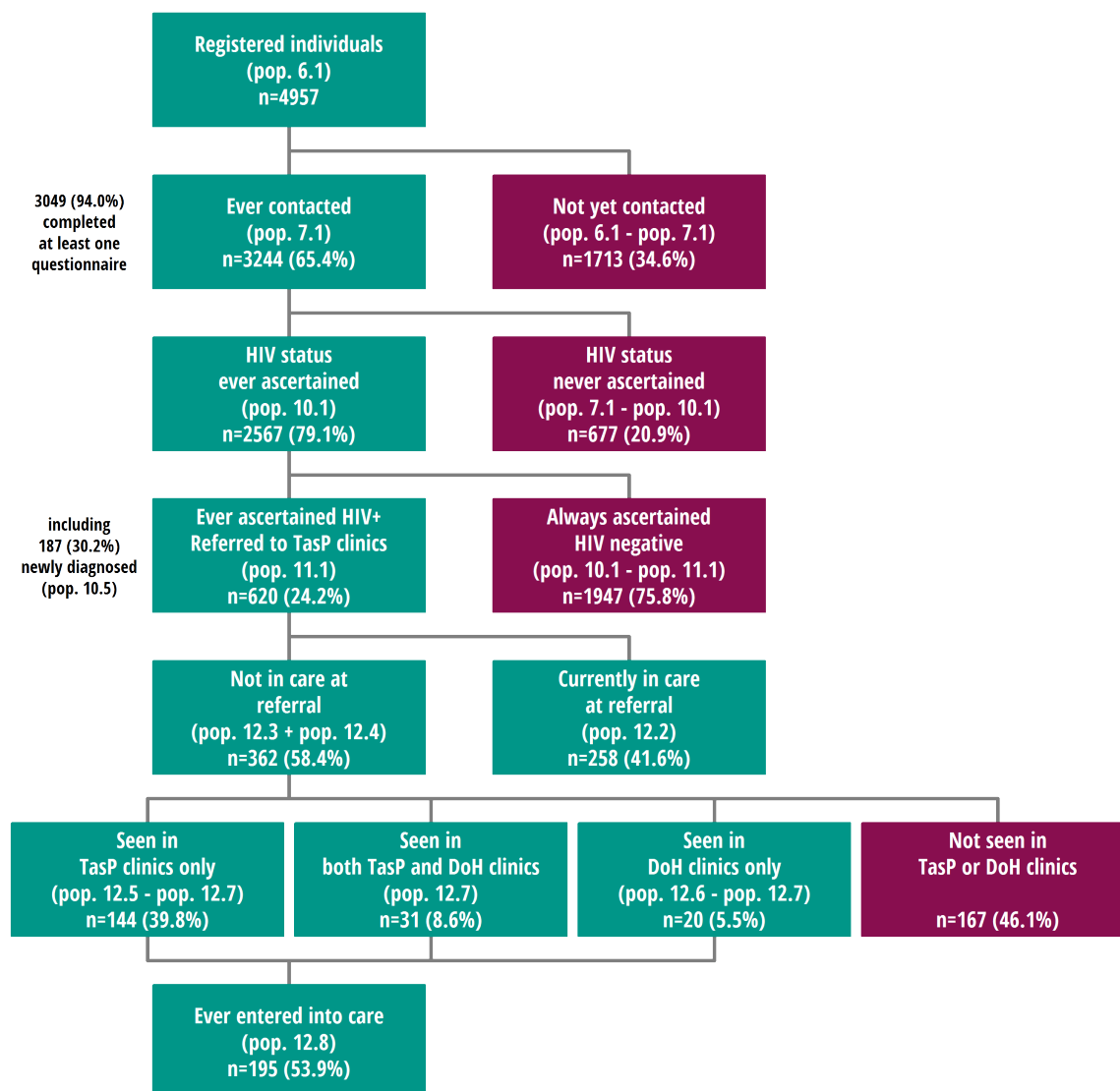
## 2.6 Among individuals registered in third calendar round



## 2.7 Among women



## 2.8 Among men



## 3 Contact

### 3.1 Overall contact rate

The global flowchart presents the proportion of individuals ever contacted (77.0%), i.e. registered individuals contacted at least once (ind. 7.2).

### 3.2 Contact rate per calendar round

Contact rates can also be calculated for each calendar round (ind. 7.4).

- At calendar round 1: 69.1%

- At calendar round 2: 66.8%
- At calendar round 3: 59.6%

Overall contact rate per calendar round (merging all rounds):  
**66.8%** [95% CI: 66.3%-67.4%]

Overall contact rate per calendar round and per arm:

- Control clusters: 68.3% [95% CI: 67.5%-69.1%]
- Intervention clusters: 65.2% [95% CI: 64.4%-66.1%]

## 4 HIV ascertainment & HIV testing

The HIV status of an individual is considered *ascertained* if a rapid test was performed (with a valid result) or if she/he said to the fieldworkers that he already knew being HIV positive.

### 4.1 HIV ascertainment uptake (ever HIV ascertained)

The global flow chart presents the proportion of ever contacted individuals whose status has been ever ascertained (82.9%), i.e. ascertained at least once (ind. 10.2).

### 4.2 HIV ascertainment uptake per calendar round

HIV ascertainment uptake can also be calculated for each calendar round (ind. 10.3).

- At calendar round 1: 77.2%
- At calendar round 2: 79.2%
- At calendar round 3: 72.8%

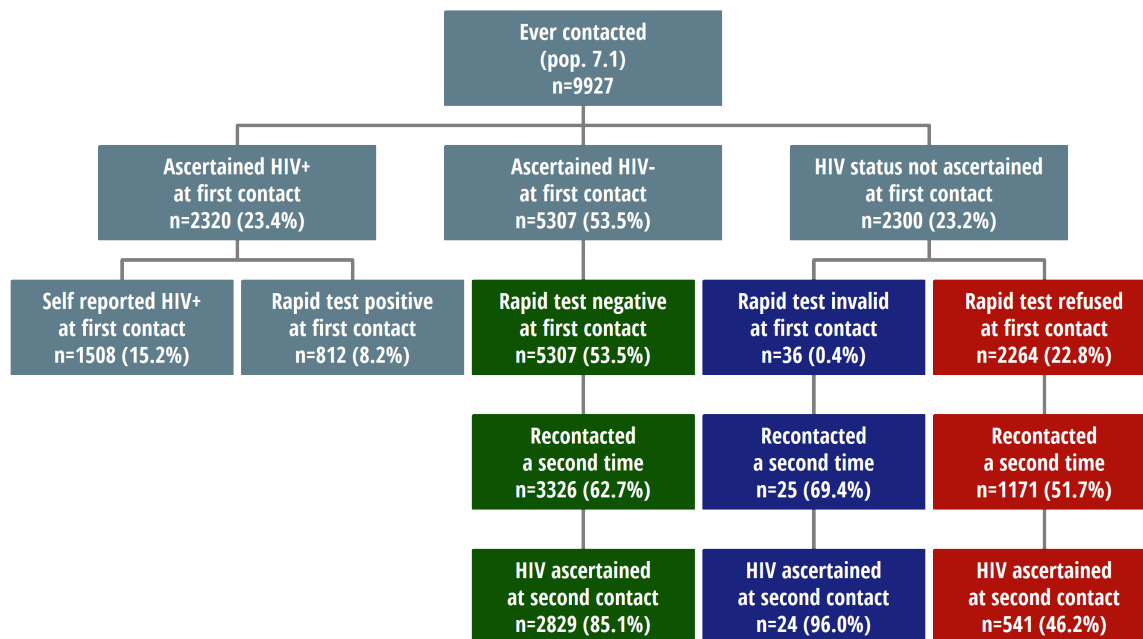
Overall HIV ascertainment uptake per calendar round (merging all rounds):  
**77.6%** [95% CI: 77.0%-78.2%]

Overall HIV ascertainment uptake per arm:

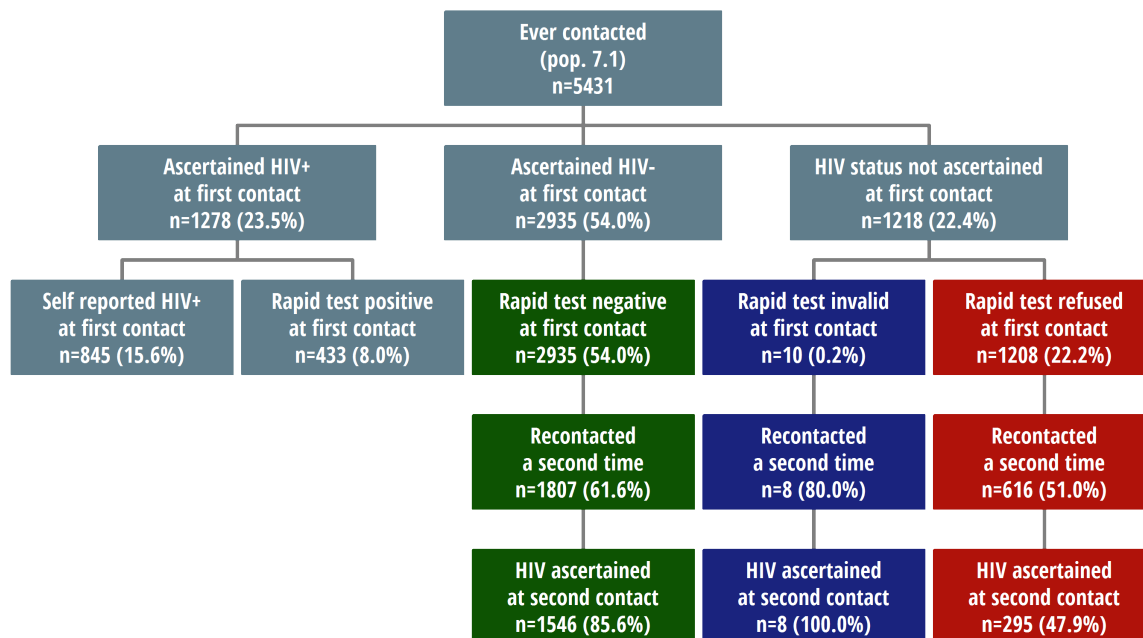
- Control clusters: 78.4% [95% CI: 77.5%-79.2%]
- Intervention clusters: 76.7% [95% CI: 75.8%-77.6%]

### 4.3 Repeat HIV ascertainment

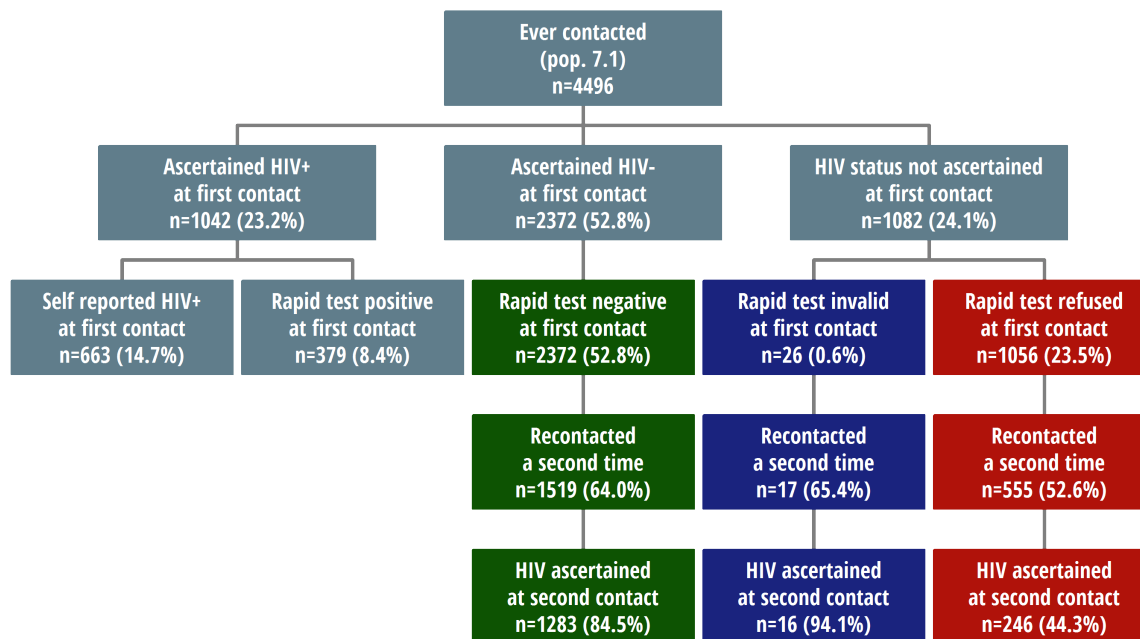
#### 4.3.1 Overall



#### 4.3.2 Control clusters



### 4.3.3 Intervention clusters



## 5 Engagement with care

### 5.1 Entry into care

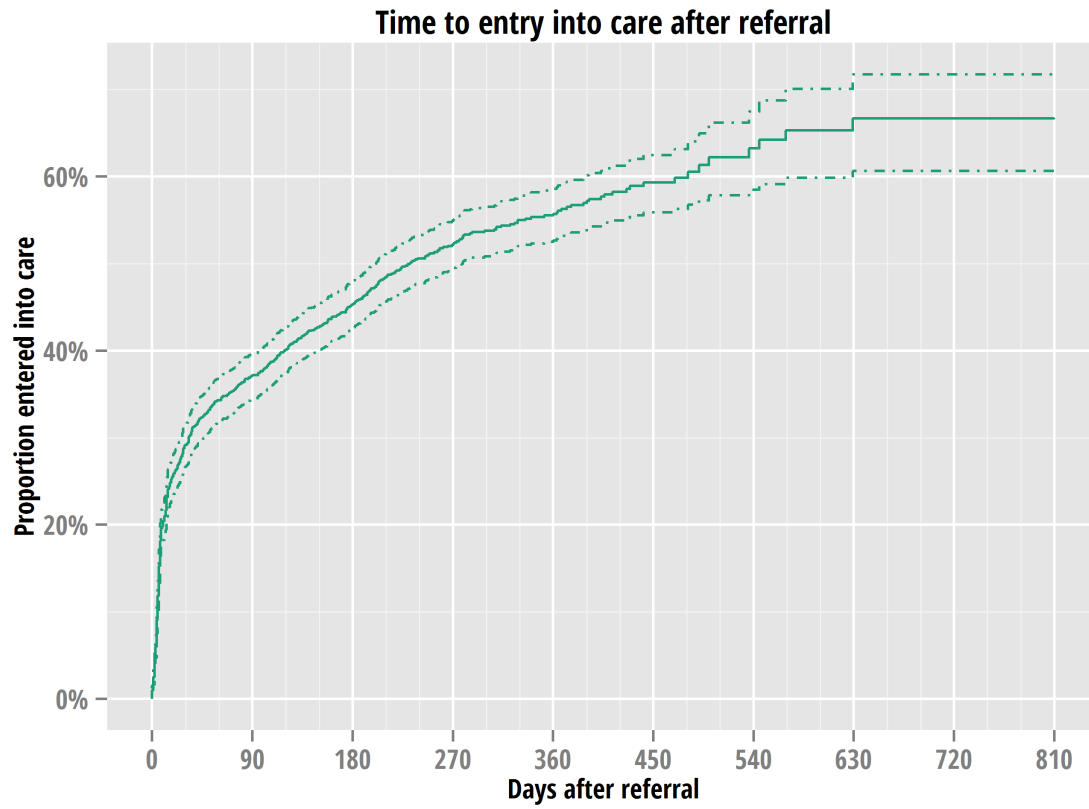
This indicator (ind. 12.10) is calculated only among individuals never been in care at time of referral (pop. 12.4) or previously in care in Department of Health (DoH) clinics but lost to follow-up (pop. 12.3). It measures entry into care in TasP clinics and/or DoH clinics **within X months** after referral (positive HIV ascertainment).

End date of data collection and trial exits have been taken into account to exclude individuals not observed 3, 6, 9 or 12 months respectively.

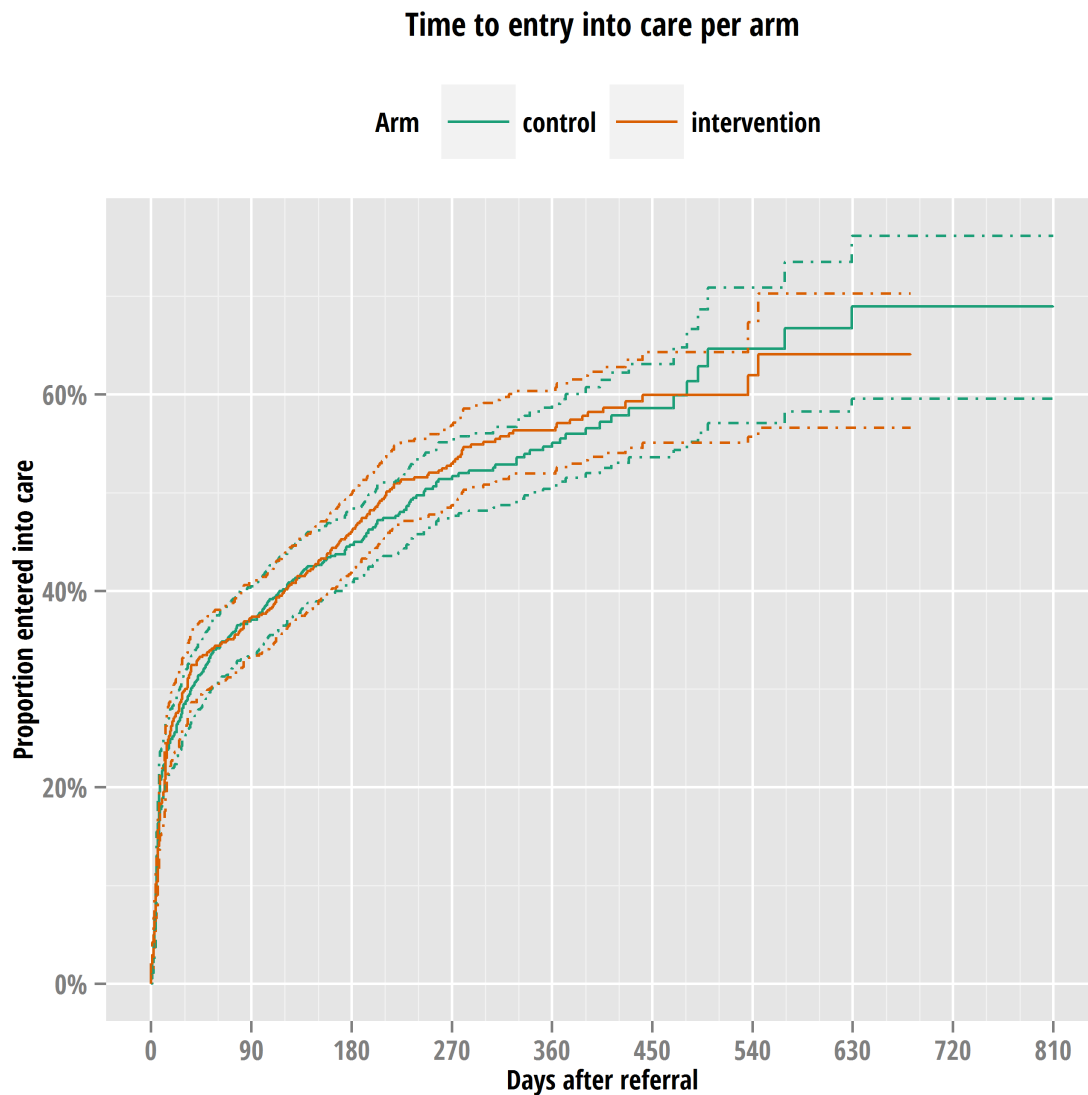
Table 1: Entry into care per arm

|                              | n/N      | %     | 95% CI    |
|------------------------------|----------|-------|-----------|
| <b>Control clusters</b>      |          |       |           |
| within 3 months (91 days)    | 262/717  | 36.5% | 33.1-40.1 |
| within 6 months (183 days)   | 292/616  | 47.4% | 43.5-51.4 |
| within 9 months (274 days)   | 243/408  | 59.6% | 54.7-64.2 |
| within 12 months (365 days)  | 185/291  | 63.6% | 57.9-68.9 |
| <b>Intervention clusters</b> |          |       |           |
| within 3 months (91 days)    | 226/609  | 37.1% | 33.4-41.0 |
| within 6 months (183 days)   | 267/561  | 47.6% | 43.5-51.7 |
| within 9 months (274 days)   | 252/447  | 56.4% | 51.7-60.9 |
| within 12 months (365 days)  | 191/305  | 62.6% | 57.1-67.9 |
| <b>All clusters</b>          |          |       |           |
| within 3 months (91 days)    | 488/1326 | 36.8% | 34.2-39.4 |
| within 6 months (183 days)   | 559/1177 | 47.5% | 44.7-50.4 |

|                             | n/N     | %     | 95% CI    |
|-----------------------------|---------|-------|-----------|
| within 9 months (274 days)  | 495/855 | 57.9% | 54.6-61.2 |
| within 12 months (365 days) | 376/596 | 63.1% | 59.1-66.9 |







## 5.2 Individuals actively engaged with care

This indicator (ind. 12.20) is calculated among all individuals ever referred to HIV care, including individuals currently in care at time of referral (pop. 12.2) and individuals not in care at time of referral (pop. 12.3 and pop. 12.4). It measures if individuals are actively in care **at X months** after referral:

- for individuals already in care at referral, we checked if they are still in care (in TasP or DoH clinics) at M3, M6, M9 or M12 after referral;
- for individuals not in care at referral, we checked if they entered into care (in TasP or DoH clinics) within 3, 6, 9 or 12 months after referral.

End date of data collection and trial exits have been taken into account to exclude individuals not observed 3, 6, 9 or 12 months respectively.

Table 2: Actively in care per arm

|                              | n/N       | %     | 95% CI    |
|------------------------------|-----------|-------|-----------|
| <b>Control clusters</b>      |           |       |           |
| at M3 (91 days)              | 929/1416  | 65.6% | 63.1-68.0 |
| at M6 (183 days)             | 922/1277  | 72.2% | 69.7-74.6 |
| at M9 (274 days)             | 686/926   | 74.1% | 71.2-76.8 |
| at M12 (365 days)            | 530/664   | 79.8% | 76.6-82.7 |
| <b>Intervention clusters</b> |           |       |           |
| at M3 (91 days)              | 722/1133  | 63.7% | 60.9-66.5 |
| at M6 (183 days)             | 723/1059  | 68.3% | 65.4-71.0 |
| at M9 (274 days)             | 605/866   | 69.9% | 66.7-72.8 |
| at M12 (365 days)            | 484/625   | 77.4% | 74.0-80.5 |
| <b>All clusters</b>          |           |       |           |
| at M3 (91 days)              | 1651/2549 | 64.8% | 62.9-66.6 |
| at M6 (183 days)             | 1645/2336 | 70.4% | 68.5-72.2 |
| at M9 (274 days)             | 1291/1792 | 72.0% | 69.9-74.1 |
| at M12 (365 days)            | 1014/1289 | 78.7% | 76.3-80.8 |

### 5.3 Linkage to TasP clinics

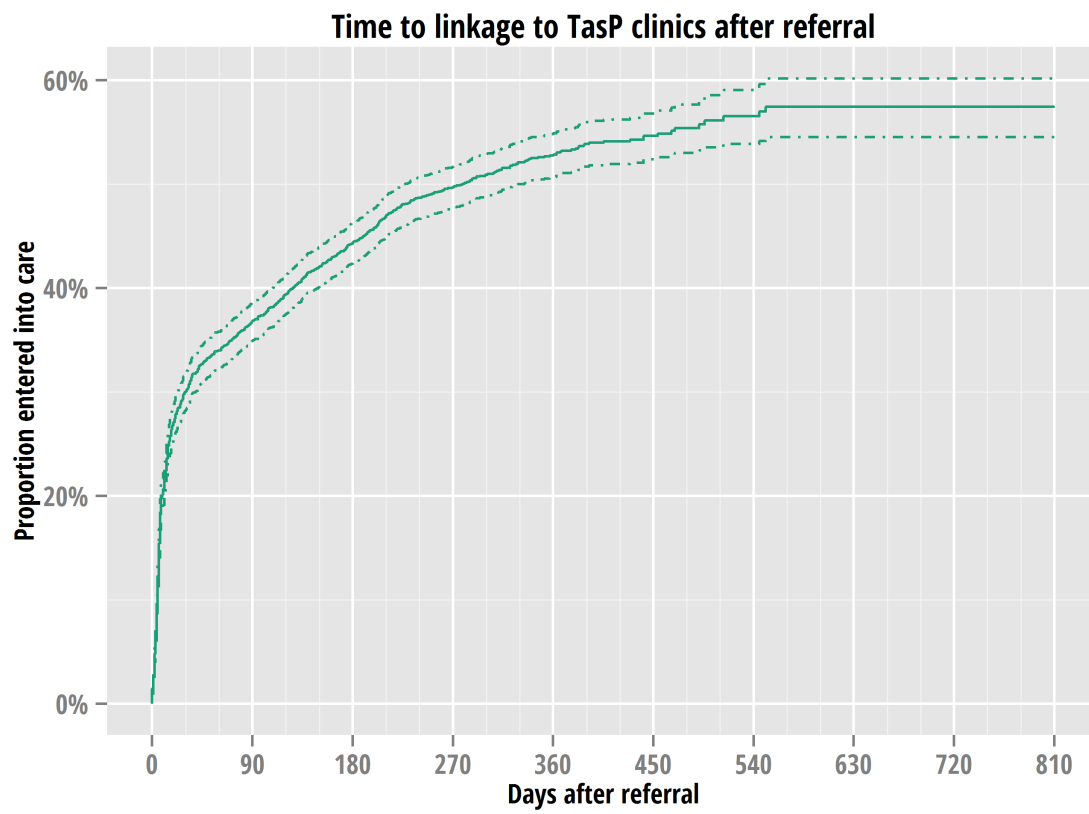
This indicator (ind. 12.12) is calculated among all individuals ever referred to HIV care, including individuals currently in care at time of referral (pop. 12.2) and individuals not in care at time of referral (pop. 12.3 and pop. 12.4). It measures entry into care in TasP clinics only **within X months** after referral (positive HIV ascertainment), i.e.:

- *transfers into TasP care* for individuals already in care at referral, ;
- *novel entries into care* for individuals not in care at referral.

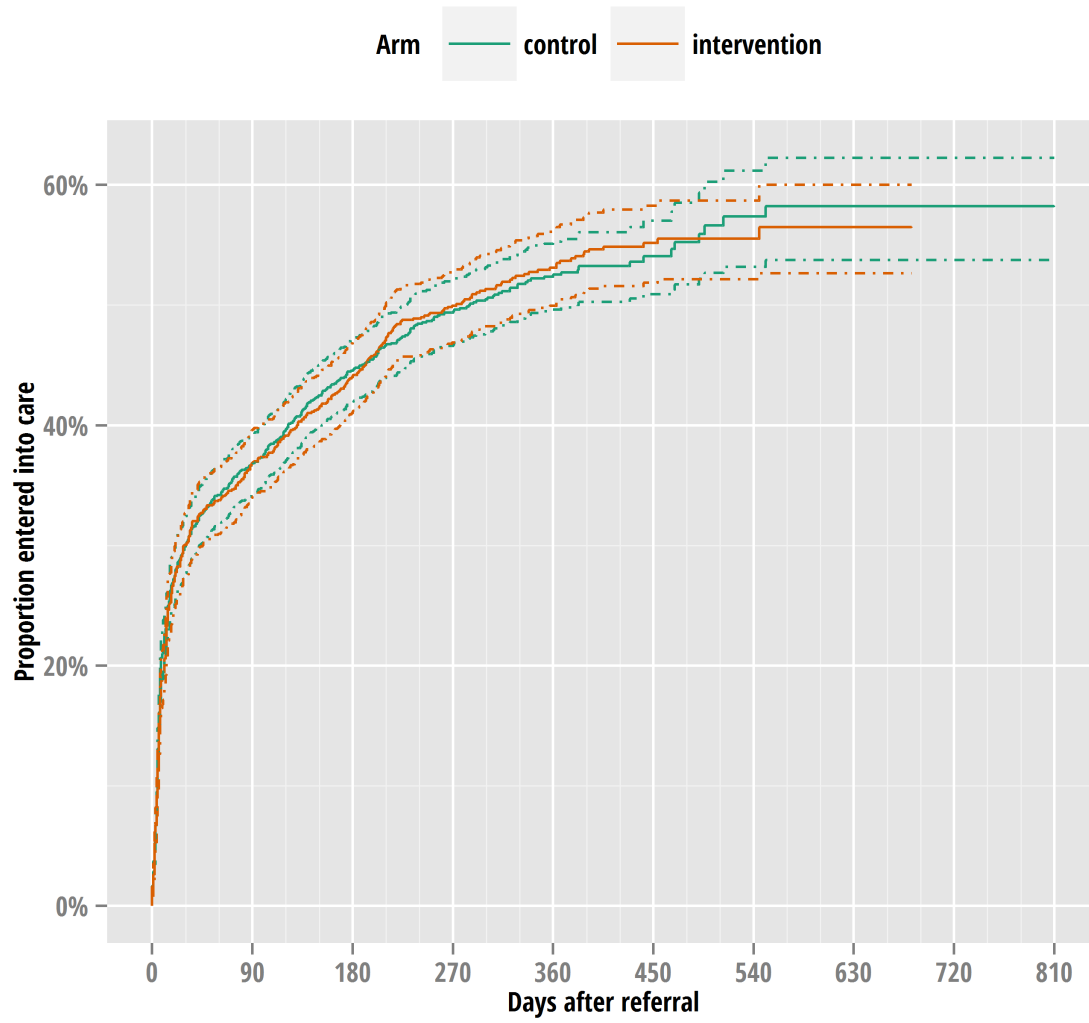
End date of data collection and trial exits have been taken into account to exclude individuals not observed 3, 6, 9 or 12 months respectively.

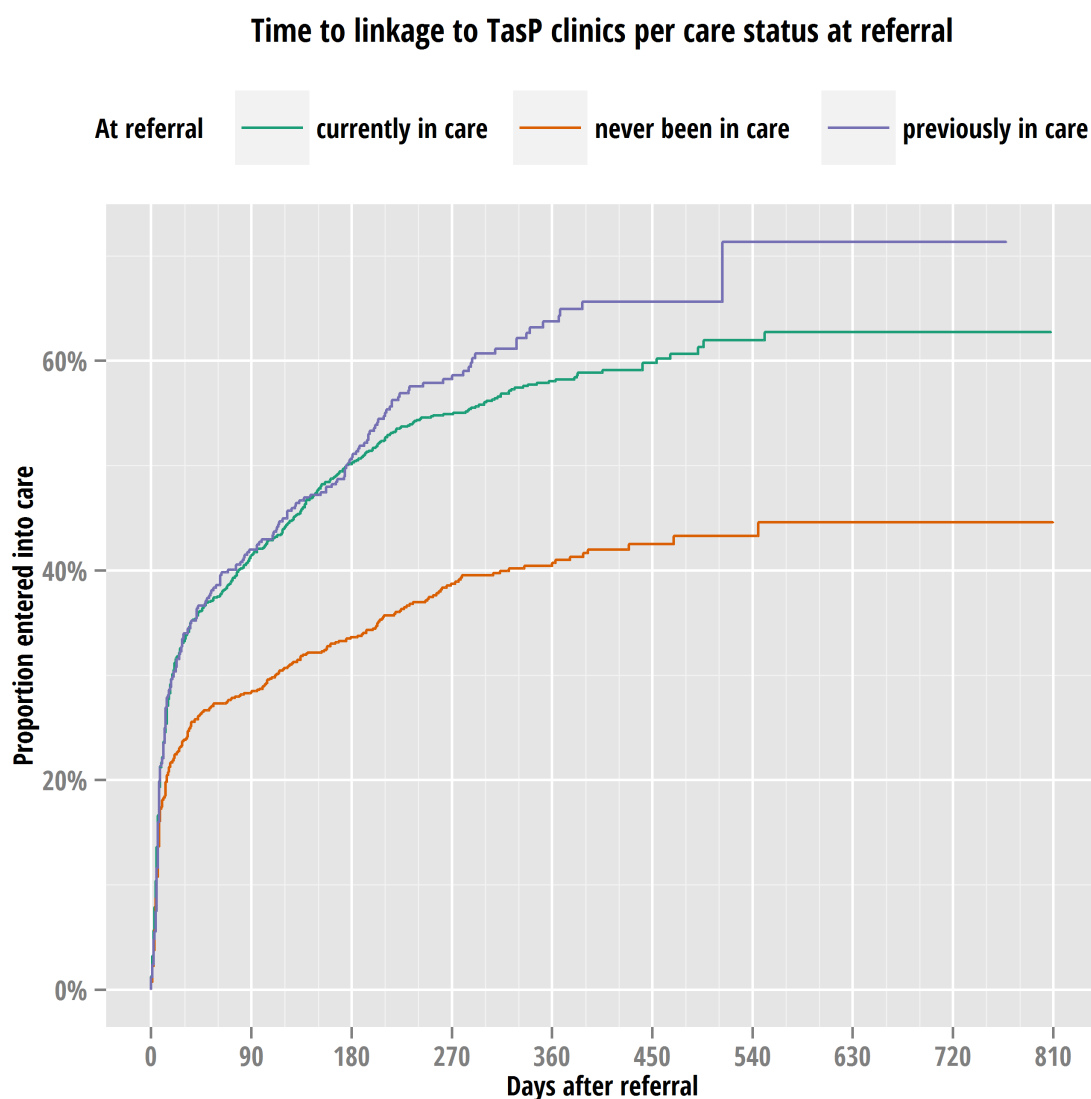
Table 3: Linkage to TasP clinics per arm

|                              | n/N       | %     | 95% CI    |
|------------------------------|-----------|-------|-----------|
| <b>Control clusters</b>      |           |       |           |
| within 3 months (91 days)    | 516/1416  | 36.4% | 34.0-39.0 |
| within 6 months (183 days)   | 597/1277  | 46.8% | 44.0-49.5 |
| within 9 months (274 days)   | 523/926   | 56.5% | 53.3-59.6 |
| within 12 months (365 days)  | 395/664   | 59.5% | 55.7-63.2 |
| <b>Intervention clusters</b> |           |       |           |
| within 3 months (91 days)    | 417/1133  | 36.8% | 34.0-39.7 |
| within 6 months (183 days)   | 479/1059  | 45.2% | 42.3-48.2 |
| within 9 months (274 days)   | 467/866   | 53.9% | 50.6-57.2 |
| within 12 months (365 days)  | 378/625   | 60.5% | 56.6-64.2 |
| <b>All clusters</b>          |           |       |           |
| within 3 months (91 days)    | 933/2549  | 36.6% | 34.8-38.5 |
| within 6 months (183 days)   | 1076/2336 | 46.1% | 44.0-48.1 |
| within 9 months (274 days)   | 990/1792  | 55.2% | 52.9-57.5 |
| within 12 months (365 days)  | 773/1289  | 60.0% | 57.3-62.6 |



### Time to linkage to TasP clinics per arm



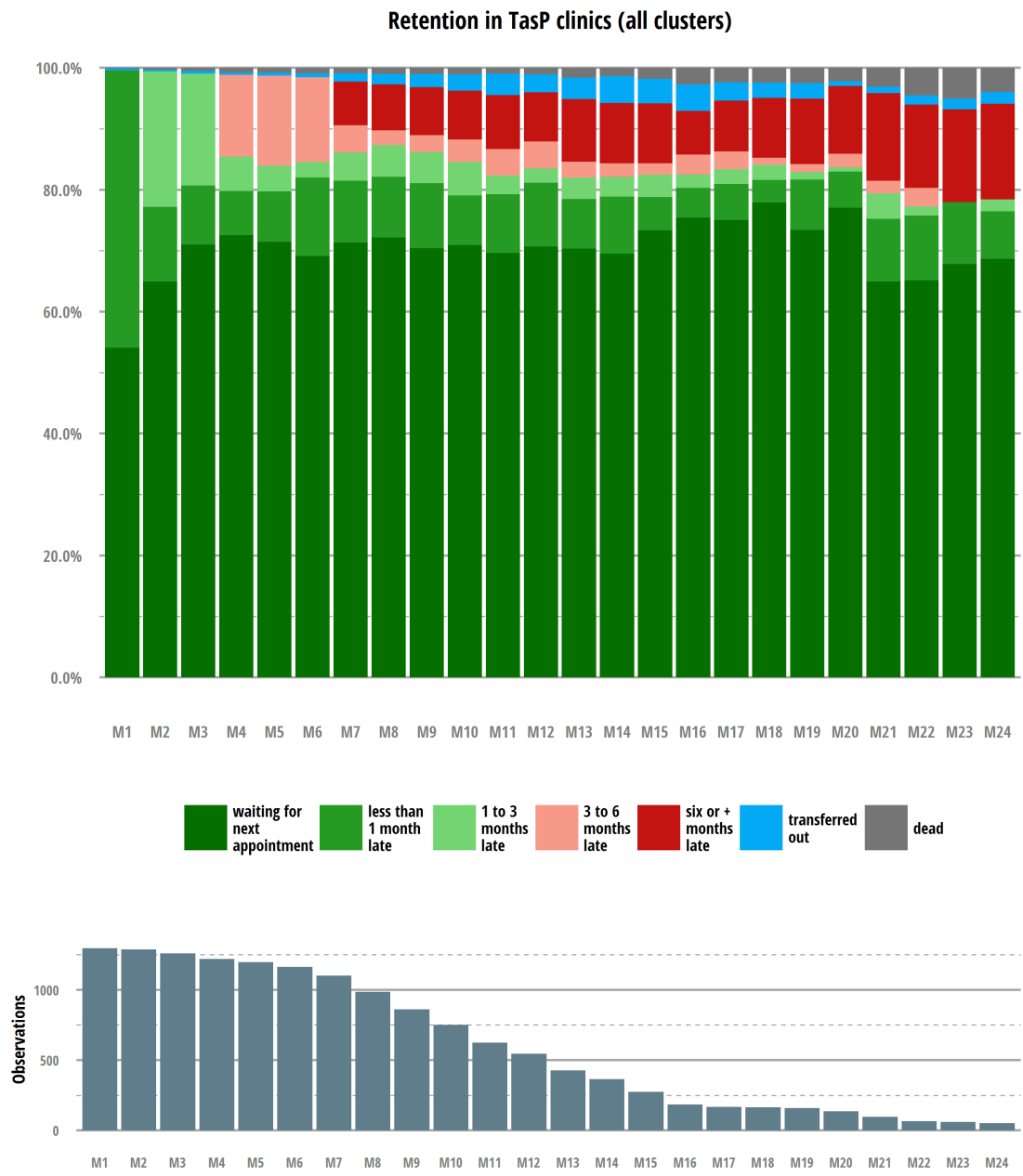


## 6 Retention in TasP clinics (after baseline visit)

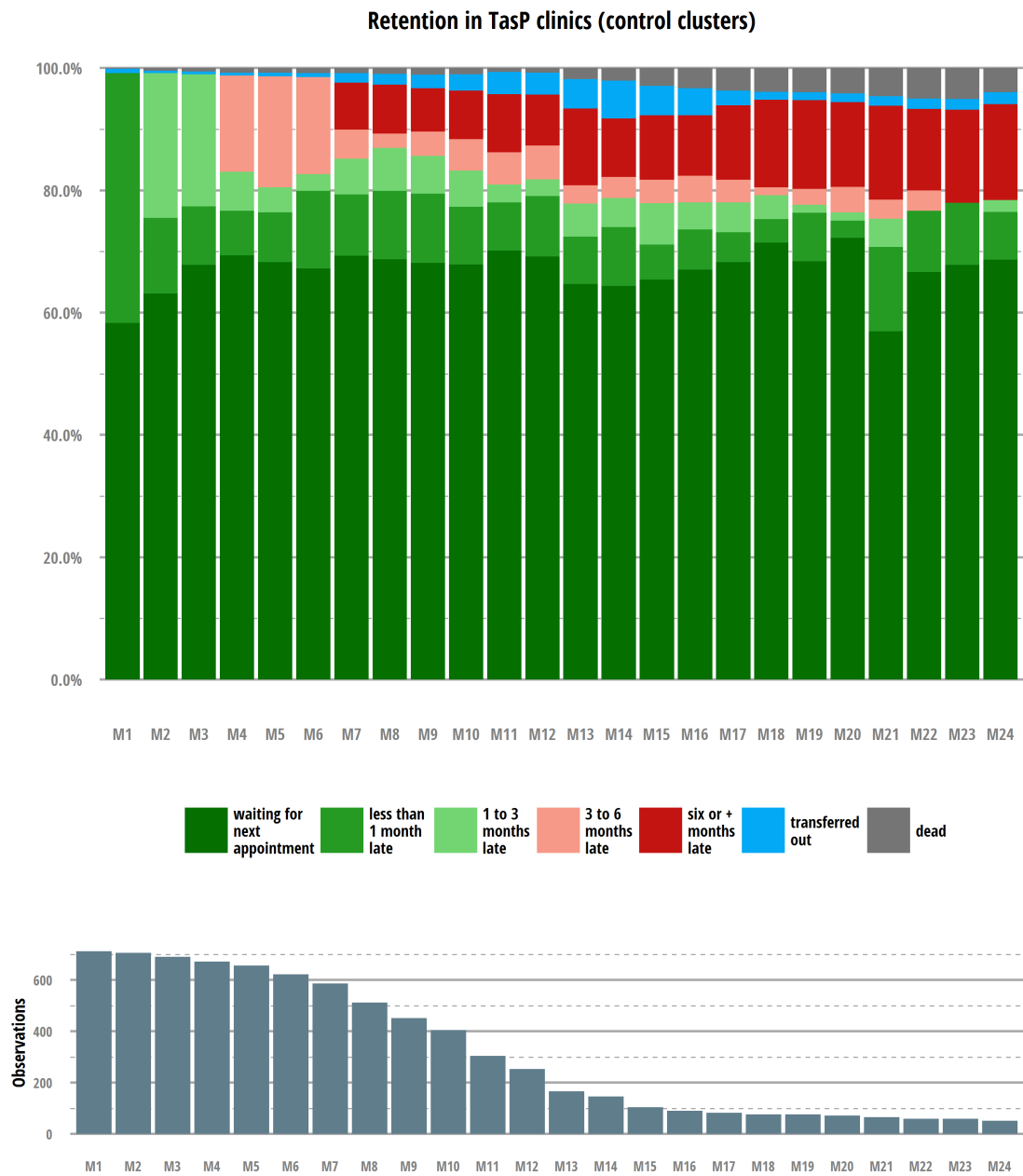
This retention status in TasP clinic (definition 19.2) indicates, at a specific point of time, the status of a TasP patient regarding his/her care within TasP clinics. This status is based on the next appointment scheduled by the nurse/ARV counsellor, i.e. it indicates if the patient is waiting his/her next appointment or if he/she is late.

Furthermore, this status also takes into account if the patient was reported dead or if he/she was transferred out. A patient could be transferred out for several reasons, including the willingness to receive care in DoH clinics or migration outside the TasP area. A patient could transfer out and then come back later in TasP clinics.

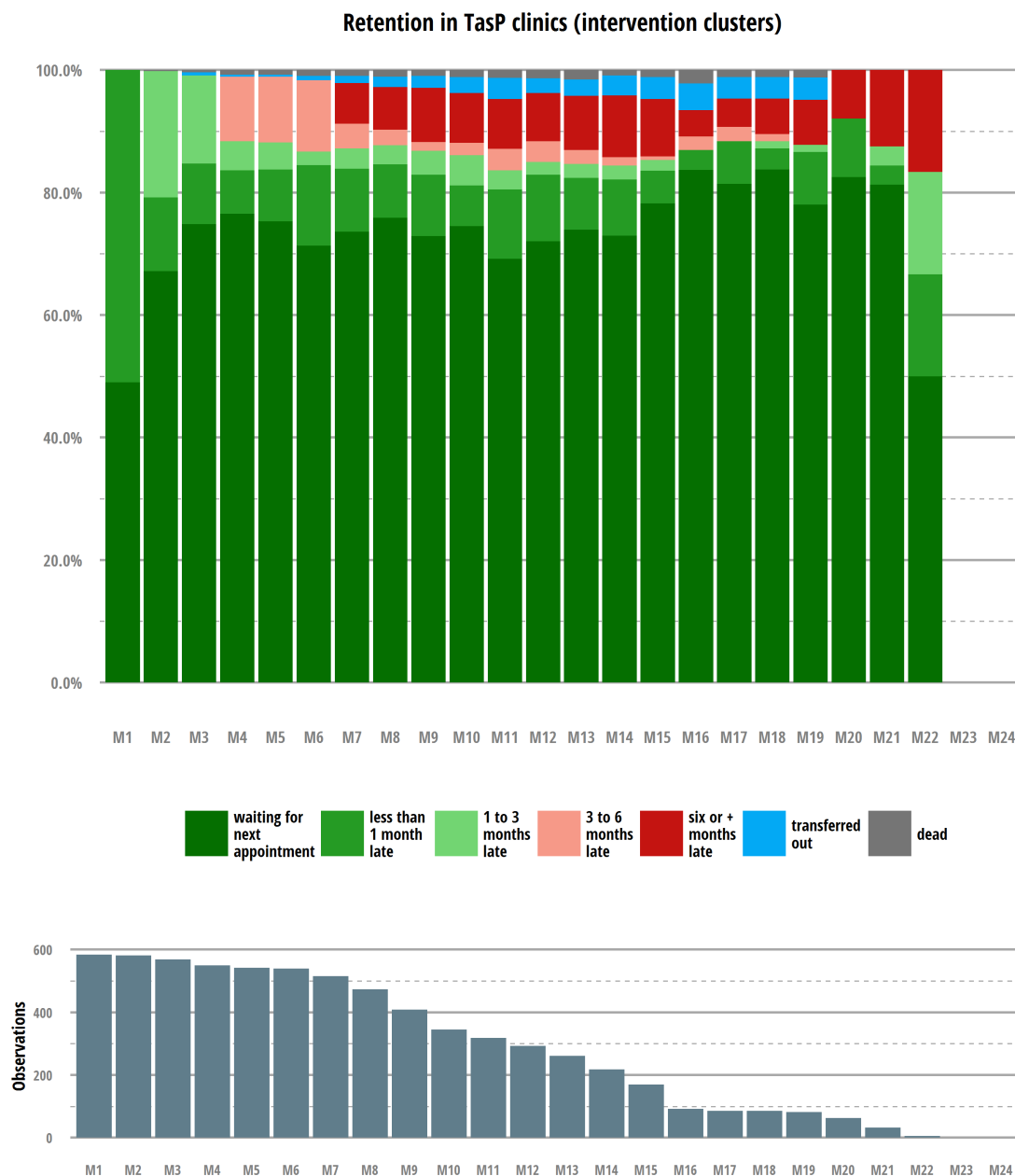
6.1 Overall schema



6.2 Control clusters schema



## 6.3 Intervention clusters schema



## 6.4 Crude retention rate

This indicator (indicator 19.3) indicates the proportion of individuals still in care at MX among all individuals observed X months, **including** deaths and transfers out. A individual is considered as *lost to follow up* if he is more than 3 months late, transferred out or dead. An individual is considered *retained* in care if he is waiting for his next appointment or is less than 3 months late.

These crude retention rates could be readen directly on the previous retention schemas (and correspond to the three categories represented in green).



Table 4: Crude retention rate per arm

|                              | n/N      | %     | 95% CI    |
|------------------------------|----------|-------|-----------|
| <b>Control clusters</b>      |          |       |           |
| at M6 (183 days)             | 514/622  | 82.6% | 79.5-85.4 |
| at M12 (365 days)            | 207/253  | 81.8% | 76.6-86.1 |
| at M18 (548 days)            | 61/77    | 79.2% | 68.8-86.8 |
| at M24 (730 days)            | 40/51    | 78.4% | 65.3-87.5 |
| <b>Intervention clusters</b> |          |       |           |
| at M6 (183 days)             | 468/540  | 86.7% | 83.5-89.3 |
| at M12 (365 days)            | 249/293  | 85.0% | 80.4-88.6 |
| at M18 (548 days)            | 76/86    | 88.4% | 79.8-93.6 |
| at M24 (730 days)            | 0/0      | NA    | NA-NA     |
| <b>All clusters</b>          |          |       |           |
| at M6 (183 days)             | 982/1162 | 84.5% | 82.3-86.5 |
| at M12 (365 days)            | 456/546  | 83.5% | 80.2-86.4 |
| at M18 (548 days)            | 137/163  | 84.0% | 77.6-88.9 |
| at M24 (730 days)            | 40/51    | 78.4% | 65.3-87.5 |

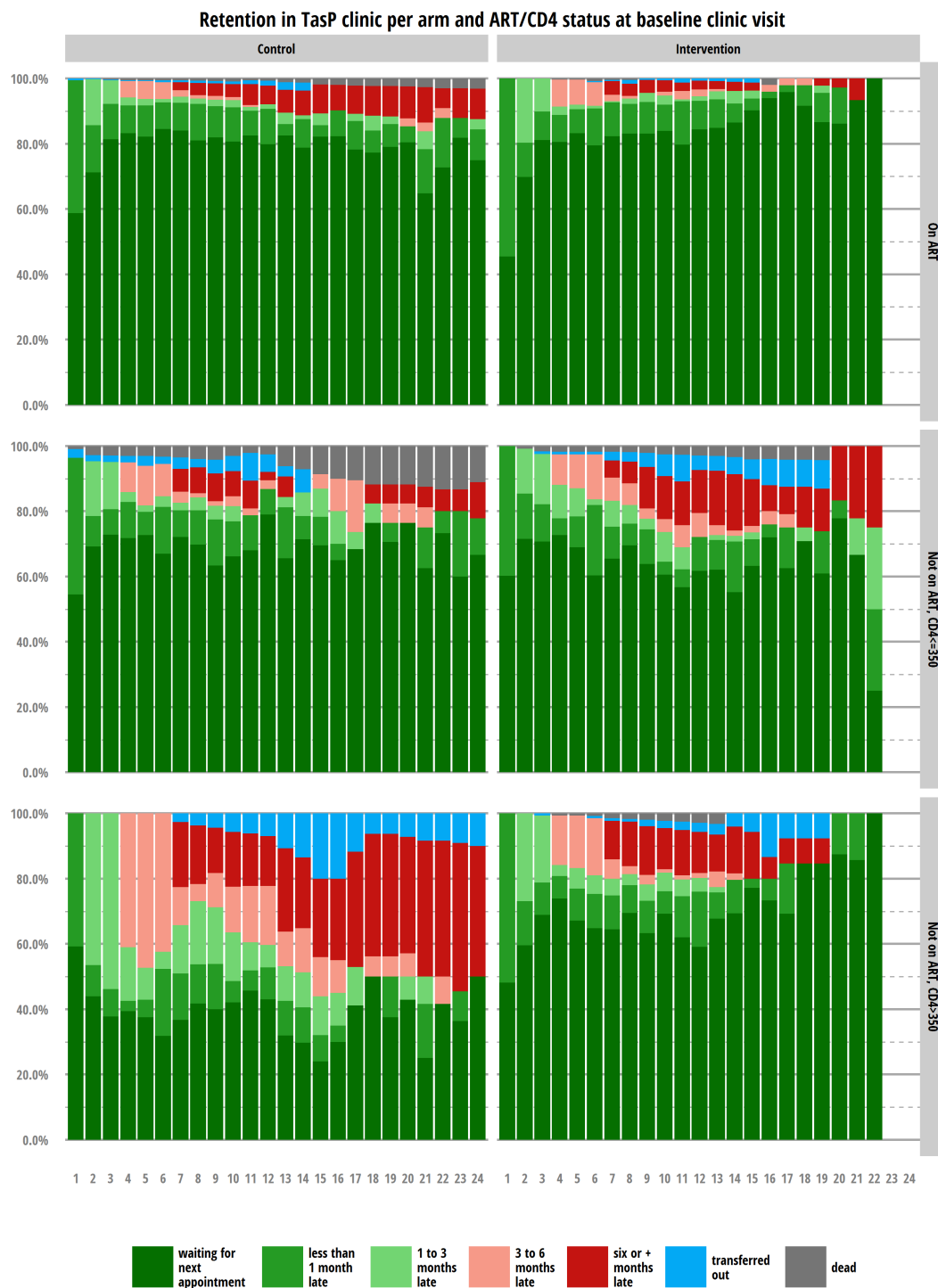
## 6.5 Net retention rate

This indicator (indicator 19.4) indicates the proportion of individuals still in care at MX among all individuals observed X months, **excluding** deaths. A individual is considered as *lost to follow up* if he is more than 3 months late or transferred out. An individual is considered *retained* in care if he is waiting for his next appointment or is less than 3 months late.

Table 5: Net retention rate per arm

|                              | n/N      | %     | 95% CI    |
|------------------------------|----------|-------|-----------|
| <b>Control clusters</b>      |          |       |           |
| at M6 (183 days)             | 514/617  | 83.3% | 80.2-86.0 |
| at M12 (365 days)            | 207/251  | 82.5% | 77.3-86.7 |
| at M18 (548 days)            | 61/74    | 82.4% | 72.2-89.5 |
| at M24 (730 days)            | 40/49    | 81.6% | 68.5-90.1 |
| <b>Intervention clusters</b> |          |       |           |
| at M6 (183 days)             | 468/535  | 87.5% | 84.4-90.0 |
| at M12 (365 days)            | 249/289  | 86.2% | 81.7-89.7 |
| at M18 (548 days)            | 76/85    | 89.4% | 81.0-94.4 |
| at M24 (730 days)            | 0/0      | NA    | NA-NA     |
| <b>All clusters</b>          |          |       |           |
| at M6 (183 days)             | 982/1152 | 85.2% | 83.1-87.2 |
| at M12 (365 days)            | 456/540  | 84.4% | 81.1-87.3 |
| at M18 (548 days)            | 137/159  | 86.2% | 79.9-90.7 |
| at M24 (730 days)            | 40/49    | 81.6% | 68.5-90.1 |

## 6.6 Retention per ART status and CD4 at baseline clinic visit

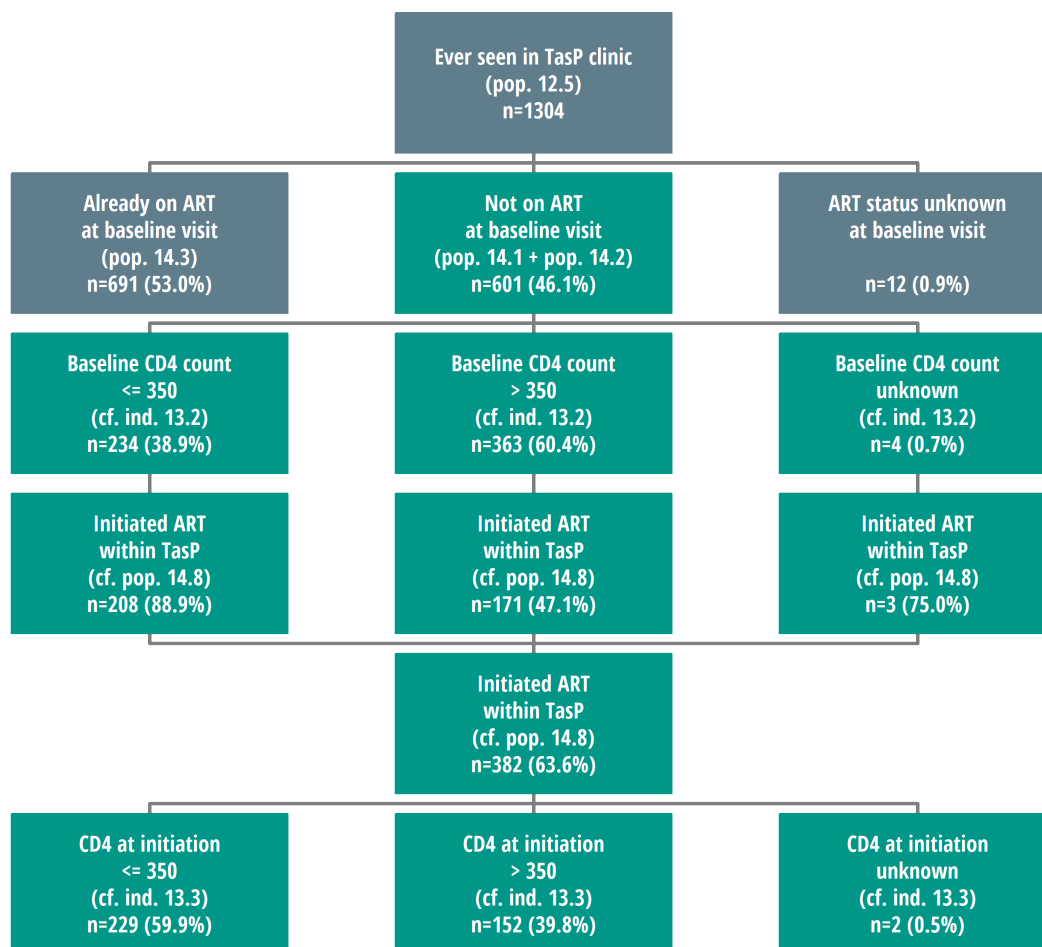


Note: this graph doesn't take into account ART eligibility at baseline (only CD4 count) and if individuals initiated ART after baseline clinic visit.

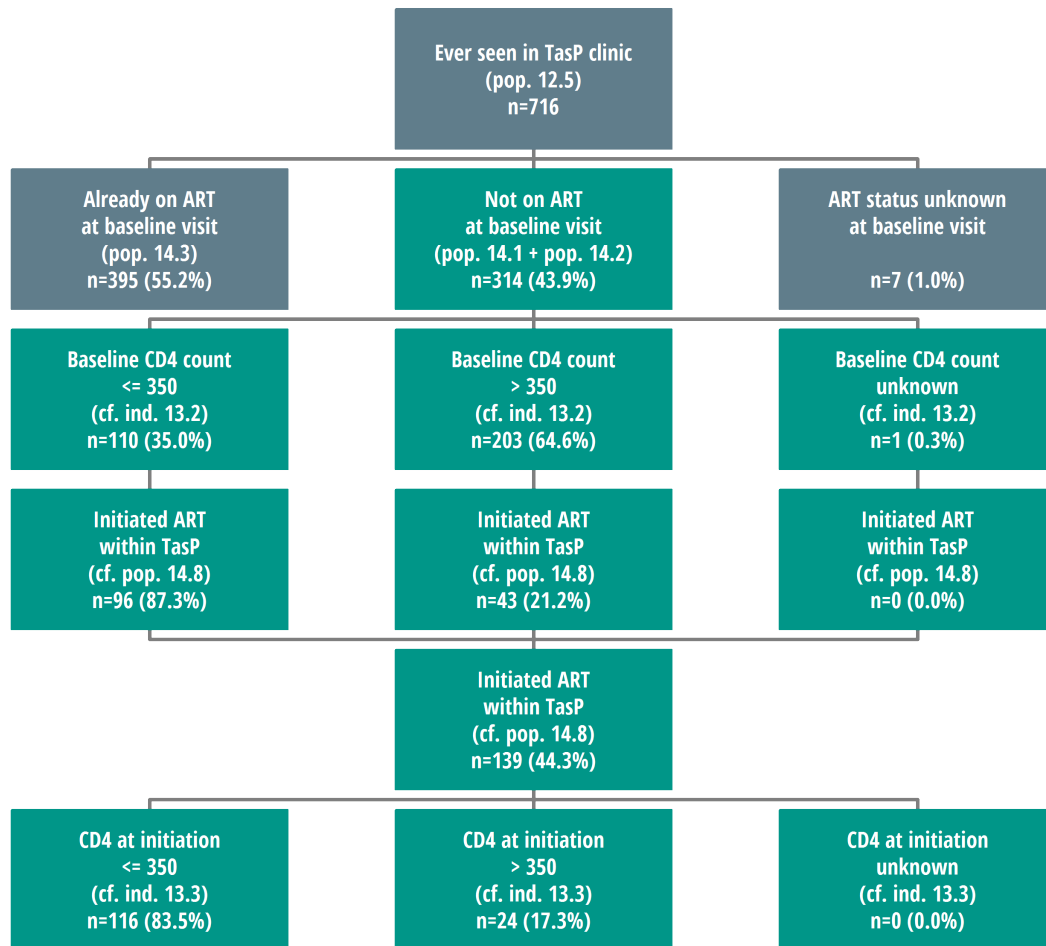
## 7 ART initiation within TasP clinics

Note: 152 individuals were not on ART at referral but were already on ART at baseline TasP clinic visit and 20 were on ART at referral but not anymore on ART at baseline TasP clinic visit.

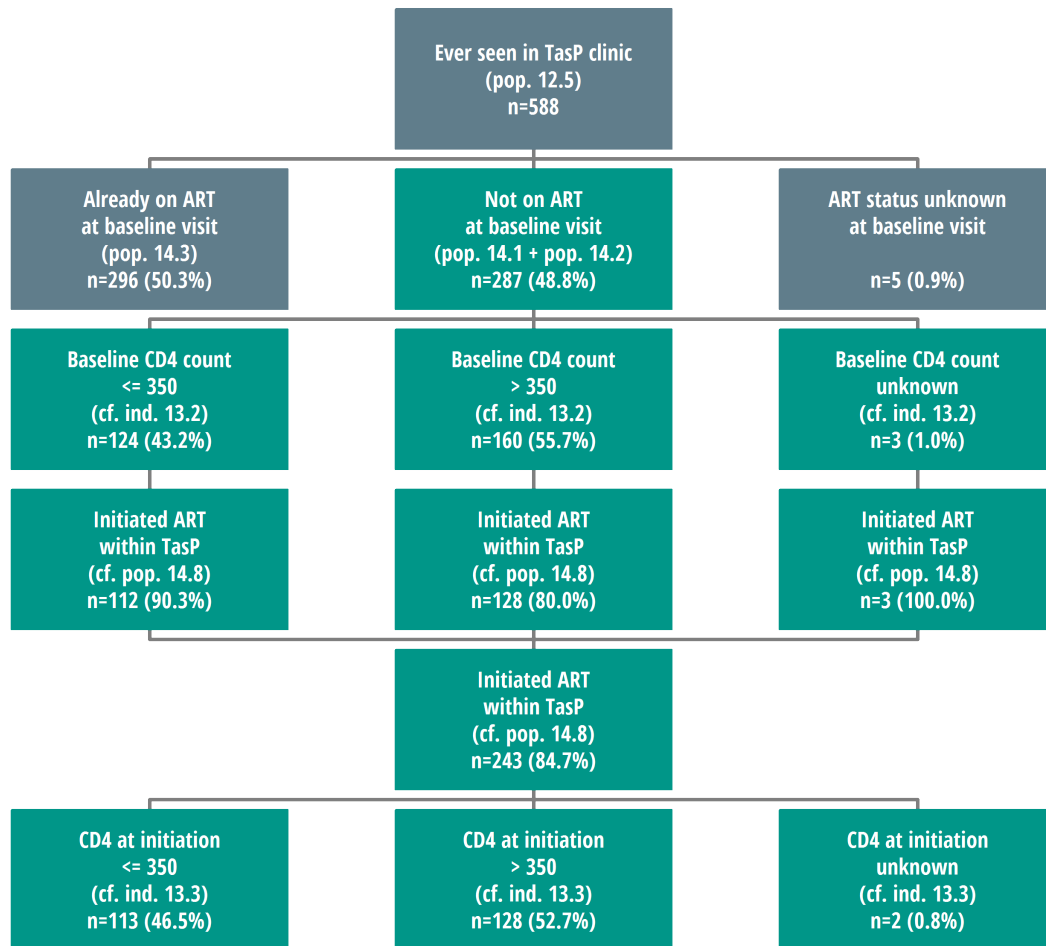
### 7.1 Overall flow chart



## 7.2 Control clusters

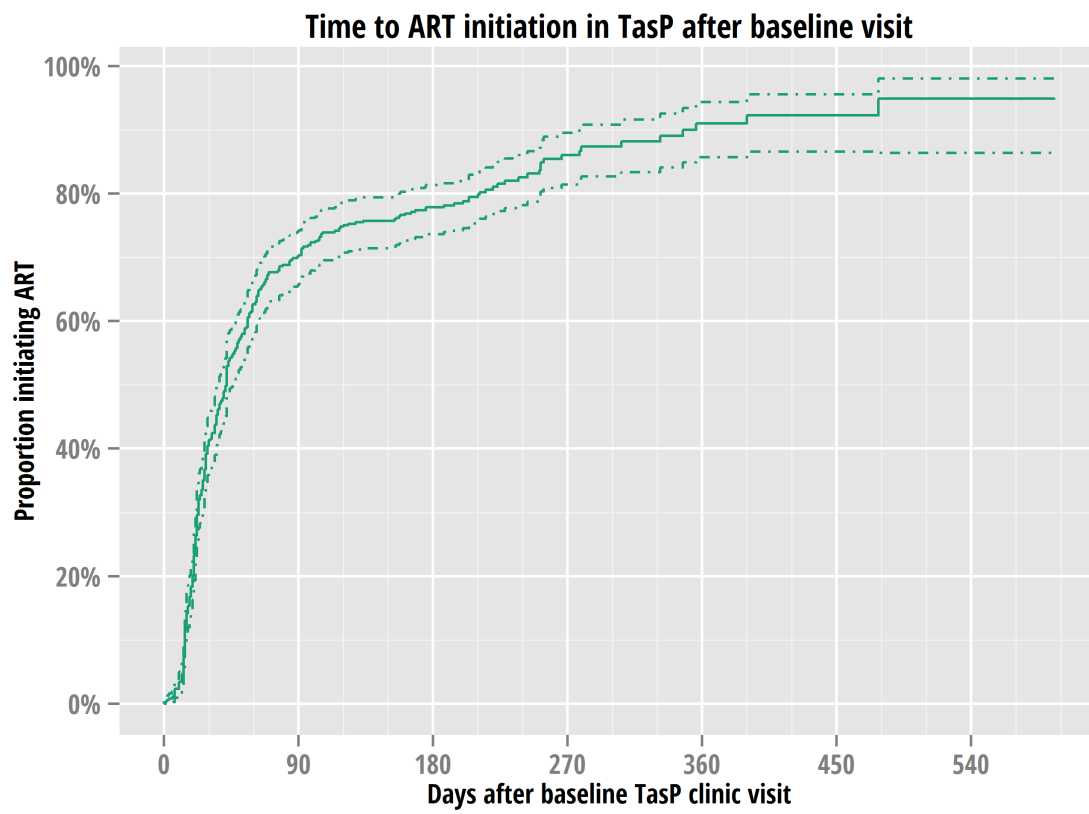


### 7.3 Intervention clusters

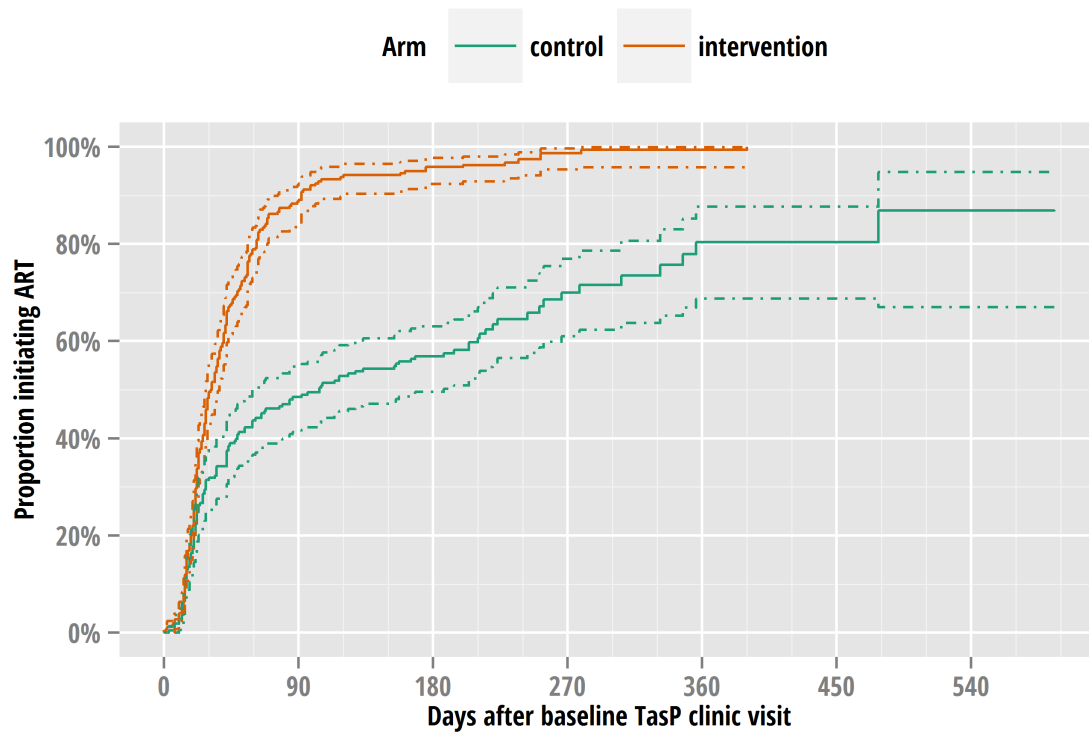


### 7.4 Time from baseline visit to ART initiation in TasP clinics (individuals not on ART at baseline)

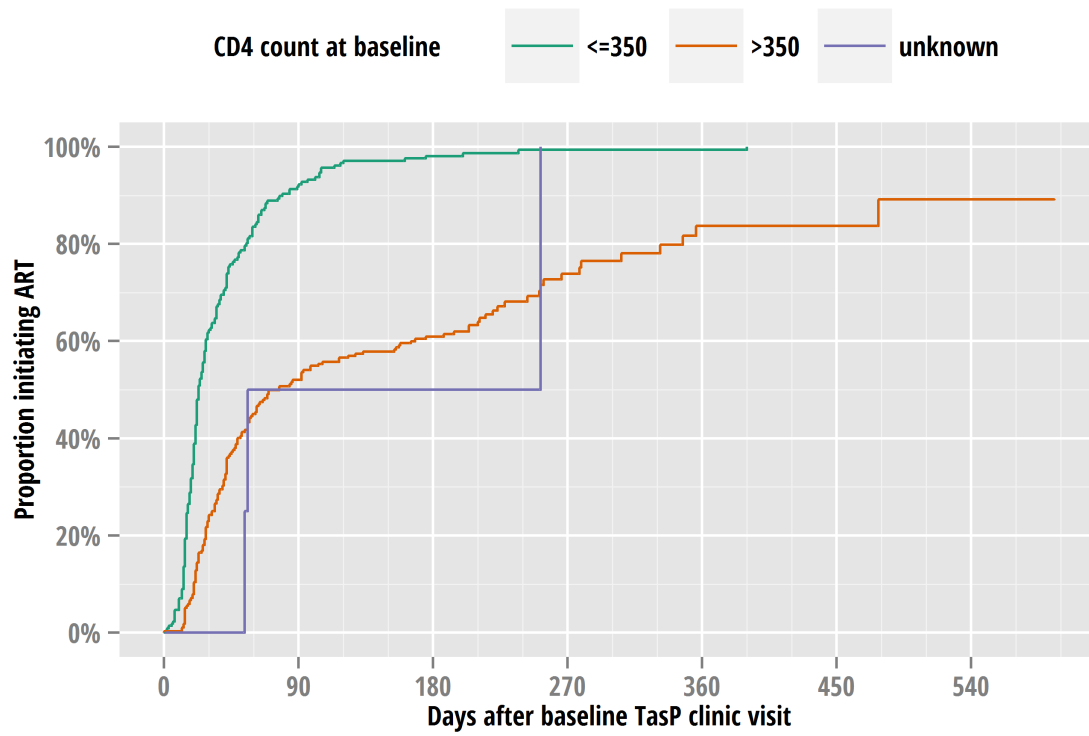
Note: for the following figures, we took into account time of observation for each individual. Time of observation is defined as the number of days between the last TasP clinic visit and baseline TasP clinic visit. Therefore, end of data collection, transfers out and losts to follow-up are properly taken into account



### Time to ART initiation after baseline per arm

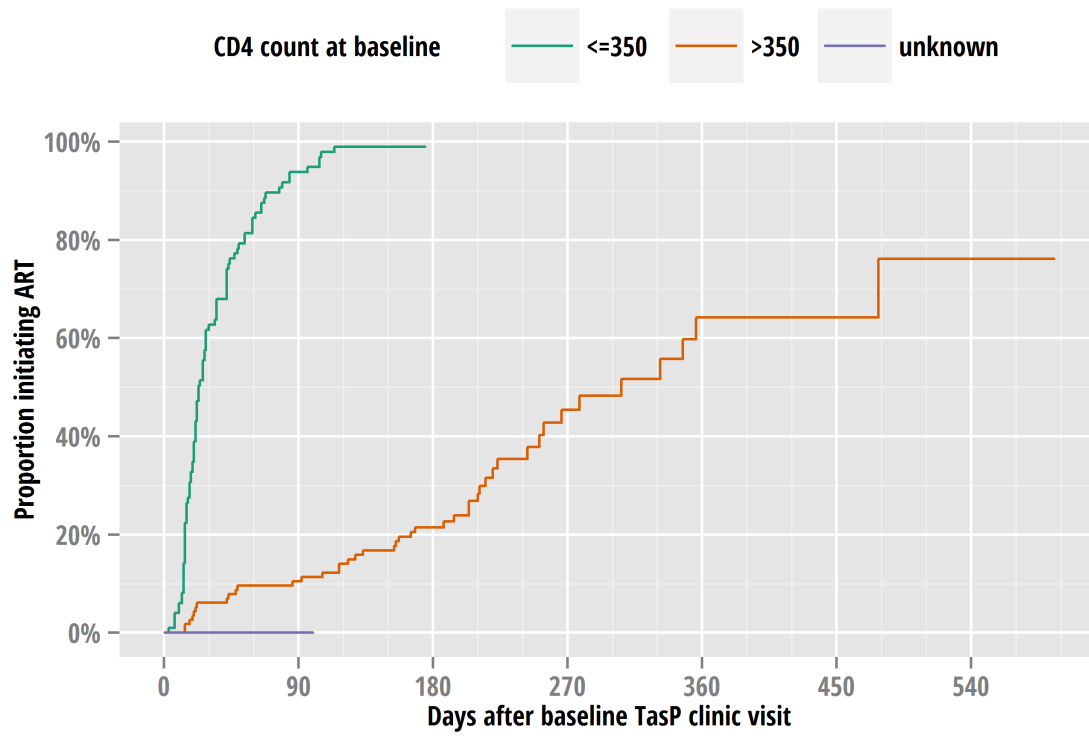


### Time to ART initiation per CD4 count at baseline (all clusters)

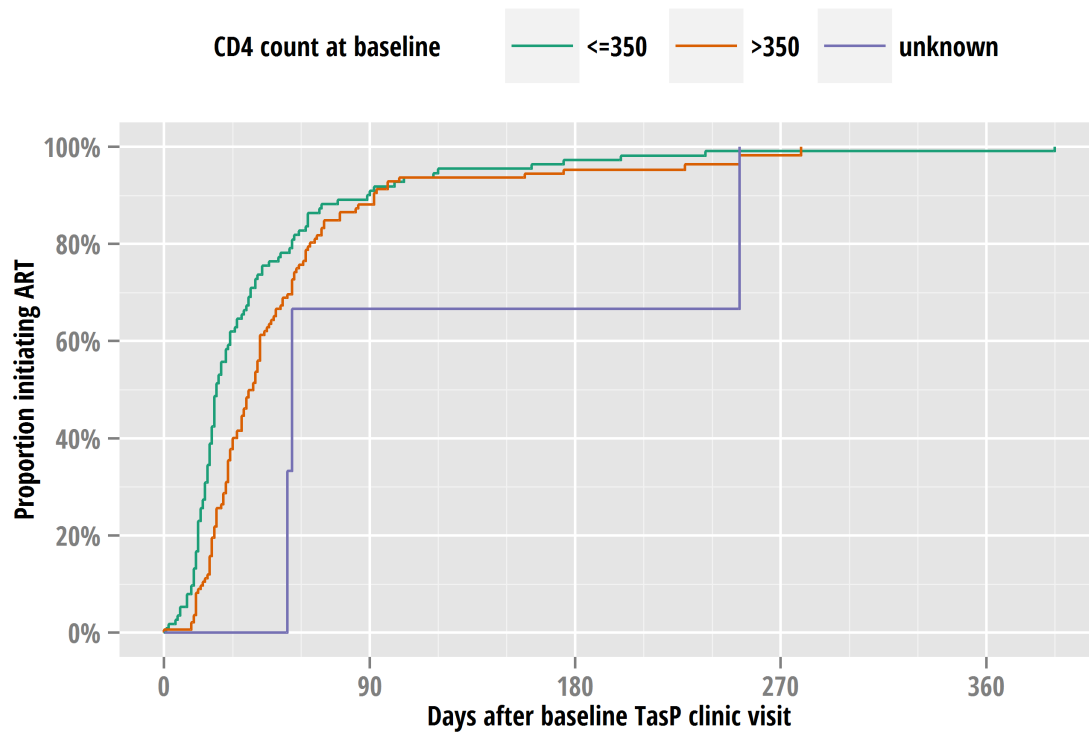




### Time to ART initiation per CD4 count at baseline (control clusters)



## Time to ART initiation per CD4 count at baseline (intervention clusters)



## 8 ART coverage and ART initiation

### 8.1 ART coverage at referral (among referred HIV+)

ART coverage at referral (ind. 15.5):

**36.8%** (945/2569) [95% CI: 34.9%-38.7%]

ART coverage at referral per arm:

- Control clusters: 38.0% (543/1428) [95% CI: 35.5%-40.6%]
- Intervention clusters: 35.2% (402/1141) [95% CI: 32.5%-38.1%]

The previous indicator doesn't take into account time of observation after referral. If we calculate it only among individuals observed at least one year after referral, results are:

ART coverage at referral (individuals observed at least one year):

**42.3%** (545/1289) [95% CI: 39.6%-45.0%]

ART coverage at referral per arm (individuals observed at least one year):

- Control clusters: 44.9% (298/664) [95% CI: 41.1%-48.7%]
- Intervention clusters: 39.5% (247/625) [95% CI: 35.8%-43.4%]

## 8.2 ART initiation uptake after referral (among referred HIV+ not on ART)

This indicator (ind. 15.7) indicates the proportion on individuals not on ART at referral who initiated ART at any given point in time after referral.

ART initiation uptake after referral (ind. 15.7):

**37.3%** (605/1624) [95% CI: 34.9%-39.6%]

ART initiation uptake after referral per arm:

- Control clusters: 30.1% (266/885) [95% CI: 27.1%-33.2%]
- Intervention clusters: 45.9% (339/739) [95% CI: 42.3%-49.5%]

The previous indicator doesn't take into account time of observation after referral. If we calculate it only among individuals observed at least one year after referral, results are:

ART initiation uptake after referral (individuals observed at least one year):

**49.3%** (367/744) [95% CI: 45.7%-52.9%]

ART initiation uptake after referral per arm (individuals observed at least one year):

- Control clusters: 40.7% (149/366) [95% CI: 35.8%-45.8%]
- Intervention clusters: 57.7% (218/378) [95% CI: 52.6%-62.6%]

## 8.3 Treatment intensity among referred HIV+ individuals

Treatment intensity among referred HIV infected individuals (ind. 15.8) is defined as HIV infected individuals on ART at referral or who initiated ART after referral among HIV infected ever referred.

Note: difference between treatment intensity and coverage at referral is indicated in brackets.

Treatment intensity among referred individuals (ind. 15.8):

**60.3%** (1550/2569, +23.6%) [95% CI: 58.4%-62.2%]

Treatment intensity among referred individuals per arm:

- Control clusters: 56.7% (809/1428, +18.6%) [95% CI: 54.1%-59.2%]
- Intervention clusters: 64.9% (741/1141, +29.7%) [95% CI: 62.1%-67.7%]

The previous indicator doesn't take into account time of observation after referral. If we calculate it only among individuals observed at least one year after referral, results are:

Treatment intensity among referred individuals observed at least one year:

**70.8%** (912/1289, +28.5%) [95% CI: 68.2%-73.2%]

Treatment intensity among referred individuals observed at least one year per arm:

- Control clusters: 67.3% (447/664, +22.4%) [95% CI: 63.7%-70.8%]
- Intervention clusters: 74.4% (465/625, +34.9%) [95% CI: 70.8%-77.7%]

## 8.4 ART coverage at the beginning of the trial (all observed HIV+)

This indicator (ind. 15.3) measures the proportion of HIV infected individuals on ART at the beginning of the trial among individuals HIV infected at the beginning of the trial. The beginning of the trial corresponds to the first survey round implemented (i.e. beginning of the trial is different in group 1 and group 2 clusters). HIV infected individuals at the beginning of the trial are individuals with a positive DBS and/or a positive HIV ascertainment during the first calendar round. Individuals who were not registered in CR1 and individuals whose HIV status was not determined during the first calendar round have been excluded.

The beginning of the trial is defined for each individual at the first date he/she provided a DBS or he/she has been HIV ascertained (for most individuals, it corresponds to the first contact).

We have no direct way to identify all individuals being on ART outside of TasP clinics. Therefore we used several data sources: ARTemis database, iDART database and some variables collected within the trial (please refer to the TasP definitions document, section 15, for more details). It is possible that we underestimates the exact number of individuals before the trial.

Table 6: ART coverage at the beginning of the trial (ind. 15.3)

| Type of clusters                    | Control arm      | Intervention arm | All              |
|-------------------------------------|------------------|------------------|------------------|
| Group 1 (4 clusters opened in 2012) | 37.9% (88/232)   | 39.4% (110/279)  | 38.7% (198/511)  |
| Group 2 (6 clusters opened in 2013) | 40.3% (369/916)  | 34.4% (207/601)  | 38.0% (576/1517) |
| All                                 | 39.8% (457/1148) | 36.0% (317/880)  | 38.2% (774/2028) |

Table 7: 95% Confidence Intervals

| Type of clusters                    | Control arm   | Intervention arm | All           |
|-------------------------------------|---------------|------------------|---------------|
| Group 1 (4 clusters opened in 2012) | [31.9%-44.3%] | [33.9%-45.3%]    | [34.6%-43.0%] |
| Group 2 (6 clusters opened in 2013) | [37.2%-43.5%] | [30.7%-38.3%]    | [35.6%-40.4%] |
| All                                 | [37.0%-42.7%] | [32.9%-39.3%]    | [36.1%-40.3%] |

## 8.5 ART coverage at the end of phase 1 (all observed HIV+)

This indicator (ind. 15.11) measures the proportion of HIV infected individuals on ART at the end of phase 1 (i.e. at the 31<sup>st</sup> of May 2014, end date of data collection) among observed individuals HIV infected at that date. (Note: this indicator doesn't take into account individuals who were never contacted, never provided a DBS and never HIV ascertained. For an estimate at population level, see the estimated cascade of HIV care)

We have no direct way to identify all individuals being on ART outside of TasP clinics. Therefore we used several data sources: ARTemis database, iDART database and some variables collected within the trial (please refer to the TasP definitions document, section 25.5, for more details). It is possible that we underestimates the exact number of individuals before the trial.

Table 8: ART coverage at the end of phase 1 (ind. 15.11)

| Type of clusters                    | Control arm      | Intervention arm | All               |
|-------------------------------------|------------------|------------------|-------------------|
| Group 1 (4 clusters opened in 2012) | 54.6% (131/240)  | 53.2% (174/327)  | 53.8% (305/567)   |
| Group 2 (6 clusters opened in 2013) | 47.5% (580/1221) | 53.2% (461/867)  | 49.9% (1041/2088) |
| All                                 | 48.7% (711/1461) | 53.2% (635/1194) | 50.7% (1346/2655) |

Table 9: 95% Confidence Intervals

| Type of clusters                    | Control arm   | Intervention arm | All           |
|-------------------------------------|---------------|------------------|---------------|
| Group 1 (4 clusters opened in 2012) | [48.2%-60.8%] | [47.8%-58.6%]    | [49.7%-57.9%] |
| Group 2 (6 clusters opened in 2013) | [44.7%-50.3%] | [49.8%-56.5%]    | [47.7%-52.0%] |
| All                                 | [46.1%-51.2%] | [50.3%-56.0%]    | [48.8%-52.6%] |

Table 10: Difference in ART coverage between the beginning of the trial and the end of phase 1 (ind. 15.11 - ind. 15.3)

| Type of clusters                    | Control arm | Intervention arm | All    |
|-------------------------------------|-------------|------------------|--------|
| Group 1 (4 clusters opened in 2012) | +16.7%      | +13.8%           | +15.0% |
| Group 2 (6 clusters opened in 2013) | +7.2%       | +18.7%           | +11.9% |
| All                                 | +8.9%       | +17.2%           | +12.5% |

## 9 HIV prevalence (first DBS)

HIV prevalence is computed using the first valid DBS (indeterminate and unknown results excluded) of each individual with at least one valid DBS result (see definition 18.1).

Table 11: First DBS HIV prevalence per cluster and per arm

|                          | n/N       | %     | 95% CI    |
|--------------------------|-----------|-------|-----------|
| <b>Per cluster</b>       |           |       |           |
| Cluster 1 (Madwaleni)    | 215/977   | 22.0% | 19.5-24.7 |
| Cluster 2 (Shunqa)       | 156/653   | 23.9% | 20.8-27.3 |
| Cluster 3 (Embongolweni) | 189/867   | 21.8% | 19.2-24.7 |
| Cluster 4 (Ntondweni)    | 117/572   | 20.5% | 17.3-24.0 |
| Cluster 5 (kwaGxaba)     | 111/576   | 19.3% | 16.3-22.7 |
| Cluster 6 (Makhambane)   | 168/670   | 25.1% | 21.9-28.5 |
| Cluster 8 (kwaSqumbe)    | 511/1478  | 34.6% | 32.2-37.0 |
| Cluster 10 (Egedeni)     | 487/1112  | 43.8% | 40.9-46.7 |
| Cluster 11 (Mchakwini)   | 594/1537  | 38.6% | 36.2-41.1 |
| Cluster 13 (Makhwela)    | 297/832   | 35.7% | 32.5-39.0 |
| <b>Per cluster group</b> |           |       |           |
| Group 1 (opened in 2012) | 677/3069  | 22.1% | 20.6-23.6 |
| Group 2 (opened in 2013) | 2168/6205 | 34.9% | 33.8-36.1 |
| <b>Per arm</b>           |           |       |           |
| Control                  | 1579/5124 | 30.8% | 29.6-32.1 |
| Intervention             | 1266/4150 | 30.5% | 29.1-31.9 |
| <b>Overall</b>           |           |       |           |
| All clusters             | 2845/9274 | 30.7% | 29.7-31.6 |

## 10 Estimated Cascade of HIV care

The purpose of this “cascade” is to provide a global overview of the HIV care cascade in the trial area and of the impact of the TasP trial, **at the end of the first phase**.

This exercise consisted in:

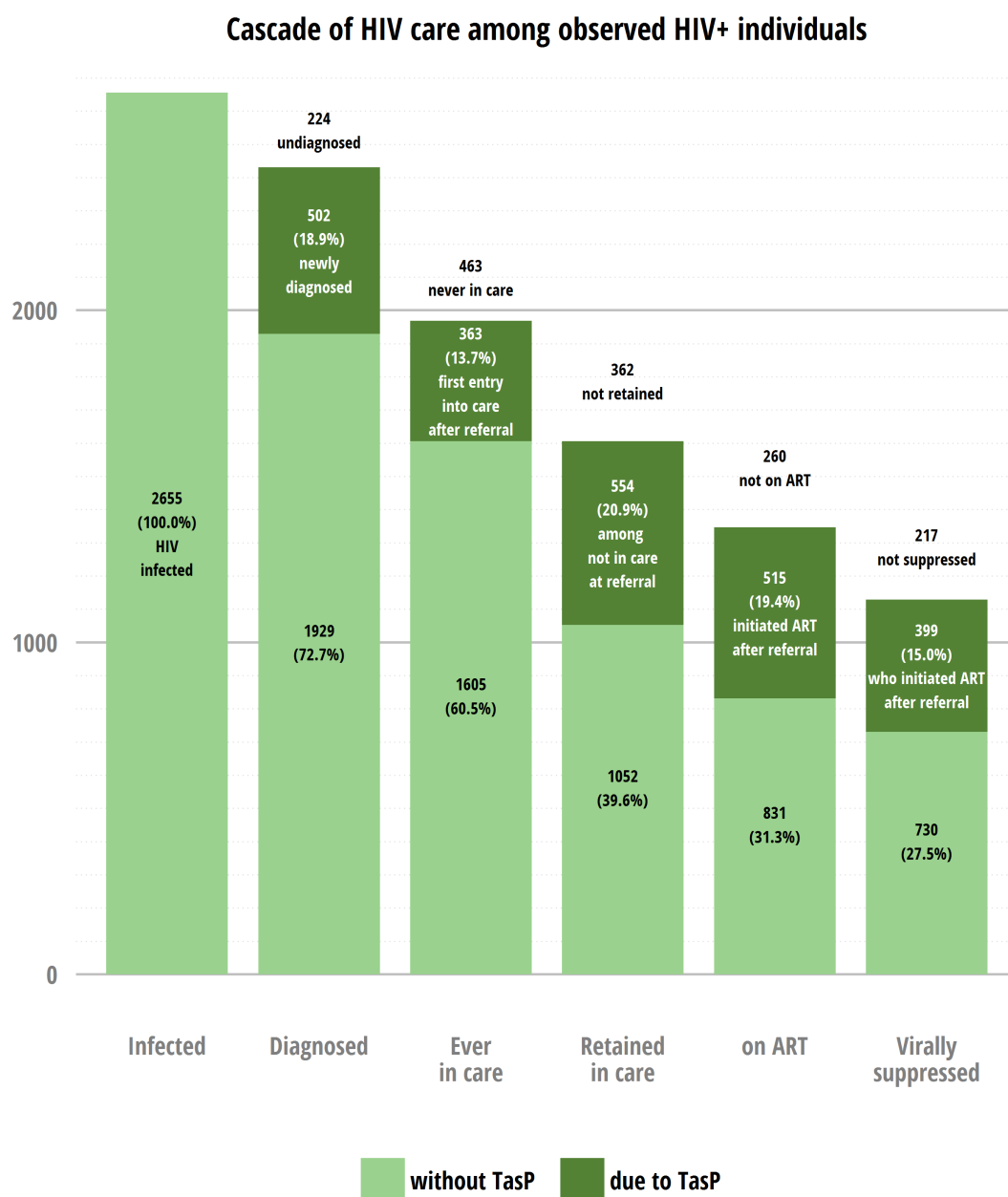
- estimating the cascade *without TasP*, i.e. without the impact of the TasP trial;
- capture improvements *due to TasP*, i.e. individuals gained at each step of the cascade due to our interventions.

The six population groups within the cascade are as follows:

- *HIV-infected individuals*, i.e. the total number of HIV+ living in the trial area;
- *diagnosed*, i.e. HIV+ having ever been tested HIV positive;
- *ever in care*, i.e. HIV+ ever engaged in care, in DoH or TasP clinics;
- *retained in care*, i.e. still in care at the end of phase 1;
- *on ART*, i.e. HIV+ receiving care;
- *on ART, virally suppressed*, i.e. on ART with an undetectable viral load ( $< 400$  copies / mL).

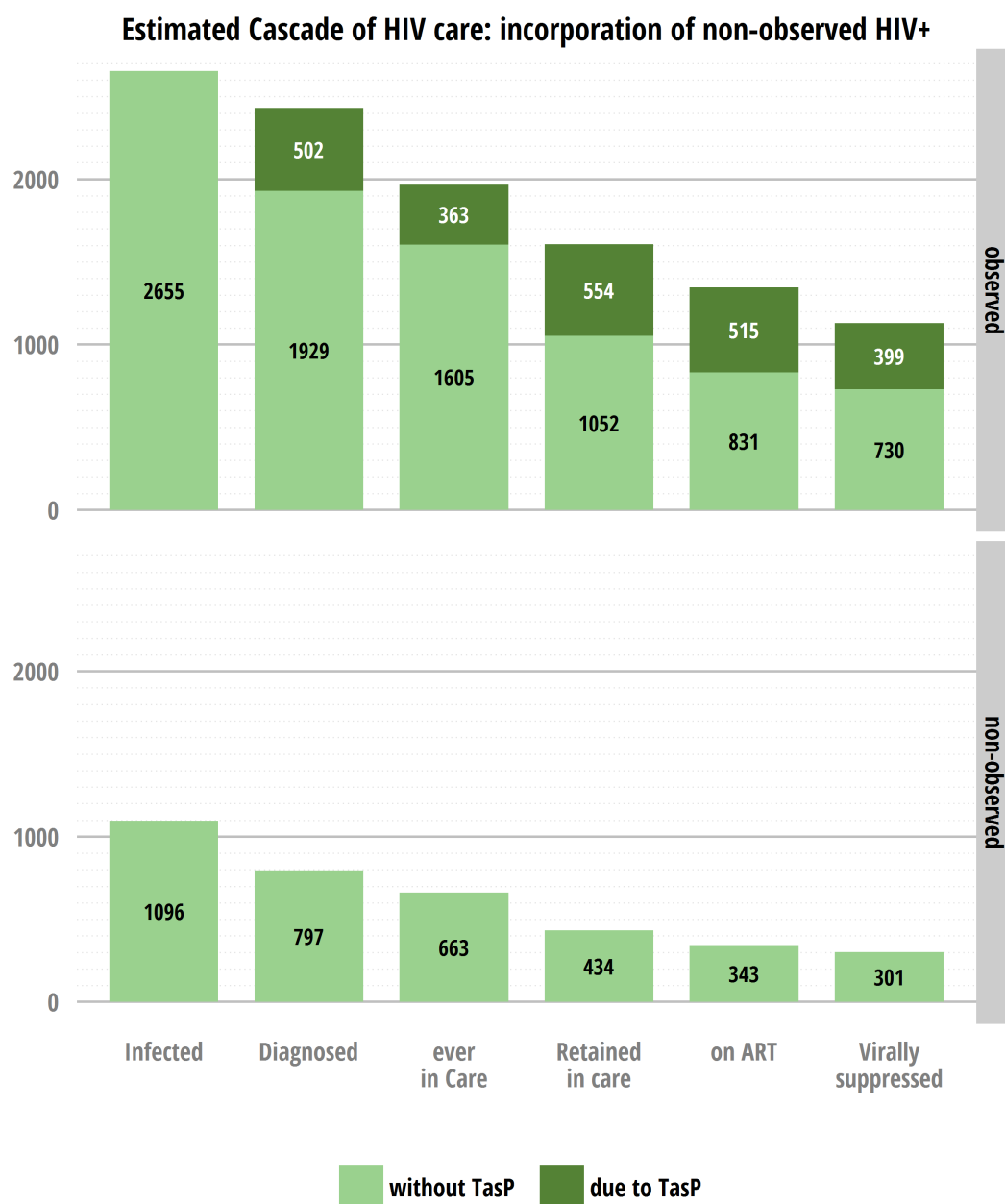
## 10.1 Computing the cascade: step 1 - cascade among observed HIV+

The first step consisted in computing a “cascade of HIV care” among individuals whose HIV positive status has been observed (through DBS and/or HIV ascertainment and were not exited at the end of phase 1.



## 10.2 Computing the cascade: step 2 - including non-observed HIV+

The second step consisted in considering our overall target population for the trial, i.e. including non-observed HIV+ individuals into the cascade, and by applying to them the “without TasP” cascade computed among observed HIV+ individuals (after excluding the improvements due to the TasP interventions). This “cascade” should therefore be considered as a modelling exercise rather than direct observations. The size of the non-observed HIV+ group has been estimated by applying the observed HIB prevalence (ind. 22.3) to the population whose HIV status was not observed.

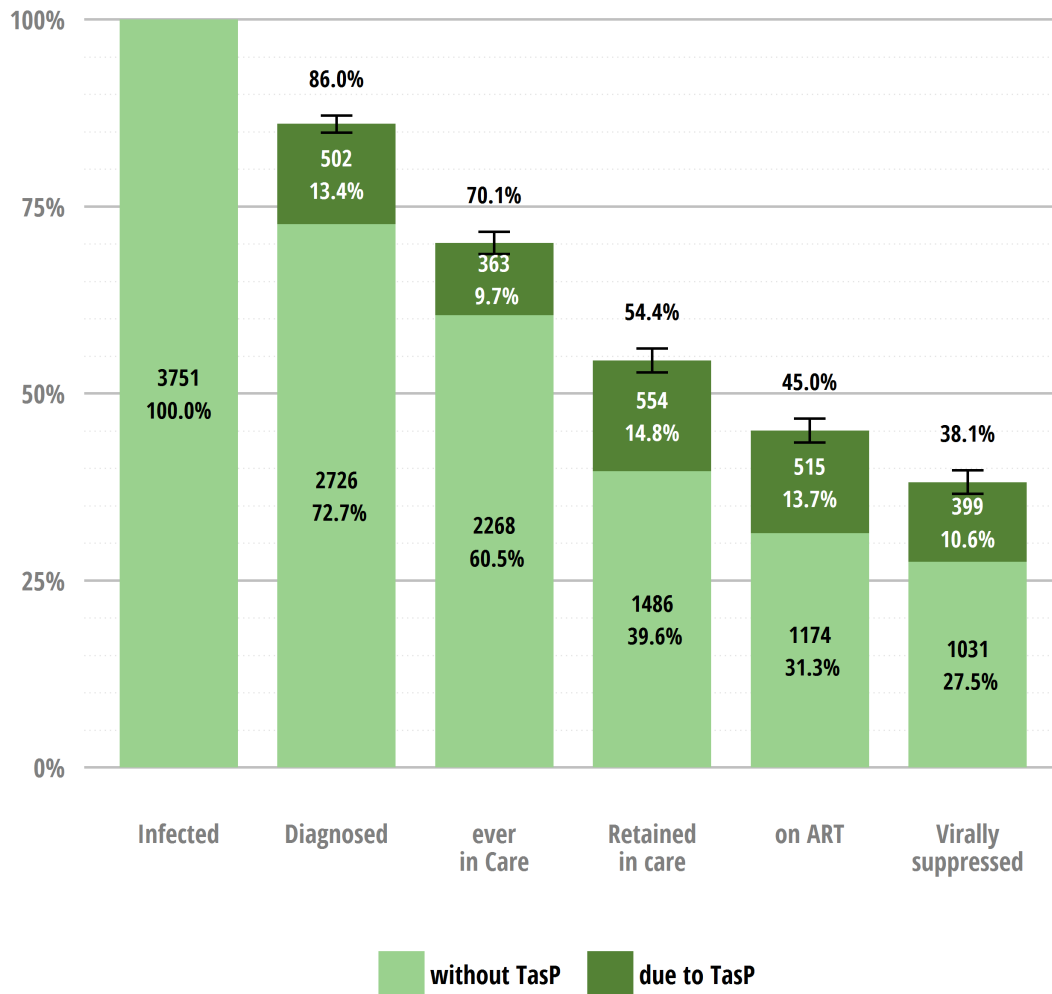


### 10.3 Overall cascade

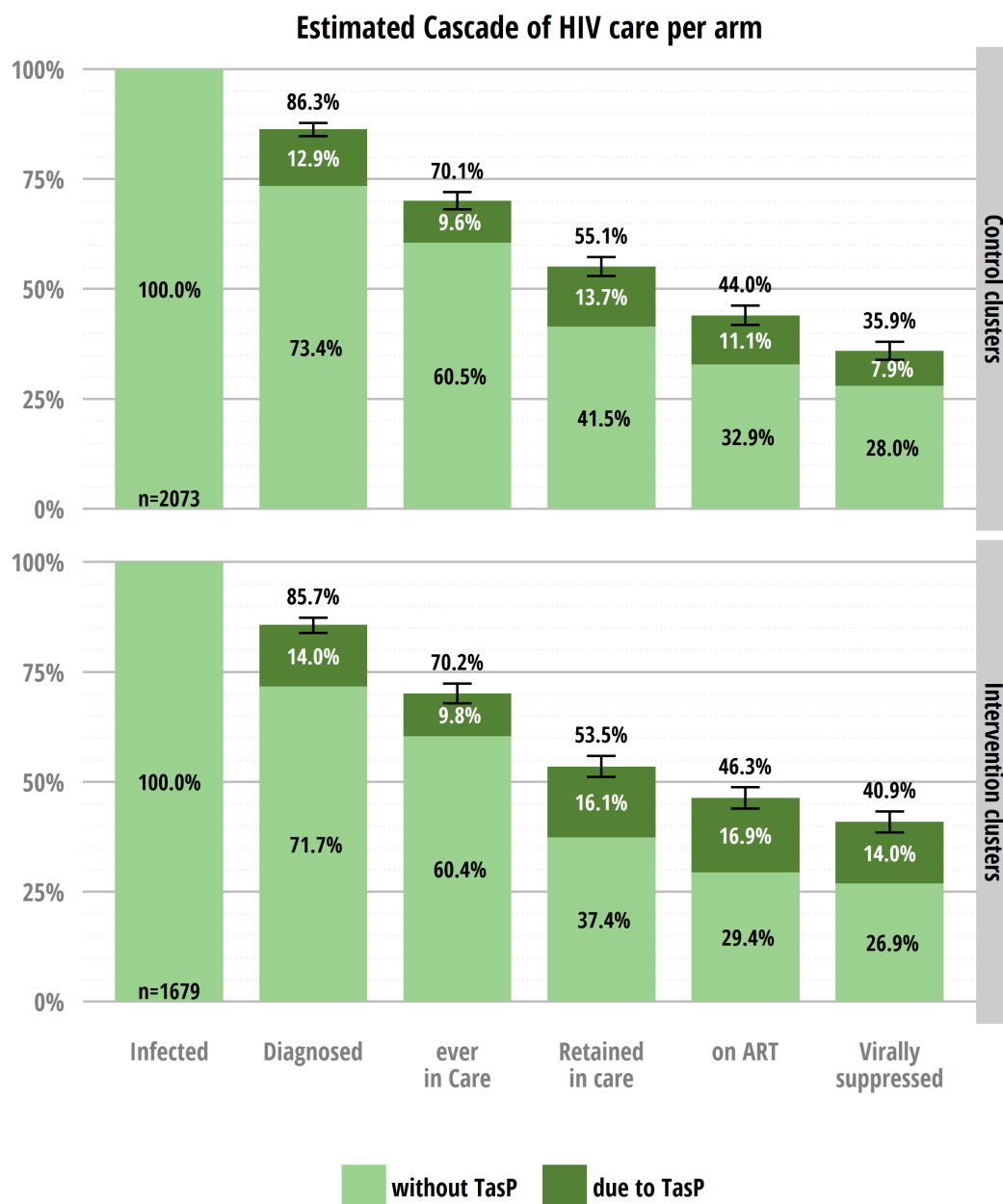
*Note:* all the following graphs integrate both observed and non-observed HIV+.



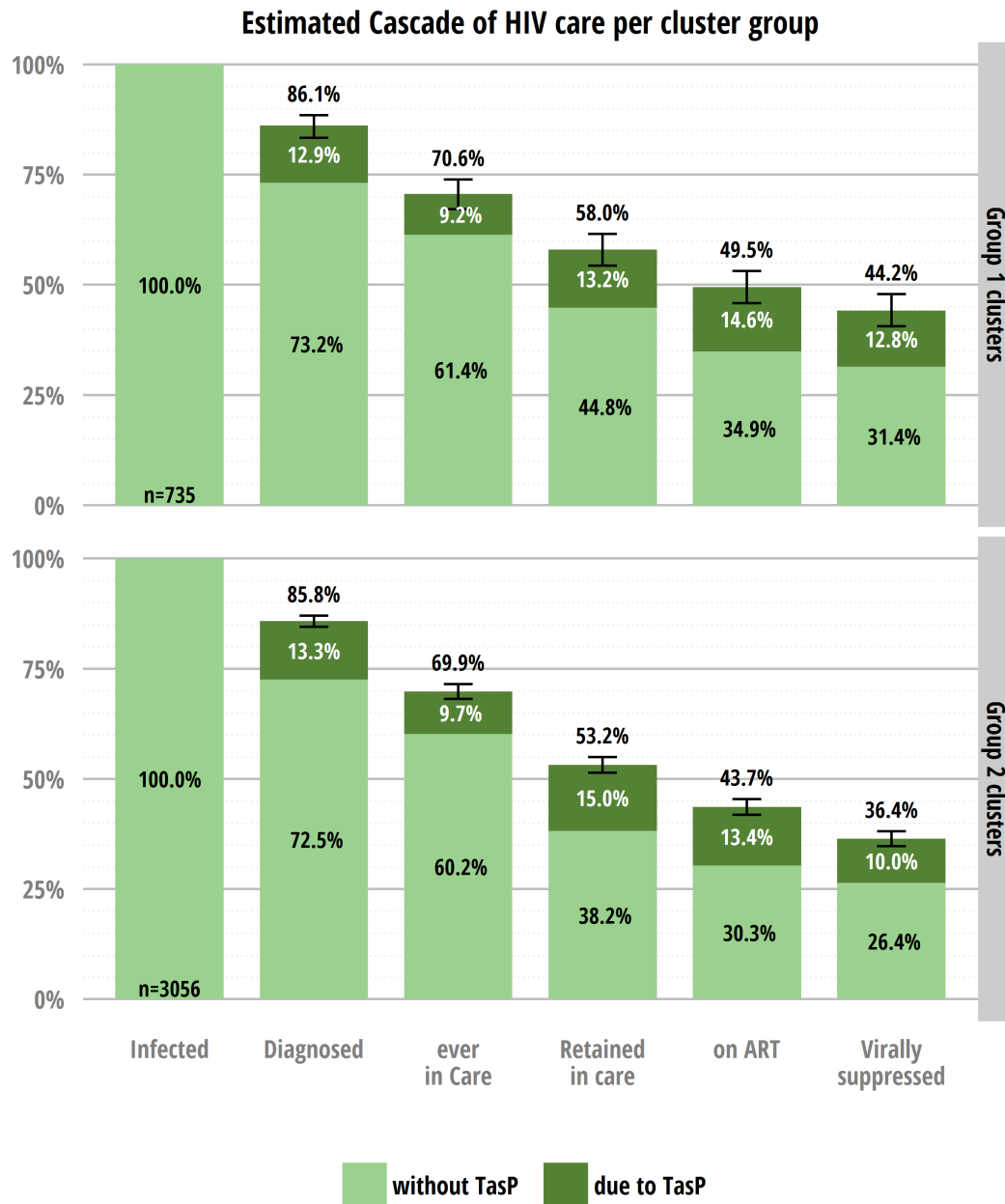
**Estimated Cascade of HIV care at the end of phase 1**



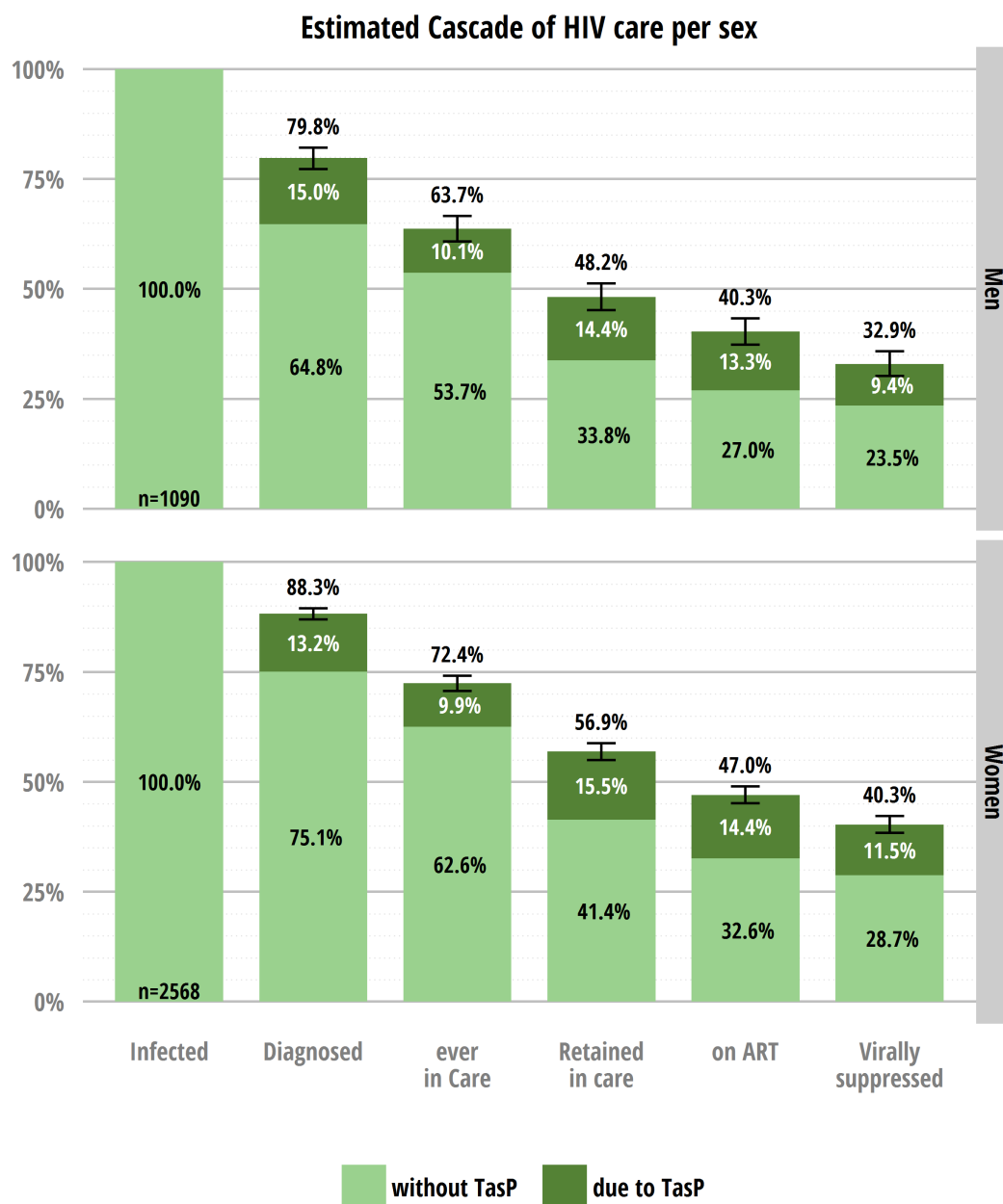
## 10.4 Cascade per arm



## 10.5 Cascade per cluster group



## 10.6 Cascade per sex

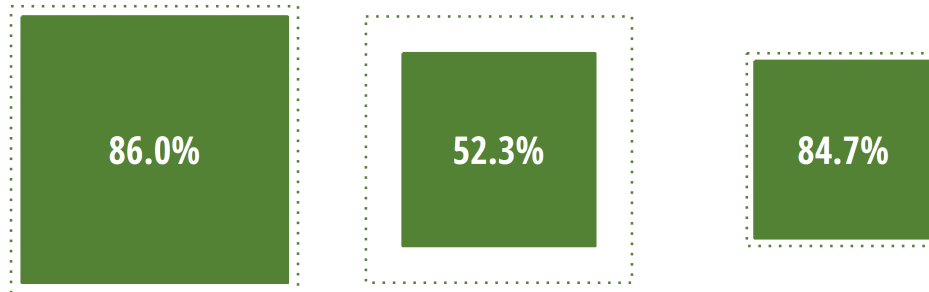


## 10.7 UNAIDS's 90-90-90 target

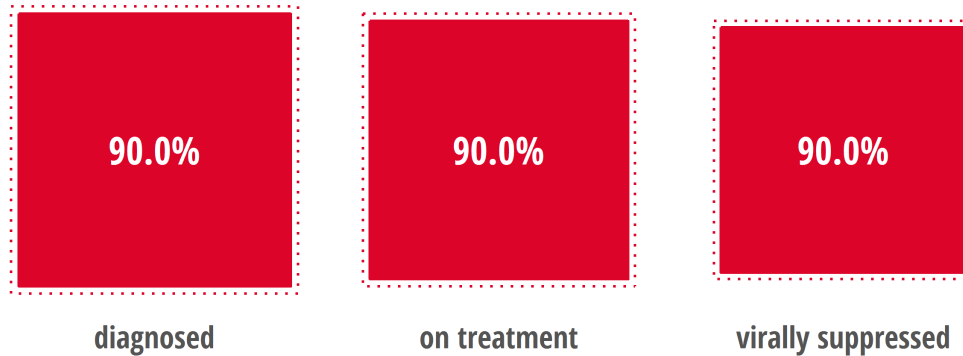
An alternative way of presenting the cascade is to follow the UNAIDS's 90-90-90 target.

| % [95% CI]             | proportion of<br>diagnosed among<br>infected | proportion of<br>patients on ART<br>among diagnosed | proportion of<br>virally<br>suppressed<br>among on ART | proportion of<br>virally<br>suppressed<br>among infected |
|------------------------|--|---|--|--|
| Overall without TasP   | 72.7%<br>[71.2%-74.1%]                       | 43.1%<br>[41.2%-45.0%]                              | 87.8%<br>[85.8%-89.6%]                                 | 27.5%<br>[26.1%-29.0%]                                   |
| Overall with TasP      | 86.0%<br>[84.9%-87.1%]                       | 52.3%<br>[50.6%-54.1%]                              | 84.7%<br>[82.9%-86.4%]                                 | 38.1%<br>[36.6%-39.7%]                                   |
| improvements           | 86.3%<br>[84.8%-87.8%]                       | 51.0%<br>[48.6%-53.3%]                              | 81.6%<br>[78.9%-84.0%]                                 | 35.9%<br>[33.8%-38.0%]                                   |
| Control clusters with  | 85.7%<br>[83.9%-87.3%]                       | 54.0%<br>[51.4%-56.6%]                              | 88.3%<br>[85.8%-90.4%]                                 | 40.9%<br>[38.5%-43.3%]                                   |
| TasP improvements      |  |   |  |  |
| Intervention clusters  |  |   |  |  |
| with TasP improvements |  |   |  |  |
| Control group 1 with   | 90.3%<br>[86.1%-93.3%]                       | 56.8%<br>[50.5%-62.8%]                              | 86.1%<br>[79.3%-91.0%]                                 | 44.1%<br>[38.4%-50.0%]                                   |
| TasP improvements      |  |   |  |  |
| Intervention group 1   | 83.3%<br>[79.4%-86.5%]                       | 57.9%<br>[52.7%-62.9%]                              | 91.8%<br>[87.1%-95.0%]                                 | 44.2%<br>[39.6%-49.0%]                                   |
| with TasP improvements |  |   |  |  |
| Control group 2 with   | 85.4%<br>[83.7%-87.0%]                       | 49.8%<br>[47.3%-52.3%]                              | 80.8%<br>[77.8%-83.5%]                                 | 34.4%<br>[32.2%-36.6%]                                   |
| TasP improvements      |  |   |  |  |
| Intervention group 2   | 86.4%<br>[84.4%-88.3%]                       | 52.6%<br>[49.5%-55.6%]                              | 86.9%<br>[83.8%-89.5%]                                 | 39.5%<br>[36.8%-42.3%]                                   |
| with TasP improvements |  |   |  |  |
| UNAIDS's target        | 90.0%  | 90.0%   | 90.0%  | 72.9%  |

### TasP trial area (end of phase 1)



### UNAIDS's target



*Note:* the number of participants on ART in DoH clinics is underestimated, due to the fact that the ARTemis database doesn't collect ART status and date of ART initiation since 2013. Therefore, we used an undetectable viral load as a proxy of ART. We also used the iDART database from pharmacies. However, this database is not exhaustive. Therefore, for the “without TasP” scenario, the proportion of patients on ART among diagnosed is slightly underestimated and the proportion of patients virally suppressed among patients on ART is slightly overestimated. It would be therefore not appropriate to conclude that this proportion dropped between the “without TasP” and the “with TasP improvements” scenarios.

## 11 Contamination between arm (DRAFT)

At that stage, we don't have an estimates of contamination between arm, i.e. the proportion of individuals having sex with a partner living in the opposite arm. Precise local areas of sexual partners have been introduced in the individual questionnaire for phase 2, but were not part of IQ in phase 1.

## 11.1 Location (isigodi) of sexual partners

As a proxy, we can look at the location of sexual partners. In phase 1 IQs, we asked where sexual partners normally resides, in the same household, the same isigodi or another isigodi. Isigodi's boundaries don't correspond to trial clusters. Usually, there are several clusters in one isigodi and an isigodi is partly 'control' and partly 'intervention'. Also, some isigodis are not located within the trial area.

Table 13: All documented sexual partners in IQ1

|                           | n    | %    |
|---------------------------|------|------|
| Same household            | 3432 | 33.6 |
| Elsewhere in same isigodi | 3110 | 30.4 |
| Outside this isigodi      | 3339 | 32.7 |
| Don't know                | 149  | 1.5  |
| Refused                   | 28   | 0.3  |
| Missing                   | 164  | 1.6  |

Table 14: All documented sexual partners in IQ3

|                           | n   | %    |
|---------------------------|-----|------|
| Same household            | 497 | 47.3 |
| Elsewhere in same isigodi | 237 | 22.5 |
| Outside this isigodi      | 305 | 29.0 |
| Don't know                | 0   | 0.0  |
| Refused                   | 4   | 0.4  |
| Missing                   | 8   | 0.8  |

In the two previous tables, all documented sexual partners were taken into account. Up to three sexual partners are documented in IQ if the participant had several sexual partners in the last 12 months. If the participant had only one sexual partner in the last 12 months or didn't have sex in the last 12 months, only the most recent partner is documented. The two following tables presents only data from the most recent partner.

Table 15: Most recent partner in IQ1

|                           | n    | %    |
|---------------------------|------|------|
| Same household            | 3259 | 39.7 |
| Elsewhere in same isigodi | 2234 | 27.2 |
| Outside this isigodi      | 2523 | 30.7 |
| Don't know                | 72   | 0.9  |
| Refused                   | 18   | 0.2  |
| Missing                   | 100  | 1.2  |

Table 16: Most recent partner in IQ3

|                           | n   | %    |
|---------------------------|-----|------|
| Same household            | 487 | 49.4 |
| Elsewhere in same isigodi | 201 | 20.4 |
| Outside this isigodi      | 288 | 29.2 |

|            | n | %   |
|------------|---|-----|
| Don't know | 0 | 0.0 |
| Refused    | 4 | 0.4 |
| Missing    | 6 | 0.6 |

Results are also similar by arm.

Table 17: All sexual partners in IQ1 (CONTROL clusters)

|                           | n    | %    |
|---------------------------|------|------|
| Same household            | 1873 | 33.1 |
| Elsewhere in same isigodi | 1775 | 31.4 |
| Outside this isigodi      | 1815 | 32.1 |
| Don't know                | 98   | 1.7  |
| Refused                   | 22   | 0.4  |
| Missing                   | 75   | 1.3  |

Table 18: All sexual partners in IQ1 (INTERVENTION clusters)

|                           | n    | %    |
|---------------------------|------|------|
| Same household            | 1559 | 34.2 |
| Elsewhere in same isigodi | 1335 | 29.3 |
| Outside this isigodi      | 1524 | 33.4 |
| Don't know                | 51   | 1.1  |
| Refused                   | 6    | 0.1  |
| Missing                   | 89   | 2.0  |

## 12 Attitudes / Opinions at population level

### 12.1 Attitudes toward HIV testing

#### 12.1.1 Best place to be tested for HIV

The exact question was “There are many places to get an HIV test. Which is the best place to get tested?”.

Table 19: Best place to be tested for HIV at first participation (IQ1)

|                        | n    | %    |
|------------------------|------|------|
| At home                | 5529 | 58.3 |
| At hospital            | 110  | 1.2  |
| At Counselling Centre  | 30   | 0.3  |
| At clinic              | 3266 | 34.4 |
| At private doctor      | 183  | 1.9  |
| At Mobile Testing Unit | 189  | 2.0  |
| Other                  | 46   | 0.5  |
| Don't know             | 66   | 0.7  |



|         | n    | %     |
|---------|------|-------|
| Refused | 2    | 0.0   |
| Missing | 69   | 0.7   |
| Total   | 9490 | 100.0 |

Table 20: Best place to be tested at first participation (IQ1) per arm (n=9490)

|                        | Control clusters | Intervention clusters | All clusters |
|------------------------|------------------|-----------------------|--------------|
| At home                | 56.5             | 60.4                  | 58.3         |
| At hospital            | 1.2              | 1.1                   | 1.2          |
| At Counselling Centre  | 0.4              | 0.2                   | 0.3          |
| At clinic              | 36.1             | 32.3                  | 34.4         |
| At private doctor      | 1.8              | 2.1                   | 1.9          |
| At Mobile Testing Unit | 1.9              | 2.1                   | 2.0          |
| Other                  | 0.6              | 0.4                   | 0.5          |
| Don't know             | 0.8              | 0.6                   | 0.7          |
| Refused                | 0.0              | 0.0                   | 0.0          |
| Missing                | 0.6              | 0.9                   | 0.7          |
| Total                  | 100.0            | 100.0                 | 100.0        |

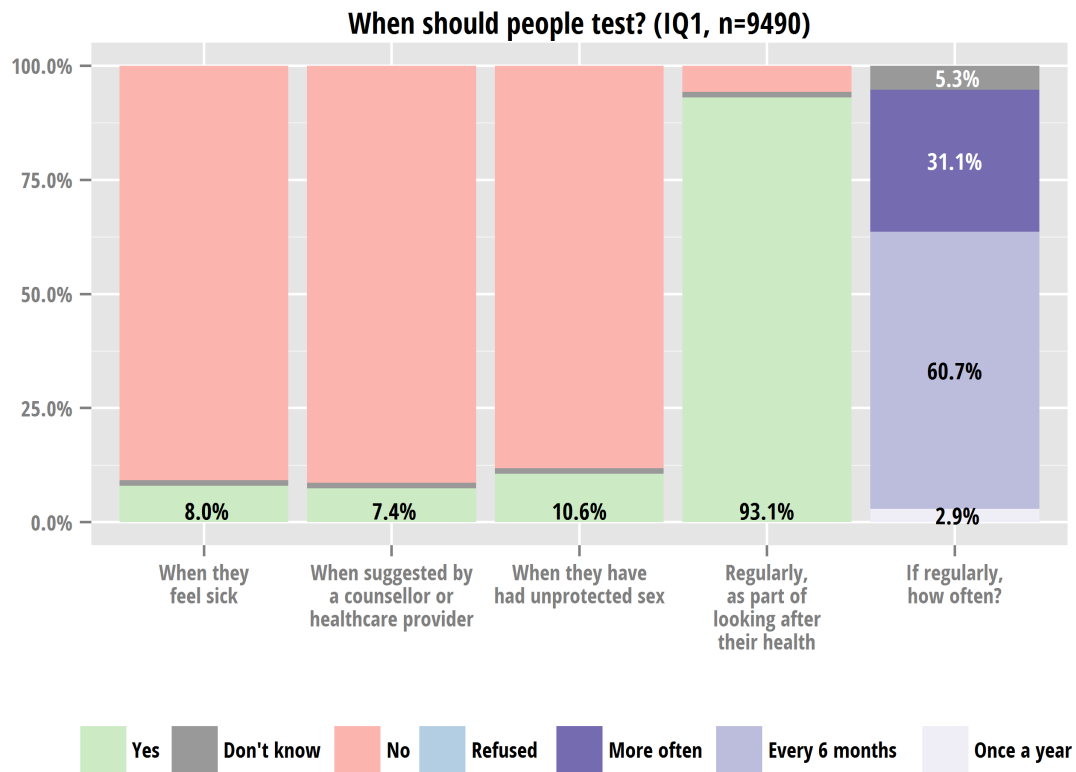
Table 21: Best place to be tested at first and third participation (IQ1 & IQ3, among individuals having completed both, n=1334)

|                        | IQ1   | IQ3   |
|------------------------|-------|-------|
| At home                | 73.8  | 86.7  |
| At hospital            | 0.5   | 0.3   |
| At Counselling Centre  | 0.1   | 0.0   |
| At clinic              | 23.7  | 10.1  |
| At private doctor      | 0.9   | 1.0   |
| At Mobile Testing Unit | 0.6   | 0.1   |
| Other                  | 0.1   | 0.1   |
| Don't know             | 0.3   | 0.0   |
| Refused                | 0.0   | 0.1   |
| Missing                | 0.1   | 1.6   |
| Total                  | 100.0 | 100.0 |

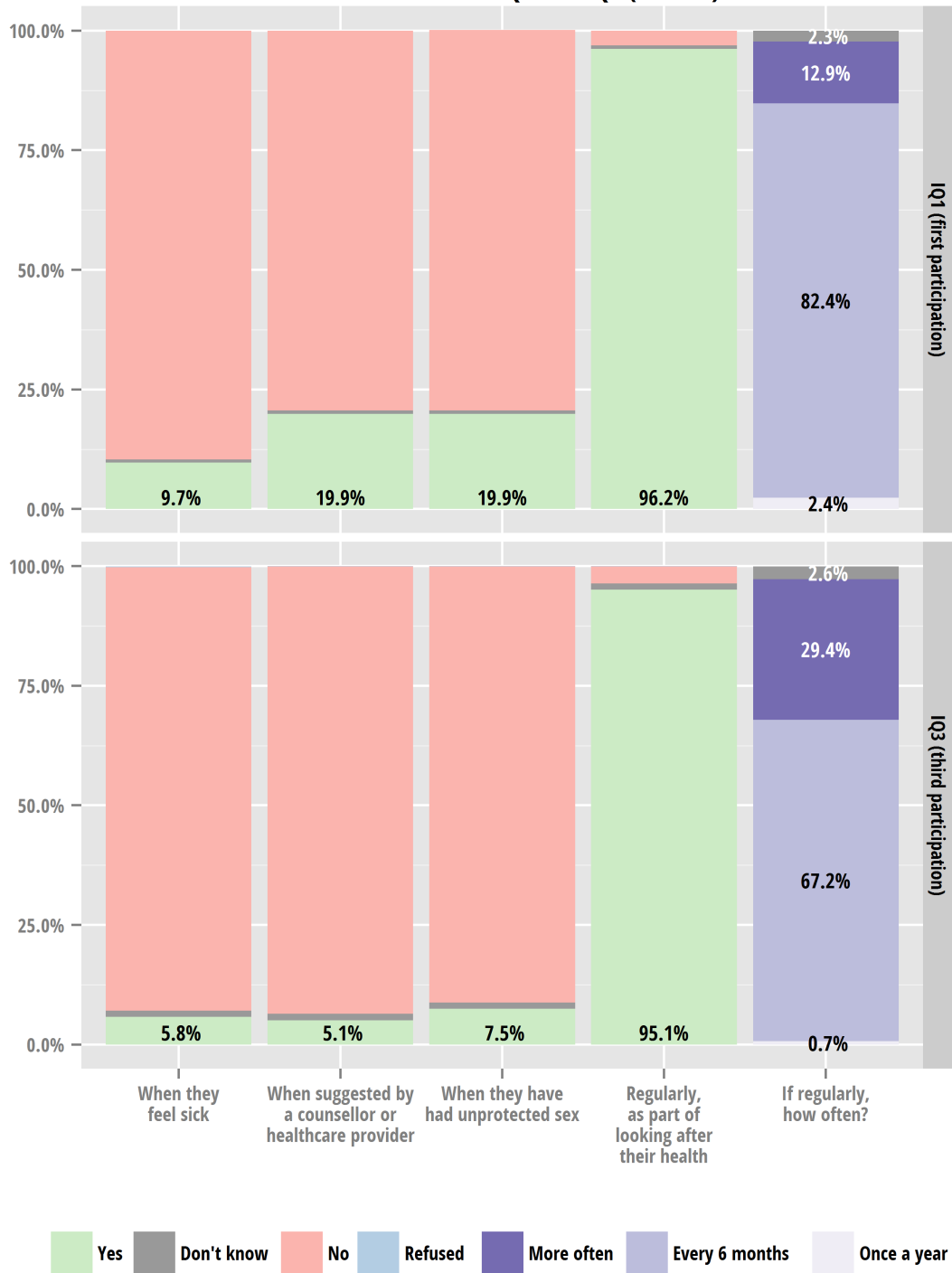
Note: only individuals in group 1 clusters (clusters opened in 2012) could have completed IQ1 and IQ3 as only two calendar rounds have been implemented in phase 1 in group 2 clusters (clusters opened in 2013).

### 12.1.2 When should people test for HIV?

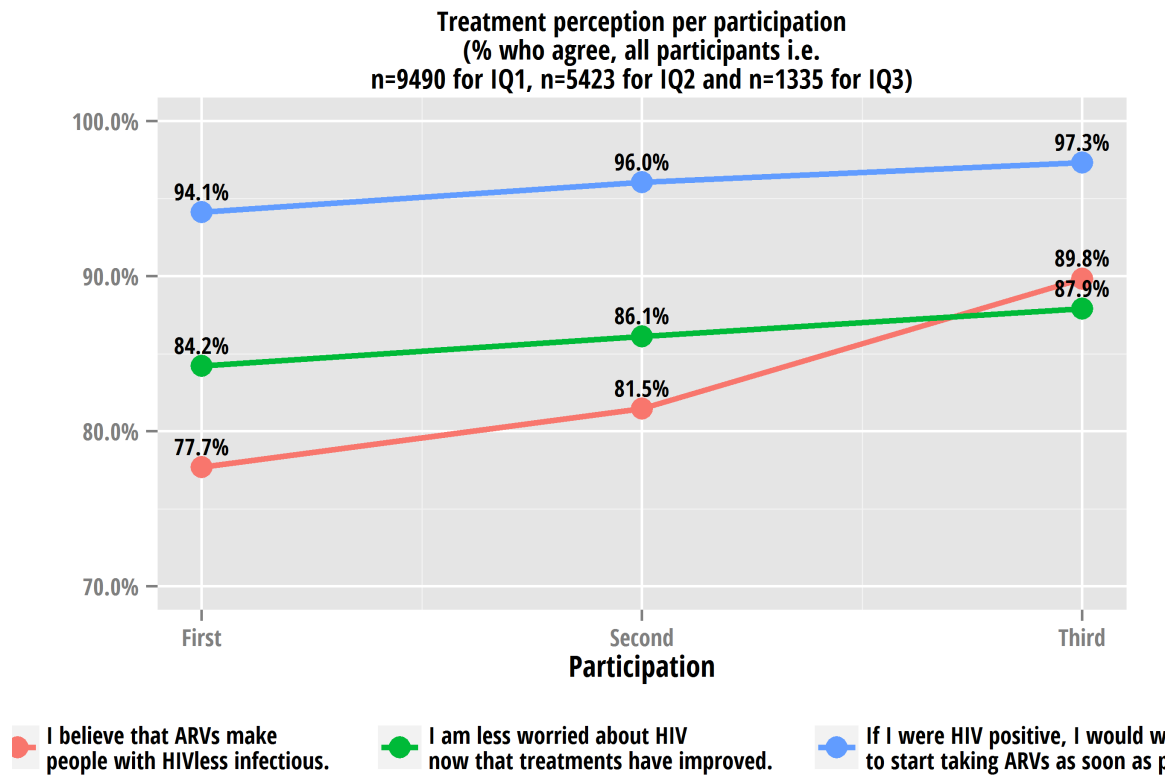
According to you, when do think people should test for HIV? (at first participation, among all individuals having completed IQ1, n=9490).



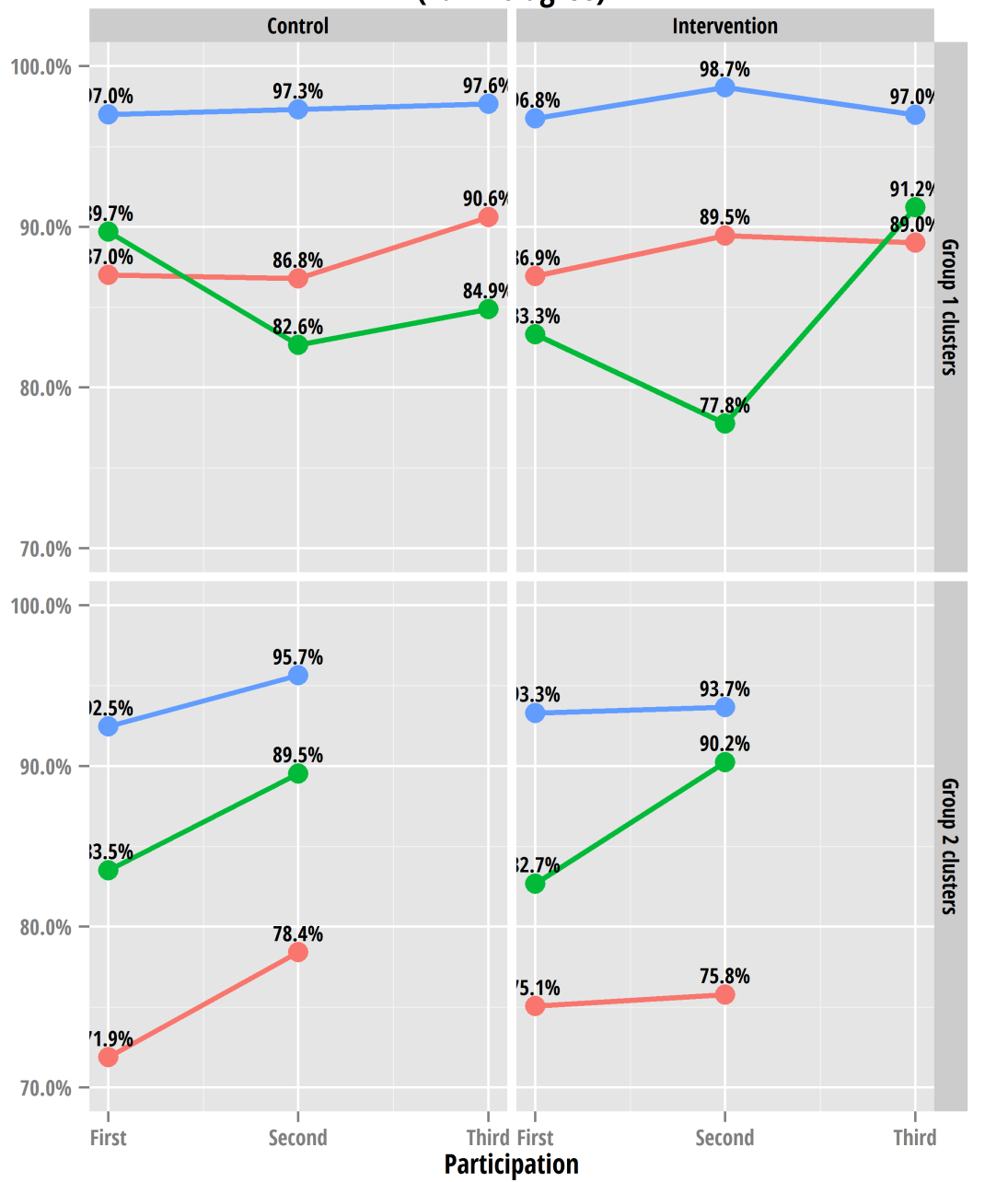
Evolutions between IQ1 and IQ3 (n=1334)



## 12.2 Treatment perception



**Treatment perception per participation, arm and cluster group  
(% who agree)**



● I believe that ARVs make people with HIV less infectious.

● I am less worried about HIV now that treatments have improved.

● If I were HIV positive, I would want to start taking ARVs as soon as possible.