Feasibility and Outcome of Rapid Initiation of Antiretroviral Treatment among Newly-diagnosed HIV-positive Patients at a Tertiary Center in Taiwan

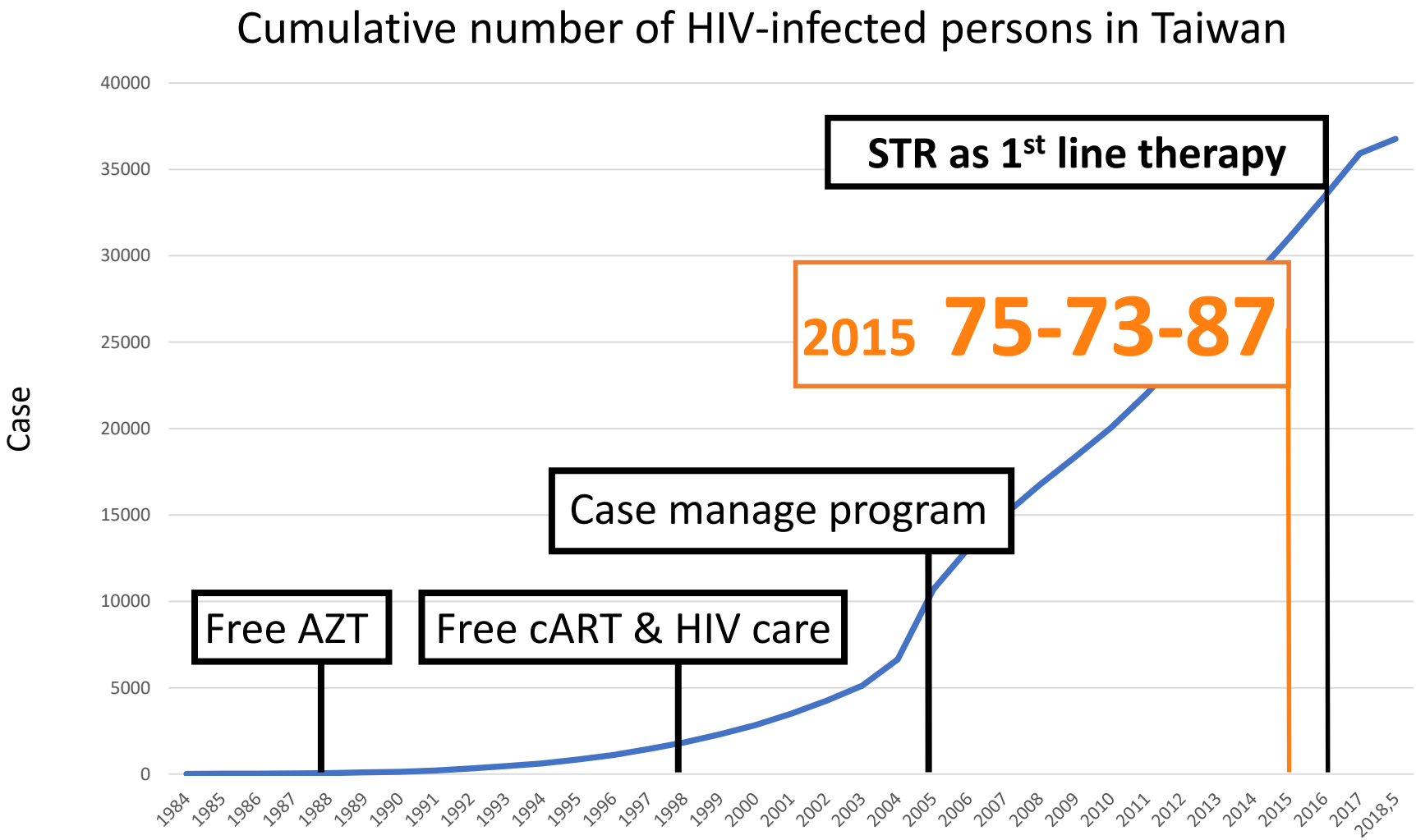
Yu-Zhen Luo[1], Yi-Chia Huang[1], Pei-Ying Wu[1], Chien-Ching Hung[2]

[1]Center of Infection Control and [2]Department of Internal Medicine, National Taiwan University Hospital

Presenter Disclosure Information

- Yi-Chia Huang has no conflict of interest to declare

HIV/AIDS Epidemics & Policy in Taiwan



AZT, zidovudine; cART, combination antiretroviral therapy; STR, single-tablet regimen

Taiwan CDC 2018

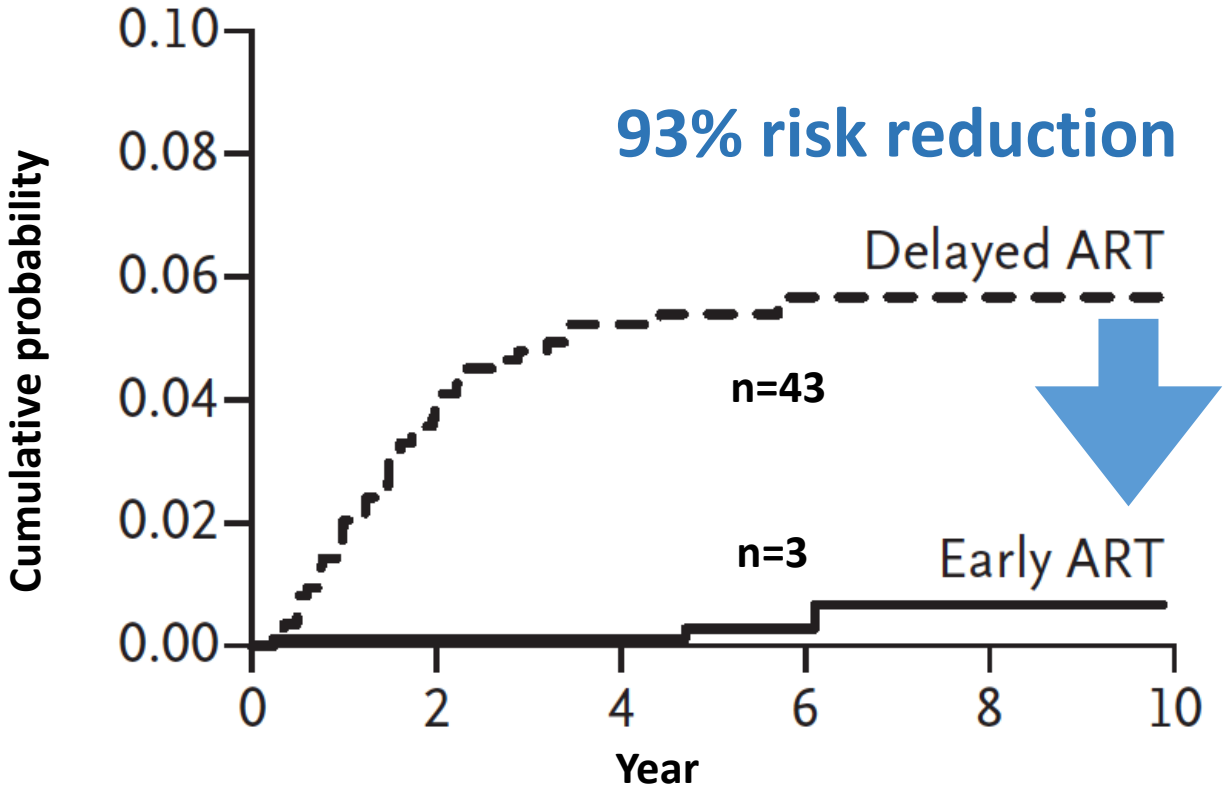
Treatment as Prevention –HPTN052

Heterosexual subjects recruited and observed, 2007-2010

Early ART (CD4 350-500 cells/mm^3) vs Delayed ART (CD4 <250 cells/mm^3)

46 cases of linked infection among 10031 PYFU

No linked infection when PVL was fully suppressed



Cohen MS, et al. N Engl J Med. 2016;375:830-9.

Targeting Individuals with Acute/early HIV Infection

Phylogenetic analysis of viral gene sequences among new HIV cases

Quebec, Canada - Primary HIV cohort (1998-2005)

Table 1. Clinical and clustering features for the primary HIV-infected (PHI) and chronically infected (CI) patient populations.

Study population	Age, years	Viral load, copies/mL	No. of patients in the study population clustering with PHI transmission clusters (PHI transmissions, %)			Estimated transmissions,[c] %
			PHI small clusters[a]	PHI large clusters[b]	CI-PHI new cluster	
Genotyped PHI[d]	37 ± 10	4.64 ± 0.83	293 (24.2)	300 (25.1)	…	49.4
Genotyped naive CI[e]	41 ± 11	4.71 ± 0.70	5 (0.8)	7 (1.2)	25 (4.2)	~15.5
Genotyped treated CI[f]	43 ± 8	4.14 ± 0.76[g]	9 (1.5)	8 (1.3)	17 (2.0)	~12.0
Nongenotyped CI[h]	43 ± 8	2.58[i]	…	…	…	…

Therapy provided to patients with early disease may prevent onward HIV transmission

Brenner BG, et al. J Infect Dis. 2007;195:951-9.

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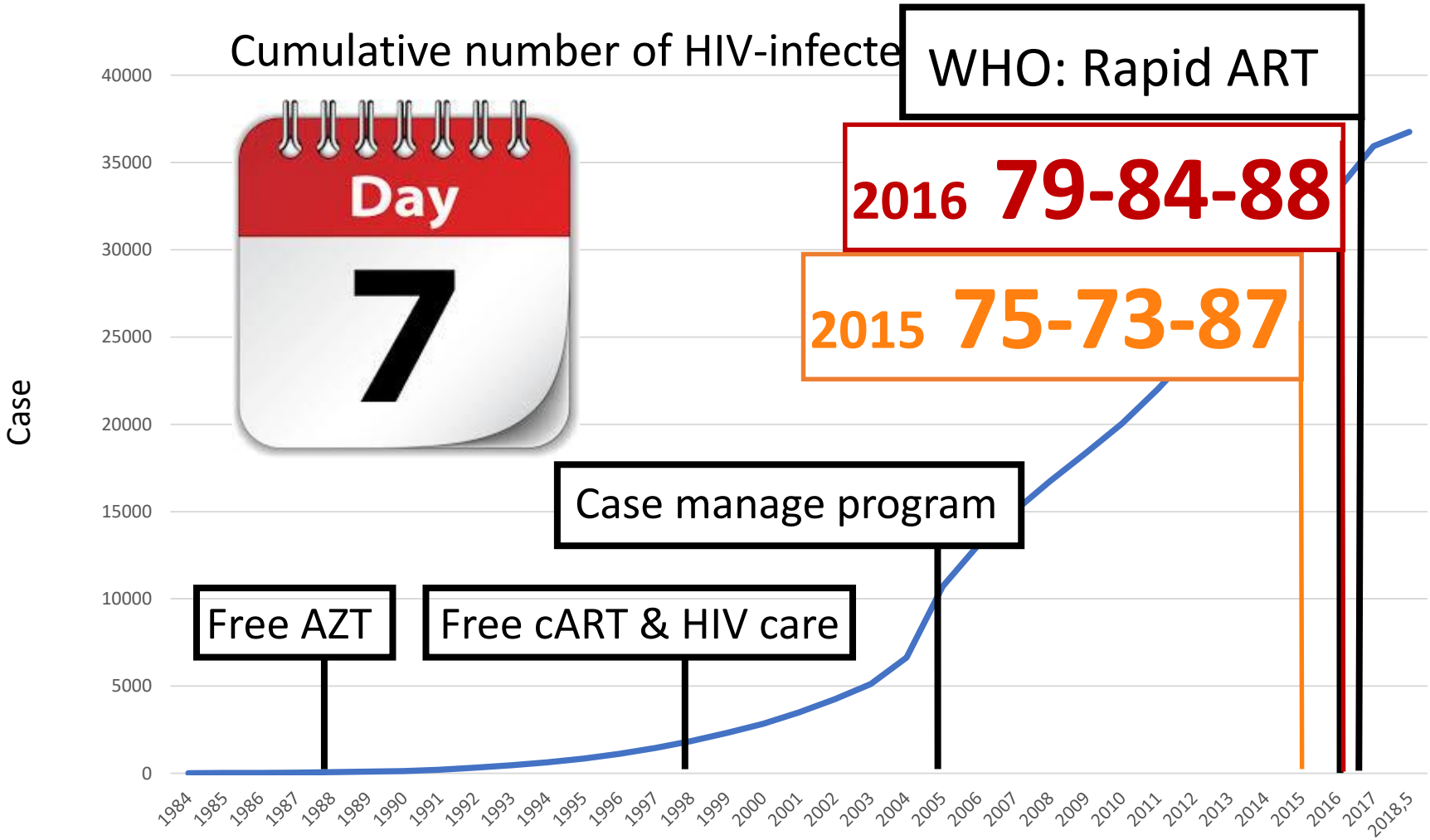
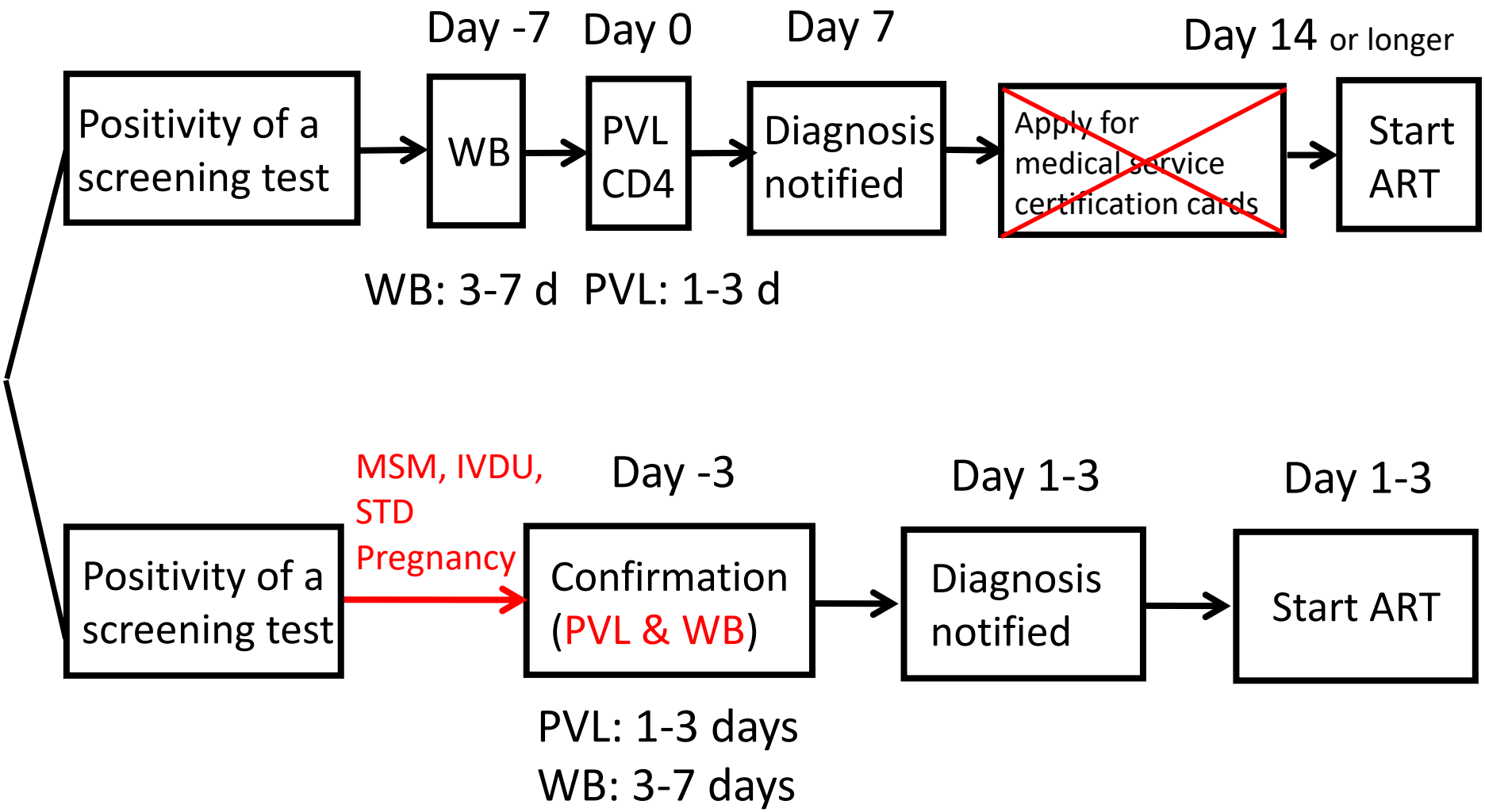


WHO guidelines 2017

Taiwan CDC 2018

Diagnostic Algorithm for High-risk Individuals
at National Taiwan University Hospital



Study Aims

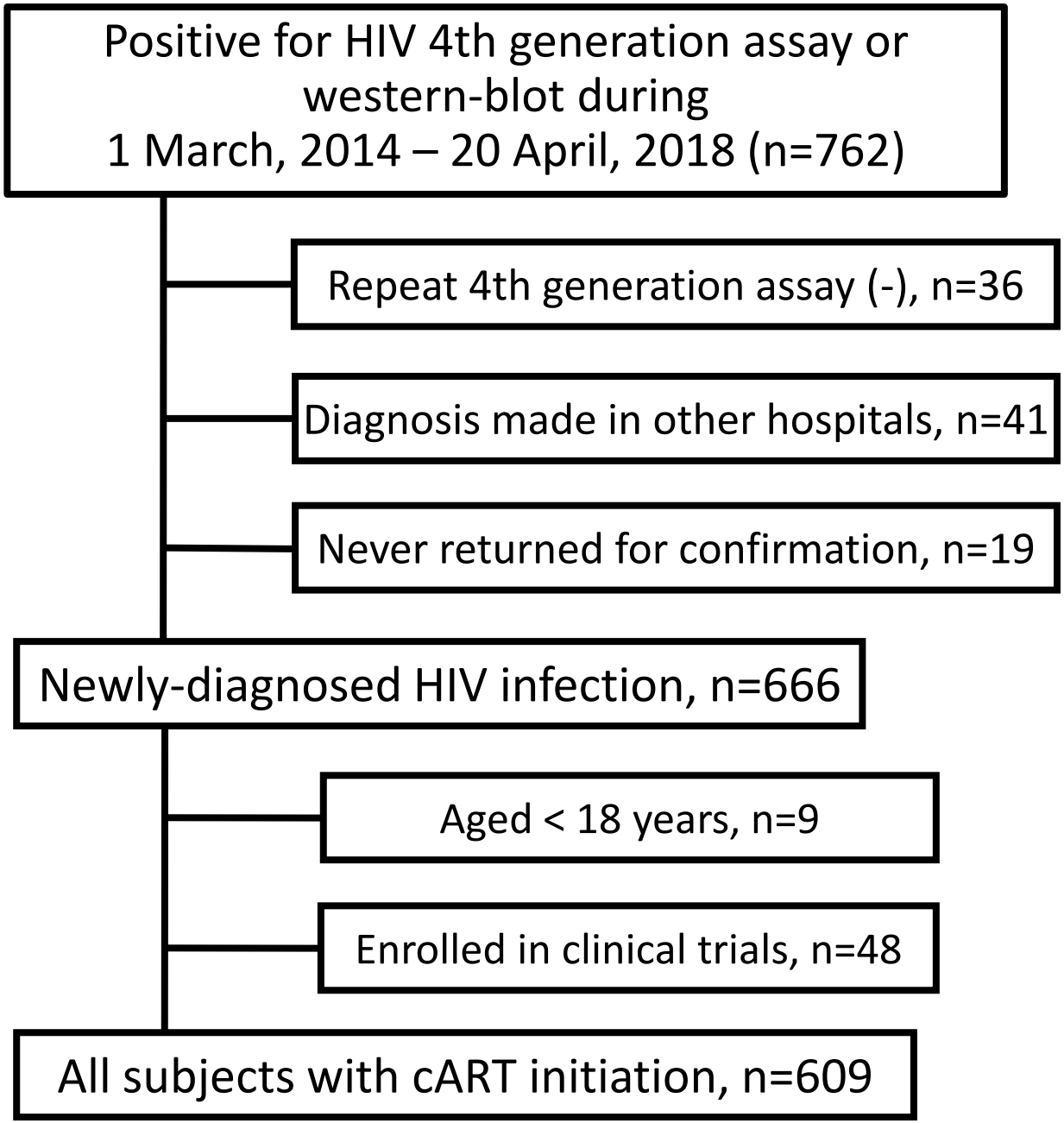
- Feasibility of rapid ART initiation among newly-diagnosed HIV-positive patients at NTUH

- Outcome of rapid ART initiation at NTUH

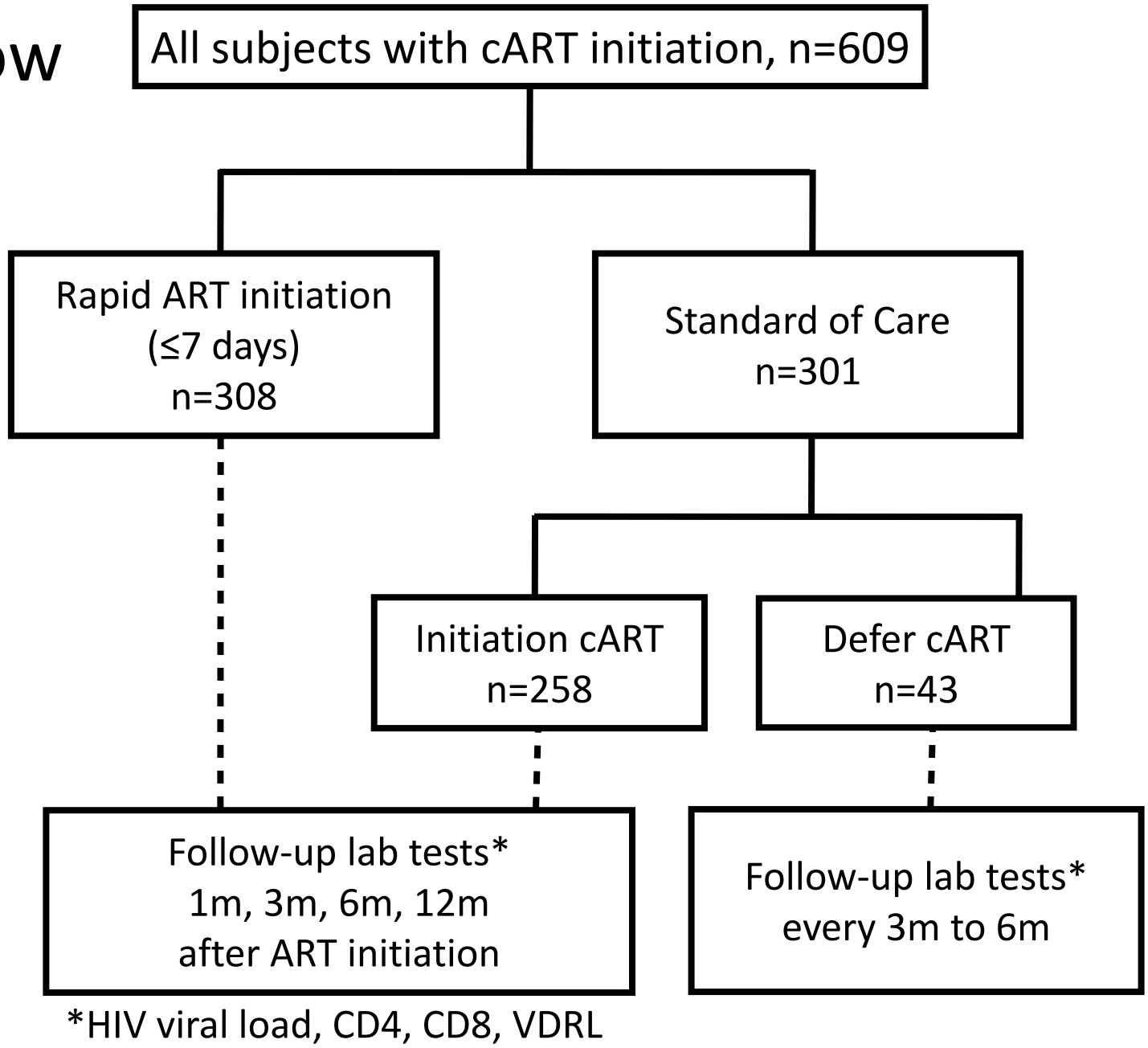
Methods

- Retrospective, cohort study
- Study period: 1st March, 2014 to 20th April, 2018
- Study site: National Taiwan University Hospital
- Single-tablet regimen has been included in the first-line therapy since June 2016
- Baseline and follow-up laboratory tests were performed according to the national guidelines and the clinical presentations.

Study Flow


Positive for HIV 4th generation assay or western-blot during 1 March, 2014 – 20 April, 2018 (n=762)
Repeat 4th generation assay (-), n=36
Diagnosis made in other hospitals, n=41
Never returned for confirmation, n=19
Newly-diagnosed HIV infection, n=666
Aged < 18 years, n=9
Enrolled in clinical trials, n=48
All subjects with cART initiation, n=609

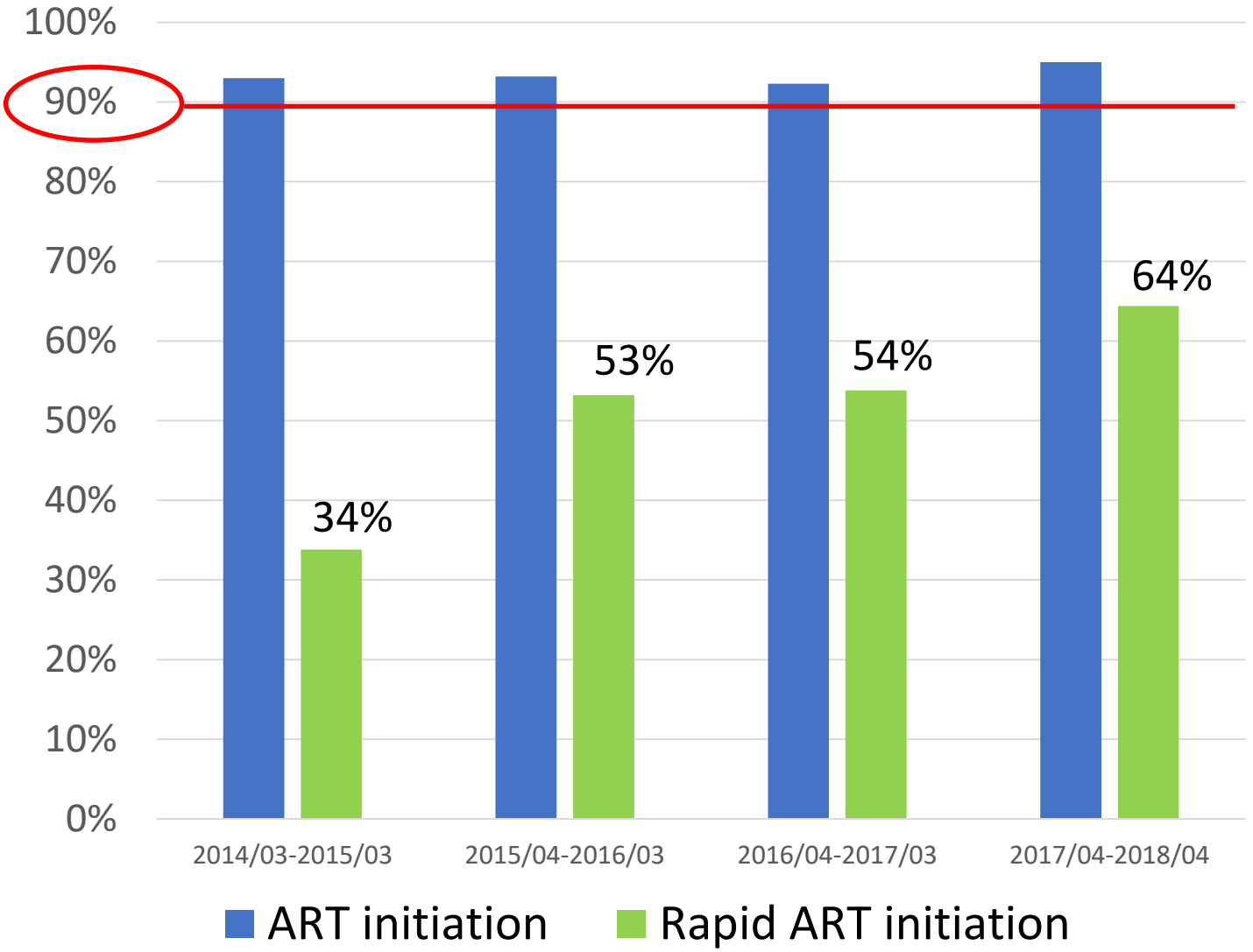
Study Flow


All subjects with cART initiation, n=609
Rapid ART initiation
(≤7 days)
n=308
Standard of Care
n=301
Initiation cART
n=258
Defer cART
n=43
Follow-up lab tests*
1m, 3m, 6m, 12m
after ART initiation
Follow-up lab tests*
every 3m to 6m
*HIV viral load, CD4, CD8, VDRL

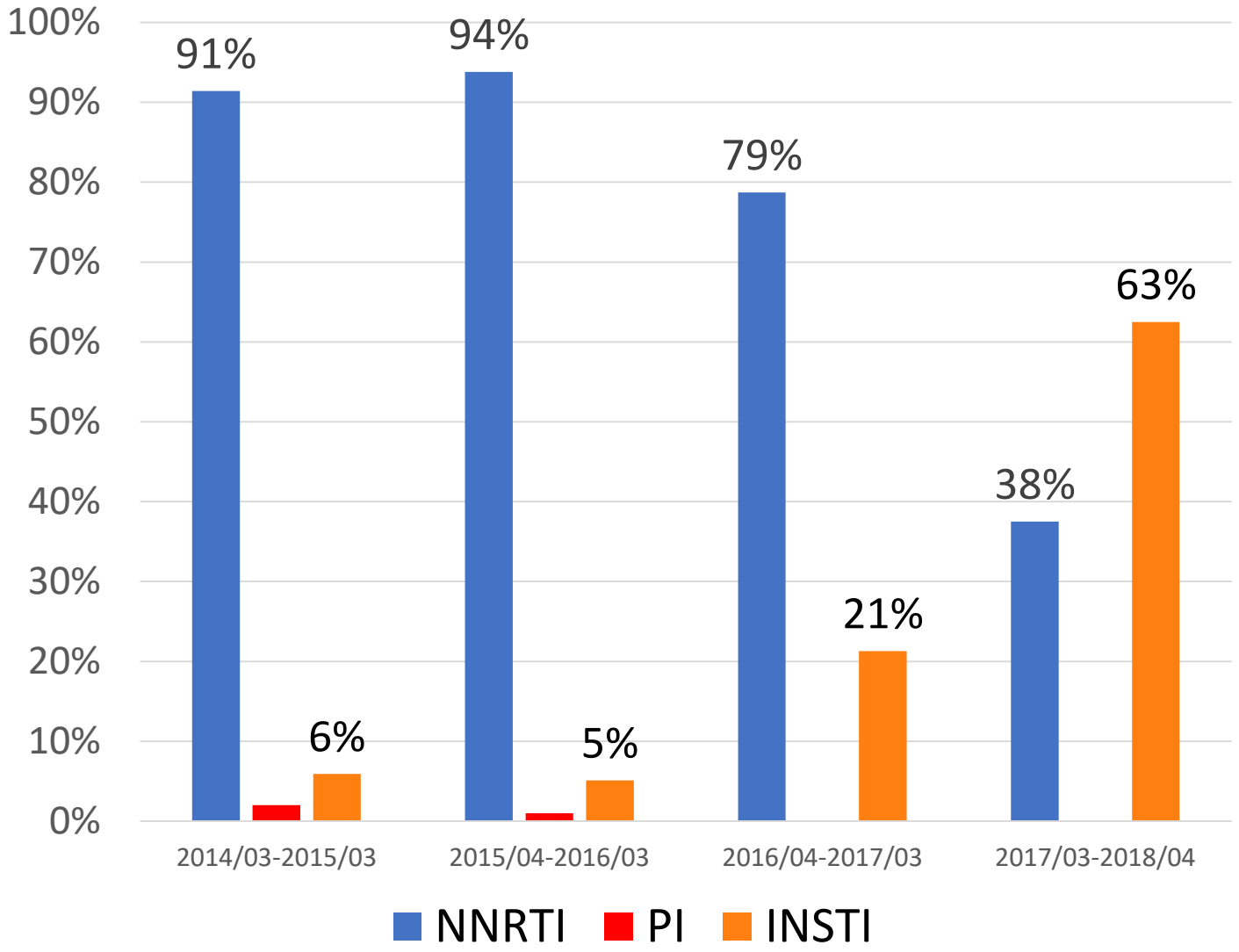
Baseline Characteristics

	2014/03-2015/03 (n=201)	2015/04-2016/03 (n=190)	2016/04-2017/03 (n=117)	2017/04-2018/04 (n=101)	P value
Male, n (%)	197 (98.0)	188 (98.9)	116 (99.1)	99 (98.0)	0.774
Age, mean (SD), year	32.4 (9.9)	33.5 (9.7)	31.6 (9.4)	34.2 (8.8)	0.144
Plasma HIV RNA load at baseline, median (IQR), log10 copies/mm3	5.0 (4.5-5.5)	5.0 (4.5-5.4)	5.2 (4.6-5.8)	4.8 (4.5-5.5)	0.011
CD4 <200 cell/μl, n (%)	56 (27.9)	67 (35.3)	48 (41.0)	34 (33.7)	0.107
Acute HIV infection, n (%)	19 (9.5)	34 (17.9)	15 (12.8)	5 (5.0)	0.006
Anti-HCV positivity, n (%)	7 (8.7)	7 (8.5)	8 (5.2)	5 (4.6)	0.533
HBsAg positivity, n (%)	14 (16.3)	19 (16.1)	10 (10.0)	8 (8.7)	0.812
Syphilis, n (%)	46 (22.9)	47 (24.7)	28 (23.9)	34 (33.7)	0.214

Trends of Rapid ART Initiation

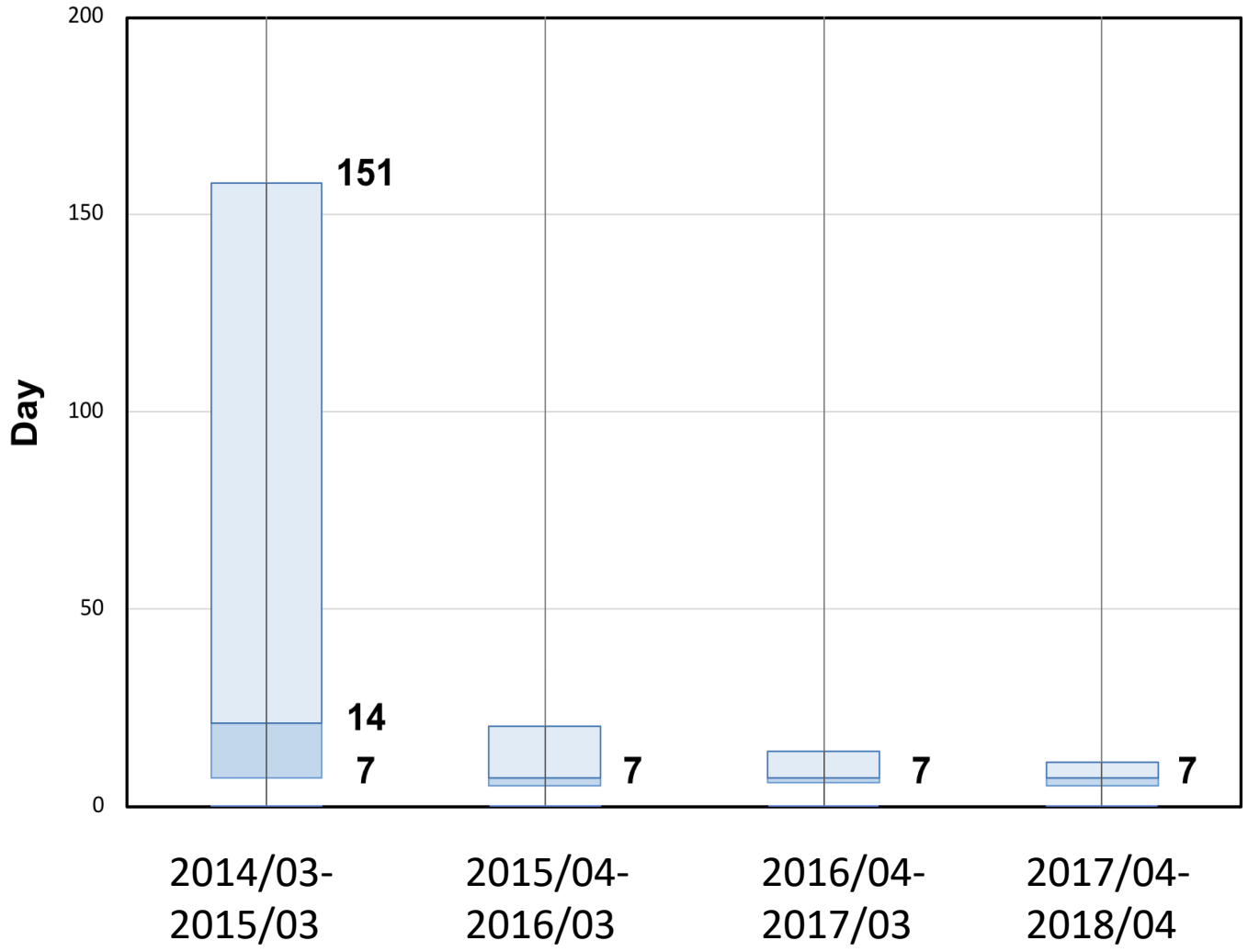


The Third Agent Chosen in Initiating cART



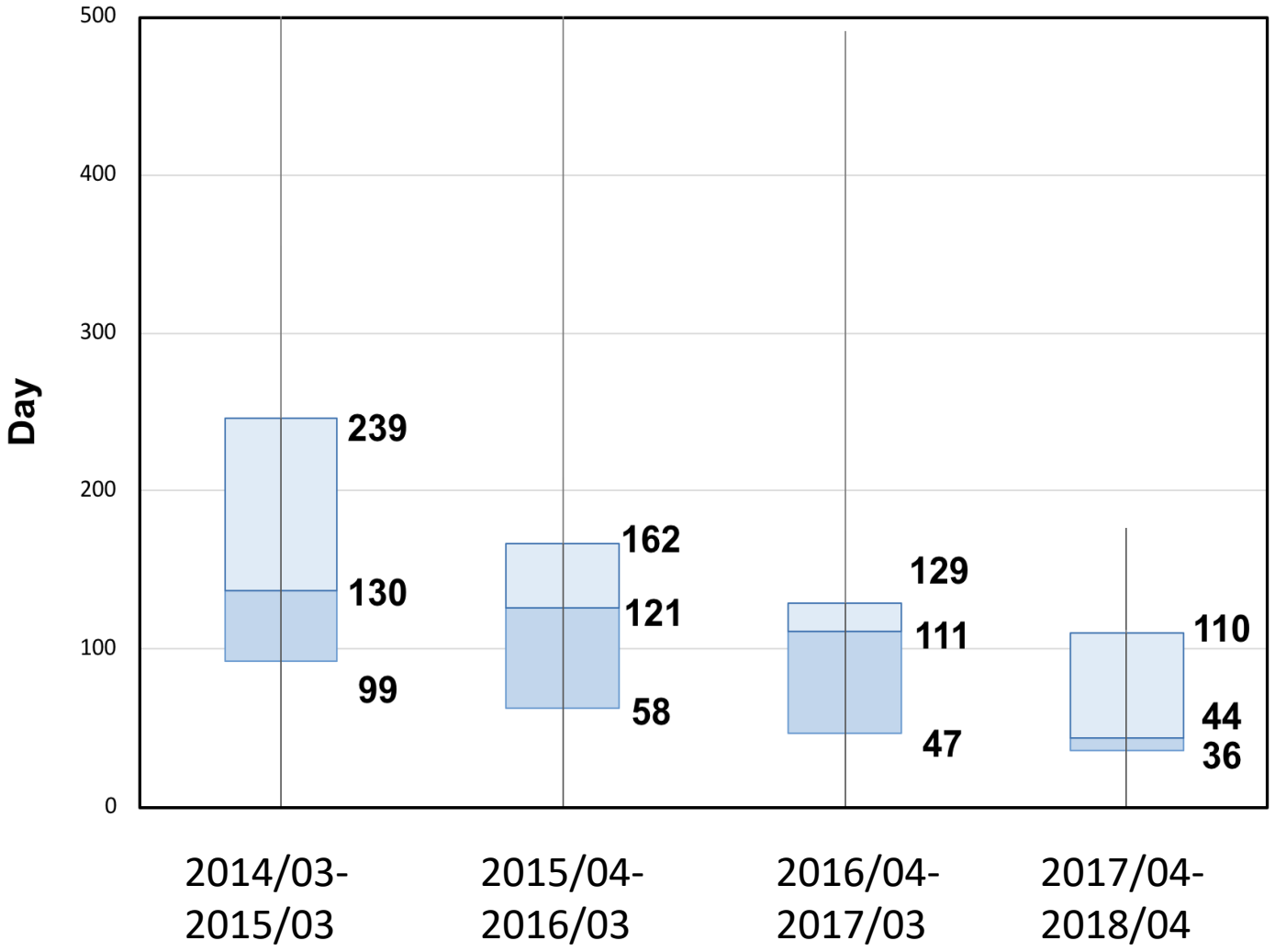
*Raltegravir was available in 2011; dolutegravir in 2016; and elvitegravir/c in March 2018

Time from Diagnosis to cART Initiation

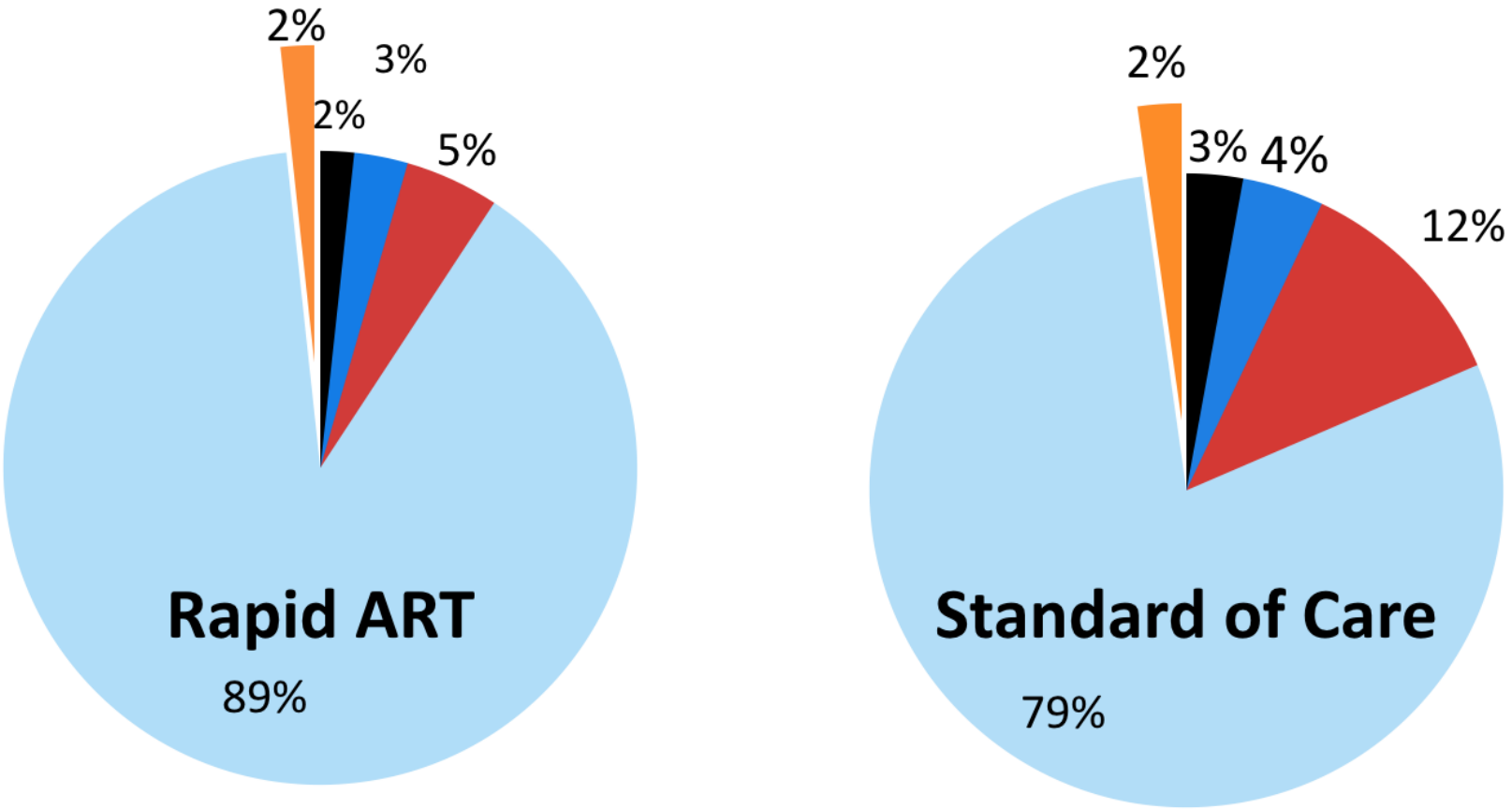


Time from Diagnosis to Viral Suppression

(<200 copies/ml)

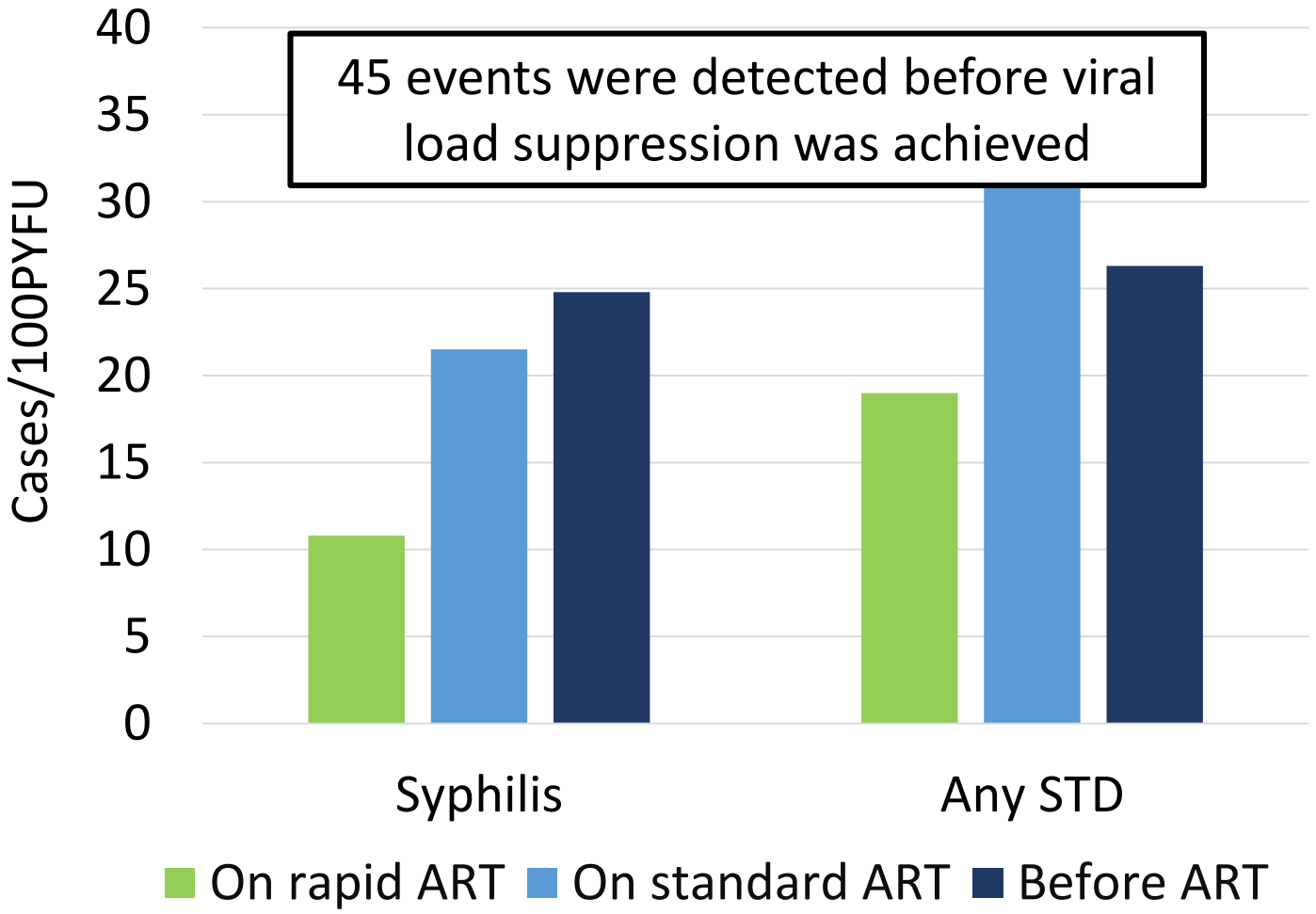


Outcome of Rapid ART Initiation



	P value
Death	0.421
Transfer	0.644
Lost to follow-up	0.009
Retain in care	0.002
Viral rebound (PVL >400 cp/ml)	0.773

Risk of HIV Onward Transmission-
Incident STD Infections before Viral Suppression



* Any STD included syphilis & symptomatic gonorrhea, chlamydia, amebiasis, or genital warts

Limitations

- Before 2017, patients who received rapid ART were more motivated or presented at the late stage, which might have led to better adherence.
- The incidence rates of STD infections were confounded by different frequencies of serological testing or clinic visits (observation bias).
- Linked HIV transmission cannot be documented by this short-term retrospective study; the benefit of rapid ART in reducing HIV transmission cannot be confirmed.

Conclusions

- An increasing trend of rapid ART initiation was observed, with 65% of the HIV-positive patients who were diagnosed after 2017 initiated cART within 7 days of confirmed diagnosis.
- Compared with those who did not initiate cART within 7 days of diagnosis, the rate of retaining in care was higher in patients initiating ART within 7 days while the rate of virologic failure was similar.
- High incident rates of syphilis and other STDs before viral suppression suggest early achievement of viral suppression might reduce the risk of onward HIV transmission.

Acknowledgements

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