INCREASING IN LIFE EXPECTANCY OF THAI LIVING WITH HIV IN THE ERA OF TREAT ALL

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BACKGROUND

- In the era of 'treat all at any CD4 count', life expectancy among people living with HIV (PLHIV) has steadily increased.
- Here, we present recent estimates of life expectancy trends from 2008 - 2019 among PLHIV based on a National AIDS Program (NAP).

METHODS

- All Thai PLHIV aged ≥15 years initiating antiretroviral therapy (ART) from 2008 to 2019 were analyzed.
- Life expectancy (LE) was defined as additional years of life from age at starting ART.
- Vital status was confirmed by Death Registry linkage.
- We used Chiang's method of abridged life tables to estimate life expectancy by period of ART initiation (2008–13 and 2014–19), overall and by sex and CD4 cell count at ART start (baseline).
- Cox regression analysis was used to assess predictors of mortality during follow-up.
- Segmented Poisson regression analysis was used to demonstrate mortality trends among PLHIV accounting for changing CD4 thresholds in successive updates in treatment guidelines: 2010 (<350) and 2014 (any CD4).

RESULTS

- A total of 321,786 PLHIV, with 1,813,110 person-years of follow-up were included. Median duration on ART was 5 (IQR 3-8) years.
- Median baseline CD4 cell count was 191 (IQR 67-363) cells/mm^3, median age was 36 (IQR 28-43) years, and 175,341 (61%) were male.
- Lower pre-ART CD4 was associated with increasing mortality risk as presented in Table 1.

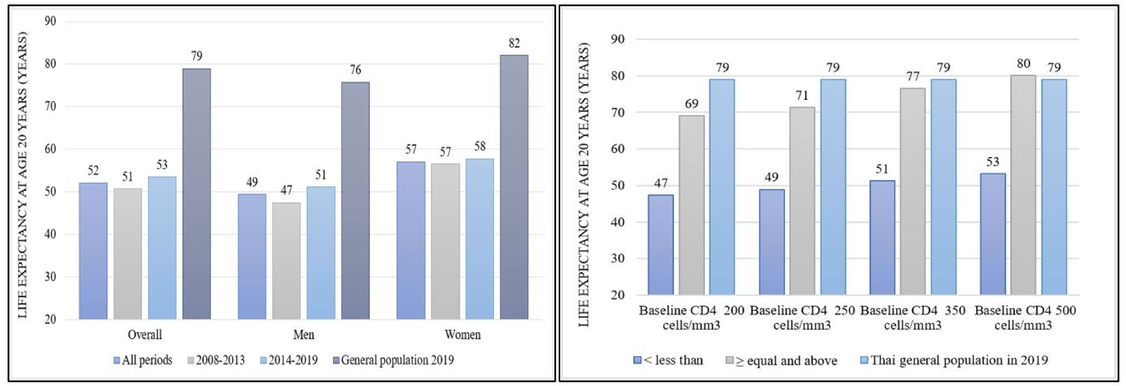
Updating HIV treatment guideline has led to an increasing trend in life expectancy and a reduction in mortality rate among people living with HIV after ART initiation regardless any CD4 levels .

Table 1 Baseline characteristics and factors association with mortality after ART initiation

	Overall N=321,786	Death, N (%)	Person-years	Multivariate model adjusted Hazard ratio (95%CI)
Sex				
Male	175,341 (61)	31,040 (10)	1,055,440	1.30 (1.28-1.33)
Female	111,592 (39)	15,806 (5)	757,670	reference (1)
Year at ART initiation				
2008 to 2013 (CD4 < 500 cells/mm^3)	145,756 (45)	30,386 (9)	1,129,592	1.13 (1.10-1.15)
2014 to 2019 (treat all)	176,030 (55)	16,460 (5)	683,518	reference (1)
Age at ART initiation, years	36 (IQR 28-43)			
15-19	11,755 (4)	921 (0)	53,676	0.94 (0.88-1.01)
20-24	33,850 (11)	2,632 (1)	162,575	0.80 (0.76-0.83)
25-29	45,769 (14)	5,179 (2)	250,030	0.93 (0.90-0.97)
30-34	56,366 (18)	7,816 (2)	341,965	reference (1)
35-39	58,843 (18)	8,998 (3)	361,721	1.09 (1.06-1.13)
40-44	48,454 (15)	7,910 (2)	286,423	1.21 (1.17-1.25)
45-49	32,049 (10)	5,570 (2)	180,609	1.37 (1.32-1.41)
50-54	18,244 (6)	3,565 (1)	96,796	1.61 (1.55-1.68)
≥ 50	16,456 (5)	4,255 (1)	79,316	2.29 (2.21-2.38)
Pre-ART CD4 count, cells/mm^3	191 (IQR 67-363)			
<200	147,643 (46)	28,218 (9)	877,455	3.38 (3.20-3.56)
200-<350	63,388 (20)	5,683 (2)	372,705	1.72 (1.62-1.82)
350-<500	38,168 (12)	2,086 (1)	199,645	1.23 (1.15-1.32)
≥500	37,734 (12)	1,509 (0)	183,850	reference (1)
unknown	34,853 (11)	9,350 (3)	179,455	5.65 (5.35-5.97)
Loss to follow-up	50,332 (16)	4,414 (1)	18,401	7.55 (7.31-7.79)

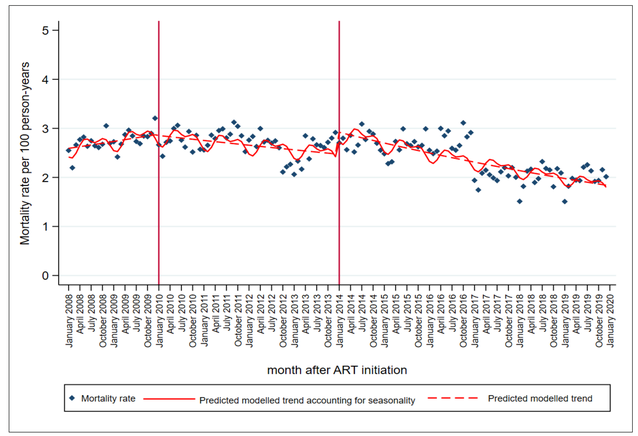
Note: Presented as n (%) for categorical data and median (Interquartile range) for continuous data, *adjusted by regions, first regimen and HIV stage at ART initiation.

Figure 1 Life expectancy of Thai PLHIV receiving ART at age 20 years by sex and pre-ART CD4 count



- Figure 1 indicates overall life expectancy at 20 years increased from 30.8 (95%CI 30.6–30.7) years to 33.5 (95%CI 33.4-33.6) years.
- Male LE at age 20 years significantly increased from 27.5 (95%CI 27.3-27.6) years to 31.2 (95%CI 31.0-31.3) years.
- Female LE slightly increased from 36.6 years (95%CI 36.4 –36.8) to 37.8 years (95%CI 37.5–38.0), respectively.

Figure 2 Trend in mortality rates with segments defined by updated versions of Thai HIV treatment guidelines



- Guideline changes to treat all at any CD4 count in 2014 were associated with an additional monthly mortality decrease of 0.4% compared to starting ART at lower CD4 thresholds.

CONCLUSIONS

- LE among PLHIV starting ART significantly improved after guidelines recommended staring ART irrespective of CD4 cell count.
- This finding further supports the recommendation of rapid ART initiation; early case finding will further improve life expectancy and reduce mortality.

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