



## Good ART patient outcomes and survival achieved in a 5-year HIV/AIDS program in Cambodia

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### BACKGROUND

The first HIV-clinics in Cambodia opened in the early 2000s. By 2008, 92% of individuals in the country who were eligible for antiretroviral treatment (ART) were actually receiving therapy, and ART scale-up efforts have thus been deemed successful.

### OBJECTIVES

We assessed the effectiveness of two of the earliest HIV programs supported by Médecins Sans Frontières by measuring survival up to 5 years after enrolment in care, attrition and retention.

### SETTING

- National HIV prevalence rate 0.9% (2006)
- 2 provincial level hospital-based HIV clinics in **Takeo and Siem Reap provinces**.
- ARV delivered free of charge (3TC/D4T/NVP or EFV) from year 2002 on.
- Transfer of patients to newly opening ART clinics started in year 2005



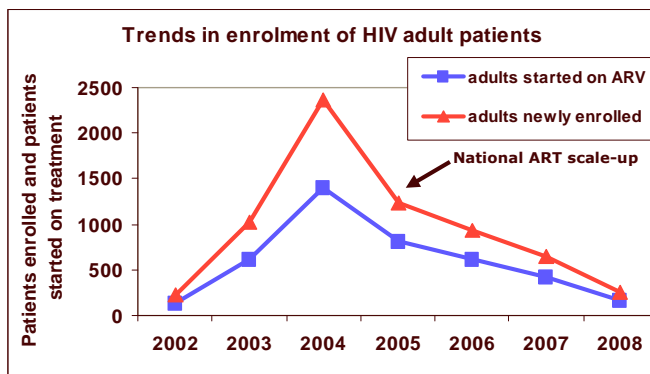
### METHODS

- Retrospective cohort study from 2002 to Dec 2008
- Survival time estimated by Kaplan-Meier method
- Cox regression used to assess risks for loss to-follow-up and death

### RESULTS

#### Patient enrolment and characteristics:

- 6688 HIV-positive adults enrolled in care
- 4150 (62%) received ART for a median duration of 26 months (IQR:12-44)
- 53% of patients were women
- Median baseline CD4-count = 120cells/mm<sup>3</sup> (IQR:27-332)
- Proportion of patients admitted with CD4 < 50 did not significantly change over the years (40%)



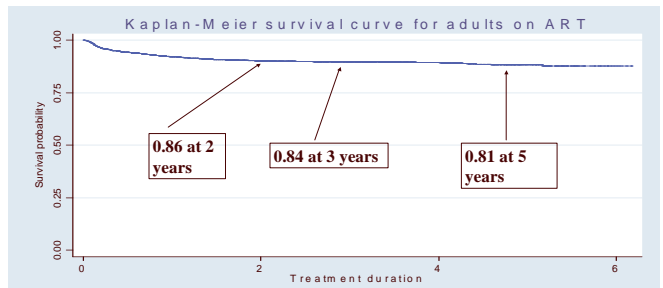
### In-program mortality rate

(pre-ART and on ART patients):

6.4 deaths/100 P-Y (95%CI:6.0-6.9)

### Treatment outcomes for all patients on ART

	N (%)	Rate per 100 person-year
<b>Retained in care</b>	3565 (85.9%)	<b>37.1 (95% CI: 35.9-38.3)</b>
Alive and on ART	1759 (42.4%)	18.2 (95% CI: 17.4-19.1)
Transferred out	1806 (43.5%)	18.8 (95% CI: 17.9-19.7)
<b>Attrition</b>	585 (14.1%)	<b>6.0 (95% CI: 5.5-6.5)</b>
Lost to follow-up	203 (4.9%)	2.0 (95% CI:1.8-2.3)
Dead	382 (9.2%)	4.0 (95% CI:3.6-4.4)



### Immunological recovery:

- Median CD4-gain: +118cell/mm<sup>3</sup> at 6 months, +162 at one year, +244 at two years, +339 at four years, and +367 at six years among the 4114 patients started on first-line ARV

### Viral load monitoring:

- Overall, among adults with suspected treatment failure 150(3.6%) had a viral load >1000copies/ml detected after a median treatment time of 28 months (IQR: 18-40mo)

### Risk factors for death:

- ≥40 years (adjusted HR=1.8, 95%CI: 1.4-2.3, p<0.001)
- advanced clinical disease (aHR=1.7, 95%CI: 1.3-2.3, p<0.001)
- CD4 < 50 cells/mm<sup>3</sup> at first consultation (aHR=0.5 for CD4>200, CI95%:0.4-0.6, p<0.001)

### Risk factors for loss to follow-up:

- Baseline CD4 < 200 cells/mm<sup>3</sup> (HR=0.6 for CD4>200, 95%:0.4-0.9, p=0.015)
- Living out of province (aHR=1.5, 95%CI: 1.1-2.1, p=0.005)

## Conclusions

Satisfactory ART outcomes and survival were achieved and maintained up to 5 years in this resource-limited setting. The gradual country-wide expansion of the national program is expected to further improve retention in care.