



Treatment cascade of HIV-infected infants in the Thailand National Program: How close are we to the 90-90-90 target?

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on behalf of the ACC working group



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PMTCT and Pediatric HIV services



HIV Diagnosis
90

Treatment
90

HIV viral
suppression
90

**MCH
Antenatal
care**

**HIV Early
Infant
Diagnosis**

**Pediatric
ARV
Program**

1990

HIV screening in
pregnant women

2006

HIV DNA PCR

2010

Treat all infants
< 1 year

HIV Early Infant Diagnosis Program in Thailand

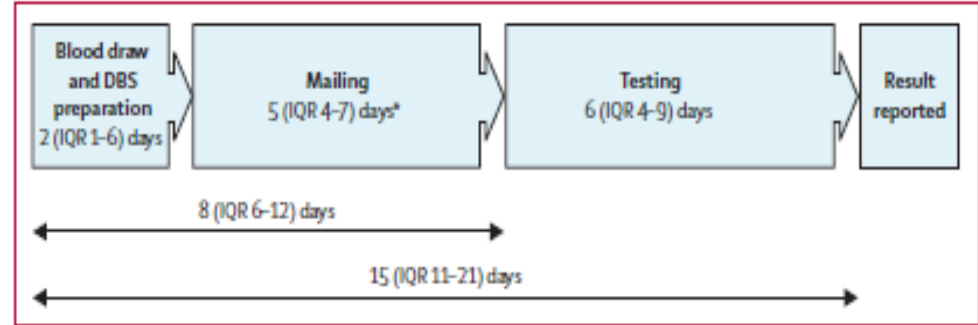
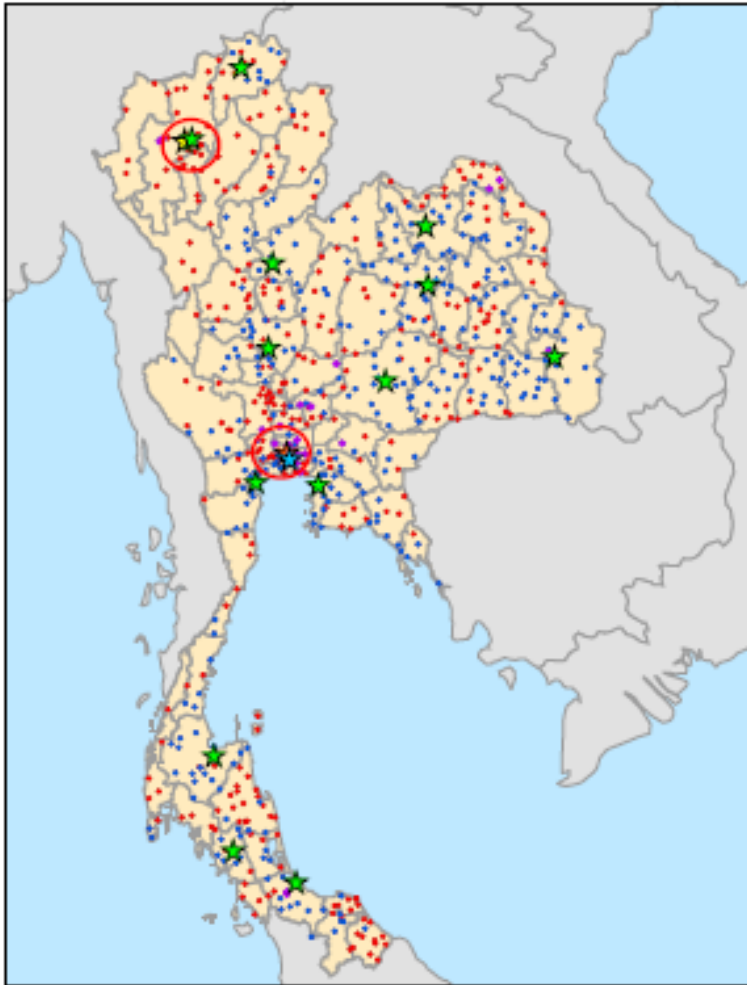


Figure 2: Median turnaround time of the early infant diagnosis of HIV service at the Clinical Microbiology Service Unit during 2007-13

- Whole blood (WB)
- Dried blood spot (DBS)
- DBS & WB
- DBS at birth testing

Naiwatanakul T. Int AIDS Soc 2016;19:20511.
Sirirungsri W. Lancet HIV 2016, 3;e259-e265.

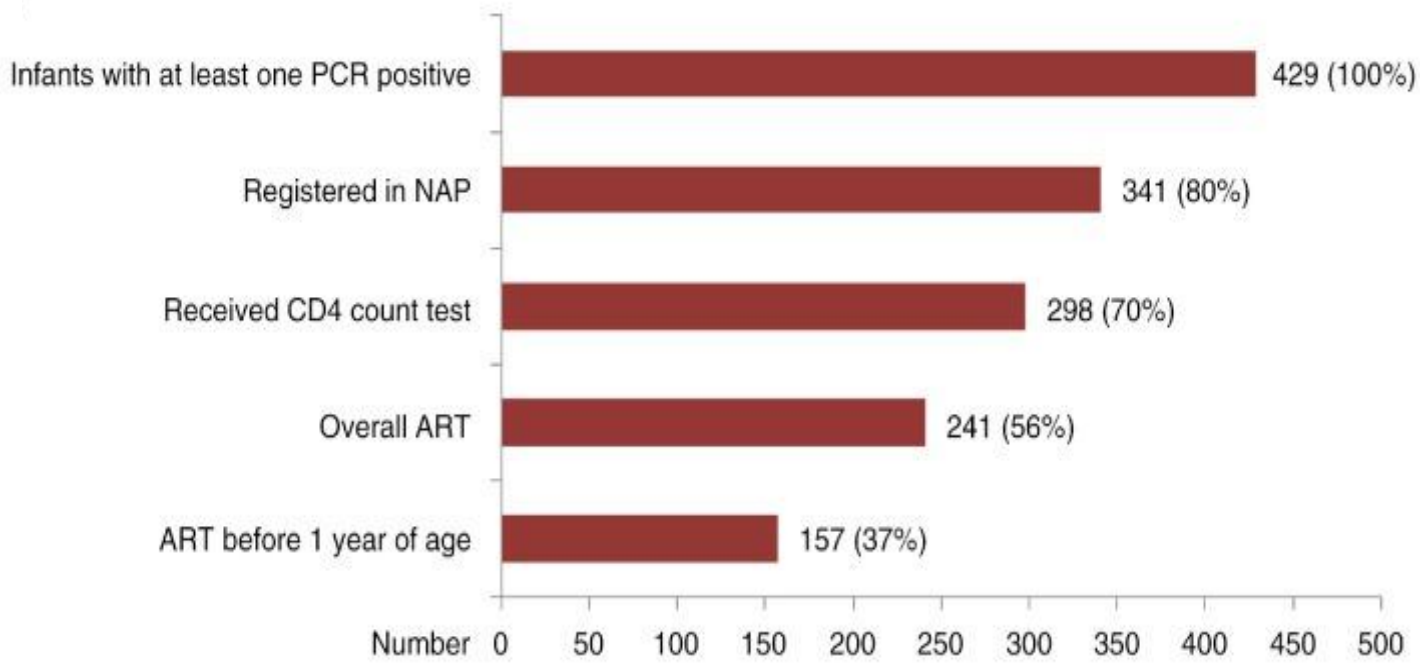
Linkage to care for HIV-infected infants

Thai National Program 2008-2011

Diagnosis
53%
(37-63%)

Treatment
56%

HIV viral suppression
47%



Naiwatanakul T. Int AIDS Soc 2016;19:20511.
Sirirungsri W. Lancet HIV 2016, 3:e259-e265.

Active Case Management

to promote Early ART Initiation August 2014

Blood samples from HIV-exposed infants for HIV DNA PCR

PCR@Birth

PCR in infants

2 Laboratories

16 Laboratories

PCR positive

**EID
Coordinator**

PCR positive

Pediatric Treatment Coordinator
Via Email + Line

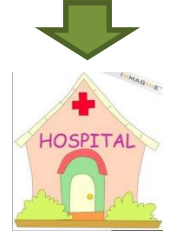
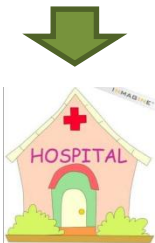
North
Chiang Rai

Northastern
Srinagarindh

South
Hat Yai

Central
Prachomkloa

Central
HIVNAT





Objective

To describe the coverage of early infant diagnosis and treatment cascade of HIV-infected infants in the National Program under ACC structure.



No. HIV infants identified

Estimated No.

No. infants initiated ART

No. infected infants identified

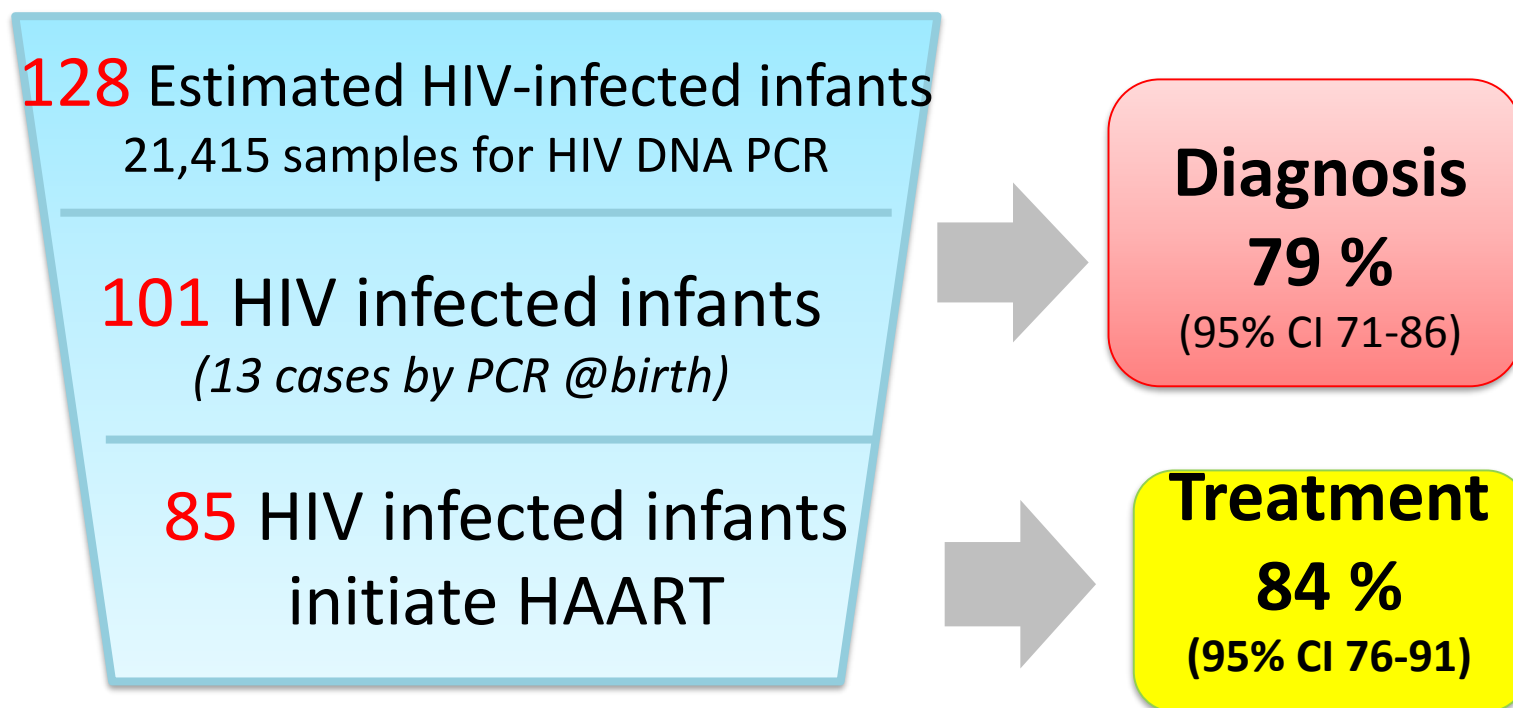
@ Month 6 & 12

HIV RNA <50 <400, <1000c/ml

GARP report 2014: 4,869 HIV+ve pregnant women, 102 HIV infants
SPECTRUM 2015: 4,450 HIV+ve pregnant women, 85 HIV infants
Aug2014-Dec 2015; 6479 HIV+ve pregnant, 128 HIV infants

Results – Diagnosis and Treatment

- From Aug 2014 – Dec 2015 (17 months)
- Data of treatment cascade until June 30, 2016



Characteristics of HIV-infected infants

N=85

HIV diagnosis

HIV-exposed identified during ANC 71 (84%)

HIV Treatment

Lapse time from PCR report +ve to start ART 15 days

Mean age at ART initiation 2.9 months (IQR 1.9-4.9)

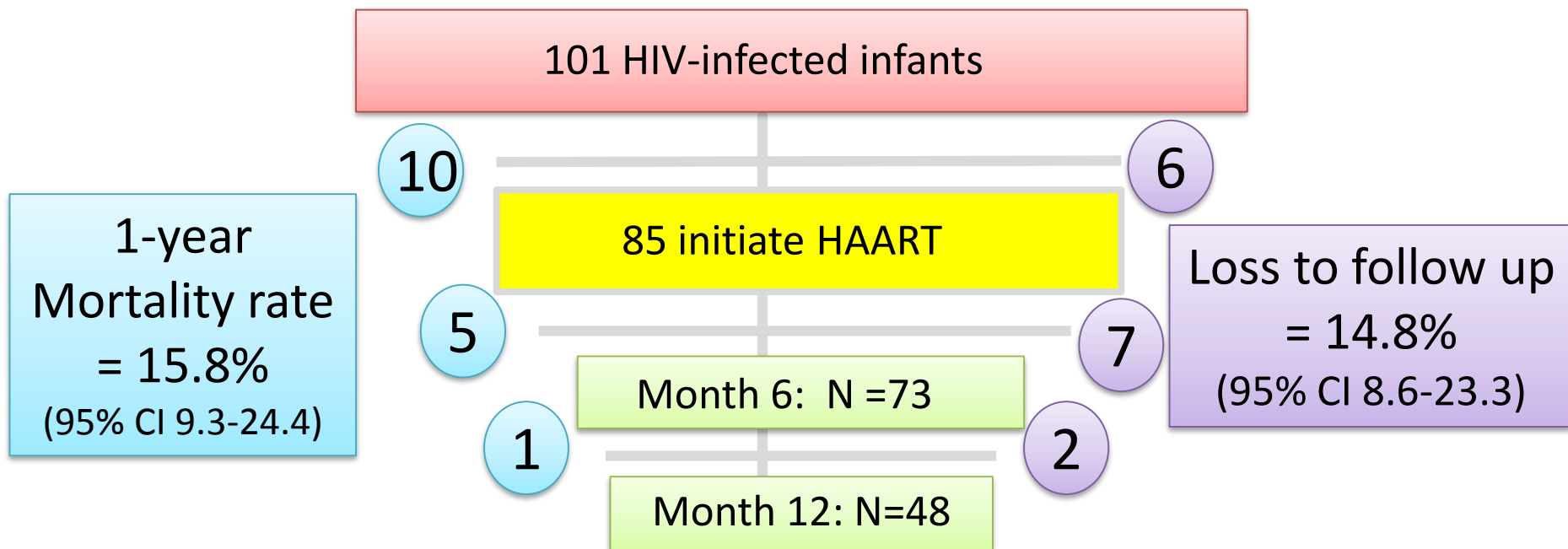
Initiate ART on the same day of confirmatory PCR 60(70%)

CD4 percentage prior to ART (N=39) 32 % (21-39)

HIV RNA prior to ART (N=46) 5.3 log₁₀ c/ml(IQR 3.3-6.4)

Lopinavir/r based HAART 72(85%)

Results – Treatment outcome



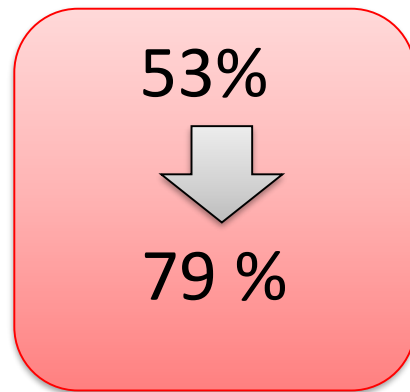
| HIV RNA | Month 6 (n=60) | Month 12 (n=37) |
|-------------|----------------|-----------------|
| < 50 c/ml | 31.7% (20-45) | 51.4% (34-68) |
| < 400 c/ml | 51.7% (38-65) | 59.5% (42-75) |
| < 1000 c/ml | 58.3% (45-71) | 67.6% (50-82) |

Treatment cascade of HIV-infected infants in the Thailand National Program

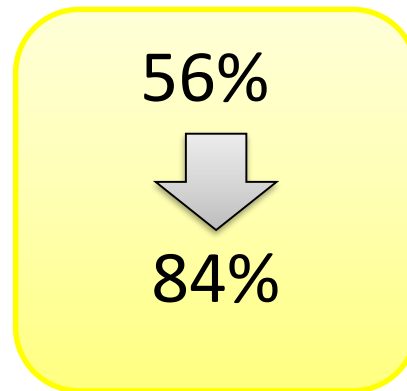
Active case management to promote early ART initiation

August 2014-June 2016

Diagnosis



Treatment



Viral suppression
<50 to < 1000 c/ml



Discussion: HIV diagnosis

Diagnosis
79%

- **Entry point for HIV early infant diagnosis (EID)**
 - 16% of HIV-infected infants were not identified as HIV-exposed during ANC.
 - Detect incident case: Repeat HIV testing in 3rd trimester, HIV status of partners by HIV couple counselling and testing.
 - ***¹South African***: 3.3% HIV incidence during pregnancy & breastfeeding, accounted for 26% of early MTCT
- **HIV Early infant diagnosis**
 - HIV DNA PCR @ birth can detect 13 infants with in utero infection.
 - Treatment was initiated at mean age of 1 month, yet have similar mortality, loss to follow up and virological suppression compare with the rest of cohort.

Discussion: HIV treatment

- Active case management model using case manager system with real-time coordination
- **Benefit:** shorten time from laboratory HIV DNA PCR +ve result to initiate treatment.
- **Challenges:** data confidentiality, man power to maintain the system

Discussion: Treatment outcome

- **1-yr mortality rate:** as high 15.8% (7.1% after ART)
 - ¹*Sub-Saharan Africa:* 30% die at age of 1 years
 - ²*Southern African cohort:* 3- year mortality = 16%
- **HIV viral suppression** only 51-68%.
 - ²*Southern African* HIV viral suppression at 1 year = 56%
 - Lopinavir/r based regimen, high-genetic barrier ARV should be used to rather than NNRTI, to reduce risk of NNRTI class resistance.
- **Retention in care and long-term adherence is challenging.**

¹ Newell ML Lancet 2004;364:1236-43.

²Porter M. JAIDS 2015;69:593-601



Conclusions

- With the model of active case management, the cascade for management of HIV-infected infants is improved; with **79-84-68** for Dx-Rx-HIV suppression.
- Coordination of existing vertical programs and real time tracking are an integral part of the program.
- Challenges in high mortality rate and loss to follow-up rate are remained.

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