

The PEARL Study

PMTCT Effectiveness in Africa: Research and Linkages to Care and Treatment

UAB – CIDRZ (Zambia)

U. Bordeaux – PAC-CI (Cote d'Ivoire)

U. Cape Town (RSA)

EGPAF and CBCHB (Cameroon)

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PEARL Study

- An effectiveness evaluation
 - Facilities and their catchment populations randomly identified in each country
 - Facility-based evaluations
 - Cord Blood Surveillance
 - Facility Survey
 - Community-based evaluations
 - Community Survey
 - Cost-effectiveness evaluation
-
- Funding: CDC-GAP (ZM, CI, RSA)
EGPAF (Cam)

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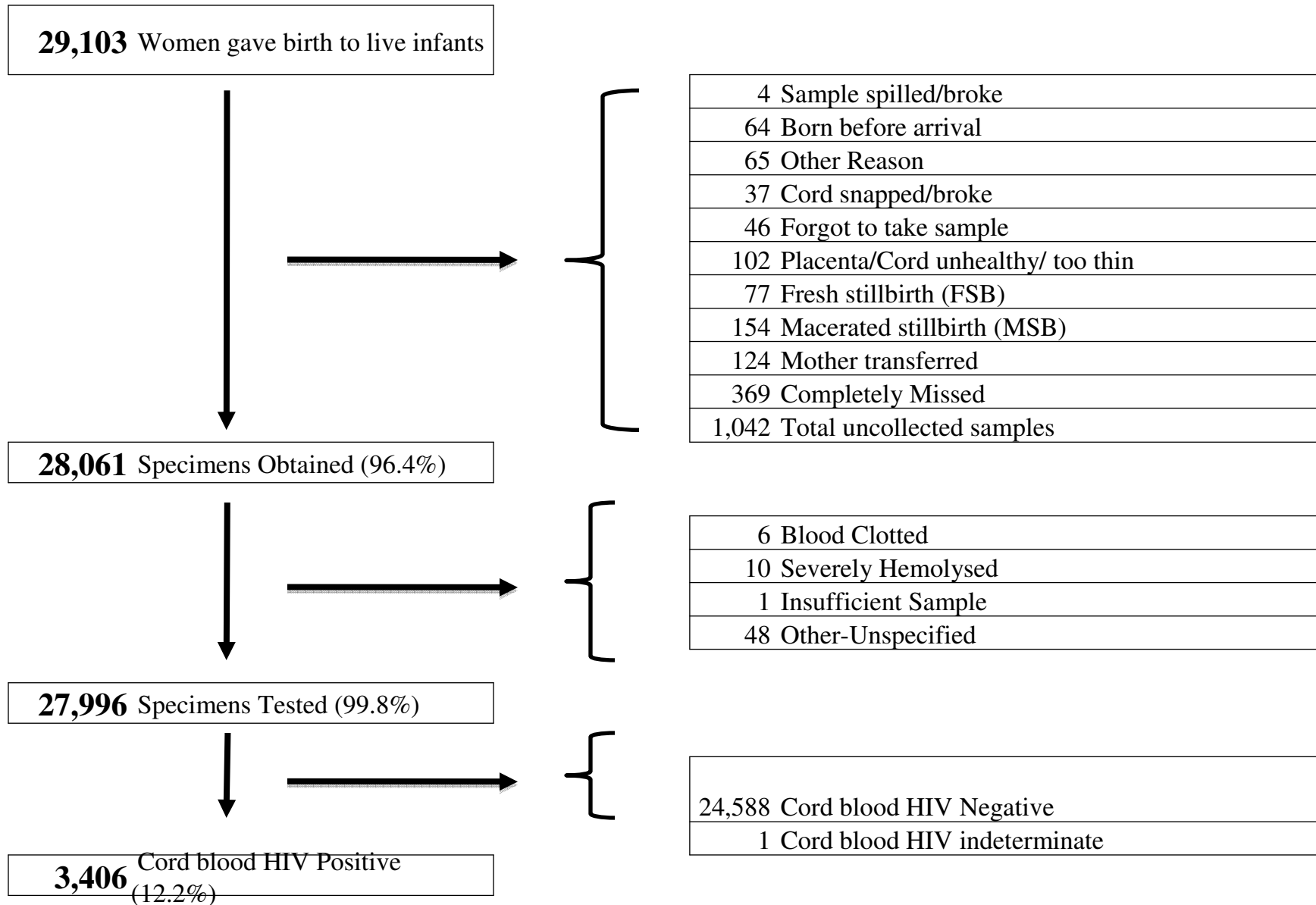
Cord Blood Surveillance Methodology

- Anonymous cord blood specimens from all deliveries
- 43 randomly selected sites in 4 countries
 - Zambia (country-wide)
 - Cote d'Ivoire (where safe)
 - RSA (Free State and Western Cape)
 - Cameroon (English-speaking provinces)
- Sites not providing PMTCT services not sampled

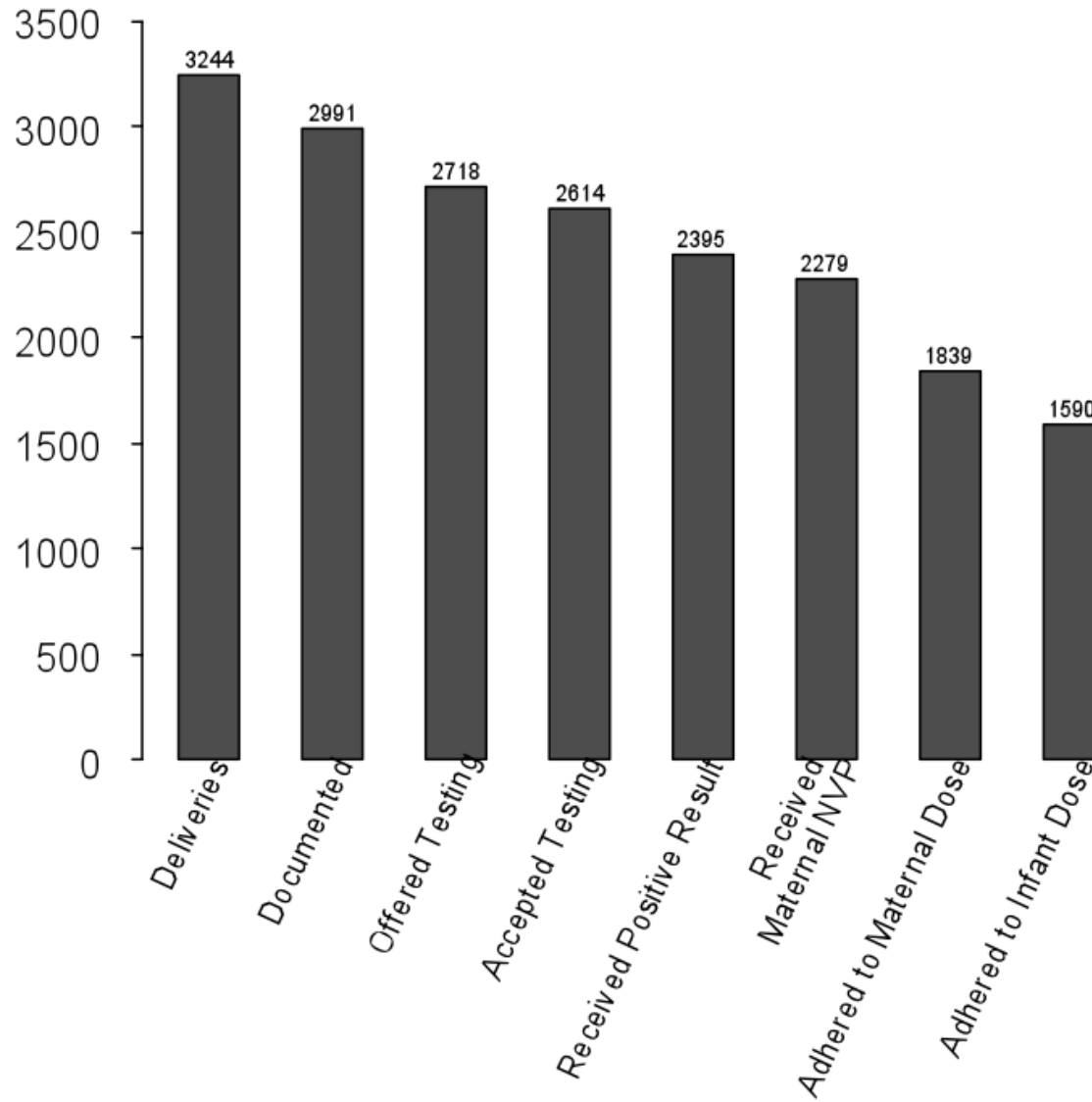
Cord Blood Surveillance Methodology (2)

- Tested specimens for HIV antibodies and NVP
- “Coverage” = +NVP / +HIV Abs
- Results linked by medical record review to:
 - antenatal HIV testing history from medical record
 - whether the infant was dosed prior to discharge

Results

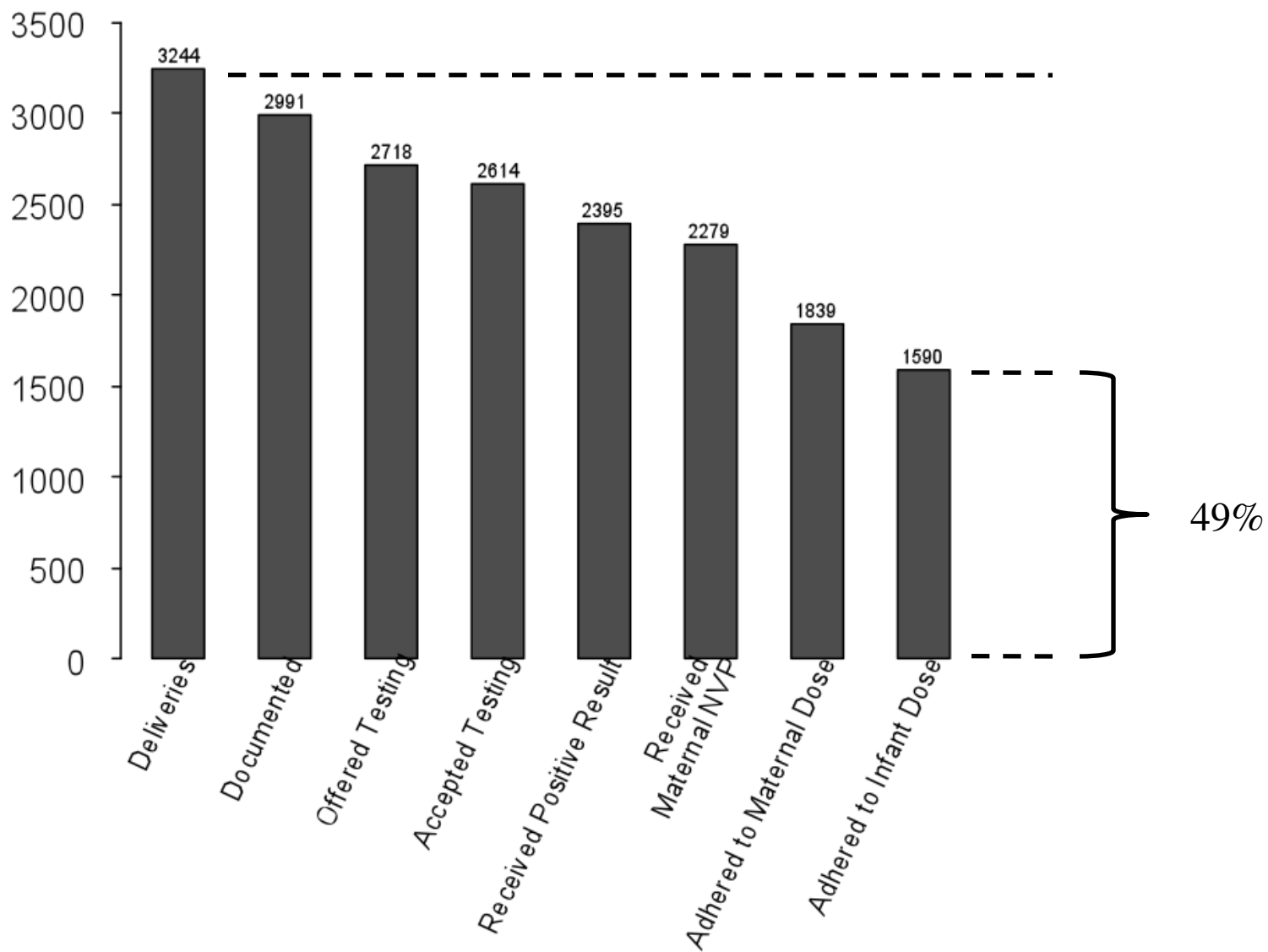


PMTCT Coverage – all Countries

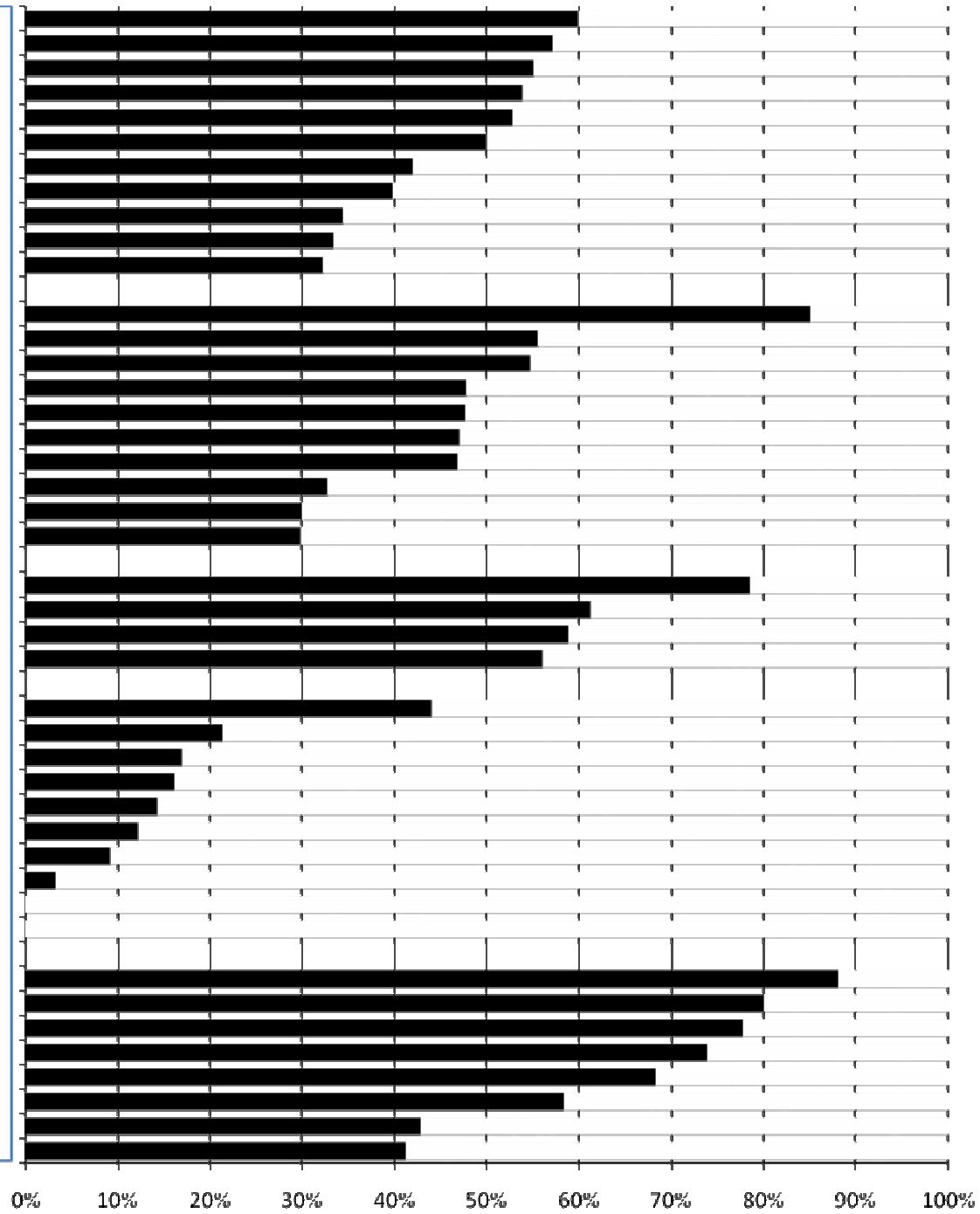


(162 no NVP results)

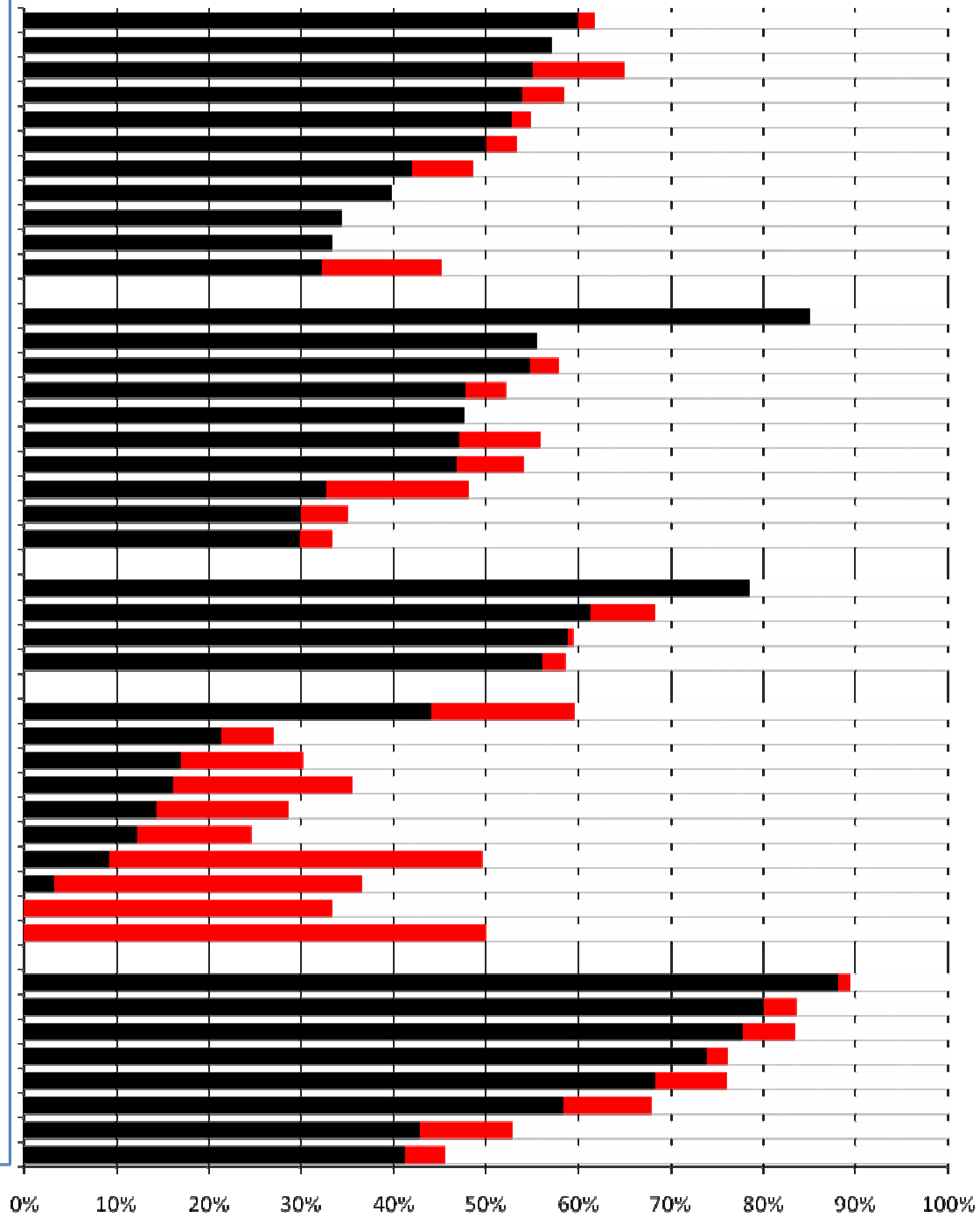
PMTCT Coverage – all Countries



**Individual
treatment
facilities**

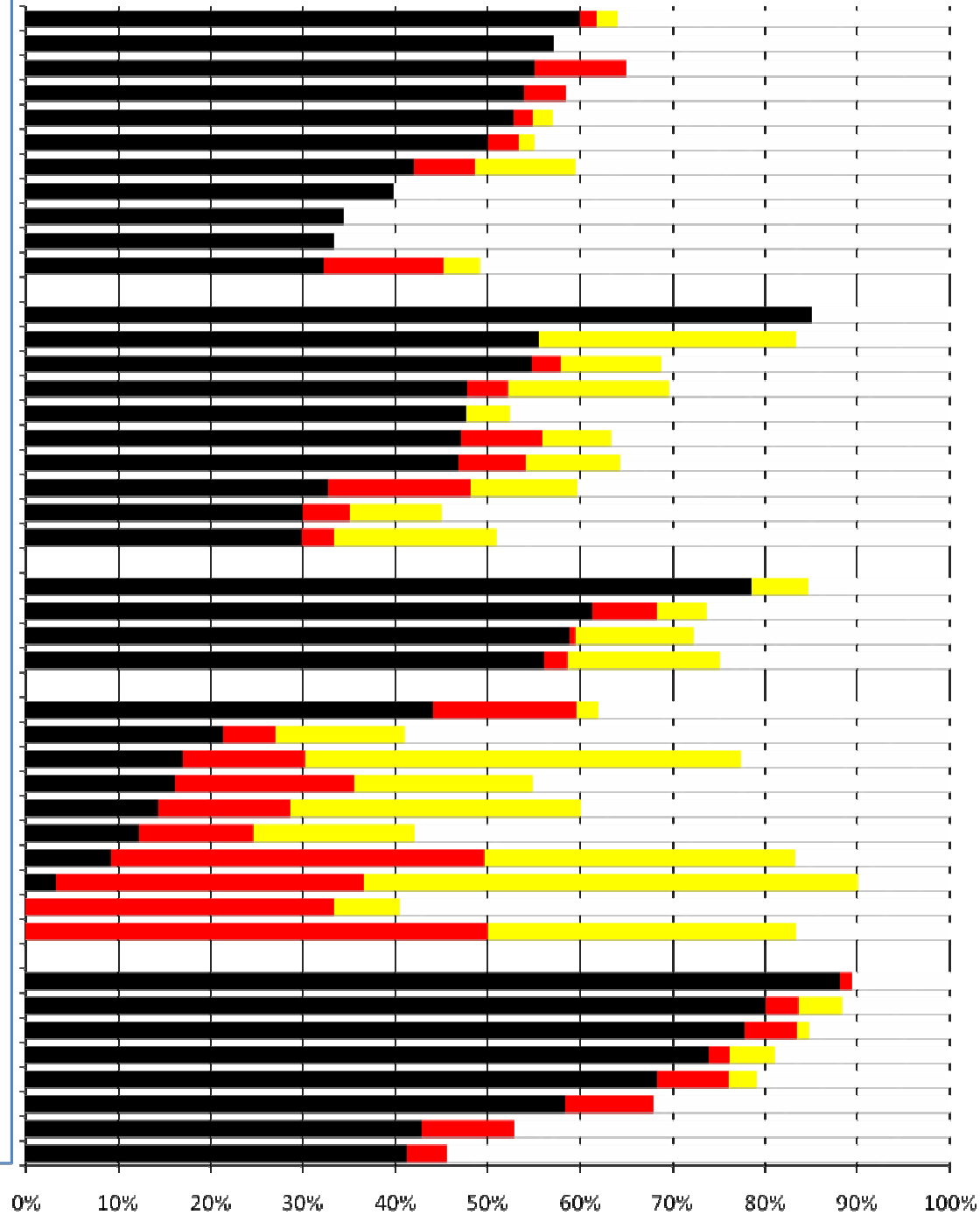


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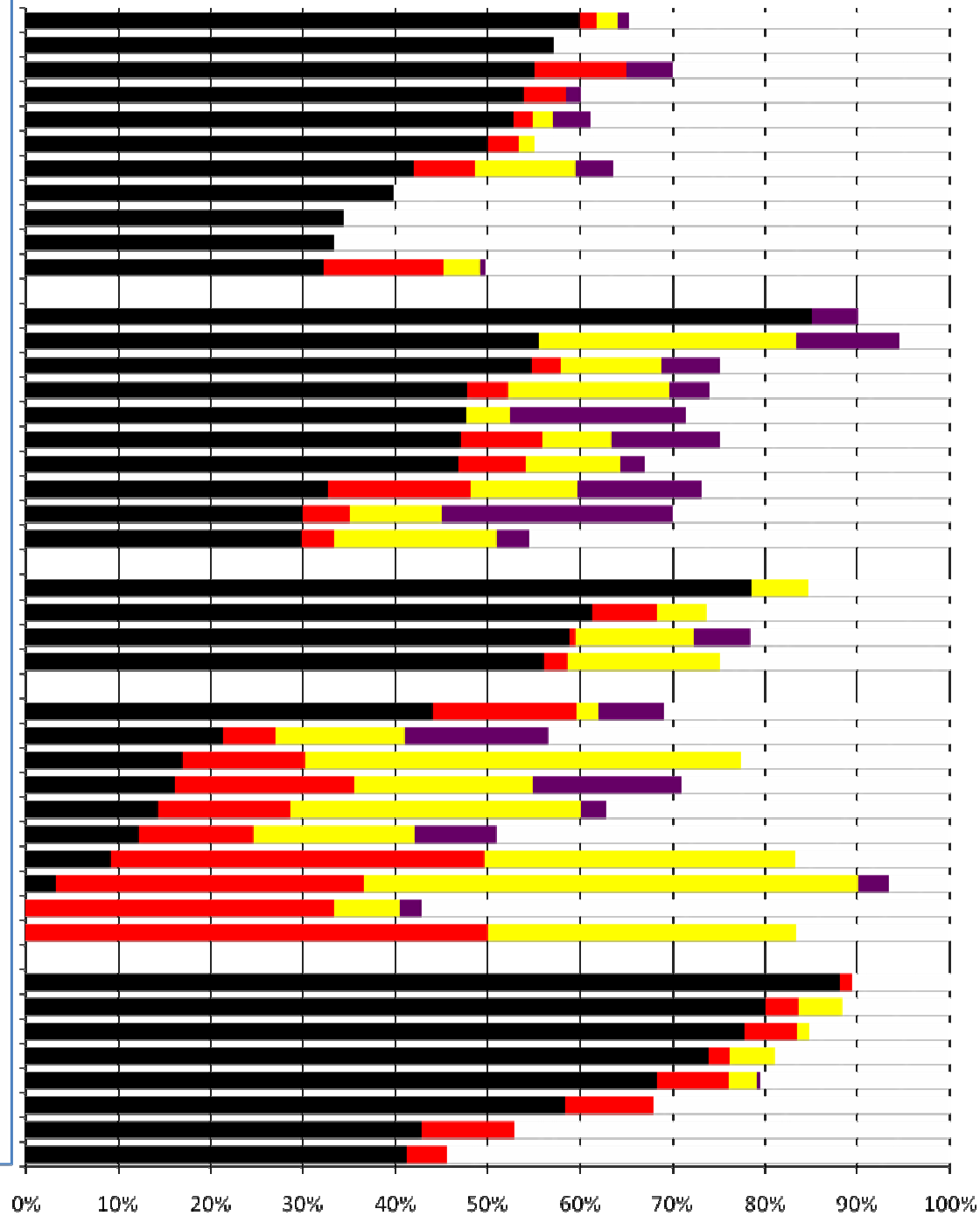


■ Successful Prophylaxis
■ PMTCT not documented

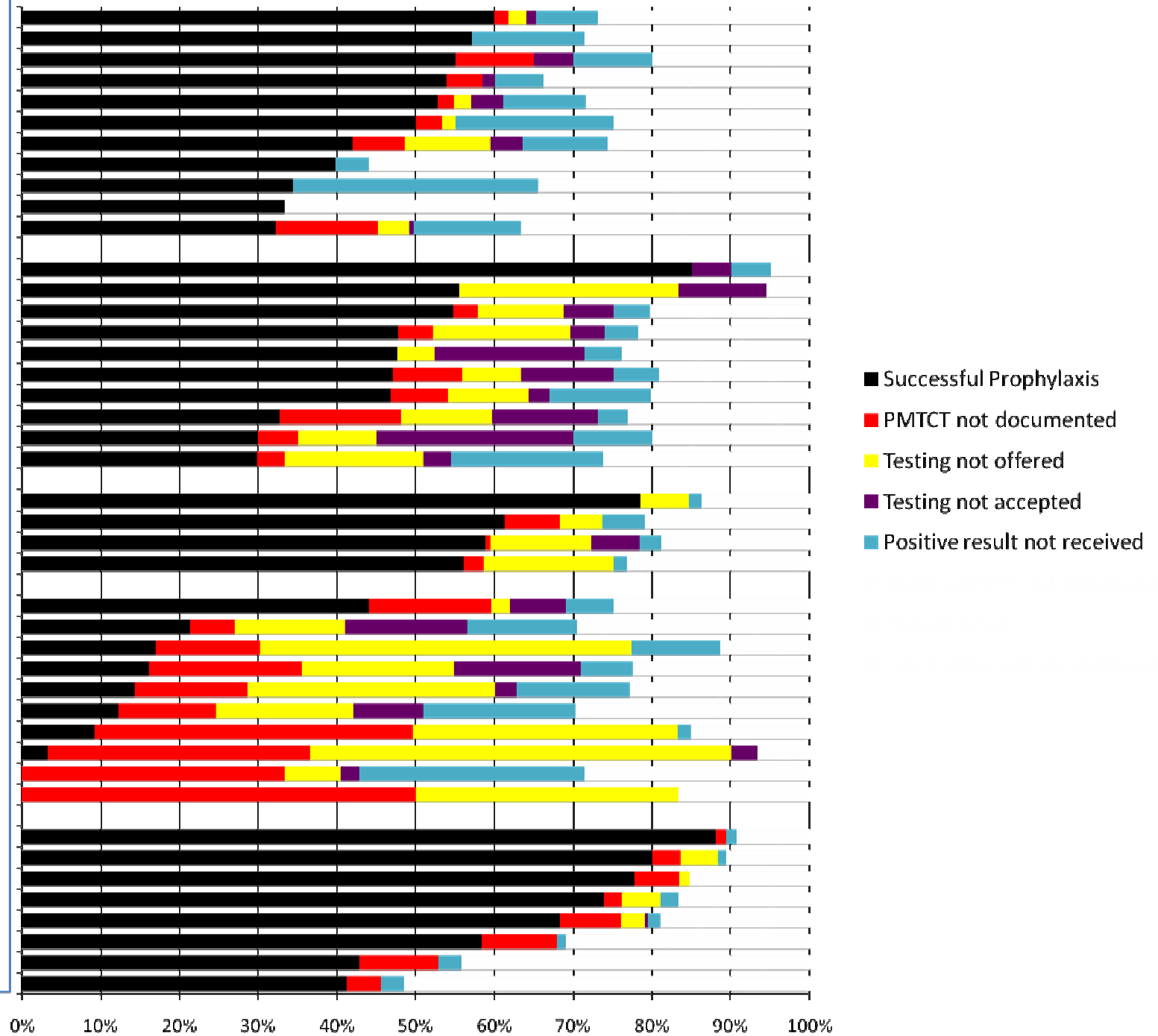
Individual treatment facilities



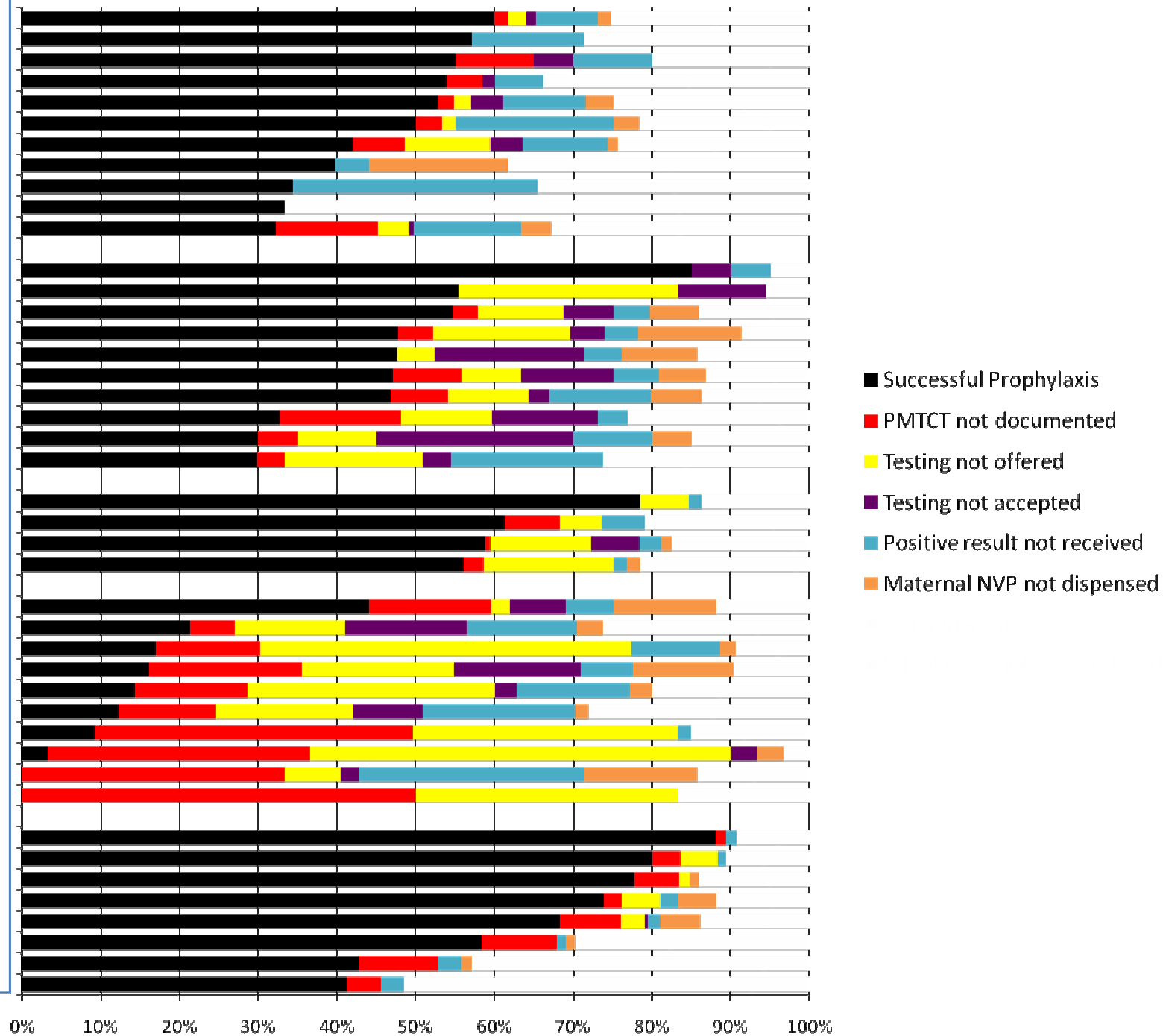
Individual treatment facilities



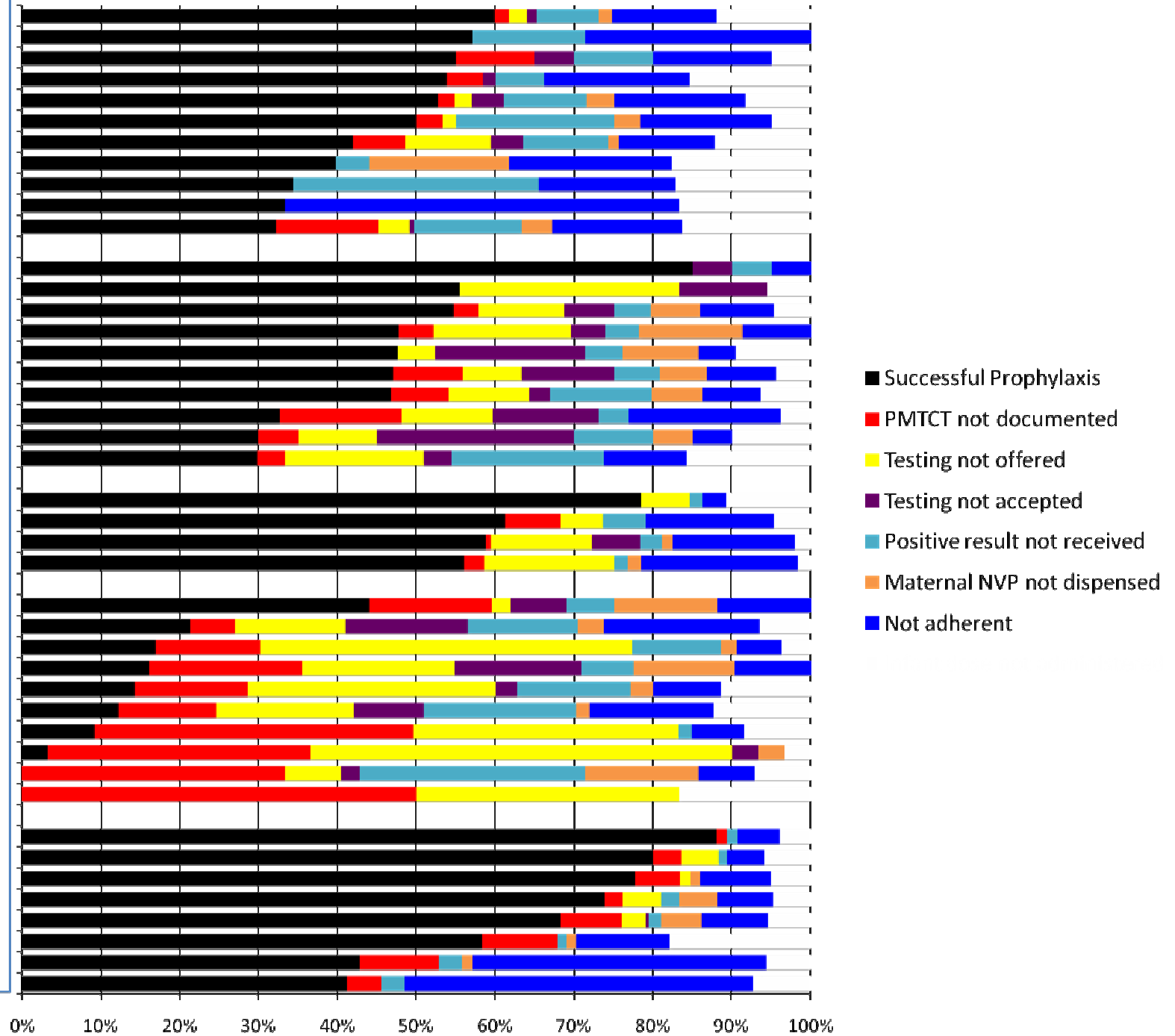
Individual treatment facilities



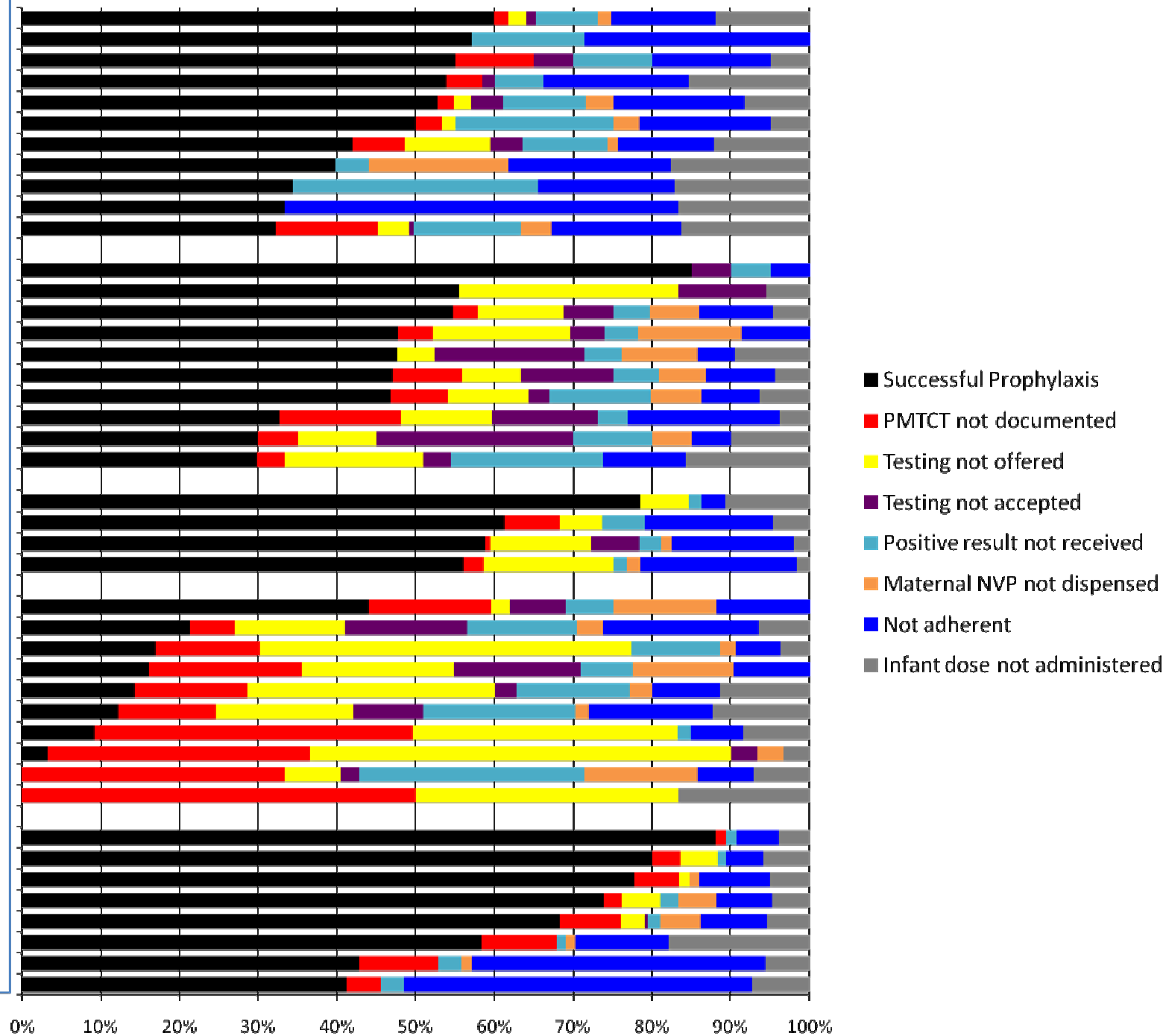
Individual treatment facilities



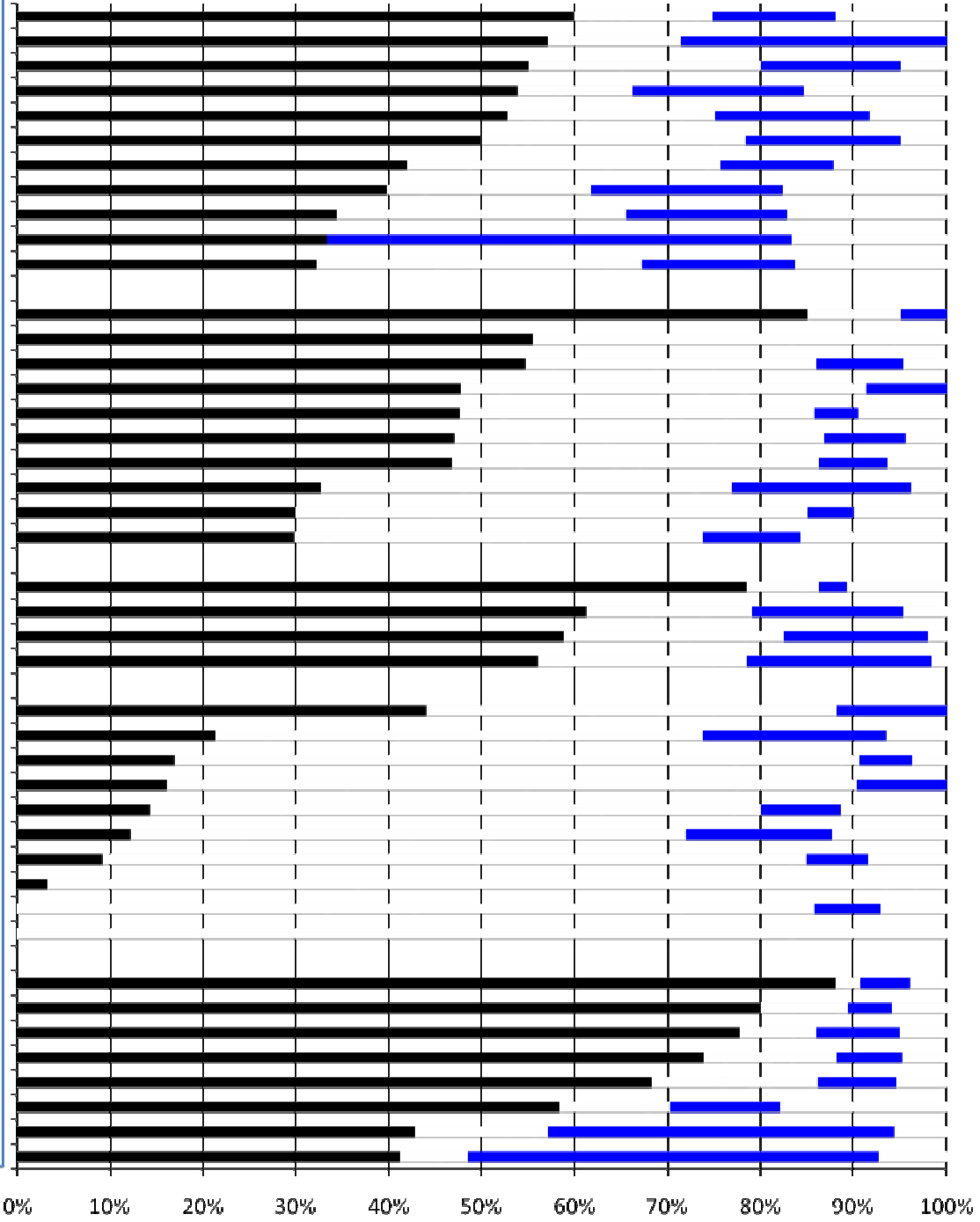
Individual treatment facilities



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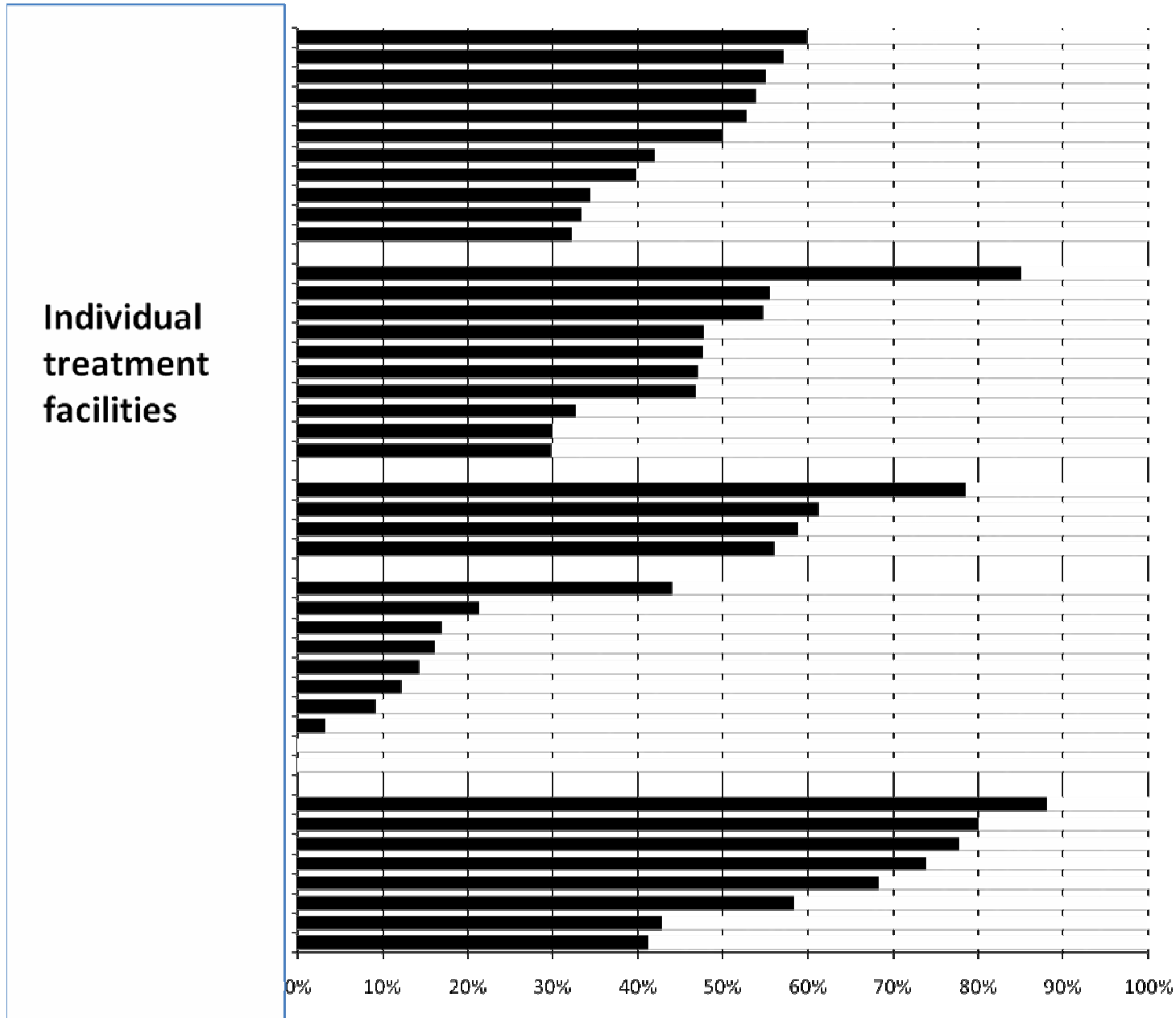
Individual treatment facilities



■ Successful Prophylaxis

■ Not adherent

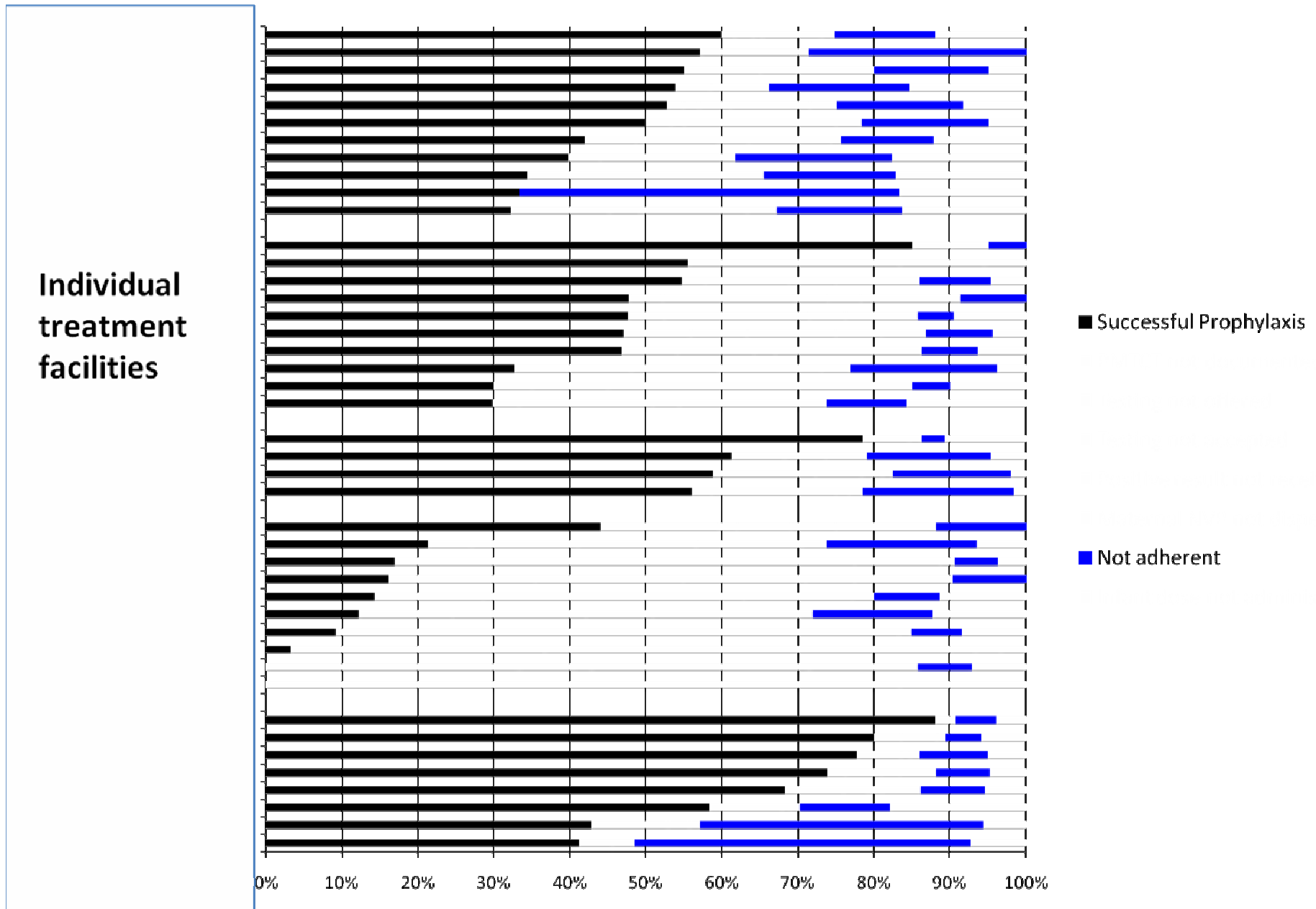
Factors associated with failed coverage



Factors associated with Failed Coverage

	Crude OR	Adjusted OR
Mother's Age		
> 30	1.0	1.0
26-30	1.08 (0.89 - 1.32)	1.13 (0.91 - 1.40)
20-25	1.26 (1.03 - 1.54)	1.30 (1.02 - 1.65)
<= 20	1.45 (1.12 - 1.88)	1.59 (1.14 - 2.22)
Gravidity		
1	1.0	1.0
2	1.01 (0.82 - 1.24)	1.01 (0.80 - 1.28)
3	0.92 (0.74 - 1.16)	1.04 (0.80 - 1.37)
4+	1.02 (0.82 - 1.27)	1.19 (0.89 - 1.58)
Number of ANC Visits		
6+	1.0	1.0
4 or 5	1.48 (1.18 - 1.86)	1.46 (1.15 - 1.84)
2 or 3	1.71 (1.36 - 2.15)	1.69 (1.33 - 2.14)
0 or 1	3.35 (2.43 - 4.62)	2.96 (2.09 - 4.19)
≥ 1 month b/w last visit and delivery	1.05 (0.89 - 1.23)	0.91 (0.77 - 1.08)

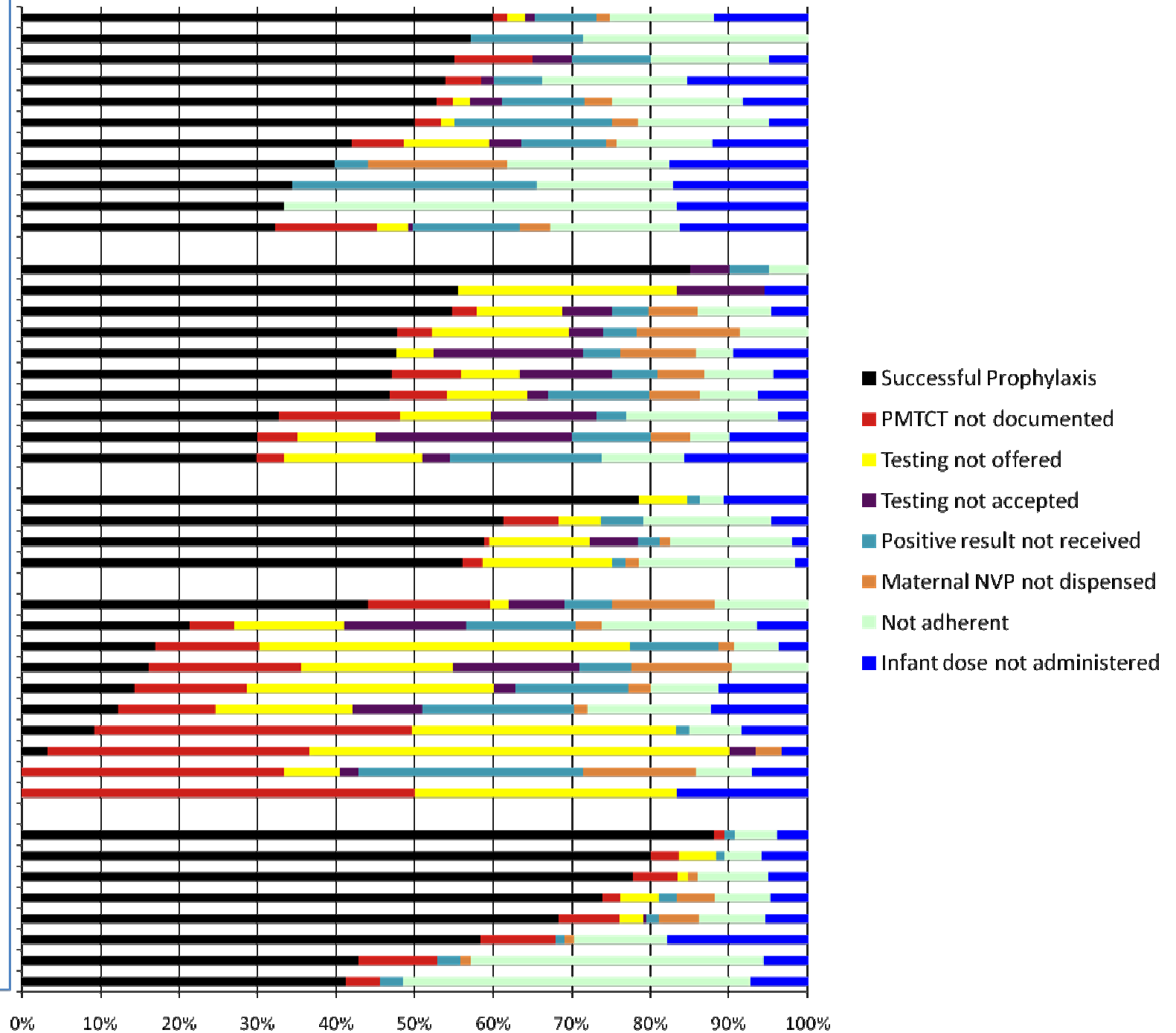
Factors associated with maternal non-adherence



Factors associated with maternal non-adherence

	Crude OR	Adjusted OR
Mother's Age		
> 30	1.0	1.0
26-30	1.26 (0.96 - 1.67)	1.39 (1.03 - 1.88)
20-25	1.13 (0.84 - 1.50)	1.38 (0.97 - 1.95)
<= 20	1.03 (0.69 - 1.52)	1.21 (0.74 - 1.99)
Gravidity		
1	1.0	1.0
2	1.20 (0.87 - 1.65)	1.19 (0.83 - 1.70)
3	1.28 (0.90 - 1.80)	1.31 (0.89 - 1.95)
4+	1.60 (1.16 - 2.22)	1.63 (1.07 - 2.46)
Number of ANC Visits		
6+	1.0	1.0
4 or 5	1.67 (1.20 - 2.32)	1.58 (1.11 - 2.25)
2 or 3	1.94 (1.39 - 2.70)	1.87 (1.27 - 2.74)
0 or 1	3.08 (1.99 - 4.78)	2.90 (1.69 - 4.96)
≥ 1 month b/w last visit and delivery	1.04 (0.83 - 1.30)	0.91 (0.71 - 1.17)
Months b/w Tested & Delivery	0.93 (0.88 - 0.99)	1.00 (0.93 - 1.08)
Delivery Method		
Cesarean	1.0	1.0
Vaginal	1.74 (1.08 - 2.78)	1.57 (0.94 - 2.60)
Prophylaxis Type		
NVP only	1.0	1.0
NVP and AZT	1.83 (1.42 - 2.35)	1.65 (1.26 - 2.16)
HAART	0.83 (0.51 - 1.37)	0.81 (0.48 - 1.36)

Individual treatment facilities



Conclusions

- In order for PMTCT to work, each mother-infant pair must negotiate a complex cascade of events
- Failures can and do occur along each step of this pathway and should be systematically targeted
- Fixing the “coverage problem” would prevent as many infant HIV deaths as would rolling out more effective regimens – and should be taken more seriously

END

Components of PMTCT Effectiveness

- Efficacy – how much the prescribed regimen reduces risk of MTCT
- Coverage – proportion of the at-risk population who access and correctly use the intervention
- Effectiveness – real-world, population effects of an intervention
 - The product of efficacy and coverage
- Research and program activity is disproportionately focused upon efficacy