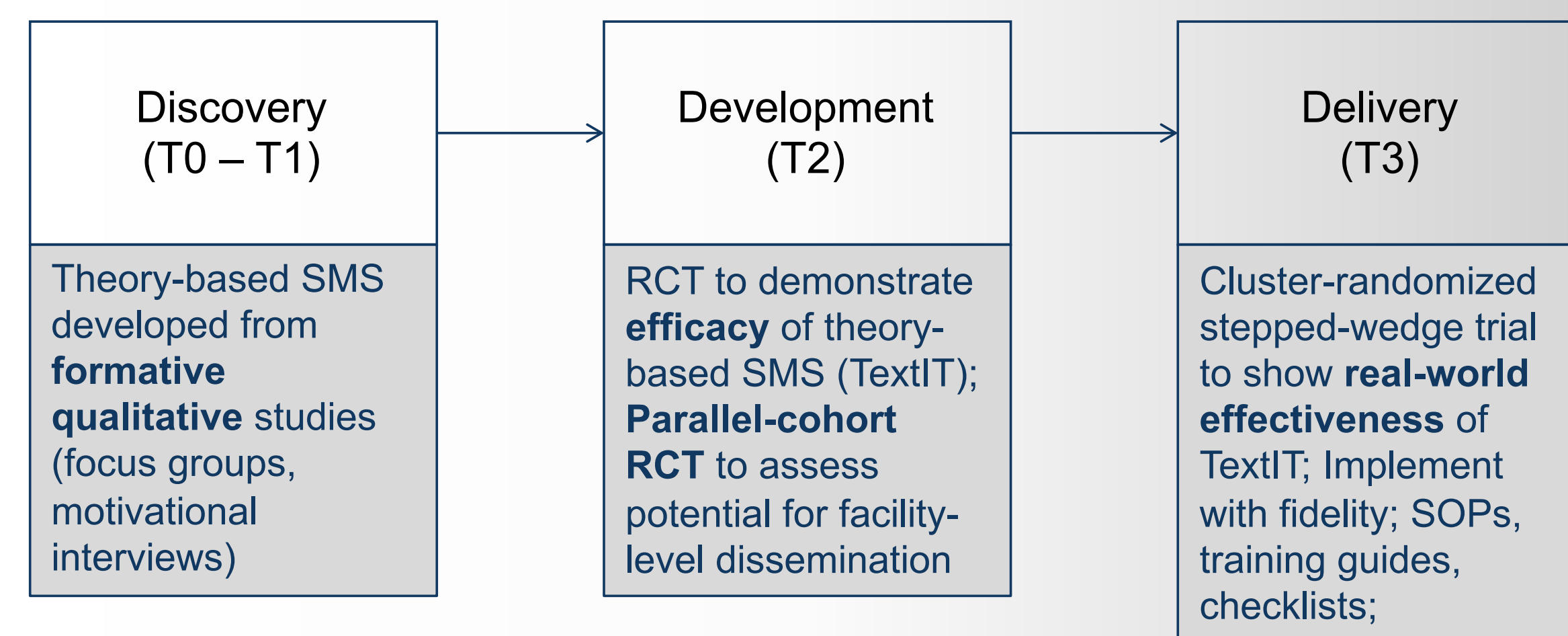


## Background

- Timely diagnosis of infant HIV infection is essential for antiretroviral therapy initiation, yet about 50% of mother-infant pairs are lost to follow-up during the postpartum period.
- We aimed to evaluate real-world effectiveness of an efficacious two-way theory-based text messaging system (TextIT) in western Kenya.

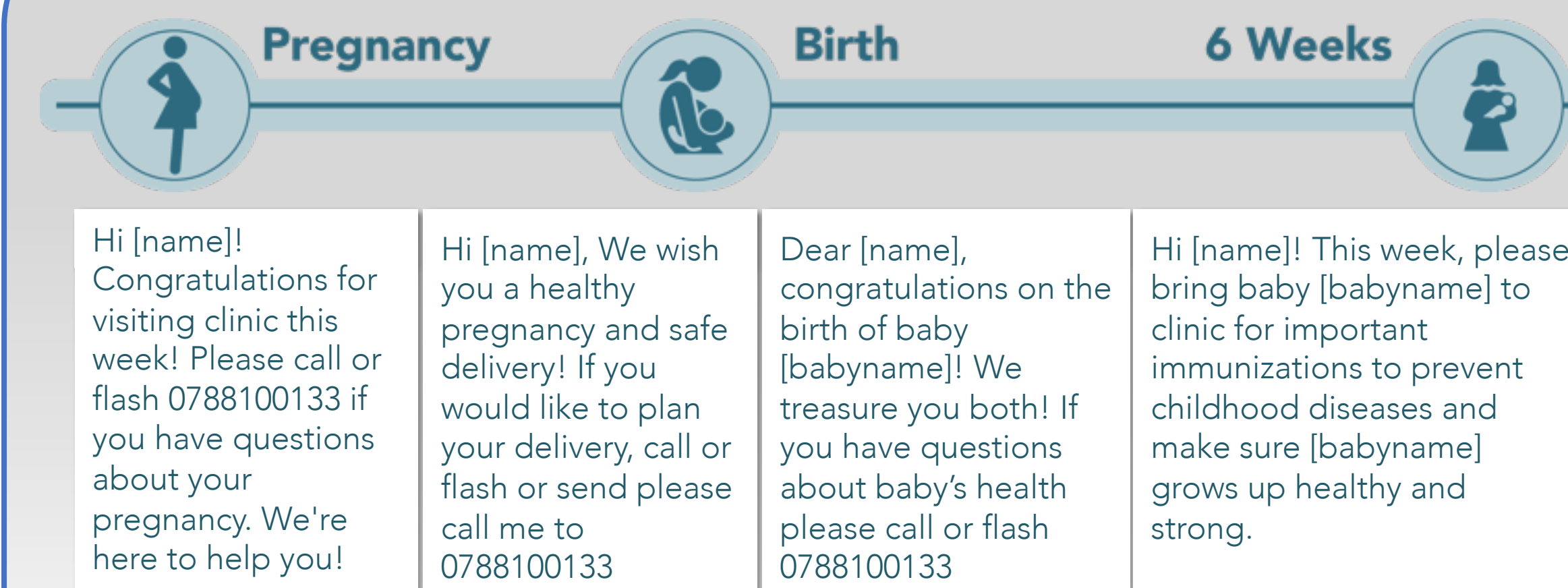
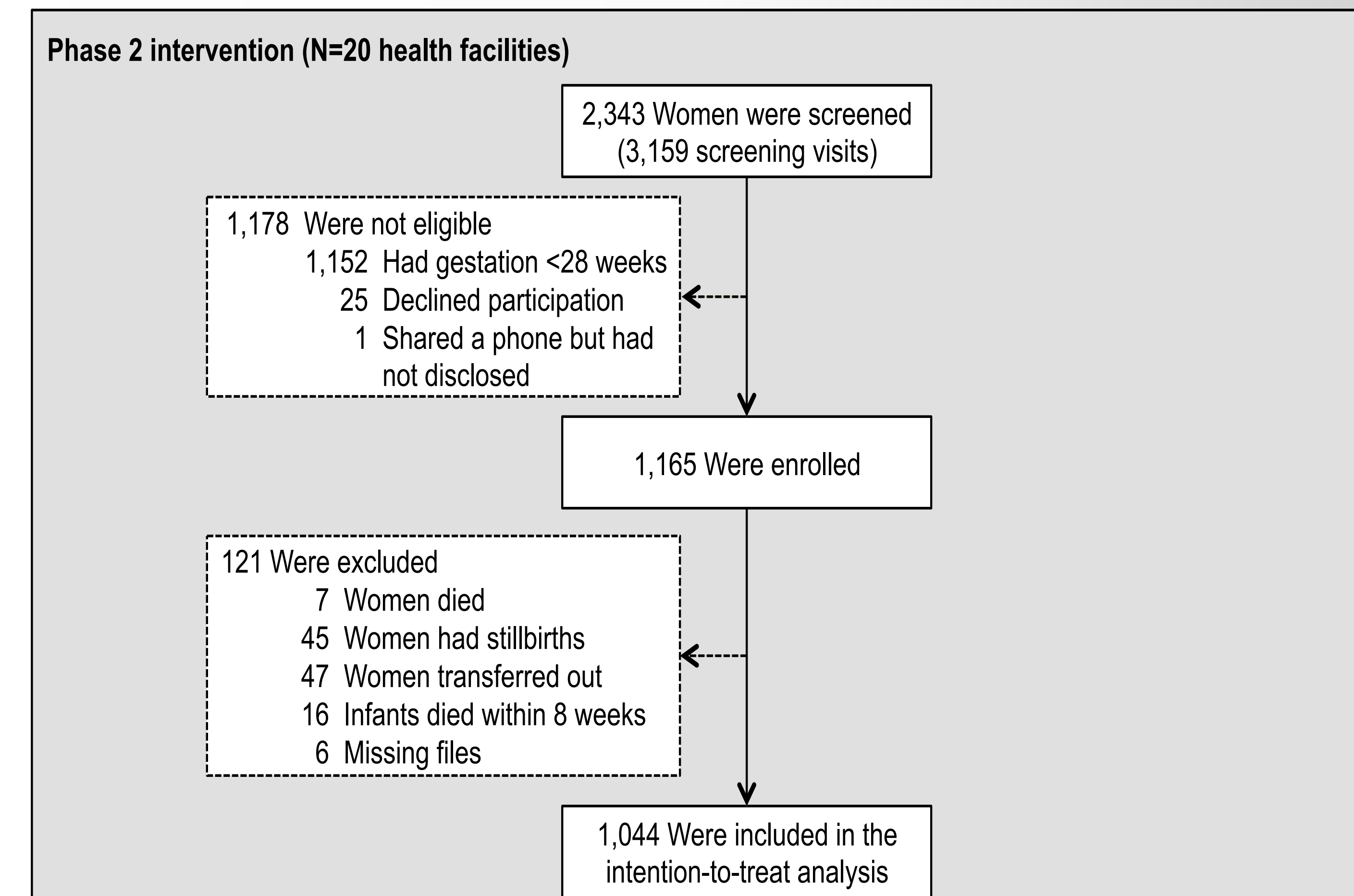
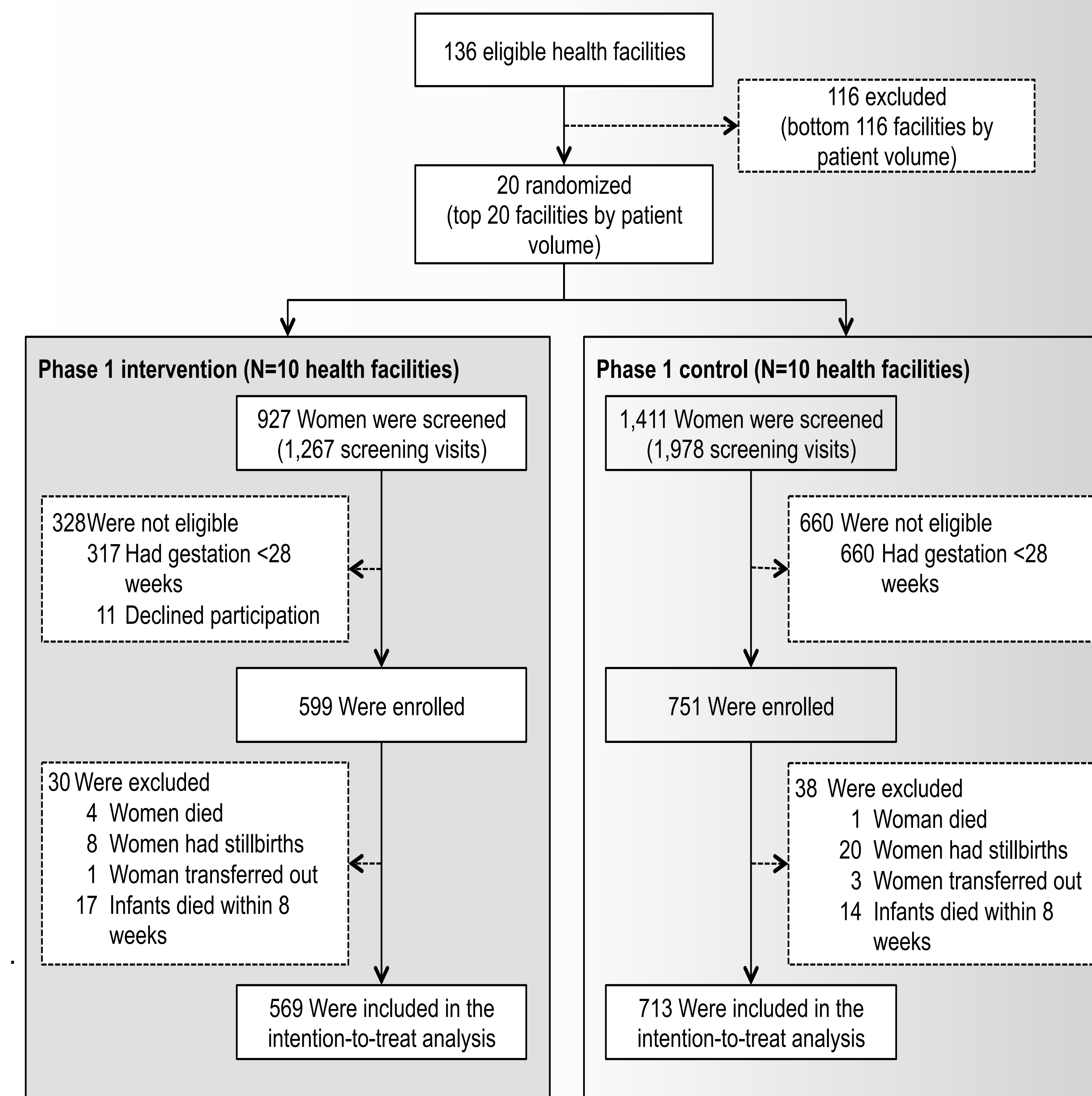
Mapping the TextIT strategy onto stages of translational epidemiology



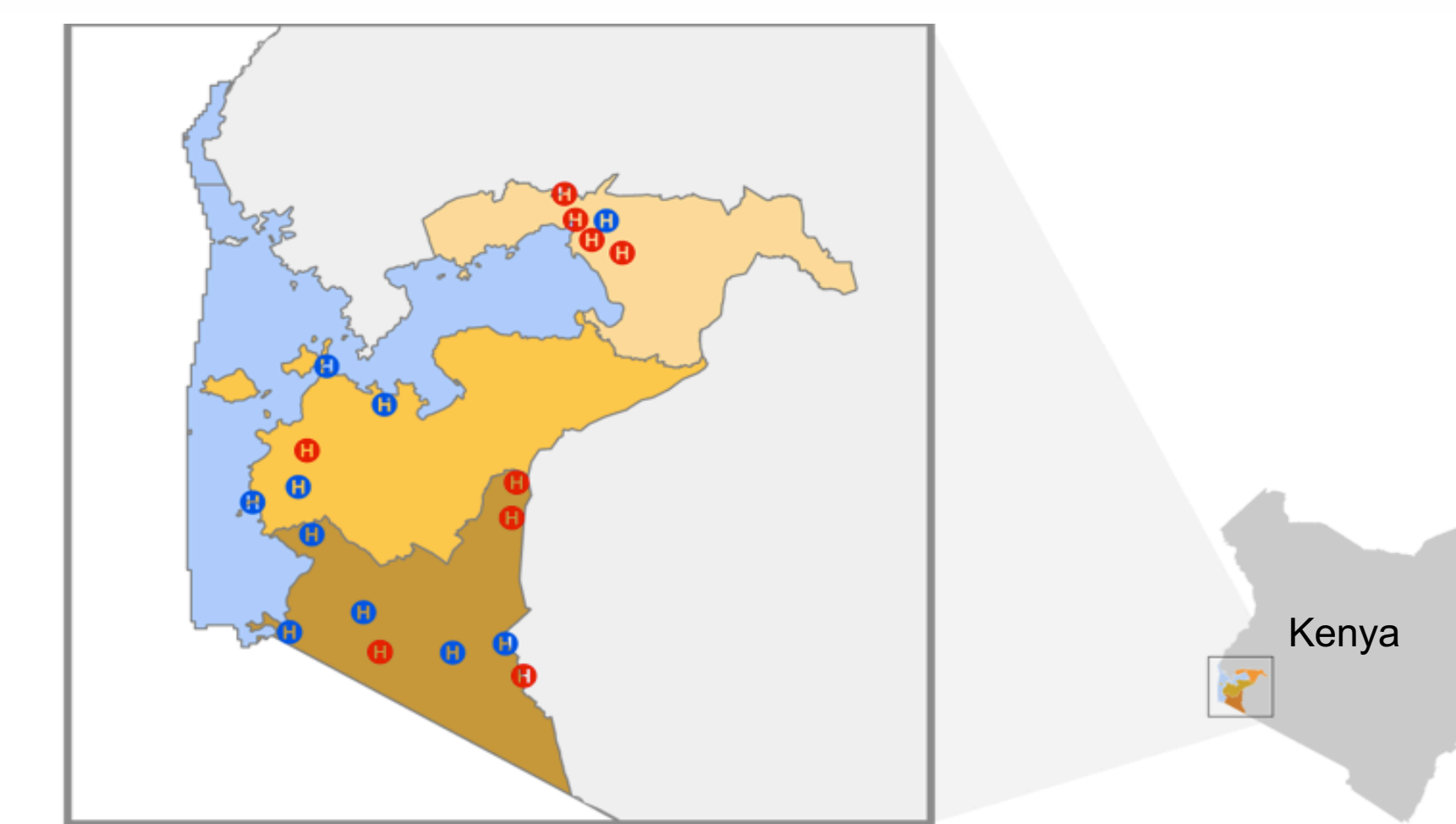
## Methods

- In a pragmatic, cluster randomized, stepped-wedge we randomly allocated 10 clinics to immediate, and 10 to delayed implementation
- We used modified Poisson regression with robust variance estimation to estimate the relative risk and 95% confidence intervals (CI)
- Generalized estimating equations were applied on individual-level data to account for clustering by site

## Study profile



14 text messages tailored for specific points during pregnancy and the postpartum period



Distribution of facilities according to randomization period Blue=immediate intervention; Red=delayed intervention

## Results

Infant characteristics at birth	SMS (N=1,684) N (%)	Control (N=695) N (%)
Gestational age at delivery (weeks), median (IQR)	39 (37–41)	39 (36–41)
Live births (vs. stillbirths)	1,629 (96.7)	675 (97.1)
Female	842 (47.7)	328 (43.7)
Birth weight (kg), median (IQR)	3.2 (3.0–3.5)	3.2 (3.0–3.5)
Delivery at health facility (vs. home)	1508 (85.5)	621 (82.7)
Exclusive breastfeeding (vs. other)	1,577 (89.4)	653 (87)

\* IQR=inter-quartile range

### Effect of SMS on infant HIV testing and maternal postpartum retention

Outcome	SMS	Control	Unadjusted RR (95% CI)	P-value	Adjusted * RR (95% CI)	P-value
Infant HIV testing	1,466/1,613 (90.9%)	609/713 (85.4%)	1.07 (1.02-1.11)	0.002	1.03 (0.97-1.10)	0.3
Maternal postpartum retention	1,548/1,725 (89.7%)	571/747 (76.4%)	1.18 (1.03-1.34)	0.01	1.12 (0.97-1.30)	0.1

\* adjusted for intervention time period and randomization stratum; control group as reference; RR=relative risk

### Maternal baseline demographic and clinical characteristics.

	SMS (N=1,764) N (%)	Control (N=751) N (%)
<b>Maternal age (years)</b>		
<18	29 (1.6)	17 (2.3)
18-24	569 (32.3)	257 (34.2)
25-34	983 (55.7)	406 (54.1)
35+	183 (10.4)	71 (9.5)
Employed	388 (22)	211 (28.1)
<b>Education</b>		
None	248 (14.1)	54 (7.2)
Primary	1113 (63.1)	536 (71.4)
Secondary	321 (18.2)	138 (18.4)
Post-secondary	82 (4.6)	23 (3.1)
Married	1600 (90.7)	697 (92.8)
First pregnancy	171 (9.7)	86 (11.5)
<b>Most recent CD4 cell count (cells/μL)</b>		
<200	143 (8.1)	61 (8.1)
200-349	303 (17.2)	152 (20.2)
350-500	390 (22.1)	180 (24)
500+	775 (43.9)	311 (41.4)
Receiving ART	1740 (98.6)	747 (99.5)

## Conclusion

- A greater proportion of infants in the intervention group received HIV testing compared with the control group, but the difference was small, and not statistically significant
- There was a non-significant increase in maternal postpartum retention in the intervention periods
- Despite the lack of a significant effect of the intervention, key lessons emerged, both for strengthening PMTCT and for implementation research in general