

Assessing the impact of a Vi-Polysaccharide Conjugate Vaccine in preventing typhoid infection among Bangladeshi children – a Phase IIIb trial

SAFETY OF TYPHOID CONJUGATE VACCINE IN BANGLADESHI CHILDREN: PRELIMINARY RESULTS FROM A DOUBLE BLIND CLUSTER-RANDOMIZED CONTROLLED TRIAL

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TyVAC Typhoid Vaccine
Acceleration Consortium

PATH/Rocky Prajapati

STRATAA- Bangladesh – August 2016-Jan 2019

Mirpur- Wards 3 and 5

Census population- 110,731

Passive surveillance in 7 health facilities



Age (yrs)	Typhoid fever	Paratyphoid A fever
0-4	457.622271	57.2027839
5-9	558.933124	107.864287
10-14	268.260542	70.5948795
15-29	96.971712	45.7152356
30+	30.0050778	12.694456
Overall	163.912219	41.9940396

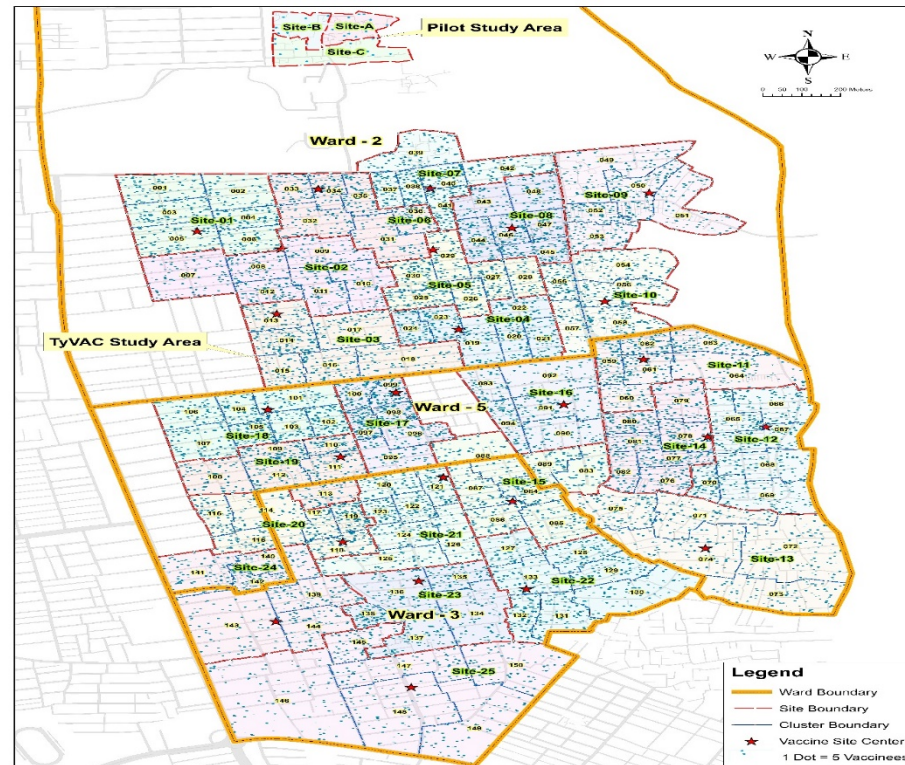
Incidence per 100,000 person-years

Study design:

Cluster randomized trial

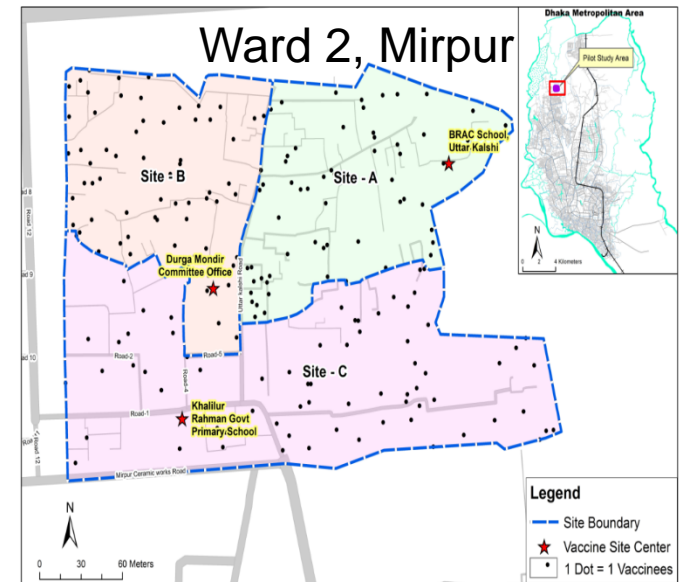
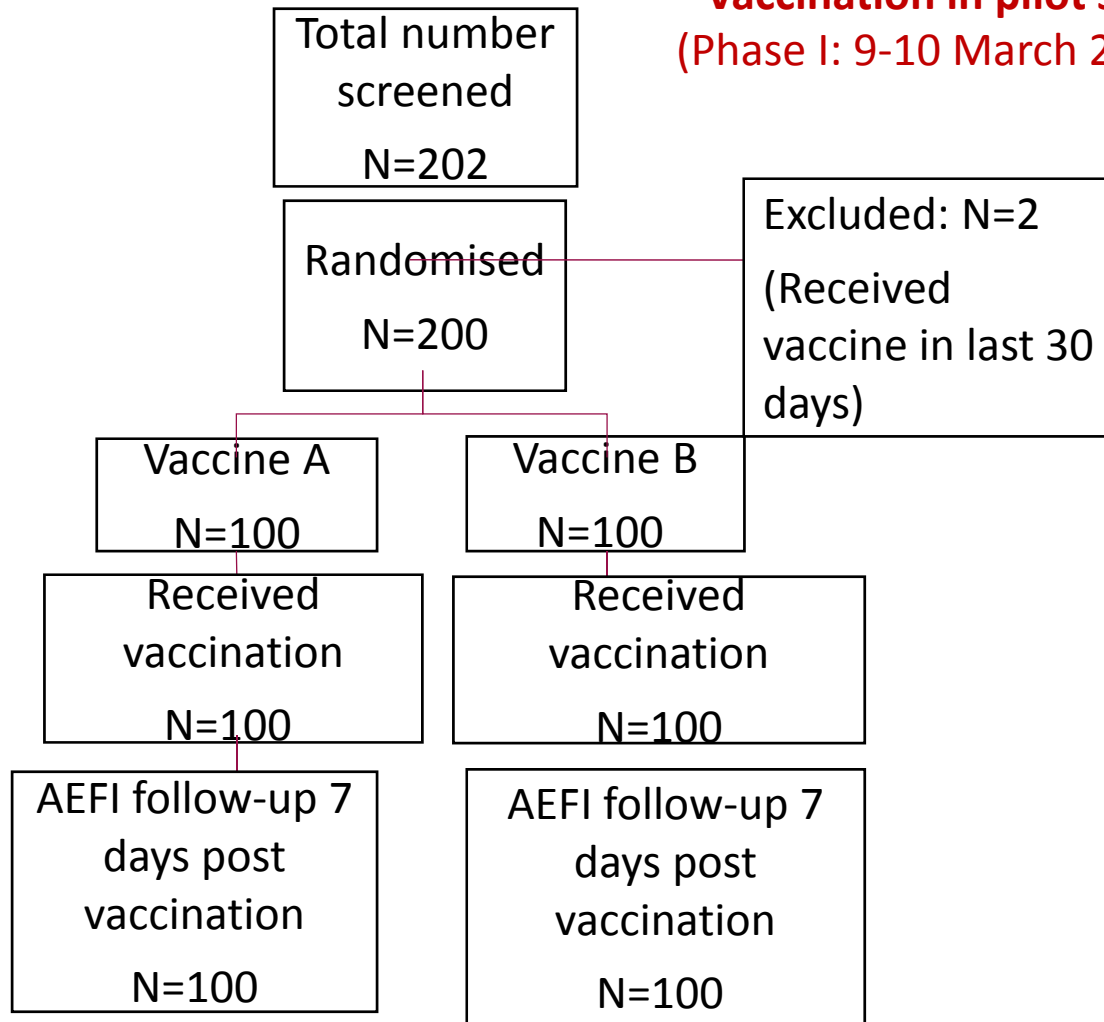
Typhoid Conjugate Vaccine (Vi-TCV) vs control (JE) vaccine- 1:1 ratio

STUDY AREA WARDS 2,3,5 MIRPUR



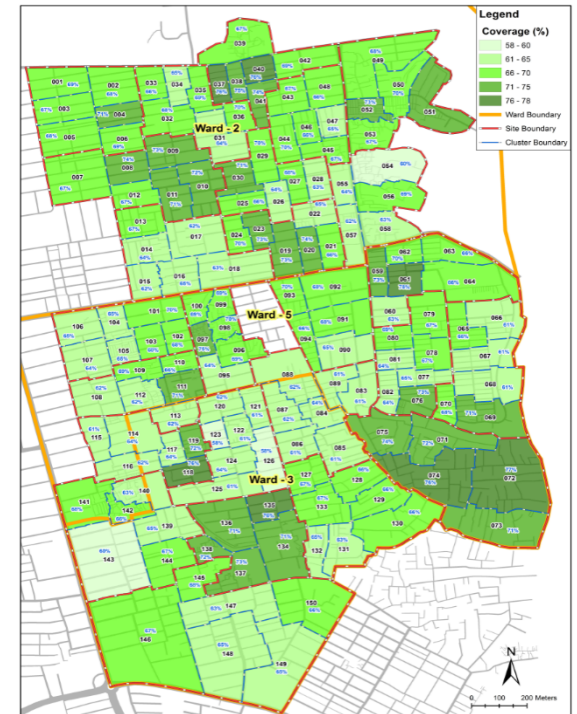
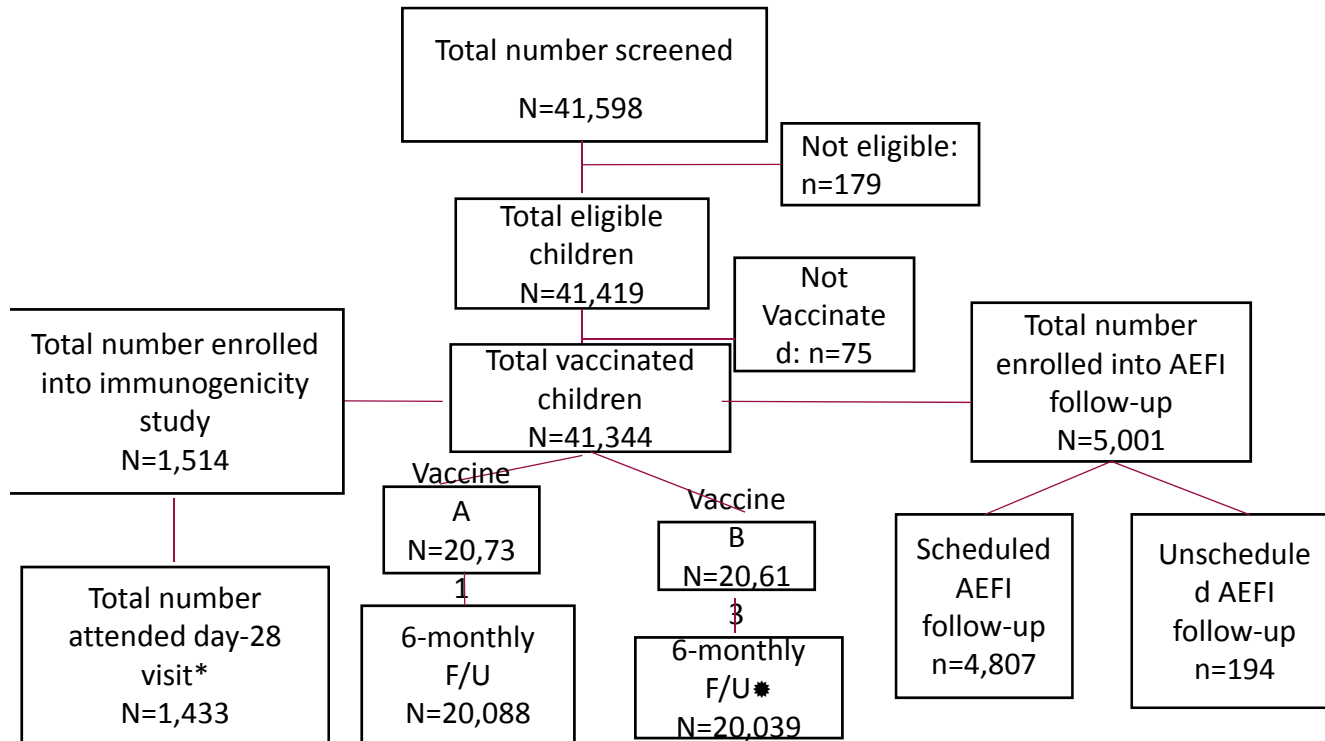
150 Clusters randomized into TCV and JE ARM-25 vaccination sites

Vaccination in pilot study
 (Phase I: 9-10 March 2018; Phase II: 21-22 March 2018)



Vaccination sites in pilot study

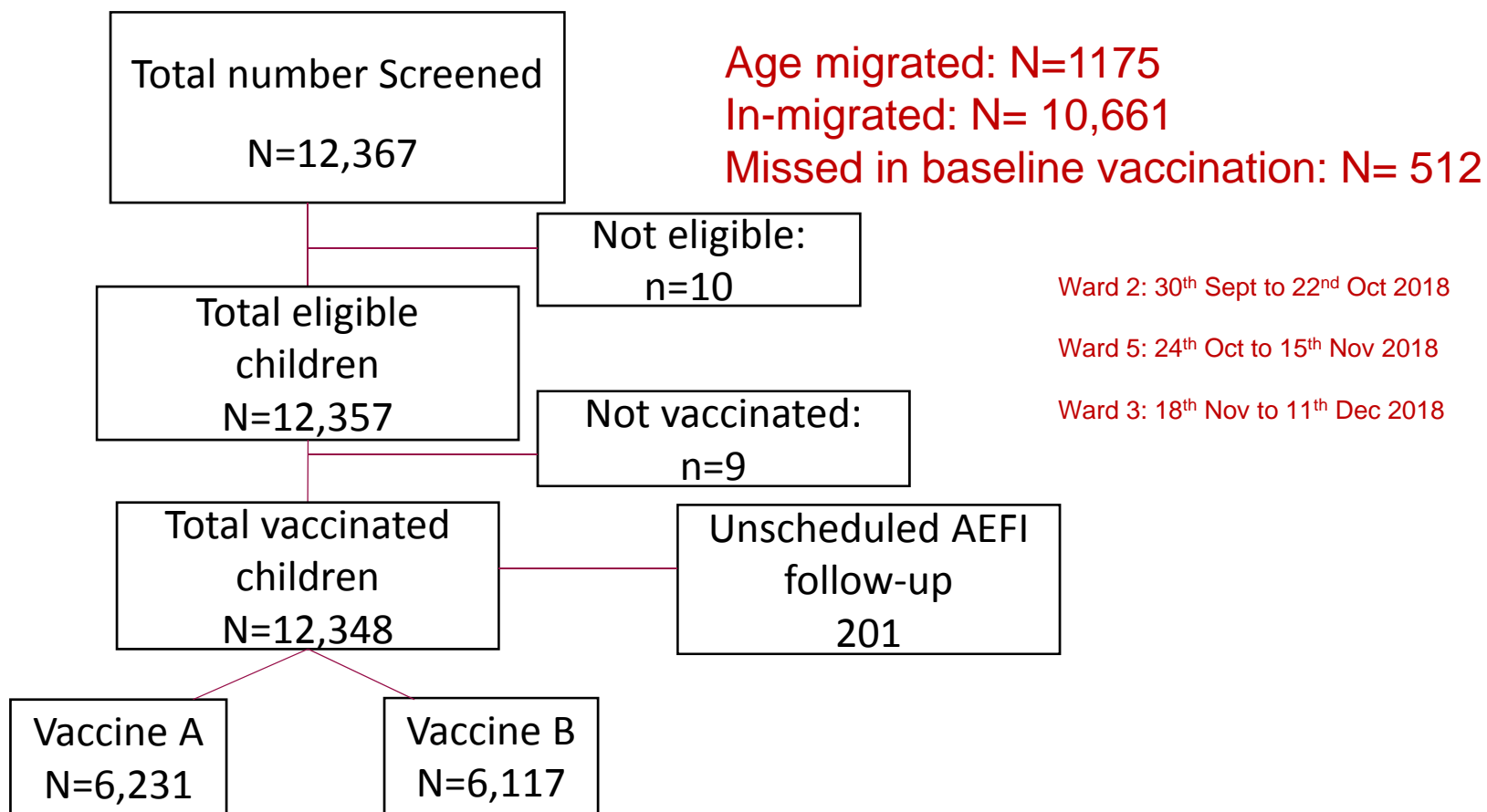
Main vaccination (15th April 2018 to 15th May 2018)



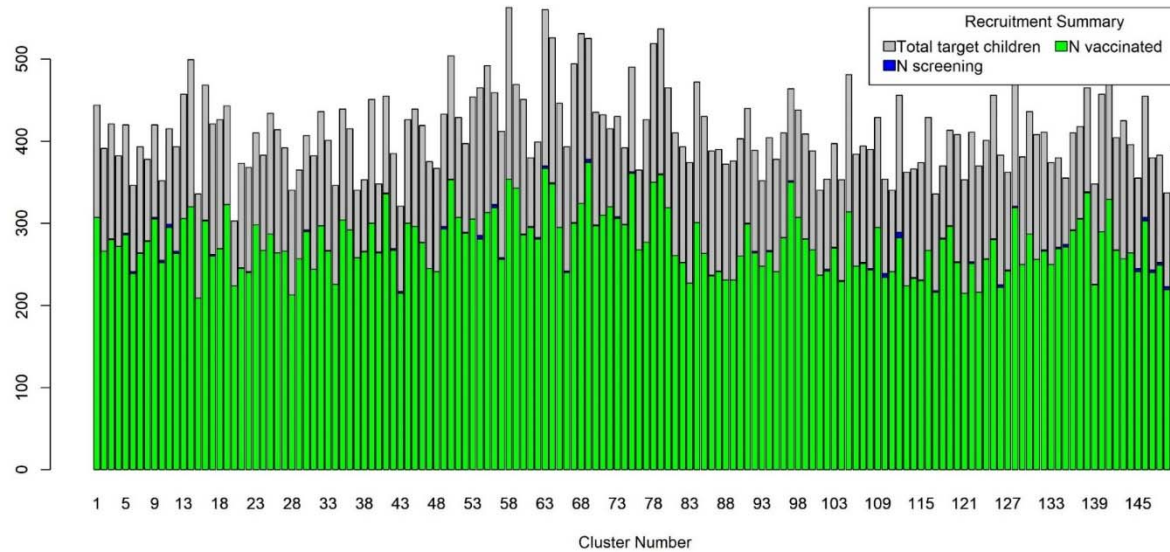
Cluster-wise vaccine coverage

*F/U of the immunogenicity participants at days 545 and 730
 * 6 monthly follow-up of all vaccinees up to 2 years

1st Catch up Vaccination
(30th Sep 2018 to 11th Dec 2018)



Vaccination summary by clusters

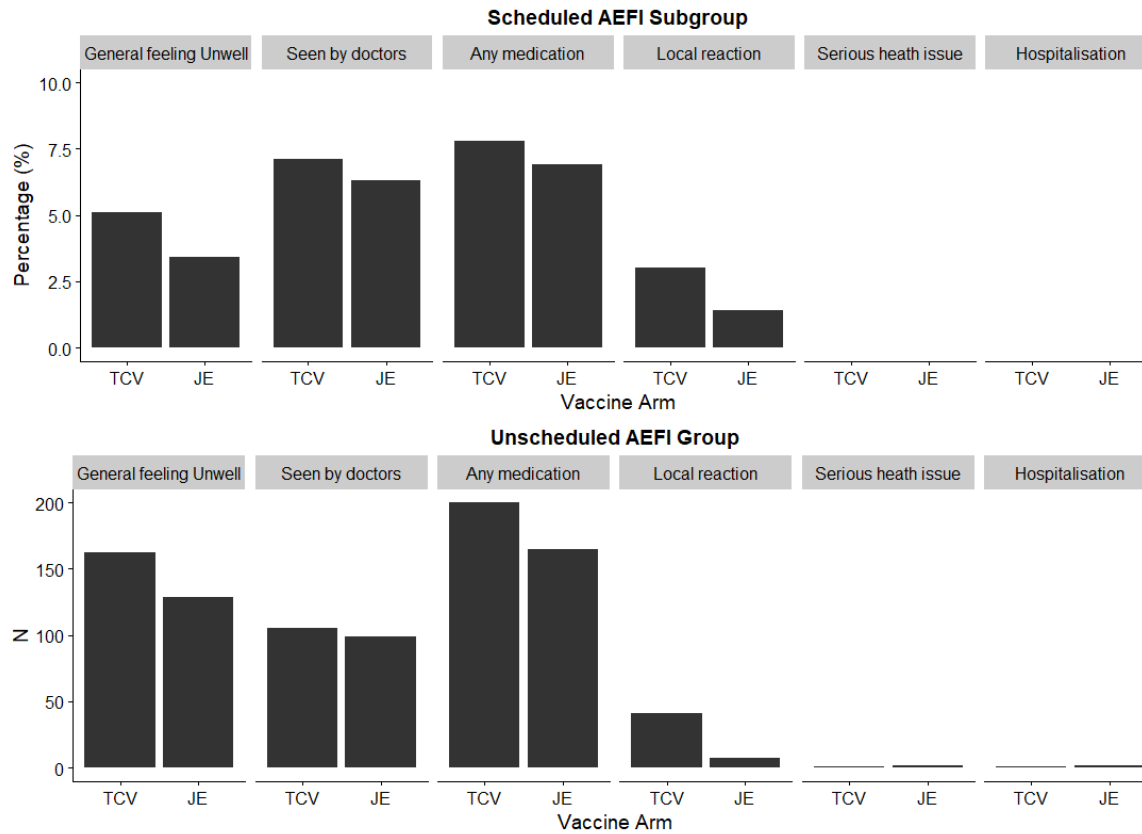


- The target was to go for 60% coverage
- The mean vaccine coverage among eligible children was 67% after the main vaccination campaign
- After the first catch up campaign, the mean vaccine coverage rate increased to 72%

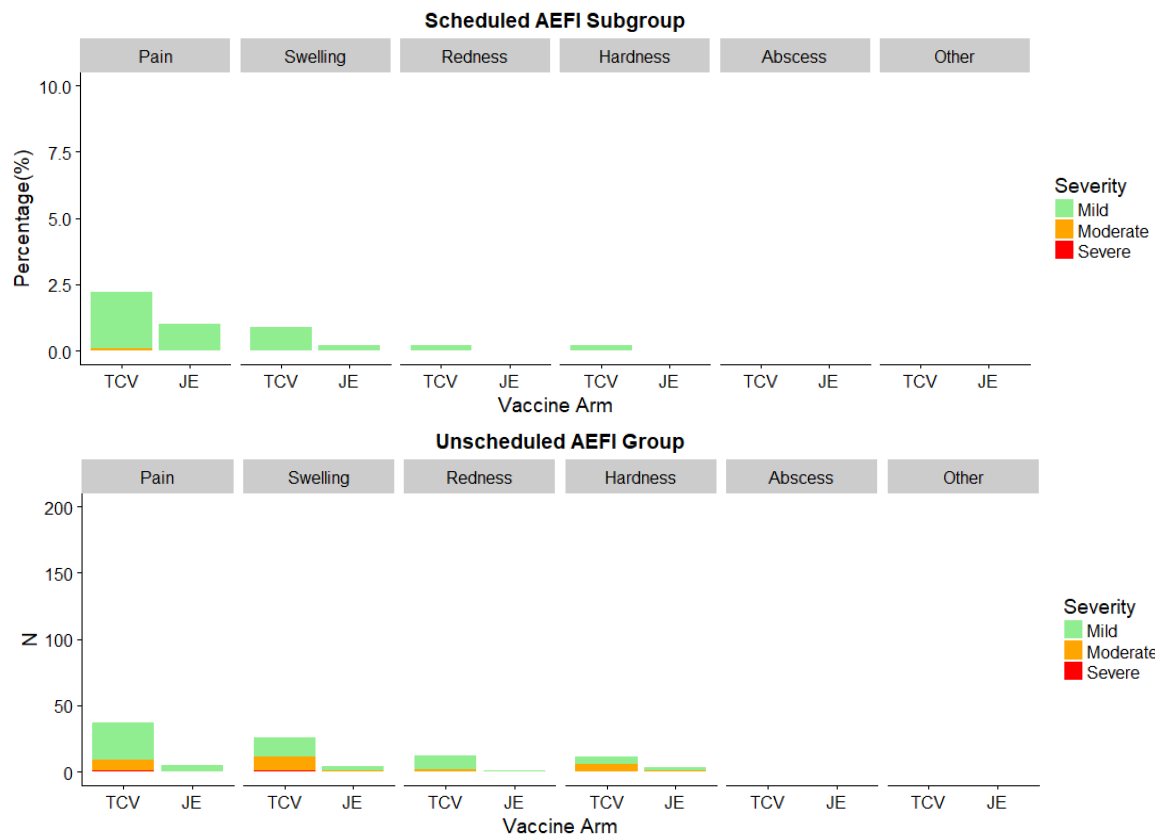
Baseline characteristics of the vaccinees (n=53,692)

	TCV (N=26,962)	JE (N=27,730)	Total (N=53,692)
Gender			
<i>Male N (%)</i>	13340 (49.5%)	13367 (50%)	26707 (49.7%)
Age at enrolment (years)			
<i>Mean (SD)</i>	7.9 (4.3)	7.8 (4.3)	7.9 (4.3)
<i>Median (Range)</i>	7.8 (0.8-16)	7.7 (0.8-16)	7.8 (0.8-16)
Temperature (°C)			
<i>Mean (SD)</i>	36.3 (0.4)	36.3 (0.4)	36.3 (0.4)
<i>Median [Range]</i>	36.2 (35.5-37.9)	36.2 (35.5-37.9)	36.2 (35.5-37.9)
Medical history of typhoid			
<i>Yes N (%)</i>	1346 (5%)	1432 (5.4%)	2778 (5.2%)
Children aged ≤ 5 years	N (%)	N (%)	N (%)
	8249 (30.6%)	8387 (31.4%)	16636 (31%)

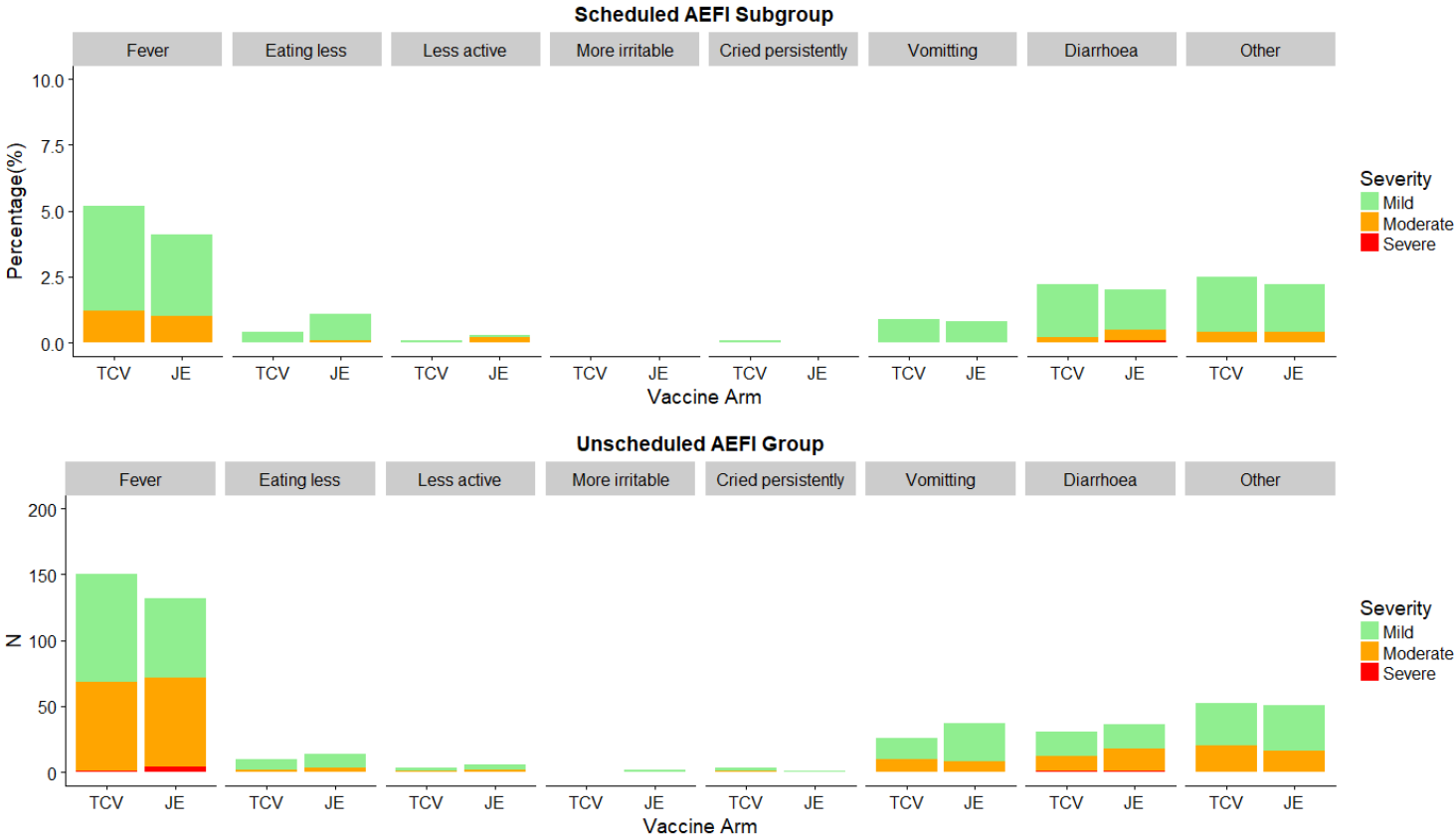
Adverse events following immunisation (AEFI): Day 7 follow up



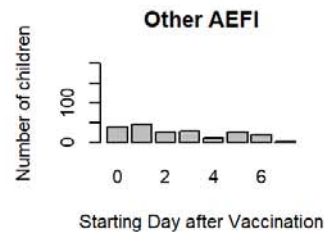
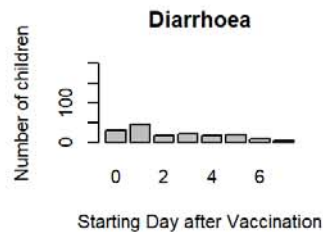
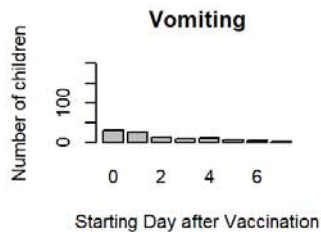
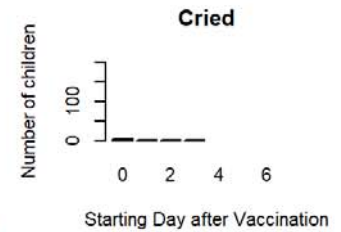
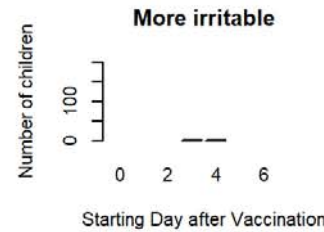
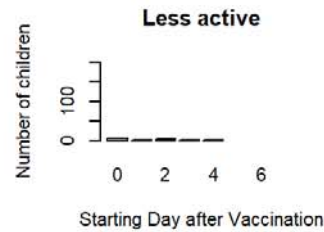
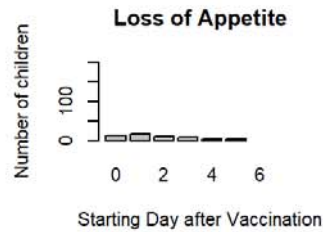
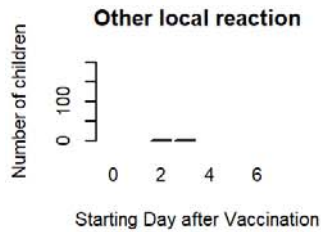
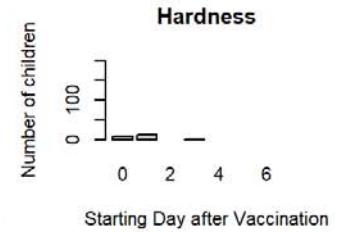
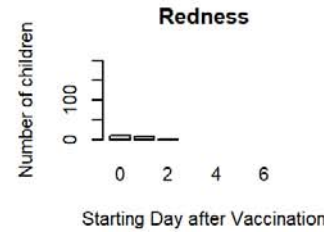
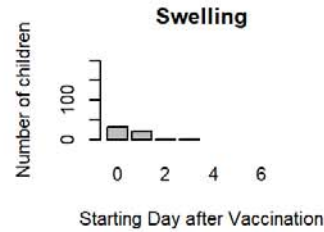
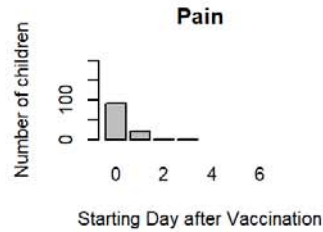
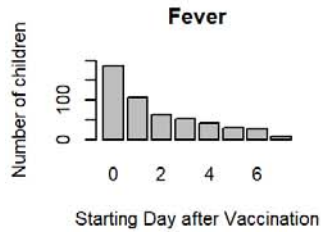
AEFI-Local Reaction



AEFI-Systemic Reaction



Adverse events following immunisation (AEFI): Day 7 follow up

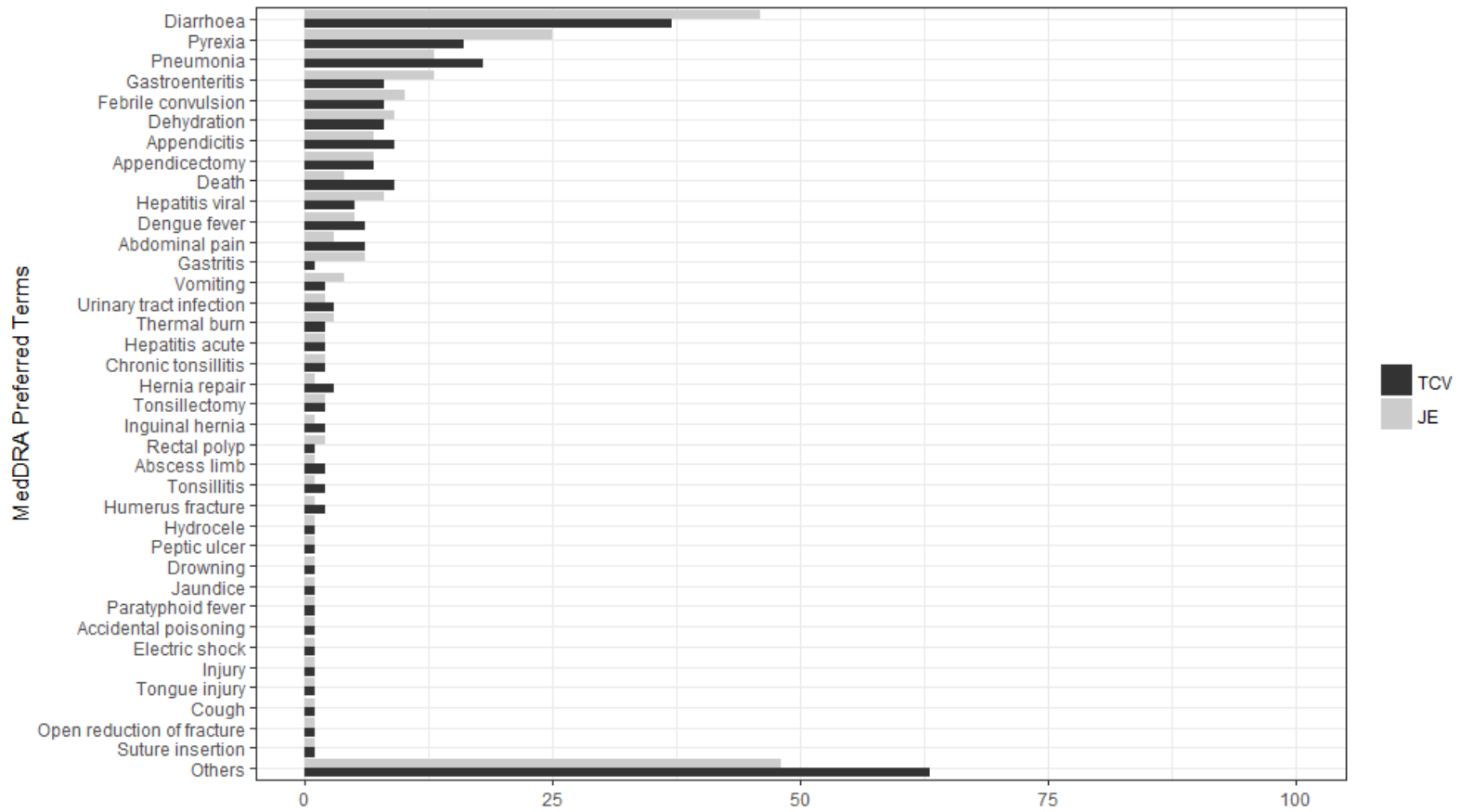


Serious adverse events (SAEs)

	TCV	JE	Total
Number of participants with SAEs	270 (47.7%)	296 (52.3%)	566
Number of SAEs	287 (48.1%)	310 (51.9%)	597
<i>Unexpected</i>	0	0	0
Severity			
<i>Moderate</i>	0 (0%)	2 (0.6%)	2 (0.3%)
<i>Severe</i>	287 (100%)	308 (99.9%)	595 (99.7%)
Related to trial medication			
<i>Not related</i>	287 (100%)	310 (100%)	597 (100%)
Outcome			
<i>Recovered</i>	275 (95.8%)	305 (98.4%)	580 (97.2%)
<i>Recovered with sequelae</i>	0	1 (0.3%)	1 (0.2%)
<i>Death</i>	9 (3.1%)	4 (1.3%)	13 (2.2%)
<i>Continuing</i>	2 (0.7%)	0 (0%)	2 (0.3%)
<i>Unknown</i>	1 (0.3%) ¹	0 (0%)	1 (0.2%)

¹The outcome is unknown as the participant has migrated out

Frequency of SAEs by MedDRA coding



Summary

- The most frequent AEFI was fever in the TCV arm (5.2%)
- There was no SAE related to study vaccines
- There is no safety concern on vaccinating children aged 9 months to <16 years with TCV at endemic settings

COLLABORATING ORGANIZATIONS

Thanks to the icddr,b and the Oxford Teams



Yale SCHOOL OF PUBLIC HEALTH

Learn more at:

<http://takeontyphoid.org>



TyVAC Typhoid Vaccine
Acceleration Consortium

PATH/Rocky Prajapati