



Supplementary Figure S1: Flowchart for selection of analytic samples.

Supplementary Table S1. Variables assessed as predictors of 2YL vaccine receipt

Child age group (months)
18-23
24-35
Child's sex
Female
Male
Birth order
First
Second
Third or more
Maternal age (years)
<25
25-34
≥35
Paternal age (years)
<25
25-34
≥35
Maternal education
Never attended school
Primary
Secondary or higher
Paternal education
Never attended school
Primary
Secondary or higher
Maternal religion
Other
Christian
Maternal marital status
Single/Divorced/Separated/Widowed
Married/Co-habiting
Settlement type

Urban
Rural
Household size
More than 6 members
6 or less members
Caregiver has access to phone for text messaging
No
Yes
Caregiver received phone reminder for 18 mo visit
No reminder received
Reminder received
Child attends school/daycare
No
Yes
Child attends school/daycare offering routine immunization
No
Yes
Child's HBR reviewed at school
No
Yes
Fully immunized child by 12 mo
No
Yes
Caregiver knows someone with measles
No
Yes
Caregiver knows 2 doses are needed for full protection
No
Yes
Caregiver knows MCV dose should be given during 2YL
No
Yes
Caregiver knows MACV dose should be given during 2YL
No
Yes
Caregiver thinks more than one MCV dose is needed for full protection

	No
	Yes
Caregiver knows MCV doses are given at 9 & 18 mo	
	No
	Yes
Caregiver knows MACV dose is given at 18 mo	
	No
	Yes
Caregiver aware of need for 18 mo visit before 2nd birthday	
	No
	Yes
Caregiver believes healthcare provider provides enough information on 2YL vaccine	
	No
	Yes
Healthcare provider is caregiver's most trusted source of immunization information	
	No
	Yes
Caregiver believes vaccines protect against VPDs	
	No
	Yes
Caregiver believes vaccines are safe	
	No
	Yes
Caregiver believes completely unvaccinated children are vulnerable to disease	
	No
	Yes
Caregiver believes unvaccinated children can infect others	
	No
	Yes
Caregiver believes 2YL vaccine is important for child	
	No
	Yes
Caregiver believes 2YL vaccine is important for other children	
	No
	Yes
Both father and mother involved in decision to vaccinate child	

No
Yes
Caregiver believes 2YL vaccination is supported by spouse
No
Yes

Supplementary Table S2. Model output for the predictors of MCV2 receipt in Greater Accra Region with interaction term for school availability of RI services and settlement type.

	aOR	95 % CI	P value
Child's sex			
Female	REF		
Male	1.0	0.5–2.1	0.923
Birth order			
First	REF		
Second	0.7	0.2– 2.7	0.698
Third or more	0.3	0.2–0.8	0.016
Maternal education			
Never attended school	REF		
Primary	1.5	0.5–5.0	0.468
Secondary or higher	2.0	0.9–4.7	0.069
Maternal age (years)			
<25	REF		
25-34	2.4	0.5–11.4	0.265
≥35	2.8	0.8–9.2	0.087
Maternal religion			
Other	REF		
Christian	1.1	0.5–2.5	0.853
Settlement type			
Urban	REF		
Rural	4.7	0.8–28.9	0.094
Attends school/daycare offering routine immunization			
No	REF		
Yes	0.8	0.3–1.9	0.567

Interaction term	0.1	0.02–0.8	0.031
Fully immunized child by 12 mos.			
No	REF		
Yes	4.0	1.7–9.4	0.002
Caregiver knows MR dose should be given during 2YL			
No	REF		
Yes	2.4	1.2–4.9	0.017

Supplementary Table S3. Joint effects of settlement type and school RI service availability on MCV2 receipt among children aged 18–35 months in Greater Accra Region

	aOR	95% CI	P value
Urban school; no RI service available	REF		
Urban school; RI service available	0.8	0.3–1.9	0.567
Rural school; no RI service available	4.7	0.8–28.9	0.094
Rural school; RI service available	0.4	0.2–1.2	0.102
Joint effects were calculated from the model with the interaction term using the lincom post-estimation Stata command			

Supplementary Table S4: MCV2 coverage among children aged 18–35 months by availability of RI services at school and settlement type in Greater Accra region, Ghana, 2020

MCV2 dose received	Urban				Rural			
	Attends school/daycare offering routine immunization (RI)							
	No	Yes	Total	P value	No	Yes	Total	P value
No	83	22	105		12	3	15	
	37.4 (31.1,44.1)	23.1 (15.8,32.5)	33.2 (27.9,39.1)	0.011	24.6 (12.6, 42.5)	35.3 (23.9,48.6)	27.13 (16.5,41.3)	0.094
Yes	147	72	219		27	4	31	
	62.6 (55.9,68.9)	76.9 (67.5,84.3)	66.8 (60.9,72.1)		75.4 (57.5,87.4)	64.7 (51.4,76.1)	72.87 (58.7,83.5)	

Total	230	94	324	39	7	46
	100.00	100.00	100.00	100.00	100.00	100.00

First row shows the *unweighted counts* and second row has *MCV2 coverage with 95% CIs*
P value represents significance of design-based chi square test