

SUPPLEMENTARY TABLES (S1 – S4)

A multi-modal intervention to improve hand hygiene in the health care facility and home environment during the peri-natal period in Kampong Chhnang, Cambodia: controlled before-and-after feasibility study

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S1. Baseline and endline characteristics by intervention group and observation period

	Baseline		Endline	
Labour and delivery room	Comparison (N = 16)	Intervention (N = 29)	Comparison (N = 19)	Intervention (N = 35)
Mother's age				
Mean (SD)	27 (3.8)	28 (5.4)	29 (5.9)	30 (5.6)
Range	22 – 38	21 – 40	18 – 39	18 – 37
Previous live births				
Mean (SD)	2 (1.2)	2 (1.6)	2 (1.4)	1 (1.5)
Range	0 – 4	0 – 6	0 – 5	0 – 5
HCF Travel time (mins)				
Mean (SD)	16 (11.5)	21 (9.7)	33 (27.9)	26 (20.5)
Range	5 – 40	5 – 40	10 – 120	10 – 90
HCF staff presence (%)				
Primary midwife	15 (94)	16 (55)	18 (95)	17 (49)
Secondary midwife	11 (69)	22 (76)	12 (63)	28 (80)
Doctor or Nurse	1 (6)	7 (24)	1 (5)	8 (23)
Midwife intern	0 (0)	4 (14)	0 (0)	23 (66)
Working shift time (%)				
Morning (6.00 – 12.00)	8 (50)	12 (41)	5 (26)	16 (46)
Afternoon (12.00 – 18.00)	3(19)	6 (21)	3 (16)	6 (17)
Overnight (18.00 – 6.00)	5 (31)	11 (38)	11 (58)	13 (37)
HCW per birth				
Mean (SD)	3 (0.81)	2 (1.08)	2 (0.94)	3 (1.29)
Range	2 – 5	1 – 5	1 – 5	1 – 6
Post-Natal Care	Comparison (N = 17)	Intervention (N = 29)	Comparison (N = 18)	Intervention (N = 35)

Time elapsed since birth (hrs)				
Mean (SD)	1.6 (0.71)	1.4 (0.82)	1.6 (0.6)	1.1 (0.3)
Range	1 – 3	1 – 5	1 – 3	1 – 2
Presence of HCW in PNC (%)				
Present	17 (100)	26 (90)	11 (61)	31 (100)
Absent	0 (0)	3 (10)	7 (39)	0 (0)
Working shift time				
Morning (6.00 – 12.00)	5 (29)	11 (38)	6 (33)	14 (40)
Afternoon (12.00 – 18.00)	6 (35)	9 (31)	4 (22)	8 (23)
Overnight (18.00 – 6.00)	6 (35)	9 (31)	8 (44)	13 (37)
Number of visitors in PNC				
Mean (SD)	8 (1.7)	4 (1.8)	4 (2.0)	4 (2.1)
Range	1 – 8	2 – 8	1 – 9	2 – 8
Intervention facilities at time of observation				
HWF with soap and water				33 (94)
ABHR station at mother's bed				35 (100)
Mother with personal ABHR				28 (80)
Baby with intervention hat				29 (86)
HOME	Comparison (N = 11)	Intervention (N = 11)	Comparison (N = 11)	Intervention (N = 11)
Days elapsed since birth				
Mean (SD)	2 (0.75)	2 (0.47)	2 (0.54)	1 (0.4)
Range	1 - 3	1 – 2	1 – 3	1 – 3
Days spent at home since discharge				
Mean (SD)	0 (0.5)	0 (0.5)	0 (0.3)	0 (0.5)
Range	0 – 1	0 – 1	0 -1	0 – 1
Presence of visitors at home				
Mean (SD)	5 (3.2)	8 (3.3)	6 (3.3)	6 (2.8)
Range	2 – 11	3 – 13	2 – 11	3 – 12

S2. Frequency and proportion of aseptic events within delivery flow

	Baseline		Endline	
	Comparison	Intervention	Comparison	Intervention
All aseptic events (N)	108	232	131	267
<i>Individual aseptic events % (N)</i>				
Artificial Rupture Of Membranes	4.6 (5)	6.9 (16)	6.1 (8)	5.6 (15)
Urinary Catheter Removed	-	1.7 (4)	0.8% (1)	4.1 (11)
Episiotomy	-	3.0 (7)	3.1 (4)	3.7 (10)
Fingers in Vagina	8.3 (9)	12.5 (29)	3.8 (5)	2.2 (6)
NB face wiped during delivery	14.8 (16)	12.9 (30)	14.5 (19)	16.1 (43)
NB delivered	14.8 (16)	12.9 (30)	14.5 (19)	16.1 (43)
Cord	15.7 (17)	12.5 (29)	15.3 (20)	13.5 (36)
Placenta	14.8 (16)	15.3 (30)	15.3 (20)	13.5 (36)
VE post delivery	15.7 (17)	12.9 (30)	16.0 (21)	13.1 (35)
IV cannula- related	-	-	1.5 (2)	-
Catheter-related	-	1.7 (4)	-	1.9 (5)
Injection given	1.9 (2)	2.2 (5)	1.5 (2)	0.4 (1)
Perineum suturing	9.3 (10)	7.6 (18)	7.6 (10)	9.7 (26)

S3. Aseptic events within delivery flows conducted under adequate hand hygiene

	Baseline		Endline		OR ¹ (95% CI)	AOR ^{1,2} (95% CI)
	Comparison	Intervention	Comparison	Intervention		
All events % (n/N)	19.4% (21/108)	11.2% (26/232)	12.2% (16/131)	14.6% (39/267)	2.4 (0.9 – 5.9)	2.6 (0.9 – 7.6)
<i>Individual aseptic events % (n/N)</i>						

Artificial Rupture Of Membranes	40.0 (2/5)	12.5 (2/16)	25.0 (2/8)	46.7 (7/15)
Urinary Catheter Removed	-	50.0 (2/4)	0.0 (0/1)	27.3 (3/11)
Episiotomy	-	14.2 (1/7)	25.0 (1/4)	30.0 (3/10)
Fingers in Vagina	22.2 (2/9)	13.8 (4/29)	0.0 (0/5)	33.3 (2/6)
NB face wiped during delivery	25.0 (4/16)	13.3 (4/30)	15.8 (3/19)	16.3 (7/43)
NB delivered	25.0 (4/16)	13.3 (4/30)	15.8 (3/19)	16.3 (7/43)
Cord	11.8 (2/17)	6.9 (4/29)	15.0 (3/20)	19.4 (7/36)
Placenta	25.0 (4/16)	10 (3/30)	5.0 (1/20)	2.8 (1/36)
VE post delivery	17.5 (3/17)	10 (3/30)	4.8 (1/21)	2.9 (1/35)
IV cannula- related	-	-	0.0 (0/2)	-
Catheter-related	-	0.0 (0/4)	-	0.0 (0/5)
Injection given	0.0 (0/2)	0.0 (0/5)	50.0 (1/2)	100 (1/1)
Perineum suturing	0.0 (0/10)	5.6 (1/18)	10 (1/10)	0.0 (0/26)
<i>Note. AOR =Adjusted Odds Ratio, OR = Odds Ratio</i> <i>1 Clustered by facility; 2Adjusted for facility type (referral hospital vs primary health facility), professional qualification (midwife vs Doctor + Nurse vs Midwife intern)</i>				

S4. Effect of the intervention on invalidated hand hygiene during labour and delivery

	Baseline N (%)	Endline N (%)	% point difference (%)	OR ¹ (95% CI)	AOR ² (95% CI)
Invalidated hand hygiene					
All flows					
Intervention	72 (45)	85 (34)	-11	0.8 (0.5, 1.2)	0.7 (0.4, 1.2)
Comparison	35 (40)	44 (36)	-4	1.00 (Ref)	1.00 (Ref)
Labour⁴					
Intervention	16 (23)	18 (25)	+2	1.4 (0.8, 2.5)	1.5 (0.7, 3.4)
Comparison	6 (23)	7 (20)	-3	1.00 (Ref)	1.00 (Ref)

Delivery⁵					
Intervention	33 (52)	27 (34)	-18	0.4 (0.2, 0.8)	0.3 (0.1, 0.7)
Comparison	14 (36)	15 (41)	+5	1.00 (Ref)	1.00 (Ref)
Newborn Aftercare⁶					
Intervention	24 (77)	40 (40)	-37	0.5 (0.2, 1.4)	0.4 (0.2, 0.9)
Comparison	15 (65)	22 (44)	-21	1.00 (Ref)	1.00 (Ref)
<i>Note. AOR = Adjusted Odds Ratio, OR = Odds Ratio</i> <i>¹ Clustered by facility; ² Adjusted for working shift time, facility type (referral hospital vs primary health facility), professional qualification (midwife vs Doctor + Nurse vs Midwife intern); ³ Baseline n = 251, Endline n = 375; ⁴Baseline n = 95, Endline n = 108; ⁵ Baseline n = 102, Endline n = 116; ⁶ Baseline n = 54, Endline n = 151; ⁷Baseline n = 340, Endline = 398</i>					