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Effectiveness of CHW platforms for delivering community-based interventions for MNCH

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Background

- An appropriate mix of interventions can significantly reduce the burden of maternal and child mortality and morbidity.
- These interventions often do not reach those who need them most.
- An integrated approach that includes community-based care as an essential component has the potential to substantially improve maternal, newborn, and child health outcomes.
- It is widely agreed that communities should take an active part in improving their own health outcomes and that CHWs can play a vital role.

Community based intervention package

Home visits Community mobilisation Combination of both

Impact of Community-based Intervention Packages Maternal Mortality

			Intervention Package	Standard Care		Risk Ratio	Risk Ratio
Study or Subgroup	log[Risk Ratio]	SE	Total			IV, Random, 95% CI	IV, Random, 95% CI
1.1.1 Intervention page	ckage mainly con	sisted o	f building community-s	upport groups/w	omen gra	oups	
Azad 2010	0.5538	0.298	15153	14736	11.2%	1.74 [0.97, 3.12]	
Colbourn 2013	-0.0943	0.2954	10055	9931	11.3%	0.91 [0.51, 1.62]	
Fottrell 2013	-0.3011	0.3386	8819	8602	9.2%	0.74 [0.38, 1.44]	
Lewycka 2013	-0.5447	0.3537	4610	4960	8.5%	0.58 [0.29, 1.16]	
Manandhar 2004	-1.514	0.756	2899	3226	2.2%	0.22 [0.05, 0.97]	
Tripathy 2010	-0.223	0.23	9388		16.2%		A
Subtotal (95% CI)			50924	50274	58.6%	0.83 [0.56, 1.22]	•
Heterogeneity: Tau ² =	: 0.11; Chi ^z = 10.41	, df = 5 (P = 0.06); I ² = 52%				
Test for overall effect:	Z = 0.96 (P = 0.34)					
1.1.2 Intervention page	ckage mainly con	sisted of	f community mobilisati	on and home visi	tation (ar	ntenatal & postnatal)	
Bhutta 2008	-0.431	0.287	2932	2610	11.9%	0.65 [0.37, 1.14]	
Bhutta 2011	-0.094	0.296	17613	16390	11.3%	0.91 [0.51, 1.63]	
Kumar 2008	-0.801	0.594	2609	1079	3.4%	0.45 [0.14, 1.44]	
Subtotal (95% CI)			23154	20079	26.6%	0.72 [0.49, 1.06]	◆
Heterogeneity: Tau ² =	: 0.00; Chi ² = 1.39,	df = 2 (P	= 0.50); I ² = 0%				
Test for overall effect:	Z = 1.67 (P = 0.10)					
1.1.3 Intervention page	ckage mainly con	sisted of	f training TBAs who ma	ade home visits (antenatal	& intrapartum)	
Gill 2011	-0.248	1.402	1889	1466	0.7%	0.78 [0.05, 12.18]	
Jokhio 2005	-0.301	0.254	10093	9432	14.1%	0.74 [0.45, 1.22]	
Subtotal (95% CI)			11982	10898	14.8%	0.74 [0.45, 1.21]	◆
Heterogeneity: Tau² =	= 0.00; Chi ² = 0.00,	df = 1 (P	= 0.97); I² = 0%				
Test for overall effect:	Z = 1.20 (P = 0.23)					
Total (95% CI)			86060	81251	100.0%	0.80 [0.64, 1.00]	•
Heterogeneity: Tau² =	= 0.03; Chi ² = 12.53	3, df = 10	(P = 0.25); I ² = 20%				
Test for overall effect:	Z = 1.97 (P = 0.05)					0.01 0.1 1 10 100 Intervention Package Standard care
Test for subgroup diff	ferences: Chi ² = 0.	27. df = 2	2 (P = 0.88), I ² = 0 <u>%</u>				intervention Fackage Stanuaru Cale

Impact of Community-based Intervention Packages Neonatal Mortality (1 of 2)

		I	ntervention Package	Standard Care		Risk Ratio	Risk Ratio
Study or Subgroup	log[Risk Ratio]	SE	Total	Total	Weight	IV, Random, 95% CI	IV, Random, 95% Cl
1.2.1 Intervention packa	ige mainly consist	ed of bui	lding community-supp	ort groups/wome	en group	S	
Azad 2010	-0.105	0.107	15153	14736	4.5%	0.90 [0.73, 1.11]	
Baqui - Sylhet 2008 (1)	-0.051	0.16	3009	1436	3.7%	0.95 [0.69, 1.30]	+
Colbourn 2013	-0.1054	0.093	10055	9931	4.7%	0.90 [0.75, 1.08]	+
Fottrell 2013	-0.4308	0.1339	8819	9896	4.1%	0.65 [0.50, 0.85]	+
Lewycka 2013	-0.3285	0.1468	13784	4960	3.9%	0.72 [0.54, 0.96]	
Manandhar 2004	-0.357	0.142	2899	3226	4.0%	0.70 [0.53, 0.92]	
More 2012	0.3507	0.184	7944	7759	3.4%	1.42 [0.99, 2.04]	
Persson 2013	-0.0408	0.1397	11818	10559	4.0%	0.96 [0.73, 1.26]	+
Tripathy 2010	-0.342	0.077	10093	9432	4.9%		+
Subtotal (95% CI)			83574	71935	37.5%	0.84 [0.73, 0.96]	•
Heterogeneity: Tau ² = 0.0	02; Chi² = 21.31, df	= 8 (P =	0.006); I² = 62%				
Test for overall effect: Z =	: 2.62 (P = 0.009)						
1.2.2 Intervention packa	ige mainly consist	ed of cor	nmunity mobilisation a	ind home visitati	on (antei	natal /postnatal)	
Bhutta 2008	-0.371	0.116	2932	2610	4.4%	0.69 [0.55, 0.87]	+
Bhutta 2011	-0.163	0.057	12028	11005	5.2%	0.85 [0.76, 0.95]	+
Kirkwood 2013	-0.943	0.1562	7721	7898	3.8%	0.39 [0.29, 0.53]	→
Kumar 2008 (2)	-0.821	0.147	1482	527	3.9%	0.44 [0.33, 0.59]	
Kumar 2008 (3)	-0.693	0.168	1065	527	3.6%	0.50 [0.36, 0.70]	
Midhet 2011 (4)	-0.386	0.072	740	448	5.0%	0.68 [0.59, 0.78]	+
Midhet 2011 (5)	-0.446	0.077	622	447	4.9%	0.64 [0.55, 0.74]	+
Subtotal (95% CI)			26590	23462	30.9%	0.60 [0.49, 0.72]	•
Heterogeneity: Tau ² = 0.0	05; Chi² = 40.70, df	= 6 (P <	0.00001); I² = 85%				
Test for overall effect: Z =	5.33 (P < 0.00001)					
1.2.3 Intervention packa	ige mainly consist	ed of co	nmunity mobilisation a	ind home-based	neonata	l treatment	
Baqui - Sylhet 2008 (6)	-0.415	0.173	2812	1436	3.6%	0.66 [0.47, 0.93]	
Subtotal (95% CI)			2812	1436	3.6%		\blacklozenge
Heterogeneity: Not applic	cable						
Test for overall effect: Z =							
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Lassi & Bhutta. Cochrane Syst Review 2015

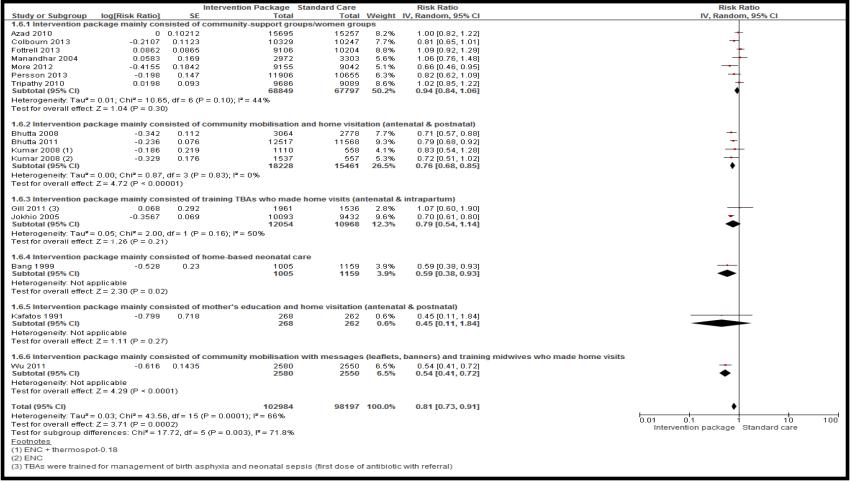
Impact of Community-based Intervention Packages Neonatal Mortality (2 of 2)

1.2.4 Intervention package n	nainly consisted of training T	BAs who made hom	ne visits (ante	natal and	intrapartum)	
Gill 2011 (7)	-0.598 0.261	1889	1446	2.5%	0.55 [0.33, 0.92]	
Jokhio 2005	-0.128 0.061	10093	9432	5.1%	0.88 [0.78, 0.99]	*
Subtotal (95% CI)		11982	10878	7.6%	0.74 [0.48, 1.16]	◆
Heterogeneity: Tau ² = 0.07; C	chi² = 3.07, df = 1 (P = 0.08); l²	= 67%				
Test for overall effect: Z = 1.3	1 (P = 0.19)					
1.2.5 Intervention package n	nainly consisted of home-ba	sed neonatal care &	treatment			
Bang 1999	-0.844 0.238	979	1108	2.7%	0.43 [0.27, 0.69]	
Bhandari 2012	-0.163 0.0502	29667	30813	5.2%	0.85 [0.77, 0.94]	
Subtotal (95% CI)		30646	31921	7.9%	0.63 [0.32, 1.22]	◆
Heterogeneity: Tau ² = 0.20; C	chi ² = 7.84, df = 1 (P = 0.005); l	r = 87%				
Test for overall effect: Z = 1.33	7 (P = 0.17)					
1.2.6 Intervention package n	nainly consisted of mother's	education and home	e visitation (a	ntenatal 8	postnatal)	
Darmstadt 2010	-0.139 0.118	1322	1231	4.4%	0.87 [0.69, 1.10]	
Kafatos 1991	-0.4 0.192	265	254	3.3%	0.67 [0.46, 0.98]	-
Subtotal (95% CI)		1587	1485	7.7%	0.80 [0.63, 1.02]	•
- /	chi² = 1.34, df = 1 (P = 0.25); l²	= 25%				
Test for overall effect: Z = 1.84	4 (P = 0.07)					
1.2.7 Intervention package n	nainly consisted of commun	ity mobilisation with	messages (le	eaflets, ba	nners) and training midw	vives who made home visits
Wu 2011	0.365 0.081	2094	2062	4.9%	1.44 [1.23, 1.69]	+
Subtotal (95% CI)		2094	2062	4.9%	1.44 [1.23, 1.69]	•
Heterogeneity: Not applicable	e					
Test for overall effect: Z = 4.5°	1 (P < 0.00001)					
Total (95% CI)		159285	143179	100.0%	0.75 [0.67, 0.83]	•
Heterogeneity: Tau ² = 0.06; C	hi² = 151.47, df = 23 (P < 0.00	1001); I² = 85%				0.01 0.1 1 10 100
Test for overall effect: Z = 5.23	7 (P < 0.00001)					Intervention package Standard care
Test for subgroup differences	s: Chi ² = 58.54, df = 6 (P < 0.0)	0001), I² = 89.8%				intervention package Standard care

Impact of Community-based Intervention Packages Perinatal Mortality

		Int	aniantian Dackage Stand	and Care		Risk Ratio		Dick Datio
a t b a b			ervention Package Stand					Risk Ratio
	log[Risk Ratio]	SE	Total			IV, Random, 95% CI		IV, Random, 95% Cl
	-		ommunity-support groups/	-				
Azad 2010	-0.04	0.043	15695	15257	6.3%	0.96 [0.88, 1.05]		1
Colbourn 2013	-0.1744		10329	10247	5.7%	0.84 [0.72, 0.98]		-
Fottrell 2013	-0.1165		9106	10204	5.6%	0.89 [0.75, 1.06]		
Lewycka 2013	-0.3011		14064	5059	4.8%	0.74 [0.58, 0.94]		-
Manandhar 2004		0.117	2972	3303	4.9%	0.93 [0.74, 1.17]		
More 2012		0.1318	9155	9042	4.6%	1.01 [0.78, 1.31]		+
Persson 2013	-0.0408		11818	10559	4.5%	0.96 [0.73, 1.26]		-
Tripathy 2010	-0.235	0.062	9686	9089	6.0%	0.79 [0.70, 0.89]		÷.
Subtotal (95% CI)			82825	72760	42.5%	0.88 [0.82, 0.95]		•
Heterogeneity: Tau ² = 0 Test for overall effect: 2			= 0.14); I ^z = 36%					
1.5.2 Intervention pack	kage mainly con	sisted of c	ommunity mobilisation and	home visi	tation (an	tenatal and postnatal)		
Bhutta 2008	-0.329	0.084	3064	2778	5.6%	0.72 [0.61, 0.85]		-
Bhutta 2011	-0.186	0.059	12517	11568	6.1%	0.83 [0.74, 0.93]		-
Kumar 2008 (1)	-0.635	0.17	1110	557	3.9%	0.53 [0.38, 0.74]		- -
Kumar 2008 (2)	-0.616	0.179	1537	558	3.7%	0.54 [0.38, 0.77]		
Midhet 2011	-0.357	0.0456	622	447	6.3%	0.70 [0.64, 0.77]		-
Midhet 2011	-0.673	0.053	740	448	6.2%	0.51 [0.46, 0.57]		+
Subtotal (95% CI)			19590	16356	31.7%	0.64 [0.54, 0.77]		•
Heterogeneity: Tau ² = (Test for overall effect: Z			< 0.00001); I² = 89%					
1.5.3 Intervention pack	kage mainly con	sisted of tr	aining TBAs who made ho	ne visits (a	antenatal	& intrapartum)		
Gill 2011 (3)	-0.2614	0.191	1961	1536	3.5%	0.77 [0.53, 1.12]		
Jokhio 2005 Subtotal (95% CI)	-0.343	0.045	10093 12054	9432 10968	6.3% 9.8%	0.71 [0.65, 0.78] 0.71 [0.65, 0.78]		•
Heterogeneity: Tau ² = 0 Test for overall effect: 2			0.68); I² = 0%					
1.5.4 Intervention pack	kage mainly con	sisted of h	ome-based neonatal care					
Bang 1999	-0.654	0.159	1005	1159	4.1%	0.52 [0.38, 0.71]		
Bhandari 2012	-0.1165	0.067	29667	30813	5.9%	0.89 [0.78, 1.01]		-
Subtotal (95% CI)			30672	31972	10.0%	0.69 [0.41, 1.17]		
Heterogeneity: Tau² = (Test for overall effect: Z			0.002); I ² = 90%					
1.5.5 Intervention pack	kage mainly con	sisted of c	ommunity mobilisation with	messade	s (leaflets	s, banners) and training mi	dwives who made home visits	
Wu 2011	-	0.065	2580	2550	6.0%	1.08 [0.95, 1.23]		+
Subtotal (95% CI)	0.077	5.005	2580	2550	6.0%	1.08 [0.95, 1.23]		•
Heterogeneity: Not app	licable							Γ
Test for overall effect: Z		b)						
Total (95% CI)			147721	134606	100.0%	0.78 [0.70, 0.86]		•
Heterogeneity: Tau ² = 0			P < 0.00001); I² = 88%					
Test for overall effect: Z								Intervention package Standard care
	rences: Chi = 3	9.56, df = 4	(P < 0.00001), I² = 89.9%					
Footnotes								
(1) ENC + thermospot								
(2) ENC								
(3) TBAs were trained f	for management	of birth asp	hyxia and neonatal sepsis	(first dose	of antibioti	c with referral)		

Impact of Community-based Intervention Packages Stillbirths



Lassi & Bhutta. Cochrane Syst Review 2015

Impact of Community-based Intervention Packages Maternal Morbidity

Community mobilization and home visitation

			Intervention Package	Standard Care		Risk Ratio	Risk Ratio
Study or Subgroup	log[Risk Ratio]	SE	Total	Total	Weight	IV, Random, 95% Cl	I IV, Random, 95% CI
Bhutta 2008	-0.1743	0.403	1478	1401	6.5%	0.84 [0.38, 1.85]	
Jokhio 2005	-0.4	0.057	100930	9432	61.7%	0.67 [0.60, 0.75]	
Manandhar 2004	-0.301	0.277	3190	3524	12.5%	0.74 [0.43, 1.27]	− ∎+
Tripathy 2010	0.0295	0.21	9468	8867	19.4%	1.03 [0.68, 1.55]	ı →
Total (95% CI)			115066	23224	100.0%	0.75 [0.61, 0.92]	▲
Heterogeneity: Tau² = Test for overall effect:	•	•	(P = 0.24); I² = 28%			1	0.05 0.2 1 5 20 Intervention package Standard care

Impact of Community-based Intervention Packages Tetanus Toxoid Immunization

Community mobilization and home visitation

			Intervention Package	Standard Care		Risk Ratio	Risk Ratio
Study or Subgroup	log[Risk Ratio]	SE	Total	Total	Weight	IV, Random, 95% CI	IV, Random, 95% Cl
Azad 2010	-0.01	0.072	15695	15257	4.8%	0.99 [0.86, 1.14]	+
Baqui -Sylhet 2008 (1)	0.104	0.043	3009	1436	10.3%	1.11 [1.02, 1.21]	•
Baqui -Sylhet 2008 (2)	0.166	0.054	2812	1436	7.6%	1.18 [1.06, 1.31]	-
Darmstadt 2010	0.049	0.0199	1732	1759	20.8%	1.05 [1.01, 1.09]	•
Gill 2011	0.0198	0.0526	1920	1517	7.8%	1.02 [0.92, 1.13]	+
Kumar 2008 (3)	0.0295	0.015	1122	564	23.6%	1.03 [1.00, 1.06]	+
Kumar 2008 (4)	0.0295	0.015	1559	565	23.6%	1.03 [1.00, 1.06]	+
Midhet 2011 (5)	0.5878	0.2069	836	511	0.7%	1.80 [1.20, 2.70]	
Midhet 2011 (6)	-0.3567	0.2855	703	511	0.4%	0.70 [0.40, 1.22]	
Tripathy 2010	-0.105	0.29	9468	8867	0.4%	0.90 [0.51, 1.59]	
Total (95% CI)			38856	32423	100.0%	1.05 [1.02, 1.09]	
Heterogeneity: Tau ² = 0.0	00; Chi² = 18.66, d	#f = 9 (P =	: 0.03); I² = 52%				
Test for overall effect: Z =	= 2.94 (P = 0.003)						Standard care Intervention package
(1) community care arn	n						
(2) home care arm							
(3) ENC							
(4) ENC + thermospot							
(5) W-IECC							
(6) C-IECC							

Impact of Community-based Intervention Packages Iron\folic acid supplementation

Community mobilization and home visitation

			Intervention Package	Standard Care		Risk Ratio	Risk	Ratio	
Study or Subgroup	log[Risk Ratio]	SE	Total	Total	Weight	IV, Random, 95% CI	IV, Rando	m, 95% C	l
Azad 2010	-0.041	0.18	15695	15257	13.6%	0.96 [0.67, 1.37]	-1	-	
Baqui -Sylhet 2008 (1)	0.588	0.134	3009	1436	14.3%	1.80 [1.38, 2.34]		-	
Baqui -Sylhet 2008 (2)	1.212	0.043	2812	1436	15.1%	3.36 [3.09, 3.66]		•	
Darmstadt 2010	0.262	0.032	1732	1759	15.2%	1.30 [1.22, 1.38]		•	
Gill 2011	-0.0101	0.0157	1920	1517	15.2%	0.99 [0.96, 1.02]		ŧ	
Manandhar 2004	0.688	0.284	3190	3524	11.6%	1.99 [1.14, 3.47]			
Tripathy 2010	0.029	0.072	9468	8867	15.0%	1.03 [0.89, 1.19]	-	+	
Total (95% CI)			37826	33796	100.0%	1.47 [0.99, 2.17]		◆	
Heterogeneity: Tau ² = 0.	.26; Chi ² = 744.21,	df = 6 (P	< 0.00001); I ^z = 99%				0.01 0.1		
Test for overall effect: Z	= 1.93 (P = 0.05)						Standard care	• •	
(1) Community care ar (2) home care arm	rm						ciandara care	intervent	ion paokag

Impact of Community-based Intervention Packages Institutional Deliveries

Community mobilization and home visitation

			Intervention Package	Standard Care		Risk Ratio	Risk Ratio
Study or Subgroup	log[Risk Ratio]	SE			Weight	IV, Random, 95% CI	IV, Random, 95% CI
Azad 2010	-0.0304	0.12	15695		8.1%	0.97 [0.77, 1.23]	+
Bhutta 2008	0.871	0.153	395	375	7.2%	2.39 [1.77, 3.22]	
Bhutta 2011	0.215	0.085	292	267	9.1%	1.24 [1.05, 1.46]	-
Darmstadt 2010	0.207	0.076	1759	1732	9.3%	1.23 [1.06, 1.43]	-
Fottrell 2013	0.0488	0.0901	9106	10204	9.0%	1.05 [0.88, 1.25]	+
Jokhio 2005	-0.094	0.033	10114	9443	10.1%	0.91 [0.85, 0.97]	•
Kirkwood 2013	-0.0305	0.092	5373	5539	8.9%	0.97 [0.81, 1.16]	+
Kumar 2008 (1)	0.255	0.225	1135	1143	5.3%	1.29 [0.83, 2.01]	+
Kumar 2008 (2)	0.344	0.213	1179	572	5.6%	1.41 [0.93, 2.14]	
Lewycka 2013	0.2852	0.2345	4538	4148	5.1%	1.33 [0.84, 2.11]	+
Manandhar 2004	1.267	0.42	2945	3270	2.4%	3.55 [1.56, 8.09]	
Midhet 2011 (3)	0.2624	0.3158	836	511	3.6%	1.30 [0.70, 2.41]	
Midhet 2011 (4)	0.2624	0.3945	703	511	2.6%	1.30 [0.60, 2.82]	
More 2012	-0.0834	0.2354	7656	7536	5.0%	0.92 [0.58, 1.46]	-
Tripathy 2010	-0.4462	0.2528	9468	8867	4.7%	0.64 [0.39, 1.05]	
Wu 2011	0.583	0.282	6730	591	4.1%	1.79 [1.03, 3.11]	
Total (95% CI)			77924	69966	100.0%	1.20 [1.04, 1.39]	•
Heterogeneity: Tau ² =	= 0.05; Chi ² = 76.7	5, df = 15	5 (P < 0.00001); I ² = 80%				
Test for overall effect:	Z = 2.48 (P = 0.01	n ⁱ	, ,,				0.01 0.1 1 10 100 Standard care Intervention package
							Standard care intervention package
(1) ENC							
(2) ENC + thermos	pot						
(3) W-IECC							
(4) C-IECC							

Impact of Community-based Intervention Packages Use of Clean Delivery Kits

Community mobilization and home visitation

			Intervention Package	Standard Care		Risk Ratio	Risk Ratio
Study or Subgroup	log[Risk Ratio]	SE	Total	Total	Weight	IV, Random, 95% CI	IV, Random, 95% CI
Azad 2010	0.247	0.301	15695	15257	20.9%	1.28 [0.71, 2.31]	
Bhutta 2011	0.2546	0.0326	867	1102	29.2%	1.29 [1.21, 1.38]	•
Manandhar 2004	1.36	0.208	2945	3270	24.6%	3.90 [2.59, 5.86]	
Tripathy 2010	0.554	0.191	8084	7034	25.3%	1.74 [1.20, 2.53]	
Total (95% CI)			27591	26663	100.0%	1.82 [1.10, 3.02]	◆
Heterogeneity: Tau ² = Test for overall effect:	•		P < 0.00001); I² = 90%				0.01 0.1 1 10 100 Standard care Intervention packag

Impact of Community-based Intervention Packages Initiation of Breastfeeding within an Hour

Community mobilization and home visitation

		Intervention Package	Standard Care		Risk Ratio	Risk Ratio
[Risk Ratio]	SE	Total	Total	Weight	IV, Random, 95% CI	IV, Random, 95% Cl
0.351	0.022	1760	845	8.9%	1.42 [1.36, 1.48]	•
0.215	0.025	1661	845	8.9%	1.24 [1.18, 1.30]	-
1.292	0.038	6204	6163	8.8%	3.64 [3.38, 3.92]	•
1.144	0.106	395	375	8.2%	3.14 [2.55, 3.86]	-
0.4367	0.0427	2326	2122	8.8%	1.55 [1.42, 1.68]	-
0.378	0.029	1322	1231	8.9%	1.46 [1.38, 1.54]	-
0.1989	0.0669	3743	3280	8.6%	1.22 [1.07, 1.39]	-
1.52	0.154	1065	527	7.6%	4.57 [3.38, 6.18]	-
1.475	0.154	1581	1143	7.6%	4.37 [3.23, 5.91]	-
0.571	0.4247	4414	4248	3.8%	1.77 [0.77, 4.07]	+
0.336	0.51	2899	3226	3.1%	1.40 [0.52, 3.80]	
0.0953	0.1081	7656	7536	8.2%	1.10 [0.89, 1.36]	+
0.489	0.06	2787	3110	8.7%	1.63 [1.45, 1.83]	-
		37813	34651	100.0%	1.93 [1.55, 2.39]	•
hi² = 766.66,	df = 12 (l	P < 0.00001); I² = 98%				0.01 0.1 1 10 100
i (P < 0.0000	1)					0.01 0.1 1 10 100 Standard care Intervention package
						Standard care Intervention package
ŀ	0.351 0.215 1.292 1.144 0.4367 0.378 0.1989 1.52 1.475 0.571 0.336 0.0953 0.489	0.351 0.022 0.215 0.025 1.292 0.038 1.144 0.106 0.4367 0.0427 0.378 0.029 0.1989 0.0669 1.52 0.154 1.475 0.154 0.571 0.4247 0.336 0.51 0.0953 0.1081 0.489 0.06	0.351 0.022 1760 0.215 0.025 1661 1.292 0.038 6204 1.144 0.106 395 0.4367 0.0427 2326 0.378 0.029 1322 0.1989 0.0669 3743 1.52 0.154 1065 1.475 0.154 1581 0.571 0.4247 4414 0.336 0.51 2899 0.0953 0.1081 7656 0.489 0.06 2787 37813	0.351 0.022 1760 845 0.215 0.025 1661 845 1.292 0.038 6204 6163 1.144 0.106 395 375 0.4367 0.0427 2326 2122 0.378 0.029 1322 1231 0.1989 0.0669 3743 3280 1.52 0.154 1065 527 1.475 0.154 1581 1143 0.571 0.4247 4414 4248 0.336 0.51 2899 3226 0.0953 0.1081 7656 7536 0.489 0.06 2787 3110	0.351 0.022 1760 845 $8.9%$ 0.215 0.025 1661 845 $8.9%$ 1.292 0.038 6204 6163 $8.8%$ 1.144 0.106 395 375 $8.2%$ 0.4367 0.0427 2326 2122 $8.8%$ 0.378 0.029 1322 1231 $8.9%$ 0.1989 0.0669 3743 3280 $8.6%$ 1.52 0.154 1065 527 $7.6%$ 1.475 0.154 1581 1143 $7.6%$ 0.571 0.4247 4414 4248 $3.8%$ 0.336 0.51 2899 3226 $3.1%$ 0.0953 0.1081 7656 7536 $8.2%$ 0.489 0.06 2787 3110 $8.7%$ 0.489 0.06 2787 3110 $8.7%$	0.351 0.022 1760 845 8.9% 1.42 [1.36, 1.48] 0.215 0.025 1661 845 8.9% 1.24 [1.18, 1.30] 1.292 0.038 6204 6163 8.8% 3.64 [3.38, 3.92] 1.144 0.106 395 375 8.2% 3.14 [2.55, 3.86] 0.4367 0.0427 2326 2122 8.8% 1.55 [1.42, 1.68] 0.378 0.029 1322 1231 8.9% 1.26 [1.38, 1.54] 0.1989 0.0669 3743 3280 8.6% 1.22 [1.07, 1.39] 1.52 0.154 1065 527 7.6% 4.57 [3.38, 6.18] 1.475 0.154 1581 1143 7.6% 4.37 [3.23, 5.91] 0.571 0.4247 4414 4248 3.8% 1.77 [0.77, 4.07] 0.336 0.51 2899 3226 3.1% 1.40 [0.52, 3.80] 0.953 0.1081 7656 7536 8.2% 1.10 [0.89, 1.36] 0.489 0.06

Impact of Community-based Intervention Packages Health care seeking for maternal illnesses

		int	ervention (Risk Ratio	Risk Ratio
tudy or Subgroup	log[Risk Ratio]	SE	Total	Total	Weight	IV, Random, 95% CI	IV, Random, 95% CI
1.1 Community mo	bilization						
lanandhar 2004	0.575	0.0851	3190	3524	12.9%	1.78 [1.50, 2.10]	
lidhet 2010 (1)	-0.2135	0.0432	836	511	14.9%	0.81 [0.74, 0.89]	-
lidhet 2010 (2)	-0.0524	0.0409	703	511	15.0%	0.95 (0.88, 1.03)	-
ripathy 2010	-0.2485	0.3537	945	922	3.2%	0.78 (0.39, 1.66)	
ubtotal (95% CI)			5674	5468	46.1%	1.05 [0.77, 1.45]	+
eterogeneity: Tau* =	0.09; Chi* = 69.5	7, df = 3 (P +	0.00001); P	= 96%			
ent for overall effect	Z=0.32 (P=0.75	9					
1.2 Home visitation							
ashour 2008 (3)	0.0075	0.1075	294	148	11.6%	1.01 (0.82, 1.24)	
ashour 2008 (4)	0.0855		285	149		0.92[0.74, 1.14]	
ubtotal (95% CI)			579	297	23.0%	0.96 (0.83, 1.17)	•
ieterogeneity: Teu#=	0.00; Chi*= 0.36	df = 1 (P = 1	0.65) P=0%				1
est for overall effect							
1.3 Community mo	bilization + home	visitation					
umar 2008 (5)	0.1394	0.029	1122	564	15.4%	1 15 (1.09, 1.22)	*
umar 2008 (6)	0.1450	0.0273	1559	565	15.5%	1 16 [1 10, 1 22]	
ubtotal (95% CI)	1. 10. 10. 10. 10.		2681	1129	30.9%	1.15 [1.11, 1.20]	•
eterogeneity: Tau#+	0.00; Chi#= 0.03	df = 1 (P = 1	0.67); #= 0%			0.002.002.000.002.002.002.002.002.002.0	
est for overall effect	Z = 7.19 (P × 0.00	001)					
otal (95% CI)			8934	6894	100.0%	1.06 (0.92, 1.22)	•
eterogeneity: Tau*=	0.03; Chi*= 103.	75. ef = 7 (P	= 0.00001);	1*= 93%		10 10 10	1. 1. 1. 1 1 1 t
est for overall effect.							0.1 0.2 0.5 1 2 5 10
est for subgroup diff	ferences: Chi* = 5	29, df = 2 (F	= 0.075, #=	62.2%			Favours control Favours Intervention
ootnotes	an near subserve		- Sundanie	2000			
1) Women - Informal	tion and Education	for Empow	erment and	Change			
2) Couple - Informat							
3 Single visit	01-1-10-000-000-000	1990 800 800					
E Four visits							
Essential Newbor	n Cale + thermo :	Spice.					
Essentail Newbor							

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Impact of Community-based Intervention Packages Health care seeking for neonatal illnesses

		limit	arvention	Control		Risk Ratio	Risk Ratio
hady or Subgroup	log[Risk Ratio]	58	Tortal	Total	Weight	IV, Random, 95% CI	IV, Random, 95% CI
2.1 Community mo	bilization		2.275.25			Later Longage College	
and 2010	-0.1165	0.1153	4457	4441	10.2%	0.89 (0.71, 1.12)	-
fanandhar 2004	0.6097	0.1073	2823	3107	10.4%	1.84 (1.49, 2.27)	-
tore 2012	-0.0834	0.118	2590	2566	10,1%	0.92 (0.73, 1.16)	+
ripathy 2010	0.4253	0.3503	940	1050	4.4%	1.53 (0.77, 3.04)	
iubtotal (95% CI)			10010	11154	35.1%	1.20 (0.79, 1.03)	•
eterogeneity: Tau#=	0.15; Ch/*= 28.1	1. df = 3 @ -	0.00001);	(*= 89%			
est for overall effect	Z=0.87 (P=0.3)	R)					
2.2 Home visitation	í						
lari 2006	0.5785	0.1002	270	257	10.6%	1.78 [1.47, 2.17]	-
armstadt 2010	0.4904	0.0835	355	400	11.1%	1.62 (1.37, 1.90)	+
Griewood 2013	0.3577	0.1024	102	77	10.6%	1.43 [1.17, 1.75]	-
iubtotal (95% CI)			727	734	32.3%	1.61 [1.43, 1.81]	•
ieterogeneity: Tau# = 'est for overall effect			0.30); P=1	6%			
2.3 Community mo	blization + home	visitation					
umar 2068 (1)	0.3846	0.0816	1522	539	11.1%	1.47 [1.25, 1.72]	-
umar 2008 (2)	0.6050	0.0803	1087	540	11.1%	1.99 [1.70, 2.32]	+
ubtotal (55% CI)			2609	1079	22.2%	1.71 [1.27, 2.29]	•
ieterogeneity: Tau#+ 'est for overall effect			0.00%); P =	06%			
2.4 Enhanced peril	natal careleducat	ion					
licen 2008	0.0496	0.1094	1970	1913	10.4%	1.05 (0.85, 1.30)	+
labtotal (95% CI)			1970	1913	10.4%	1.05 (0.85, 1.30)	•
leterogeneity: Not as	plicable.						
ect for overall effect	$Z = 0.44 \{P = 0.64}$	6)					
otal (95% CI)			16116	14890	100.0%	1.40 [1.17, 1.68]	•
ieterogeneity: Tau#=	0.07; Ch#=67.6	6, df = 9 (P -	0.00001);	P= 87%			101 0.1 10 100
est for overall effect	Z=3.70 (P=0.00	002)					Favours control Favours intervention
est for subgroup diff	ferences: Chi#= 1	3.67, df = 3	(P = 0.004)	P=77.9	×-		Labora Source Labora companyon
cotnotes.							
t) Essential Newton	n Care						
OI CREAMENT REMARKS	n Care + thermo	to ot					

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Impact of Community-based Intervention Tuberculosis treatment success

Study or Subgroup	log[Risk Ratio]	SE	Weight	Risk Ratio IV, Fixed, 95% CI	Risk Ratio IV, Fixed, 95% Cl
Amo-Adiei 2013	0.6817	0.1193	0.5%	1.99 [1.66, 2.60]	
Atkins 2011	0.0783	0.0291	7.7%	1.00 [1.02, 1.14]	
Barker 2002	0.0366	0.0327	6.1%	1.04 [0.97, 1.11]	
Brust 2012	0.5595	0.1254	0.4%	1,75[1.37, 2.24]	
CDI-study	0.0183	0.061	1.7%	1.02 [0.90, 1.15]	
Chaisson 2001	0.0101	0.0722	1.2%	1.01 [0.88, 1.16]	
Clarke 2005	0.0773	0.0822	1.0%	1.09 [0.92, 1.27]	
Colvin 2003	0.1499	0.0665	1.5%	1.16 [1.02, 1.32]	
Dudley 2003	0.029	0.0414	3.8%	1.03 [0.95, 1.12]	-
Ferreira 2011	0.209	0.019	18.0%	1.23 (1.19, 1.20)	-
Filho 2011	0.1977	0.0996	0.7%	1.22 [1.00, 1.48]	
Gandhi 2008	0.3369	0.0909	0.8%	1.40[1.17, 1.67]	
Heal 1998	-0.4836	0.093	0.7%	0.62 (0.61, 0.74)	
Kamineni 2011	0.0085	0.021	14.7%	1.01 [0.97, 1.05]	+
Kampiratanakul 1999	0.1016	0.0364	5.2%	1.11[1.03, 1.19]	
khan 2002	0.0776	0.1051	0.6%	1.08 [0.88, 1.33]	
Kironde 2002	0.0428	0.0541	2.2%	1.04 [0.94, 1.16]	
Lwilla 2003	0.0739	0.0864	0.9%	1.08 (0.91, 1.28)	
Macintyre 2003	-0.2089	0.0999	0.6%	0.81 [0.67, 0.99]	
Mafigin 2012	-0.2437	0.1088	0.5%	0.78 [0.63, 0.97]	
Malotte 2001	-0.1273	0.1702	0.2%	0.88 [0.63, 1.23]	
Miti 2003	0.2217	0.1404	0.3%	1.25 [0.95, 1.64]	
Newell 2006	0.0507	0.0259	9.7%	1.05[1.00, 1.11]	+
Niazi 2003	0.1991	0.0071	0.9%	1.22 [1.03, 1.45]	
Oile Golg 2001	0.4042	0.0784	1.1%	1.50 [1.28, 1.75]	
Prado 2011	0.1603	0.0535	2.3%	1.17 [1.06, 1.30]	
Vassal 2002a	0.4787	0.0917	0.8%	1.61 [1.35, 1.93]	
Vassal 2002b	0.1335	0.0988	0.7%	1.14 [0.94, 1.39]	
Vieira 2011	0.0674	0.05	2.6%	1.07 [0.97, 1.18]	+
Walley 2001	-0.0376	0.6837	0.9%	0.96 [0.82, 1.13]	
Wandwalo 2004	0.0253	0.0362	4.9%	1.03 [0.96, 1.10]	+
White 2002	0.7092	0.338	0.1%	2.03 (1.05, 3.94)	
Wright 2004	-0.0261	0.0383		0.97 [0.90, 1.05]	-+
Yassin 2013a	0.1888	0.0612	1.7%	1.21 [1.07, 1.36]	
Zwarenstein 1998	0.1044	0.1184	0.5%	1.11 [0.88, 1.40]	
Zwarenstein 2000	0.2638	0.1398	0.3%	1.38 [0.99, 1.71]	
Total (95% CI)			100.0%	1.09 [1.07, 1.11]	
Heterogeneity: Chi#= 2	31.91, df = 35 (P <	6	05 07 15 2		
Test for overall effect Z	= 10.91 (P + 0.000		Favours control Favours intervention		

Arshad et al. Infectious Dis of Poverty. 2014

Impact of Community-based Intervention Prevalence of Malaria

	1210-011-00-05-05-05	5 M.	weater-	Risk Ratio	Risk Ratio
Study or Subgroup	log[Risk Ratio]	SE	Weight	IV, Random, 95% Cl	IV, Random, 95% CI
1.9.1 Community ba:	sed ITN/IRS delive	ry			
Dapeng 1996	-0.3269	0.1508	10.9%	0.72 [0.54, 0.97]	
Kulle 2003	-0.734	0.191	10.6%	0.48 (0.33, 0.70)	+
Sharma 2009	-0.673	0.137	11.0%	0.51 [0.39, 0.67]	-
Thang 2009 Subtotal (95% CI)	-1.897	0.261	10.0%	0.15 [0.09, 0.25] 0.42 [0.25, 0.70]	
Heterogeneity: Tau ² :	= 0.25; Chi# = 27.2	2, df = 3 ((P < 0.000	001); /= 89%	
Test for overall effect	Z = 3.28 (P = 0.00	11)	N 1999		
1.9.2 Community ba	sed IPT				
Ahorlu 2011	-2.1789	0.2598	10.0%	0.11 (0.07, 0.19)	
Delacollete 1996	-0.3269	0.1508	10.9%	0.72 [0.54, 0.97]	-
Msyamboza 2009	0.0582	0.249		the second se	
Subtotal (95% CI)			31.0%	0.45 [0.14, 1.47]	-
Heterogeneity: Tau*: Test for overall effect			(P < 0.001	001); (* = 96%	
1.9.3 Community ba	sed education and	d cleanlin	ness		
Ayi 2010	-0.433	0.4607	8.0%	0.65 (0.26, 1.60)	
Castro 2009 (1)	0.531	0.222	10.4%	1.70 [1.10, 2.63]	
Castro 2009 (2) Subtotal (95% CI)	-2.12	0.447	8.1% 26.5%	0.12 (0.05, 0.29) 0.53 (0.11, 2.59)	
Heterogeneity: Tau*:	= 1.83: ChP = 28.9	8. df = 2.			
Test for overall effect			000010727		
Total (95% CI)			100.0%	0.46 [0.29, 0.73]	•
Heterogeneity: Tau ^a :	= 0.50; Chi? = 113.	60, df = 9	(P < 0.00	0001); (*= 92%	0.01 0.1 1 10 100
Test for overall effect	Z = 3.26 (P = 0.00	11)			0.01 0.1 1 10 100 Favours Intervention Favours Control
Test for subgroup dif (1) Environment+Ls (2) Environmental M	ferences: Chi ^a = 0. arvicide		2 (P = 0.9	6), i* = 0%	Payours intervention Payours Control

Salam et al. Infectious Dis of Poverty. 2014

Expanding the Community Health Worker Mandate

- Task shifting may allow CHWs or less trained TBAs to receive training and perform interventions that might have reserved for highly trained professionals.
- No global consensus exists on the appropriate package of services for CHWs
- Neonatal resuscitation, the administration of intravenous antibiotics, and the management of postpartum haemorrhage with uterotonics are some of the interventions that may be appropriate for CHWs.

Improving the Quality of Community-Based Care

- Ensuring that care provided in communities meets quality standards
 - training and supervision are crucial mechanisms for ensuring quality care.
- Training styles to stimulate training to less educated or illiterate CHWs (interactive sessions, including small group discussions, clinical vignettes, and field training).
- Training should take into account differences in cultural and religious beliefs and particular practices of communities.
- A program tailored to communities' specific needs and health concerns is preferable.

Mobile Technology

- Use of mobile health (mHealth) tools may increase the effectiveness of CHWs
- Mobile technology can be used for a variety of purposes, from helping CHWs collect comprehensive, timely, and precise health data to providing CHWs with information and reminders about health care practices and protocols via text messaging.
- Mobile technology can also play a role in training, peer-to-peer learning, and monitoring of the performance of CHWs
- Regular follow-up and evaluation of training courses will reinforce knowledge and skills as well as provide opportunities to acknowledge problems and issues that have arisen.

Improving Referral System

- For referral systems to be effective, transportation and communications capabilities must be in place, and CHWs must be integrated into the primary health care system.
- Integrating CHWs into the primary health care system, as well as ensuring sufficient staffing at facilities, is vital for ensuring strong referrals and for alerting facilities of the imminent arrival of patients.

Enhancing Motivation

- In the absence of appropriate compensation, along with weak supervision and monitoring systems, a lack of effort and decline in performance among CHWs has been noted.
- Although some may serve on a voluntary basis, full-time status would help improve performance and encourage CHWs to exert the effort necessary to deliver quality care.
- Nonfinancial incentives can also play a key role in the overall satisfaction and motivation of CHWs

Building Links with Community and Local Health Facilities

- Primary care services need to be well linked with the community
- Effective communication must be present along with feedback mechanisms.
- Community concerns may be conveyed to higher authorities/channels.

Research Gaps

- The studies available for review are mostly program evaluations without comprehensive and high-quality study designs.
- RCTs are limited to evaluation of interventions to improve newborn, child, and maternal outcomes.
- The majority of community-based health programs are based in South Asian and Sub-Saharan African countries, and CHWs remain the core of the community based care concept.
- Very few studies has studied the quality of life and satisfaction among the CHWs themselves.

Research Gaps

- Scarce evidence about whether the CHWs are over- or underutilized, and the impact of incentives, work hours, and job-related satisfaction on the performance of CHWs.
- Evidence is also needed on the cost-effectiveness of small and large nutrition and other community-based programs, the role of public and private partnerships, and the effect of political will and stability on health care delivery.
- More learning is also needed from community-based programs from HICs, with lessons adapted to LMICs.

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