Supplementary Table 1: Mixed methods approach (quantitative and qualitative)

Author,	Study	Design/															Qua
journal,	aim/title	Design/ Data	***	***	XXX	***	XXX	-	***	-	***	***	***	***	***	***	lity
year	of study	source	Was	Was	Was	Were	Was a	For	Was	For	Were	Was	Were	Were	Was	Were	rati
year	or study	(Cross-	the	the	the	all the	sample	the	the	expos	the	the	the	the	loss	key	
		sectiona	resea	study	partici	subject	size	analys	timefr	ures	exposu	expos	outco	outco	to	potenti	ng
		sectiona	rch	popul	pation	S	justific	es in	ame	that	re	ure(s)	me	me	foll	al	
		(0,000,000,42)	ques	ation	rate of	selecte	ation,	this	suffic	can	measur	assess	measur	assess	ow-	confou	
		(quanti/	tion	clearl	eligibl	d or	power	paper,	ient	vary	es	ed	es	ors	up	nding	
		quali),	or	У	e	recruit	descri	were	so	in	(indep	more	(depen	blinde	after	variabl	
		longitud	obje	specif	person	ed	ption,	the	that	amou	endent	than	dent	d to the	base	es	
		inal,	ctive	ied	s at	from	or	expos	one	nt or	variabl	once	variabl	exposu	line	measur	
		prospec	in	and	least	the	varian	ure(s)	could	level,	es)	over	es)	re	20%	ed and	
		tive,	this	defin	50%?	same	ce and	of	reaso	did	clearly	time?	clearly	status	or	adjuste	
		retrospe	pape	ed?		or	effect	interes	nably	the	define		define	of	less	d	
		ctive	r			similar	estima	t	expec	study	d,		d,	partici	?	statisti	
		(includi	clear			popula	tes	measu	t to	exami	valid,		valid,	pants?		cally	
		ng	ly			tions	provid	red	see an	ne	reliabl		reliabl			for	
		health	state			(includ	ed?	prior	associ	differ	e, and		e, and			their	
		facilities	d?			ing the		to the	ation	ent	imple		imple			impact	
		record				same		outco	betwe	levels	mented		mented			on the	
		review),				time		me(s)	en	of the	consist		consist			relatio	
		seconda				period)		being	expos	expos	ently		ently			nship	
		ry				? Were		measu	ure	ure as	across		across			betwee	
		analysis				inclusi		red?	and	relate	all		all			n	
		of data,				on and			outco	d to	study		study			exposu	
		case-				exclusi			me if	the	partici		partici			re(s)	
		control,				on			it	outco	pants?		pants?			and	
		RCT,				criteria			existe	me						outco	
		survey				for			d?	(e.g.,						me(s)?	
		(DHS,				being				categ							
		SPA,				in the				ories							
		MICs				study				of							
		ect)				prespe				expos							
						cified				ure,							
						and				or							
						applie				expos							
						d				ure							

				unifor mly to all partici pants?			meas ured as contin uous variab le)?				
Birungu et al, Internati onal Perspecti ves on Sexual and Reprodu ctive Health, 2011	Maternal Health Care Utilizatio n Among HIV- Positive Female Adolesce nts in Kenya	Cross- sectional; Analysis of pregnan cy history data			NA	NA	N/A	NA	N/A	NA	Goo d
Taffa & Chepnge no, Tropical Med Int H, 2005	Determin ants of health care seeking for childhoo d illnesses in Nairobi slums	Nairobi Urban Demogr aphic Surveilla nce System (NUDSS).			NA	NA	N/A	NA	N/A	NA	Goo d
Chege et al, East Af. M J, 2002	Childcar e practices of commerc ial seks workers	Cross- sectional ; Mixed methods ; FGDs			N/A	N/A	N/A	NA	N/A	NA	Fair

Tann et, BMC Preg Childbirt h, 2007	Use of antenatal services and delivery care in Entebbe, Uganda: a communi ty survey	cross- sectional retrospe ctive commun ity survey			NA	NA	N/A	NA	N/A	NA	Goo d
Sanni et al, Int	Factors associate	Cross- sectional									
Health,	d with	; 2011									
2018	maternal	DHS									
	utilizatio										
	n of										
	health facilities										
	for										
	delivery										
	in										Goo
	Ethiopia				NA	NA	N/A	NA	N/A	NA	d
Ngandu	Wealth-	Cross-									
et al, BMJ	related	sectional									
Open,	inequalit y in early	survey, 2012									
2017	uptake of	PMTCT									
	HIV	program									
	testing	me									
	among										
	pregnant										
	women:										
	analysis										
	of data										
	from a										
	national				27/	27/	27/		27//		Goo
	cross-				N/A	N/A	N/A	NA	N/A	NA	d

	sectional survey										
Mustaph a et al, BMC infectiou s diseases, 2018	Utilizatio n of "preventi on of mother- tochild transmiss ion" of HIV services by adolesce nt and young mothers in Mulago Hospital,	cross- sectional and mixed methods study which employe d both quantitat ive and qualitati ve methods									
Anastasi et al, PLOS ONE, 2017	Uganda Unmaski ng inequaliti es: Sub- national maternal and child mortality data from two urban slums in Lagos,	Cross- sectional , commun ity- based househol d survey			N/A NA	NA NA	NA NA	NA NA	N/A	NA NA	Fair

	Nigeria tells the story										
Adewuyi et al, Scandina vian journal of Public health, 2017	ce and factors associate d with non-utilizatio n of healthcar e facility for childbirt h in rural and urban Nigeria: Analysis of a national populatio n-based	Cross- sectional survey									Goo
Antai, BMC Public Health, 2010	survey Migratio n and child immuniz ation in Nigeria: individua l- and communi ty-level factors	2003 Nigeria Demogr aphic and Health Survey (DHS)			NA NA	NA NA	NA NA	NA NA	N/A N/A	NA NA	d Goo d

Mekonn en & Mekonn en, J Health Popul Nutr, 2003	Factors Influenci ng the Use of Maternal Healthca re Services in Ethiopia	2000 Ethiopia Demogr aphic and Health Survey			NA	NA	NA	NA	N/A	NA	Fair
Owiti et al, Pan African Medical Journal, 2018	Utilizatio n of Kenya's free maternal health services among women living in Kibera slums: a cross- sectional study	Cross- sectional			NA	NA		NA	N/A	NA	Goo d
Adewuyi et al, PLOSO NE, 2018		2013 Nigeria Demogr aphic and Health Survey			NA	NA	NA	NA	N/A	NA	Goo d

iv od an un re s or 20 N de pl he su	n the 013 ligeria emogra hic and ealth urvey											
su et al, public in health, 2015 de au of va or al, public in de au or va or au or cl au au o	f three interventi ins and etermin ints in in ints in in in in ints in ints in ints in ints in ints in ints in intervention in ints in intervention in interventi	cross- sectional study using the Multiple Indicator Cluster Survey (MICS) 2011 conducte d by the Kenya National Bureau of Statistics (KNBS) with support from UNICEF			NR	N/A	N/A	N/A	N/A	N/A	NA	Fair

Machira	The	2010												1
and	factors	Malawi												
Palamul	associate	Demogr												
eni,	d with	aphic												
Journal	women's	and												
of Egypt	use of	Health												
Public	postpartu	Survey												
Health	m care	data												
Associat	services	which is												
ion, 2017	in urban	the												
,	areas as	national												
	compare	represen												
	d with	tative												
	the rural	survey												
	areas in	of												
	Malawi.	women												
		in the												
		reproduc												
		tive age												
		between												
		15 and												Goo
		49 years.				N/A	N/A	N/A		NA		N/A	NA	d
Engodi	Determin	Nairobi												
et al,	ants of	Cross-												
IJEH,	immuniz	Sectiona												
2015	ation	1 Slum												
	inequalit	Survey												
	y among	of 2012												
	urban													
	poor													
	children:													
	evidence													
	from													
	Nairobi's													
	informal													
	settlemen													
	ts				NR	N/A	N/A	N/A	NR	N/A	NR	N/A	NA	Fair

Phiri et al, BMC Preg Childbirt h, 2014	Factors associate d with health facility childbirt h in districts of Kenya, Tanzania and Zambia: a populatio n based survey	A populati on-based survey in 2007			N/A	N/A	N/A		N/A		N/A	NA	Fair
Fotso,	Describe	Cross-			 								
Ezeh &		sectional											
Oronje; Journal	provision of												
of Urban	obstetric												
Health,	care in												
2008	the												
	Nairobi												
	informal												
	settlemen												
	ts; (2)												
	describe												
	the												
	patterns												
	of antenatal												
	and												
	delivery												
	care,												
	notably												
	in terms												Goo
	of				N/A	N/A	N/A	NR	N/A	NR	N/A	NA	d

	timing, frequenc y, and quality of care;												
Fotso et al, Maternal and child health Journal, 2008	Identify the factors which influence the choice of place of delivery among the urban poor in Nairobi, Kenya	Cross- sectional				N/A	NA	NA	NA	NA	N/A	NA	Goo d
Bayu et al, Global Health Action, 2015	Identify factors affecting unplanne d home delivery in urban settings	Commu nity- based follow- up study								NA	N/A	N/A	Fair
Kibiribir i et al, Int J of Gyn & Ob, 2016	Examine disparitie s in the	A cross- sectional , mixed methods study			NR	N/A	N/A	N/A		N/A	N/A	N/A	Fair

	pregnant refugee women and local South African pregnant women											
Aidam et al EJCN, 2005	Assess factors associate d with exclusive breast- feeding (EBF) in Accra, Ghana	Cross- sectional			NR	N/A	CD	N/A	N/A	N/A	N/A	Fair
Bellows et al, Health Policy Plan, 2012	Measure the associati on between the introduct ion of an output- based voucher program me and the odds of a facility- based delivery in two Nairobi informal	Cross-sectional analysis of the 2004 - 2005 & 2006– 2008 NUDHS S data			RNR	N/A	N/A	N/A	N/A	N/A	N/A	Fair

	settlemen ts.											
Olusany a, Alakija, Inem, J Biosc Sci, 2010	Etablish the pattern and uptake of maternity services and associate d factors against the backdrop of rapid	Cross- sectional										
	urbanizat ion in Nigeria.				N/R**	N/A	N/A	N/A	N/A	N/A	N/A	Goo d
Rossier et al, Global Health Action, 2014 Belayne h, Adefris and	To assess MH utilizatio n in Nairobi and Ouagado ugou Assess timing of ANC booking	Cross- sectional analysis of 2009 - 2011 HDSS data Hospital -based cross- sectional			NR	N/A	N/A	N/A	N/A	N/A	N/A	Goo d
Andargi e, 2014	and associate d factors	study				N/A	N/A	N/A	N/A	N/A	N/A	Fair

	among pregnant women attending ANC clinic at Universit y of Gondar Hospital, 2013										
Babirye et al,	Urban settings	Mixed methods									
BMC	do not	approac									
Health Services	ensure access to	h (quantita									
Research	services:	tive and									
2014	findings	Qualitati									
	from the immunis	ve collected									
	ation)									
	program										
	me in Kampala										Goo
	Uganda				N/A	N/A	N/A	N/A	N/A	N/A	d
Fatiregu	Maternal	A cross									
n et al, Vaccine,	determin ants of	sectional study									
2011	complete	design									
	child										
	immuniz										
	ation among										
	children										
	aged 12– 23										
	months in a										Goo
	southern				N/A	N/A	N/A	N/A	N/A	N/A	d

	district of Nigeria										
Idowu et al., Ethiopia n journal of health sciences, 2017	Determin ants of Skilled Care Utilizatio n among Pregnant Women Resident s in an Urban Commun ity in Kwara State, Northcen tral Nigeria	A cross sectional study design			N/A	N/A	N/A	N/A	N/A	N/A	Goo d
Demilew , BMC Res Notes, 2017	Factors associate d with mothers' knowled ge on infant and young child feeding recomme ndation in slum areas of Bahir	A cross sectional study design			N/A	N/A	N/A	N/A	N/A	N/A	Goo d

	Dar City, Ethiopia: cross sectional study										
Adane et al. Journal of Health, Populati on and Nutrition , 2017	Utilizatio n of health facilities and predictor s of health- seeking behavior for under- five children with acute diarrhea in slums of Addis Ababa, Ethiopia: a communi ty-based cross- sectional study	A cross sectional study design			N/A	N/A	N/A	N/A	N/A	N/A	Goo d
Abimbol a et al, African health	Pattern of utilizatio n of ante- natal and	A descripti ve cross-sectional study			N/A	N/A	N/A	N/A	N/A	N/A	Fair

sciences, 2016	delivery services in a semi-													
	urban													
	communi													
	ty of													
	North-													
	Central													
	Nigeria.													
Wakwoy	Infant	A cross												
a et al,	feeding	sectional												
Pan	practice	study												
African	and	design												
Medical	associate													
journal,	d factors													
2016	among													
	HIV													
	positive													
	mothers													
	in Debre													
	Markos													
	Referral													
	Hospital													
	East													
	Gojam													
	zone, North													
	West													Goo
	Ethiopia					N/A	N/A	N/A	N/R	N/A	N/R	N/A	N/A	d
Kuwawe	The	Mixed				IV/A	IV/A	IV/A	TV/IX	IV/A	11/11	1 \ / /\	11/1	u
naruwa	effects of	methods												
et al.	MCH	approac												
Journal	insurance	h												
of	cards on	(quantita												
Health,	improvin	tive and												
Populati	g equity	Qualitati												
on and	in access	ve)												
Nutrition	and use	ĺ												
, 2016	of				NR	N/A	N/A	N/A		N/A		N/A	N/A	Fair

Woldegh	maternal and child health care services in Tanzania : a mixed methods analysis Length	Cross-										
ebriel et	of time in Ghana is	sectional										
al., Maternal	associate	study										
and child	d with											
nutrition,	the											
2017	likelihoo d of											
	exclusive											
	breastfee											
	ding											
	among Liberian											
	refugees											
	living in											
	Budubur											Goo
	am				NR	N/A	N/A	N/A	N/A	N/A	N/A	d
Bayou et	The	Cross-										
al. BMC	adequacy	sectional										
Pregnan cy and	of antenatal	design										
Childbirt	care											
h, 2016	services											
	among											
	slum											
	residents											
	in Addis Ababa,											Goo
	Ethiopia					N/A	N/A	N/A	N/A	N/A	N/A	d

Sasaki et al, Tropical Medicin e and Internati onal Health, 2010	Access to a health facility and care- seeking for danger signs in children:	Repeate d Cross- sectional design										
2010	before											
	and after											
	a communi											
	ty-based											
	interventi											
	on in											
	Lusaka,											Goo
	Zambia				NR	N/A	N/A	N/A		N/A	N/A	d
Westhei	Acceptan	Cross-										
mer et al,	ce of HIV	secttiona										
Journal of	Testing	1 design										
Acquire	Among											
d	Pregnant											
Immune	Women											
Deficien	in											
cy	Dar-es-											
Syndrom	Salaam,											Goo
e, 2004	Tanzania	G			NR	N/A	N/A	N/A	N/A	N/A	N/A	d
Nwame	Complia	Cross-										
me et al, Maternal	nce with Emergen	sectional study										
Child	cy	study										
Health	Obstetric											
Journal,	Care											
2013	Referrals											
	Among											
	Pregnant											
	Women					N/A	N/A	N/A	N/A	N/A	N/A	Fair

1	in an											1
	Urban											
	Informal											
	Settleme											
	nt of											
	Accra,											
	Ghana											
Asundep	Determin	Cross-										
et	ants of	sectional										
al,Journa	access to	study										
1 of	antenatal	,										
Epidemi	care and											
ology	birth											
and	outcomes											
Global	in											
Health,	Kumasi,											Goo
2013	Ghana				NR	N/A	N/A	N/A	N/A	N/A	N/A	d
Sasaki et	То											
al, J Epid	examine	Repeate										
& Comm	the	d cross-										
Health,	associati	sectional										
2019	on	surveys										
	between											
	immunis											
	ation											
	coverage											
	and											
	distance											
	to an											
	immunis											
	ation											
	service											
	as well as											
	socio-											
	demogra											
	phic and											
	economi											Goo
	c				NR			N/A		N,A		d

	factors before and after the introduct ion of outreach immunis ation services, and to identify optimal locations for outreach immunis ation services,									
	a peri- urban area in									
	Zambia									
Mutua et	Childhoo	Longitu								
al, BMC	d	dinal								
Public Health,	vaccinati on in									
2011	informal									
2011	urban									
	settlemen									
	ts in									
	Nairobi,									
	Kenya: Who gets									
	vaccinate									Goo
	d?							N/R		d

Jennings et al., Maternal and Child Health Journal 2017	Associati on of Househol d Savings and Expected Future Means with Delivery Using a Skilled Birth Attendan t in	A multi- country longitudi nal study									
	Ghana and Nigeria:										
	A Cross- Sectional Analysis				N/A	N/A	N/A	N/A	N/A	N/A	Goo d
Kimani- Murage et al, Int J Dohad, 2016	Determin e potential effective ness of the national	A quasi- experim ental study. Data from -a longitudi									
	Commun ity Health Strategy involving home-	nal observat ional study									
	based counselli ng visits by								N/A	N/A	Goo d

	CHWs on EBF											
Fotso, Ezeh & Esendi, 2009, Rep Health	resource- poor urban settings: how does women's autonom y influence the utilizatio	Cross- sectional										
	n of obstetric care services					N/A	N/A	N/A				Goo d
Govende r, SA Fam Practice,	Obstetric outcomes and antenatal access among adolesce nt pregnanc ies in KwaZulu -Natal, South	Mixed methods										
2018	Africa				NR	N/A	N/A	N/A	N/A	N/A	N/A	Fair

Supplementary Table 2: Qualitative approach

Author, journal, year	Study aim/title of study	Design/Data source (Cross- sectional (quanti/quali), longitudinal, prospective, retrospective (including health facilities record review), secondary analysis of data,	Was there clear statem ent of aims of the researc h?	Is the qualitativ e methodol ogy appropriat e?	Was the research design appropri ate to address aims of the research ?	Was the recruitm ent strategy appropri ate to the aims of the research ?	Was the data collect ed in a way that addres s the researc h	Has the relations hip between researche r and participa nts been adequate ly consider	Has ethical issues been taken into considerati on?	Was the data analysis sufficien tly rigorous ?	Is there a clear statem ent of finding s?	How valuab le is the resear ch	Quali ty ratin g
		case-control, RCT, survey (DHS, SPA, MICs ect)					issue?	ed?					
Ndimbii et al, Sexual & Reproduct ive Healthcar e, 2018	Access and utilisation of reproductive, maternal, neonatal and child health services among women who inject drugs in coastal Kenya	Qualitative focus group discussion and indepth interviews											Good
Kimani- Murage et al,Mat Ch Nut, 2015	Investigates the factors that contribute to poorbreastfee ding practices in two urban slums in Nairobi,Keny a, using	Qualitative: 19 in-depth interviews (IDIs),10 focus group discussions (FGDs) and 11 key infor-mant interviews (KIIs) in April 2012											Good

	qualitative methods							
Izugbara, Kabiru, Zulu, PH reports, 2009	To assess the views of poor urban women on the attractions of and deterrents to hospital-based deliveries	Qualitative - 12 FGDs						Fair
Wilunda et al, PLOSON E, 2016	Barriers to Institutional Childbirth in Rumbek North County, South Sudan: A Qualitative Study	Qualitative						Good
Mirkuzie, IJEH, 2014	Explored the inequities in maternal health care among migrant women in Addis Ababa, Ethiopia	Community based qualitative study						Good

Supplementary Table 3: RCT

Author, journal, year				Study aim/title of study			Design/Data source (Cross-sectional (quanti/quali), longitudinal, prospective, retrospective (including health facilities record review), secondary analysis of data, case-control, RCT, survey (DHS, SPA, MICs ect)										
Ochola, Labadarios, Nduati, Pub Health Nutri, 2013 Aidam , Pérez-Escamilla, Lartey, J Nutr, 2005				Determine the impact of facility-based semi-intensive and home-based intensive counselling in improving exclusive breast-feeding (EBF) in a low-resource urban setting in Kenya Determine the effect of lactation counseling on EB			Cluster randomized controlled trial April 2006 to April 2008: RCT: Intervention groups (IG) 1 - EBF support given pre-, peri-, and postnatally (IG1; n = 43); 2) EBF support given only peri- and postnatally (IG2; n = 44); or CG - nonbreast-feeding health										
						educational support (n = 49)											
Studies with pre- protocol	Unique ID	Study	Experi	imental	Comparator		Outcome		Randomization process	Deviations from intended interventions	Missing outcome data	Measurement of the outcome	Selection of the reported result	Overall			
protocor			exclus	ive breastfeeding	usual health		exclusive	Ochola et al								I am siala	
	R1 R2	RCT RCT2	Couns		education Usual care		breastfeeding Exclusive breastfeeding	21012 Aidam et al 2005		X				2 4		Low risk me ncerns	
															- 1	gh risk	