

Formative Phase

1. Key Informant interviews (all female)

Table 1: Descriptive characteristics (N=12) (1 key participant had no demographic xtics)

Variable	Frequency (N)	Percentage (%)	Mean (Min-Max)
Age group (years)			
20 - 25	4	36.3	28.3 (20 – 43)
26 - 30	3	27.3	
31- 35	3	27.3	
41 - 45	1	9.1	
Level of education			
No formal education	3	27.3	
Primary	6	54.5	
Secondary	1	9.1	
High school	1	9.1	
Employment status			
Self-employed	1	9.1	
Teacher	1	9.1	
Not working (farming/housewife, etc)	9	81.8	
Estimated household income per month (CFA)			20,000 -240,000
10,001 – 30,000	3	27.3	
30,001 – 50,000	4	36.3	
70,001 – 90,000	1	9.1	
More than 90,000	3	27.3	
Marital status			
Married	10	90.9	
Never married/single	1	9.1	
Religion			

Catholic	3	27.3
Presbyterian	2	18.2
Baptist	2	18.2
Muslim	4	36.3
Heard of family planning before?		
Yes	11	91.7
No	1	8.3
Have you used any family planning method?		
Yes	6	54.5
No	5	45.5
Language most spoken at home		
Local dialect	9	81.8
Other	2	18.2

Table 2: Descriptive characteristics (N =12)

Variable	Frequency (N)	Percentage (%)
You or anyone in household owns a phone?		
Yes	11	91.7
No	1	8.3
Will you like to use a mobile phone to communicate with your doctor?		
Yes	12	100
No	0	
Benefits of using mobile phone		
Yes	10	83.3
Heard of vouchers		
Yes	9	81.8
No	2	18.2

Love to go for regular antenatal if free		
Yes	12	100
Ever used mobile phone to seek care or heard of it to seek care		
Yes	2	16.7
No	10	83.3
Anyone in your household owns a car?		
Yes	4	40
Are you pregnant?		
Yes	9	75
Was pregnancy confirmed?		
Doctor	8	88.9
Nurse	1	11.1
Pregnancy age known?		
Yes	9	75
Head of the household		
Husband	10	83.3
Other	2	16.7

Table 3: Disaggregated data on KI who have heard of family planning (N=11)

Variable	Frequency (N)	Percentage (%)
Age group (years)		
20 - 25	3	30

26 - 30	3	30
31- 35	3	30
41 - 45	1	10
Level of education		
No formal education	3	30
Primary	5	50
Secondary	1	10
High school	1	10
Estimated household income per month (CFA)		
10,001 – 30,000	3	30
30,001 – 50,000	4	40
70,001 – 90,000	1	10
More than 90,000	2	20
Where did you hear of family planning?		
Radio	1	9.1
Hospital	8	72.7
Market	1	9.1
Others	1	9.1
Family planning method used		
Coil	1	16.7
Natural method	2	33.2
Tablet	1	16.7
Injection	1	16.7
Condom	1	16.7
Will you like to listen to ANC and family planning messages on a phone?		
Yes	9	81.8
No	2	18.2
How often will you like to hear about family planning?		
Twice a week	1	12.5

Daily	2	25
Weekly	3	37.5
Monthly	1	12.5
Never	1	12.5

Most preferred language of listening to family planning messages?

English	3	42.8
Pidgin English	1	14.4
Local dialect	3	42.8

Table 1a: Focus Group discussions- by gender (N = 14 for Females and N= 12 for males)

Variable	Females [N (%)] Mean (Min – Max)	Males [N (%)] Mean (Min – Max)
Age group (years)	27.3 (19 – 36)	36.8 (30 – 47)
15 - 25	6 (50)	0 (0)
26 - 35	2 (16.7)	6 (60)
36 -35	4 (33.3)	2(20)
46- 55	0 (0)	2 (20)
Level of education		
No formal education	4 (28.6)	0 (0)
Primary	0 (0)	4(33.3)
Secondary	10 (71.4)	2(16.7)
High School	0 (0)	4 (33.3)
University	0 (0)	2 (16.7)
Employment status		
Employed for salary	2 (14.3)	0 (0)
Self- employed	0 (0)	8 (66.7)
Not working (farming/housewife, etc)	12 (85.7)	4(33.3)

Estimated household income per month (CFA)		
No income	4 (28.6)	2 (16.7)
Less than 10,000	6 (42.8)	8(66.6)
10,001 – 30,000	2 (14.3)	2(16.7)
More than 90,000	2 (14.3)	0 (0)
Marital status		
Married	12 (85.7)	10 (83.3)
Never married/single	2 (14.3)	2 (16.7)
You or anyone in household owns a phone?		
Yes	14(100)	12(100)
Language most spoken at home		
Pidgin English	0 (0)	6(50)
English	2 (14.3)	2(17.7)
Local dialect	12 (85.7)	4(33.3)

Table 1b: Focus Group discussions for both men and women (N =32)

Variable	Frequency (%)	Mean (Min – Max)
Age group (years)		31.7 (19 – 47)
15 - 25	7 (21.8)	
26 - 35	15 (46.7)	
36 -35	8 (25)	
46- 55	2 (6.25)	
Gender		
Male	15 (46.88)	
Female	17 (53.12)	
Level of education		
No formal education	4 (12.5)	
Primary	10(31.2)	

Secondary	12(37.5)	
High School	4 (12.5)	
University	2 (6.3)	
Employment status		
Employed for salary	2 (6.3)	
Self- employed	10 (31.2)	
Not working (farming/housewife, etc)	20 (62.5)	
Estimated household income per month (CFA)		
No income	10(31.2)	
Less than 10,000	16(50)	
10,001 – 30,000	4(12.5)	
More than 90,000	2(6.3)	
Marital status		
Married	24(75)	
Never married/single	6(18.7)	
Widowed	2 (6.3)	
You or anyone in household owns a phone?		
Yes	30 (93.7)	
Language most spoken at home		
Pidgin English	6 18.7)	
English	8(25)	
Local dialect	2 6.3)	
Other	16 (50)	

Female Focus Group Discussions (Family planning information)

1. Generally, all participants (100%) will love to use the graphics on the phone to get in touch with the doctor
2. One woman had never heard of family planning (FP) since it was her first pregnancy

3. All the others have heard of FP mostly at the clinic during ANC or after delivery
4. Some had used FP methods (natural method and coil)
5. Some had never used any FP method
6. The preferred language for FP messages by a majority of the participants was the local dialect.
7. All the participants will like to listen to FP messages on their phones.
8. All the participants or members of their households had regular phones
9. 83.3% of participants reported having their husbands as head of the household.

Male Focus Group Discussions (Family planning information)

1. Generally, all participants (100%) love the idea of using graphics on the phone for women to get in touch with the doctor
2. A majority of men have heard about FP and they had different opinions about FP methods and practices
3. A majority will love to receive and listen to FP messages on their phones.
4. Majority of participants or members of their household had regular phones

Providers

Number of providers interviewed = 9

- Medical doctors = 2
- Midwives = 2
- Nurses = 5
- Percentage that would love to use mobile phone to deliver care 9/9 (100%)
- Percentage that listed benefits of using mobile phone to deliver MNCH 9/9 (100%)

Intervention Phase

Table 1: Summary results from the BornFyne-PNMS platform

PNMS Outcome data from Intervention group in the intervention district

		N=140			
		Mean	Standard Deviation	Count	%
AGE		27	6		
income	10,001-30,000 CFA			1	0.7%
	Less than 10,000 CFA			123	87.9%
	No income			16	11.4%
attend_antenatal_clinic	Last Month			8	5.7%
	Not Started			30	21.4%
	Past Week			102	72.9%
physical_exam	No			33	23.6%
	Yes			107	76.4%
family_planning_before	No			122	87.1%
	Yes			18	12.9%
family_planning_method	No			125	89.3%
	Yes			15	10.7%
family_planning_any_method	4 Month			2	1.4%
	Never			138	98.6%
family_planning_form	missing			3	2.1%
	No			137	97.9%
mosquito_net_before	No			119	85.0%
	Yes			21	15.0%
mosquito_net_before_last_slept	Do not Remember			1	0.7%
	Last Week			1	0.7%
	Not Started			121	86.4%

	Yesterday			17	12.1%
are_you_iptp	No			65	46.4%
	Yes			75	53.6%
mosquito_net	No			120	85.7%
	Yes			20	14.3%
hrp_recoded	No			3	
	Yes			137	
discuss_partner	No			130	92.9%
	Yes			10	7.1%
education_level	High school			10	7.1%
	No formal education			25	17.9%
	Primary			62	44.3%
	Secondary			41	29.3%
	University			2	1.4%
employment_status	Employed for salary			36	25.7%
	Housewife			52	37.1%
	Not working			7	5.0%
	Self-employed			30	21.4%
	Student			14	10.0%
	Unable to work			1	0.7%
occupation	Farming			139	99.3%
	Fishing			1	0.7%
marital_status	Divorced			2	1.4%
	Monogamy			73	52.1%
	Polygamy			35	25.0%
	Single, never married			30	21.4%
language	English			3	2.1%
	Pidgin English			137	97.9%
religion	Christian (Catholic, Presbyterian, Baptist)			139	99.3%

	Muslim			1	0.7%
residence	rural			16	11.4%
	semi-urban			9	6.4%
	Urban*			115	82.1%
antenatal_visits		81	102		
delivery	Assisted Delivery			1	0.7%
	C-section			5	3.6%
	Normal			134	95.7%
head_of_household	Male			140	100.0%
alive (children)		2	2		
dead (children)		0	1		
total_pregnancies		3	2		
echography	No			47	33.6%
	Yes			93	66.4%
echography_reason	Check gestational age			1	0.7%
	Check sex			1	0.7%
	fetal heart rate			2	1.4%
	fetal movement			1	0.7%
	missing			13	9.3%
	negative			1	0.7%
	No money			6	4.3%
	not started ANC			28	20.0%
foetal_movements	position			87	62.1%
	No			3	2.1%
	Yes (good)			137	97.9%
foetal_presentation	Cephalic – Good			140	100.0%
vaccination_status	none			9	6.4%
	td (tetanus diphteria)			131	93.6%

*Urban as defined within a rural setting

PNMS collects a wide range of variables for each patient and their history, we have reported only those variables that are related to the project objectives.

A total of 140 women were enrolled into the trial in the intervention group.

87% of these women had monthly income of less than 10000frs CFA(approximately(20USD) while 11% had no income.

85% not sleeping under mosquito net and this is flagged in PNMS for district health providers to follow up with community health workers.

Up to 80% of women were listed under high risk pregnancy as flagged by the PNMS system

District Health Information System (DHIS2) outcome data from intervention and control districts

Table 1: Results from intervention and control districts

Outcomes	Control (N=2419)		Intervention (N=1282)	
	n	%	n	%
skilled birth deliveries	1711	70.7%	1017	79.3%
community deliveries	87	3.6%	56	4.4%
ANC1	1876	77.6%	982	76.6%
ANC4	1513	62.5%	1430	118.0%
Users who chosed FP method	110	4.5%	0	0.0%
New user who chosed FP method	1088	45.0%	457	35.6%
Still birth	10	0.4%	7	0.5%
maternal death in health centre	2	0.1%	1	0.2%
maternal death in community	0	0.0%	0	0.0%
immediate postpartum FP	292	12.1%	36	2.8%
CS	111	4.6%	54	8.7%
Exclusive Breast feeding	38	1.6%	21	3.0%

DHIS2 Data summary

Due to the escalating conflict, it was not possible to recruit from the control health areas as initially planned.

Our contingency plan was to use the district health information system DHIS2 data to compare intervention and control.

DHIS2 data collects our primary and secondary outcomes. Given that the intervention had effects beyond our target population. Women came in from other health districts when they got news of free phones and e-vouchers to subsidize their ANC and skilled birth delivery. Though these women who came in were often not eligible based on when they came or that they were out of our catchment area (inclusion eligibility). This led to an increased in service demand in the intervention district.

CHW/Data collectors endline report

Table 1

Variable		Count	%	Mean	Standard Deviation
Age				27	6
Feeling_about_preg	Fine	76	95.0%		
	Some concerns	4	5.0%		
PlannedBefore	Missing	3	3.8%		
	No	18	22.5%		
	Yes	59	73.8%		
PregnancyAge	Missing	7	8.8%		
	No	1	1.3%		
	Yes	72	90.0%		

Tell_age_preg	1st Trimester	66	82.5%		
	2nd Trimester	5	6.3%		
	3rd Trimester	7	8.8%		
	Missing	2	2.5%		
HeardANCServices	Missing	4	5.0%		
	Yes	76	95.0%		
AttendedANC	Missing	3	3.8%		
	Yes	77	96.3%		
LastTimeANC	2_months	6	7.5%		
	3_months	1	1.3%		
	4_months_	4	5.0%		
	Last_Month	53	66.3%		
	Missing	5	6.3%		
	Past_Week	11	13.8%		
RelevantANC	Missing	3	3.8%		
	No	1	1.3%		
	Yes	76	95.0%		
BestToStartANC	As_soon_as_i_know	15	18.8%		
	month_2	21	26.3%		
	month_3	40	50.0%		
	month_4	4	5.0%		
HowManyANC	4	5			
	5	17			
	6	26			
	7	16			

	8	15		
HowManyANCRelevant	Above_Four	75	93.8%	
	Missing	3	3.8%	
	Three_to_Four	2	2.5%	
NurseEducateDuringANC	All_of_the_time	59	73.8%	
	Most_of_the_time	10	12.5%	
	Non_of_the_time	3	3.8%	
	Some_of_the_time	8	10.0%	
DangerSignsPreg	Missing	7	8.8%	
	No	2	2.5%	
	Yes	71	88.8%	
ComfortableDicussPreg	Missing	2	2.5%	
	Yes	78	97.5%	
Obstacle_challenge	No	36	45.0%	
	Yes	44	55.0%	
Obstacle_Cost	No	41	51.3%	
	Not applicable	36	45.0%	
	Yes	3	3.8%	
Obstacle_Distance	No	38	47.5%	
	Not applicable	36	45.0%	

	Yes	6	7.5%		
Obstacle_Insecurity	No	6	7.5%		
	Not applicable	36	45.0%		
	Yes	38	47.5%		
UsedTraditionalBirthAttendant	Missing	3	3.8%		
	No	71	88.8%		
	Yes	6	7.5%		
DeliveredInHospital	Missing	2	2.5%		
	No	4	5.0%		
	Yes	74	92.5%		
BYWhom	Doctor	10	12.5%		
	MidWife	29	36.3%		
	Missing	4	5.0%		
	Nurse	37	46.3%		
DeliveredAtHome	No	76	95.0%		
	yes	4	5.0%		
YesByWhom	Not applicable	76	95.0%		
	Relative	4	5.0%		
PreferedDelivery	Health center	3	3.8%		
	Health center by a health professional	65	81.3%		
	Hospital	12	15.0%		
FPMMessage	Missing	3	3.8%		

	Yes	77	96.3%		
If_yes__where_did_you_hear_.community health worker	No	73	91.3%		
	Yes	7	8.8%		
If_yes__where_did_you_hear_.Health professional during ANC	No	10	12.5%		
	Yes	70	87.5%		
If_yes__where_did_you_hear_.Community gathering	No	77	96.3%		
	Yes	3	3.8%		
If_yes__where_did_you_hear_.Njangi Group	No	79	98.8%		
	Yes	1	1.3%		
If_yes__where_did_you_hear_.Friend	No	60	75.0%		
	Yes	20	25.0%		

If_yes__where_did_you_hear_.Television	No	76	95.0%		
	Yes	4	5.0%		
If_yes__where_did_you_hear_.Radio	No	75	93.8%		
	Yes	5	6.3%		
HowOften	Daily	37	46.3%		
	Monthly	22	27.5%		
	Quarterly	5	6.3%		
	Weekly	16	20.0%		
UseContraception	No	63	78.8%		
	Yes	17	21.3%		
MethodUse	Condom	14	17.5%		
	Depo injection	2	2.5%		
	Not applicable	63	78.8%		
	Withdrawal method	1	1.3%		
OftenPratice	6_months	3	3.8%		
	Last_2_years	1	1.3%		
	Last_year	11	13.8%		
	Not applicable	63	78.8%		
	Past_3_months	2	2.5%		
DiscussWithPartner	No	28	35.0%		
	Yes	52	65.0%		

PartnerPractice	Missing	1	1.3%		
	No	44	55.0%		
	Yes	35	43.8%		

Service availability and readiness assessment (SARA) adopted from the WHO SARA guidelines. This tool was used to assess health facilities in the area to ensure facilities have basic equipment needed to ensure the implementation of the digital platform and to assess if some needed additional support for equipment and also registered their GPS coordinates for the intervention.

Table 1: Service Availability (Staffing), inpatient and observation beds

Variable	Facility Number												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Staffing	25	6	4	3	3	31	6	4	5	19	9	21	13
Specialist medical doctors	0	0	0	0	0	0	0	0	0	1	0	0	0
Non physician clinicians/paramedical professionals	1	0	0	0	0	5	0	0	0	0	1	2	0
Nursing professionals	20	1	2	1	3	14	3	3	3	9	4	10	8
Midwifery professionals	2	0	0	0	0	0	0	0	0	0	0	1	1
Pharmacists	0	0	0	0	0	0	0	0	1	0	0	1	1
Laboratory technicians	2	0	1	1	0	4	0	0	1	2	1	2	0
Community health workers	17	5	7	4	18	4	5	4	9	8	3	8	25
N° of overnight inpatient beds for both adults and children	52	2	0	5	8	50	9	12	14	36	28	41	28
N° of beds dedicated to the maternity	13	2	0	2	7	17	2	3	6	6	3	8	11

Table 2: Infrastructure (communication, ambulance/transport for emergencies, power supply, basic client amenities)

Variable	Facility Number												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Functional landline telephone	No	No	No	No	No	No	No	No	No	Yes	No	No	No
Functional cellular phone or private cellular phone	Yes	No	Yes	No	Yes								
Functioning short-wave radio for radio calls	No	No	No	No	No	No	No	No	No	No	No	No	No
Functioning computer	Yes	yes	No	No	No	Yes	No	No	No	Yes	No	Yes	No
Access to email or internet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Functional ambulance or vehicle for emergency transportation	no	no	n	no	no	no	no	no	no	yes	no	no	no
Access to ambulance or vehicle fir emergency use	no	no	no	no	no	no	yes	no	no	no	no	no	no
Fuel for ambulance or emergency vehicle available	no	no	no	no	no	no	no	no	no	no	No	no	no
Electricity from any source in the facility?	yes	yes	yes	yes	yes	yes	no	no	yes	yes	yes	yes	yes
Use of electricity													
Only standalone electric devices /appliances	Yes	Yes	Yes	No	Yes	yes	no	No	No	yes	yes	yes	Yes
Electric lighting, communication and 12 electric devices	No	No	No	no	no	No	no	no	Yes	No	no	No	No
Electric lighting (excluding flashlight)	No	No	No	Yes	No								
All electrical needs	No	No	No	No	no	no	Yes	yes	No	no	No	no	no
Facility main source of electricity													
Central supply of electricity	Yes	yes	yes	no	yes	yes	no	no	no	yes	yes	yes	yes
Solar system	no	no	no	no	no	no	no	No	Yes	No	no	no	no
Generator (fuel or battery operated generator)	no	no	no	yes	no								
Other	no	no	no	no	no	no	yes	yes	no	no	no	no	no
Backup source of electricity													
Generator (fuel or battery operated generator)	yes	no	no	-	-	yes	no	no	yes	yes	yes	yes	yes
No secondary source	no	yes	yes	no	no	no	Yes	no	no	no	no	no	no
Other	no	no	no	no	no	no	no	yes	no	no	no	no	no

Table 3: Infrastructure (communication, ambulance/transport for emergencies, power supply, basic client amenities) continuation

Variable	Facility Number												
	1	2	3	4	5	6	7	8	9	10	11	12	13
During past 7days was there a regular supply of electricity?													
Always available (no interruptions)	-	yes	no	-	no	-	no	-	-	-	-	-	-
Often available (interruptions of less than 2 hours)	no	no	Yes	no	yes	no	yes	no	no	No	No	no	no
Functional generator	yes	no	yes	yes	no	yes	No	no	no	yes	yes	yes	yes
Fuel or charged battery available	yes	no	no	yes	no	yes	no	no	no	yes	yes	yes	yes
Functional solar system													
Yes, functional	yes	no	no	no	no	-	no						
Partially, battery needs servicing (replacement)	no	no	no	no	no	no	no	no	yes	no	no	no	no
No solar panel	no	yes	yes	yes	yes	no	yes	yes	no	yes	yes	yes	yes
On average hours per day facility is open													
24 hours	yes	yes	no	yes									
5 to 8 hours	no	no	yes	no									
Most commonly used source of water													
Piped into facility	no	no	no	yes	yes	no	yes	no	no	no	no	no	no
Public tap/stand pipes	no	yes	yes	no									
Tubewell/borehole	Yes	no	no	no	no	yes	no	yes	no	yes	yes	yes	yes
Unprotected dug well	no	no	no	no	no	no	no	no	yes	no	no	no	no
Water outlet 500m from facility	yes	yes	no	-	-	yes	-	no	yes	no	yes	yes	no
Room with auditory and visual privacy													
Both auditory and visual privacy	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Functioning toilet(latrine) in outpatient													
Pit toilet with slab	yes	yes	no	no	no	no	no	yes	yes	yes	no	no	yes
Flush toilet	no	no	no	yes	yes	yes	yes	no	no	no	no	no	no
Hanging toilet/ hanging latrine	no	no	yes	no	yes	yes	no						

Table 4: Reproductive, Maternal and Newborn Health

Variable	Facility Number												
	1	2	3	4	5	6	7	8	9	10	11	12	13

ANC providers provide following to pregnant women:													
Iron supplementation	Yes												
Folic acid supplementation	Yes												
IPTp for malaria	yes												
Tetanus toxoid immunization	Yes												
Monitoring for hypertensive disorder of pregnancy	yes												
Provision of misoprostol tablets for homebirths	yes	no	no	no	no	yes	no						
National ANC guidelines	yes	No	no	no	yes								
ANC check-list/or jobaids	yes	yes	yes	no	no	no	yes	no	no	yes	yes	yes	yes
IPTp guidelines, checklists/jobaids including wall charts	yes	no	yes	yes	no	yes	yes	no	no	no	yes	no	yes
You or provider training on ANC in last 2 years	no	no	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes
You or provider received training in IPTp in last 2 years	no	no	yes	yes		yes	no	no	yes	no	yes	yes	yes
Facility have services for PMTCT	yes												
As part of PMTCT services offer the following													
HIV counseling and testing to HIV pos preg women	yes												
HIV counseling and testing to infants born to pos mothers	yes												
ARV prophylaxis to HIV pos preg women	yes	yes	yes	yes	yes	yes		yes	no	no	yes	yes	yes
Infant and young child feeding counseling	yes	no	yes	yes	yes	yes	yes						
Nutritional counseling for HIV pos preg women	yes	no	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	Yes
Family planning counseling to HIV pos preg women	no	yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	yes

Outcome table

Table on Outcomes based on combination of data collection sources using community health workers monitoring framework, the BornFyne-PNMS platform, and data collectors report using Magpi software. This result does not constitute results from the DHIS2 data set, it is based only on the BornFyne-PNMS platform

Outcome measures	Scale	Type	Measure	Method analysis	of	Results	Observations based on lessons learnt
<i>Feasibility Outcomes</i>							

Successful randomization	Ordinal	Binary	% of health areas with successful stratification and randomization	Feasibility threshold of 95%	<p>Successful using computer generating software (Excel)</p> <p>Stratification successful using performance-based financing equity scores which stratifies health areas according to context variables including remoteness, poverty, density etc. Lower scores indicate very remote rural areas.</p> <p>Data source Health Facility for PBF scores and Excel for randomization</p>	successful
Enrolment rate	Nominal	Binary	% of participants with successful enrolment within 6 months into the trial	Feasibility threshold of 50%	<p>Recruitment in the intervention area reached sample size within the first 7 months into the trial. Successful recruitment. As noted in the trial registration, recruitment started October 2018 and completed in May 2019</p> <p>As earlier noted in the trial registry, recruiting was challenging in the control due to the escalating conflict, internally displaced women moved into the</p>	Successful recruitment above 50% threshold

					intervention district, though most of them were not eligible due to the inclusion criteria. Data source=BornFyne-PNMS platform	
Complete follow-up	Ratio	Continuous	% of participants who complete follow-up at 8months into the trial	Feasibility threshold of 80%	All participants completed follow-up for ANCs and skilled birth delivery despite the escalating conflict. However, up to 25% of women were unable to be contacted after delivery (post-partum care period) to collect data on exclusive breastfeeding. Could not reach some of the women during this period, we were able to reach their husbands and their husbands seem to be in possession of their phones at the time Data Source: BornFyne-PNMS platform, CHW report and data collectors Magpi report	Depending the entry point into the trial Successful follow up of 100% in the early phase given the nature of the outcome and intervention. The conflict setting played a contributing role in increasing displaced persons at the later stage of the intervention (during post-partum period)
Compliance rate	Ratio	Continuous	% of participants who do not follow procedure as	Feasibility threshold of	Compliance rate before skilled birth delivery was up to 100%. Immediately after	Compliance feasible in early phase of the intervention, later

			allocated	10%	<p>skilled birth delivery compliance dropped. Some families were displaced due to the war at some point and we tried reaching them using their phones, but the phones were answered by their husbands. The husbands had been sensitized from the onset not to be in possession of the phone throughout the intervention, however some of the husbands did not comply and not keeping the phone with them after skilled birth delivery to follow up on exclusive breastfeeding that was initiated at birth led to a drop in compliance rate to about 80%</p> <p>Data Source: BornFyne-PNMS platform, CHW and Data collectors</p>	<p>stages requires additional follow up. The war is also a setback for compliance</p>
Contamination	Ratio	Continuous	% of contamination	Feasibility threshold of 10%	Contamination at the level of the entire district as women were informed of the e-vouchers and mobile	

					<p>phones the news went viral across the entire region especially due to the escalating violence, with internally displaced persons. This contamination increased demand for RMNCH services in this district. However, most of the women were not eligible to benefit into the trial due to our inclusion criteria.</p> <p>Data Source: CHW report/district health service report</p>	
Refusal rate	Ratio	Continuous	% of participants who refused to respond	Feasibility threshold of 5%	<p>Women did not refuse to respond to questions.</p> <p>Data Source: CHW report and data collectors</p>	The setback was the war
Adherence rate	Ratio	Continuous	% of participants who adheres to the intervention	Feasibility threshold of 80%	<p>About 90% Participants adhered to intervention throughout until during post-partum care when some women had been displaced for some reason given the escalating nature of the conflict.</p> <p>Women listened to FP regularly which was monitored using CHW and</p>	Adherence rate was feasible irrespective of the war. This also was due to the provision of mobile phones and access to health providers and e-vouchers

					<p>data collectors on routine follow-up</p> <p>Adherence on using the pain and emergency icons</p> <p>Adherence with reaching out to providers or CHW during emergency</p> <p>Adherence to keeping their phones until delivery</p> <p>Adherence at post-partum phase about 75%</p> <p>Data Sources: BornFyne-PNMS platform, CHW and data collectors report</p>	
Clinical Outcomes						
Failure rate	Ratio	Continuous	% of participants whom intervention (mobile phone features) failed to function according to design	n (%)	<p>Earlier stages (first 4 months into the implementation) some participants experienced functional issues with receiving their reminder messages for ANC and the emergency activation. This was later resolved.</p> <p>Later stages functional issues was more focused</p>	<p>We observed periods of network destruction network failures due the conflict which affected the user interface, issues with adaptability in the early phase of the implementation</p> <p>Enrolled participants with multiple</p>

					<p>on poor network and the escalating war that led to destruction of some network communication channel. Contingency plan we used multiple telecommunication network</p> <p>Data Source CHW reports and data collectors</p>	networks to address the issues
Mortality	Ratio	Binary	Number of maternal deaths	n (%)	<p>There were no maternal deaths in the intervention group of the 140 participants that were recruited.</p> <p>Data Source: See PNMS result table above</p>	However, in the intervention district which was used as contingency district as we were unable to recruit in the control health areas, there was 1 maternal death (see DHIS2 results table above)
Number of ANC visits	Nominal	Binary	Number of ANC visits attended	Mean (SD)	<p>Mean 81 SD 102</p> <p>All 140 women attended an average of 4 visits, and all had at least one echography. Some women had up to 6 ANC visits due to the need and 10 participants benefitted from additional tests as requested during ANC</p> <p>Data Source-PNMS(see</p>	We observed early ANC visit in the health facilities implementing the intervention

					PNMS result table above)	
Number of Skilled birth delivery	Nominal	Binary	Number of skilled birth delivery	Mean (SD)	<p>All 140 women delivered using skilled birth attendant.</p> <p>Normal deliveries 134(95.7%) and 5(3.6%) C-sections and 1 assisted delivery (0.7%).</p> <p>Data source: PNMS results table above</p>	We anticipated C-section percentage of 15% at baseline for the intervention group and registered 3.6% C sections.
Family Planning	Nominal	Binary	% using family planning/awareness	n (%)	120(85%) initiated exclusive breastfeeding upon delivery based on PNMS record. However, follow-up by CHW was challenging due to escalating violence and displacement	