

INTEGRATION OF FAMILY PLANNING

*in Chhaya Integrated Village
Health and Nutrition Days (CiVHND)*



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Contents

List of Abbreviations	01
List of Figures	03
List of Tables	03
I. Introduction	04
II. Review of data and Literature	04
III. Benefits and opportunities for Integration of Family Planning in Chhaya Integrated Village Health and Nutrition Days (CiVHND)	07
IV. Evolving the Concept for CiVHND	09
V. Layering in FP Components at CiVHND in Uttar Pradesh	10
VI. Planning for Key Activities in a CiVHND	10
A. Pre CiVHND preparations	10
B: Package of Family Planning Services provided in CiVHND	13
C. Tracking of women with high risk pregnancy for FP Counselling.	17
D. Roles and responsibilities of ASHA, ANM and AWW in CiVHND	18
E. Role of Supervisory Cadre	20
F. Integrated supply chain management	21
G. Documentation and reporting post CVHND	21
H. Capacity building of FLWs	21
I. Monitoring and mid-course corrections	22
VI. Progress made thus far	22
VII. Conclusion	23
References	24

List of Abbreviations

AEFI	Adverse Events Following Immunization
ANC	Antenatal Care
ANM	Auxiliary Midwife
ARI	Acute Respiratory Infection
ASHA	Accredited Social Health Worker
AWW	Anganwadi Worker
BF	Breastfeeding
BMGF	Bill and Melinda Gates Foundation
BMI	Body Mass Index
BMP	Breastfeeding Motivation Program
BOC	Block Outreach Coordinator
BP	Blood Pressure
CB	Capacity Building
CBTS	Community Behaviour Tracking Survey
CDPO	Child Development Project Officer
CHO	Child Health Officer
CPHC	Comprehensive Primary Healthcare
DSCO	District Specialist Community Outreach
EBF	Exclusive Breastfeeding
EC	Eligible Couples
ECD	Early Childhood Development
EIBF	Early Initiation of Breastfeeding
FHR	Foetal Heart Rate
FLW	Frontline Worker
FP	Family Planning
HBNC	Home Based New-born Care
HBYC	Home Based Young Child Care
HH	Household
HRP	High Risk Pregnancy
HTSP	Healthy Timing and spacing of pregnancy
ICDS	Integrated Child Development Scheme
ICTC	Integrated Counselling and Testing Centre
IEC	Information Education Communication
IFA	Iron Folic Acid
IUCD	Intra-uterine Contraceptive Device
iVHND	Integrated Village Health Nutrition Day
IYCF	Infant Young Child Feeding
LAM	Lactation Amenorrhea Method
JSSK	Janani Shishu Suraksha Karyakaram
KMC	Kangaroo Mother Care
LBW	Low Birth Weight
MCH	Mother and Child Health
MCP	Mother-Child Protection
MNCH	Maternal and Child Health

MOIC	Medical Officer In Charge
MWRA	Married Women of Reproductive Age
NFHS	National Family Health Survey
NHM	National Health Mission
NRC	Nutrition Rehabilitation Centre
ODK	Open Data Kit
OGTT	Oral Glucose Tolerance Test
ORS	Oral Rehydration Salt
PMMVY	Pradhan Mantri Matru Vandana Yojana
PNC	Postnatal Care
PPFP	Post-Partum Family Planning
PPIUCD	Post-Partum IUCD
PRI	Panchayati Raj Institutions
PT	Pregnancy Test
PW	Pregnant Woman
RI	Routine Immunization
RMNCH	Reproductive, Maternal, New-born and Child Health
RMNCHN	Reproductive, Maternal, New-born, Child Health and Nutrition
RMNCH+A	Reproductive, Maternal, New-born, Child and Adolescent Health
RTI/STI	Reproductive Tract Infection/Sexually Transmitted Infection
SC	Sub centre
SNCU	Special New-born Care Unit
TB	Tuberculosis
TD	Tetanus Diphtheria
THR	Take Home Ration
ULB	Urban Local Bodies
UP	Uttar Pradesh
UP TSU	Uttar Pradesh Technical Support Unit
VHIR	Village Health Information Register
VHND	Village Health Nutrition Day
WHO	World Health Organization

List of Figures

Figure 1	Unmet Need: percentage distribution of 51 lakh women
Figure 2	Children age 12 – 23 months fully vaccinated (%), NFHS
Figure 3	Flow of Services in Chhaya Integrated Village Health and Nutrition Day

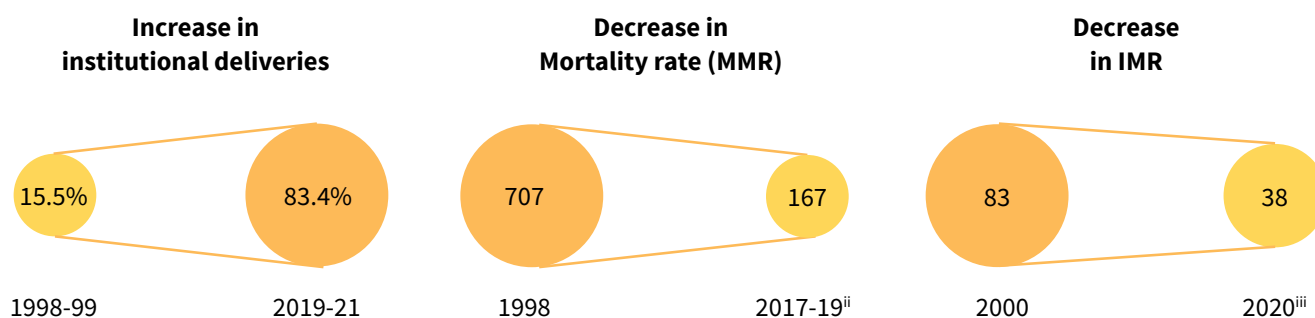
List of Tables

Table 1	Package of Family Planning Services provided in CiVHND
Table 2	Enhancing Community Involvement
Table 3	Services to be provided in CiVHND
Table 4	Counselling Topics for Pregnant Women by Trimester
Table 5	Roles and Responsibilities of ASHA, ANM and AWW in CiVHND
Table 6	Role of Supervisory Cadre (ASHA Sangini, BCPM and CHO)

I. Introduction

Family planning (FP) is one of the four pillars of the Safe Motherhood Initiative to reduce maternal and infant morbidity and mortality in developing countries. If all women in lower middle income countries wanting to avoid a pregnancy were to use modern contraceptives and all pregnant women and their new-borns were to receive care at the standards recommended by the World Health Organization, the impacts would be dramatic. Evidence suggests that addressing unmet need of women could reduce unintended pregnancies by 68%, unsafe abortions by 72% and maternal deaths by 62%.ⁱ In order to achieve the goal of population stabilization, the state intends to prioritize strategies to increase the modern contraceptive prevalence rate (mCPR) and reduce the unmet need for family planning, especially among hard-to-reach social groups and geographies.

Uttar Pradesh has also made substantial progress in maternal and infant health.



Further progress is possible by strengthening essential health system functions to reliably deliver high quality family planning services at facility and community levels and facilitating convergent actions at the village level. These are a major component of the integrated strategy of the Government of Uttar Pradesh to improve reproductive, maternal, new-born and child health (RMNCH) outcomes and nutrition goals.

II. Review of data and Literature

Closely spaced pregnancies, especially within the first year postpartum, increase the risk of death for both the mother and baby and result in increased risks for other adverse outcomes, such as preterm birth, low birth weight and small for gestational age^{iv}. Experience from developing countries indicates that counselling of pregnant women on post-partum family planning during antenatal care visits improves the likelihood of uptake of contraceptives in the post-partum period^v. This prevents closely spaced pregnancies.

The service delivery guidelines for antenatal care services in many countries recommend providing pregnant women with counseling concerning post-partum family planning, breastfeeding, danger signs, birth preparedness and complication readiness plan and other topics.^{vii}

A study conducted in Ghana found that group ANC as compared to individual ANC offers an opportunity to increase quality of care and improve maternal and newborn outcomes and intent to use postpartum FP.^{viii}

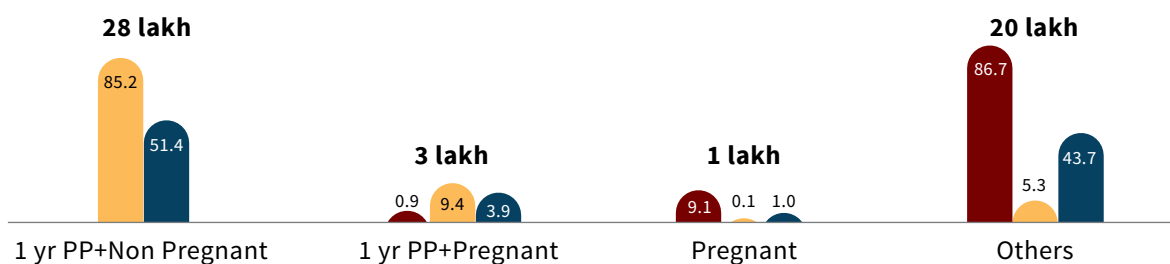
Another study conducted in urban Uttar Pradesh showed that FP information provision as part of antenatal care in the third trimester, delivery and the postpartum period have a positive association with postpartum modern contraceptive use.^{ix} Increasing access to FP services through integration of both counselling and service delivery in the extended postpartum period has been proved to be a successful approach for integrating FP services reaching women in rural areas. Healthcare providers can ensure continuity of care through strengthening integration of FP counseling services during ANC and PNC, and referral linkages between community and facility level health workers.

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“Timed and Targeted” FP messages provide women with the information they need, when they required it. In Uttar Pradesh, a resource-poor state of India, nearly 3,000 community volunteers in three districts were trained by the Pragati project to provide FP, MCH, and nutritional counseling in an integrated approach that is timed according to a woman’s stage of pregnancy and the age of her infant, and targeted according to her needs and desires to prevent or delay pregnancy. Between 2003 and 2007, contraceptive use and proper child feeding practices more than doubled^x.

The unmet need for family planning in UP decreased between NFHS 4 and 5 from 18.1% to 12.9%. Unmet need for spacing is 4.8% while unmet need for limiting is 8.1%. This translates to 51 lakh women in UP who want to plan their families. More than half of these women are either currently pregnant or non-pregnant women within their first year after delivery. Although the unmet need as shown in the figure 01 has declined between the last two NFHS surveys in the first year postpartum; the rate of decrease needs to be accelerated further.

Figure 1: Unmet Need: percentage distribution of 51 lakh women




UPTSU conducted a FP survey to measure the FP related indicators at the state and across the 18 administrative divisions (both rural/urban) during the period December 2020-Mid March, 2021.

IN ALL, 12741 HOUSEHOLDS WERE INTERVIEWED


12200 
currently married women in reproductive age (CMWRA)


419 ASHA 
370 ANMS

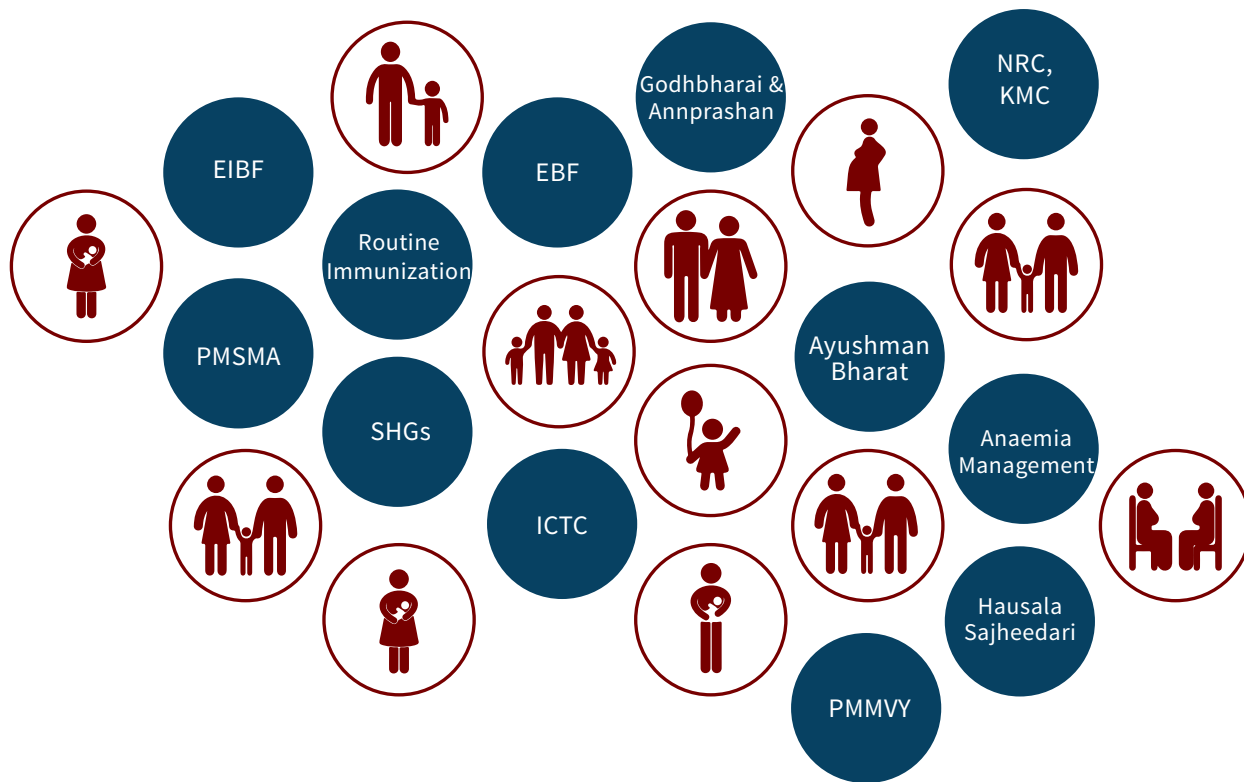
193 
Village Health Nutrition Day (VHND) observations were completed with >90% response rate.

SURVEY HIGHLIGHT

23% 
(0-2months) post-partum women received FP counselling during pregnancy.


Counselling was mainly focused on IUCD, sterilisation and injectables after termination of pregnancy and was low for other methods


FP counselling among low parity women (P1) remained low
8% ANC
10% PNC

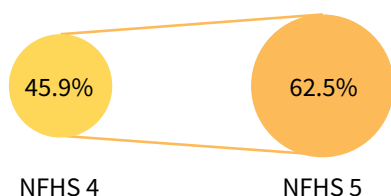


Postpartum women are among those with the greatest need for timing or limiting births. However, because of lack of knowledge and limited availability of family planning services, some women end up not using any method of modern contraception during the postpartum period.^{xi xii}

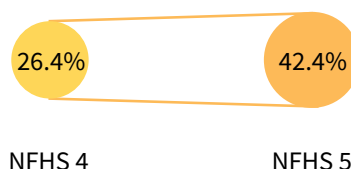
This calls for novel approaches to extend access to family planning services to women and couples who desire to limit or space their childbearing but are not currently using contraceptives. A focus on improving effective coverage of family planning services up to the last mile is necessary to improve the modern contraceptive prevalence rate. Presently, in UP, among all strengthening initiatives, Chhaya Integrated Village Health and Nutrition Day (CivHND) has emerged as the last mile service delivery platform at the village level to provide comprehensive RMNCH+N services.

CivHND is being used as a strategic intervention in Uttar Pradesh to utilize the community platforms, connect with health systems and facilitate convergent actions at village level to improve a range of services. These include increasing early registration and 4+ANC check-ups, improving identification, management and referral of HRP women, reviewing birth-preparedness, distributing contraceptives, achieving full immunization coverage and promoting menstrual hygiene.

Increase in the proportions of pregnant women receiving antenatal care (ANC) in the first trimester



Increase in pregnant women doing at least 4 antenatal care visits



ANC provides an opportunity to encourage deliveries with a skilled birth attendant and counsel on the importance of FP and contraceptive options available to the woman, including those that can be provided at the time of a facility-based birth (WHO 2006, WHO 2010b).^{xiii}

In Uttar Pradesh, most pregnant women receive ANC services at a VHND. Integrating family planning services with other health services and platforms like CivHND may serve to be an effective way to reduce unmet need. This integrated approach will make counselling and support available at the VHND level, empowering women to make informed choices as per her need.

III. Benefits and opportunities for Integration of Family Planning in Chhaya Integrated Village Health and Nutrition Days (CiVHND)



Integrated FP service delivery aligns with all life stages and program streams. This has two important components:

1

continuity of care across the life-cycle approach starting from pre-pregnancy, pregnancy, childbirth, postpartum, and childhood,

2

the linkage between the location and facilities at which care services are delivered to the mother and child.



COST-EFFECTIVENESS:

Integrated programming provides more opportunities, greater penetration and access to FP services in the most remote and hardest-to-reach communities. The use of existing platforms facilitates quicker introduction and scale-up of essential services.^{i, v, vi, xiv} Integration is also cost-effective.



CONVERGENCE:

The “godbharai” event organized by the Anganwadi Worker at the community level is an excellent opportunity to discuss the importance of postpartum family planning. The “Annaprasan” event celebrated at the Anganwadi when complementary feeding is initiated for the six months old child can also be used to emphasize associated pregnancy risks. These are opportunities for convergence between the Departments of Health and Family Welfare and Women and Child Development, that can help to reduce missed opportunities for addressing the unmet need of women.



COVERAGE:

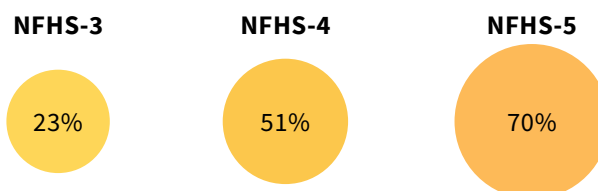
More than 71% of pregnant women access ANC through the VHND platform. This platform when leveraged for FP information and counselling provides opportunities for counselling about spacing or permanent methods. Antenatal counselling can be provided as part of home-based practices and/or within facilities. Home based visits during provide an opportunity to engage husbands and family members to support healthy pregnancy and postpartum behaviour.



CONVENIENCE:

The coverage of fully vaccinated children age 12 - 23 months increased from 23% in NFHS 3 to 70% in NFHS 5. Integrating Family Planning (FP) and immunization service is another “promising” High-Impact Practice (HIP). This is because FP services for women (and men) and immunization services for infants and young children provides overlapping contact opportunities during the first year postpartum to reach women with unmet need for family planning .^{xv}

Figure 2: Children age 12 – 23 months fully vaccinated



THREE MODELS OF INTEGRATION OF FP IN THE CIVHND PLATFORM ARE PROPOSED:



**Single service with
Counselling**



Single service with referral
(PPFP counselling of HRP women with referrals for institutional delivery and committed FP services)



Combined service provision
(offering both immunization and FP counselling and service provision of appropriate post-partum FP method)

IV. Evolving the Concept for CiVHND



Village Health and Nutrition Day (VHND) was conceptualized under the National Health Mission (NHM) as one of the community platforms, connecting with health systems and facilitating convergent actions at Village level. VHNDs cover approximately 1000 in a village once a month preferably on a Wednesday or Saturday at the sub-centre, Anganwadi Centre (AWC) or any other suitable location. It serves as an important platform to increase early registration, 4+ANC check-ups, improve identification, management and referral of HRP women, review of birth-preparedness, distribution of contraceptive methods, full immunization coverage & menstrual hygiene.

- **Revised GO** integrating RMNCH+A services
- **Micro Plan redesigned** to reflect ANC and RI.
- **Services for PW (15)**, Adolescents (04) and Children 5 Year (12) were included (From SBA Guidelines)
- **Supportive Supervision for VHND Session Sites** initiated (Adapted from 2007 guidelines)
- **Governance mechanism** created at district & sub district.
- **Role of FLW** (ASHA, AWW and ANM) expanded.

In 2015, the Government of Uttar Pradesh (GoUP) / NHM adopted continuum of care approach for improving RMNCHN services through Village Health & Nutrition Days, but it was primarily providing Routine Immunization (RI) services. With the focused approach on universal coverage of effective interventions, GoUP/NHM integrated and streamlined services of VHNDs to build a comprehensive and responsive service delivery mechanism, to adopt a life cycle approach and strengthen the documentation and reporting protocols.

On April 26, 2022, Government of Uttar Pradesh rechristened VHND's in the state as Chhaya integrated VHND- (CiVHND) so as to prioritize the Population Stabilization and family planning efforts and strengthen immunization. CiVHND has a mandate to deliver and link to **systematic, customized** and **beneficiary-focused package** of defined RMNCH+N services for women and children enabling **convergence** to improve the **quality** and **effectiveness of services**.

Guidelines for CiVHNDs, thus includes expansion of the range of services from only RI to comprehensive services that includes ANC, FP and Nutrition services. GoUP also addressed the unavailability of proper infrastructure (VHNDs used to happen in open spaces without privacy and functional toilets) and scarcity of essential equipment and supplies for the stipulated services.

This integrated approach in CiVHNDs through restructuring different services, better organization and improved FLW coordination is expected to improve effective coverage through continuum of care that would further impact overall maternal and child health outcomes.

V. Layering in FP Components at CiVHND in Uttar Pradesh

CiVHND is an approach to deliver and link to systematic, customized and beneficiary-focused package of defined RMNCH+N services for women and children enabling convergence to improve the quality and effectiveness of services. Adhering to the Life Cycle approach, services are integrated with ANC and PNC services for women and the parent accompanying children for immunization and other reasons.

FP has been incorporated in the integrated VHND observation checklist to monitor integration. The checklists include the Village Health Information Register (VHIR), Due list, mobilization, counselling, availability of FP Commodities, etc., Emphasis in the CiVHND is laid on strengthening the documentation and feedback from Block Outreach Coordinators (BOC) to Medical Officer on a routine basis, w.r.t FP Commodities - so that this is addressed in a seamless manner.

Efforts are also being made to fix the denominators for FP commodities in each CiVHND site and to have it duly incorporated and institutionalized through a Government Order. CiVHND has a component of Certification. Out of 46 indicators in CiVHND, 7 indicators are related to FP commodity availability and service utilization.

VI. Planning for Key Activities in a CiVHND



A. Pre CiVHND preparations

UP TSU supports organising CiVHNDs in a fixed site such as Anganwadi Centre or any other government building that is conveniently located, easily accessible and has adequate space for adequate service provision. This site could also be a Sub Centre and/or Health and Wellness Centre (HWC). The fixed site is a place within the village where CiVHNDs is organized every month. Communities ensure availability of a hand-washing corner and circles for social distancing. Private space for urine collection and abdominal examination and providing safe drinking water and toilet amenities are ensured. Adequate supplies and functional equipment and a separate counselling area that include furniture such as chairs, tables, examination table, curtains or screens for privacy, etc., are arranged. The ANM is responsible for indenting supplies, including contraceptives from PHC and for coordinating with AWW to ensure that ICDS nutrition related supplies are available. Representatives of Panchayat and the Village Health, Sanitation and Nutrition Committee (VHSNC) are also engaged to mobilize resources to ensure that low/no cost amenities, furniture and supplies are available at the site.

1 Mobilization of Beneficiaries:



DUE LIST STRENGTHENING: GoUP/NHM lays a lot of emphasis on updating and review of due-list of pregnant women, EC and children in Sub-Centre meetings. The Due-list of the clients includes a) those who are already users, particularly Antara to ensure continuation for subsequent doses in the intervention areas, b) Pregnant Women c) mothers/parents of children who are due for immunization, d) eligible couples and e) others who attend for other reasons such as acute illness, and underweight children. SC meeting convergence platforms are used to strengthen the review of the due list, and for better coordination among ASHA/ANM/AWW. ANMs and AWWs are mentored by Block Outreach Coordinators (BOCs) to review and validate the due-list.



TIME SLOTS: In order to avoid overcrowding and ensure systematic delivery of services in VHND, women and children receive time slots and are mobilized based on these slots. The time slots are provided to the beneficiaries before a VHND day by ASHA and AWW during home visits. Different groups of women (eligible couple, pregnant women, lactating women with children for immunization) are mobilized in separate slots to the VHND, so that they can be provided a customized package of services.



OUTREACH: ASHA undertakes home visits, counsels and provides time-slots to the pregnant women, eligible women, and lactating mothers based on the services they require. She reinforces adherence to time slots, safety protocols, social distancing, and explains the benefits of services and session information (date, time, place etc.). For mobilization of reluctant families, ASHA conducts a community level meeting a day before the VHND, involving members from the Panchayat, family and service providers like AWW, etc., During this meeting, the service providers sensitize and counsel the families reluctant to bring their children for immunization, pregnant women for ANC services and families resistant to adopt family planning methods. For those who had missed an appointment, follow up tracking is done by the ASHA.

2 Enhancing Community Involvement:

Different stakeholders are involved in order to ensure the smooth conduct of a CiVHND. The involvement of different stakeholders is summarised in Table 1 below.

Table 1: Enhancing Community Involvement

Panchayat Members	VHSNC	Community Health Officer (CHO)
<ul style="list-style-type: none"> To address socio-cultural taboos and beliefs of the community To organise community level meetings with ASHA on awareness generation on ANC/ RI and FP Spreading key FP messages in the community Sensitization of households on FP related government schemes and entitlements Community mobilization in FP related activities 	<ul style="list-style-type: none"> Supporting FLW in organising CiVHND in appropriate space Community monitoring of referral of high risk mothers to facilities Emergency transportation of high risk mother Arranging logistics for the VHND that can be used for emergency purposes/services Promoting Family Planning services with the support from ASHA and AWW Encouraging the FLWs to mobilize beneficiaries from hard to reach areas to avail the basic services and FP counselling Facilitating the identification and distribution of cash benefits to the eligible beneficiaries for various govt. schemes including Family Planning. 	<ul style="list-style-type: none"> To create health-related awareness focusing on Family Planning within and outside the group in the community Members of SHG would be involved in organising Saas Bahu Beta Sammelan, etc., in the CiVHNDs so as to provide FP education to the beneficiaries at the community level

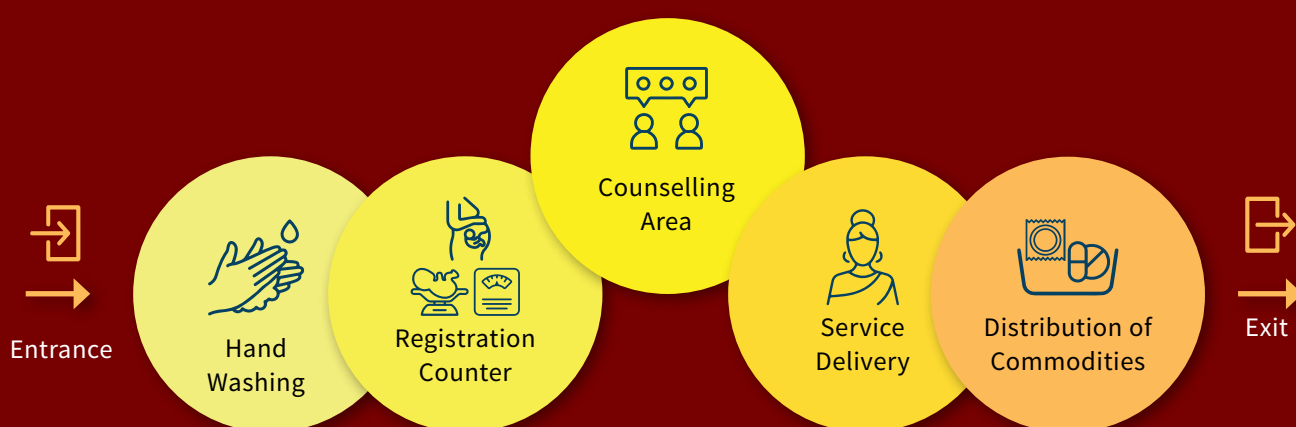
3 Organising flow of services in the CiVHND:

Once the women are mobilized to CiVHND in their particular time slot, they would initially be received at the registration counter/area. Beneficiaries receive a token number from ASHA/AWW at this counter to avail services by turn. During the time of registration, beneficiaries are asked whether they have an MCP card with them.

This card is used to document and assess the uptake of family planning and other services that they receive. In case of non-availability, the new beneficiaries are issued a card. Others are given a duplicate MCP card, if it has been misplaced. They are counselled to retain the card carefully and to bring it with them whenever they access the VHND/facility for services. If a beneficiary forgets to bring her MCP card and her residence is nearby, she will be asked to get it from her residence. If not, her information is entered in the register and a transcript is entered in MCP card during her next visit. The beneficiaries would then proceed towards the counselling area where they receive counselling, customizing FP messages as per life stages on relevant topics. FLWs also involve the spouse of the beneficiaries in the counselling process, when they are available.

ASHA further screens the women from the due-list and group counselling session and further refers them to the ANM for subsequent counselling. After the counselling session, the beneficiaries move towards the service provision area, where ANM would provide the required services to each beneficiary. ANM enters the services provided in the MCP card, distributes supplements, contraceptives or other medicines, based on the individual's requirement.

Figure 3: Flow of Services in Chhaya Integrated Village Health and Nutrition Day



Role of ASHA

- Mobilization as per Time Slot Registration (Invitation Card)
- Measuring Weight and BP
- Facilitating Counselling sessions on FP, ANC and RI
- Supporting ANM in delivering services
- Report and record updation (at the end)

Role of AWW

- Measuring weight of PW and Children
- Counseling on Maternal Nutrition & food groups
- Mobilization of underweight children
- Support in distribution of nutrition
- Record and Report updation

Role of ANM

- Service provision for PW, EC and RI
- Counselling (one to One)
- Distribution of drugs and other commodities
- Report and Record Updation

B: Package of Family Planning Services provided in CiVHND

PACKAGE OF SERVICES IN CIVHND AND HWC

In the Chhaya integrated VHNDs, women are categorized into three groups i.e. a) pregnant women, b) lactating women with children 0-11 months old visiting CiVHND for immunization and other child related services c) non-pregnant women who are listed in the eligible-couple register of VHIR and visiting for FP services. If a woman belongs to more than one category for example, she is pregnant, lactating and has a child > 12 months, she will be counselled according to her reproductive intentions and referred for appropriate management. Illustrated below in the tables is the package of integrated services that beneficiaries receive based on their group classification, along with the need based counselling thereby strengthening FP efforts cutting across the RMNCH&N continuum.

Table 2: Integrated Services provided at CiVHND ^{xvi}





	Antenatal Care <ul style="list-style-type: none">All pregnant women are to be registeredRegistered pregnant women to be given ANCDropout pregnant women eligible for ANC are to be tracked and given services
	Immunization <ul style="list-style-type: none">All eligible children are to be given vaccines as per immunization scheduleAll dropout children who do not receive vaccines as per the scheduled doses are to be vaccinatedVitamin A solution is to be administered to under-five children
	Nutrition <ul style="list-style-type: none">All under-six children are to be weighed every month and their height to be recorded every quarter, and data to be entered in Poshan Tracker and plotted on MCP card simultaneously by AWWUnderweight and wasted children are to be identified and managed appropriately. Identified SAM children with medical complications to be referred to the NRC or health facility with paediatric care facilities. All under-six children to be provided supplementary nutrition
	Family Planning <ul style="list-style-type: none">All postpartum women accompanying their infant for immunization sessions are counselled for postpartum family planning.All eligible couples are to be given condoms, Combined Oral Contraceptives (COCs), Centchroman (Chhaya), Emergency Contraceptives Pills (ECP) as per their choice and referrals are made for other contraceptive services.



Table 3: FP integrated services pertaining to pregnant women

	Services	Counselling	Intervention Coverage
Population : All Pregnant Women	Hb, BP, Weight, Urine, TD, BMI Calculation, HIV Test, HRP Identification and Referral	Safe abortion, PFP, Healthy Timing and Spacing (HTSP), Danger Signs, Ultrasound, Balanced Diet, Diet Diversity, Correct Cooking Practices, ANC warning signs, THR	Counselling
	Weight, BP, Hb, FHR, IFA, Calcium, Albendazole, Urine, abdominal examination, TD Vaccine, gestational diabetes, HRP identification and Referral	Birth Preparedness, Institutional Delivery, Danger Signs, HTSP, PFP, Diet Diversity, gestational weight gain, maternal nutrition	Counselling
	Weight, BP, Ultrasound, Urine, HIV Test, gestational diabetes, TD Vaccine, HRP identification and Referral OGTT, IFA, Calcium	HTSP, PFP, Mission Parivar Vikas activities, Institutional Delivery, 48 hours stay in facility, birth planning, danger signs, new born care and practices, KMC, early initiation of breast feeding, exclusive breastfeeding, diet diversity, food hygiene, immunization	Counselling

■ First Trimester
 ■ Second Trimester
 ■ Third Trimester

Table 4: Counselling Topics for Pregnant Women by Trimester and Post Pregnancy

	Reproductive (ASHA)	Maternal / New Born (ASHA)	Services (ANM/CHO)
First Trimester(1-3)	Safe abortion (information and referral) on client's request	Vaccination (TD)	Registration on confirmation of Pregnancy Test (PT)
	Healthy Timing and spacing of pregnancy (HTSP)	Ultrasound	<ul style="list-style-type: none"> History of PW
	Need for Post-Partum FP (PFP)	Danger Signs	<ul style="list-style-type: none"> Weight and Height Measurement BP Measurement Hb Measurement Urine, HIV and Syphilis test, malaria tests in endemic areas. Gestational Diabetes test TD Vaccine Tab Folic Acid Identification of HRP and Referral BMI Calculation (<20 weeks), OGTT (<12 weeks) Blood RH Group

	Reproductive (ASHA)	Maternal / New Born (ASHA)	Services (ANM/CHO)
2nd Trimester (4 – 6)	Healthy Timing and spacing of pregnancy (HTSP)	<ul style="list-style-type: none"> • Vaccination 	<ul style="list-style-type: none"> • Registration on confirmation of PT
	Different Options Post-Partum FP (PPFP)	<ul style="list-style-type: none"> • MCP Card • Birth Preparedness • Danger signs • Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA) Day • Appropriate Facility Delivery (HRP) • Social Entitlements • IFA and calcium supplementation • Importance of ID 	<ul style="list-style-type: none"> • History of PW • Weight and Height Measurement • BP Measurement • Hb Measurement • Urine, HIV and Syphilis test • Gestational Diabetes test • TD Vaccine • Referral for Ultrasound • Distribution of IFA and Calcium Supplements • Albendazole prophylaxis • HRP identification and Referral
3rd Trimester (7-9)	Healthy Timing and spacing of pregnancy (HTSP)	<ul style="list-style-type: none"> • Plan for ID 	<ul style="list-style-type: none"> • Weight and Height Measurement
	<ul style="list-style-type: none"> • Post-Partum FP (PPFP) through LAM or appropriate family planning • Ensuring Spacing at Birth for Spacing and Limiting 	<ul style="list-style-type: none"> • 48 hour stay at facility 	<ul style="list-style-type: none"> • BP Measurement
	Enhanced compensation to beneficiaries for sterilization, incentive scheme for PPIUCD	<ul style="list-style-type: none"> • Provisions for Referral Transport • Birth Preparedness • Danger Signs during Pregnancy • Early introduction of Breast Feeding • New-born care practices (Delayed bathing, cord care and danger sign of new born) • Scheduled HBNC and HBYC visits by ASHA 	<ul style="list-style-type: none"> • Hb Measurement • Urine Test • Gestational diabetes test • TD Vaccine • Referral for ultrasound • Distribution of IFA and calcium supplements • HRP identification and Referral

First Trimester
 Second Trimester
 Third Trimester

Post-Pregnancy as per Baby's Age

	Reproductive (ASHA)	Maternal / New Born (ASHA)	Services (ANM/CHO)
0 - 1 Months	<ul style="list-style-type: none"> Influence of Breastfeeding on return to fertility ESB 	<ul style="list-style-type: none"> Maternal Danger Signs 	<ul style="list-style-type: none"> Infant
	<ul style="list-style-type: none"> Healthy Timing and Spacing of Children 	<ul style="list-style-type: none"> New-born Danger Signs 	<ul style="list-style-type: none"> Weight Monitoring
	<ul style="list-style-type: none"> PPFP and Basket of Choices available 	<ul style="list-style-type: none"> KMC Practices for LBW 	<ul style="list-style-type: none"> Vaccination
	<ul style="list-style-type: none"> LAM Home Delivery of Contraceptives by ASHAs 	<ul style="list-style-type: none"> Handwashing 	<ul style="list-style-type: none"> Identification development delays and danger signs
	<ul style="list-style-type: none"> Family Planning Indemnity Scheme 	<ul style="list-style-type: none"> Parenting Tips as per MCP card for Early Child Development 	
	<ul style="list-style-type: none"> Enhanced compensation to beneficiaries for sterilization, incentive scheme for Post abortion IUCD 	<ul style="list-style-type: none"> Vaccination 	<ul style="list-style-type: none"> Breast Feeding Support
	<ul style="list-style-type: none"> Mission Parivar Vikas Services 	<ul style="list-style-type: none"> AEFI Prevention of ARI, diarrhoea JSSK for sick infants (transport) 	<ul style="list-style-type: none"> KMC Process Screening, referral and follow up for disabilities. Management of small and sick new born
1-6 Months	<ul style="list-style-type: none"> Influence of Breastfeeding on return to fertility Health Timing and Spacing for Children PPFP and Basket of Choices available Risk of Pregnancy in lactation amenorrhoea after 6 months Home Delivery of Contraceptives by ASHAs Family Planning Indemnity Scheme Enhanced compensation to beneficiaries for sterilization, incentive scheme for PPIUCD, Post abortion IUCD Mission Parivar Vikas Yojana Services 	<ul style="list-style-type: none"> Prevention of ARI, pneumonia and diarrhoea Parenting tips as per MCP card (ECD) Handwashing, safe drinking water Use of ORS and zinc Immunization 	<ul style="list-style-type: none"> Danger signs identification, management Distribution of FP commodities as per requirement, Refer for injectable, IUCD, sterilization ORS and zinc tablets in diarrhoea management. Developmental delays.

Post-Pregnancy as per Baby's Age:

	Reproductive (ASHA)	Maternal / New Born (ASHA)	Services (ANM/CHO)
6- 11 Months	<ul style="list-style-type: none"> Influence of breastfeeding on return to fertility 	<ul style="list-style-type: none"> ARI symptoms and prevention 	<ul style="list-style-type: none"> Vaccination
	<ul style="list-style-type: none"> Healthy Timing and Spacing of children, PPFP and Basket of Choices available, 	<ul style="list-style-type: none"> Use of ORS and zinc 	<ul style="list-style-type: none"> Monitoring Vitamin A consumption,
	<ul style="list-style-type: none"> Risk of pregnancy in lactation amenorrhoea after 6 months 	<ul style="list-style-type: none"> Handwashing 	<ul style="list-style-type: none"> Prophylactic ORS and Growth monitoring
	<ul style="list-style-type: none"> Home Delivery of Contraceptives by ASHAs 	<ul style="list-style-type: none"> Parenting tips as per MCP card for ECD, 	<ul style="list-style-type: none"> Danger signs & SAM identification & referral
	<ul style="list-style-type: none"> Family planning Indemnity scheme 	<ul style="list-style-type: none"> Micronutrient supplementation 	<ul style="list-style-type: none"> Management of ARI/Diarrhoea and other common illness
	<ul style="list-style-type: none"> Enhanced compensation to beneficiaries for sterilization, 	<ul style="list-style-type: none"> Complementary feeding 	<ul style="list-style-type: none"> Screening, referral and follow up for disabilities and developmental delays,
	Mission Parivar Vikas Yojana services	<ul style="list-style-type: none"> Immunization 	<ul style="list-style-type: none"> Distribution of FP commodities as per requirement Refer for - Insertion/removal of IUCD, Injectable Identification & management of RTI/ STI

C. Tracking of women with high risk pregnancy for FP Counselling

The ANMs perform all the measurements during ANC and screen the pregnant women for high-risk pregnancy. ASHA's mobilize all the pregnant women in her village to undergo at least one high-risk screening by a doctor/obstetrician. She also informs them about the care that they need for themselves to address the high-risk, in the context of FP. All identified high risk pregnancies are mobilized for three additional ANC visits and are linked with nearest First Referral Units (FRU) for ensuring a safe delivery and prompt management of complications.

D. Roles and responsibilities of ASHA, ANM and AWW in CiVHND:

The roles and responsibilities of the frontline workers are summarised in the table below:

Table 2: Counselling Topics for Pregnant Women by Trimester and Post Pregnancy

	ASHA	AWW	ANM
Before CiVHND	<ul style="list-style-type: none"> Match lists of beneficiaries and eligible couples with AWW Prepare a due list of Eligible Clients who require FP counselling, services and/ or referral. The due list will be prepared according to life stage and the services that would be delivered to the mother and child during the particular visit. Clients may be segregated as a user (both satisfied and with side effects) and non-users, including the HRPs Make home visits and provide time slots; Meeting with EC, reluctant families and counsel them for services Draw circles for social distancing at VHND site 	<ul style="list-style-type: none"> Prepare a list of Beneficiaries, share and match with ASHA Keep VHND site clean, arrange for water & toilet and place with privacy for ANC Keep growth monitoring records readily available Plan for a community event like Godbharaai and Annaprashan, where integration of FP would be done and inform accordingly to ANM/ASHA for appropriate counselling 	<ul style="list-style-type: none"> Prepare Monthly Sub-centre VHND plans Indent and ensure supplies, drugs, vaccines, contraceptives, equipment and other consumables (Facility-based
During CiVHND	<ul style="list-style-type: none"> Mobilize all beneficiaries as per the time slots and as per the life stage; Keep a check if mobilized beneficiaries attend VHND; Ensure that malnourished / growth faltered children come for a consultation with ANM; Ensure all HRP women attend VHND; Assist ANM in distributing supplements; Counselling of every PW in the antenatal period to help them make a tentative choice of PPFM methods Immunization related counselling Proactive counselling of Post-Partum women during child immunization visit to assess the individual risk of Pregnancy of each client. 	<ul style="list-style-type: none"> Keep an adequate number of MCP cards Ensure weighing scales for infants, children and adults and infantometer, stadiometer Individual nutrition counselling for growth faltered children/ malnourished children, along with contraceptive counselling for their mothers. Prepare and manage the Early Childhood Development corner Provide nutrition & Breastfeeding Motivation Program(BMP) counselling to lactating mothers are assessing compliance to LAM in women with babies less than six months and contraceptive counselling to partially breastfeeding women as well as mothers of children more than 06 months of age. Task Shifting (BP and Weight) 	<ul style="list-style-type: none"> Registration of new pregnant women; Proactive FP Counselling of all Antenatal women. Proactive FP Counselling of all Post-Partum women as per the life stage to assess the individual risk of Pregnancy of each client and offer available FP methods. Provision of FP services to beneficiaries. Counselling of dissatisfied clients, management of side effects to encourage continuation / switching to another methods Counselling of clients with complications and referral to higher facility. Document all services Provided

	ASHA	AWW	ANM
After CiVHND	<ul style="list-style-type: none"> • Ensure regular follow up of discontinuing clients and counselling to encourage switching to another method. • Follow up of HRP clients to ensure adherence to the method of their choice. • Prepare due list and time slots for the next VHND 	<ul style="list-style-type: none"> • Assist ASHA in preparation of due list • THR and function as a depot holder for providing FP products and contraceptives 	<ul style="list-style-type: none"> • Ensure reporting of the VHND to the MO in charge of the PHC/Block • Ensure that the following are sent to block PHC: Immunization waste (used vials and syringes); Open vials of vaccines (DPT, TT, Hepatitis B, Oral Polio Vaccine (OPV), Haemophilus influenzae type B (Hib) containing Pentavalent vaccine and injectable Inactivated Poliovirus Vaccine (IPV); which can be reused as per the Open Vial Policy are carried back in proper cold chain.



E. Role of Supervisory Cadre

CiVHND provides a wide spectrum of RMNCH services across different life stages which provide multiple opportunities to offer FP advice and services in an integrated manner for pregnant and post-partum women to understand the importance of protecting themselves from intended/unwanted pregnancy. However, despite these arrangements, challenges in VHND including FLWs' skills, coverage and quality exist and hamper the progress in improving RMNCH indicators especially Family Planning. Supportive Supervision of different functionaries is critical to ensure effective roll out of the integrated VHNDs. The roles and responsibilities of the supportive cadre to the frontline workers is summarized in the table below.

Table 6: Roles and responsibilities of Supervisory Cadre

ASHA Sangini	Block Community Process Manager (BCPM)	Community Health Officer (CHO)
<ul style="list-style-type: none"> • To support ASHA in finalization of due list of Eligible Clients who require FP counseling, services and/or referral. The due list is prepared in alignment with life stage and the services to be delivered to the mother and child during the particular visit. Clients may be segregated as user (both satisfied and with side effects) and non-users including the HRP's. • To mentor ASHA on how to cluster the time slots based on due list for beneficiary's mobilization. • To assist ASHA in organizing Village level meeting in coordination with Panchayat members to sensitize families resisting family planning advice; • To provide feedback on VHND observations to MoIC on logistics gaps or challenges; • To identify gaps in knowledge and counseling skills among ASHAs, and provide need based mentoring; • To track services by referring due list and conducting home visits along with ASHA where there is less service utilization; 	<ul style="list-style-type: none"> • To ensure that VHNDs are organized as per micro plan; • To ensure the availability of all FLWs in VHNDs; • As part of pilot, BCPM will observe minimum 2 VHNDs per month; • BCPM will document the gaps and challenges observed in consultation with Asha Sangini for further sharing at block and district level meetings; • To identify poor performing VHNDs and plan for supervisory visits with Asha Sangini; • To identify gaps and plan for capacity building of FLWs based on identified skill gaps; • During supervisory visits, BCPM will ensure - VHIR is updated; Quality due list is maintained; beneficiaries' mobilization based on time clustering, logistics are available; • BCPM will organize convergence meetings with other concerned departments to address the gaps in logistics, drugs, supplements at VHNDs. 	<p>When CiVHNDs are organized at the HWC, the Community health officer (CHO) is responsible for supervising the efficient organization of the CiVHND.</p> <ul style="list-style-type: none"> • Indent and ensure supplies, drugs, vaccines, • contraceptives, equipment and other consumables (Facility-based CVHND) • Registration and proactive FP Counselling of all pregnant and postpartum women; • Provision of FP services to beneficiaries. • Follow up counselling and management of side effects to encourage continuation / switching to another methods • Counselling of clients with complications and referral to higher facility. • Document all services Provided

F. Integrated supply chain management



For quality services at CiVHND, availability of supplements, functional equipment and logistics is to be ensured. Hence, in order to ascertain that all CiVHNDs have proper supply of all required supplements and functional equipment, close coordination of the District and block team with Uttar Pradesh Medical Supplies Corporation Limited (UPMSCL) is required to ensure uninterrupted supply of required logistics and sufficient drugs availability at CiVHND. District and block team work on the indenting process based on the estimations and distribution based on the client load. They submit written feedback to the concerned departments on the CiVHND observations and gaps in services delivery due to the absence of required supplies. This facilitates timely actions to improve the logistics and availability of drugs and commodities during CiVHNDs.

G. Documentation and reporting post CVHND

After the CiVHND session ends, the three FLWs (ANM, AWW and ASHA) make a tally of beneficiaries who attended VHND and the absentees and list the households for follow up services. Lists of High Risk Pregnant (HRP) women both in the antenatal and extended postpartum phase, clients following LAM disinclined to use modern methods, clients discontinuing/switching to other methods, clients with side effects, referred clients as well as mothers of SAM children.

ASHA and AWW conduct follow-up visits to beneficiary homes to counsel pregnant women, for new-born care, to promote infant and young child feeding etc. They also contact absent beneficiaries to motivate them to attend the next CVHND. The ANM and Anganawadi worker submit a comprehensive report of services utilization during VHND to the Block/PHC Medical Officer (BMO) and Child Development Project Officer. During the monthly meetings, District and Blocks/PHCs discuss CiVHNDs observation data and the discuss solutions and actions to address the challenges.

H. Capacity building of FLWs

TRAINING

The effectiveness of the Chhaya VHND and the delivery of FP services is largely determined on the active involvement of Frontline health workers (FLWs) at each stage. Hence, capacity building of FLWs (ANM, ASHA, AWW) is integral to keep them updated on latest procedures and processes. They are trained on their roles and responsibilities at the block level.

ANMs are sensitized on new contraceptives through a two-day classroom training. Orientation of accredited social health activists (ASHAs) is facilitated through cluster meetings and Anganwadi workers (AWW) are sensitized through supportive supervision.

MENTORING

Continuous mentoring and supervision forms an integral part of the whole intervention with more emphasis on building competencies and problem solving. The Block Outreach Coordinators (BOC) mentor the ASHAs on maintaining quality due-list, community mobilization, time clustering, tracking and follow up of severely anaemic pregnant women during home visits. The BOC also supports them to develop home-visit plans based on gaps identified in the VHIR. Quality if VHIR data directs Block Outreach Coordinators (BOC) to prioritise ASHA areas for mentoring visits. The BOC also observes practice of ASHA's skills to mobilize community and change behaviours during on-site mentoring, focused on areas with low PW identification and utilisation of CiVHND services.



I. Monitoring and mid-course corrections

For the monitoring and mid-course correction of CiVHND intervention, data and information is being generated through two different sources. ODK application is being used to compile infrastructure and logistic availability. E-kavach/TECHO app is being used to generate coverage and service uptake information. Both the data capturing tools are web based applications, enhancing data accountability and real time data monitoring, and facilitating effective integration and decision making.

VI. Progress made thus far

Currently around 400 Block Outreach Coordinators (BOC) cover similar number of blocks and they observe 6 to 8 VHNDs per month. As on date, 3200 CiVHND sessions are observed each month by BOC's – where beneficiaries are segmented as per each category, and provided with the service package that includes FP counselling and services. BOC's spend 09 days each month to do Mentoring. Mentoring checklists are being filled and FP is incorporated (with specific focus on low parity, eligible couple and lactating women). It is estimated that roughly 36000 mentoring visits will happen with near around 32000 HH being reached through FP messaging (audio) and FP methods in these mentoring areas.

BOC provides supportive supervision and mentoring support to the FLWs during CiVHNDs and other key program platforms. Capacity Building of ASHA and ASHA Sangini has been completed in 28 districts. Post the trainings, as next steps, 21% of ASHA Sangini in 28 districts have completed the cluster meetings capacitating the participants through structured CB modules that contain specific sections and component of Family Planning. This initiative is now being scaled up to 75 districts.

Bulk of FP commodity movement is through ASHA home visits. ASHAs act as depot holders for uninterrupted distribution of commodities. CVHNDs also act as distribution point for ANM's service delivery.

Block wise data of the (%) CiVHNDs with availability and adequate availability of Condoms, Mala and Chhaya during the period April 2021 - April 2022, as observed through 13998 sessions suggests that:



81.8%

CiVHND sessions had Condom packets available



79%

CiVHND sessions had OCP-Mala strips available



69.4%

CiVHND sessions had Chhaya strips available



68.4%

CiVHND sessions had ECP strips available



79.2%

CiVHND sessions had Pregnancy Test Kit (Nischay kits) available

To improve availability and utilization of FP Commodities at the sub-centre level - a report is shared once in every 15 days for areas where FP commodities are not available enabling District Specialist Community Outreach (DSCO) to coordinate with DFPS and work closely to ensure that the FP commodities reaches the sub centre level in a seamless manner.

It has been observed that EC/ YLPC footfalls in CiVHNDs is generally low. Block Outreach Coordinator (BOC) thus provides supportive supervision and mentoring support during home visits to observe and demonstrate the skills and techniques including counselling. In each home visit they make an attempt to visit one Eligible Couple; one Pregnant Women (2nd & 3rd trimester) – with Priority to HRP; two new-born (0 to 28 days) with Priority to LBW/pre-term/ sick new-born; one child (2 to 5 month) and at least one child between 6 to 11 month.

The Digital Health platform (e-kavach/TECHO) has been piloted in Bahua Block, Fatehpur and is being scaled up in the state. FP Counselling, Service Delivery, Service Utilization and Footfall/Attendance are components of the e-kavach. Digital enumeration under the e-kavach entails listing of each member in the HH. This in turn generates due-lists for ANC as well as FP. Integrated workflow has been developed and FP messages for newlywed are included as a special focus group. The availability of infrastructure / drugs and functionality of equipment is monitored through the VHND Checklist.

VII. Conclusion:

Integrating FP within CiVHND services can enhance modern contraceptive use. This document describes the design, strategies and processes involved in facilitating effective integration of FP in CiVHND to minimize missed opportunities, when women are likely to seek other services at a time when they have an unmet need for contraception.

Consistent efforts are being made to strengthen access and uptake of FP services through the community platform (CiVHND) and by direct FLW household contact visits. However, new challenges may arise as the program expands to new geographies. The VHND is designed for populations resident in rural areas. The model will require adaptation to address emerging priority populations such as the urban poor.

Integrated FP services at CiVHND have shown to increase satisfaction by reduced waiting time, harmonizing messages, offering a package of services, follow-up home visits, and timely referrals. Focusing on the last mile of service provision will allow greater access to FP counselling and services to the marginalized and vulnerable population, especially in hard to reach areas and population sub-groups.

References

- i Adding it up: Investing in Sexual and Reproductive Health 2019: Guttmacher Institute <https://www.guttmacher.org/sites/default/files/report_pdf/adding-it-up-investing-in-sexual-reproductive-health-2019.pdf>
- ii <https://pib.gov.in/PressReleasePage.aspx?PRID=1697441>
- iii SRS_Bulletin_2020_Vol_55_No_1
- iv DaVanzo JHH, Razzaque A, Rahman M. Effects of inter-pregnancy interval and outcome of the preceding pregnancy on pregnancy outcomes in Matlab, Bangladesh. BJOG. 2007;114(9):1079–87
- v Warren C, Mwangi A, Oweya E, Kamunya R, Koskei N. Safeguarding maternal and new-born health: improving the quality of postnatal care in Kenya. Int J Qual Health Care 2010;22(1):24–30
- vi Integration of family planning with maternal health services: an opportunity to increase postpartum modern contraceptive use in urban Uttar Pradesh, India - Pranita Achyut, Anurag Mishra, Livia Montana, Ranajit Sengupta, Lisa M Calhoun, Priya Nanda
- vii <https://www.prb.org/resources/integrating-family-planning-and-maternal-and-child-health-care-saving-lives-money-and-time/>
- viii Lori JR, Ofosu-Darkwah H, Boyd CJ, Banerjee T, Adanu RMK. Improving health literacy through group antenatal care: a prospective cohort study. BMC Pregnancy Childbirth. 2017; 17:228
- ix Integration of family planning with maternal health services: an opportunity to increase postpartum modern contraceptive use in urban Uttar Pradesh, India - Pranita Achyut, Anurag Mishra, Livia Montana, Ranajit Sengupta, Lisa M Calhoun, Priya Nanda
- x Population Reference Bureau, Policy Brief: Integrating Family Planning and Maternal and Child Health Care: Saving Lives, Money and Time: By Karin Ringheim, James Gribble, And Mia Foreman; August 2011
- xi Mumah J, Kabiru CW, Mukiira C, Brinton J, Mutua M, Izugbara C, et al. Unintended pregnancies in Kenya: a country profile? STEP UP Research Report. Nairobi: African Population and Health Research Centre; 2014
- xii Ross JA, Winfrey WL. Contraceptive use, intention to use and unmet need during the extended postpartum period. Int Fam Plan Perspect 2001;2(1):20–7
- xiii Programming strategies for Postpartum Family Planning, World Health Organization (2009), 2013
- xiv Borwankar, R., Amieva, S. (2015). Desk Review of Programs Integrating Family Planning with Food Security and Nutrition. Washington, DC: FHI 360/FANTA
- xv Family Planning and Immunization Integration Working Group, Maternal and Child Survival Program, USAID
- xvi Government of India, National Guidelines for Village Health, Sanitation & Nutrition Day (VHSND), September 2019



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