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Introduction

Since the historic foundation of National Program for Family Planning in 1952, India has travelled a long and difficult path towards transforming the terms of the policy and actual program implementation.

Initially the program had a 'targeted approach' but now it has evolved into the 'target free approach'. Now this program is envisioned as a critical intervention towards reducing the maternal mortality and morbidity. The key turning point to bring back the lost sheen of family planning programs globally is 'London Submit of Family Planning', held in 2012. In addition to this for achieving India's Commitments for giving Healthy Reproductive Life to its Citizens GOI has included family planning programs under key elements like 'Vision FP 2020' and an 'Integrated RMNCH+A approach'.

The outbreak of COVID-19 has quickly altered the pre-existing sexual and reproductive health environment along with affecting the provision and supply of contraceptives, and a wide variety of sexual and maternal health services.

Across the globe, around 12 million women have underwent commotions in their family planning services due to the COVID-19 pandemic, steering to 1.4 million unintended pregnancies. (According to new estimates made available by UNFPA).

Access to family planning was widely interrupted by factors like travel restrictions, stock-outs, interrupted supply chains, and swamped health facilities.

For improving contraceptive availability, aids couples to avoid unplanned pregnancies and making the Family Planning program more responsive to the customer's need, an efficient supply chain and logistic system, i.e., FP-LMIS, is required. Along with this to strengthen this complex process, GoI also joined hands with various development partners.

To enjoy a safe and healthy sexual life is the reproductive right of every woman and it provides them the freedom to decide and command their own reproductive functions. Also, the women must be liberated enough to embrace the blessing of motherhood as per her convenience and will. Lives can be saved by providing access to the life-saving health commodities for safe abortion.

India's commitment to attain its sexual and reproductive health goals can only be accomplished through a widespread approach that spotlights on the 'continuum of care' for women.
The topic of 'Abortion' has always posed a big challenge to women's health. Although the GOI had eased the access to abortion services, related laws, and policies more than three decades ago, many women still have very limited access to safe services.

Limited access to safe abortion services often leads to holdups in finding services and trust on unsafe providers, especially for women living in rural areas. It is a matter of great concern that

despite of so many policies for abortion, unsafe abortions still contribute for a large number of maternal deaths.

Expanded basket of choice of FP products has also increased the need for an efficient Logistic Management Information System to ensure that the right commodities will reach to the right person, in right time and place. Envisioning this necessity MoHFW has developed a Family Planning Logistic Management Information System (FP-LMIS) which is a SMS based application developed for Web and Mobile. It is enabled to provide instant stock information up to the community level.

This Logistics Management includes various activities that support the six rights of logistics which are as follows, Forecasting, Procurement, Indenting, Distribution & use, Transportation, Recording and reporting and Warehousing.

These programs and solutions are acting as a catalyst and propelled the program from the 'Vision Mode to the Mission Mode'. Although, India has witnessed the sudden drop in the population growth rate over the last decade, But the country still needs to travel an extra mile to achieve its sexual and reproductive health targets.

Objectives

● Development of an effective monitoring system that is helpful in maintaining the adequate stock availability of family planning commodities and thorough abortion care aids.
● To improve the awareness and attitude towards the usage of FP commodities and services in reproductive age group.
● To find the factors that are barriers in effective supply chain mechanism of FP commodities and services.29
● Effect of COVID-19 on India's Supply Chain for Family Planning Commodities and aids.
● To study support mechanism from various Development Partners in strengthening the supply chain for FP commodities and services.

Research Question

The research question was:
Impact of Covid -19 on Supply Chain Mechanism for the Family Planning Commodities and Services in India and Support from Development Partners to Overcome?

Methodology

- Search for relevant studies is conducted by employing mixed method approach (quantitative and qualitative procedures), recovered from web databases like PubMed, Google Scholar, Lancet.
- Journals and articles exclusive to the reproductive health filed derived using a set of unique keywords associated to Covid-19, supply chain disruption, unmet need of family planning and contraception were also reviewed.
- Official statistic data (for example NFHS), administrative data as well as the data gathered via various commercial operators and also from past projects and reference material provided by MoHFW is also considered.
- Analysis of existing data is done through content observation and theoretical perspective.

Inclusion Criteria:

- Location: low- and middle-income countries, India
- Time: articles published between March 2020 to present times
- Age: Couples of reproductive age,
- Females:15-49 years,
- Males:18-54 years,
- (Who faced setbacks in accessing SRH services due to Covid 19).
- Research Focus: Covid-19 induced supply chain disruption of FP products and services, leading to unmet needs of FP.
- Articles that investigated any study design circulated in peer-reviewed journals addressing the question on the research.

Exclusion Criteria:

- Location: high income countries
- Time: before Covid-19
- Age: Females: <15 and >50 years,
- Males: <18 years and > 54 years
- Studies that do not convey the effect of COVID-19 on family planning aids, and sexual behaviour, comments along with editorials were also not considered.
- Educational level, Religion, Number of sexual partners, HIV/STD, SRH complications other than related to supply chain disruption.

Current Scenario of Sexual and Reproductive Health of India in a Snapshot

Poor Sexual and Reproductive Health (SRH) is increasing the burden of disability and premature death worldwide. Unsafe sex is amongst the main factor causing morbidity and untimely mortality in Indian women. Almost half of the pregnancies are unwanted and to further complicate the situation, half of these end into abortions.

Lack of information and access to right methods of contraception put women's sexual as well as reproductive health at risk. Proper choice of contraceptives helps in preventing unwanted pregnancies, decrease the abortion rate, and also reduce the frequency of death and disabilities resulted due to complication of pregnancy as well as childbirth.

Key Sexual and Reproductive Health Concerns of India are high Maternal Mortality Ratio (113 per 1,00,000 live births in 2016-18 RGI-SRS 2016-18), high unwanted fertility rate and high unmet need for family planning.

India's huge population size impacts its health indicators. 17.5% of the world's total population is possessed in only 2.4% of the universal land mass. It also incorporates about almost 17.3% of the world's protected couples. 20% of world's eligible couples with unmet contraception needs also live here.

Recent figures and estimates present a challenging picture regarding the comprehensive abortion care in India. Current MMR in India is 113 per 1,00,000 live births (RGI-SRS, 2016-18). 8% of the Maternal Mortality Ratio (MMR) is contributed just to abortions, and in every two hours, one woman breathe their last due to the unsafe abortion practices.

A huge percentage of women recounted impediments after they had an abortion: 40% of surgical abortion users and about 66% of medical abortion users. Problems from precarious abortions ended up in hospitalization of more than 5 million women a year across the globe. Even after surviving, a large percentage ends up suffering from chronic and devastating diseases for the rest of their lives. In general, every year, in India around 3.5 million young women out of 107 million young women search for abortion services.

Approximately one out of four abortions in India (22%) are happening in health facilities. Generally, three in four abortions (73%) are gained autonomously from a chemist or unsanctioned client by purchasing medical methods of abortion (MMA). Other 5% are gained through serious harmful methods. Approximately two-thirds of women and 85% of men mistakenly believed that abortion is illegal.

India has a very big Maternal mortality level which is one of the main factor that determines women's health and social status of a country. Maternal deaths could be prevented especially those that are resulting because of risky abortion and are undoubtedly objectionable in nature. Intensifying proper approach to secure abortion care services will act as a cornerstone in reducing these avoidable maternal deaths.

By taking all these population issues in consideration, the country has made a transition from a "Population Control Centric Approach to a Reproductive Rights Based Approach".

India's Key Indicators for Sexual and Reproductive Health

Parameters	Source (NFHS-4, 2015-16)		
	Urban Total	Rural	
1. Total Fertility Rate	1.8	2.4	22
2. Unmet need for family planning (currently married women 15-49 years)			
a. Total unmet need %	12.1 12.9	13.2	
b. Unmet need for spacing %	5.2 5.7	5.9	
3. Present-day use of family planning methods (currently married women 15-49 years)			
a. Any method %	57.2 53.5	51.7	
b. Any modern method %	51.2 47.8	46.0	
c. IUD/PPIUD %	2.4 1.5	1.1	
d. Pills %	3.5 4.1	4.3	
e. Condoms %	9.1 5.6	3.9	

Prevalent Factors for Choosing Illegal and Unsafe Abortions Practices by Women

There are many factors prevailing in the society the influence a women's decision about choosing safe abortion care. Some of these factors are social beliefs, economic problems, policy related and limited access to healthcare facilities.

1. Social Factors – there are many social stigmas related to abortion is present in the society, like abortion is dangerous to women, abortion services must be carried out only in facilities like hospitals by doctors, only imprudent women go for abortions etc. Shyness to seek care from a male provider for reproductive health related needs of the women and sometimes poor or judgmental provider's attitude towards women seeking abortion care.
Gender discrimination and low status of women also add on to the problem. Still in many parts of the country women cannot take decisions for themselves. Issues related to male accountability for women's health.

2. Economic Factors- Economic limitations like, low-income levels, poverty, high charges for services by private service providers etc. affect the women's decision to seek comprehensive abortion care.

3. Policy Factors- People have lack of awareness for laws and policies related to abortion. They do not know that in India choosing abortion is a legal right of a women. Also, the Legal aspects of abortion not disseminated well. Lack of qualified manpower and inadequate supplies and equipment. Stunted contraceptives usage. Prescribing or Imposing only a specific type of contraceptive method during the particular abortion care. Weak referral linkages in case of complications.

4. Physical Access Related Factors- Transportation related Barriers to reach facilities providing safe abortion services. Lack of trained providers in under-served areas. No information regarding facilities providing safe abortion services.

Restricting Factors from Providers Side for Denial of Services at the Facility Level

Studies have suggested that many times healthcare providers had denied the abortion services to the women coming to them, especially in rural part of the country. There are many barriers related to abortion services that need to be focused upon.

Restricting Factors	% of Women
Gestation above 12 weeks	28%
Women came on a day when provider was not present	17%
Changed her mind after counselling	17%
Not pregnant	16%
Came alone/no attendant came with her	8%
Unfavorable medical conditions	6%
Unable to come for follow up	5%
Wanted medical abortion	2%
Apprehensive/Wanted anesthesia	1%

Government of India's Policies and Strategies for Safe and Comprehensive Abortion Care

For addressing this important issue, government has made safe abortion care one of the main element of a vast majority of maternal health policies in the nation. The aim of these policies is that the women should have right knowledge and should be able to choose methods that are harmless, successful, reasonably priced, and conventional for the required care.

Policies under National Population Policy (NPP) 2000 and RCH II (NRHM) program (2005–2012), within the framework of the Medical Termination of Pregnancy (MTP) Act 1971 are focused on enhancing access and availability of comprehensive abortion care services in both the public and private sector.

Special mention is a trailblazing approach called RMNCH+A strategy which is adopted by the GOI to make establishment of considerate and reliable abortion care aids for women. This strategy primarily focuses on providing Comprehensive Abortion Care (CAC) services along with crafting a need for these aids or services at the fitting level of public health facilities.
This strategy also takes care of the constraining dynamics that manipulates women's health needs and the individual situations for not able to gain access to any of these services.

In addition, strengthening 'delivery points', capacity building, generating awareness, directing Maternal Death Review (MDR) to amend the worth of obstetric care and lessen maternal mortality and sickness and growing understanding regarding the mental and social situations of women requiring abortion care services are few of the main policy aspects.

Making Comprehensive Abortion Care (CAC) A Women Centric Approach

In 2010, GOI had released "the CAC Training and Service Delivery Guidelines". The aim was to renovate abortion care from only considered a medical practice to a 'Woman Centered Comprehensive Abortion Care' approach. Under this approach provisions were made to provide safe and legal abortion services to women. There are three main factors of Woman Centered Comprehensive Abortion Care, Choice, Access and Quality.

1. Choice- In relation to sexual and reproductive rights, 'Choice' means the 'right and an option to be able to choose between options and any women should be able to make any choices for her own health and body. In broadest sense it means that it is a person's justified privilege to decide, if and when to become pregnant, and whether to continue or terminate a pregnancy, what are my on hand options to choose for abortion procedures, providers and facilities.
The right choice should be made only after getting complete and accurate information. Women must always be given opportunity to ask questions and express concerns to providers. To be woman-centered in their care, health workers must recognize and respond to a woman's right to choices, regardless of her age or marital status.

2. Access- This means that, regardless of economic or marital status, age, education or social origin, women can get immediate needs-based services close to home. Women's access to services also depends on the availability of trained and technically competent providers.

3. Quality - Quality of care in the context of women-cantered care means providing services tailored to the medical and personal needs of women, allowing adequate time for counselling, maintaining privacy and confidentiality, using internationally recommended technologies such as MVA, EVA and MMA according to appropriate clinical standards and Protocols for infection prevention, pain management, complication management, and other clinical components of post-abortion contraceptive care and services, including emergency contraception.

Commonly used FP products available under the Family Planning Programs in India

FP commodities like Combined Oral Contraceptive Pills (COC) (Mala-N), Emergency Contraceptive Pills (ECP) (Ezy pills), Weekly pills (non- steroidal, non- hormonal contraceptive pill) (Chhayya), Injectable contraceptives (Antara Program), Condoms (Nirodh), Intra Uterine Contraceptive Devices (IUCD 380A & 375), Pregnancy Testing Kits (PTK) and Tubal Rings are available at the public healthcare facilities.

They are provided to beneficiaries across free distribution at the facility level and ASHA (paid distribution) at the community level. IUCDs are provided by the state at 50:50, and OCP in a state are provided at 20:80. These commodities are provided to the states supported the projected demand submitted on the premise of a median of the past three years performance.

Commonly used FP Services under the Family Planning Programs in India

A. Services available at public health facilities

I. Pre and During Abortion Care:

1. Creating Awareness (using IEC/BCC materials)
2. Counselling Services (Pre procedure counselling)
3. Termination of First Trimester Pregnancies
    a. Manual Vacuum Aspiration (MVA)
    b. Electric Vacuum Aspiration (EVA)

c. Medical methods of abortion (MMA) – Include the use of mifepristone and misoprostol. The World Health Organization (WHO) advises the use of mifepristone with misoprostol for medically induced abortions and misoprostol for follow-up care only. Misoprostol alone can also be used to manage induced abortion when mifepristone is unavailable (WHO, 2018).

4. Termination of Second Trimester Pregnancies
    a. Surgical methods
        (i) Dilatation and Evacuation (D&E)
        (ii) Hysterotomy
    b. Medical methods
    c. Miscellaneous

Basic set of instruments for conducting safe abortion:

Complete set for MVA (MVA syringe + Sponge holding forceps + Sim's/Cusco's speculum+ Tenaculum/ Volsellum + Adaptor for MVA syringe + At least 3 sizes of suction cannula)

Complete set for EVA (Suction machine + Sponge holding forceps + Sim's/Cusco's culum +Tenaculum/ Volsellum +Dilator set (at least 12 different sizes)+At least one sizes of suction cannula)

Complete set for D&C(Sponge holding forceps +Sim's/Cusco's culum +Tenaculum/Volsellum +Ovum forceps+ Uterine curette +Dilator set (at least 12 different sizes)

II. Post Abortion Care:

1. Follow ups
2. Management of partial and risky abortion and difficulties
3. Counselling
4. Contraceptive and family planning services (post-abortion contraception)
5. Reproductive and other health services

B. Services at Doorstep of Users

1. Creating Awareness (using IEC/BCC materials)
2. Counselling Services
3. Post Abortion Care
    a) Contraceptive products
    b) Community and service provider partnerships

FP Commodities Supply Chain System in India

Improving access to FP services is a crucial step towards addressing the population related issues in the country, like high fertility rate and unmet need for contraception. Because access to family planning services is not a privilege, but a fundamental human right. Therefore, provisions must be made so that no one in need should go unserved.

Procurement of the FP commodities is done Centrally under MoHFW, in India. After that they are further supplied to all the States and UTs.
For handling such a large-scale channel of supplies and distribution it is imperative to have a well-functioning and up to date Logistic and Supply Chain Management system.

The Indian government has introduced a Family Planning Logistics Management Information System (FP-LMIS). This digital system will work diligently to fortify and level the FP supply chain in India.

Flow of Supply Chain for FP Commodities:

It is a multidepartment approach which involves stores at National, State and Regional levels. Family Planning Division and Supplies and Social Marketing Division of MoHFW have primary responsibility for coordinating the activities of FP's goods supply chain.

Logistic Cycle of FP Commodities:

The goal of the logistic management system is to ensure the timely delivery of quality products to the end users. It has 6 components namely, Forecasting, Procurement, Indenting, Distribution and Use, Transportation, Recording and Reporting and Warehousing. An efficient logistic cycle makes sure that all the six components of logistic management system work together in a well-coordinated system.

Various components of a State Supply Chain Management System of FP Products as per Logistics Management Information System

1. Forecasting: it is a planning tool that uses data to estimate the required quantity of each FP commodity for distribution or utilization. By analyzing the data from the past and present trends we can reduce the errors and forecast accurately. It also aids in reducing the uncertainties.
The contraceptive forecast can be constructed using simple algorithms and/or calculations that take a variety of inputs into account. This contains demographic data (modern contraceptive prevalence rate [mCPR], unmet need for family planning); Consumption data; Program inputs (number of trained providers, advertising campaigns, strategy for providing services); Logistics data; Service statistics, etc.

2. Procurement: After finalizing the annual demand received from the states, Family Planning division of MoHFW submits it to the SSM division for procurement. For FP commodities, procurement is done centrally and the further supplied to States and UTs and from there to the public health facilities. ASHA further help in delivering theses commodities at the community level.

Then SSM division finalize the distribution plan as well as the schedule for delivering the FP commodities and issue the purchase order. CMSS is used for procurement process and purchase orders are issued to PSUs and Private manufactures.

After that they divide the socks into required stock and buffer stock (for emergency demand from States/UTs). Required stock is then delivered to State warehouses and buffer stocks are reached to GMSDs.

3. Indenting: It is routinely done by the one who placed the order i.e., person in charge or institution. The works on two approaches **Pull/Requisition System** (The person or institution placing the order determines the quantity to be ordered based on their consumption and stock on hand) and **Push or Allocation System** (the person or institution who fulfills the order and also determines the quantity to be issued). For making sure the smooth flow and proper tracking of the FP commodity the *'Pull'* approach must be adopted.

Indenting Demand Flow Chart

Recommended Frequency for Indenting

Institution Level	Frequency	Quantity of Indent
District	9 times a year	6 month's quantities
DH	9 times a year	1 month's quantity
SDH	12 times a year	1 month's quantity
Block	9 times a year	3 months quantity
PHC	9 times a year	1 month's quantity
Sub Center	12 times a year	1 month's quantity

4. **Distribution:** It is the most important aspect of the whole logistic management system of the FP commodities. Maintaining proper distribution channel will help in avoiding many supply chains issues like, under or over supply, damage or pilferage. Availability and condition of the stores, stock in hand and monthly average consumption etc. are few factors that worth considering while distribution is done.

Ideal Frequency for Distribution:

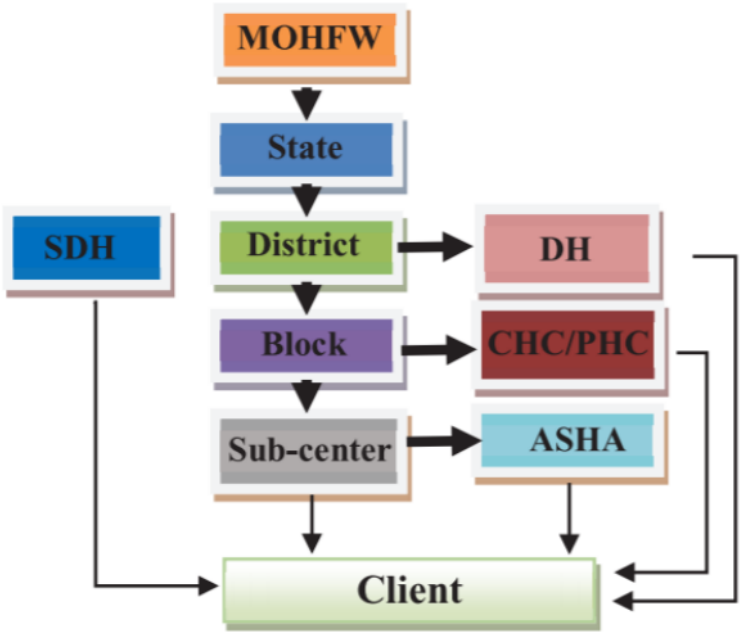
State to District: at least six months to a district warehouse. The quantities should be based on average monthly consumption and stock on hand at the district. It is important to ensure that 'three months' stock of each commodity is supplied to the block store and remaining 'three months' stock is kept at the district warehouse.

District Warehouse to District Hospital/Civil Hospital store: District warehouse should dispatch at least 'one month' stock to District Hospital/ Civil Hospital/ Sub Divisional Hospital based on their monthly consumption and stock on-hand.

District to Block: District warehouse should dispatch at least 'three months' stock to block store. The quantities should be based on average monthly consumption and stock on hand at the block. It is important to ensure that 'one month' quantity of each commodity is supplied to the sub center level and remaining 'two months' quantity is kept at the block level.

Block to PHC and Sub Center: Block store should dispatch one-month quantity to PHC and Sub Center every month based on their monthly consumption and stock on-hand at the respective facility.

Supply Flow Chart



5. **Assessing Stock Status:** There are two main factors to assess stock status: Stock on hand and the rate of consumption and these help in determining whether to place an order or not.

6. **Transportation:** Dedicated vehicles are allotted for delivering the FP commodities. A proper route map must be made beforehand to avoid any uncertainties. Various types of vehicles are available across different levels, right down to the sub center, for the distribution of drugs and consumables. Wherever government vehicles are not available, there is a provision for hiring vehicles.

Frequency for Transportation

Levels	Quantity	Mode	Frequency
State to District	Bulk quantity (for 6 months)	Truck	2 times
District to Block	Moderate quantity (for 3 months)	LMV/Mini Truck	4 times
Block to Sub Center and ASHA	Small quantity (for 1 month)	HW/ASHA	12 times

7. Warehousing: It is not only related to storing of commodities but ensuring their security and safety. While storing FP commodities environmental conditions must be favorable to maximize their shelf life. Commodities must be stored in such a way that they are readily available for their distribution. Required SOPs, Monitoring Checklists must be maintained. Periodic supervisions must be done by Program Managers and Storekeepers for ensuring quality of the products.
In case of any damaged or expired Family Planning commodities it be immediately removed from the inventory proper disposal must be ensured as per the SOPs.

8. **Inventory Management**: An inventory management system provides information to effectively utilize personnel as well as efficiently manage and coordinate the flow of materials. It is one of the most important processes of a warehouse/store to determine when and what quantity to order and how to keep the correct inventory for all goods to avoid bottlenecks or oversupply and order on time.
And this significantly helps the managers to be able to come with accurate decisions under normal circumstances.
Then below this is the Minimum Stock Level which means the level of stock when actions to replenish inventory should begin under normal circumstances and also the Maximum Stock Level which means the level of stock above which inventory levels should not rise under normal circumstances.

Monitoring Mechanism for FP Commodities:

The whole process of the supply chain needs to be monitored properly for ensuring the quality in the system. Accurate recording and reporting of the transactions is mandatory to avoid discrepancies. Record keeping is very important for tracking the supplies. Store records should be maintained in the proper orders to make the process fast and smooth.

An effective monitoring system is also useful to maintain adequate warehouse availability, which is also important to lower repetition and waste. In monitoring mechanism supportive oversight visits should be encouraged in the monitoring mechanism as they help reinforce the supply chain. These would be effective when done from center of State as well as within the state at consistent times.

Some of the States has also adopted few 'innovative strategies' of monitoring the stocks like, three-monthly analysis of stock situation of ASHA supply and associating it with the results stated in HMIS.

State of Odisha has established its own software for logistic management commitment, i.e., Reproductive Health Commodities Logistic Management Information System (RHCLMIS). This system was developed by the UNFPA support. It helped the state to streamline its supply chain imbalances. It is a user-friendly software which works on the dual applications (SMS and Web). Key features of this system are instant updates regarding the stock position, accurate tracking throughout the distribution channels, auto generation of reports in graphical format and it works without internet availability also.

The state government also used the India Post to deliver family planning materials from camp in Odisha to camps in 5 districts during COVID-19. This innovation has strengthened the FP product distribution throughout the State of Odisha.

Existing Comprehensive Abortion Care Supply Chain System for FP services (Comprehensive Abortion Care) in India:

Readily available abortion products are life-saving health commodities. Usually the supply schedule comprises of data about the total product amounts as well as projected costs essential to fulfill the resource pipeline in order to guarantee uninterrupted allocation of products. It must be within the specified parameters for delivery time, minimum and maximum inventory, delivery dates and acceptable delivery dates for goods.CAC supply chain management mainly enables delivery of MMA drugs, MVA equipment and consumables.
Logistics Management Information System (LMIS) provides appropriate, precise, wide-ranging, and reliable reporting and is core foundation of data for any supplies of FP commodities and is significantly helpful in the development, funding, purchasing, and delivery of the various supplies.

Various components of a State Supply Chain Management System of FP Services as per Logistics Management Information System

Forecasting:

Forecasting is the procedure of guesstimating the quantities of a particular product that will be spent, consumed, or used in the future over a period of time to meet the needs of a target audience. It can be established on chronological depletion (quantities issued or consumed), services obtainable, morbidity and / or demographics and can contain conventions about upcoming requirement, program plans (current and future) and performance.

When the available historical data is limited, insufficient or missing, assumptions will be made to evaluate the performance of the plan and the use of products/services and recorded.

Sometimes due to some aggravating factors, the forecast for the supplies required for carrying out a reliable and safe abortion practice becomes uncertain, which may be very difficult. Few of the variables could be that the total amount of abortion services provided may be overlooked in the country due to stigma, religious beliefs, and criminal laws and guidelines.

Certain drugs and medical devices used for the safe termination of pregnancy can also be used for other clinical purposes (Misoprostol is also used to prevent gastric ulcers related to non-steroidal anti-inflammatory drugs). The data quality may be unreliable, outdated, incomplete or non-existent at all.

Consumption-based forecast- This method relies on chronological utilization configurations to forecast upcoming developments. This is the most suitable method for a established program with a reliable data acquisition system. Due to the stigma associated with abortion, abortion services may underreport consumption data. This may cause storage bottlenecks.

In some cases, the records may not include utilization data for the different types of abortion amenities provided (for example, manual, incomplete abortion treatment), which can also upset the prognosis.

Service-based forecast- This method enumerates the up-to-date utilization of a service and regulates it to the notional amount necessary to handle a precise disease or medical service. This method necessitates consistent data on patient care (hospital visits) and the use of treatment guidelines.

This method may be the most effective but also complicated and time consuming, and can lead to huge differences between forecasts and future use. The biggest risk associated with this method is

that healthcare professionals must always follow the prescribed standard treatment guidelines. However, this method is usually suitable for new and expanded programs, or when consumption data is not available.

Morbidity-based forecast- Quantitative population forecasts can be used to estimate the potential market for people who use or intend to use the service. Most of the time, these forecasts do tend to miscalculate request and may lead to system overlap.

Product requirements by method and gestational age: For estimating determinations, sometimes the course of supervision sometimes has an significant consequence on the quantities of misoprostol tablets needed.

HEALTH SERVICE	UP TO 10 WEEKS GESTATION	10 – 13 WEEKS GESTATION	AT OR AFTER 13 WEEKS GESTATION (13-24 WEEKS)	POST-PARTUM
	MIFEPRISTONE & MISOPROSTOL			
Induced abortion	200mg mifepristone (1 tablet) on day 1 followed by initial dose of 800µg misoprostol (4 tablets) 1 – 2 days later	200mg mifepristone (1 tablet) on day 1 followed by initial dose of 600 (2 tablets) 1 – 2 days later followed by repeat doses of 400µg misoprostol (2 tablets) every 3 hours until expulsion. Alternatively, 200mg mifepristone (1tablet) followed by initial dose of 800µg misoprostol (4 tablets) 1-2 days later. The dose of misoprostol may be repeated to achieve abortion success.	200mg mifepristone (1 tablet) followed by initial dose of 400µg misoprostol (2 tablets) 1 – 2 days later followed by repeat doses of 400µg misoprostol (2 tablets) every 3 hours until expulsion	

HEALTH SERVICE	BEFORE 13 WEEKS GESTATION	AT OR AFTER 13 WEEKS GESTATION (13-24 WEEKS)	POST-PARTUM
	MISOPROSTOL ONLY		
Induced abortion	800µg misoprostol (4 tablets) every 3 hours until expulsion	400µg misoprostol (2 tablets) every 3 hours until expulsion	
Incomplete abortion	600µg misoprostol (3 tablets) orally or 400µg (2 tablets) sublingually or (in the absence of vaginal bleeding[7]) vaginally	400µg misoprostol (2 tablets) every 6 hours until expulsion	
Missed abortion	800µg misoprostol (4 tablets) vaginally or 600µg (3 tablets) sublingually every 3 hours until expulsion	400µg misoprostol (2 tablets) every 6 hours until expulsion	
Cervical preparation prior to surgical abortion	400µg misoprostol (2 tablets) orally		
Postpartum hemorrhage prophylaxis			600µg misoprostol (3 tablets)
Postpartum hemorrhage treatment			800µg misoprostol (4 tablets)

HEALTH SERVICE	UP TO 10 WEEKS GESTATION	10 – 13 WEEKS GESTATION	GESTATIONAL AGE > 13 WEEKS	AFTER BIRTH
	SURGICAL PROCEDURES			
All types of abortion services (induced, incomplete, missed)	Manual vacuum aspirator (MVA)/Electrical vacuum aspirator (EVA)		MVA/EVA/Dilation and Evacuation (D&E)[8]	

Usage and Availability:

The survey report shows that the retail market for medicinal abortion is huge. Medical abortion can be seen almost everywhere in urban areas, and almost half of the retail market in rural areas can be used for medical abortion. Almost a third of women receive their pills straight from the pharmacy.

Procurement:

Attributes such as shelf life, packing, price, and market undercurrents affect the way these products are purchased and survived in the supply chain.

Storage:

Standard operating procedures are required to extend shelf life, prepare products for distribution, and store them safely. Store the product in a parched, well-lit, well-ventilated warehouse and shun direct sunlight. Retain the accurate storage temperature. 15℃～30℃.

Stores should facilitate first-to-expire, first-out (FEFO) procedures. Arrange cartons with arrows pointing up. The identification labels, expiry dates and manufacturing dates should be clearly visible. Clean and disinfect storeroom regularly to discourage harmful insects and rodents from entering the storage area.

Organizing procedures like First Expiration, First Out (FEFO) could be helpful. Cardboard boxes with arrows pointing upwards is another efficient way of storing. Identification labels, expiration date and date of manufacture should be mainly observable. Disinfected and sterilize the warehouse frequently in order to make sure that harmful insects and rodents stay from entering the storage area.

Keep fire security equipment available, accessible, and functional at all times. Ensure employees are trained on using the equipment. Limit storage area access to authorized personnel only.

An instrument trolley can be used to store MVA instruments and devices together. The cart can also serve as a tray for instruments throughout the procedure. The cart must remain tamper-proof when not in use. Sanitized instruments can be packed in advance and put together with equipment and other necessary accessories.

All the disposable instruments must be discarded with proper precautions as per the recommended SOPs. And the reusable instruments (canula and aspirator) will be handled by a qualified staff member. They will usually steep soiled instruments in enzymatic cleaner, scrub visibly bloody areas, and then clean the instruments and later allowing them to air-dry.

All old, soiled medical instruments should be reserved in a “dirty” area of a room. After drying, the instruments should be autoclaved on the site or could be sent out for autoclaving. Keeping a machine operation log, cleaning calendar, weekly spore test/biologic indicator outcomes must be ensured for infection control. Sterile MVA instruments should be kept separately in the instrument cart.

It is recommended to immediately use instruments after sterilization. If case of storing instruments after High Level Disinfection (HLD), in covered tray, do not use instruments after 27 hours while instruments stored in sterilized drum can be used up to 7 days.

Monitoring and Assessment of FP Services:

Continuous monitoring and assessment to evaluate safe CAC services is of utmost importance for quality assurance. Monitoring should be based on various indicators like, abortion services performed with appropriate technology or not, people retrieving abortion aids received contraception before getting discharged from the medical center or not etc.

For improving the CAC services supervisors need to evaluate how often the particular services are used along with maintaining a log of all client’s records, the obtainability and appropriate utilization of gear and supplies and precise pointers of the value of care. Recognize and classify

any differences or difficulties that might occur and always give a response and share opinions with staff in order to correct any problems that can be acknowledged in advance.

The Tupange SMS Commodity Tracking System: (Intrepid System)

The Tupange SMS Tracking System utilizes the similar phone skill to guarantee effective and suitable Tracking & Monitoring availability of FP and CAC commodities.

This system helps in supervising stocks in Facilities & Districts thus allowing instantaneous feedbacks to acknowledged breaches. The information could be distributed among stakeholders – DRH, KEMSA, District RHCs, etc. for instant decision making.

Some states like Jammu and Kashmir have gone un extra mile for doing supportive supervision under the RMNCH+A integrated approach to maintain proper supplies of CAC commodities and instruments.

Literature Review

After conducting organized literature exploration on reports issued in various periodicals and writing with a emphasis on the study's research question, 20 web dbs. were examined. Google Scholar website was also utilized to examine any relevant studies available specifically in English between March 2020 to present times, with these significant terminologies: "Coronavirus 2019" OR "COVID-19" with "Family planning use" "Family planning service" OR "Contraceptive use" "Contraception use" "Maternal health service" "Child health service" "Sexual behavior".

I performed a thorough web search on Mesh that stands for Medical subject. I also undergo through a thorough search consisting of a number of mentioned lists of various articles and documentation to gather appropriate and applicable resource.

COVID-19 has shaken the whole healthcare system and disrupted the family planning supply chain globally. It is projected that around 48 million women from both low as well as middle revenue countries might encounter difficulties while choosing which particular family planning way they want to choose and that sadly results in around 7 to 15 million accidental pregnancies internationally.

Before COVID-19 came into the picture, one of the major global issue that has been around is hostile sexual and reproductive health consequences. A whooping number of projected 210 million women are being open to the pregnancy difficulties of which around half a million dies in between the pregnancy and post-partum duration. Around 68000 women lose their life annually just because of the difficulties arising from the dangerous abortion practices. 3 million babies lose their life in just the very first week of their life annually and while around 3.3 million infants were stillborn. And it also includes 340 million new sexually spread bacterial and protozoal infections developed each single year.

Remarkably, continuous admittance to sexual and reproductive services has been recognized as a solution to control the contrary sexual and reproductive health universally and throughout all socio-demographic features. But with the unexpected arrival of COVID-19 pandemic in the early months of year 2020 resulted in the enforcement of county wide lockdowns across the globe. And along with limiting the spread of the virus, these tactics have helped in altering the sexual and reproductive health (SRH) services across the globe.

Especially, SRH services like family planning commodities, sexual health as well as mother and child health services have been badly interrupted. To safeguard faithfulness to recommendations arranged by the World Health Organization (WHO), authors at the Guttmacher Institute and others have lectured that the hasty pause in quantity of SRH resucres would result in an unpredicted growth in hostile SRH. Thus, this study proposes to record the evidential effects of COVID-19 on SRH using a methodical scoping review.

- As India holds a key position of one of the largest domestic market and the manufacturer of the FP commodities in the world. Disruption caused by COVID-19 in Indian FP commodity supply chain resulted in serious implications worldwide.

- For containing the spread of the deadly virus series of lockdown and reopening measures were implemented by GOI from 25th of May to 1st of June. Although these measures were the need of the hour at that time, but it resulted in the serious disruption of the existing healthcare market along with the FP services.
- The entire supply chain for FP products was hampered due to the lockdown. There were significant constraints in operations like, manufacturing, distribution, and exports etc.
- Lockdowns, economic fall, fear of getting infected from the virus and restricted healthcare services impacted the women to seek their preferred choice of contraception.
- COVID-19 has shaken the whole healthcare system and disrupted the family planning supply chain globally.
- A WHO finding exhibited that in around 105 countries, 90% went through health service commotions as a consequence of the COVID-19 pandemic. One of the most universally interrupted region is family planning aid, with 68% of countries broadcasting service commotions.
- It is anticipated that around 48 million women living in love or medium median salary areas in countries could encounter difficulties in gaining access to their preferred family planning method, resulting in between 7 to 15 million unintended pregnancies globally.
- If we talk about the impact on India only then in the misfortunate setup it is expected to result in 2.95 million unplanned pregnancies, 844,483 live births, 1.04 million dangerous abortions and 2,165 maternal deaths.
- Around 27.18 million families won't be able to get access to birth control services because of a loss of 890,281 sterilizations, 1.28 million IUCDs, 27.69 million cycles of OCPs, 1.08 million ECPs and 500.56 million condoms.
- As India holds a key position of one of the largest domestic market and the manufacturer of the FP commodities in the world.
- Disruption caused by COVID-19 in Indian FP commodity supply chain resulted in serious implications worldwide.
- Series of lockdown and reopening measures hampered the entire supply chain for FP products. There was a significant disruption of operations like, manufacturing, distribution and exports etc.
- Along with this, economic fall, fear of getting infected from the virus and restricted healthcare services impacted the women to seek their preferred choice of contraception.
- WHO guesstimates around 2.5 million people across the globe have lost their life from COVID-19, but it excludes the full toll of the pandemic.
- We need to incorporate the astonishing results endured by girls, women and men of reproductive age, whose lives ended unexpectedly, their future life got altered or had to go through any type of body damage due to commotions in admittance to birth control and health care.

Estimated Changes by Indian Supply Chain Stakeholders in FP Products Usage by Methods Before and During the Pandemic

Method	Pre-COVID use among Married Women*	Estimated 3 Month Impact	Estimated 12 Month Impact
IUD	1.5%	-57%	-40%
Condom	5.6%	-82%	-35%
Injectable	0.2%	-40%	-22%
Pill	4.1%	-23%	-12%
Emergency Contraceptives	0.3%	-15%	-10%

27 ata source: National Family Health Survey-4; prevalence of emergency contraceptives refers to percentage of women who have used the method in the last 12 months

Apart from the limited access there were several other factors that resulted or will result in reduced demand of FP commodities, for example:

1. When lockdown restrictions lifted, the pharmaceutical manufactures were permitted to restart their operations, but as IUDs and Condoms are regulated under medical devices, there were no clear guidelines regarding restarting their manufacturing. Also the absence of a focal advocate for market barriers to family planning products constrained effective representation to government authorities.

2. Because of the increased cost of transportation, the cost of production also increased. To mitigate this problem the marketers, reduce their product portfolio and also focused on the high demand area for sales.

3. Women who used public facilities for their needs have also faced the accessibility issues due to lack of alternatives.

4. Changes in client behaviors and needs is also witnessed due to the restrictions on travelling during lockdown as there were less opportunities for the non-cohabiting couples to meet. Limitations on movement have reduced opportunities for non-cohabiting couples to meet up, and thus have reduced the need for the condoms that these couples typically use. In addition to this fear of contracting COVID-19 at a health facility has depressed health care-seeking behavior in general, so women avoided visiting the healthcare facilities for the need of family planning.

Challenges

The studies that were reviewed highlighted few key facts. One of them is that the Covid-19 induced supply chain restrictions and barriers leads to higher number of incidences of stockouts of contraception products, mainly impacting the rural and low-level healthcare facilities as well as areas with poor physical reach.

Rapidly emerging unregulated market for retail products of medical abortion also threatened the GoI and other authorities, who are responsible for taking care of reproductive and sexual health of women in the country.

Pharmacists were selling medical abortion drugs liberally, without a doctor's prescription. Their role in providing the necessary counselling for women seeking these services is almost nil. Chances for proper communication is also absent. In settings like this, privacy of the patient is also jeopardized.

Despite of having laws that does not approve the practices like selling drugs for medical abortion by Pharmacist's with a proper Doctor's prescription, these incidences are prevalent in the society, causing unimaginable harm.

Over the counter sales of these drugs create a negative impact on several areas related to sexual and reproductive health of the couples. It is important to highlight an important fact here is that selling medical abortion drugs without prescription not only directly create negative impact on women's health, but it has some indirect consequences also. Like, leading to decrease chances of up taking of proper family planning measures by the couples, post abortion. There are also less chances for seeking counselling services for medical abortion by the couples.

Apart from above discussed challenges, there are few others worth mentioning:

- There is a presence of weak and poor institutionalized LMISs. Due to this we get in accurate and inadequate information about current inventory, finances related calculations were also an issue, and also the flow of product to guide accurate procurement is also missing.
- Inefficiencies in distribution system and lack of a well-managed institutionalized supply chain processes are some of the critical hurdles towards an effective family palnning supply chain management system.
- In addition to these issues, there is also a lack of human resources for technical skills for designing, planning and implementing such systems, lack of other resources, inadequate and poor infrastructures specially for technical and communication services, and low level of literacy rate in the country also cause obstacles for designing and implementation of LMISs.
- Another common challenge developing countries face the resistance to use them by the end users. Often users fail to adopt and continue to use these kinds of digital solutions when they are forced on them.

- Inadequate and insufficient infrastructure, that includes poorly connected road networks and lack of warehouses for proper storage facilities are also missing.
- Few reviewed studies also identified that availability of non-reliable and poorly constructed and maintained physical infrastructures such as well-connected road networks and warehouses, must be considered as a major bottleneck that is hindering an effective and efficient supply of modern family planning commodities and services.
- There is a need to develop core supply chain skills: Facilitation of capacity-building workshops on family planning supply chain inventory management for key human resources i.e., Storekeepers of the facilities inventory management. And coordination with state officials and partners for providing support in monitoring the availability of stock across more than 300 warehouses in states.
- There are also indications of inadequate, insufficient or total lack of domestic and international funding from various agencies. Timely funding is an essential component for the successful procurement of commodities and services. This factor must be considered as a leading limitation that is affecting the supply chain of modern FP and contraceptives. This will also further lead to the supply chain mismanagement practices like, high stockout rates.
- Not the only the critical shortage of skilled and expert healthcare human resources, especially in rural there is one more major factor disrupting the supply chain. And that is rigid inflexible government policies, rules, and regulations. Theses strict mandates failed to embrace the citizen's need. Disturbed the workflow of community health workers in distributing contraception methods to hard-to-reach inaccessible areas causing a huge impediment to security initiates that are taken for delivering contraceptives in timely manner.
- Handling delays in transportation: To provide dedicated vehicles of appropriate size to pick up stocks from centralized district warehouses of family planning commodities. Also, to give technical support in introducing reliable, consistent, and affordable transportation options. And ensuring optimization of supply chain network, so that the layers of distribution and supply chain points will be reduced. For example, Government of Odisha in collaboration with PATH has leveraged the 'India Post' into a fully developed and implemented distribution system for delivering family planning commodities to the needy.
- Various studies have shown that the access to contraceptive is undoubtedly need based. It is majorly dependent on the surrounding socioeconomic and cultural environment of a person seeking this service. Personal feelings as well as mental attitude towards family planning is also a leading factor. Different social, cultural, and economic beliefs sometimes act as barriers regarding use of contraception. For example, in Catholic Communities using artificial means for birth control are not a preferred option.
- As the GOI is envision a strong IT platform for healthcare delivery including the supply chain, the key role player will be ASHA at the community level. But considering the low digital literacy, limited resources, and connectivity issues it might pose as an adoption challenge by ASHA, impacting the programs sustainability.
- Lack of knowledge: Some sort of hesitation from the providers side is also noticed, restricting them from providing safe abortion services to the women in need, specially the younger unmarried ones. The reason detected as the limited understanding of the POCSO Act, 2012 and MTP Act, 1971, fearing prosecution.

- Stringent laws: There is also a provision of reporting requirement that is mandatory under the POCSO Act. This policy has hindered many young women in accessing safe abortion services at the facility level and opting for unsafe practices from illegal sources. This restriction has also led to increased chances of self-administration of MMA, especially in younger female group.
- Poor referral mechanism: if we look into facts there is a significant number of abortion related complications, reaching the healthcare facilities are referral-based cases. Most of them are related to over-the-counter usage of medical methods of abortion and also complications caused by surgical abortion related procedures.
- Insufficient infrastructure prevailing in many public healthcare facilities also hampers the safety, privacy and confidentiality that is required for a safe abortion service for women of the country.
- Lack of accuracy because of poor forecasting techniques.
- Lack of end-to-end supply chain visibility
- Integration of manufacturing with other supply chain functions
- Gap in technical skills of the workforce, highlighting the greater efforts needed for skill building.
- Adaptation to fast transformation i.e., to work on operational excellence and digitalization simultaneously.

Support from Various Development Partners

Achieving India's goal of healthy sexual and reproductive life for its citizens is not possible without the help of development partners. Involving people from various sectors and regions to collaborate towards a common goal, not only invites fresh ideas and innovations but also fasten the process.

Along with the development partners harnessing the private sector (Social Franchising) is also essential for the success of the mission. Promoting Public Private Partnerships and effectively collaborating with the private sector would significantly able to address the unmet need in family planning in India.

GOI is closely working with the governments and authorities in all the States and also with key development partners. The goal is to augment the capacity of FP supply chain and services. Aiming towards increasing the count of healthcare providers that are well trained is a sure shot way to ensure a sustainable service provisions at different levels of healthcare systems of the country.

Development partners such as IPAS, Engender Health, Jhpiego and Hindustan Latex Family Planning Promotion Trust are actively implementing various training programs for healthcare service providers on services like Interval IUCDs as well as Post-Partum IUCDs services in collaboration with GOI. Different approaches like conducting regular onsite training programmes, along with post-training follow-ups, are done to observe and measure the performance of the healthcare service providers that are getting trained. Apart from this, special focus is put on counselling and capacity building plus proving support and also on job handholding, mentorship to enhance competency in expertise and skills of the staff.

An important contribution came from many private and semi-government organizations and NGOs, like Hindustan Latex Family Planning Promotion Trust, Parivar Sewa Sansthan, MSI, Janani and Futures Group to name a few. They provided their extended support for the family planning program by ensuring reach of the FP commodities and services at every household in need that too at affordable prices. Simultaneously, they linked their initiatives with the communications campaign that were focused towards sexual and reproductive behavioral changes.

The Family Planning Association of India (FPAI) along with Parivar Sewa Sanstha was a pioneer non-governmental initiative for providing safe abortion services in the country. Since then they are activity helping in raising awareness as well as in providing legitimate and safe abortion care services.

There is a noticeably active participation from FPAI to improve the reach of the message of delivering safe abortion practices covering whole of the India. They are doing this through their many branches, conducting various training programmes. FPAI also initiated GCACP i.e., Global Comprehensive Abortion Care Project in India. Aim was to increase access for safe

abortion services, specifically in the need-based areas of India. They also tried administration of Misoprostol in home settings in 559 cases through Gynuity Healthcare Projects.

CEHAT, PSS, and FPAI are helping GOI in making major and important recommendations in policies to improve accessibility of legal and safe abortion services in India. They are also working towards strengthening the Medical Termination of Pregnancy (MTP) training centres in both the public and private healthcare sectors in the country and also facilitating the capacity building in terms of infrastructure and human resources.

Many non-government organizations for example Janani, FPAI, Ipas PSI, Ipas, ICMA, MSI and IPPF, to name a few are working currently towards facilitating MA services across various healthcare sectors of the country. They are simultaneously supporting the efforts of GoI for amendment of various laws for ensuring good accessibility to all appropriate technologies, including Medical abortion for the citizens of India.

PSI also conducted a study on chemists that helped in revealing the fact that almost seventy percent and sometimes even more than that MA drugs are dispensed independently by Chemists without a Doctor's prescriptions.

Ipas has also developed and published a guide that provides guidance about practical approaches that help in accurate forecasting of medicines and other medical supplies that are needed for safe abortion services.

Summary of Activities of Development Partners in States

Uttar Pradesh

Development Partners:
Public - Uttar Pradesh medical supplies corporation limited
Private-
1. PATH - Strengthens supply chain services and commodities via innovative solutions via technical support and innovations.
2. Jhpiego (NTSU-FP) - Voluntary high-quality FP services, Educational support prior to join services for Nurse Midwifery Cadre in India. Helped for sustaining of Quality Assurance Accreditation for Maternal and child Healthcare in Private Sector of the country. Also implemented a three-yearly program focused at 'Leveraging Private Enterprises to Improve Maternal and New-born Health and Family Planning in India'.
3. DKT Janani – Delivers products In Gorakhpur/ Allahabad/ Varanasi/ Mathura/ Aligarh Janani via Surya clinics for family planning services, outreach programmes for family planning services at the government facilities. Apart from these 5 districts Janani is also doing Social Marketing of Contraceptive products in rest of the districts in UP.
4. The Challenge Initiative for Healthy cities (TCIHC)- Door to door service by ASHA and ANM and ensuring adequate supply of contraceptives and medical abortion drugs. TCIHC has helped activate outreach camps (ORC), urban health nutrition days (UHNDs) and family planning day at urban PHCs (UPHCs). Suggested ways to streamline supply chain management throughout U.P. Made the case for advancing the rollout of the FPLMIS in urban areas in 2018

Alternate delivery model opted during pandemic: Door to door services by ASHA and ANM were continued during lockdown. And family planning kits have been home delivered in UP's Ballia district on ACMO's order amidst concerns of a population boom.

Rajasthan
Development Partners:
Public: Rajasthan Medical Services Corporation
Private:
1. Ipas Development Foundation (IDF): Ensures availability of essential equipment and drugs at delivery sites via family health clinics, acme pharmaceuticals wholesale and retail distribution network.
2. Population Health Services India (PHSI): Socially market MA kits in the state (i.e.; Khushi MT Kit & Envon combination packs) Network of operations include clinics with a sales force of 800 detailers, private sector providers and pharmacies.
3. Foundation for Reproductive Health Services India (FRHSI): Clinical outreach, mini-clinical outreach, family health center and public sector support. In RJ, it is present in 26 districts; 274 public sector facilities; with 122 team members and 17 Clinical Outreach Teams. It also has 2 Family Health Centers in Ajmer and Jaipur that offer C[illegible], including MA.
4. DKT Janani: Delivers FP products via Surya clinics for family planning services, outreach programmes for family planning services at the government facilities. Also conducting marketing via social media for contraceptive and abortion care products.
5. Jhpiego (NTSU-FP): Voluntary high-quality FP services, Educational support prior to join services for Nurse Midwifery Cadre in India. Innovations and interventions that are technology driven - (ĀSMĀN) Alliance for Saving Mothers and New-born. Quality Improvement in Labour Rooms – "DAKSHATA Program".

Tamil Nadu
Development Partners:
Public Sector- Tamil Nadu Medical Services Cooperation Limited
Private Sector-
1. Parivar Sewa Sanstha - Promotion of reproductive health interventions via socially marketed reproductive health clinics, social marketing of reproductive health products and awareness, education & training.
2. RUWSEC- Rural Women's Social Education Centre - Based out of Chengalpattu, Kancheepuram District, Tamil Nadu., its key strategy is on identifying core group of young community leaders for agents of change on supporting & promoting gender, reproductive, sexual health and rights.

Alternative Delivery Method Opted During Pandemic- Archanaa Seker, a Chennai-based activist arranged a stock of I-pill from Bangalore and encouraged people to reach her out for help through a twitter post.

Maharashtra
Private Development Partners-
1.PATH- Strengthens supply chain services and commodities via innovative solutions via technical support and innovations.
2. Engender Health- Increase contraceptive options and strengthen & expanding family planning options and services by increasing availability of additional services for reproductive health of the citizens, expand access to new contraceptive technologies.

Alternative Delivery Method Opted During Pandemic- Engender Health team supported nearly 144 health facilities in Maharashtra and Karnataka in ensuring contraceptive stocks during pandemic by virtual orientations with district health authorities.

Chhattisgarh
Development Partners:
Public- Chhattisgarh medical services corporation limited
Private-
1. Center for Catalyzing Change- Operational in 6 districts of Chhattisgarh. Promote rights-based approach to sexual and reproductive health (SRH) throughout, especially with respect to care around childbirth and family planning. Enables community participation in delivery of family planning services.
2. Jhpiego (NTSU-FP)- Voluntary high-quality FP services (Technical support). Expanding Access to IUD services in India (EAISI). Technical support to GOI for increasing the contraceptive basket and for delivering quality FP services through MCSP.

Assam
Private Development Partners:
1. Ipas Development Foundation (IDF)- Facilitated roll-out of Injectable MPA, Antara; and Cent chroman, Chhaya, (new contraceptives in the public health system).
2. Jhpiego (NTSU-FP)- Technically supporting GoI in improving the contraceptive basket and for delivering quality FP services through MCSP. SWG and DWG are advocated for Assam under Advance Family Planning program. Capacity building, providing preservice educational pport Nurse Midwifery Cadre in the country.
3. Hindustan Latex Family Planning Promotion Trust (HLFPPT): Building capacities of healthcare providers on FP services. Offering increased basket of choice for contraceptives. Creating network of dedicated FP Clinics.

Odisha
Development Partners:
Public- Odisha medical supplies corporation limited
Private –
1. PATH- Strengthens supply chain services and commodities via innovative solutions via technical support and innovations. Analyzed several distribution systems and helped leveraged the use of Indian Postal Services into distribution system of contraceptives.
2. Center for Catalyzing Change (C3)- Operational in 6 districts of Odisha. Aimed at promoting the sexual and reproductive health that is right based (SRH) throughout, especially with respect to care around childbirth and family planning. Enables community participation in delivery of family planning services.
3. Indian Postal Services- The state government of Odisha in January 2020, used "India Post" to ship its first and one of a kind consignment of family planning supplies. They picked it up from a warehouse in Odisha and depots it in five districts of the state.
4. Jhpiego (NTSU-FP)- Providing education services for Nurse Midwifery Cadre in India, before their joining the services. Helping in increasing access to IUDs related services in India (EAISI). Also joined hands with GoI in providing technical support for increasing the choice for contraceptive basket and for delivering quality FP services through MCSP. Quality Improvement in Labor Rooms – "DAKSHATA Program.

Alternate delivery method opted during COVID-19: Well-known Indian postal services, which is classified as essential service was functional throughout the lockdown and was the only distribution system in the state of Odisha during lockdown.

Other Private Players/Partners are Dunzo, The YP Foundation, CHAI and Surgo

Amid mist the nationwide lockdown to contain Covid-19 outbreak, Cloudnine Group of Hospitals, Bengaluru, had come forward to collaborate with Dunzo, which is an all-in-one, complete 24*7 delivery platform to deliver FP products along with essential medicines to women at their doorstep.

The YP Foundation along with FHRS and various other partners had conducted a social media campaign during World Population Day. The goal is to highlight that there is an urgent need for balancing the pre, in between and post counselling sessions for women seeking contraceptive services. The foundation actively participates and organize various reproductive health related awareness spreading programmes from time to time.

Surgo- Working actively towards removing barriers related to FP conversations. They helped in promoting family planning during COVID-19. They used a mobile based application 'Chatbot' to deliver family planning related health information directly to couples. Focus area were small districts of India.

Results

Thirteen studies indicated evidences regarding the impact of Covid-19 on the supply chain mechanism distrusting family planning services, sixteen studies showed impacts on maternal and child care services, eleven studies pointed out negative effects on sexual health/behaviours and seventeen studies confirmed the positive impact of involving development partners.

Few important impacts that were highlighted in the reviewed studies, worth mentioning here are, reduced accessibility for FP commodities, less chances of having transactional sex, reduced incidences of sexual activities with multiple partners and lastly disruption of maternal and child health services.

FP-LMIS:

- Indenting mechanism that is App or Web based were more effective in enabling healthcare staff for ensuring quick and time bound availability of family planning commodities and hence, providing its uninterrupted delivery to the community.
- FP-LMIS Dashboard indicators proved very efficient in real time monitoring of the current stock levels of the commodities. Frequency and timely delivery were also ensured by the help of these dashboards.
- Providing quicker visibility of stocks in nearly 16,000 facilities to key decision-makers for effective planning and implementation.
- The existing push system is modified to pull system for delivering contraceptives to healthcare facilities (bottom to top i.e., from the level of ASHA to the level of health sub-centres)

Development Partners:

- Providing technical and transportation support for reliable, consistent and low-cost options.
- Also ensuring supply chain network optimization to reduce layers of distribution and supply chain points.
- Facilitating capacity-building opportunities for key human resources in family planning supply chain inventory management.
- Around 4 million eligible couples in India are expected to benefit from improved availability of contraceptive commodities.

Discussion

Aim of this review is to capture all the evidences that shows the impact of Covid-19 on sexual and reproductive health of citizen. So, mapping of all the evidences was done using a scoping review. As per the results, there are few variations that showed the impact of this disease on the population studied. The reviews indicated that Covid-19 severely impacted the supply mechanism of family planning commodities. In addition to this, it also put adverse effects on the sexual behaviour of the people. Maternal and child health services also got hampered.

Results indicated the social distancing is one of the major factors in causing discontinuation of preferred method of FP commodities and services. Although choosing the perfect mode of family planning had always been a challenge for the couples in the past. But, Covid-19 had increased this issue manifold. The main reason was the limited accessibility.

As per the orders from the Government and authorities, there were orders for stay at home as well as for following rules of social distancing. Hence, the reviewed studies suggested that because of these factors the studied population had less sexual partners, thus the access for the condoms remain unchanged.

There was also indication for reduced transactional sex, especially amongst MSM and access to doctors for consultation, prescriptions drugs and services of FP also gone a downhill because of the disease outbreak.

All these reviews pointed towards the need for increased attention from the healthcare providers and workers. The focus must be on the people with sexual needs. It needs to be cared for immediately as delay will lead towards the increased risk of HIV cases. The impact will be huge soon and also in coming years after the restricts will be lifted and there were reduced effects of this pandemic.

Pregnant women and their children were the main sufferer of these lockdowns and social distancing mandates. Theses restriction reduced their chances of accessing healthcare facilities like, primary health centres and antenatal clinics. Additionally, from reproductive health issues, essential services for vaccination and immunizations were also got disrupted, resulting further complicating the health issues.

However, there is clear demarcation between the population of low-middle income countries as compared to high-income countries. The reason being the early innovation and adoption of ways to tackle the situation by HICs. One more reason is the already existing FP services that are way better than the LICs.

The main barriers that were identified in low income countries are basically the already existing issues, that got further complicated by Covid-19 induced restrictions. For example, healthcare provider related problems, not getting appointments for health services or the unavailability of drugs, commodities, or vaccines etc.

Some studies pointed out that even after so many Covid-19 induced restrictions, casual sex was pertinent in the young, single, and illiterate or less educated males. This behaviour was already persisted in this population group and it remained unchanged by the impact of Covid-19.

After comparing the important determinants in all the methodologies of the included studies, it was observed that although in all the qualitative studies age and educational status of the women is considered a very relevant factor that need to be explored more to get important insights, those were rarely elaborated in the studies.

Some important points from the reviewed studies to ponder upon are:

- Although delivering contraceptives to the consumers may appear as a task that needs to be done routinely for us, but the process requires a well-functioning supply chain management system.
- It involves many different personnel, departments, suppliers, agencies and procedures, hence making it a complex task.
- Readily available FP and abortion products are life-saving health commodities.
- At present, the personnel at various levels lack skills on demand forecasting, inventory management and distribution processes, leading to either overstocking or stock outs across many public health facilities.
- Above all this, the monitoring of Family Planning supply chain at every level is very week. It hinders the uninterrupted supply of commodities in public health system.
- Support from development partners along with timely, accurate, complete, and consistent reporting Logistics Management Information System (LMIS) is the key to an efficient supply chain.
- There is also a need to uplift information technology related literacy and healthcare human resources in the country.
- A well-connected network to link all health facilities, sub-centres and ASHAs is required.
- Provision for dedicated transportation at all level in the country.
- Dedicated budget for FP commodity supply.
- To create a regular feedback mechanism at monthly as well as annual basis at all healthcare centres, specially at the district and block level.

Conclusion

Improving access to FP commodities and services is a crucial step towards addressing the population related issues in the country, like high fertility rate and unmet need for contraception. As having access to family planning Services is not a privilege for someone to have, but a very important and basic human right. Therefore, provisions must be made so that no one in need should go unserved.

These programs and solutions are acting as a catalyst and propelled the program from the 'Vision Mode to the Mission Mode'. Although, India has witnessed the very deep decline in the rate of population growth over the last decade but still, the country needs to travel an extra mile to achieve its sexual and reproductive health targets.

It is imperative to act quickly and with ingenuity. It will help many health systems to maintain and restore proper accessibility for all the essential health services, that includes contraceptives also.

We need to be innovative and creative in our efforts. Like, promoting use of application-based delivery system for FP products. Outreach programmes using SMS. Our target should be quarantine centres and other areas where counselling is necessary. This approach has helped a lot previously also. But irony is still several many women continuously facing serious approachability issues in getting family planning and other life-saving services related to sexual and reproductive health.

We need to create a framework that is accountable. Apart from this a strong mechanism for performance review is also required. All this step will make a long part but they will slowly but surely take us towards achieving FP products and services security in the healthcare facilities in India.

pallavi gangil

ORIGINALITY REPORT

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