

Indian Institute of Health Management Research

S.D. Gupta School of Public Health

A Capstone Project Report on:

**Patient Care for Hypertension Under the
National Program on Prevention and Control of Cancer, Diabetes,
Cardiovascular Diseases, and Stroke (NPCDCS): Gaps and Enablers in
Chomu Community Health Centre, Jaipur, Rajasthan**

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Master of Public Health (Implementation Science)**

By:

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Sincerely,
Ph. Rimaz Dawelbait.

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Background of NPCDCS Program:

According to 2016 estimates of the disease burden globally, there is a significant burden in India due to the fact that 62% of deaths and 55% of disability-adjusted life years are attributed to NCDs (1).

With the goal of preventing and controlling major NCDs, the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) was introduced in 2010, which is focusing on strengthening infrastructure, human resource development, health promotion, early diagnosis, management, and referral. (2), before 2010, there was no programme addressing these NCDs; nevertheless, there were other projects that ran in parallel and catered to various parts of these NCDs. Almost 13 programmes are now making a direct or indirect contribution to the prevention and management of NCDs, despite severe implementation difficulties(1).

Objectives of NPCDCS(3):

- Health promotion through behaviour change with involvement of the community.
- Opportunistic screening along with outreach camps at all levels in the health care system for early detection NCDs.
- To prevent and control chronic non- communicable diseases.
- To build capacity at various levels of health care for prevention, early diagnosis, treatment, IEC/BCC, operational research, and rehabilitation.
- To support cost-effective diagnosis and treatment at all levels of health care.
- To monitor NCD morbidity, mortality, and risk factors, as well as to promote the creation of a database of NCDs through a surveillance system.

Strategies under NPCDCS are as follows (2):

- Healthy lifestyle promotion through involvement of community, civil society, community-based organizations, media etc.
- Outreach Camps for opportunistic screening at all levels in the health care delivery system.
- Management of chronic non-Communicable diseases, through early diagnosis, treatment and follow up by setting up of NCD clinics.
- Capacity building of health care providers at various levels for prevention, early diagnosis, treatment, IEC/BCC, operational research, and rehabilitative care.
- Provide support for diagnosis and treatment in terms of cost at primary, secondary and tertiary levels of health care.
- Provide support for development of database of NCDs through a robust Surveillance System and to monitor NCD morbidity, mortality, and risk factors.

Recent initiatives under NPCDC (2):

- Providing guidelines for treating and preventing chronic kidney disease (CKD) and chronic obstructive pulmonary illness (COPD) under NPCDCS.
- Guidelines are issued to implement Population-based Screening for early detection of NCDs in the community.
- Integration of AYUSH with NPCDCS' has been piloted in six districts in India.
- Piloting an intervention for prevention and control of Rheumatic Fever and Rheumatic Heart Disease under the platforms of NPCDCS and RBSK (Rashtriya Bal Swasthya Karyakram), in three select districts (Gaya - Bihar, Firozabad - Uttar Pradesh and Hoshangabad - Madhya Pradesh).
- Another initiative is the integration of Revised National TB Control Program with NPCDCS, forming the “National Framework for Joint Tuberculosis-Diabetes collaborative activities”.

Schematic Illustration on the Program:

A. Service Delivery under NPCDCS:

The NPCDCS program provides a wide range of services that are all aimed to early detection, management, and control of the non-communicable diseases starting from the community level in sub-centres until the higher tertiary centres. Following is an illustration of the service delivery process:

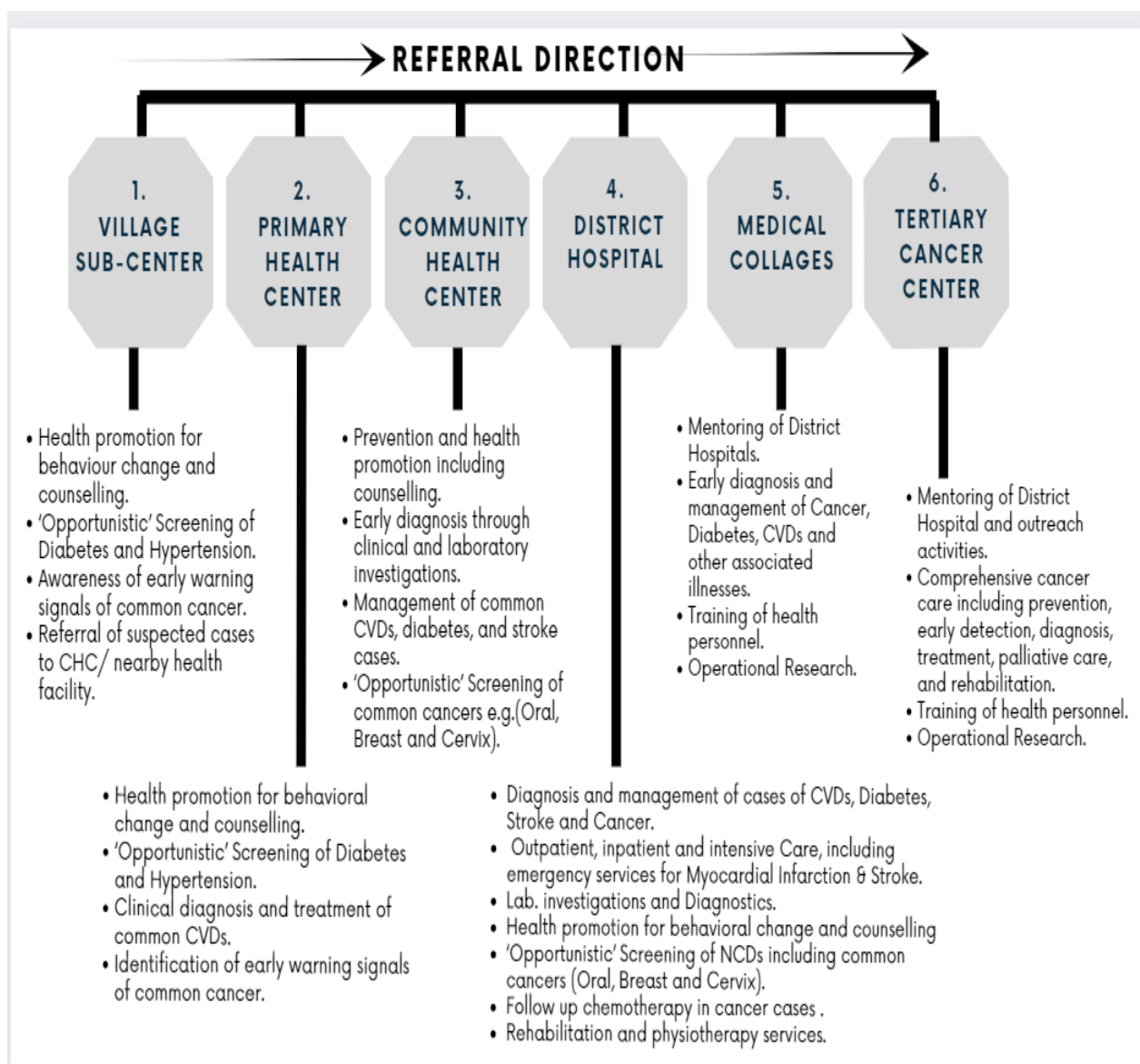


Figure (1): shows the service delivery process under NPCDCS.

B. Patient's Pathway Observed in the NCD Clinic:

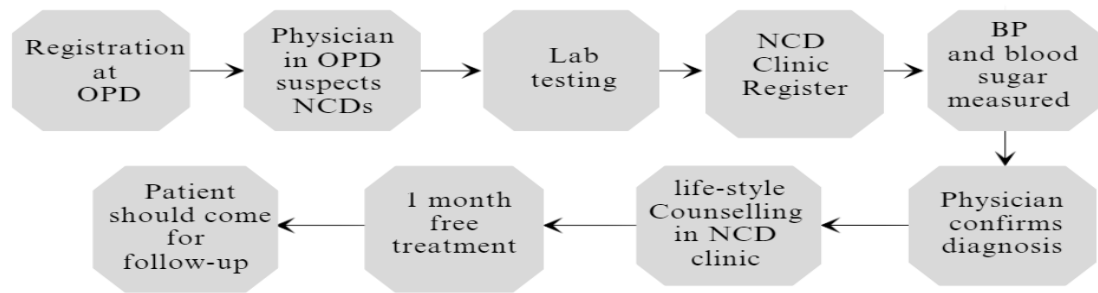


Figure (2): shows the patient pathway observed in the NCD clinic.

C. Stakeholders Involved in NPCDCS:

Multiple stakeholders are contributing to different stages and parts of the service delivery process. A multisectoral action plan was formed within the NPCDCS plan for the year 2017-2022, that identified all ministries and partners needed to join the efforts in addressing NCDs.

Below is an illustration of the main stakeholders:

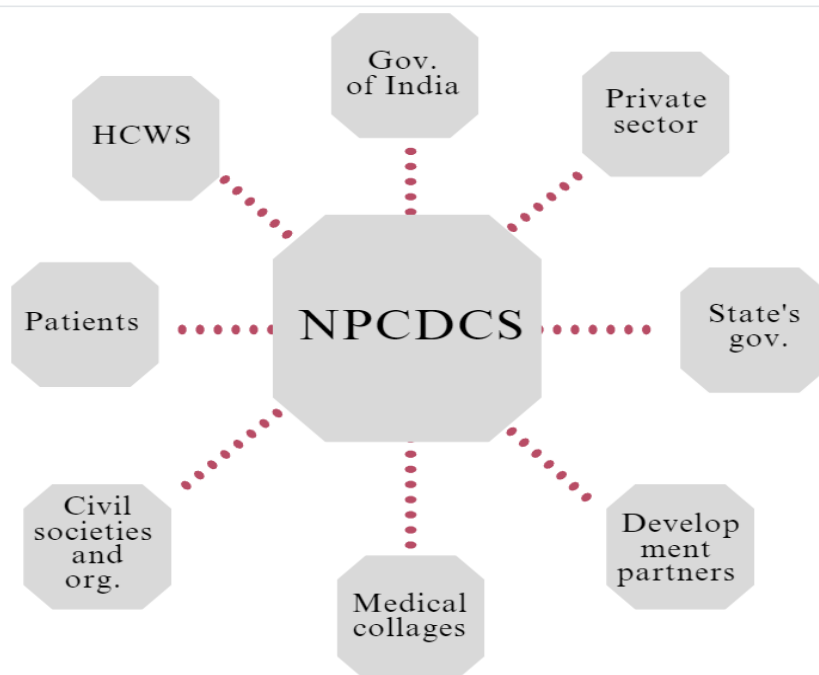


Figure (3): shows the stakeholders involved in the NPCDCS program.

Capstone Work-area and Objectives:

Patient Care for Hypertension was determined as the main work area for the capstone:

Presently, in India, Disability-adjusted life years (DALYs) were predominantly caused by high blood pressure with a percentage of 8.5% of total DALYs, while it is projected that 28.1% of all fatalities were caused by CVD (4). Hypertension is affecting the district of Rajasthan with a prevalence of 18.3% in rural areas while urban areas had a prevalence of 26.1%(5). Also, adults aged 45 and older had a 5.2% prevalence of CVDs and a 46.7% prevalence of particularly hypertension (6).

The need for assessing the patient care process that was held under the NPCDCS strategies is emerging as India's Hypertension control levels has been extremely low, in rural areas the percentage ranges from 6.5-15%, while in urban areas it is 11.6-28.7% (7). Additionally, as shown in a study that examined the hypertension treatment cascade, that among those who underwent screening, 66.8% were unaware of their diagnosis, 45.7% of those who had received the diagnosis were still not taking treatments, and 51.4% of those who had received treatment still had uncontrolled blood pressure(8). In 2023, the coverage of the community level follow-up in Haryana, a nearby state to Rajasthan, was discussed by a researcher, where estimated coverage of 'ASHAs asking disease status details' was 8.9% and all the 30 states were reporting poor performance in this aspect(9).

These estimates have tremendous public health implications, low treatment rates among hypertension patients reflect patients' poorer levels of knowledge, attitude, and practice, and ultimately, increased burden of the disease.

Objectives:

1. To determine the challenges and enablers in patient care for Hypertension.
2. To provide recommendations to address the challenges in patient care for Hypertension.

Method of Data Collection:

The observations and information on the care service were collected in 3 visits to Chumo community health centre, and 1 visit to Chumo subcentre. In-depth interviews were the main mode of data collection, along with service statistics and observations on the delivery of patient care for hypertension in the NCD clinic.

The interviews were done with:

- The NCD Staff (counsellor and lab technician).
- The medical officer of the CHC.
- The Subcentre Staff (1 ANM, 2 ASHAs, 1 CHO).
- Hypertension patients in the NCD clinic (10 randomly selected patients).

See appendix (1-5) for statistics, interactions notes, observations, and pictures.

Field Visits and Documentation:

Visit (1):

I. Activities done:

1. Introduction to the CHC departments and services.
2. Discussion with the NCD clinic staff on the program and processes.
3. Observations on the lab, DDC, X-Ray, USG, ECG departments was done according to the observation format.
4. Interview of 3 HTN patients on their experience.

II. Observations made on:

1. Goals and objectives of the NPCDCS program.
2. Description of the services provided by the program.
3. Process mapping of the program.
4. Training of the staff.
5. Evaluation of the service.
6. Challenges faced by the staff.
7. Patients interview notes on the care received.

Visit (2):

I. Activities done:

1. Introduction to a subcentre in Chomu village.
2. Interview with 1 ANM, 2 ASHA, and 1 CHO was done on their role in the NPCDCS program.

II. Interview's observations made on:

1. Subcentre components and services related to NCDs.
2. The follow-up visits.
3. Community-Based Assessment Checklist (CBAC).
4. Community acceptance of the services.

Visit (3):

I. Activities done:

An interview was done with the medical officer of the CHC on his role in the NPCDCS program.

II. Observations made on:

1. Type of services provided by the MO.
2. Training.
3. Challenges faced by the MO.
4. Health system challenges.

Visit (4):

I. Activities done:

1. Interviews with 7 more patients were done.

II. Observations made:

1. Most patients attending the clinic came for follow-up.
2. Referral by ASHAs did not occur.
3. Last contact with ASHA happened in more than 2 months.

Findings and Observations on Patient Care:

According to the service statistics provided by the NCD clinic in Chumo CHC for the year 2022, the percentage of hypertensive patients attending the NCD clinic out of the total patients in that year was **32%** (new and follow-up), leaving the rest of NCDs (diabetes, cancers, CVDs, and comorbidities) with **68%** of patients. The chart below demonstrates the statistics:

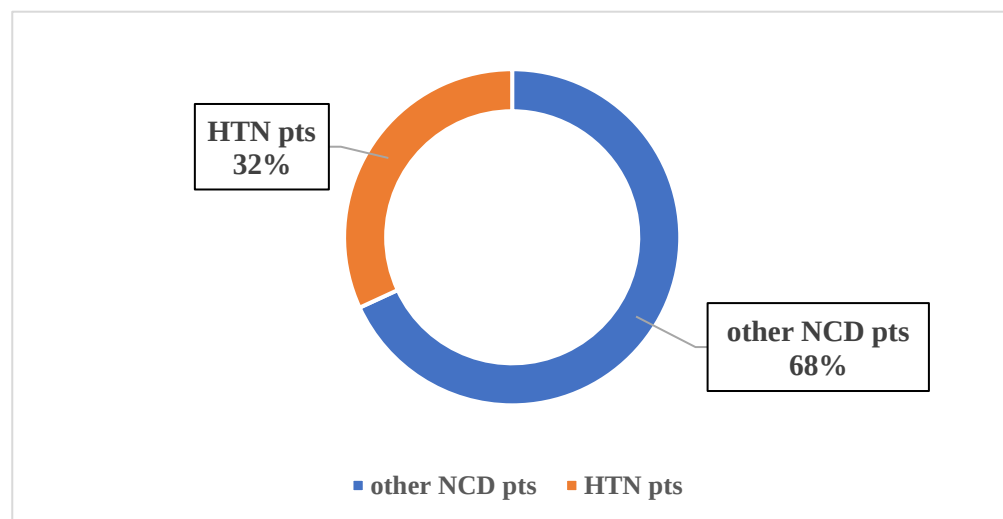


Figure (4): shows the percentage of Hypertension patients in the NCD clinic.

The high contribution of HTN of the clinic patients highlights the need for more focus on the quality of care provided to this big proportion of patients. These statistics are supported by the testimony of the providers (MO, ASHAs, ANM) that hypertension patients are more encountered than any other type of NCDs which indicates that the prevalence might be in increasing in trend.

Note: the data was provided for only one year, 2022, and rest of the given data was not applicable for analysis, comparison, or trend tracking due to missing data. See appendix (1) for total numbers.

Gaps and Enablers Observed in the Patient Care Process:

Challenges and problems, along with enablers that have been identified are described below on the bases of field service data, field interviews with providers, clinic workers, HTN patients, and observations linked to the service provision and resources availability:

Gaps and problems:
<u>In the NCD Clinic:</u>
• No records of referred patients from sub-centre level or referral slip.
• No patient card/booklet for history and follow-up.
• Overcrowding in the clinic settings
• Ineffective counselling sessions.
• No pamphlets provided.
• No assigned staff nurse.
• No training was provided to the clinic counsellor since 2017.
• Low patient compliance to medications.
<u>In the Sub-centre:</u>
• Low motivation with increased workload and low incentives among ASHAs.
• Low awareness levels among community about the diseases.
• Low patient compliance to medications.
<u>Patients:</u>
• Less number of doctors and overcrowding.
• ASHAs didn't come for follow-up for at least 2 months back.
Overall Enablers:
• Active monitoring visits for the CHC by authorities (MHFW, NHM, WHO, State MOH).
• Free treatment and diagnostic tests under the chief minister initiatives.
• Effective inventory management in all levels of the health system.
• Multi-sectorial involvement in implementing the strategies.
• Digitalization and using MIS.

The major gaps and problems -related to patient care for hypertension- are then shortlisted for more elaboration:

1. No records of referred patients from sub-centre level or referral slips:

The disease control strategy is designed to start for the community level in order to facilitate it and capture as much uncontrolled cases as possible, although the interviewed ASHAs responded that they refer patients to the CHC when they go for follow-up at least once monthly, there is no recording of referred patients through the visits done by ASHAs in the CHC level, although the referral slip was described in the program documents, and used in some states, its introduction was absent in this subcentre which makes tracking of the activities a difficult task.

2. No patient card/booklet for history and follow-up:

Patients who are diagnosed of hypertension are not provided with any type of cards or booklets for history keeping or follow-up documentation. The clinic staff testified that the absence of this aspect -although it is pointed out to as a part of the program under the follow-up strategy- makes checking compliance, medication acquisition, and follow-up visits a hard step. This challenge particularly has a huge impact on providing care for the patients as counselling depends on understanding the behaviours of the patients towards their disease which can only be captured through the documentation of these behaviours. Ultimately, it is affecting the patient health by giving ineffective counselling sessions where information and motivation might not be delivered correctly, leading to a risk for developing complications of the disease. As the staff reported, this gap is present due to not introducing the card for patients since the beginning of the clinic.

3. Ineffective counselling sessions:

Counselling is an important playing factor in hypertension control and patient compliance. It was observed that the counsellor does not provide effective or full counselling sessions to the patients during the visit to the clinic, the session was missing one or more of the 3 basic elements of counselling which are counselling on adherence to medications, adverse effects, and healthy lifestyle, pamphlets were not provided to the patients although it is described in the program document. This challenge might be a result of other gaps like lack of refreshing training, pamphlets supply, absence of cards for tracking history and follow-up, and overcrowding.

4. ASHAs didn't come for follow-up for at least 2 months back:

One of the main roles of ASHAs in hypertension treatment and follow-up that is stated as an important strategy in the program, is the monthly follow-up visits done by them to the diagnosed patients in their village which should improves compliance and health behaviours of the patients. Patients reporting that the last visit done was at least 2 months back is an indicator to existence of gaps in the follow-up task that was given to ASHAs, this gap can also be linked the challenges ASHAs reported which was low motivation and increased workload which might lead to lower performance in some activities.

5. No training was provided to the NCD counsellor since 2017:

The only clinic staff member who was provided with training was the counsellor (with a psychology background), and it was dating back to 2017, one year after the clinic was established. The training covered a brief on NCDs, risk factors, dealing and counselling patients. It was observed that the absence of refreshing training for 6 years is clearly affecting the performance and quality of counselling sessions provided to the patient.

Below is a chart that summarize the gaps in the patient care process:

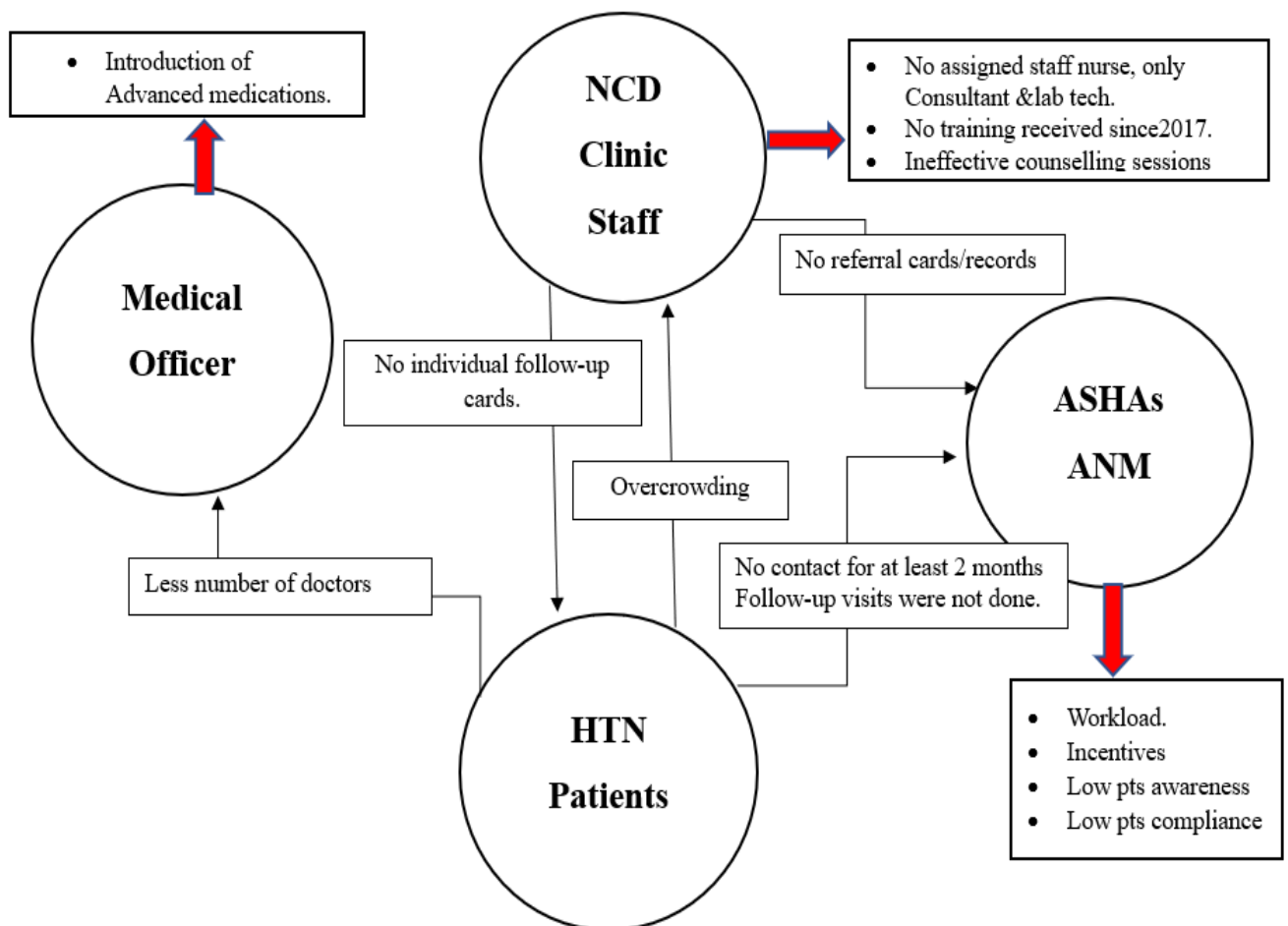


Figure (5): shows the gaps in patient care process.

Focusing on the major gaps and problems that was described above, possible solutions with feasibility grades are proposed in the next analytic grid:

Gaps/problems	Suggestive Actions	Feasibility	Priority
No records of referred patients from sub-centre level or referral slip.	• Provision of referral slips that shows the patient referral details.	Swift	
	• Provision of a space in the register that captures the ASHA-referred patients.	Challenging	
No patient card/booklet for history and follow-up	• Provision of cards/booklets for all patient that contains the details of the patients, their follow-up visits, and medication acquisition track.	Challenging	
Ineffective counselling sessions	• Regular training of the staff on counselling methods, skills, and behavioural change.	Swift	
	• Crowd management in the clinic settings	Challenging	
ASHAs didn't come for follow-up for at least 2 months back	• Strengthening the supervision on ASHAs activities	Swift	
No training was provided to the NCD counsellor since 2017.	• Conducting refreshing training for counsellor sessions regularly.	Swift	

Priority grading:

- Red (high): actions that are expected to be more effective in removing the bottlenecks.
- Yellow (intermediate): actions that should be taken up and are considered to improve the functioning.
- Gray (low): actions that will take lot of efforts and /or yield minimal results.

Furthermore, below are observed enablers that contributed to enhancing the provision of care, and are expected to be sustained by following the next supporting actions:

Enablers/ Best Practices	Supporting actions required for sustainability
Active monitoring visits for the CHC by authorities (MHFW, NHM, WHO, State MOH)	Clear and organized record keeping will help facilitating the monitoring process and makes detection of areas that need more work.
	Appreciating the noticed improvements will increase the motivation levels among the healthcare workers
Free treatment and diagnostic tests under the Chief Minister initiatives.	Increase advocacy and awareness of people about the service provided will ensure that more patients are utilizing it therefore completing their treatment course.
Effective inventory management in all levels of the health system.	Strengthening the existing system by adopting new technologies and training the staff on them.
Multi-sectorial involvement in implementing the strategies.	Expanding the collaborations with other sectors and valuing the efforts they make to support the program.
Digitalization and using MIS.	Expanding the MIS system to include more features that ensures the quality of data and minimize chances for errors.

Conclusion:

To put it briefly, this report demonstrates the gaps and enablers in patient care for hypertension which starts at the community level, in the form of monthly follow-up visits done by community health workers, with gaps in supervision that affected the execution of this activities. The extension of the care process was delivered in Chumo CHC, for new and already diagnosed hypertension patients, is composed of follow-up checks, lab tests, and counselling sessions, all aspects of care were fully done with mainly recording, reporting, and training gaps that reflected on the quality of the patient care provided.

On the other hand, the high level of performance in treatment provision, evaluation, inventory management, digitalization, and multisectoral engagement were all mentioned as process enablers that are facilitating the delivery of care throughout the various levels of the health system in the village.

Recommendations:

The results of this report show how the provision of healthcare is improving in Chumo village in terms of an adequate health workforce, resources, technology, and accessibility of the services. In contrast, to provide sustainable services and high-quality hypertension care, proactive solutions are required to address problems and gaps in patient care. These actionable steps include enhancing the CHC's systems of recording, reporting, as well as providing the health workers with better training, supervision, and motivation.

Overall, this report serves as a tool for decision-making, providing a brief understanding of hypertension care. Hopefully, the insights and recommendations presented here will drive positive outcomes and contribute to the success of the service and ultimately, a better patient life.

Limitations:

This report holds a few limitations to its findings that needs to be mentioned, these includes:

Firstly, the small number of respondents that might not be representative.

Secondly, lack of beneficial service statistics from the CHC; the full statistics could have been a very helpful aspect in capturing the full picture of the service provided.

Thirdly, the findings depend majorly on interviews and interactions with providers, as well as beneficiaries, therefore, the gaps mentioned are limited to their perspective, and more information might be obtained with the help of official documents and reports.

Fourthly, the language barrier played a role in hindering the process of understanding the context and non-verbal communication, that may have impacted reporting difficulties experienced by the respondents.

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Appendixes:

- **Appendix (1):** Statistics on percentage of HTN patients in the NCD clinic.
- **Appendix (2):** Provisions & Organization of Services (Observation and Assessment Checklist on NCD Clinic, Chumo CHC.
- **Appendix (3)** Provider interaction with:
 - A. Medical Officer in NCD Clinic, Chumo CHC.
 - B. ANM, ASHAs and CHO in Chumo village Sub-centre
- **Appendix (4):** Patient Interaction- Hypertension Patients in NCD Clinic, Chumo CHC.
- **Appendix (5):** Interaction's pictures with the:
 - 1. Medical officer in NCD Clinic, Chumo CHC.
 - 2. Community health workers in Chumo Sub-centre.
 - 3. Patients in NCD Clinic in Chumo CHC.

Appendix (1): Statistics on % of HTN patients in the NCD clinic.

The statistics below are provided for only the year 2022:

Statistics of the NCD clinic for the year 2022		
	Number of pts	% of patients
HTN only pts	5374	32%
Other NCD pts	11484	68%
total pts in NCD	16858	100%

**Appendix (2): Provisions & Organization of Services (Observation and
Assessment Checklist on NCD Clinic, Chumo CHC)**

	Service	Options			
A	Laboratory:				
	No. of Lab Technicians	2 lab tech., 1 senior lab tech., 1 assistant lab tech.			
1	Lab Technician Availability	24x7 ☐	Partial √	Not Available ☐	9am to 3pm
2	Blood Sugar	Being Done √	Not Being Done	Approximate Number of Tests per day 80-100	If Not Done Specify Reason _____
3	Lipid Profile	Being Done √	Not Being Done	Approximate Number of Tests per day 10- 15	If Not Done Specify Reason _____
4	Blood Urea	Being Done √	Not Being Done	Approximate Number of Tests per day 40-45	If Not Done Specify Reason _____

5	Chest X Ray	Being Done √	Not Being Done	Approximate Number of Tests per day 50-100	If Not Done Specify Reason _____
6	ECG	Being Done √	Not Being Done	Approximate Number of ECG per day 20-25	If Not Done Specify Reason _____
7	USG	Being Done √	Not Being Done	Approximate Number of USG per day 65	If Not Done Specify Reason _____
8	a) Blood Samples: Usual Time to report (Ask the technician)				
	i) OPD Samples	2:30_to 3:00			
	ii) Field Samples	_none_			
	b) Documentation (Check the register):				
	i) OPD Samples	Done	Offline and online through MIS portal		
	ii) Field Samples	None			
9	Training of LTs in past five years	Yes	No √	Remarks	
10	Resource Availability:				

	a) Functional Glucometer	Yes ☒ - No	Supply Issues / Stockouts in Past (Ask) Yes ☐ No ☐	The supply and inventory were managed well.	
	b) Glucometer Strips	Yes ☒ - No	Supply Issues / Stockouts in Past (Ask) Yes or No ☒		
	c) Lancets	Yes ☒ - No	Supply Issues / Stockouts in Past (Ask) Yes or No ☒		
	d) ECG paper Rolls	Yes ☒ - No	Supply Issues / Stockouts in Past (Ask) Yes or No ☒		
	e) X Ray Films	Yes ☒ - No	Supply Issues / Stockouts in Past (Ask) Yes ☒ or No		
11	There is arrangement for segregation of BMW at the site.	Yes ☒ - No			
B	OPD and Service Provision Area:				
1	IEC Related to NCDs displayed in Facility	Yes ☒ - No			
2	Functional BP Apparatus	Yes ☒ - No			
3	Separate NCD Clinic functional	Yes ☒ - No			

4	Counsellor Posted	Yes ✓ No			
5	Designated Nurse for NCD services at Clinic	Yes - No ✓		The nurses were trained in the NCD cell, but they were shifted to the emergency room.	
C Drug Dispensing:					
1	Drug Availability:				
	a) Tab Aspirin	Yes ✓ No	Supply Issues / Stockouts in Past (Ask) Yes or No ✓		
	b) Tab Atenolol	Yes ✓ No	Supply Issues / Stockouts in Past (Ask) Yes or No ✓		
	c) Tab Metoprolol	Yes ✓ No	Supply Issues / Stockouts in Past (Ask) Yes or No ✓		
	d) Tab Amlodipine	Yes ✓ No	Supply Issues / Stockouts in Past (Ask) Yes or No ✓		
	e) Tab Enalapril	Yes - No ✓	Supply Issues / Stockouts in Past (Ask) Yes or No ✓		

	f) Tab Hydrochlorothiazide	Yes ✓ No	Supply Issues / Stockouts in Past (Ask) Yes or No ✓	
	g) Inj Streptokinase 7.5 Lac / 15 Lac U	Yes ✓ No	Supply Issues / Stockouts in Past (Ask) Yes or No ✓	
	h) Inj Heparin Sodium 1000 IU	Yes ✓ No	Supply Issues / Stockouts in Past (Ask) Yes or No ✓	
	i) Inj Insulin Regular / Intermediate	Yes ✓ No	Supply Issues / Stockouts in Past (Ask) Yes or No ✓	
	j) Tab Metformin	Yes ✓ No	Supply Issues / Stockouts in Past (Ask) Yes or No ✓	
	k) Tab Isosorbide Dinitrate	Yes ✓ No	Supply Issues / Stockouts in Past (Ask) Yes or No ✓	
	l) Tab Digoxin	Yes ✓ No	Supply Issues / Stockouts in Past (Ask) Yes or No ✓	
	m) Inj Digoxin	Yes ✓ No	Supply Issues / Stockouts in Past (Ask) Yes or No ✓	

	n) Inj Mannitol 20% 300 ml	Yes√- No	Supply Issues / Stockouts in Past (Ask) Yes or No √	
	o) Inj.Adrenaline	Yes √- No	Supply Issues / Stockouts in Past (Ask) Yes or No √	
	p) Inj Atropine	Yes √- No	Supply Issues / Stockouts in Past (Ask) Yes or No √	

Appendix (3): A. Provider interaction: Medical Officer in NCD Clinic, Chumo CHC:

Interaction results: According to the interview, the following areas were discussed:

1. Type of services provided by the MO:
 - Testing patients whose age is more than 30y for HTN, DM.
 - Counselling on lifestyle, stress management, and diet control.
 - Providing pamphlets for patients.
 - On the 1st Wednesday of each month, a mega camp for large scale screening of NCDs is conducted under his clinic.
 - Approx.20-30 new patient of HTN is diagnosed every month, with approx.10-15 new patients of DM every month.
 - Only around 20% on the patients are referred by ASHAS.
 - During the mega camp for screening, usually high number of people attend for services.
2. Training:
 - The MO received training for NCD clinic in 2011.
 - And he is also receiving online training (last one was 2 months ago).
 - The training is done on the disease aspects, reporting process, and current guidelines for management.
3. Challenges faced by the MO:
 - Political: non was faced, due to the support of the gov. by the policies made.
 - Social: currently non, due to good health seeking behaviours of the people.
 - Economic: the gov. is responsible for the supply of all the resources needed, therefore, no issues economically.
 - Technical: non faced regarding the infrastructure or technologies.
 - Geographical: non, as accessibility to the CHC was good.
4. Health system challenges:
 - The MO reported no challenges related to the workforce, service delivery, or workload.
 - Introduction of advanced medications was suggested.
 - Referral for higher facilities for diagnosis or treatment was very rarely done.
 - No difficulties in online reporting system.
 - Monitoring of the program was done by the chief officer every 1-2 month, along with periodic visits by the gov. of Jaipur.

Appendix (3): B. Provider interaction: ANM, ASHAs in Chumo village Sub-centre:

(Interaction was done with 1 ANM, 2 ASHAs, 1 CHO)

Interaction results: According to the interview, the following areas were discussed:

1. Subcentre components and services related to NCDs:
 - Staff are: 1 ANM, 10 ASHAs, covers a population of approx. 9500 people.
 - BP checks, blood sugar checks, Height, weight, eye checks.
 - Basic medicines.
 - Pregnancy follow-up.
 - Referral to CHC in case of NCD complications.
2. Assessment of the subcentre was done by the NHM, WHO.
3. The follow-up visits were done by the ASHAs approx. once in a month since 2020.
4. Training was also conducted on 2021 by the NHM on HYPC, and training booklet was provided.
5. A community-based assessment checklist (CBAC) form is filled by interviewing the people and uploaded online. Part-1 of the CBAC covers risk assessment for NCDs by scoring of different questions.
6. Patients suspected of NCDs are then referred to the CHC for further investigations.
7. A register of all patients is available at the subcentre.
8. Notes on the visit on the process:
 - No referral cards for patients from subcentre to higher facilities.
 - No patient booklet for history and follow-up.
 - No IEC materials provided to risk population.
 - No resistance of people to the screening process.
 - HTN patients usually face medication compliance issues.
 - HTN is more prevalence than other NCDs.
9. In case of any NCD complications faced by a patient, ASHA is contacted first, then she refers to the subcentre where BP and blood sugar is checked, then referred to the CHC.
10. HTN patients usually contact ASHA regarding complications approx. 1-2 times a week.
11. Digital BP device is available, functioning, with 2 spare devices in case of demand.
12. Challenges faced by the ASHAs, ANM: mainly decreased motivation with increased workload and insufficient incentives.

Appendix (4): Community Interaction- Hypertension Patients in NCD Clinic, Chumo CHC:

(Interaction was done with 10 Hypertension patients)

Interaction results: According to the interview, the following areas were discussed:

1. Reason for visiting the NCD clinic:
 - Complaining of HTN related symptoms (dizziness, nervousness, weakness, low BP...)
 - For monthly follow-up and treatment.
2. Distance travelled from house to CHC:
 - Ranging from 1-8 km, with travel time spent being 5-20 min.
3. Patient referred or sent by:
 - All patients were self-referred.
4. Did patients actively contact ASHA:
 - All patients reported that they do not contact ASHA for help, rather they seek healthcare by their own.
5. Last time ASHA came to the house for follow-up:
 - All patients testified that ASHA coming -for treatment follow-up and awareness- to their house happened approximately about 2 months back.
6. Issues faced during Testing or acquiring medicine:
 - All patients faced no issues with the services provided (clinic, testing, treatment).
7. Areas that need improvements in the CHC or NCD clinic:
 - Patients were satisfied and expressed that noticeable improvements were happening.
 - Some suggested increasing physicians as crowding and high number of patients was troublesome for them.

The table below shows the distribution of the patients answering the questions:

Question Asked	Beneficiaries Answer	No. of Respondents
1. Reason for visit	Complaining of HTN related symptoms (dizziness, nervousness, weakness, low BP...)	6
	For monthly follow-up and treatment.	4
2. Distance travelled	From 1-8 km, with travel time spent being 5-20 min.	10
3. Referral state	Self-referred.	10
4. Last active ASHA contact	Did not contact ASHA for help, rather they seek healthcare by their own.	10
5. Last ASHA visit for follow-up	Approximately about 2 months back	10
6. Problems faces with service	No issues faced with the services provided (clinic, testing, treatment).	10
7. Areas need improvement in the NCD, CHC	Patients were satisfied	6
	Overcrowding	4

Appendix (5): Interaction's pictures with:



1. Medical officer in NCD Clinic, Chumo CHC.



2. Community health workers in Chumo Sub-centre.



3. Patients in NCD Clinic in Chumo CHC.

