Public-Private Partnerships in Health Care under the National Health Mission in India: A Review

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PREFACE

Public private partnerships (PPPs) have been one of the mainstays of health reforms in India and continues to be an integral part of the National Health Mission (NHM). The task force on PPP constituted in 2006 under National Rural Health Mission (NRHM) had identified the role and responsibilities of the private partners and how they could be effective in implementation of different health services and programmes. It also reiterated the NRHM's framework of implementation, where the role of NGOs was viewed as critical to the success of the Mission and made the distinction between non-profit NGO and for profit sector where the former was recognised for reaching out to remote areas

The present working paper on PPPs in health care is a review of all available PPPs under the NHM. Several databases have been accessed to come to a comprehensive listing of PPPs under NHM. Based on the available data, a typology of PPPs and their characteristics has been created and these PPPs have been analysed based on the available and relevant evaluation studies on PPPs. Four dominant PPPs under NHM have been discussed in detail - PPPs in management of PHCs, PPPs with Mobile Medical Units, Contracting-out of clinical services (EmOC and delivery), and PPPs in Diagnostics and Dialysis. The framework used to review PPPs is the outcomes of PPPs for public health service system strengthening.

The findings shows that most PPPs are contracting models and discusses the constraints in partnerships that are available in literature of existing PPPs and their implications for public health service system strengthening. It looks at the gaps in governance, monitoring structures, payment and redressal mechanisms. It also highlights the difference between partnerships with for-profit and non-profit private sectors. It also discusses the prerequisites for a sustainable partnership within the larger goal of equitable distribution of services.

The study concludes that PPPs are here to stay and provides few policy recommendations for their role to strengthen public health services. Important among these are building state capacities to administer a PPP as well strengthening the public health service system to make the PPP sustainable in the long-term, transparency in selection of private partners and developing MoUs/contracts, capacity building of all actors in a partnership to delineate their roles and responsibilities, strong monitoring system to administer and assess the functioning of a partnership and more longitudinal evaluation studies to be conducted of existing PPPs, especially for the dominant forms that are here to stay.

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HCF Team, NHSRC

Public-Private Partnerships in Health Care under the National Health Mission in India: A Review

This report is a review of public-private partnerships (PPPs) in health care with special reference to PPPs undertaken under the National Health Mission (NHM erstwhile National Rural Health Mission) since 2005 in India.

This report is divided into several parts – first section is the background and rationale of the study followed by objectives and methodology; it then provides a detailed review of existing literature on evaluations of PPPs in India between 2005-2020 under the NHM; maps and creates typology of PPPs under NHM based on available literature; discusses the constraints in PPPs that arise from the review; delineates the gaps in research and provides policy recommendations.

1. BACKGROUND AND RATIONALE

India has a mixed economy in health services since its independence. Even though the health policies have emphasised on public delivery of services, the private sector has always existed and has grown in size and heterogeneity over the decades. The growth of the private sector was related to the underfunding of the public sector and both the sectors are not discreet. They have been interdependent on one another and there has been a history of collaborations. These collaborations became more formal with the advent of 'partnerships' in the 1990s.

PPPs gained greater legitimacy in the 1990s when multilateral organisations, bilateral organisations, pharmaceutical companies, American foundations and international non-governmental organisations partnered with global health institutions as well as governments across low-to-middle-income countries. Having said this, different forms of interactions and modes of collaboration between the public and private sectors had existed in health care even before this as a means of mobilising resources to enhance health system capacity and sustainability, but there is a lack of conceptual clarity in the definition of PPPs (Baru and Nundy 2008; Venkat Raman and Bjorkman 2009; Ravindran 2011; Wong et al 2015).

Most definitions on PPPs are built on the assumption that the partnership is an equal one. There are very few studies that have focused on the power dynamics between the actors and there is little reflection on negotiations between the two sectors to form a partnership.

Baru and Nundy state, "…. the World Bank gives precedence to the role of the private sector as in the following definition, where it states that: 'a PPP is a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility, and remuneration is linked to performance' (World Bank, 2017, p. 1). The World Bank definition clearly mentions the need for a formal agreement between the two sets of actors regarding the length of the partnership, tasks to be undertaken, shared benefits and risks" (Baru and Nundy 2021).

In the health sector, the World Health Organization (WHO) describes partnership as a means to "bring together a set of actors for the common goal of improving the health of populations based on mutually agreed roles and principles" (cited in Kickbusch and Quick 1998, p.69). In this definition, agreement on key principles is considered crucial, as well as maintaining a balance of power between the parties, to enable each to retain its core values and identities (Buse and Walt, 2000 cited in Wong et al 2015).

The United Nations (UN) System Task Team which is comprised of a group of multilateral agencies, define partnership as voluntary and collaborative relationships between various parties, both state and non-state, in which all participants agree to work together to achieve a common purpose or undertake a specific task and to share risks, responsibilities, resources, competencies and benefits (UN System Task Team, 2013). The spirit of this is reflected in the definition by Venkat Raman and Bjorkman: "a collaborative effort and reciprocal relationship between two parties with clear terms and conditions to achieve mutually understood and agreed upon objectives following certain mechanisms" (Venkat Raman and Bjorkman, 2009, p. 13). Thus, it is quite clear that there is much ambiguity in the definition of PPPs in health care as a result of which the process and outcomes are diverse and case specific. Venkat Raman and Bjorkman (2009), also state that generalizations on clubbing every interaction between private and public sector results in degrading the core content of partnerships, "...which contains five essential principles: relative equality between the partners, mutual benefits to the stakeholders, autonomy, accountability and mutual commitment to agreed objectives" (pg no from the reference) There are differences in interpretations of these core values and also a deep mistrust between the two sectors that make the ideal partnership non-existent.

Partnerships in health is diverse and term itself is loosely used as they do not fit into the definitions set by the WHO or World Bank. This reflects in the variation of definitions and lack of conceptual clarity on PPPs in health. Many of them define PPPs as mere interactions or collaborations.

History of public-private collaborations in health care in India

In India, over the years, a weak public sector and a fairly large private sector resulted in complex inter-relationship between both sectors. In the initial years after independence, the various forms of these inter-relationships included - government doctors engaging in private practice; public subsidies to private sector and; collaborations between the for-profit, non-profit sectors and public institutions as a part of the national health programmes (NHP). Baru and Nundy (2009) discuss the relationship between the non-profit sector and the family welfare and other disease control programmes. They make a distinction between the pre- and post-1980s regarding the nature and scope of these partnerships. Most of the collaborations in the pre-1980s phase were with the non-profit sector and restricted to NHPs. Among the various health programmes, it is family planning programmes that had the maximum number of collaborations with non-governmental organisations (NGOs). The collaborations with private practitioners existed for limited service provisioning. The latter were involved in the provision of spacing and permanent methods of birth control. Initially these collaborations were simple, with the government offering some incentives in the form of cash and kind to mostly NGOs. However, it is the government that set the terms, initiated and supported these collaborations (Baru and Nundy, 2008; Baru and Nundy 2021).

Before the 1990s they can be described as collaborations, while after the 1990s the idea of PPPs was an important policy initiative in the health sector. This was marked during the period of health sector reforms in the 1990s. The 1990s saw several PPPs in the health sector at the global level. Key multilateral and bilateral agencies adopted this strategy in global health policy that influenced national policies. The term partnership was used to cover collaborations in general and newly emerging ones as well. In India the beginning of the transition from collaboration to formal partnerships is seen during this period.

The National Health Policy of 2017 emphasised partnerships with private sector in the urban areas and views it as inevitable, given the huge presence of private institutions in cities. Partnerships with private sector is encouraged in diagnostics services, ambulance services, safe blood services, rehabilitative services, palliative services, mental healthcare, telemedicine services, managing of rare and orphan diseases. It sees the role of the private sector in the health and wellness centres. The policy also recommended collaborating

with the non-profit sector not only at the primary level but even at the tertiary level for accepting referrals from public institutions. It recommends, "… quality secondary and tertiary care services through a combination of public hospitals and well measured strategic purchasing of services in health care deficit areas, from private care providers, especially the not-for profit providers" (GOI 2017, pg no from the reference).

PPPs in Reproductive and Child Health (RCH) and National Health Mission (NHM)

It was in the mid-1990s (eighth plan onwards) and the decade of the 2000s that there was a shift from building partnerships only at the primary level. Several partnerships emerged in secondary and tertiary public hospitals but majority of the partnerships still remained at the primary level. RCH-I (1997-2005) clearly strategized PPPs as one of the ways to achieve goals of the programme. Under the National Rural Health Mission (NRHM) and RCH-II (2005 onwards till 2013), PPPs have been one of the mainstays, and continues to be an integral part of the National Health Mission (NHM). The Task Force on PPPs that was reconstituted in 2006, observed that there was a need to redefine PPPs so as to address the broader public health goals stated in the NRHM and examine the existing systems of partnerships and suggested modifications in regulations. It identified strengthening of the public sector health system and expanding the pool of health professionals for public health goals as two keys issues for consideration. It also reiterated the NRHM's framework of implementation, where the role of NGOs was viewed as critical to the success of the Mission and made the distinction between non-profit NGO and for profit sector where the former was recognised for reaching out to remote areas (GOI 2006). The partnerships under NRHM were encouraged to be transparent and to ensure quality and affordable services to the community. Within the framework of universal health coverage in the last decade, PPPs have been promoted as means to expand access and coverage.

The most common form of PPPs that emerged within the NHM were the contracting-in and -out models that were seen across all levels of care. These included outsourcing primary health centres to a private entity, contracting-in private providers/entities at the secondary or tertiary level to deliver clinical or non-clinical services. There were also social marketing, social franchising, and voucher schemes at the primary level that constituted as partnerships. These were mostly seen with the RCH programme during the late 1990s onwards through the NHM. Given the emphasis on universal health coverage in the present times, PPPs has been again seen as a strategy to fill gaps in delivery of services.

A quick review on PPPs tells us that there are few evaluation studies detailing their successes, constraints and outcomes in a comprehensive manner. Venkat Raman and Bjorkman's (2009) work has been the initial study detailing the formation and implementation of some major PPPs from across India. This was conducted in the beginning phase of the NRHM. Having said that, there has been a dearth of comprehensive evaluation studies on PPPs in India, given its complexities and varied design. Most of the studies have been based on secondary reviews and/or evaluations of specific PPPs. For instance, there have been several studies of the *Chiranjivi* scheme in Gujarat, because it was one of the first of its kind and projected to be a 'successful' PPP – there are several reviews available of its success as well as constraints. The objectives of the evaluations have been diverse with narrow focus mostly on outcomes of accessibility, affordability and cost effectiveness. What has been missing in these studies are the critical aspects of the context of the partnerships, the process of constituting these partnerships, the practice of these partnerships for sustaining them and their role in strengthening public sector health service system.

Given the background there are several questions that arise on the nature of arrangement of PPPs in health care, way it is implemented and how it has impacted the overall health system. Specifically, the questions that we need to keep in our minds are:

- What are the necessary and sufficient conditions/prerequisites for setting up a PPP?
- What is the context of the emergence of a particular PPP in health care? What are the motivations behind the partnership?
- What is the design and architecture of the PPP? How are risks and benefits measured when deciding on a PPP?
- How is the Memorandum of Understanding (MoU) drawn? How is a consensus arrived at in framing the MoU?
- How is power and authority diffused between all actors?
- Who is the target group? How is accessibility, affordability and equity measured?
- What is considered a success in PPPs and how is it defined? What makes a PPP successful in one context and not in another?
- What are the governance structures and accountability mechanisms built in administering a PPP?
- Are there any redressal mechanisms for those involved in the partnership and also for beneficiaries of a PPP?
- What is critical for a sustainable PPP?
- How do PPPs build capacities of the health service system? Do the PPPs fulfil the goal of strengthening the public sector health system?

2. OBJECTIVES OF THE STUDY

The overall objective of the study is to review the key public-private initiatives, collaborations, interactions, partnerships that have been introduced as PPPs in the last 15 years (2005-2020), since the beginning of the NHM (erstwhile NRHM) and understand their role in strengthening the public sector health service system as well as assess some health system goals such as strengthening of public health services systems, improved availability and coverage for underserved population. We will conduct a review of available literature on PPPs in health care in India with the objective of analysing the evaluations conducted till date and will create a typology of PPPs under NHM.

The specific objectives are to:

a) identify - the characteristics of PPPs in health care in India in terms of typology, architecture, actors involved, across levels of care under NHM;
b) the magnitude of spending for PPPs under NHM;
c) to analyse the available evidence on specific types of PPPs in health in India for some health system goals like strengthening of public health services systems, improved availability and coverage for underserved population;
d) to understand debates on challenges and constraints of PPPs in meeting their desired objectives;
e) to delineate the gaps in research;
f) to provide policy recommendations.

3. METHODOLOGY

The study is primarily based on secondary review. Secondary data will include review of existing and available material on PPPs in the health sector in India from various online sources and databases from the period 2005-2020. For the purpose of the study we restrict our understanding of PPPs to those under the purview of and classified under the NHM. We focus on these PPPs across levels of care – primary, secondary and tertiary and delve more on partnerships at the primary level as maximum PPPs appear to be at the primary level.

The sources used for the review include searches on several databases for the period 2005 to 2020 — google scholar, PubMed, centre and state government websites (Ministry of Health and NHM), evaluation studies conducted and data provided by the National Health Systems Resource Centre (NHSRC), New Delhi. We also use grey literature available while

searching various databases – these are mainly reports by civil society organisations, NGOs and unpublished dissertations and theses' available on university websites.

Limitations of the study — Since the study only focuses on PPPs under NHM, many other forms of PPPs especially linked to health insurance (RSBY now subsumed under PMJAY) and health programmes (disease control and RMNCH+A) are not included. We also do not include PPPs in non-clinical services like bio-waste management, housekeeping and security at the secondary and tertiary level. Given the COVID-19 pandemic, there was no primary study conducted and the analysis is based on an extensive secondary review of available studies. We therefore, do not study the impact of PPPs on health status of the population or community perceptions as that will require a longitudinal primary study.

4. REVIEW OF PPPs UNDER NHM

For the study, PPPs in health care have been mapped through searching various databases. There is no comprehensive list of PPPs in NHM available with the government agencies – both at the central level and the state level. In order to map and create a typology, we used different sources including secondary review studies and articles available online, government reports and documents, centre and state NHM websites based on components of NHM, and data available with the NHSRC, New Delhi on Record of Proceedings (RoPs) and Programme Implementation Plans (PIPs).

4.1 Analysis of Record of Proceedings in PPPs in NHM

The NHM divides its components programme-wise and in terms of health service system strengthening. Based on the Record of Proceedings (ROPs) of 2019-20, Uttar Pradesh, Bihar, Madhya Pradesh, Tamil Nadu, Gujarat, Karnataka, Andhra Pradesh, Rajasthan and Odisha seem to have more funds diverted to PPPs under NHM. But the state-wise budget of PPPs under ROPs is not comprehensive as PPPs figure under many other budget heads. This issue arises because of the ambiguity in the definition of PPPs. The states do not define it but have their own perceptions on what is put under PPP heads and another reason could be that budgeting itself is a complicated process and perhaps for convenience, some PPPs are budgeted under some other heads to accommodate them in the annual budget.

Table 1 - PPP budget state-wise for NHM, 2019-20 (ROP)

S.No.	States	PPP budget (ROP) 2019-20 (in lakhs)	Observations (Programmes / Health service system strengthening
1	Bihar	7251.7	RCH-Family Planning, NLEP, RNTCP, NPCB, Dialysis programme, Diagnostic services and other HSS activities.
2	Chandigarh	36.5	NVBDCP-Malaria, Dengue Chikungunya, RNTCP and NPCB.
3	Delhi	362.4	NVBDCP- Malaria, Dengue Chikungunya, NLEP, RNTCP, NPCB and other HSS activities.
4	Goa	48	RNTCP, NPCB and NVBDCP - Dengue Chikungunya and Malaria.
5	Haryana	1814.08	NVBDCP - Malaria, RNTCP, NPCB, Diagnostics services and other HSS activities.
6	Karnataka	4415.34	NVBDCP-Malaria, Dengue, Chikungunya, RNTCP, NPCB, Outsourcing of primary care services, RKSK and Dialysis programme.
7	Maharashtra	3301.77	RCH, NVBDCP - Dengue Chikungunya and Malaria, NLEP, RNTCP, NPCB, Diagnostic Services and other HSS activities.
8	Meghalaya	196.45	NVBDCP - Malaria,Dengue and Chikungunya, RNTCP, NPCB, NLEP and Outsourcing of health Centres .
9	Mizoram	83.42	RNTCP, NPCB ,NMHP, HMIS Training,
10	Madhya Pradesh	6331.25	RNTCP, NPCB,Dialysis and other HSS.
11	Nagaland	151.17	RCH , NVBDCP - Malaria and Dengue, RNTCP, NPCB and Grant to NGO/ Community Organisation.
12	Rajasthan	4361.29	RNTCP, NPCB, Outsourcing of clinical and non-clinical maintenance services and Dialysis programme.
13	Telangana	806.55	NVBDCP - Dengue Chikungunya and Malaria, NLEP, RNTCP,NPCB and Dialysis programme
14	Tripura	112.55	NVBDCP - Dengue Chikungunya, RNTCP, NPCB, NPCDCS, Bio Medical waste and Dialysis programme.
15	Uttarakhand	670.32	RNTCP, NVBDCP - Dengue Chikungunya, NPCB andDialysis programme.

16	Jammu & Kashmir	132.1	NVBDCP - Dengue Chikungunya, RNTCP, NPCB and Management of Clubfoot.
17	Andaman & Nicobar	0.69	NVBDCP - Dengue Chikungunya, RNTCP and NPCB.
18	Uttar Pradesh	9527.2	RCH-Family Planning, NVBDCP-Dengue Chikungunya, RNTCP, NPCB, Grant to NGOs, Dialysis programme,Outsourcing of Ambulance services, Diagnostic and Dialysis services and other HSS activities.
19	Odisha	4137.8	NVBDCP-Malaria, NLEP, RNTCP, NPCB, Outsourcing of PHCs, Dialysis programme and other HSS activities.
20	Assam	3164.13	NLEP, RNTCP, NPCB, eVIN activities and other HSS activities.
21	Chhattisgarh	888.02	NVBDCP-Dengue Chikungunya, NLEP, RNTCP, NPCB and other HSS activities.
22	Daman & Diu	4.89	NPCB
23	Gujarat	5103.07	NVBDCP- Malaria, Dengue and Chikungunya, RNTCP, NPCB andOutsourcing clinical services institutional delivery/EmOC.
24	Himachal Pradesh	342.89	NVBDCP - Dengue Chikungunya and Malaria, RNTCP, NPCB and Dialysis programme.
25	Jharkhand	3690.22	RNTCP, NPCB, other HSS activities and Diagnostics services.
26	Kerala	491.79	NVBDCP - Dengue Chikungunya, NLEP, RNTCP, NPCB and NPCDCS.
27	Manipur	754.2	RCH (Family Planning), NVBDCP - Malaria, RNTCP, NPCB, Management of PHC, other HSS activities, Dialysis programme and Diagnostic Services.
28	Puducherry	46.91	NVBDCP - Dengue Chikungunya, RNTCP and other HSS activities
29	Punjab	529.98	NVBDCP - Dengue Chikungunya, RNTCP and NPCB.
30	Sikkim	10	NCPB
31	Tamil Nadu	5879.2	NVBDCP-Dengue Chikungunya, RNTCP, NPCB, NMHP, other HSSactivities andOutsourcing ofPrimary care services.
32	West Bengal	2809.13	RCH (Family Planning), NVBDCP - Dengue Chikungunya , NLEP, RNTCP, NCPB, and Diagnostics services, Thalassemia control, and Clinical institutional delivery
33	Lakshwadeep	0.6	RNTCP

34	Arunachal Pradesh	814.36	NVBDCP - Malaria, NLEP, RNTCP, NPCB, HSS
35	Andhra Pradesh	4376.1	Leprosy, RNTCP, NPCB
	Total	**72646.06**	

Source: Compiled by NHSRC from ROPs for 2019-20 (NHM website)
ROP – Record of Proceedings, RCH – Reproductive and Child Health, NLEP- National Leprosy Eradication Programme, RNTCP – National Tuberculosis Elimination Programme,NPCB – National Programme for Control of Blindness, HSS – Health System Strengthening, NVBDCP – National Vector Borne Disease Control Programme, NPCDCS – National Programme for Prevention & Control of Cancer, Diabetes, Cardiovascular Diseases & stroke, NMHP – National Mental Health Programme, RKSK- Rashtriya Kishore Swasthya Karyakram.

4.2 Characteristics of PPPs under NHM

Based on the review of all information available (not restricted only to ROPs), we created a table that provides details of PPPs at primary, secondary and tertiary level by NHM component (Table 2). Among the programme components at the primary level, maximum PPPs are observed with Revised National Tuberculosis Control Programme (RNTCP); maternal and child health services under RMNCH+A, where most partnerships are seen in family planning services; and substantial amount of funds are diverted to cataract surgeries as PPPs under blindness control programme. Under the health service strengthening component of the NHP, the dominant partnerships at the primary level are seen in the management of PHCs, mobile medical units and transportation for emergency medical services. These partnerships at the primary level form an important component of health care delivery as these are said to fill the gaps in delivery and strengthen the health services. At the primary level there are partnerships mostly with the non-profit sectors.

Another form of PPP that has been around for many years is the outsourcing (contracting-out) of certain clinical services, like institutional delivery and emergency obstetric care to the private providers. Most common forms of design of PPPs are based on the contracting model. At the secondary and tertiary level most PPPs are in diagnostic services and dialysis and these are expanding across states under NHM.

Table 2 – Characteristics of PPPs under NHM (Primary, Secondary and Tertiary)

	Type of PPP and NHM component	States which have the PPPs	Design and Architecture of the PPP
I	**PPPs for Health Service System Strengthening**		
1.	PPPs in management of PHCs	Odisha (34 Rural; 25 Urban), Rajasthan (24 Rural), Uttarakhand (33 Urban), Arunachal Pradesh (16 Rural), Manipur (5 Rural), Meghalaya (19 Rural), Nagaland (1 Rural), Andhra Pradesh (243 Urban), Karnataka (24 Rural, 6 Urban)	Design includes outsourcing management of PPPs to an agency, in most cases an NGO, where the government provides with the infrastructure and running cost of the centre and the NGO manages the day to day service provisioning. The other design is providing grants in aid to NGOs that are present in difficult to reach areas where there is no government infrastructure. NGOs either partner with the government to run the institution as a government health centre or else receive some grant-in-aid to carry out some government programmes.
2.	PPPs for Mobile Medical Units	23 states and UTs have MMUs – Tamil Nadu, Madhya Pradesh, Rajasthan, Assam and Jharkhand seem to have over 100 such units	Support to Mobile Medical Units (MMUs) under NHM, now encompassing both NRHM and NUHM is a key strategy to facilitate access to public health care particularly to people living in remote, difficult, under-served and unreached areas. The objective of this strategy is to take healthcare to the doorstep of populations, particularly rural, vulnerable and under-served areas. This is not meant to transfer patients. MMU services are envisaged to meet the technical and service quality standards for a Primary health Centre through provision of a suggested package of services under 12 thematic areas- Maternal Health, Neonatal and Infant Health, Child and Adolescent health, Reproductive Health and Contraceptive Services, Management of Chronic Communicable Diseases, Management of Common Communicable Diseases & basic OPD care (acute simple illnesses), management of Common Non-Communicable Diseases, Management of mental Illness, Dental Care, Eye Care/ENT Care, Geriatric Care and Emergency Medicine.

			These services are provided free of cost through MMUs, besides enabling referrals. There is usually one vehicle per MMU, however, in case of more than one vehicle: One vehicle is used for transport of medical and para-medical personnel. Second vehicle is used for carrying equipment/ accessories and basic laboratory facilities. Third vehicle carries diagnostic equipment such as X-Ray, ultrasound, ECG machine and generator. Deployment of MMUs is based on a population norm with 1 MMU per 10 lakh population subject to a cap of 5 MMUs per district. However, further relaxation of norms is available on a case to case basis, where patients served through existing MMUs exceeds 60 patients per day in plain areas and 30 patients per day in hilly areas, based on the appraisal of proposals submitted by the respective states in this regard. Support to the states/UTS for MMUs is provided both for capital cost as well as operational cost within the ceiling of specified financial norms. The approved operational cost/ recurring cost with a diagnostic van is Rs.24 lakhs, while it is Rs. 28 lakhs for North Eastern states, Jammu & Kashmir and Himachal Pradesh. The recommended human resource per MMU is one medical officer, one nurse, one lab technician, one pharmacist cum administrative assistant and one driver cum support
3.	PPPs for Emergency ambulance services	At the time of launch of NRHM in 2005, such ambulances networks were non-existent. Now 33 States/UTs have the facility where people can Dial 108 or 102 telephone number for calling an ambulance.	Private players operate and manage emergency transport service: One of the achievement of NHM is the patient transport ambulances operating under Dial 108/102 ambulance services. Dial 108 is predominantly an emergency response system, primarily designed to attend to patients of critical care, trauma and accident victims etc.

		5499 empanelled vehicles are also being used in some States to provide transport to pregnant women and children e.g. Janani express in MP, Odisha, Mamta Vahan in Jharkhand, Nishchay Yan Prakalpa in West Bengal and Khushiyo ki Sawari in Uttarakhand.(Source : NHM MIS)	Dial 102 services essentially consist of basic patient transport aimed to cater the needs of pregnant women and children though other categories are also taking benefit and are not excluded. JSSK entitlements e.g. free transfer from home to facility, inter facility transfer in case of referral and drop back for mother and children are the key focus of 102 service. For Dial 102 Service and Dial 108 Service, operational cost is supported under NHM. Implementation of National Ambulance Service (NAS) guidelines has been made mandatory for all the ambulances whose Operational Cost is supported under NHM. 10238 ambulances are being supported under 108 emergency transport systems including new.(Source : NHM MIS) 10147 ambulances are operating as 102 patient transport including new ambulances. (Source : NHM MIS)
4.	Institutional delivery under EmOC	In several states – Gujarat, Maharashtra	Contracting out delivery services to private providers, for instance Chiranjeevi scheme in Gujarat.
5.	Strengthening of diagnostic services of H&WC through PPP	Bihar, Haryana, Maharashtra, Assam (boat clinics, charitable hospitals and tea garden hospitals), Jharkhand, Manipur, West Bengal	PHC/CHC/SDH/DH facilities in states need to strengthen the public health facility to enable delivery of diagnostic services, especially low cost high volume diagnostic tests. However, in such facilities where the medical equipment, human resource, or infrastructure for performing tests does not exist, outsourcing (PPP) mechanism could be used. For essential pathology initiatives - 1. Hub and Spoke Model: Under this model, the samples are collected at peripheral facilities/collection centres (including Mobile Medical Units) and safely transported to a central laboratory which will act as the Hub ; 2. Outsourcing of diagnostics services: Outsourcing of high cost, technologically demanding and lower frequency diagnostic services to private service providers while High volume, low cost tests not requiring highly skilled manpower are undertaken within public health facilities and

			3. Contracting-in: Contracting- in of the services of specialists, such as like radiologists, pathologists, microbiologists etc, where in house expertise is not available, FDI-Lab (Implementation Status as on 31st August 2018) It has been implemented in total 31 States. PPP mode in 9 States: Andhra Pradesh, Assam, Delhi, Maharashtra, Meghalaya, Uttar Pradesh, Odisha, Jharkhand, Manipur. In-house mode in 22 States/UTs: A&N Island, Bihar, Chandigarh, Chhattisgarh, D&N Haveli, Daman & Diu, Goa, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Lakshadweep, Madhya Pradesh, Puducherry, Punjab, Rajasthan, Sikkim, Tamil Nadu, Telangana, West Bengal, Jammu & Kashmir. Tele-radiology initiative: Apart from infrastructure, lack of specialist clinicians especially radiologists have been a major challenge which denies the poor patient of essential radio-diagnosis. To bridge this gap a viable and cost effective PPP model has been devised under which digitized X-Ray films are transmitted to service provider and reports are received within a stipulated time frame. FDI- Tele-radiology (Implementation Status as on 31st August 2018): PPP mode in 9 States: Andhra Pradesh, Meghalaya, Rajasthan, Tripura, West Bengal, Assam, Odisha, Uttrakhand, Uttar Pradesh. FDI CT scan (Implementation Status as on 31st August 2018): PPP mode in 13 States: Andhra Pradesh , Himachal Pradesh, Jharkhand, Karnataka, Punjab, Rajasthan, Tripura, Uttar Pradesh, West Bengal, Assam, Delhi, Odisha, Madhya Pradesh. In-house mode in 11 states/UTs: A&N island, Goa, Gujarat, Haryana, Kerala, Puducherry, Sikkim, Tamil Nadu, Telangana, Daman & Diu, Lakshadweep.
6.	Pradhan Mantri National Dialysis Programme - (Haemodialysis) has been implemented at District level - state govt and private players	Public Private Partnership for Haemodialysis services - 21 States/ UTs- are operating in PPP Mode - Andhra Pradesh, Arunachal Pradesh, Assam, Bihar,	BPL patients are availing the dialysis services on free of cost basis whereas APL category patients can also get the services on self-payment basis on discounted rate finalized through open tendering process. Payment (for BPL patients only) to dialysis service provider are pooled from NHM funds on basis of cost per dialysis session; as per tendered cost duly approved in PIP.

		Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Rajasthan, Telangana and Uttar Pradesh, Chhattisgarh, Lakshadweep, Madhya Pradesh, Odisha, Tripura, Uttarakhand and West Bengal.	In most instances dialysis services are contracted-in by State Health Society District/ State Health Department at district hospitals level from private sector and in some other instances services are contracted-out to a private provider. In Odisha and Gujarat, the dialysis services are completely free to all beneficiaries. APL beneficiaries' requirement of dialysis are met through State budget. State of Bihar has included drugs and diagnostic services requirement under the service provider's scope of services under this initiative and reimbursement of dialysis services includes the additional cost of drugs and diagnostics.
II	**PPPs in Health Programmes**		
7.	RMNCH+A (mostly in family planning services)	Mamata (Delhi); Voucher Schemes and Social Franchising – Uttar Pradesh, Assam, Chhattisgarh, Madhya Pradesh, Orissa and West Bengal), Merrygold (UP)	Design includes franchising models as well as contracting-out services. In franchising models as in Merrygold scheme in UP – there are family planning centres/franchises at the block, district and cities providing contraceptive products and counselling services.
8.	PPPs in Disease Control programmes		
i.	RNTCP	33 partners with the centre – multilateral and bilateral . As per 2018 data, 685 partners are involved with state and district health societies, with Delhi (51), Kerala (52), Gujarat (63), Rajasthan (90) and West Bengal (179) having maximum collaborations.	Public private mix (PP/NGO support) and for Public Private Support Agency (max funds to Bihar, Chhattisgarh, Gujarat, Jharkhand, Tamil Nadu, West Bengal).
ii.	NVBDCP – Malaria		Most PPPs are in health promotion and for intersectoral convergence

iii.	NLEP	Delhi, Karnataka, Maharashtra, Meghalaya, Telangana, Odisha, Assam, Chhattisgarh, Kerala, West Bengal	GOI and State governments, WHO, the International Federation of Anti Leprosy Associations (ILEP), the Sasakawa Memorial Health Foundation & the Nippon Foundation, NOVARTIS.
9.	PPPs in NCDs		
i.	Blindness Control Programme	NPCB receives more funds than any other programme – maximum partnerships under category of reimbursement for cataract operation for NGO and private practitioners – in all states	Grant-in-aid to NGOs and private providers for cataract surgeries.
ii.			PPP at district NCD cell/clinic – very few
III	**PPPs in non-clinical services**		
i.	Bio-waste management, Health Information systems management, Hospital maintenance and security, dietary and laundry services	Many states have outsourced non-clinical services at the secondary and tertiary level hospitals to private players. Bihar, Maharashtra, West Bengal, Gujarat and so on.	These are mostly outsourcing of services to a private entity.
ii	National Biomedical Equipment Management and Maintenance Program	Medical Devices are crucial for efficiency and sustainability of health systems as they aid in prevention, diagnosis and treatment of illness and Disease. To ensure the timely availability and proper functioning of medical equipment in public health facilities, the Ministry of Health and Family Welfare launched	Ensured upkeep time for medical equipment in PHC/CHC/DH at 80%, 90% and 95% respectively. Converted pending dysfunctional equipment to functional in States/UT following BMMP. • 24 X 7 Toll free number for reporting breakdown, • Medical Equipment Management Information system for planning and monitoring performance • Preventive maintenance, Corrective maintenance • Calibration and User Training.

		the Biomedical Equipment Management and Maintenance Program in the year 2015 for comprehensive maintenance and management of medical equipment in public health facilities from Primary Health Centre to District Hospital level. This program aims to ensure upkeep time for medical equipment in PHC/ CHC/DH at 80%, 90% and 95% respectively.	

Source: compiled from various sources.

As we will observe, there are few review studies conducted on overall PPPs in health in India and there are evaluations of specific PPPs based on a specific programme or a specific health service. We will not discuss in detail partnerships in health programmes but we briefly touch upon private sector engagement in Tuberculosis which is going to be a mainstay for PPPs. Since the maximum PPPs are at the primary level we primarily focus on those in the first section. We focus mostly on PPPs that are said to strengthen public health services at the primary level. Since primary level of care is the first point of contact for the community, partnerships at this level are critical to the overall functioning of the health services. Optimum functioning of the health services, especially in areas that are difficult to reach is important. At the end we review PPPs in diagnostics across levels of care and in dialysis which is an intervention at the tertiary level.

4.3 Review of Dominant PPPs in the NHM

i. PPPs in Health Programmes

Many PPPs in the primary levels as discussed are at the programmatic level either linked to family planning services or in disease control programmes especially in Tuberculosis (RNTCP). We see these partnerships with non-profits and private providers across states. Maximum funds in the NHM for health programmes is directed towards RNTCP.

In the TB programme, history of engagement with the private sector has been around for more than two decades. India made a transition in its strategy with the Revised National TB Control Programme (RNTCP) in 1997 with World Bank's intervention. This was then expanded across India until the entire nation was covered by the RNTCP in March 2006. It was the initial successes of two pilot projects on partnerships in Hyderabad (Mahavir Trust Hospital and Delhi (LRS Hospital) that laid the ground for further partnerships in RNTCP. There was a fundamental shift at this time to initiate services to address TB/HIV, MDR-TB and to extend RNTCP to the private sector. The WHO STOP TB programme initiated and encouraged the public-private mix in diagnosing, reporting and treating TB patients in 2001.

In 2001, the Central TB Division formulated the first guidelines on partnership for engagement of non-governmental organizations (NGOs). The objective of these guidelines was to expand the reach of the programme to all patients through NGOs and private-sector providers. Additionally, the RNTCP has engaged with private medical colleges and several NGOs in the past through grant-in-aid mechanisms and with mixed outcomes. Primarily, in these interventions, a large scale, sustainable engagement of the 'for-profit' private health sector remained missing.

In 2001 it was well-established that private sector links with TB programme was very weak. Yet, it was realised that involvement of the private sector in the TB programme was crucial since most patients visited private providers as first point of contact. Most of the partnerships were successful in increasing demand by active detection of TB cases but the constraint was in notification and referral of patients detected to the TB programme. This is corroborated by studies that underline the importance of a strong national control programme as a necessary condition for ensuring success of the PPP. A study of PPP that was initiated in a district in Kerala to improve case detection of tuberculosis patients shows that there was a significant improvement in case detection but it says, "This was only possible because of the existence of a strong local government TB programme with adequate staffing, medication and capacity to monitor the partnership while continuing routine diagnostic and treatment services for most TB patients" (Kumar et al 2005, p. 873). Dewan et al (2006, p. 4) observe, "A strong public sector tuberculosis control programme proved critical for provision of necessary advocacy, training, and supervision" in relation to building and sustaining partnerships with the private sector.

Private sector involvement in TB is seen as important for continuity in care; low costs of treatment under RNTCP; and monitoring of patients in order to control TB. A study on private providers in Tamil Nadu and Kerala showed that there were more informal

contracts than formal; lack of trust between public and private providers; different regimes of treatment other than DOTS prescribed. Financial incentives were in the form of grant-in-aid or 'in-kind' (Muraleedharan et al 2005). Kielmann et al in a study on private sector engagement note that "limited understanding of each other's functioning has meant that 'partnerships' generally amounted to one-sided arrangements whereby the public sector took on the lead role of recruiting, educating and monitoring PPs (private practitioners) adherence to the RNTCP without adequate consideration of PPs' interests" (Kielmann et al 2014, p. 976). They also suggest that there is little empirical attention to the social relations among diverse actors tasked with implementing the complex formal arrangements envisaged under such partnerships. In this study the authors observed that the intermediaries, TB Health Visitors, were crucial in facilitating the PPM-DOTS – they were the interface between patients, RNTCP functionaries and private providers. They were able to build trust between the patient, provider and the programme staff (Kielmann et al 2014).

Significant shifts in TB partnership policy have been seen only recently since 2012, and much has happened in the policy domain with specified guidelines for partnerships which were ad hoc earlier. The National Strategic Plan (NSP) of 2012-17, emphasized the role of private sector engagement. In the NSP 2017-25 for TB elimination, a framework to guide the activities of all stakeholders including the national and state governments, development partners, civil society organizations, international agencies, research institutions, private sector, and many others whose work is relevant to TB elimination in India was outlined and implemented upon. It specifies the intent to universal access, quality diagnosis, treatment, care and control of TB and to include those treated in the private sector (GOI 2019; PATH n.d.). But it is yet to be seen how this unfolds in the coming years. But the Joint Monitoring Mission report of 2019 on RNTCP in collaboration with the government of India and the WHO observes that there has been a significant rise in TB patients being notified from the private sector since 2013.

In 2019 the government brought out a guidance document for partnership with partnership options that the states could opt for (GOI 2019). This provides a set of guidelines that states could adapt to their context, hence keeping the flexibility. But this is one of the first partnership guidelines brought forth by the central government. It spells out several partnerships that state governments could opt, from detection, diagnosis to treatment and care. One of these is PPSA (Patient Providing Support Agency). PPSA is an interface agency between the RNTCP and the private-sector healthcare system.

Table 3: PPPs with PHCs

S. No	Name of the state	Rural / Urban	PHC Functional on a PPP basis* through NHM Support	PHC Functional on a PPP basis* through State Government	Number of PHCs under PPP upgraded to HWCs (As on Date)	Number of PHCs under PPP upgraded to HWCs (Planned to be made operational by 2019-20)	Whether For Profit/ Non Profit	Specify Name of Private Partner	Remarks
	High Focus								
1	Jharkhand	Rural	0	0	0	11			State has already sent notification of 11 PHCs for the bidding process for PPP mode & also planned to upgrade these 11PHCs to HWCs by this financial year. State has also plan to upgrade HSC Maduban (functional on PPP mode by Deepak fondation) to HWC-SHC by this year.

S. No	Name of the state	Rural / Urban	PHC Functional on a PPP basis* through NHM Support	PHC Functional on a PPP basis* through State Government	Number of PHCs under PPP upgraded to HWCs (As on Date)	Number of PHCs under PPP upgraded to HWCs (Planned to be made operational by 2019-20)	Whether For Profit/ Non Profit	Specify Name of Private Partner	Remarks
2	Odisha	Rural	34	0	27	7	Non-Profit	Among many – Karuna Trust, Shanti Maitri, Orissa VHAI, etc.	
		Urban	25	0	24	1	Non-Profit	Among many - Indian Management and Technical Society (IMTS), Gopinath Juba Sangha (GJS) etc.	
3	Rajasthan	Rural	24	0	24	0	Non-profit	WISH foundation	
4	Uttarakhand	Rural	0	0	0	0	0		
		Urban	33	0	33	0	Non-Profit	Samarpan, Society of people for development, Bombay Hospital, Friends	
	North-East								
5	Arunachal Pradesh	Rural	16	3	0	Non Profit	Non-Profit	Karuna Trust; Future Generation; N.N. Charitable Trust; M.M. Charitable Trust; J.A.C Priyas	

S. No	Name of the state	Rural / Urban	PHC Functional on a PPP basis* through NHM Support	PHC Functional on a PPP basis* through State Government	Number of PHCs under PPP upgraded to HWCs (As on Date)	Number of PHCs under PPP upgraded to HWCs (Planned to be made operational by 2019-20)	Whether For Profit/ Non Profit	Specify Name of Private Partner	Remarks
6	Manipur	Rural	5	0	0	5	Non-Profit	New Life Trust, Imphal	It is an NGO entering into 3rd Year under PPP
7	Meghalaya	Rural	19	0	0	6	Non Profit	Karuna Trust, Citizen Foundation, VHAM, Bakdil	
8	Nagaland	Rural	1	1	0	0	Non profit	ECS Tuensang	
	Non-High Focus								
9	Andhra Pradesh	Urban	243	NA	243	NA		182 with Apollo and 58 with Dhanush	243 e-UPHCs are functional through PPP mode.

S. No	Name of the state	Rural / Urban	PHC Functional on a PPP basis* through NHM Support	PHC Functional on a PPP basis* through State Government	Number of PHCs under PPP upgraded to HWCs (As on Date)	Number of PHCs under PPP upgraded to HWCs (Planned to be made operational by 2019-20)	Whether For Profit/ Non Profit	Specify Name of Private Partner	Remarks
10	Karnataka	Rural	Yes	30	10	5	Non Profit	Karuna Trust	
		Urban	Yes	19		17	Non Profit	Lions, Sri Sharana Seva Samaja, Sumangali Seva Ashrama, IRCS, Karuna Trust, CSI, Mysore Makkala Koota, All India Womens Council	
11	Lakshadweep	Rural	No	NA	NA	NA	NA	NA	But 1 SDH has been given in PPP Mode to an organisation from Kerala- ICRA International Hospitals.

** Includes PHCs with Complete Management Outsourced to a Private Partner*

Source: Data obtained from NHSRC. 2020.

PPSA acts on behalf of the RNTCP to liaise with laboratories, physicians, chemists and all other clinical / medical establishments, and ensures that all private-sector patients have access to the quality services with their preferred provider and with minimum out-of-pocket expenditure. The main objectives of a PPSA is to efficiently engage with private-sector providers, ensure high-quality diagnostics, provide treatment and adherence support, ensure public health action, facilitate linkages of services and actively follow-up with patients till the completion of their treatment (PATH. n.d.). It is still to be established how these partnerships shape the outcomes of the TB programme in the coming years, but it is important to note that much of the initiative of private engagement in the past was funded by international organisations as pilot studies. It is only recently, since 2012 that the government has taken the need for private sector engagement seriously and has integrated it into the TB policy and programme.

ii. PPPs in management of PHCs

One of the most important partnerships at the primary level is outsourcing of the management of PPPs to the private sector. In most cases this is with a non-profit entity. It was Karuna Trust, an NGO in Karnataka that initially piloted a partnership with the state government to manage a PHC (Gumballi in Chamarajanagar district) in 1996. Over the years Karuna Trust has managed PHCs across seven states. Under NHM, some of the states have initiated PPPs in management of PHCs as a strategy for difficult to reach areas and also in many urban centres. For instance, rural Arunachal Pradesh and rural Nagaland have several PHCs managed by Karuna Trust and other NGOs in the area. On the other hand, urban Andhra Pradesh has initiated the functioning of 243 urban PHCs in PPP mode. Table 3 gives the number of PPPs with PHCs across India.

In 2018, under Ayushman Bharat, the Government of India announced the creation of 1,50,000 Health and Wellness Centres (HWCs) by transforming existing Sub Centres and Primary Health Centres as the base pillar. The idea is to provide comprehensive care services for the population closer to home which equitable. They are envisaged to deliver expanded range services that go beyond maternal and child health care services to include care for non-communicable diseases, palliative and rehabilitative care, mental health and first level care for emergencies and trauma , including free essential drugs and diagnostic services. Many of these are envisioned to be in partnership with the private sector.
Since the Health and Wellness Centres are a very recent policy shift, there are no evaluation studies available for this. In this study we review some of the earlier studies on PHC management by the non-profits.

Given below are the highlights from a Memorandum of Understanding (MoU) between state government and an NGO to manage PHCs in the state.

Box 1 – Highlights of MoU between Government of Meghalaya and Karuna Trust

The modalities of implementation as per the MoU (this is listed specifically for the between State Government of Meghalaya and Karuna Trust (KT) signed in 2015) include–

The State Government hands over the building and physical infrastructure of the PHC(s) to the Agency along with the existing equipment and furniture. The state government maintains the said building and associated infrastructure, whereas, the agency utilizes it with due care.

The Agency provides all the Health/Medical/Family Welfare Services, curative, preventive and promotive, as are normally expected from any PHC, to the local population residing in the geographical area under the jurisdiction of the said PHC. The Agency engages its own Medical/ Paramedical and other staff for providing these services ensures that these personnel are always available at the pre-decided timings. The IPHS norms regarding human resources have to be followed. The personnel, the Agency are duty bound to provide an alternative so that the PHC does not, at any point of time becomes non-functional due to the lack of required personnel. The existing staff at the PHC is suitably redeployed by the State Government to other PHCs/health facility centres.

The Agency has to provide all services that are listed under the functioning of a PHC including National Health Programmes, OPD and in-patient services. Also included is dispensing essential medicines and laboratory facilities that is listed under the protocols.

The Agency receives funds from the Government, towards meeting the cost of personnel, administrative charges and other management expenditure, including contingencies.

Drugs, Medicines, Reagents, Surgical Material, Health Care Consumables, Civil Works, Furniture, Equipment to the extent are supplied by the state government/or may be procured by information and/or approval from the Govt. as far as practicable.
The Agency would meet from its own sources no less than 10% from its sources towards Project Cost.

The disbursement/release of funds by the State Government to the Agency is in quarterly instalments every year, exactly the procedure of government fund and for the current financial year, funds are released as per mutually agreed schedule after signing of the MoU.

On an average the Karuna Trust MoU shows that the monthly cost of running a PHC was around Rs.4 lakhs in 2015. The MoU provides with details of regular audits by the state government.

Source: NHSRC, 2011

A review conducted by the NHSRC in 2011 assesses the service delivery outcomes in NGO run health facilities in Meghalaya with respect to the MoUs. It also attempted to review the management and implementation process in the state. In 2008, the Government of

Meghalaya (GoM) adopted the PPP approach for providing health care delivery services in CHCs and PHCs/HSCs located in peripheral and difficult to reach areas through NGOs for management and operations of these facilities and services. As a result, 29 CHCs including PHCs/HSCs were handed over to NGOs. Out of these 29 facilities, 22 were handed over to 7 NGOs which were Bakdil, Karuna Trust (KT), North East Society for Promotion of Youth and masses (NESPYM), Citizens' foundation, Voluntary Health Association Of Meghalaya (VHAM), Jaintia Hills Development Society (JHDS) and Akhil Bhartiya Kishan Kalyan Samiti (ABKKS) located in various districts. The GoM through these seven NGOs had been successfully providing health care services in these difficult areas for almost three years when the review was conducted in 2011.

While availability of services improved significantly, there were several challenges observed. It was difficult recruiting and retaining appropriate human resources and was as problematic for the NGO as was for state managed facilities. Infrastructure was poor in some cases but some NGOs like KT managed to supplement and strengthen the infrastructure through their own resources. KT was one of the NGOs that introduced newer services apart from the standard set of services in some of their projects – these included community mental health programme, telemedicine, dental services, community health insurance and so on. These flexibilities were allowed and depended on the capacities of the NGOs. Most of these PHCs had residential accommodation for all staff, including Grade IV workers adjoining the facilities and this was seen as an incentive for staff retention. This was important since the PHC was to be made available 24/7 (NHSRC 2011).

The other challenge was to do with training of the staff. Many of the staff had not received training by the government, especially ANMs, nurses and ASHAs in the communities. Hence, there was a lack of coordination between the community health workers and the PHC. There was also limited understanding of RKS and other communitization processes by the staff of the PHC. Community outreach was limited.

There were variations between the quality of the seven NGOs providing services. While Karuna Trust fared better than the rest, some of the other agencies had not been able to provide quality services or develop trust within the community. High turnover of human resources was a concern. While overall functioning of PHCs had improved in terms of delivery of services, utilization and access, there were still several constraints in their optimum functioning. What comes out clearly is that much is left to be desired in the management of the PHCs and there were variations across operational and implementation issues.

Management of a PHC by a private entity illustrates the presence of several actors having multiple roles and its success is dependent on the optimal functioning of each of them and their interaction with one another. While the PHC itself has its own services and day to day management of services, it is also part of the larger ecosystem of the health service delivery structure, linking it to the sub-centre below and to the CHC above. It also has to reach out to the community through the ANM, ASHA and the RKS and link to these communitization processes in order to reach the community. The NGOs were weak in these processes.

The study observed that State also needed to supplement the efforts with smooth flow of funds, keep the staff and community health workers trained, regular supply of drugs and other equipment, and monitoring. The question of retention of staff too had to be worked out with the state. With the adequate state support and coordination, NGOs would be able to take better ownership of the functioning of the PHC (Laishram et al 2012). A lot depends on the specific state government's effort – KT fared better in Karnataka than in Meghalaya. What is also important to note is that KT had gained community trust in Karnataka before a PHC was handed to them in the area. In Meghalaya that was not the case. Process building, commitment and trust with the community are important for the success of the partnership and these seemed under developed in the case of Meghalaya.

Another study conducted in Odisha by Baig et al (2014) aimed to understand the breadth and depth of services in a PHC under government, in a PHC under an NGO and another managed by a corporate. It studied some key factors – effectiveness measured through performance; equity in terms of accruing benefits to the poor; quality services that was measured through a patient survey and compliance measured against Indian Public Health Standards (IPHS). It was found that there were no significant differences in the breadth and depth of services across the three models. In fact the government run PHC had better accessibility, behaviour of doctors and availability of medicines. Programme performance and human resource retention was inadequate in all models. Comprehensive services were not being provided in any of the PHCs and the different alternatives of managements introduced did not add any value (Baig et al 2014)

iii. PPPs in Mobile Medical Units (MMU)

One major initiative under the NRHM was the operationalization of Mobile Medical Units (MMUs) to provide a range of health care services for populations living in remote, inaccessible, un-served and underserved areas mainly with the objective of taking healthcare service delivery to the doorsteps of these populations. According to the MMU

guidelines of the NHM, partnerships are also encouraged for operationalising the mobile units by handing over to credible NGOs. With the launch of NUHM, the MMUs services are also intended to cater to the urban poor and vulnerable population and provide fixed services in areas where there is no infrastructure. The idea behind MMUs is that services reach where it is difficult to build health facilities. Apart from community health workers who might or might not be available, communities in difficult to reach areas also need care that require higher professional skills, diagnostics as outreach services. In many instances, it is also seen that MMUs function in areas that have PHCs and sub-centres that are unresponsive and provide combination of services and provide referral services for communities to other private or public clinics

Table 4: Operational Status of MMUs under NHM (as on 31st March, 2018)

S.No.	State/UTs	Total MMUs
	Bihar	6
	Jammu & Kashmir	11
	Jharkhand	100
	Madhya Pradesh	144
	Orissa	8
	Rajasthan	206
	Arunachal Pradesh	16
	Assam	130
	Manipur	9
	Meghalaya	4
	Mizoram	9
	Nagaland	11
	Sikkim	4
	Andhra Pradesh	52
	Gujarat	61
	Haryana	9
	Karnataka	70
	Kerala	28
	Maharashtra	40
	Punjab	33
	Tamil Nadu	415
	West Bengal	54
	Dadra & Nagar Haveli	1
	Delhi	2

	Puducherry	4
	Total in India	**1427**

Source: MIS reports from States/UTs

There is no evaluation that seems to be conducted on MMU partnerships. The one available is a review conducted by the NHSRC in 2011 on '104 services' managed by Health Management Research Institute (HMRI) in Andhra Pradesh (AP). In 2010, the AP government initiated reforms at the primary level health care services. The NHSRC was approached to conduct an evaluation on the HMRI model of '104 services' initiated as a PPP under the NRHM between the AP government and Satyam Foundation and later the HMRI. It started as a health information helpline service for providing clinical advice, counselling services, complaint registry against any public facility and also provide referral information. Later a fixed day health services (FDHS) was introduced as another component to the programme where MMUs were to provide a package of services once a month to rural areas. There were 475 vans distributed across 22 districts and 22,501 service points (NHSRC 2011). Training of RMPs formed another component of the 104 service. The objective of this evaluation was to assess the role of the HMRI model in improving access, in strengthening public health delivery system and to also understand community perception in its role in improving access to health services. Three districts were covered in the study with sampling of villages from each district. It was found that the level of integration of FDHS with key health functionaries at the community level form a link between the FDHS by the MMU and the public health delivery system. The ASHA was linked to the FDHS as she received an incentive while the medical officer at the PHC was referred patients by the MMU. The ANM and Anganwadi workers (AWW) were not too involved with the FDHS. It was observed that the HMRI initiative was not facilitating national health programmes, they were more focused on diagnosing non-communicable diseases and referring these to the PHC. It was also found that none of the data that was generated by the FDHS for the community people visiting them was shared with the PHC. The PHC medical officers were also not involved in monitoring the FDHS. While the local RMPs were trained by HMRI for over a year, none of them received any certificate of advancement. There were drugs being dispensed on FDHS but there were anomalies in its distribution and some RMPs were found selling these drugs. It was also felt that none of the services were exclusive to what the PHC and sub-centre could not provide, especially when the government was financing 95 per cent of the programme. While the community perception seemed positive towards the FDHS, the dissatisfaction about the programme at various levels made it unsustainable. By the end of 2011, the MOUs with HMRI became redundant and the state government took over the programme (NHSRC

2011). One can observe that while there was some effort made to integrate the services to the existing delivery services, there was much left to be desired. While the immediate community members found it beneficial to get services once a month, it did not add up to strengthening the public health services. It only supplemented the services to some extent but there were duplication of services. Almost 95 per cent of the funds came from the government, therefore, it was less a partnership and more a government funded programme.

iv. PPPs in Emergency Medical Service and Referral Transportation System

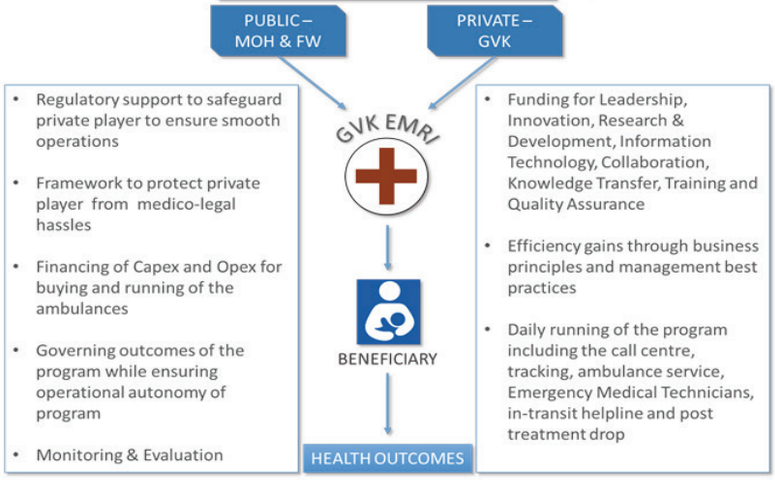
Emergency medical service and referral transport models in partnership with state government have been operationalized for many years. There are several models of EMRS but 108 ambulance service is the most common across states. The '108 Ambulance Service' is a PPP model between state governments and Emergency Management and Research Institute (EMRI) and the service is intended to provide complete pre-hospital emergency care from event occurrence to evacuation to an appropriate hospital. The concept of '108 Ambulance' aims at reaching the patients/sites within 20 minutes in urban areas and 40 minutes in rural areas and that the aim is to shift the patient to the nearest hospital within 20 minutes after reaching him/her. The emergency transportation is to be conducted in a state-of-the-art ambulance, which is provided free. The Emergency Response System (ERS) implemented by EMRI also includes trained human resources from the call centre staff to support staff in ambulances. Each ambulance has three pilots (drivers) and three technicians who work in pairs of two for every 12 hour shift with a break every fourth day. For every 15 ambulances there is one operation executive and one fleet executive. Above them there is one district manager and one administrative officer, for every district.

One of the key functions that EMRI performs is to recruit private hospitals who would participate in the ERS and this would imply cashless service for the first 24-hours till the patient is stabilized. For this purpose EMRI has signed MOUs with large number of hospitals to formalise an understanding that the hospital would not refuse admission if a patient is brought to it. The financing of EMRI in the initial years including capital or operational from the central government expenditure routed through the NRHM flexible pool. The government provided 100 per cent capital expenditure for procurement of ambulances and infrastructure and also provided 95 per cent of operating expenses. The rest five per cent contribution comes from the private partner EMRI as their share in the PPP initiative. But from the year of 2009-10 onwards, in the first year the state was to bear 40 per cent of operational cost, 60 per cent in the second year, 80 per cent in the third year, and 100 per cent thereafter. The operating costs are currently approximately

Rs. 15 to Rs. 17 lakhs per ambulance per year (including an annual replacement cost of approx. Rs. three to five lakhs per year).

In 2009 G.V. Krishna Reddy Emergency Management and Research Institute provided over 2600 ambulances across Andhra Pradesh, Gujarat, Uttarakhand, Goa, Tamil Nadu, Rajasthan, Karnataka, Assam Meghalaya and Madhya Pradesh (Geetha 2012). The partnership between the GVK Emergency Management Research Institute and the state governments was unique. While the government supported the capital and operational expenses of running the ambulances, the GVK Foundation was responsible for leadership, innovation, information technology, collaborations, research, knowledge transfer, and quality assurance. The government provided regulatory support critical to ensuring consistent operations. The private providers contribution was to help improve efficiency through its contributions of effective management and design of the service. (Case Study Access Health International)

Figure 5: Partnership Model for GVK EMRI



But models of EMRS varies across the states and in many states like Bihar, MP the models are diverse from the model described above. The Janani Express scheme in MP is a non-EMS transportation model. It is only accessible to pregnant women in need of emergency transport. Bihar has '102' and '1911' (mix of EM and basic transportation model).

Studies on evaluation of some of these models were conducted across states by the NHSRC in 2011-12. The objective of these studies were to analyse the three different business models of emergency response services (ERS) that had evolved under NRHM across the country. Based on the review three distinct business models of public-private partnership in ERS were identified. The three business models studied were: i.) Dial 108 in Andhra

Pradesh; ii.) Haryana Swasthya Vahan Sewa (HSVS); and iii.) Janani Express in Odisha. Dial 108 was studied at its most mature site, Andhra Pradesh. HSVS model is a district model with assured referral transport for pregnancy as primary focus, and emergency response as secondary. Janani express, a local partnership-based model of assured referral transport – this was studied in a district of Odisha where the model had been functioning for some period of time. The study compared the strengths and weaknesses of each of these models in terms of: i.) coverage, timeliness, prioritization and quality of emergency response; ii.) provision of assured cashless transport for pregnant-women and sick new-borns; iii.) costs and sustainability of the models; iv.) equity of access to these services; and v.) outcomes with respect to the rest of the emergency healthcare chain (NHSRC 2011; 2012).

The studies showed that there were several challenges. Most of the study areas were those where the models had matured but still reported several anomalies. These ambulances did not reach out to all areas, many people below poverty line were left out of the system. There was weak monitoring of the services provided. Many worked only as referral transport rather than providing emergency services that was needed during transportation. Required number of personnel like paramedics were absent. In many instances the ambulance services were reported to be lacking equipment. The financing policy needed redefinition and there was caution provided against provider monopoly (Sundaraman et al 2012).

Subsequent to the NHSRC studies, eight more states adopted a more competitive approach to procurement and financing. More new players entered the market to provide emergency referral services. Many alternate models emerged. Comparison across models in the second- generation studies provided inputs into strengths and limitations of each and helped improve designs. It was observed that this mechanism of evaluation and feedback was essential to ensure constant improvements in effectiveness, efficiency and governance of such a massive public health effort (Sundaraman et al 2012).

v. Contracting-out clinical services to private sector: The case of PPPs for institutional delivery and Emergency Obstetric care (EmOC)

In the early 1990s, there were research studies conducted that provided evidence that EmOC services was the most cost-effective way to reduce maternal mortality. This strategy of EmOC was adopted in India under the World Bank and UNICEF funded project called Child Survival and Safe Motherhood (CSSM) in 1992. There was focus on development of comprehensive EmOC centres throughout India as per the international norm of

one EmOC facility per 500,000 populations, however, there was little progress. The key constraint was non-availability of obstetricians in the government sector in rural areas. The reasons were low salaries, remote areas and inadequate infrastructure.

Gujarat was one of the first states to initiate PPPs in EmOC services. The state had a significant presence of obstetricians in the private sector. Gujarat government in collaboration with academic institutions (IIM Ahmedabad), NGOs (Sewa Rural – Jhagadia), facilitated by GIZ explored various options to provide skilled care at delivery and EmOC through private sector. This collaboration gave shape to what is now known as Chiranjeevi Yojana (CY) or Scheme. CY in Gujarat was launched in 2006 as a partnership at the primary and secondary level. This model has been extensively studied and evaluated. This partnership aimed to provide free delivery care for poor and tribal women by partnering with the huge private health sector. It was presented as a success soon after it was launched. Benefits included delivery in the private sector, access to emergency obstetric services when needed, it was also linked to EMRI services in the state. In its initial years this PPP is said to have achieved improved rates of institutional delivery, lowered maternal mortalities for the vulnerable population.

A study conducted took data of institutional delivery from 2001-10 stratifying by sector (public, private, non CY, CY), showed a significant rise in institutional deliveries from 2001 to 2010, there was no statistically significant influence of the CY program on rate of increase of private institutional delivery proportions. The total numbers of obstetricians joining the programme was on the rise in the initial years and then there was a dip in 2010. Some of the positives that were noted were — "The financial reimbursement package for private obstetricians under CY was designed to limit unnecessary caesareans (embedded disincentive for unnecessary caesarean), thus providers were paid a fixed amount per 100 deliveries, assuming a 7 per cent caesarean proportion per 100 deliveries. This embedded disincentive had probably contributed to keeping the caesarean rate low, though it is not possible to conclude from the data whether only unnecessary caesareans were avoided" (De Costa et al. 2014). It was calculated that between 13 to 16 per cent of all institutional deliveries from 2001 to 2010 occurred under the CY but approximately 73 per cent of poor and tribal women did not utilize the free delivery service, thus raising concerns of equity (Yasobant et al 2016).

A cross-sectional study between 2012-13 was conducted of facilities that conducted births in three districts. The study found that private facilities that were fairly new functioned as general services and conducted lower C-sections. The remuneration package was effective in keeping a check of caesarean rates. It recommended that the state should

design remuneration packages with the aim of attracting relatively new obstetricians to set up practices in more remote areas (Iyer et al 2017).

In the later years it was found that bureaucratic procedures as well as economic viability seemed to have influenced providers to either withdraw from the programme or not participate at all. Providers feared that participating in CY would lower the status of their practices and some were deterred by the likelihood of more clinically difficult cases among eligible CY beneficiaries. Providers also said that discussions would take place in FOGSI, professional body of obstetricians, where decision would often be taken to discontinue participation in CY. Younger obstetricians in the process of establishing private practices, and those in more remote, 'less competitive' areas, were more willing to participate in CY. Some doctors had reservations over the quality of care that doctors could provide given the financial constraints of the scheme. Operational difficulties and a trust deficit between the public and private sectors affected the retention rates of private providers in the scheme (Ganguly et al 2014). Another community based cross-sectional study in three districts in Gujarat revealed that out-of-pocket expenses were incurred by all women who participated in the scheme Add citation (Baru and Nundy 2021). So while the CY scheme increased availability of EmOC services, however, overall performance was not up to the UN standards of comprehensive services for EmOC. There were quality issues. In yet another study conducted in 2013 from the beneficiaries' perspective found that after almost a decade of its implementation, uptake of the CY among eligible women was low. Community awareness about the scheme was still low and out-of-pocket expenses were still an important deterrent to joining the scheme.

Randive (2012) evaluated PPP in EmOC services in rural Maharashtra. It brings forth the challenges in effective functioning of PPPs. Density and geographic distribution of private providers were important factors in determining feasibility and use of contracting-in. The study clearly spells out that no single measure is applicable to all regions – contracting-in might be rational in some districts but not in others. For instance, it was observed that Satara district had a greater concentration of private providers and hence there were more opportunities for contracting-out EmOC services and there was space for a dialogue. On the other hand the other district, Nandurbar in the state had a dearth of specialists even in private sector rendering contracting unfeasible.

There are clear regional variations. The Gujarat experience is greatly divergent from the Maharashtra experience. But the shortages of specialists in public service and the long term sustainability of such arrangements needs to be considered. As Randive states, "The findings suggest that local circumstances will dictate balance between introduction

or expansion of contracts with private sector and strengthening public provisions and that neither of these disregard the need to improve public systems. Sustainability of contracting in arrangements, their effect on increasing coverage of EmOC services in rural areas and overlapping provisions for contracting in EmOC specialists are issues for future consideration." (Randive 2012, pg no).

The *Janani Suraksha Yojana*, a safe motherhood intervention was modelled on the CY, and expanded to other states under the NRHM but was largely focused on improving deliveries in the public health sector. In a PPP model a district health society is created to manage the scheme for institutional delivery (skilled birth attendance and emergency obstetric care) for women living below the poverty line. The state government contracts private providers after verifying them accrediting them to provide services for institutional delivery. The government pays the private provider for their services, as well as an honorarium to the pregnant woman and the health worker who accompanied the pregnant woman. In an analysis on JSY in UP and Jharkhand, some of the major factors serving as barriers to participation of private practitioners in JSY were low reimbursement amounts, delayed reimbursements, process of interaction with the government and administrative issues, previous experiences and trust deficit, lack of clarity on the accreditation process and patient-level barriers. On the other hand, factors which were facilitators to participation of private practitioners were ease of process, better communication, branding, motivation of increasing clientele as well as satisfaction of doing social service (Yadav et al 2017).

In some states, there are overlapping provisions of EmOC services between JSY and those under the IPHS, therefore, pointing to the lack of coordination in policy making. In planning a public health programme care needs to be taken to ensure resources are not duplicated.

vi. PPPs in Free Diagnostic Service Initiative and National Dialysis Services

At the secondary and tertiary level, PPPs in diagnostics and dialysis are the most crucial in the recent years and these have expanded over the last few years and will expand in the coming years.

a. Free Diagnostics Service Initiative in PPP mode

Diagnostics is one of the critical services in health care. In July 2015, under the aegis of NHM, the Free Diagnostics scheme was launched for accessible, quality and affordable

services. The scheme is intended to provide a set of essential diagnostics at various levels of care so that providers can make rational decisions regarding treatment and patients can benefit by getting their tests conducted within the facility free of cost. The government envisages that this health intervention will reduce both direct costs and out-of-pocket expenditure. A set of implementation guidelines has been formulated by the Ministry of Health and Family Welfare for states to ensure the availability of basic diagnostics services at public health facilities (WHO 2016). With the varying capacities the States/UTs have adopted different models– states like Rajasthan and MP are strengthening their in-house capacities while Maharashtra, Odisha, Meghalaya and Assam are providing services through a PPP arrangement. Table 5 provides details of private partners state-wise for diagnostic services.

Under NHM, Andhra Pradesh was the first state that rolled out laboratory and radiology services in a hybrid model. The scheme called NTR Vaidya Pariksha scheme started in 2016. The state government provides free of cost laboratory and radiology services at public health facilities through private partners. About 60 per cent funding for the scheme is supported by NHM and the rest 40 per cent by the state government. The NTR is a single service provider selected through competitive bidding and provides the designated tests across district hospitals to PHC level. The public laboratories and NTR scheme complement each other. The public sector provides the basic tests while NTR provides a wide range of other tests, including some advanced tests, not provided by the public sector. An evaluation conducted by the WHO (2018) showed that maximum tests were performed at the PHC level (52%) and the least at the DH (6%). This showed that there was improved access at the primary level, hence people did not have to travel to the DH to conduct some of the basic tests. There was a significant reduction, almost 55%, in out-of-pocket expenditure on diagnostics and the scheme seemed to have had reached a certain level of maturity in terms of coverage, volume of services provided and its management. The government took efforts to increase uptake of services and instituted a robust monitoring framework. There was continuous monitoring by a team of people for quality of services, availability of stocks used for tests like strips for checking sugar levels.

The WHO review listed the key enablers that made the implementation successful. These included a high political and administrative commitment, leadership, adequate budgetary allocations, phased rollout, availability of designated test all the time in all facilities, efforts by the government to overcome the initial resistance of doctors to prescribe tests to the service provider, timely payments to service provider as well as penalties when required, a robust monitoring framework and continued monitoring to improve quality, intensive

campaigns to inform communities of the programme. All these increased the uptake of services.

Maharashtra and Assam have rolled out the diagnostic services in PPP-mode in 2017 as per NHM Free Diagnostic Service Initiative Guidelines. The services are being delivered through hub and spoke model of service delivery. All the public health facilities from level of PHCs up to District hospitals are covered under this initiative and designated as spokes. The service provider has set up hub labs as per geographical regions to meet the turnaround time of diagnostic tests.

Odisha has outsourced the advance tests (high cost low volume) as per the NHM Free diagnostic service initiative at District hospital level. The reimbursement to the service provider is based on per test model (discount on CGHS).

There is a provision for real time dashboard for monitoring of diagnostic service key performance indicators as specified by States. Under Free Diagnostic service initiative, there is a provision for contracting in the radiological services which include tele-reporting of X-ray service from a specialist in private sector and setting up of CT scan services at district hospital.

b. Partnerships in Pradhan Mantri National Dialysis Program

The PM National Dialysis Programme (PMNDP) was introduced in 2016 given the rise in renal diseases across the country and the need for accessible dialysis services. PPPs were introduced in the programme for haemodialysis. This has been started in district hospitals in a contracting-in mode, where a private service provider selected through a tender process is to provide human resources, dialysis machine and other equipment and consumables to conduct the haemodialysis. The government provides the space in district hospitals, drugs, power and water supply and pays for the cost of dialysis for the poor patients. Table 6 gives the private providers who have partnered with the state governments in India. DCDC Healthcare Services is India's largest operator of PPP dialysis centres. The Asian Development Bank invested in DCDC in 2018 and in early 2021. At present DCDC has more than 100 centres in public hospitals, private hospitals, and as stand-alone clinics. The Fairfax Group has signed an MOUs with State of Odisha, Assam, Arunachal Pradesh Chhattisgarh, Uttarakhand to provide the haemodialysis machines free of cost in dialysis centres in PPP-mode.

Table 5 - PPP in Diagnostics

Free Diagnostic Initiative-Lab Services (PPP-mode)		Free Diagnostic Initiative-CT Scan (PPP-mode)		Free Diagnostic Initiative-Teleradiology (PPP-mode)	
State	**Service Provider**	**State**	**Service Provider**	**State**	**Service Provider**
Andhra Pradesh	Medall	Andhra Pradesh	Krshna Diagnostics Centre Pvt. Ltd, NRIAS Pvt Ltd	Andhra Pradesh	Krsnaa Diagnostics Pvt. Ltd.
Arunachal Pradesh	ASR Hospitals	Assam	M/s Spandan Diagnostics Centre Pvt. Ltd	Assam	Krsnaa Diagnostics Pvt. Ltd.
Assam	HLL lIfe care LTD.	Chandigarh	SSS Diagnostic & Research Centre Pvt. Ltd.	Himachal Pradesh	Krsnaa Diagnostics Pvt. Ltd.
Delhi	Multiple Providers	Delhi	Multiple Providers	Jammu and Kashmir	Krsnaa Diagnostics Pvt. Ltd.
Jharkhand	SRL & Medall	Himachal Pradesh	Krsnaa Diagnostics	Meghalaya	Woodland hospitals Shillong
Maharashtra	Hindlabs	Jharkhand	Health Map	Odisha	Krhsna Diagnostic
Manipur	KRSHNAA Diagnostics Pvt Ltd	Karnataka	Krsnaa Diagnostics Pvt. Ltd., Hansinal	Rajasthan	Vasco
Meghalaya	Krsnaa Diagnostics Pvt. Ltd	Madhya Pradesh	M/s Siddharth	Tripura	Webel Electronic Communication Systems Ltd
Odisha	Tech Med Healthcare	Odisha	Spandan	Uttarkhand	Vital Radiology Services
Tripura	ASR Hospitals	Rajasthan	DKM Xray and Diagnostic Centre, Kalpana Nursingh Home Pvt. Ltd., Rajasthani Diagnostic & Medical Research Centre, Siddharth Diagnostic and Imaging Centre	Uttar Pradesh	Apollo, KDPL
Uttar Pradesh	POCT	Tripura	Teresa Diagnostic Centre	West Bengal	Multiple Providers
		Uttar Pradesh	HLL, KDPL, Star Imaging		
		West Bengal	Multiple Providers		
Total	**11**	**Total**	**13**	**Total**	**11**

Source: NHSRC 2020

Under PMNDP, peritoneal dialysis (PD) has been introduced and guidelines for PD was launched in October 2019. With the introduction of peritoneal dialysis, home based dialysis treatment is possible with minimal supervision and lesser disruption to normal lifestyle and does not put additional incremental burden on the existing healthcare infrastructure. PD also reduces travel to the dialysis centres for treatment and allows greater flexibility and freedom in treatment schedule. In PIP 2020-21, NHM approved PD program support for 20 States/UTs for approximately 4000 patients.

Being the next generation of PPPs, the government seems to have developed detailed operational guidelines and agreements but the PPPs are still in their nascent stage and evaluation studies need to be carried out.

Table 6 - PPPs in Dialysis

S. No.	States	Name of the Private service provider	Remarks (observations on performance, Coverage, constraints, challenges)
1	Andhra Pradesh	Apollo; B-Braun; Nephro-Plus; Dr YSR Arogyasri	The program has been implemented on PPP Mode in all the 13 districts with 37 Centres deploying 456 machines. Dialysis services are available in all the three Aspirational District (Kadapa, Visakhapatnam, Vizianagaram Multiple service provider and reimbursement is based on dialysis per session; Under NHM Services are free to BPL beneficiaries.
3	Assam	M/s Apollo Hospitals Enterprise Limited, Chennai	The program has been implemented on PPP Mode in 21 districts out of total 33 districts with 26 dialysis centres deploying 175 dialysis machines.

4	Bihar	Nephro-plus; Apollo Hospitals; B-Braun (Phasing out in 2020)	2014:B-Braun Services were not free to any beneficiaries Dialysis services implemented at District hospitals Agreement was signed at hospital by Medical Superintendent. Some of the centres are still having agreement with the service provider(B-Braun) 2019: Nephro-plus and Apollo Hospitals; The program has been implemented in PPP Mode in 33 districts out of total 38 districts with 33 dialysis centres deploying 165 Haemodialysis machines. Dialysis services are available in 11 aspirational districts (Araria, Banka, Gaya, Jamui, Muzzafarpur, Nawada, Sheikhpura, Sitamarhi, Khagaria, Aurangabad and Begusarai) out of total 13 aspirational districts. Dialysis Services are being provided free of cost to Household Priorities
5	Chhattisgarh		The program has been implemented through PPP and in-house mode in 8 districts out of total 27 districts with 8 dialysis centres deploying 35 HD machines. Dialysis services are available in 4 aspirational districts (Kanker, Mahasamund, Bijapur and Korba) out of total 10 aspirational districts. Under NHM Services are free to BPL beneficiaries
6	Delhi	Apex Kidney	The program has been implemented on PPP Mode in 3 districts out of 11 districts with 5 Centres deploying 60 machines. Services are free to BPL beneficiaries;
7	Goa	Multiple service provider	The program has been implemented on PPP Mode in both districts with 12 Centres deploying 117 machines.

8	Gujarat	IKDRC Hospital (Public Public Partnership)	1. Dialysis services are provided free of cost to all beneficiaries; NHM supports free services for BPL beneficiaries; APL is being covered through State fund 2. Services are provided within the premises of the health facility;Level of implementation: SDH and DH 3. Number of centres-55 DH:17 SDH:21 4. Drugs and Diagnostics services are also provided free of cost to all beneficiries availing the hemodialysis services in the facility 5. Single use dialyser policy 6. HR component-Medical Officers, DT, Nurses and support staffs are the responsibility of the service provider. 7. Capital Expenditure of HD centre:
9	Haryana	Multiple Service Provider	The program has been implemented on PPP Mode in 18 districts out of 22 districts with 19 dialysis centers deploying 187 machines. In aspirational district (Mewat) work allotted to the vendor and services to be started at SKHM medical college, Nalhar (Mewat) soon.
10	Himachal Pradesh	Rahicare	The program has been implemented on a PPP Mode in 10 districts out of 12 districts with 15 dialysis centres deploying 97 dialysis machines.
11	Jharkhand	DCDC; Sanjivini	The program has been implemented on a PPP-mode in only 18 districts out of 24 districts with 18 Centres deploying 55 machines. Dialysis services are available in 13 Aspirational Districts (East Singhbhum, West Singhbhum, Bokaro, Dumka, Hazaribagh, Palmu, Godda, Latehar, Ranchi, Simdega, Chatra, Giridih and Garhwa) out of 19 Aspirational Districts
12	Karnataka		The program has been implemented on PPP Mode in all the 30 districts with 167 dialysis centres deploying 601 dialysis machines. Dialysis services are available in both aspirational districts (Yadgir and Raichur)

13	Madhya Pradesh		The program has been implemented through In-house and PPP mode in 51 districts out of total 52 districts with 56 Centers deploying 196 machines. State is running the Dialysis Yojana successfully since 2016. Dialysis services are available in all 8 aspirational districts (Damoh, Singrauli, Barwani, Vidisha, Khandwa, Guna, Chattarpur, Rajgarh)
14	Odisha	Rahicare	1. Dialysis services are provided free of cost to all beneficiaries; NHM supports free services for BPL beneficiaries; APL is being covered through State fund 2. Services are provided within the premises of the health facility;Level of implementation: SDH and DH 3. Drugs and Diagnostics services are also provided free of cost to all beneficiries availing the hemodialysis services in the facility 4. Single use dialyser policy 5. HR component-Medical Officers, DT, Nurses and support staffs are the responsibility of the service provider. 7. Capital Expenditure of HD centre: It is borne by the States
15	Rajasthan	Multiple Service Providers	The dialysis program has been implemented on PPP Mode in 32 Districts out of 33 districts. 33 dialysis centres are operational by deploying 99 dialysis machines in Rajasthan. Dialysis services are available in Jhalawar (Medical College) district through state funds. Dialysis services are available in all the five aspirational districts (Dholpur, Karauli, Baran, Jaisalmer and Sirohi)
16	Telangana	B-Braun	Single use dialyser policy; The dialysis program has been implemented on PPP Mode in 27 districts out of 33 districts with 44 centres deploying 365 machines. Dialysis services are available in 1 aspirational district (Khammam) out of 3 aspirational districts

17	Tripura		The dialysis program has been implemented through In-house and PPP Mode in 5 districts out of 8 districts with 6 centres deploying 35 HD machines. In West Tripura district there are 02 centres one in PPP mode and one in In-house mode. Dialysis services are available in aspirational district Dhalai
18	Uttar Pradesh	Eskag Sanjeevani Private Limited; DCDC Health Care limited; Heritage Health Care limited	44 district hospitals provide haemodialysis services through partnerships with three private entities.
19	Uttarakhand	Rahicare; Nephroplus	The program has been implemented through In-house and PPP mode in 8 districts out of 13 districts with 9 Centres deploying 88 machines. Dialysis services are available in both aspirational district (Udham Singh Nagar and Haridwar
20	West Bengal	Multiple Vendors	The program has been implemented through In-house and PPP mode in 22 districts out of 23 districts with 50 dialysis centres (43 centres on PPP mode and 07 on In-house mode) deploying 392 machines. Apart from 22 districts dialysis services are available in 5 health districts also. There is no aspirational district in the State.

Source: NHSRC 2020; https://nhm.assam.gov.in/schemes/detail/pradhan-mantri-national-dialysis-programme; http://upnrhm.gov.in/uploads/828601347766024.pdf

vii. Payment Mechanism in PPPs in Health Care

A payment mechanism is central to any kind of PPP. Typically these contracts, especially in the health sector, involve the nature of participation of private sector in the provision of health services. The basic elements of PPP payment mechanisms include user charge where payment is done to the private party directly from users of the service or payment by government for service or asset that is provided (Iossa et al 2007). In the case of health care, PPPs can be classified as greenfield or brownfield projects. A brownfield project is where there exists hospital infrastructure or equipment and it is handed over to the private party for rehabilitation, operation, and maintenance in exchange for incentives. On the other hand, a greenfield project is where the private partner, design-builds, operates and manages a hospital facility (building or infrastructure) in exchange for incentives such as the collection of user charges or availability payment (Nuwagba et al 2020). In the Indian context over the years, the PPP arrangements have become an important means

to provide health care in the country. Available evidence in India does suggest the PPP model in India has gone for both greenfield as well as brownfield projects.

The need for PPP is linked with the increase in allocative efficiency which is a demand-side phenomenon or the effectiveness of these arrangements will depend upon whether it has been able to reach the desired goal. So, it becomes important that these arrangements have continuous and precise monitoring and assessment of project performance, to avoid opportunistic behavior by private partners and unjustified escalations of public costs (Buso et al 2020; Burger and Hawkesworth 2011). Since PPP projects are often ascribed to the agency, problem becomes to properly evaluate the payment mechanism that is followed in the arrangement between the two parties (De Graft et al 2018). The payment mechanism that is followed by PPPs under NHM mostly follows the contract system where the payment is based on delivery of services whether it is in terms of running of PHCs by the private entity or running a specialized service like diagnosis, dialysis etc. The section below discusses these payment mechanisms followed under the NHM and available evidence on the pros and cons of these payment methods.

a. Payment under contracting out

The payment mechanism can be under two types where the government pays an outside individual to manage a specific function. In case of contracting out of PHC the arrangement is based on the premise that the private party will be more efficient in managing the PHC. The available evidence suggests that there are two types of payment mechanisms in this type of arrangement, the fee-for-service and lump sum grant (Maluka et al 2018). In the Indian context, fund flow takes place on a lump sum basis. One common problem arising in such a contract is the delay in fund transfer from the government primarily due to government budget approval processes (Bhat et al 2007). The other form of contracting-out includes when the government pays an outside entity to manage a specific function. Chiranjeevi scheme is a classic case of such contracting-out arrangement. Chiranjeevi scheme follows the capitation mode of payment. To ensure that there are no fund flow delays in reimbursing the providers, the state government provided an upfront advance for 11 deliveries (Rs. 20,000) to private providers and replenished this advance on a month-to-month basis. Good care was taken to reduce any kind of procedural delays in this payment system. Managing the administrative load of the new payment system was not significant as the government from the beginning decided to keep the implementation of the scheme simple. For example, simple formats were used to keep information load minimum. The scheme did not ask for detailed information on various units of services provided to clients under the scheme (Bhat et al 2007). But capitation fees system are known to be risk-reducing as capitation gives providers a financial incentive to minimize

costs and maximize the difference between revenues and expenditures (Barnum et al 1995). Experience from Chiranjeevi scheme hints towards similar phenomena as it was observed that payment made to the doctors includes all kinds of delivery from normal cases to caesarean cases but doctors had a tendency to only attend the normal cases and divert the complicated ones to the public hospitals. The justification given for this peculiar behaviour was that the cost accrued with complicated cases was much higher than what was paid to them (Acharya 2009; Thadani 2014).

b. Payment under discrete clinical services

In this type of PPP the government contracts-out a private partner to operate and deliver specific clinical or clinically-related services, which are typically performed on the premise of the public health care facility. Both strengthening of diagnostic services of Health and Wellness Centre and Pradhan Mantri Dialysis programme comes under this category. In this arrangement while the private partner may introduce technology and assets that lead to higher quality care, the government needs to ensure that the new technologies are aligned with local needs, government financial limits and long-term management capacity: for example, the most cutting-edge (and usually more expensive) equipment may not be necessary to achieve considerable improvements in quality of care within a particular setting (Abuzaineh 2018). Since these PPPs involve mostly profit-oriented organisations it becomes even more important it is preceded by well-thought regulation. For instance, in some states, there is a provision for charging the APL patient for diagnostic services on a fee for service basis and it has been observed that unfettered fee-for-service reimbursement promotes excessive use of services, because consumers rely on providers for information on their need for services and providers, in turn, have a financial incentive to increase the volume of services (Barnum et al 1995).

5. DISCUSSION

This study focuses on PPPs under NHM and conducts a review of existing relevant studies on PPPs for an understanding of their objective of health service strengthening. There are few evaluations conducted on PPPs with varying objectives in India even though there are many instances and evidence of PPPs in health care since the 1990s. Most articles on PPPs are descriptive in nature with very few providing analytical understanding into the context of a particular partnership, constraints in the process and long-term gains for the public health service system and larger public health goals. There are those studies that look at the outputs or outcomes of PPPs and not the context or the process that goes into a partnership over a period of time. These are mostly cross-sectional studies that focus in a limited way on access, coverage, community response or on the operational aspects

of the partnerships and constraints within it. Not many focus on equity. Very few studies have any in-depth follow-up on the process of the partnership or any longitudinal study of a partnership. Apart from studies on CY which has been the most frequently studied partnership, there are no long-term studies available of partnerships. Yet, one is aware that there are many partnerships that have been unable to survive. There would also be many that might have seemed successful at a point in time but faded out eventually.

The first available detailed evaluation of PPPs was by Venkataraman and Bjorkman (2008). Most of these evaluations were of those partnerships that emerged before the NRHM but their study provided some interesting insights in to the workings of PPPs. They focused on multiple stakeholder interests (within public and private sector) that tended to push the priorities in different directions and also noted the absence of community as a stakeholder, therefore their priorities not figuring in the PPP. There have been also detailed task forces identifying the objectives of PPPs. But somehow the collective knowledge of PPPs has still not reflected in the next generation of PPPs, post-NRHM. They still remain ad hoc and therefore it becomes increasingly imperative to understand the constraints in PPPs and also the pre-requisites, necessary conditions and key enablers important for making PPPs successful, even though they are specific to the context. Success of any PPP depends on the objectives and targets defined in the partnership.

5.1 Constraints in partnerships

There are several constraints in partnerships that make the operational aspects of a partnership difficult. These have consequences for the public health service system strengthening and fulfilling the objectives of the partnership.

i. Design and Architecture of PPPs: Developing MoUs

PPPs vary from simple to complex, depending on the interventions and the levels at which they operate. The important issues for design are: what services are rendered through the partnership, and how is the arrangement or memorandum of agreement spelt out and defined so as to make it transparent, accountable, equitable and scalable?

The design and architecture of partnerships vary across and within levels of care. Broadly all PPPs within NHM are contracting-in and -out models and there are variations and plurality in models. At the primary level most PHCs, MMUs and EMRS are contracted-out to private providers. Diagnostics and dialysis are either contracted-in or -out. Clinical services like institutional deliveries and EmOC are contracted-out to private providers. These details are generally given in the MoU that is a contract signed between the two

partners. MoUs in most cases are drawn by the government and there are no insights into the process of developing these documents, and whether there are any negotiations with the private agency. From some earlier reviews it is understood that the government has the upper hand in developing the MoUs (Baru and Nundy 2008). The content of MoUs itself has several lacunas. They do not build into it structures of accountability or redressal. Neither are structures of governance and monitoring built into the understanding. These are critical to the functioning of the partnership. There is a difference between a contract and MoU. MoUs are drawn out centrally and are uniform with no space for negotiations unlike a contract based on the context, provides more detailed descriptions of roles and responsibilities. The terms of reference under the dialysis programme are quite detailed but there is no sense of whether states have discussions with private partners before entering into an agreement and if there are any modifications possible to the contract.

ii. Selection of the private partner

The review shows that in places where the private players were less in number there was either a monopoly of one player or very few takers in the private sector willing to partner with the government. This is seen in the case of contracting-out institutional delivery and EmOC services in one district in Maharashtra where the presence of private doctors was negligible and private doctors from other districts were unwilling to partner. Introducing partnerships in these districts void of private doctors did not seem to be the solution to access services. Perhaps investing in and strengthening the public sector would be more beneficial in these areas. It is important to have more private players to have a dialogue. Nishter says, "the criteria for selection are an important issue both from an ethical and process-related perspective as it raises the questions of competence and appropriateness. In many instances the public sector is vague about important issues related to screening potential corporate partners and those in the non-profit sector." (Nishtar 2004, pgno)

iii. Governance structures, financing mechanisms and accountability

As discussed earlier, governance structures, accountability and monitoring mechanisms, and grievance redressal systems are not discussed in the MoU. Several studies reiterate the importance of governance as a tool to take stock of a health system that operates under limited resources. These components are important for the functioning of partnership and to strengthen delivery of services. While this is needed for both partners, there is also lack of information on whether there is any redressal for the community for whom the services are available. It is clear though that institutional mechanisms for accountability are missing. On governance structures, Nishtar states that, "workable partnerships require a well-defined governance structure . . . to allow for distribution of responsibilities

to all the stakeholders. Public-private partnerships may run into problems because of ill-defined governance mechanisms." (Nishtar 2004, pgno)

iv. Asymmetry in partnerships

The public and private sector are said to have an antagonistic relation. Partnerships bring together these opposing forces that have different goals and objectives. Thus, building trust between the players becomes a foremost challenge. This seemed to be indicated in many studies where there was a trust deficit between the partners. Indications of interpersonal communication, interactions, robust monitoring of quality of services are all missing from most reviews. The government at the primary level mostly provides the tangibles — infrastructure and supplies like medicine and equipment. But key input components involves not just tangibles but also intangibles like capacities of the private sector through their experience of management, strengthening systems of monitoring and governance and also issues like gaining trust with the community.

As seen in the case of PPPs in PHCs, MMU and EMRI, while government was providing most of the capital and operational costs, the private partner had to deal with the intangibles like management of the service delivery, information technology, collaborations, research, knowledge transfer, and quality assurance. Therefore, need of capacity building and constant training of individuals to be oriented towards the goal and to comprehend all roles and responsibilities is important.

v. Partnerships with for-profits and non-profits

Taking the previous point on asymmetry in partnerships forward, partnerships of the public sector with non-profits and for-profits are distinctly different. A partnership with a for-profit agency makes the workings more complex as the profit interests of the private agency has to be accommodated. The for-profit entity has a distinct goal of maximising profits which adds to the asymmetry. This is seen in the contracting-out of clinical and diagnostic services to for-profit private providers. The for-profits are mostly present at the secondary and tertiary level. The non-profits are seen mostly at the primary level and are most of the times those organisations who have already worked with communities and have different set of experiences that they bring to the partnerships like building trust with the community. They are driven by the objectives of providing equitable and accessible services rather than profit motives and are also present in difficult to reach areas. These qualities of non-profits make them advantageous for partnerships.

vi. Multiple actors and agencies

Based on the review of articles and existing evaluation studies one realises that there are multiple actors and agencies involved in any partnerships from both sides – the public (centre, state, local) and the private (for- and non-profit). There is diffusion of power and authority across these actors that makes the arrangement complex. This comes out clearly from the review where every PPP has different level of complexity and has to be adapted to the local situation and context. It seems the government yields more power in partnerships at the primary level, especially with those with the non-profit sector. Partnership for health service system strengthening and for a particular disease will have diverse inputs and range of activities. Priorities and interests differ across these levels of actors. Earlier many of these partnerships were driven by multilateral and bilateral agencies that further complicated the partnerships.

vii. Engagement with community

Most of the times it has been seen that the community is ill-informed of a service delivery that has been initiated. They are unaware of the benefits and these services do not reach the people who need it the most or even if they have heard about it they are unsure of how to utilise it. This is where there must be proper information sharing with the community. This was seen clearly in case of the Chiranjeevi Yojna. Most so called successful PPPs are seen with the non-profit sector at the primary level. For instance, Karuna Trust faced several challenges in Karnataka when they partnered with the government. The hurdles came from within the public sector at several levels – they were greeted with lack of trust and hostility from frontline workers to other personnel, when they ventured into managing the PHC. They also faced trust issues with the community. The leadership of KT was able to gain the trust of the community over time that enabled them to continue with their work and strengthen the partnership. But this was not replicable in other instances of similar partnerships in other states.

viii. Overlap of services

If a public health service institution already exists in the area then creating a parallel service through partnership in the same area is a waste of resources. In the case of the MMU study this seemed to be one of the issues. The MMU in this case needed to be linked to the PHC so that it was able to reach the distant areas under the PHC.

ix. Retention of staff

The contractual nature of the staff and the turnover of employees recruited create constraints in the partnership and its outcome. Human resources are an essential

component that keep a partnership functional and also add to strengthening the public health services. There need to be ways to work on retaining staff by keeping them motivated. In the case of the PHC staff it was quite clear that providing living quarters to the staff and their families helped in retention. Contractual status of the staff could be a deterrent in the partnership especially when there is a mix of permanent and contractual staff. In other instances like contracting-out of delivery and EmOC services, many of the private providers who had enlisted themselves in the partnership withdrew after sometime either due to issues regarding payment or they did not seem to benefit from it. This also again shows the asymmetry between the providers.

5.2 Outcomes for public health service strengthening

None of the studies indicate any specific outcome of partnerships on public health service strengthening but poor governance, difficulty in retaining staff or provider, lack of accountability all point to a weak partnership, indicating that these did not add to strengthening of public health services.

The erstwhile NRHM made PPPs one of the main strategies but this was to be implemented alongside strengthening public sector which was an important pre-requisite. As can be seen from some of the reviews on PPPs in TB programme as well as management of facilities, a strong health programme is a necessary condition for a successful partnership. Building capacities of public sector is critical to partnerships. These capacities in various aspects is important to complement the partnership. The strength of the public sector has to move beyond simply providing capital costs and infrastructure, it has to also venture into the intangibles.

Failed PPPs in India (and elsewhere) are many and their untold stories are perhaps as rich as the experiences of few that succeeded. However, many such innovations and models that work and others that did not, lose their relevance to policymaking in the lack of asking the right questions.

5.3 Pre-requisites or necessary conditions in the formation of PPPs: Enabling factors for a sustainable partnership

Once a PPP is functional, it bridges the immediate gap and makes services available. There is an initial uptake of these services and utilisation might increase. But if not sustained then they tend to fade away and die out a natural death and these are related

to the constraints that are listed above. Success of PPP in fulfilling the objectives of the partnership at a given time does not ensure its success forever – sustaining a PPP will need consistent efforts and this means better regulation, careful selection of private partner, accountability and stronger governance structures, the development of management capacity within the government to work with the private sector, much deeper engagement and investing in partnerships and reorienting all actors towards the common objectives of a PPP while being mindful of the differing objectives. This can be seen in the diagnostic PPP in Andhra Pradesh. The review shows that the commitment starts from the top and with constant monitoring, engaging with the community, the providers and maintaining constant supplies of tests was a necessary condition for the partnership to succeed. The government also addressed the initial resistance of the doctors to refer patients to the particular diagnostic service. Therefore a stronger public health system was a pre-requisite for a successful partnership.

Building capacities of public system to sustain a PPP

PPPs must involve building of capacities within the public sector to exercise and administer these partnerships with a common agenda and goal. It would also mean conducting evaluations of the partnerships over a period of time. Sustaining a PPP is its biggest challenge and these would include course corrections on the way. Sustainability does not only include financial sustainability, which is important, it also includes working towards the objective of the partnership of delivering services to the community in an equitable and accessible manner.

The success of any PPP will depend on how well it has set up proper regulation and accreditation of the heterogeneous private providers (from a private medical practitioner to a private for-profit or non-profit provider). To avoid ad hoc partnerships, regulatory framework for PPPs should be developed. In India this is a challenge since private sector is unregulated and this creates impediments in sustaining a partnership. Experience has shown that developing MOUs is also extremely technical. This would require a much more systematic enquiry into the suitability of institutions and their adherence to treatment protocols and ethical guidelines and factor in issues related to monitoring, governance and delineated roles and responsibilities of each partner.

It is best not to treat PPPs as panacea. Studies on successes of PPPs as well as those that have constraints show the need for designing and managing contracts needs capacities and skills and overcoming challenges of mutual trust, logistical arrangements and financial transactions like social auditing. PPPs are not alternatives to poor governance

and leadership. The example of Karuna Trust also shows that there are variable degrees of progress across PHCs managed by it. Hence, governance structures are important.

5.4 Gaps in research on PPPs in health care

There are several gaps in research when it comes to studying and understanding PPPs in health in India. As discussed before, there are very few longitudinal studies available of PPPs. There are more cross-sectional studies with varying objectives that do not provide a holistic understanding of the process of the partnership. Evaluation studies of PPPs from time to time would be an essential component in developing stronger partnerships. These should study in detail the context, process and outcome with respect to the larger objective of the partnership. The following could be some of the objectives for the evaluation research study.

Context

- To understand the emergence of the PPP, its objectives and function;
- To understand the criteria of selection of the private partner;

Practice

- To study the process of the PPP; the mechanism of building trust, governance structures, accountability and transparency, grievance or legal redressal for the stakeholders;
- To study the roles and responsibilities of the various actors through the MOUs;
- To understand the risks and benefits of each actor, diffusion of power and authority and challenges in operating a PPP;

Outcome

- To identify enabling factors for 'success' of PPPs in a given context and what leads to the success or failure of a PPP.
- To study the outcome of the PPP for health service system strengthening. Health service system components would include – financing model, infrastructure development, governance, human resources, technology and drugs – the necessary conditions for access, 'better' coverage and delivery of services.

5.5 Future of partnerships in NHM and policy recommendations

It is important to understand that partnerships in health care are here to stay. There are lessons to be learned from the review of existing partnerships. While there are no single set of enabling factors to sustain a PPP, but some are central to all PPPs while others would be specific to the context.

Table 7 – Summary of major types of PPPs in focus under NHM

S.No.	Type of PPP	Dominant Designs	Prerequisite for a successful PPP	Enabling factors for sustaining a PPP	Barriers to partnerships
1.	Management of PHCs	The PHC is contracted-out to a private entity (mostly a non-profit). Infrastructure and supplies are by the government. Human resources, delivery of services and management of the PHC is by the non-profit.	Existing infrastructure with living quarters for all personnel. Proper and fair selection from list of NGOs working in the area. Training of all personnel (actors) towards the goal of the PPP. Introducing the NGO to the community and preparing and informing the community of the services. This is to build ongoing trust. Reaching the people who need services most	Developing a clear contract regarding roles and responsibilities of each actor. Retaining human resources by providing incentives like proper living arrangements. Constant training of the PHC staff and also the community health workers and sub-centre workers together, not only on their specific roles but also to reiterate the objective of the partnership. Open communication channels for feedback from community and government for redressal – regular supply issues, training, infrastructure issues, quality and so on Monitoring mechanisms	Contractual nature of the workers; a greater turnover of staff is a break in continuity. Management of Outreach services as per Public health facilities plan.

S.No.	Type of PPP	Dominant Designs	Prerequisite for a successful PPP	Enabling factors for sustaining a PPP	Barriers to partnerships
2.	Mobile Medical Units (MMU)	The medical units and supplies are provided by the government, while the private entity manages the operations and delivery of services.	Nearest public sector PHC or CHC or district hospital for referral. Link with ASHA and other community health workers. Selection of the private entity through a list of organisations and fair process. Training of all MMU staff about the goals of the partnership and informing the community it proposes to cover. Reaching the difficult to reach areas	Information sharing with the nearest public sector health institution for follow-ups. Constant flow of supplies and community and government monitoring mechanisms so that supplies are not misused. Retention of medical officer and other staff and successive trainings of all staff. Feedback from partners and re-training of staff in intervals to address constraints.	Lack of supplies and staffs – it should be more than a drug dispensing service. Lack of connection with the nearest public facility. Lack of service providers in hilly areas and North Eastern States due to tough geographical terrain.

S.No.	Type of PPP	Dominant Designs	Prerequisite for a successful PPP	Enabling factors for sustaining a PPP	Barriers to partnerships
3.	Contracting out clinical services (EmOC)	Contracting out delivery services to private providers in a district. Payment is made by the government for x number of cases.	Selection of private providers. Studies show new and young providers are more motivated but case by case selection would be better. Training/capacity building of the medical doctors who are recruited for the partnership and engagement with all actors. Well defined goals and outputs.	Monitoring mechanisms in place by the government. Check the documentation by the private provider at regular intervals. Create awareness in the community (those from lower-income levels) to be informed of the services and gain trust.	Lack of private players in a given area Lack of trust between community and enrolled doctors in the private sector. Private practitioner might not take complicated cases in order to maximise their profits

S.No.	Type of PPP	Dominant Designs	Prerequisite for a successful PPP	Enabling factors for sustaining a PPP	Barriers to partnerships
4.	Diagnostics	Contracting-in or -out of diagnostic services. The private provider provided these services either from within the public facility or has its own set up where services for certain diagnostics are contracted to them.	Careful selection of private providers. Engage at least 2-3 private players. Training/capacity building/sensitisation of all actors to understand roles and responsibilities as well as goals and outputs of the partnership. Institutional mechanisms in place for monitoring and grievance redressal (for the partners).	Inform community of the diagnostic services – whether subsidised or free. Proper auditing of services being provided. Contracting-in could work better as the services are provided within the public facility. All staff need sensitising so that people are referred to services available within the facility. Synergy of in-house laboratory services with PPP scheme: The states/UTs should delineate the tests that would be done in-house and those outsourced at the outset. It is most commonly found that in-house laboratories continue to provide most of the designated tests and uptake of in-house tests increased after PPP scheme rollout. This increases the risk on return of investment for service provider.	Lack of awareness in the community of the services available. Lack of supply of material at the diagnostic centre. Ineffective monitoring of services at facility level and district level. Lack of adherence to terms of references mentioned in the agreement such as private provider's lab on quality assurance etc. There should be continual improvement in quality of services by the service provider through IQC, EQAS and NABL accreditation. Delay in payments to the service provider and levying of penalties when required.

S.No.	Type of PPP	Dominant Designs	Prerequisite for a successful PPP	Enabling factors for sustaining a PPP	Barriers to partnerships
5.	Dialysis	Contracting-in of dialysis services at the district hospital or medical college	Careful selection of private providers Ensuring robust mechanism for monitoring and timely payments	Availability of essential services including drugs and diagnostic in public health facilities will ensure effective functioning of PPP Robust Data system within the facilities Proper IEC for treatment of ESKF	Lack of Nephrologists in Public and Private sectors. Dropout of patients availing the services due to unavailability of essential drugs in Public health system. High capital and operational expenses

There is a future of PPPs in some areas and these could be strengthened. At the primary level, managing of PHCs or what will now be the Health and Wellness Centres by non-profit organisations; emergency referral services and mobile medical units for difficult to reach areas perhaps are interventions where PPPs will possibly continue. PPPs in diagnostics at primary, secondary and tertiary level and providing clinical services in certain areas like dialysis will continue but need strengthening and further evaluations. Given the present context of COVID-19, PPPs in telemedicine and digital health services are also going to expand considerably in the coming years.

Since PPPs will be mainstays for some programmes under NHM, evaluation studies for PPPs under NHM will be important to conduct and will need to be taken up. For instance, NHSRC could conduct evaluations of the PPPs that had been conducted earlier to see which ones still survive and which ones have failed. It would also need to conduct newer forms of partnerships that have emerged at the tertiary level with the dialysis programme as well as handing over management of district hospitals to private entities. In the larger interest of public health goals of equity, universal coverage and comprehensive services across states it is critical that the PPP mandate be studied more rigorously before further expansion and course corrections be made in the existing ones and ones that are yet to be initiated.

Policy Recommendations

1. A strong public health delivery system is a pre-requisite for a successful partnership. Evaluation of the state capacity to manage and administer a PPP is a must. It would be important to build the capacity of the public sector to understand the workings and functions of the PPP and also build capacities to manage a partnership.
2. The MoU or contract should have detailed break up of Terms of Reference of roles and responsibilities of all partners. Indicate institutional mechanisms for governance structures, financial arrangement, regular monitoring and accountability. Also the MoUs/contract should have flexibility for negotiations specific to the context.
3. Transparency in the selection of private providers for partnership from a larger pool of providers.
4. Sensitisation and training of all actors to understand the roles and responsibilities and the objectives of the partnership. This should also include a normative understanding of need for the partnership.
5. Conduct evaluations of PPPs in regular intervals — those that have existed from 2005-10 and the more recent ones, especially those that will be scaled up and replicated across states. While NHSRC has conducted evaluations of PPPs in the past, there has been no continuity in these evaluations. Re-evaluations must be

done to discern whether the PPPs that emerged around 2005-10 still exist and if they do how are they faring. A standardised evaluation framework could be created. Among recent partnerships more evaluations need to be carried out for diagnostics and dialysis partnerships.

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