Dissertation Training

Public–Private Partnership (PPP) Models in Health Service Delivery in India: A Narrative Review

by

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PG/24/092

Under the guidance of

Dr. Sandipta Chakraborty (IIHMR, Delhi)

PGDM (Hospital & Health Management)
2024-2026



International Institute of Health Management Research
New Delhi

Internship Training

at

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International Institute of Health Management Research
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Area of Dissertation: Healthcare Transformation Consulting, with focus on health systems strengthening, private sector engagement, and policy research through preparation of industry reports and proposals.

Attendance: The student maintained excellent attendance throughout the internship period and demonstrated strong commitment and punctuality in all assigned tasks and project engagements.

Objectives achieved: The student successfully achieved the objectives of the dissertation by actively contributing to consulting assignments in the healthcare domain. He demonstrated strong analytical capabilities through extensive secondary research, supported the preparation of high-impact industry reports such as AMCHAM and CII, and gained practical exposure to healthcare consulting, proposal development, and stakeholder-oriented deliverables.

Deliverables: The student contributed significantly to multiple deliverables including preparation of healthcare sector reports (AMCHAM and CII), development of proposals for various projects, and research-based analytical inputs. Additionally, he played a key role in supporting the coordination and execution of the Pulse Med Conclave, ensuring timely and effective delivery of outputs.

Strengths: The student exhibited strong research and analytical skills, with the ability to synthesize complex information into structured consulting outputs. He demonstrated good coordination and communication skills, particularly during the Pulse Med Conclave. His proactive approach, attention to detail, and ability to work collaboratively in a fast-paced consulting environment are commendable.

Suggestions for Improvement: The student can further strengthen his expertise by gaining deeper domain knowledge in specific healthcare segments and enhancing advanced analytical and presentation skills to deliver more nuanced insights in consulting engagements.

Suggestions for Institute (course curriculum, industry interaction, placement, alumni): The institute may enhance industry exposure by incorporating more practical, consulting-oriented coursework, live projects, and increased interaction with industry professionals. Strengthening focus on real-world case studies, especially in healthcare management and policy, and fostering stronger alumni engagement can further improve student preparedness for industry roles.

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Introduction

Background of the Study

India's healthcare system operates within a complex and evolving landscape characterized by a mixed public-private delivery model, significant regional disparities, and persistent constraints in infrastructure, workforce, and service quality. The public sector remains responsible for ensuring equitable access to healthcare services; however, limitations in financing, capacity, and administrative efficiency have historically constrained its ability to meet growing healthcare demands.

Simultaneously, the private sector has emerged as a dominant provider of healthcare services in India, accounting for a substantial share of outpatient and inpatient care. This dual structure creates both opportunities and challenges for healthcare delivery. While private providers contribute significantly to capacity expansion, the absence of effective integration mechanisms often leads to fragmentation, inefficiencies, and inequitable access.

To address these challenges, **Public-Private Partnerships (PPPs)** have gained prominence as a strategic approach for leveraging private-sector efficiency, investment, and innovation while maintaining public-sector oversight and accountability. PPPs are increasingly being explored in areas such as diagnostics, dialysis, hospital infrastructure, and medical education to bridge existing gaps in healthcare delivery and capacity.

Context of PPPs in the Health Sector

India's health system provides the context for the feasibility questions

examined in this report. It is characterized by a large and deeply mixed delivery system, persistent infrastructure and workforce constraints, considerable variation across states in administrative and implementation capacity, and growing pressure to expand tertiary care, diagnostics, specialist services, and health professional education without relying exclusively on direct public provision.[1,2] In this setting, public-private partnerships (PPPs) are relevant not because private actors are absent from the system, but because the policy challenge is to determine the circumstances under which private participation can be translated into arrangements that are implementable, governable, and fiscally credible.[1,3]

These dynamics are especially pronounced in India's mixed health system, in which private provision already accounts for a substantial share of service delivery. NITI Aayog has noted that the private sector delivers nearly 60% of hospitalizations and around 70% of outpatient care in India.[1] At the same time, pressures on public financing and service capacity remain substantial. The National Health Policy 2017 envisaged increasing government health expenditure to 2.5% of GDP by 2025.[4] The latest National Health Accounts estimates indicate that government health expenditure had risen to 1.84% of GDP in 2021–22, up from 1.13% in 2014–15, while out-of-pocket expenditure had declined to 39.4% of total health expenditure and government health

[1] Kumar Anurag, and Sarwal Rakesh. 2021. "Health Insurance for India's Missing Middle"

[2] https://cbhidghs.mohfw.gov.in/sites/default/files/NHP/NHP-2023-Last-Final.pdf

[3] https://www.pppinindia.gov.in/report/Book%20Reference%20Guide%20for%20PPP%20%20Project%20Appraisal%20_June%2016_1687005378.pdf

[4] https://www.pib.gov.in/PressReleasePage.aspx?PRID=2080071&utm_source&reg=3&lang=2

expenditure had increased to 48.0% of total health expenditure.[5]The direction of change is therefore important, but the latest published figures also suggest that the policy benchmark of 2.5% of GDP had not yet been reached.

India's federal structure adds a further layer of complexity. Although national policy, financing instruments, and regulatory frameworks shape the overall environment, implementation is mediated through state-level decisions on governance, procurement, institutional design, and service delivery. In practice, this means that the operational meaning of central policy frameworks depends heavily on how states interpret, adapt, and execute them. Variation across states is therefore central to any serious assessment of health-sector PPP feasibility in India.

These implementation questions are reinforced by continuing infrastructure gaps. According to official reporting, 8,40,455 government hospital beds were available in rural and urban areas as of 31 December 2022.[2] Separate Ministry reporting indicates that 8,18,661 beds were available across PHCs, CHCs, sub-district hospitals, district hospitals, and medical colleges as of 31 March 2023, against the National Health Policy benchmark of 2 beds per 1,000 population.[6] Relative to India's projected population, these figures suggest public-sector bed availability of only around 0.6 beds per 1,000 population, underscoring the scale of the infrastructure gap even before questions of geographic distribution, functionality, staffing, and quality are considered.

Within this broader context, PPPs in India's health sector have evolved beyond the outsourcing of isolated ancillary services toward more complex

[5] https://nhsrcindia.org/sites/default/files/2024-09/NHA%202021-22.pdf

[6] https://www.pib.gov.in/PressReleasePage.aspx?PRID=2080071&utm&reg=3&lang=2

models involving hospital infrastructure, clinical services, district hospital upgradation, and links between service delivery and medical education. At the national level, this shift is reflected in NITI Aayog's work on model and guiding documents for district-hospital-linked medical colleges and for non-communicable disease services, as well as in financing and project-preparation instruments administered by the Department of Economic Affairs.[1,4] The revamped Viability Gap Funding scheme explicitly includes social sector projects such as health and education, while the India Infrastructure Project Development Fund supports project preparation costs including feasibility studies, legal reviews, financial structuring, and transaction documentation.[7,8]

Table 1. Selected contextual indicators relevant to health-sector PPPs in India

India Health System – Key Indicators and Why They Matter (Latest Available)

Indicator	Current Status	Why It Matters
Government health expenditure under National Health Policy 2017	Target: 2.5% of GDP by 2025; latest published value: 1.84% of GDP in 2021–22	• Signals continued policy emphasis on expanding public health financing while acknowledging existing financing gaps
Out-of-pocket expenditure as % of total health expenditure	39.4% in 2021–22	• Indicates continuing household financial exposure and the importance of financing and delivery design
Government health expenditure as % of total health expenditure	48.0% in 2021–22	• Shows increased public financing effort, while highlighting continued system pressures
Beds across PHCs, CHCs, sub-district hospitals, district hospitals, and medical colleges	818,661 (as of 31 March 2023)	• Highlights continuing infrastructure and capacity pressures relevant to hospital-linked PPPs
Share of hospitalizations delivered by private sector	Almost 60%	• Indicates the scale of private-sector participation already embedded in the health system
Share of outpatient care delivered by private sector	Around 70%	• Reinforces the mixed public-private nature of service delivery in India
Physician density per 10,000 population	Approximately 9.5 allopathic doctors per 10,000 population in 2025, based on 13,86,150 registered allopathic doctors	• Highlights continuing workforce constraints relevant to service expansion, specialist care, and hospital-linked PPPs
Nurse / midwife density per 10,000 population	Approximately 29.3 nursing personnel per 10,000 population in 2025	• Indicates the scale of the nursing workforce relevant to hospital operations and the feasibility of expanding nursing and allied training capacity through PPP-linked models
Number of medical colleges (government vs private)	818 medical colleges in 2025, of which 455 are government and 363 are private	• Relevant to the feasibility of hospital-linked PPPs involving medical education, teaching hospitals, and clinical training expansion

Sources: *National Health Policy 2017; National Health Accounts 2021–22; MoHFW reporting on health expenditure and infrastructure; NITI Aayog, Health Insurance for*

[7] https://www.pppinindia.gov.in/guidelines_for_iipdf

[8] https://dea.gov.in/schemes-services/viability-gap-funding-scheme

India's Missing Middle; PIB/MoHFW update on medical education and workforce; WHO health workforce support and safeguards guidance.

Notes: Government health expenditure as a share of GDP refers to National Health Accounts 2021–22. Physician density is calculated using 13,86,150 registered allopathic doctors and India's 2025 population estimate; the Government of India's doctor-population ratio of 1:811 includes both allopathic and AYUSH practitioners. Nurse/midwife density is calculated using 42.94 lakh registered nursing personnel and India's 2025 population estimate. WHO's current workforce guidance is framed primarily around combined health workforce density rather than a universal stand-alone threshold for nurses or midwives.

These indicators show why PPP feasibility cannot be assessed through policy review alone. The analysis therefore proceeds across four levels: the central policy, financing, and institutional architecture; state-level adaptation and readiness; private-sector perspectives on incentives, risks, and bankability; and the legal and regulatory landscape for medical and nursing education, hospital-linked training, staffing, licensing, and approvals. Together, these levels provide the basis for identifying cross-cutting barriers, enabling conditions, and implications for PPP design in India.

Table 1. Analytical logic of the report structure

Level of analysis	**Core question**	**Why it is needed**
Central policy and institutional landscape	What policy, financing, and institutional instruments exist to support health-sector PPPs?	Establishes the formal enabling architecture within which PPPs are developed
State-level adoption and readiness	How are these frameworks reflected, adapted, or operationalized across different state contexts?	Identifies variation in implementation conditions, readiness, and constraint across states
Private-sector perspectives	Under what conditions do PPP opportunities appear viable or attractive to private actors?	Brings in the market-facing dimension of feasibility, including incentives, risks, and perceived bankability

Cross-cutting synthesis	What barriers, enablers, best practices, and lessons emerge across these levels?	Supports later consultation, interpretation, and recommendation development

Objectives

To identify and describe the major Public–Private Partnership (PPP) Models in Health Service Delivery in India

Specific objectives

1. To identify major policy documents in the context of PPP Models in Health Service Delivery in India
2. To synthesize key policy and implementation challenges associated with these PPP models.

METHODOLOGY

Study design

Narrative review based on policy documents, official reports, and published literature.

Data sources

- Central and state government policy documents and PPP guidelines (MoHFW, NITI Aayog, NMC, state health departments).
- Evaluation reports and relevant grey literature.
- Peer-reviewed articles on health sector PPPs in India.

Search strategy

- Databases: e.g., PubMed, Google Scholar.
- Official websites: MoHFW, NITI Aayog, NMC, state health portals.
- Keywords: combinations of “public private partnership/PPP”, “district hospital medical college”, “diagnostic PPP”, “radiology PPP”, “India”.

Inclusion criteria

- PPP models in Indian health service delivery.

- Documents describing model design, implementation, or reported challenges.

Exclusion criteria

- Non-health PPPs (e.g., roads, infrastructure) and non-Indian contexts, unless used only for brief comparison.

Data extraction and synthesis

- Extract data on type of PPP, sector/level, roles of partners, financing/contractual features, and reported issues.
- Prepare simple tables to summarize types of PPP models.
- Use thematic analysis to group challenges (e.g., financial viability, regulatory issues, governance and capacity, monitoring and accountability).

Significance

- Provides a concise evidence base for policymakers and administrators to refine PPP design and implementation.
- Helps researchers and students understand how PPPs in health and medical education are structured and where they face recurring problems.

Literature review

Central-Level Healthcare PPP Landscape

i. Overview of the central PPP landscape

The central landscape for health-sector PPPs in India is best understood as a layered and distributed architecture rather than a single, unified PPP scheme. It comprises sector-specific PPP frameworks developed through NITI Aayog, most notably the district

hospital–medical college model and the district-hospital-linked NCD service model[9,10]; cross-cutting PPP support mechanisms administered by the Department of Economic Affairs (DEA), particularly the Viability Gap Funding (VGF) Scheme[11] and the India Infrastructure Project Development Fund (IIPDF)[8]; and a broader sectoral environment shaped by current health-system investment and implementation platforms under the Ministry of Health and Family Welfare (MoHFW) and the National Health Mission (NHM), especially PM-ABHIM[12] and centrally supported dialysis service arrangements under the Pradhan Mantri National Dialysis Programme (PMNDP)[13]. The center's role is therefore not limited to issuing PPP guidance; it also extends to financing support, project preparation, and large-scale public investment in health infrastructure and service-delivery platforms.

This architecture divides model design, project sponsorship, and implementation across institutions. NITI Aayog provides health-sector models and transaction guidance; DEA's VGF and IIPDF frameworks support projects proposed by central ministries, state governments, and other sponsoring authorities; and NHM provides operational and contracting support in selected service lines. The center supplies enabling frameworks, but specific PPPs generally still depend on a ministry, state department, or public sponsoring authority taking them forward.

This architecture performs related but distinct functions: model structures for selected health and medical education PPPs, viability support for socially desirable but financially weak projects, project-preparation support for advisers, legal review, and structuring, and

[9] https://www.niti.gov.in/sites/default/files/2023-02/NCD-PPP-GUIDLINE-BOOKLET.pdf

[10] https://www.niti.gov.in/sites/default/files/2019-12/ModelConcessionAgreement-forSetting-upMedical-Colleges-under-Public-private-Partnership-Draft-for-Comments.pdf

[11] https://dea.gov.in/files/guidelines_documents/Scan_Revamped_VGF_Guidelines_alongwith_all_Annexures.pdf

[12] https://www.pib.gov.in/PressReleasePage.aspx?PRID=2239631&reg=3&lang=1

[13] https://nhm.gov.in/images/pdf/NHM/NHM-Guidelines/Operational_Guidelines_for_Dialysis_Programme.pdf

implementation context shaped by public infrastructure investment and operational program frameworks. PPPs are therefore one instrument within broader health-system strengthening, not a substitute for public provision. VGF addresses viability, IIPDF supports transaction preparation, PMNDP provides operational and procurement support in selected service lines, and medical and nursing education PPPs are further shaped by regulatory requirements that affect whether central models can become procurement-ready projects.

Table 2. Central-level health PPP architecture: instruments, ownership, current status, and implications

Instrument / framework	Central owner	What it covers	How it works / key design logic	Evidence of current use	Main relevance
District hospital–medical college PPP model	NITI Aayog PPP Vertical	Upgradation of district hospitals into teaching medical colleges through PPP	Private partner upgrades and operates district hospital, provides free OPD and free inpatient care for 300 beds plus 20% of additional beds, and constructs/operates medical college; backed by guiding principles for concession and procurement	Model guidance on NITI website; handholding support to states referenced by NITI	Most transaction-oriented central health PPP model; strongest example of hospital-linked and medical-education-linked PPP design
NCD PPP guideline	NITI Aayog PPP Vertical	Co-located district-hospital specialty NCD services	Model for cardiology, oncology, and pulmonology services with referral linkages, illustrative finance, and mixed patient/revenue streams	Current official guideline exists, but appears more framework-oriented than procurement-ready	Important central service-delivery PPP model, though less mature than medical-education model
VGF Scheme	DEA, Ministry of Finance	Viability support for socially	Improve bankability	Active scheme with identifiable	Critical to viability of hospital-

		desirable but financially weak PPPs, including health	through grant support	health-sector project approvals and disbursal	linked and socially oriented health PPPs
IIPDF	DEA, Ministry of Finance / PPP India ecosystem	Project preparation and transaction-cost support	Funds advisers and transaction costs to improve quality and quantity of bankable PPPs	Active current scheme and active projects page	Addresses a major bottleneck in health PPPs: weak public-sector preparation capacity
PM-ABHIM	MoHFW	Public health infrastructure strengthening	Major central public investment in infrastructure, labs, critical care, and public health units	Active program with current approvals	Shapes the real infrastructure context within which PPPs are considered
PMNDP dialysis under PPP / hybrid / in-house modes	MoHFW / NHM	Dialysis service delivery	Centrally supported operational platform under multiple modes	Live service-delivery platform with current footprint	Strongest current example of centrally supported operational PPP service line in health delivery
NHM PPP management role	NHM / SHM / SHS architecture	Contract execution, fund disbursal, monitoring of NGO/PPP components	Administrative route for managing PPP components	Embedded institutional role in mission architecture	Shows PPP components can be governed through existing health mission structures

These instruments support different stages of the project cycle rather than a single health-sector PPP pipeline. Table 4 maps where central support is available and where state or implementing-authority responsibility begins.

Table 3. Central process pathway for health-sector PPPs: who does what, where

support exists, and where bottlenecks remain

Stage / question	Main central institution(s)	Relevant instrument / framework	What central support provides	What still depends on states / implementing authorities	Likely bottleneck
Is there a model or concept for this PPP type?	NITI Aayog	District hospital–medical college model; NCD PPP guideline	Model logic, guidance, standard-setting, transaction framing	Whether the state wants that PPP type and can adapt it to local needs	Some models are more mature than others
Can the project be made financially viable?	DEA	VGF Scheme	Grant support for socially desirable but financially weak PPPs	State sponsorship, co-funding, and final project structuring	Weak commercial logic may remain even with support
Can the project be prepared properly?	DEA / PPP India	IIPDF	Funding for transaction advisers and project-preparation costs	State capacity to initiate proposal, manage advisers, and move to procurement	Preparation quality and follow-through
Is there a health-sector implementation platform already in place?	MoHFW / NHM	PM-ABHIM; PMNDP; NHM mission structures	Infrastructure platform, service-delivery program, procurement templates, administrative route for PPP components	Whether states operationalize these platforms through PPP, in-house, or hybrid models	Divergence across states in uptake and implementation mode
Is there evidence that the pathway is active?	DEA; MoHFW; NHM	VGF approvals; PMNDP dialysis footprint; PM-ABHIM approvals	Current evidence of approvals, program rollout, and procurement support	Translation of central activity into state-level projects	Lack of fully integrated central health PPP pipeline
What ultimately	States, with private	State procuremen	Central architecture	State ownership,	Central support is

determines implementation?	actors responding	t, governance, co-funding, regulatory navigation	can enable and support	project design, institutional capacity, private appetite	necessary but not sufficient

ii. Central frameworks for medical education and district hospital-linked PPPs

NITI Aayog's district hospital–medical college PPP model links an existing district hospital with a medical college to expand medical education capacity while strengthening hospital service delivery. It combines three objectives: district hospital upgradation and operation, establishment of a medical college, and defined public-service obligations.

Under the model, the private partner is expected to upgrade, operate, and maintain the district hospital; provide free outpatient treatment and free inpatient treatment for 300 beds and 20% of additional beds; and construct and operate the medical college. The framework therefore uses an existing public hospital platform as the base for a broader teaching and service-delivery arrangement. NITI Aayog has also issued guiding principles for the concession agreement and request for proposal, including hospital handover, development obligations, service delivery requirements, hospital charges, student fees, bid security, award processes, and compliance with applicable law and medical education norms. This indicates that the model has been developed not only as a policy concept, but also as a transaction framework intended for procurement and implementation.[14,14]

The framework is also explicitly linked to viability support. NITI Aayog's documentation connects the model to the VGF scheme, indicating that these projects

[14] https://www.niti.gov.in/sites/default/files/2020-06/RFP_-_Guiding_Principles_Medical_Education.pdf

are not assumed to be commercially self-sustaining on the basis of user revenues or educational income alone. That linkage is significant because district hospital–medical college PPPs combine substantial capital requirements, free-service obligations, regulatory compliance costs, and long implementation timelines. The central framework therefore recognizes that project design and project viability must be addressed together.

Available evidence suggests that implementation to date has been limited and selective rather than broad-based. The clearest indication of uptake comes from projects that have received in-principle or final VGF approval for the development or upgradation of medical colleges attached to district hospitals under PPP mode. These approvals indicate that the model has moved beyond central design into actual project structuring in a small number of states, including Uttar Pradesh, Arunachal Pradesh, and Jharkhand. Uttar Pradesh appears to be the most developed example among them, with a state scheme and project pipeline directed at establishing private medical colleges in districts without existing colleges. At the same time, our review provides stronger evidence of project approval and structuring than of completed implementation at scale. This is important because it suggests that the principal challenge is not the absence of a central model, but the difficulty of converting that model into operational projects.[15,16,17]

iii. Central service-delivery guidance for health-sector PPPs

NITI Aayog's guideline for PPPs in non-communicable disease (NCD) services focuses on the co-location of specialty NCD services at district-hospital level, particularly in cardiology, oncology, and pulmonology. The guideline sets out the

[15] https://sansad.in/getFile/loksabhaquestions/annex/187/AS411_F7WVFj.pdf?source=pqals

[16] https://invest.up.gov.in/wp-content/uploads/2023/02/Private-Medical-College-Unreserved-Districts-Scheme-2022-en.pdf

[17] https://www.pppinindia.gov.in/docs/document/vgf/Record%20of%20Discussion%20of%20the%2049th%20meeting.pdf

service scope, facility configuration, referral arrangements, indicative performance parameters, and an illustrative financial structure, including a mix of government-referred, insurance-linked, and self-paying patients. It is therefore best understood as a framework for structuring specialty service delivery at district-hospital level.[13,18]

The NCD framework appears to function mainly as central guidance for state adaptation rather than as a clearly documented procurement pipeline. Our review did not identify a state procurement under the NITI Aayog NCD PPP guideline in the states reviewed. This is an important feasibility finding: the model remains closer to central guidance than to a verifiable transaction pipeline.

Several implementation constraints are apparent. First, the financial model is sensitive to uncertainty in patient volumes and payer mix. Because the framework anticipates multiple patient streams, project viability depends not only on the existence of demand, but on a sufficiently predictable caseload and reimbursement profile. This is especially important for specialty NCD services, where fixed costs, equipment requirements, and staffing needs are substantial.

Second, specialist availability is likely to be a major operational constraint. Cardiology, oncology, and pulmonology services require sustained access to specialist personnel, yet district hospitals in many settings may not offer labor-market conditions or case profiles that readily attract and retain such providers. This affects both service continuity and the attractiveness of the model to private operators.

Third, the operational burden associated with equipment-intensive service delivery is significant. These services depend on diagnostic and treatment equipment that

[18] https://www.pib.gov.in/newsite/PrintRelease.aspx?relid=184237&reg=3&lang=2

must be procured, maintained, calibrated, and integrated into a functioning clinical system with reliable staffing, consumables, and referral pathways. In weaker district settings, these requirements may introduce recurrent operational risks that go beyond the initial concession structure.

iv. Financing support within the central architecture: Viability Gap Funding (VGF)

The Viability Gap Funding (VGF) Scheme is the principal central financing instrument relevant to health-sector PPPs. Administered by the Department of Economic Affairs (DEA), it is intended to support PPP projects that are socially or economically desirable but not financially viable without public support. The scheme was revamped in 2020, with an outlay of ₹8,100 crore up to 2024–25 and explicitly extended stronger support to social-sector projects, including health. Under the current framework, eligible projects may receive up to 80% of capital expenditure and up to 50% of operating expenditure for the first five years after commercial operations, through two sub-schemes: one for projects with full operational cost recovery, and another for pilot or demonstration projects in health and education with lower cost recovery thresholds. This is particularly relevant to health-sector PPPs, where social obligations, constrained pricing, and uncertain revenue streams often limit standalone commercial viability.[9,19]

v. Project preparation support within the central architecture: IIPDF

IIPDF is the principal central instrument for PPP project preparation. Administered by DEA, it was restructured as a Central Sector Scheme with an outlay of ₹150 crore for 2022–23 to 2024–25 and provides up to ₹5 crore per proposal for transaction costs. It funds the financial, legal, and technical work needed to move projects from concept to bankable transaction, which is especially relevant for district hospital–

[19] https://www.pppinindia.gov.in/report/vgf-guideline_1691500048.pdf

medical college PPPs and other hospital-linked models requiring feasibility analysis, legal structuring, financial modelling, and transaction preparation before procurement.

The available evidence suggests that identifiable health-sector use of IIPDF is limited. Our review identified one clearly documented example: the Development of Medical College & Hospital at Namsai, Arunachal Pradesh, under PPP mode, for which IIPDF support of ₹1.44 crore was approved in February 2023 for transaction advisory services. PPP India records the project status as approved, with the transaction adviser appointed and work in progress.[20,21]

The limited uptake is itself instructive. It suggests that only a small number of health PPP concepts are progressing to the stage of formal transaction preparation, likely reflecting the complexity of health PPP design and the requirements of state sponsorship, structuring, and project readiness.

vi. MoHFW, NHM, and the current central infrastructure/service-delivery layer

The central landscape is also shaped by current health-sector investment and implementation platforms, particularly PM-ABHIM. The Pradhan Mantri Ayushman Bharat Health Infrastructure Mission (PM-ABHIM) is a centrally financed scheme launched in 2021 to strengthen public health infrastructure and system capacity across primary, secondary, and tertiary care. Its scope includes laboratories, critical care infrastructure, disease surveillance, and emergency response systems, and it has an outlay of ₹64,180 crore for FY 2021–22 to FY 2025–26. Approved components include 9,519 Ayushman Arogya Mandirs, 5,456 Urban Health Centers, 2,151 Block Public Health Units, and 744 Integrated Public Health

[20] https://www.pppinindia.gov.in/docs/document/fourth_meeting_rod.pdf

[21] https://www.pppinindia.gov.in/iipdf-yearwises/iipdf-projects-list_2022-2023

Laboratories. Although PM-ABHIM is not itself a PPP scheme, it helps define the infrastructure and service-delivery context within which health-sector PPPs are being considered. More broadly, it shows that central health strategy is being pursued through substantial public investment alongside selected PPP pathways, rather than through PPPs alone.[16,22]

A more directly service-delivery-oriented example is dialysis under PMNDP. Under the Pradhan Mantri National Dialysis Programme, NHM supports States/UTs in establishing dialysis centers and delivering hemodialysis and peritoneal dialysis services based on state requirements and identified service gaps. The program has been implemented across all 36 States/UTs and 751 districts, with 1,704 dialysis centers reported as operational. Delivery is organized through in-house, PPP, and hybrid arrangements, with 14 States/UTs using PPP arrangements, 16 using in-house arrangements, and 6 using hybrid arrangements. The program does not prescribe a single preferred mode; rather, it allows states to organize delivery according to their own service requirements and implementation capacity.[23,24]

NHM's institutional guidance also identifies an administrative route for managing PPP components at state level. It states that State Health Missions and State Health Societies are responsible for NGO/PPP components, including execution of contracts, disbursement of funds, and monitoring of performance. This indicates that the central mission architecture includes institutional arrangements for administering PPP components in practice.[25]

vii. Earlier Central PPP Guidance and the Evolution of the Current

[22] https://www.pib.gov.in/PressReleasePage.aspx?PRID=2146799&reg=3&lang=2

[23] https://www.pib.gov.in/PressReleseDetailm.aspx?PRID=2151237&reg=3&lang=2

[24] https://pmndp.mohfw.gov.in/en/introduction-of-pradhan-mantri-national-dialysis-program-pmndp

[25] https://www.nhm.gov.in/index1.php?lang=1&level=3&lid=143&sublinkid=1137

Architecture

The current central architecture sits alongside earlier DEA health PPP guidance, including practitioner guides and model concession materials for greenfield hospitals, brownfield hospitals, medical colleges, and primary healthcare facilities. These documents provided practical reference points on scope, clinical and support services, user-fee and reimbursement options, regulatory requirements, service obligations, equipment, and monitoring for implementing agencies considering PPP-based health infrastructure or service delivery.

The current architecture is more layered and functionally linked. Earlier guidance mainly described possible PPP forms; the current architecture combines NITI's sector-specific model design, VGF viability support, IIPDF project-preparation support, and MoHFW/NHM implementation platforms. This shift better addresses constraints that earlier practitioner guidance did not resolve, especially weak bankability, limited transaction preparation, and the gap between model design and implementable projects.

viii. Central-level constraints and limitations

Central architecture is substantively developed, but the route from concept to implementation is not visible as a unified pipeline. Model frameworks, viability support, project-preparation support, and operational platforms are present, but their connection across need identification, structuring, preparation, financing, procurement, and implementation is less clear. This challenge is especially visible in education-linked PPPs, where regulatory compliance adds complexity beyond project structuring.

Not all PPP pathways are equally supported for implementation. The district hospital–medical college model has relatively detailed concession and procurement

guidance and an explicit viability-support link. The NCD model is more of a service-delivery template, while the MoHFW/NHM layer is more operational and programmatic. As a result, some central pathways are closer to procurement-ready implementation than others.

A second constraint relates to coordination across the layered central architecture. Responsibility for the health PPP landscape is spread across NITI Aayog, DEA, MoHFW, and NHM, each of which performs a distinct function. This distribution has advantages in that it brings together model design, financing support, project preparation, and sectoral implementation platforms. At the same time, support for implementation is dispersed across multiple instruments and institutions rather than embedded in a single pathway. As the NHSRC review of PPPs in health notes, PPP performance depends not only on the existence of a model or contract, but also on governance, monitoring, payment mechanisms, and contract management.[26] The issue, therefore, is not simply that multiple actors are involved, but whether their roles and responsibilities are sufficiently aligned to support project development and implementation efficiently. The question of project origination sits within this coordination problem. VGF applies to PPP projects proposed by Central Ministries, State Governments, and Statutory Authorities, while IIPDF funding is available to Project Sponsoring Authorities for project-development costs. That clarifies who may formally sponsor or seek support for a project, but it does not by itself establish a clearly visible health-sector process through which the initial need for a PPP is identified, validated, and translated into a sequenced proposal across the relevant institutions.

Central support does not remove the importance of state execution. VGF and IIPDF can improve viability and preparation, and model guidance can reduce structuring

[26] https://nhsrcindia.org/sites/default/files/2022-09/PPP%20BOOK%2027.05.2022_0.pdf

uncertainty, but ownership, co-funding, procurement, regulatory navigation, and contract administration remain state responsibilities. PMNDP illustrates this clearly: within one national program, states use in-house, PPP, and hybrid arrangements according to their priorities and capacity. NHM dialysis guidance and mission architecture also show that procurement and implementation support are clearer in some service lines than in the broader health PPP universe.

PPPs also sit within a wider health investment landscape. PM-ABHIM shows that the center is expanding infrastructure through large-scale public financing while supporting PPP frameworks in selected areas. PPPs are therefore not a general substitute for public infrastructure provision; their role is selective, with greater relevance in specific service lines and hospital-linked arrangements. Project environments may also be shaped by direct public capital expenditure, insurance-backed purchasing, externally supported sector programs, and state-specific investment facilitation routes.

State-Level Adoption, Readiness, and Operational Realities

i. Overview of state-level variation

The states reviewed do not follow a single pathway of health-sector PPP adoption. Telangana's visible PPP use is concentrated in recurring service platforms, especially dialysis and selected fixed-day services. Andhra Pradesh is organized around the Aarogyasri purchaser-provider pathway. Karnataka's PPP activity is project-development oriented, with prefeasibility exercises in diagnostics and hospital-linked services. Maharashtra shows a more transaction-facing pipeline in medical education and super-specialty hospitals. Madhya Pradesh emphasizes investment facilitation through the Health Sector Investment Promotion Policy, 2025. This variation shows that states are engaging with different entry points: service contracts, payer-provider arrangements, project development, market-facing

hospital transactions, and investment-promotion frameworks.

The same central architecture can therefore translate into different state pathways. Telangana is built around recurring service demand and established delivery platforms, while Andhra Pradesh operates through the Aarogyasri Health Care Trust and a large, empaneled public/private hospital network. Both are relevant to PPP analysis but differ from concession-style hospital projects or stand-alone infrastructure transactions.

Karnataka and Maharashtra sit closer to project preparation and transaction development. Karnataka's Infrastructure Development Department PPP Cell has prepared prefeasibility reports for district diagnostic centers, MRI services, dialysis centers, geriatric care facilities, and outsourced hospital facility management. This does not show that all projects reached procurement or operation, but it does indicate formal PPP project-development tools across service lines. Maharashtra reflects a market-facing route through REoIs for newly built super-specialty teaching hospitals and other medical education and tertiary-hospital proposals.

Madhya Pradesh stands apart because the visible state approach is oriented toward health-sector investment promotion rather than identifiable PPP transactions. State-level feasibility therefore depends not only on whether PPPs are present, but on where private participation appears in the implementation chain: operating service platform, provider-network reimbursement system, prefeasibility pipeline, market-facing transaction, or approvals-and-incentives framework.

The states therefore organize procurement, financing, ownership, and service delivery differently, shaping which PPP pathways are easier to advance, where non-PPP or hybrid routes remain prominent, and how implementation risks are managed.

Table 4. State-level pathways for health-sector PPP adoption and implementation

State	Central / national pathway most relevant	State institutional anchor	Approval / preparation pathway	PPP / private-participation activity reviewed	Current stage	Main bottleneck / implication
Telangana	PMNDP / NHM service-delivery PPP logic; state scheme-linked service purchasing	Health, Medical and Family Welfare Department; Finance Department PPP Cell where applicable	Sector department proposal with technical and financial appraisal through Finance Department route where applicable	Dialysis under PPP hub-and-spoke model linked to Aarogyasri; Fixed Day Health Services / mobile service platforms	Operational service-delivery PPPs, especially dialysis	Strong relevance for recurring service-line PPPs where service package, payment, and facility interface are bounded
Andhra Pradesh	Purchaser-provider architecture adjacent to PPP; public health assurance trust model	Dr. NTR Vaidya Seva / Aarogyasri Health Care Trust; Health Department oversight	Empanelment and package-based provider contracting through Trust-led scheme processes	Large empaneled public/private hospital network under Aarogyasri / Dr. NTR Vaidya Seva	Mature purchaser-provider pathway, not a concession-style PPP	Demonstrates how private participation can be routed through a public purchaser; payment discipline and claims administration are central
Karnataka	Project-preparation logic; central PPP appraisal and prefeasibility approach	Infrastructure Development Department PPP Cell; sector departments	Sector department identifies service gaps; PPP Cell supports prefeasibility, structuring, and processing before procurement	Prefeasibility reports for diagnostics, MRI, dialysis, geriatric care, and hospital support services	Structured project-preparation pipeline; uneven evidence of movement to procurement or operation	Shows the value of upstream project preparation, but also the gap between prefeasibility and implementation

Maharashtra	Hospital-linked and teaching-hospital PPP logic; medical education / tertiary-care PPP pathway	Medical Education and Drugs Department; Directorate of Medical Education and Research	Department/DMER-led REoI and market-sounding route for identified tertiary/teaching hospital assets	REoIs for Latur and Aurangabad super-specialty teaching hospitals; BASIMER Nagpur	Market sounding / REoI stage	Relevant for hospital O&M and teaching-hospital PPPs; later RFPs would need clearer monitoring, payment, and operating parameters
Madhya Pradesh	Investment-promotion route rather than a specific central PPP scheme	Department of Public Health and Medical Education; Investment Promotion Committee; CCIP for larger projects	Online application with DPR; Nodal Officer scrutiny; Investment Promotion Committee appraisal; CCIP approval for larger projects	Health Sector Investment Promotion Policy 2025, including hospitals and medical colleges	Policy and investment facilitation stage	Indicates interest in private participation, but requires conversion into project-specific feasibility, payment, and procurement structures
Delhi	NHM / service-delivery contracting logic; urban public hospital service expansion	Department of Health and Family Welfare / DGHS; participating government hospitals	Facility/service-specific procurement route, including RFQ/RFP processes for dialysis PPP	PPP Dialysis Project operating in three government hospitals	Operational service-line PPP, but limited public detail on payment and performance framework	Useful for urban service-line contracting, though documentation gaps limit assessment of payment and monitoring design
Assam	PMNDP and free diagnostics service-delivery PPP logic	Health and Family Welfare Department; NHM Assam	Scheme/program route through NHM and state health department for diagnostics and	Chief Minister's Free Diagnostic Services Programme; CT scan and X-	Operational diagnostics and dialysis PPPs	Shows how service-line PPPs can be embedded in public facilities with reporting and turnaround-time requirements

			dialysis service delivery	ray/tele-radiology PPPs; PMNDP hemodialysis PPP		
Meghalaya	NHM facility-management / NGO partnership route	Health and Family Welfare Department; NHM Meghalaya	NGO/corporate management route for selected difficult PHCs/CHCs through state/NHM arrangements	PPP management of difficult PHCs/CHCs through NGOs/corporate agencies	Management-oriented PPP model for difficult facilities	Highlights workforce, managerial-control, and financial-capacity constraints in smaller or geographically challenging states
Uttar Pradesh	NITI district hospital–medical college PPP model; VGF support	Government of Uttar Pradesh; DGME; state medical education authorities	State scheme for unserved districts; VGF-linked project pipeline	District hospital-linked medical college PPPs in six unserved districts with VGF support	In-principle VGF approval and project pipeline	Strong domestic example of VGF-linked medical college PPP pipeline; implementation depends on teaching-hospital readiness and regulatory sequencing
Arunachal Pradesh	IIPDF project-preparation support; district hospital-linked medical college PPP logic	Department of Health and Family Welfare; Directorate of Medical Education, Training and Research	IIPDF-supported transaction advisory; tender/preparation route for Namsai project	Namsai Medical College and Hospital PPP with transaction advisory support	Transaction-preparation / early procurement stage	Shows the importance of transaction advisory in smaller states where hospital conversion, NMC compliance, and market appetite need testing before award
Odisha	VGF-supported hospital PPP / transaction-advisory route	State PPP and health authorities with IFC-supported transaction development	Transaction-advisory-supported DBFOT route with public grant support	Affordable healthcare projects on DBFOT basis	More advanced transaction pathway, including bidding and financial close in	Demonstrates the role of transaction advisory and public grant support in moving health PPPs beyond concept stage

					reviewed material	

The table shows selective rather than uniform state adoption of central PPP architecture. States route private participation through health departments, medical education departments, PPP cells, health trusts, NHM structures, investment-promotion committees, and transaction-advisory platforms. Feasibility depends not only on the central instrument available, but on the state's ability to sponsor, prepare, finance, procure, and manage the arrangement after award.

ii. Extent and nature of state adoption

In Telangana, adoption is clearest in recurring service delivery. Official state reporting indicates that dialysis services are delivered in government hospitals under a PPP hub-and-spoke model linked to the Aarogyasri scheme. The Telangana Health, Medical and Family Welfare Annual Report 2018–19 records the establishment of 42 dialysis centers under PPP mode in district and sub-district hospitals, while more recent public reporting indicates that this network has since expanded to 102 centers. Fixed Day Health Services (104), delivered through mobile health units to remote and underserved habitations, reflect the same broader pattern in which PPPs are used to extend routine service delivery within the public system.[27,28]

In Andhra Pradesh, the most visible state pathway is the Aarogyasri / Dr. NTR Vaidya Seva purchaser-provider model, under which the Trust contracts with empaneled hospitals and reimburses care at package rates. The scheme operates through a network-hospital agreement model and includes both public and private hospitals in the provider network. Official data currently list 1,399 government and 903 private empaneled hospital entries in Andhra Pradesh. This indicates that private participation in the state is organized through a large publicly financed provider network embedded in tertiary and specialist care delivery.[29]

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[27] https://telangana.gov.in/wp-content/uploads/2023/05/Telangana-Health-Medical-and-Family-Welfare-Annual-Report-2018-19.pdf

[28] https://des.telangana.gov.in/publications/Socio_Economic_2020.pdf

[29] https://drntrvaidyaseva.ap.gov.in/asri1

In Karnataka, PPP adoption is most visible through formal project preparation. The Infrastructure Development Department's PPP Cell has produced prefeasibility reports across multiple health service lines, including MRI services in medical colleges, district diagnostic centers, and dialysis centers at taluka- and CHC-level hospitals. These reports define project scope, identify service gaps, specify delivery structures, and test feasibility under PPP mode. For example, the district diagnostic center prefeasibility report proposes an Own, Operate and Transfer structure, with the bid variable linked to a fraction of CGHS diagnostic rates, while dialysis prefeasibility reports contemplate contract periods aligned to machine life cycles. Karnataka therefore appears to have moved further than many states in converting service gaps into structured PPP concepts, even where projects are still at the preparation rather than operational stage.[30,31,32]

In Maharashtra, visible PPP activity is concentrated in the medical education and super-specialty hospital domain. The Medical Education and Drugs Department / Directorate of Medical Education and Research issued REoIs for the operation and maintenance of newly built super-specialty teaching hospitals at Latur and Aurangabad under PPP, and separately for BASIMER, Nagpur on a design, finance, construct, operate, maintain, and transfer basis. Publicly accessible material indicates that the March 2022 REoI for Latur and Aurangabad received four responses; however, the reviewed record does not provide a public assessment of response quality or clearly indicate subsequent progression to RFP stage, financial close, or operations. For BASIMER, the available record establishes the REoI and its extension, but does not clearly indicate the number or quality of responses

[30] https://idd.karnataka.gov.in/storage/pdf-files/69c_DiagnosticLab_UK.pdf

[31] https://idd.karnataka.gov.in/storage/pdf-files/68_Prefeasibilityreport_MRIproject.pdf

[32] https://idd.karnataka.gov.in/storage/pdf-files/67b_Dialysis_Gulbarga.pdf

or a later procurement stage.[33,34,35]

In Madhya Pradesh, the visible route for private participation is currently being articulated through the Madhya Pradesh Healthcare Investment Policy 2025, which supersedes the earlier 2019 policy. It is designed to attract more private entities into healthcare expansion and sets out a formal framework for approvals, eligibility, and incentives. The policy identifies a broad range of eligible applicants, including companies, LLPs, societies, trusts, consortia, and registered medical practitioners, and covers new super-specialty hospitals, certain multi-specialty hospitals, and medical colleges, with a preference for establishing new colleges on a PPP basis. Operationally, the policy creates a structured route through the Department of Public Health and Medical Education and the Investment Promotion Committee for proposals, approvals, interpretation, and policy support. In practical terms, Madhya Pradesh's current engagement with private participation is being expressed through a formal investment-promotion and approvals pathway intended to channel private proposals into the sector.[36]

In Delhi, the clearest example is the long-running PPP Dialysis Project under GNCTD. Official documents state that the project has operated since 2013 and that hemodialysis centers in PPP mode are functioning in three government hospitals: Lok Nayak Hospital, Rajiv Gandhi Super Specialty Hospital, and Dr. Hedgewar Arogya Sansthan. The project is intended to provide high-quality hemodialysis services free of cost to poor and identified patients, while non-sponsored patients are charged nominal rates in accordance with the concession arrangement. Our review could not establish the underlying operator payment terms, contract duration, or performance framework from publicly accessible

[33] https://dmer.maharashtra.gov.in/english/reoi-notice/

[34] https://dmer.maharashtra.gov.in/english/wp-content/uploads/2022/03/REoI-for-Latur-and-Aurangabad_8.3.2022.pdf

[35] https://www.dmer.maharashtra.gov.in/wp-content/uploads/2022/03/REoI-for-BASIMER-Nagpur_08.03.2022.pdf

[36] https://sws.invest.mp.gov.in/assets/pdfs/MP-Health-Sector-Investment-Promotion-Policy-2025.pdf

official material.[37,38] The limited public availability of contract, payment, and performance information is itself a governance finding, as it constrains assessment of payment discipline, service standards, and corrective-action arrangements.

In Assam, state adoption is clearest in diagnostics and dialysis service delivery. Under the Chief Minister's Free Diagnostic Services Programme, free CT scan services are being provided in 30 district/sub-district hospital locations in PPP mode, and free X-ray services in 164 health facilities, of which 156 were reported operational in the reviewed material. Reports are generated through tele-radiology, with time-bound reporting requirements for routine and emergency cases. Assam has also implemented hemodialysis services under PMNDP in PPP mode, with Apollo Hospitals Enterprise Ltd. identified by NHM Assam as the selected provider.[39,40,41]

In Meghalaya, PPP adoption is oriented toward the management of difficult primary and community-level facilities. NHM Meghalaya explicitly presents PPP as a strategy for taking over the management and operation of some of the state's "worst" CHCs and PHCs through NGOs and corporate agencies. Under this model, government provides the facility, equipment, furniture, and supplies, while the operator is responsible for day-to-day management and for supplementing infrastructure or other inputs as needed. The model is intended less as a vehicle for major capital expansion than as a response to persistent service-delivery constraints in difficult facilities. NHM Meghalaya's documentation also highlights important implementation constraints, including difficulty in attracting doctors and auxiliary nurse-midwives, the need for operators with their own

[37] https://dgehs.delhi.gov.in/dghs/ppp-dialysis-project

[38] https://health.delhi.gov.in/health/development-dialysis-centres-hospitals-under-government-delhi-ppp-basis

[39] https://nhm.assam.gov.in/schemes/chief-minister's-free-diagnostic-services

[40] https://nhm.assam.gov.in/schemes/detail/pradhan-mantri-national-dialysis-programme

[41] https://nhm.assam.gov.in/schemes/ppp-with-charitable-hospital

financial resources, and the importance of sufficient managerial control over staffing.[42]

The state pattern suggests that adoption is differentiated less by volume of private participation than by institutional form. A diagnostics PPP, trust-based purchaser-provider network, super-specialty hospital REoI, VGF-linked medical college pipeline, and investment-promotion policy all involve private participation, but each depends on different payment flows, procurement routes, monitoring systems, and risks. This distinction is central to assessing feasibility.

iii. Alignment with central PPP frameworks

Alignment with the central PPP architecture is visible across the reviewed states, but through different institutional routes rather than direct replication. Uttar Pradesh most clearly reflects the NITI district hospital medical college model and VGF route. Its scheme targets districts without medical colleges and combines public hospital assets, private medical college development, and Government of India VGF support. PPP India records in-principle VGF approval for six such projects.

Karnataka aligns differently. It reflects the broader enabling logic of the central architecture through repeated use of formal project preparation across multiple health service lines. In that sense, Karnataka aligns most clearly with the upstream preparation logic that also underpins instruments such as IIPDF and the wider emphasis on structured feasibility and transaction development.

A different alignment is visible in Telangana, Assam, Delhi, Andhra Pradesh, and Meghalaya, where private participation is concentrated in service delivery, purchaser-provider arrangements, or facility management rather than central hospital-linked PPP models. Telangana, Assam, and Delhi use service-line PPPs in dialysis and diagnostics; Andhra Pradesh uses a trust-based purchaser-provider pathway; and Meghalaya uses

[42] https://nhmmeghalaya.nic.in/programmes/ppp/ppp.html

PPP/NGO management arrangements for difficult PHCs and CHCs.

Madhya Pradesh occupies a somewhat different position. Its current policy framework signals state interest in attracting private participation, including in medical colleges, but this is being expressed primarily through an investment-promotion and approvals route rather than through a clearly structured central-style PPP pathway with visible concession design, project preparation, or operational service-delivery contracting.

Overall, the central architecture is being adapted selectively rather than adopted uniformly. States use NITI models, VGF, IIPDF, NHM service platforms, purchaser-provider trusts, PPP cells, and investment-promotion routes in different combinations. State adoption therefore depends not only on policy availability, but on sponsorship, preparation, payment structure, regulatory navigation, and contract-management capacity

Table 5. State-level process pathway for health PPPs: institutional route and bottlenecks

Stage / question	State-level institution usually involved	Evidence from reviewed states	What the state must do	Likely bottleneck
Who originates the PPP opportunity?	Health department, medical education department, PPP cell, health trust, investment-promotion body	Maharashtra through DMER REoIs; Karnataka through PPP Cell prefeasibility; UP through DGME medical college pipeline; MP through investment policy	Identify service gap and decide whether PPP, public provision, or purchaser-provider model is appropriate	Weak project origination or unclear departmental ownership
Who prepares the project?	PPP cell, transaction adviser, line department,	Karnataka prefeasibility reports; Namsai	Conduct feasibility, financial modelling,	Insufficient preparation before market launch

	IIPDF-supported adviser	IIPDF-supported transaction advisory; Odisha IFC-supported transaction development	legal structuring, market sounding, and bid preparation	
Who provides or secures financing support?	State finance department, line department, DEA/VGF route, trust or scheme payer	UP VGF-linked medical college pipeline; Odisha VGF-supported hospital projects; Andhra Pradesh trust-based purchasing	Define capex support, operating support, reimbursement route, and payment security	Unclear payment source or delayed reimbursement
Who procures or contracts?	Line department, PPP cell, medical education department, health society, trust	Maharashtra REoIs through DMER; PMNDP service contracts through state health systems; Aarogyasri network hospital agreements	Convert project into tender, concession, service contract, or empanelment agreement	Weak transition from REoI/prefeasibility to procurement
Who manages implementation?	Sponsoring department, health society, hospital authority, trust, PPP cell	Telangana and Assam service-line PPPs; Delhi dialysis PPP; Meghalaya facility management PPPs	Monitor performance, verify outputs, process payments, manage disputes, enforce standards	Limited contract-management capacity
Who manages regulatory compliance?	Medical education department, NMC/INC-linked authorities, State Nursing	UP and Namsai medical college PPPs; nursing education regulatory pathway	Sequence approvals, affiliation, inspection readiness, faculty requirements,	Approval delays, faculty shortages, hospital-readiness gaps

	Council, affiliating university, hospital authority		and continuing compliance	
Who monitors outcomes and public value?	Line department, independent verifier, state health mission, trust, evaluator	AP diagnostics evaluation; variable evidence across other states	Track service access, quality, public-patient obligations, payment, grievances, and outcomes	Activity reporting without evaluation of quality or outcomes

iv. Economic viability, financial readiness, and process complexity

Economic viability and financial readiness vary because the PPP forms differ. Service-line models such as diagnostics and dialysis rely on recurring service volumes, defined payments, and bounded operating responsibilities. Purchaser-provider systems such as Aarogyasri depend on package rates, claims administration, and payment discipline. Hospital-linked and medical education PPPs face higher capital requirements, longer implementation timelines, and greater regulatory and operating risks.

For medical college PPPs, the greenfield/brownfield distinction is central. Greenfield models require development of the college, hospital, hostels, equipment, and enabling infrastructure, creating a larger capex burden and longer ramp-up. Brownfield or district-hospital-linked models reduce some capex by using public assets, but introduce asset-condition risk, hospital handover, public-service obligations, legacy infrastructure constraints, and dependence on a hospital platform that may not be under full private control.

The payment mechanism is therefore critical. Student fees and private-patient revenue are unlikely to be sufficient where the private partner must upgrade a district hospital, provide free or subsidized services, maintain public beds, meet teaching-hospital norms, and bear recurring faculty and compliance costs. Such projects require explicit public support through VGF, annuity or availability-style payments, scheme reimbursements, regulated

user-fee logic, or budgeted service obligations.

A high-level comparison is set out below

v. Policy, governance, and institutional readiness

Institutional readiness varies not only in degree, but in form. The key distinction is not simply whether a state has a PPP policy or cell, but whether it has a credible route for origination, preparation, procurement, payment, monitoring, and contract management. The reviewed states show different routes: PPP cells, sector departments, health trusts, NHM platforms, medical education departments, investment-promotion committees, and external transaction advisers.

In Telangana, the clearest feature of institutional readiness is the presence of a Finance Department PPP Cell with an explicit advisory role on PPP projects referred to the department. This gives the state a cross-government platform for technical and financial appraisal rather than a purely sector-bound mechanism. The procedural significance of this arrangement is that projects requiring PPP appraisal do not remain wholly within line departments; they can be routed into a finance-led structure that is designed to review technical and financial aspects before a project is taken forward. The state's finance architecture also carries responsibility for externally aided project monitoring, which strengthens the broader institutional basis for handling projects that require interdepartmental coordination, fiscal review, and implementation oversight. In governance terms, this gives Telangana a relatively centralized and finance-led route for taking forward partnership proposals, with the potential advantage of stronger fiscal scrutiny and interdepartmental coordination. For the health sector, the significance of this arrangement lies in the availability of a central platform for scrutiny, coordination, and

fiscal review, although the strength of that route still depends on the ability of sector departments to bring forward sufficiently developed proposals for consideration.[43]

In Karnataka, institutional readiness is visible through formal project preparation. The Infrastructure Development Department supports prefeasibility and PPP structuring, including health diagnostics, MRI, dialysis, geriatric care, and facility-management proposals. This is an important upstream capacity, although the public record does not consistently show whether projects moved to procurement or operation.

In Maharashtra, institutional readiness is concentrated in the medical education and tertiary-care domain. The Directorate of Medical Education and Research manages a large network of government medical colleges and affiliated hospitals, giving the state a clear sectoral anchor for hospital-linked PPPs. This is reflected in formal REoIs for super-specialty teaching hospitals at Latur and Aurangabad and for BASIMER, Nagpur. The significance of this route is that identifiable facilities have moved from departmental ownership into market-facing processes.

In Madhya Pradesh, the institutional route is investment facilitation and approvals rather than an operating PPP pipeline. The Health Sector Investment Promotion Policy 2025 identifies the Department of Public Health and Medical Education as nodal agency, with project scrutiny through a Nodal Officer, Investment Promotion Committee, and CCIP for larger investments. This may support private investment, but differs from a PPP pathway requiring concession structuring, payment design, and post-award contract management.

In Delhi, institutional readiness is visible through service-line PPPs embedded within the health department rather than a wider state PPP pipeline. The dialysis project is

[43] https://www.telangana.gov.in/departments/finance/

implemented through specific government hospitals and health department processes. Its narrow service scope may make implementation easier than larger hospital concessions, although public evidence on payment and performance monitoring remains limited.

In Assam, institutional readiness is visible through programmatic service-delivery PPPs in diagnostics and dialysis. The Chief Minister's Free Diagnostic Services Programme and PPP-mode CT, X-ray, tele-radiology, and hemodialysis arrangements show how private participation can be embedded within public facilities. These models require reliable reporting, turnaround-time standards, equipment uptime, and facility-level coordination.

In Meghalaya, institutional readiness is shaped by difficult facility-management conditions. NHM Meghalaya presents PPP as a strategy for managing selected difficult PHCs and CHCs. The model is institutionally relevant because it addresses a specific operating constraint, but it also highlights the risks of relying on external operators where geography, workforce availability, and public-sector oversight remain challenging.

Odisha provides a useful adjacent comparator because it shows a more transaction-supported route for health PPP development. The Health and Family Welfare Department identifies an established PPP framework supported by a Regional Resource Centre, which provides technical support for PPP and NGO-related activities. The state has also developed guidance across multiple PPP modalities, including PHC management, urban health, malaria control, and other NHM-linked service arrangements. NHM Odisha further identifies an operational PPP Cell at the Mission Directorate to facilitate and manage partnership projects in rural and urban areas. This indicates that PPP development in Odisha is supported not only by sector intent, but by a dedicated institutional and

technical-support architecture.[44,45]

Odisha's Affordable Healthcare Project further shows how this institutional base can be linked to transaction support. Affordable healthcare facilities are being developed at Angul, Barbil, Bhadrak, and Jharsuguda through DBFOT-mode hospital projects, with IFC advisory support and VGF-linked structuring. PPP India records in-principle VGF approval for all four projects under Sub-scheme II, and project documentation indicates a 30-year concession period, NABH-standard hospital infrastructure, and executed concession agreements with selected private partners. This makes Odisha useful as a comparator for how state-level PPP capacity, external advisory support, and viability funding can help move projects beyond policy intent into procurement and implementation.[29,46]

Overall, the states show different capacities to originate, appraise, govern, and implement partnership models. Some are better positioned for service-line PPPs; others are at project-preparation or market-sounding stages; and medical education PPPs require the highest readiness threshold because they combine asset, financing, regulatory, faculty, and hospital-operation risks.

vi. Key implications emerging from the state-level landscape

Several implications emerge from the state-level review. First, the landscape does not support a uniform approach to health-sector PPPs across states. The main constraint is not simply variation in sector need, but variation in the institutional routes through which states originate, prepare, approve, govern, and monitor private participation. As a result, the practical question is not whether a model exists in principle, but whether there is a

[44] https://health.odisha.gov.in/en/program-schemes/public-private-partnership

[45] https://nhmodisha.gov.in/ppp/

[46] https://health.odisha.gov.in/sites/default/files/2025-07/RFP_Monitoring_Agency_AFH_Final_for%20website.pdf

credible state-level pathway through which it can be taken forward.

Second, central support does not translate into uniform state uptake. Central frameworks, viability support, and model guidance can provide an enabling structure, but they do not by themselves generate a common implementation pathway. Their practical value depends on how far they can be absorbed into existing state institutions, approval processes, fiscal arrangements, and governance systems.

Third, project feasibility is closely tied to institutional fit. States with clearer project-preparation capacity, procurement visibility, administrative ownership, and monitoring arrangements are better placed to convert policy intent into implementable projects. Where these elements are weaker or less visible, policy support alone is unlikely to be sufficient.

Fourth, the state review shows that private participation is entering health systems through multiple forms, not only classical concession-style PPPs. These include service-line contracts, purchaser-provider networks, facility-management arrangements, investment-promotion frameworks, market-sounding exercises, and externally supported transaction pathways. This widens the frame within which state readiness needs to be assessed.

Overall, the state-level landscape suggests that the feasibility of health-sector partnerships depends less on the availability of a single replicable PPP model than on the interaction between pathway design, institutional capacity, financial credibility, and implementation conditions. For private partners, what matters is whether the pathway is commercially workable, procedurally credible, and capable of being managed over time.

Private Sector Perspectives

i. Overview of private sector perspectives

Private-sector perspectives matter because the presence of a PPP framework does not

establish commercial or operational viability. Private participation depends on whether the opportunity is bankable, risks are allocated credibly, payment is visible, and the public counterparty can manage the arrangement predictably.

This is especially important in health, where partnerships operate within fiscally constrained, administratively uneven, and politically sensitive systems. Private actors evaluate not only whether demand exists, but also whether reimbursement is timely, tariffs are viable, approvals are predictable, facility interfaces are manageable, and obligations are commercially realistic. The state remains central because it defines the service package, payment route, contract structure, public-patient obligations, and monitoring environment.

ii. Recurring commercial, contractual, and operational constraints

A first recurring constraint concerns payment security and revenue visibility. In health-sector PPPs, the private concern is not simply whether there is social need or service demand, but whether the revenue stream is governed by clear payment rules, manageable claims processes, and a realistic expectation of timely settlement. This concern is visible in India's purchaser-provider models. In Andhra Pradesh, for example, recent reports indicate that private hospitals empaneled under the Dr. NTR Vaidya Seva / Aarogyasri scheme have repeatedly raised concerns over pending dues, with reported outstanding amounts ranging from ₹2,700 crore to ₹3,000 crore in 2025–26 and later government efforts to clear part of the backlog through releases and a tri-party bill-discounting mechanism.[47,48] While these reports relate to a purchaser-provider insurance model rather than a concession-style PPP, they are directly relevant to private-sector confidence:

[47] https://timesofindia.indiatimes.com/city/vijayawada/private-hospitals-in-ap-stage-dharna-demand-rs-2700-crore-aarogyasri-dues/articleshow/124769222.cms

[48] https://timesofindia.indiatimes.com/city/vijayawada/asha-announces-suspension-of-free-healthcare-services-over-pending-dues-of-rs-3000-cr/articleshow/129933082.cms

delayed or uncertain settlement can affect provider participation even where demand and scheme coverage are substantial. NHSRC similarly notes that delayed fund transfers in health PPPs can arise from budgetary and administrative processes, and treats payment mechanisms as a central determinant of PPP performance.[47]

A second recurring constraint concerns demand and utilization risk. Health projects may appear attractive because they operate in settings of high unmet need, but unmet need does not automatically translate into bankable service volume. NHSRC's review of diagnostics PPPs identifies a specific India-relevant problem: outsourced diagnostic services can become commercially fragile where public facilities continue to perform the same tests in-house rather than routing them consistently to the outsourced provider.[47] The evaluation of Andhra Pradesh's NTR Vaidya Pariksha diagnostics scheme illustrates the same issue at the level of utilization. After rollout, uptake increased sharply: the percentage of patients tested rose from 9.9% in March 2016 to 13.7% in July 2016, and the number of patients tested increased by 72% over the same period. However, utilization later declined after the state introduced measures to rationalize use. Comparing March–June 2016 with March–June 2017, total facility patient volume fell by only 1%, while the number of patients tested under the scheme fell by 13% and the number of tests conducted fell by 17%.[49] This indicates that utilization in outsourced diagnostics depends not only on underlying demand, but also on prescribing behavior, usage controls, facility workflows, and patient routing. For private operators, the issue is whether the contract and public-facility workflow protect a predictable flow of cases after award, since that volume directly affects the financial assumptions underpinning the model.

A third constraint concerns operating-interface and input-side risk. Indian PPP guidance

[49] https://rthresources.in/wp-content/uploads/2025/03/04_Andhra_Pradesh_Evaluation_Free_Diagnostics_Scheme.pdf

often assigns risks to the party best able to manage them, but health PPPs frequently depend on inputs shared with or controlled by public facilities. The private operator may manage equipment, staff, and processes, while patient flow, referral discipline, sample transport, electricity, space, IT integration, and public staff cooperation remain partly outside its control.

Operating risk is therefore not limited to formal risk allocation in the contract. It depends on whether facility workflows, logistics, IT systems, escalation routes, public staff cooperation, and payment processes allow the private partner to deliver. Contracts can assign responsibility for service quality, but if patient routing, sample movement, or payment approval fails, performance will suffer even if the contract is formally well structured.

A fourth constraint concerns contract enforceability, monitoring, and corrective action. Health PPPs require continuous contract management because payment, service standards, reporting, penalties, and performance adjustments have to remain workable after award. The issue is not only whether these provisions are included in the agreement, but whether the public counterparty has the systems, staffing, and authority to monitor performance and enforce standards over time. Evidence from the Bihar radiology PPP illustrates this problem. A study of outsourced X-ray services found a large gap in performance monitoring: although the contract required X-ray centers to maintain and submit daily records, several centers were not submitting monthly reports regularly, and there was no systematic review of whether contractual obligations were being met. The same study noted weak monitoring against service standards and limited evidence that penalties or corrective actions were being applied consistently. This shows that contract risk in health PPPs often arises after award, when service delivery depends on routine reporting, inspection, payment discipline, and enforcement capacity, rather than on the

contract document alone.[50]

Continuity of management and administrative control is another issue. Health service delivery depends on clinical protocols, staff deployment, supervision, referral management, procurement, and facility routines. Partnerships are harder to sustain where the private actor is expected to improve performance but lacks authority over key operational inputs, faces turnover in public counterparts, or operates in facilities where accountability remains fragmented.

A sixth constraint concerns regulatory and approval uncertainty, particularly in medical and nursing education PPPs. This differs from ordinary contract risk because education-linked PPPs depend on approvals and compliance requirements that sit partly outside the concession agreement itself. For medical college PPPs, the private partner must align project obligations with National Medical Commission requirements on teaching-hospital infrastructure, faculty, bed strength, clinical material, OPD/IPD load, and academic arrangements. For nursing education PPPs, feasibility may depend on state government essentiality or no-objection certification, State Nursing Council processes, affiliating university requirements, Indian Nursing Council inspection, faculty norms, hostel and infrastructure requirements, and adequate clinical training sites. These requirements affect project timing, cost, bidder appetite, and bankability because approval delays or post-award compliance gaps can prevent the project from generating the revenue or service outputs assumed in the financial model. For private participants, the key issue is whether approvals, compliance responsibilities, and the consequences of regulatory delay are mapped before tender and allocated clearly in the project structure.[39,45,51]

[50] https://phrsindia.org/wp-content/uploads/2022/11/Bihar_Radiology_PPPStudyReport.pdf

[51] https://indiannursingcouncil.org/nursing-programs-guidelines

iii. Economic and institutional conditions shaping participation

Secondary evidence suggests that private participation is more likely where the economic logic is visible from the outset. In health PPPs, this means credible demand, clear eligibility rules, adequate tariffs or payments, manageable capex and opex, and realistic revenue assumptions.

Andhra Pradesh's Aarogyasri delays illustrate how weak payment reliability can affect participation, while diagnostics and dialysis models are more attractive where volumes are predictable and service specifications are bounded.

Project-preparation quality is another important condition. DEA's appraisal guidance treats project identification, feasibility studies, risk allocation, value-for-money assessment, affordability, and procurement documents as central to PPP quality. In health, this matters because demand, payer mix, infrastructure condition, regulatory requirements, and staffing availability are often uncertain. Underprepared projects are less likely to receive credible bids or achieve durable implementation. Public-counterparty credibility is equally important. Private participants need confidence that the public authority can administer payments, enforce rules consistently, resolve disputes, and maintain predictable approvals. Where payment delays, unclear responsibilities, weak monitoring, or frequent changes in officials are common, bidders are likely to price in risk, limit participation, or avoid the project altogether.

Fit between project complexity and administrative capacity is another condition. The more integrated the PPP structure, the greater the burden on the public side to define scope, allocate risk, monitor performance, and manage disputes. Service-line PPPs are

easier to specify than hospital O&M or medical education PPPs, which combine clinical operations, infrastructure, education regulation, public-service obligations, and long-term payments.

iv. Bounded service models versus integrated hospital-linked PPPs

A major finding from the reviewed evidence is that bounded service models are generally easier to operationalize than highly integrated hospital-linked PPPs. Discrete arrangements such as diagnostics, dialysis, and selected service-line contracts have clearer service boundaries, narrower operating interfaces, and more specific payment and performance parameters. They still require monitoring, payment discipline, and quality assurance, but the operational problem is more contained: the state must define the service, route patients or samples, administer payments, and enforce standards.

Integrated hospital-linked PPPs are more demanding. Hospital management, super-specialty hospital operation, district hospital upgradation, and medical education PPPs involve broader operational control, specialist staffing, regulatory approvals, public-service obligations, and long contract periods. They require stronger preparation, clearer payment support, tighter monitoring, and a more capable public authority than narrower service contracts.

The Indian evidence is consistent with this distinction. Diagnostics and dialysis have more visible adoption because they are service-line models with bounded scope and measurable outputs. Hospital-linked and teaching-hospital PPPs remain more limited because they require asset readiness, regulatory compliance, specialist staffing, public-service obligations, and more complex payment arrangements.

International and Indian guidance point in the same direction. IFC's diagnostics PPP work highlights scale, standardized operating models, digital integration, and payment design. EPEC and World Bank PPP guidance emphasize affordability, risk allocation, and

contract management. Together, they suggest that private participation is most credible where service scope is bounded, payment is reliable, operating interfaces are manageable, and monitoring systems are strong.

Overall, the reviewed evidence suggests that private participation is most credible where the PPP structure is proportionate to the public authority's capacity to manage payment, utilization, operational interfaces, regulatory compliance, and post-award contract administration.

Discussion

Cross-Cutting Barriers, Enablers, Best Practices, and Emerging Lessons

Overview of cross-cutting findings

This chapter consolidates the central, state, and private-sector findings into a smaller set of implementation lessons for health-sector PPP design. It identifies the conditions that repeatedly determine whether a PPP pathway is likely to move beyond policy support, market sounding, or project preparation into sustained implementation.

Three findings organize the synthesis. First, feasibility depends on fit between PPP form and implementation pathway: service-line contracts, purchaser-provider arrangements, hospital O&M models, and medical education PPPs require different institutional and payment conditions. Second, state-level readiness matters as much as central policy availability. Third, private-sector participation depends on bankability, payment security, manageable operating interfaces, and credible public counterparties.

This synthesis therefore focuses on the barriers and enablers that cut across PPP forms, rather than on whether PPPs are desirable in principle. The relevant distinction is between arrangements that are institutionally legible, financially credible, and operationally

governable, and those that remain attractive as policy concepts but difficult to carry through implementation.

Table 6. Cross-cutting implementation barriers by PPP form and state evidence

Barrier	Most visible in	Evidence anchor	Implementation implication
Payment security and revenue visibility	Purchaser-provider systems; recurring service-line PPPs	Andhra Pradesh pending Aarogyasri / Dr. NTR Vaidya Seva dues; Telangana dialysis session-payment model	Weak payment credibility increases working-capital risk and reduces provider confidence
Demand and utilization risk	Diagnostics, dialysis, and other volume-dependent services	Andhra Pradesh NTR Vaidya Pariksha utilization rose after rollout but later declined after usage rationalization	High unmet need does not automatically translate into bankable service volume
Project preparation and transaction-readiness gaps	Hospital-linked, teaching-hospital, and medical-education PPPs	Karnataka prefeasibility studies show stronger preparation; Maharashtra REoIs show market testing but limited public evidence of progression to RFP or financial close	Weak preparation makes projects difficult to price, finance, and bid for
Regulatory and approval complexity	Medical and nursing education PPPs	NMC requirements for teaching hospitals; INC and State Nursing Council requirements for nursing colleges	Approval uncertainty affects timing, cost, bidder appetite, and bankability
Operating-interface risk	Diagnostics, dialysis, facility-based services	Andhra Pradesh diagnostics evaluation on phlebotomist deployment, sample collection, data validation; Assam CT/tele-radiology turnaround-time specifications	Performance depends on facility workflows, referral discipline, IT systems, and public-facility coordination
Monitoring and corrective-action weakness	Outsourced diagnostics and service-line contracts	Bihar radiology PPP reporting and enforcement gaps	Contracts underperform where reporting, inspection, penalties, and corrective action are not actively managed
Management-control and workforce constraints	Facility-management PPPs in difficult locations	Meghalaya difficult PHC/CHC PPP documentation on staffing constraints and managerial authority	Operators need enough control over staffing, resources, and fallback arrangements to sustain services

Coordination and institutional fragmentation	Integrated hospital-linked, medical education, and multi-actor PPPs	Central functions split across NITI, DEA, MoHFW/NHM and regulators; state routes vary across trusts, PPP cells, investment committees, and departments	Fragmented accountability slows approvals, payment decisions, monitoring, and implementation

The practical value of this mapping is to identify which due-diligence questions need to be prioritized for different PPP forms before they are advanced toward procurement or scale-up.

Cross-cutting enablers and design features

Implementation appears more credible where the state has not only policy interest, but also the institutional and operational assets needed to carry a PPP through preparation, procurement, payment, monitoring, and post-award management. **Table 12** summarizes the principal enablers identified in the review

Table 7. Cross-cutting enablers for health-sector PPP implementation

Enabler	**Why it matters**	**Evidence from the review**	**Design implication**
Dedicated PPP cell or equivalent institutional route	Provides a formal route for appraisal, coordination, financial review, and transaction processing	Telangana has a Finance Department PPP Cell; Karnataka has a PPP Cell within the Infrastructure Development Department; Odisha has a PPP Cell at the Mission Directorate and a Regional Resource Centre supporting PPP activities	States without a clear PPP route may need upstream institutional support before complex PPPs are taken to market
Health-sector project-preparation capacity	Improves scope definition, feasibility testing, financial modelling, and procurement readiness	Karnataka's prefeasibility reports for diagnostics, MRI, dialysis, and related services show structured project preparation before procurement	Project preparation should precede procurement, especially for hospital-linked or medical-education PPPs
Transaction advisory support	Helps convert policy intent into bankable and tenderable projects	Odisha's Affordable Healthcare Project combined state PPP structures with IFC-supported transaction development and VGF-linked DBFOT hospital projects	External advisory support may be useful where internal state capacity is limited or where projects are complex
Existing purchaser or	Creates a basis for	Andhra Pradesh's Aarogyasri / Dr. NTR Vaidya Seva system and AB-	Health PPPs should be aligned

insurance infrastructure	reimbursement, patient flow, package pricing, and provider-network governance	PMJAY/MJPJAY-linked demand assumptions in Maharashtra illustrate how insurance or purchaser systems can support viability	with existing payment and purchaser platforms where feasible
Prior PPP operating experience	Reduces implementation uncertainty and provides a base of administrative learning	Telangana and Delhi have experience with dialysis PPPs; Assam has diagnostics and dialysis PPPs; Andhra Pradesh has purchaser-provider contracting and free diagnostics experience	States with prior operating experience may be better positioned for scale-up or adjacent service-line PPPs
Bounded service scope	Makes payment, performance monitoring, and operating responsibilities easier to define	Diagnostics, dialysis, and selected service-line PPPs show more visible adoption than integrated hospital-linked or education-linked concessions	Bounded service models may be better suited where contract-management capacity is still developing
Clear operating-interface specifications	Reduces risk around patient routing, sample movement, reporting, turnaround time, data systems, and quality assurance	Assam's CT/tele-radiology model includes defined turnaround times; Andhra Pradesh's diagnostics evaluation shows the importance of phlebotomist deployment, TAT monitoring, and data validation	Contracts should specify workflows, reporting standards, IT integration, and public-side responsibilities, not only private-provider outputs
Explicit regulatory and approvals mapping	Reduces post-award uncertainty in medical and nursing education PPPs	NMC, INC, State Nursing Council, affiliation, clinical training, and teaching-hospital requirements create approval and compliance dependencies	Education-linked PPPs should not proceed to procurement without an approvals map and allocation of compliance responsibility

The enabling conditions identified in the table are most useful because they are observable before a project reaches procurement. They indicate whether a state has the institutional route, preparation capacity, payment platform, advisory support, prior operating experience, and contract-management arrangements needed to convert policy intent into an implementable transaction or service arrangement. Where these conditions are weak or absent, even well-designed models may struggle to progress beyond market sounding

or early-stage project preparation.

Conclusion

Framework for adoption and adaptation in India

Medical education PPPs in India should be designed as integrated teaching-hospital platforms rather than conventional infrastructure transactions. International and domestic experience indicates that implementation depends on aligning hospital readiness, regulatory pathways, faculty structures, financing, and long-term operations before procurement. Adaptation should follow a staged framework reflecting local capacity, health-system maturity, and implementation readiness rather than replication of a single model.

a. Establish Regulatory and Institutional Readiness

The first requirement is a pre-procurement approvals and regulatory pathway. Medical and nursing education PPPs require coordination across NMC/INC, affiliating universities, state governments, finance departments, land-owning authorities, and hospital departments. States should develop approvals maps identifying responsible institutions, timelines, dependencies, and consequences of delay. Regulatory sequencing should be completed before procurement or incorporated into concessions as conditions precedent.

b. Assess Teaching-Hospital Platform Readiness

District hospitals should not be assumed teaching-ready because infrastructure exists. Pre-tender assessments should examine OPD/IPD volumes, bed occupancy, specialty departments, emergency services, diagnostic capability, faculty availability, resident structures, and student facilities from both service-delivery and educational perspectives

to determine whether the platform can sustain long-term compliance.

c. Strengthen Clinical and Faculty Capacity

Clinical material and faculty availability should be core viability determinants, not post-award tasks. Hospitals with limited patient volumes, weak referral systems, or constrained specialist availability may struggle to sustain teaching requirements even after infrastructure upgrades. Project structures should define responsibility for faculty recruitment, retention, supervision, vacancy management, and compliance. The same logic applies to nursing education projects, including clinical instructors, training sites, and hostel requirements.

d. Align Financing with Service Obligations

Financing structures should reflect the full economics of the teaching-hospital platform, not capex alone. VGF and capital grants may reduce upfront costs but do not cover faculty salaries, diagnostics, maintenance, accreditation, or subsidized public services. Payment structures may therefore require annuity support, availability payments, regulated fee arrangements, reimbursement systems, or budgeted service payments.

e. Create Dual Performance and Governance Systems

Medical education PPPs combine healthcare delivery and education and therefore require separate but linked monitoring systems. Hospital oversight should assess service delivery, patient access, quality, emergency care, diagnostics, and referral performance. Education monitoring should track faculty strength, student intake, supervision quality, clinical exposure, skills labs, and regulatory compliance. Indicators can be integrated through common reporting platforms, but governance responsibilities should remain distinct.

f. Match PPP Models to State Readiness

Partnership models should be selected based on implementation capability rather than replicated uniformly. Full medical college PPPs may suit states with viable hospital

platforms, payment support, and contract-management capability. Elsewhere, purchaser-provider arrangements, placement partnerships, or public provision may be lower-risk alternatives. States with limited capacity may require transaction advisory support, hospital-readiness assessments, and market testing before procurement.

Overall, medical education PPPs should be introduced selectively and through phased implementation. Success depends less on infrastructure availability than on credible academic-clinical ecosystems supported by financing, regulatory alignment, and long-term institutional stewardship.

Recommendations

Adopt a differentiated feasibility pathway by PPP type

Health-sector PPPs in India should be designed through a differentiated feasibility pathway that matches each partnership model to the service gap, regulatory requirements, payment structure, and implementation capacity of the state. Diagnostics, dialysis, NCD service PPPs, hospital O&M projects, medical college PPPs, and nursing education PPPs operate under different feasibility conditions and therefore require different preparation thresholds before procurement.

Bounded service-line PPPs, such as diagnostics, dialysis, imaging, and selected NCD services, are more feasible where the service package is clearly specified, utilization is reasonably predictable, outputs can be measured, and payment can be linked to tests, sessions, reports, procedures, or service availability. These models still require disciplined patient routing, equipment uptime, quality assurance, payment timelines, and facility-level coordination. NCD and specialist-service PPPs should be treated as an intermediate category. They may be feasible where there is a clear service gap, specialist availability, credible referral pathways, defined equipment requirements, and a visible payment route.

They are less likely to be workable where demand is uncertain, patient routing is weak, specialist staffing is unrealistic, or the payer mix depends on untested assumptions. Hospital O&M, super-specialty hospital, and medical education PPPs require a higher readiness threshold. These models combine infrastructure, clinical operations, staffing, public-service obligations, payment risk, regulatory compliance, and long-term contract management. They should proceed where the state can demonstrate a viable asset or hospital platform, clear service obligations, credible payment support, regulatory sequencing, and dedicated contract-management capacity.

For medical and nursing education PPPs, the relevant unit of design is not the college infrastructure alone. It is the full teaching-hospital or clinical-training platform, including hospital readiness, clinical material, faculty, affiliation, student intake approval, public-service obligations, and continuing compliance.

Apply minimum readiness thresholds before tender

States should use a minimum readiness screen before moving any health PPP to tender. This is especially important because state-level adoption is uneven: some states have operational service-line PPPs, others have purchaser-provider systems, some have prefeasibility pipelines, and others remain at market-sounding or investment-promotion stage. A common readiness screen would help prevent underprepared projects from moving prematurely to procurement.

Table 8. Minimum readiness requirements by PPP type

PPP type	Minimum readiness conditions before tender	Do not proceed unless
Diagnostics, dialysis, imaging, and other service-line PPPs	Defined service package; facility responsibilities; patient-routing rules; equipment and maintenance obligations; payment per output or session; turnaround-time and quality indicators; MIS reporting	The state can support predictable patient flow, timely payment, equipment uptime monitoring, and quality assurance

NCD and specialist-service PPPs	Demand and referral assessment; specialist availability; equipment and consumables plan; payer-mix analysis; tariff or reimbursement rules; clinical governance arrangements	Patient volumes, referral pathways, staffing, and payment sources are credible enough to support service continuity
Purchaser-provider models	Package rates; empanelment rules; claims process; audit mechanism; fraud-control system; defined payment timelines	The trust, insurer, or public purchaser can administer claims and settle payments predictably
Hospital O&M / super-specialty hospital PPPs	Asset-readiness assessment; service obligations; staffing model; public-patient obligations; payment support; clinical governance; contract-management unit	The state can define the asset, fund public obligations, monitor performance, and manage the contract over time
District hospital-linked medical college PPPs	Teaching-hospital readiness assessment; NMC approvals map; university affiliation route; faculty plan; public-service obligation costing; VGF or payment support; market sounding	The district hospital can credibly become a teaching platform and the state can fund and govern the dual hospital-education obligation
Nursing education PPPs	INC and State Nursing Council approvals map; clinical training-site assessment; faculty and hostel plan; affiliation route; student-intake assumptions; affordability framework	The training platform, approvals route, faculty model, and clinical placement arrangements are sufficiently defined

Where a state does not meet the minimum readiness conditions, the next step should be project preparation, not procurement.

Use annuity or availability-style support where public obligations justify it

Annuity or availability-style structures can be useful in health-sector PPPs where the public authority expects the private partner to maintain public-service capacity but where user fees, student fees, or private-patient revenues are insufficient or uncertain. The relevant design principle is to separate part of the capital-recovery and service-availability risk from utilization risk, while linking payments to clearly defined performance obligations.

For hospital O&M or super-specialty PPPs, an annuity or availability-style model could combine three payment layers. The first would be milestone-linked capital support for construction, upgradation, or equipment installation. The second would be fixed

availability payments after commissioning, tied to maintaining defined service capacity, equipment uptime, staffing, public-patient access, and quality standards. The third would be variable payments linked to verified outputs, such as procedures, diagnostics, inpatient care, NCD services, or scheme-covered patients. For district hospital-linked medical college PPPs, VGF or capital support could cover part of hospital augmentation and teaching infrastructure. Availability payments could be linked to maintaining the teaching-hospital platform, including required beds, clinical departments, diagnostics, faculty and resident structures, student facilities, public-service obligations, and continuing NMC compliance. Variable payments could be linked to public-patient services, scheme reimbursements, or other measurable service outputs.

Such a structure should be used selectively. It is most appropriate where the project has a clear public-service rationale, user fees, student fees, or private-patient revenues are insufficient to sustain required obligations, and the state can make predictable long-term payments linked to measurable performance. Availability or annuity payments should be tied to service capacity, public-patient obligations, and compliance standards through clear monitoring arrangements.

Concluding recommendation

Health-sector PPPs in India should be pursued selectively and under clearly defined readiness conditions. Medical college, hospital, NCD, and service-line PPPs are all potentially relevant, but require different readiness thresholds. The central shift should be from model replication to pathway discipline: define the service problem, test state readiness, prepare the project, secure the payment architecture, sequence regulatory approvals, and resource contract management before procurement. Where those conditions are present, PPPs can support capacity expansion; where absent, direct public provision, purchaser-provider arrangements, clinical-placement partnerships, or staged

project preparation may be more appropriate.

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