

# India's Chiranjeevi Yojana ("Eternal Life") Scheme

## *Secondary Case Study*

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June 2021

## Context

Throughout the 1990s, India struggled with poor maternal and child health indicators. Vulnerable and socially disadvantaged women, including the poor and those from tribal castes, often bore the highest burden of maternal mortality. States struggled with low institutional delivery rates and a lack of public health sector capacity to serve below-poverty-line and tribal women in rural areas, who were both less likely to be able to access emergency obstetric care and more likely to require it (de Costa et al. 2014).

Given this context, the central and several state governments in India began to experiment with programs to encourage pregnant women to deliver their babies in health facilities, rather than at home (Mohanani et al. 2016). In 2005, India adopted an institutional delivery strategy for maternal care under its National Rural Health Mission. Throughout much of the country, this strategy was implemented through the Janani Suraksha Yojana (JSY) program, which leverages a conditional cash transfer to incentivize women to deliver in facilities and is run largely in the public health sector (de Costa et al. 2014).

Gujarat—a large province in western India—sought to tackle poor maternal health outcomes in multiple ways. When investments in health infrastructure did not yield results, the state government sought other approaches for state health system reform, including interventions to strengthen the delivery of maternal care in the public sector. Notably, the state also utilized public-private engagement (PPE) to achieve its maternal health goals, beginning with Chiranjeevi Yojana as a flagship PPE that not only informed the development of additional PPEs in Gujarat but also influenced the implementation of other PPEs across India (SMHS key informant interview 2020).

Chiranjeevi Yojana was born out of an acute shortage of trained obstetricians in Gujarat’s public health sector. In 2008, for example, fewer than half of all public first-referral units (responsible for providing emergency obstetric care services) had a skilled obstetrician; worse, skilled obstetricians worked in only six public community health care centers across the entire state. This shortage of obstetricians in the public sector disproportionately impacted poor and tribal women, who most frequently utilized free services in public facilities (de Costa et al. 2014).

At the same time, however, the state had a vibrant private health sector where the majority of qualified obstetricians practiced (de Costa et al. 2014; Mohanani et al. 2016; SMHS key informant interviews 2020). In 2006, Gujarat leveraged this context by launching Chiranjeevi Yojana, or the “Eternal Life” scheme. Chiranjeevi Yojana is a public-private partnership designed to harness the resources and skills in the private sector to provide free obstetric care services to poor and tribal women, especially in rural areas, with the goal of increasing institutional delivery rates and improving maternal and neonatal health outcomes (de Costa et al. 2014; Mohanani et al. 2016).

This case study explores the implementation and results of Chiranjeevi Yojana, including whether and how it achieved its intended outcomes and the factors that may have helped or hindered the success of this PPE. The remainder of the case study is organized into the following sections: Methods; Approach; Results; Key Success Factors; and Discussion.

# Methods

This case study is one of six developed for the Strengthening Mixed Health Systems (SMHS) project that presents analysis from existing evaluations of public-private engagements for health and new interviews and review of the data. The secondary case data collection and analysis for all six cases uses both existing research and supplemental primary data collection to answer the questions: (1) is there evidence that this public private engagement (PPE) is associated with improved outcomes, and (2) what factors are associated with helping and/or hindering the success of the engagement. After identifying the PPEs for these case studies, we undertook a structured search of the literature to compile existing peer-reviewed and grey literature about the PPE that would help us to answer the above questions. In addition, we attempted to interview researchers of PPE evaluations and PPE implementers/partners, when they could be identified, to collect supplementary data on the two questions. The resulting documents and transcripts were then coded and analyzed using a set of closed codes centering on four themes: PPE context and background, theory of change, process evaluation results (activities, outputs, and outcomes), and helping/hindering factors. The qualitative analysis of the process evaluation results and factors coding is presented in the Results section of the case study. For the factor coding specifically, we utilized a set of codes designed based on the PPE Factor Ecosystem that was developed as part of the SMHS project; a description of the ten factors is included in Box 1.

## ***Box 1. PPE Factor Ecosystem***

The factors presented in the Results were developed as part of a systematic evidence review conducted by the research team. This review surfaced common factors in the published literature that were cited as playing a role in either helping or hurting the success of PPEs, resulting in the development of a new ecosystem framework. The factors in the ecosystem include Environmental, Structural, and Engagement factors, specifically:

- Environmental – shaping the environment in which a PPE operates (including political, financial, legal and organizational).
- Structural – defining the architecture of a PPE (including engagement models, formality, and resources for engagement).
- Will to engage - the intention, interest, or commitment of individual PPE actor and their institutions to enter and sustain the engagement.
- Trust - the belief that the opposite sector is acting in good faith and has the goodwill and integrity to effectively participate in an engagement.
- Mutual understanding – the understanding of the opposite sector’s capacities, motivations, resources, and role in the health system.
- Communication – the process and approach used by sector partners to exchange information and participate in dialogue.
- Engagement rationale – the basis of and motivation for the engagement.
- Technical and managerial capacities – the capacities of PPE actors related to the technical area of PPE focus as well as project management and joint leadership.
- Accountability – the process and approach used by sector partners to hold one another accountable for carrying out their roles and responsibilities in the PPE.
- Other – while the above types represent factors that emerged from the literature, we allowed for open coding of factors that arose in evaluations, documentation or interviews of the focus PPE that did not otherwise fit into the above categories.

For this case study on Chiranjeevi Yojana, a total of 15 articles were identified, reviewed, and coded. Interviews were conducted with four key informants using structured interview protocols, including three researchers and one implementer from the public sector. Transcripts from these interviews were coded using the same set of closed codes centered around key themes. While these evaluations and interviews provide important insight into the question of helping and hindering factors, it is important to note the limitation that existing studies may not have sought to explicitly measure factors; as such, those identified through the coding of existing evaluations may not provide a fully representative view of the factors that influenced the effectiveness or lack thereof of the engagement.

Further limitations of this case study relate to the large evidence base and range of perspectives on the success of Chiranjeevi Yojana. First, the primary data collection for this case study was based on availability of respondents and is therefore missing several key perspectives, including implementers from the private sector and additional researcher perspectives. Second, given that Chiranjeevi Yojana is a well-known health PPE, there exist many published studies and evaluations of the scheme that used a variety of methodological approaches (and have been subjected to various methodological critiques) and offer different and sometimes contradictory findings about the scheme's success. As such, this case study seeks to objectively summarize and build upon existing evidence sources and perspectives without drawing overarching conclusions.

## Approach

### Basic information – Chiranjeevi Yojana

- Geographic focus: Gujarat State (India)
- Timing: launched in 2006
- Primary partners include: Government of Gujarat State (state and district levels); private obstetricians

The Chiranjeevi Yojana program has a clear underlying theory of change: by empaneling private facilities to provide free obstetric care services to below-poverty-line and tribal women, the program would decrease out-of-pocket expenditure for delivery services and increase access to quality obstetric services through improvement in institutional delivery rates. Ultimately, if effective, Chiranjeevi Yojana would lead to improvement in maternal and child health outcomes (Mohanani, et al. 2016). In addition to increased institutional delivery rates and reduced out-of-pocket expenditure, some researchers have taken a more nuanced view that Chiranjeevi Yojana's goal, beyond increased institutional

delivery rates, is to provide poor and tribal women in Gujarat with more options for accessing delivery care, especially comprehensive emergency obstetric care. This is demonstrated through the following quote: *"I think the main purpose was to increase access and give more options to poor women so they don't feel that the only option for free delivery care is going to [the] public sector where there may not be availability of specialists and services, and that was the main purpose and of course, access to emergency obstetric care"* (SMHS key informant interview 2020).

In other words, Chiranjeevi Yojana is a demand-side financing program through which the state recruits, contracts, and pays empaneled private obstetricians at a defined rate to provide free delivery services for poor and tribal women (de Costa et al. 2014; Temin 2016). While there is no formal accreditation process, to enroll in Chiranjeevi Yojana, a private facility must meet basic eligibility criteria, including: facility ownership by a qualified obstetrician; at least 15 beds; labor and operating rooms; and access to blood for transfusions, anesthesiologists, and emergency surgery (de Costa et al. 2014; Mohanani et al. 2013). Qualified private providers

would then enter into a contract with the district health department (de Costa et al. 2014).

Community leaders, local obstetric and gynecological societies, and district health teams are responsible for recruiting eligible obstetricians to the scheme, and community health workers are responsible for informing pregnant women of the Chiranjeevi Yojana benefits. At participating private facilities, pregnant women must show proof of their eligibility in order to receive free services (Temin 2016). As proof of eligibility, the program leverages official documentation issued by the Government of India to identify and confirm the status of families that are economically disadvantaged or members of scheduled castes or tribes (Yasobant et al. 2016).

The state government then pays participating private hospitals a defined reimbursement rate per delivery, regardless of whether the delivery is normal or Caesarian section, the level of experience of the provider, or the location of the facility (de Costa et al. 2014). The reimbursement covers only the costs of delivery and does not include any ante- or postnatal care; it is also intended to cover at some of the women's travel and food costs. Private providers are allowed to offer additional services to beneficiaries for a separate fee. Participating obstetricians could claim reimbursements from the District Program Management Unit for every 100 deliveries (Mohanani et al. 2013; Temin 2016).

The reimbursement rate was calculated by the Society for Education Welfare and Action—Rural (SEWA Rural), in consultation with key stakeholders such as local chapters of the Federation of Obstetric and Gynecological Societies of India (FOGSI) (Temin 2016). The rate was based on average expenses for 100 routine and complicated deliveries, assuming 85 normal deliveries and 15 complicated deliveries, including 7 Caesarian sections. The pricing scheme therefore included an embedded disincentive for excess Caesarian sections among participating providers (de Costa et al. 2014). When the program first launched, the reimbursement rate was 1,600 INR (approximately 37 USD) per delivery (Temin 2016); this amount increased in subsequent years, reaching 4,000 INR (approximately 67 USD) per delivery by 2016 (Yasobant et al. 2016).

## Results

When launched in January 2006, the Chiranjeevi Yojana program was first piloted in five disadvantaged northern districts of Gujarat State in January 2006; the success of this pilot encouraged the state government to expand the scheme to the rest of the state in early 2007 (de Costa et al. 2014; Mohanani et al. 2013; SMHS key informant interviews 2020). The program's pilot was supported by civil society organizations and the German development organization Deutsche Gesellschaft fuer internationale Zusammenarbeit (GIZ) (Temin 2016).

**Outputs.** Given its structure, there were two key outputs Chiranjeevi Yojana was designed to produce: first, increasing the number of empaneled private facilities providing free obstetric care services to poor and tribal women; and second, increasing the number of deliveries from those women taking place under the scheme.

***Chiranjeevi Yojana covered a large number of deliveries, though it did not exceed coverage of one-third of its target population and demonstrated subnational variation.*** By 2010, Chiranjeevi Yojana had enrolled more than 800 private hospitals and covered more than 400,000 deliveries (Mohanani et al. 2013). By 2012, that figure had increased to more than 800,000 deliveries. In total, the state government had paid out 32 million USD to participating private hospitals by 2012. (Temin 2016). While this is a large number of deliveries, it is

important to note that during this time Chiranjeevi Yojana's coverage did not exceed more than a third of all eligible deliveries among its target population, indicating low uptake among below-poverty-line (BPL) and tribal women (de Costa et al. 2014). Considering that approximately 570,625 births occurred annually among eligible women, and only about 155,721 of these were covered by Chiranjeevi Yojana, this means that approximately two-thirds of poor and tribal women did not utilize free delivery services under the scheme (Yasobant and Vora 2016). There were also large variations in the scheme's coverage across districts in Gujarat State: for example, the proportion of deliveries covered by Chiranjeevi Yojana ranged from 3.9 percent in The Dangs to 32.8 percent in Panchmahals, both socioeconomically disadvantaged tribal districts (de Costa et al. 2015). Further, the scheme struggled with sustaining the involvement of private providers. Studies detected high rates of attrition from the scheme, with 50% of participating private providers withdrawing between 2009-2014 (Ganguly et al. 2014.) Much of the provider attrition, especially between 2008 and 2010, was from highly urbanized districts (de Costa et al. 2014). It is hypothesized that low reimbursement rates among other issues caused much of this attrition (see "Key Success Factors" section).

**Outcomes.** In 2009, after observing the low uptake of Chiranjeevi Yojana by the target population and private providers, the Gujarat government commissioned an independent evaluation of the scheme from the Collaboration for Health System Improvement and Impact Evaluation in India (COHESIVE-India), led by researchers Mohanan et al. using a difference-in-differences analysis. The findings of this study contradicted past evaluations, which did not account for self-selection by women or background increases in institutional delivery rate and had reported large positive impacts of the program (Mohanan et al. 2016).

**An independent evaluation commissioned by the state found null outcomes associated with the scheme.** On Chiranjeevi Yojana's outcomes—including institutional delivery rates, out-of-pocket expenditures, and maternal and child health outcomes—Mohanan et al. found that the scheme had a null effect, though many women in Gujarat did shift to institutional delivery during the scheme's implementation period. It is important to note that institutional delivery rates were already rapidly increasing in Gujarat State prior to and during Chiranjeevi Yojana's implementation; during that decade, institutional delivery rates across the state more than doubled, from 40.7 percent in 2001 to 89.3 percent in 2010. The proportion of private sector deliveries similarly rose, increasing from 17 percent of all deliveries in 2001 to 60.3 percent in 2010 and indicating that much of the increase in institutional delivery was attributable to increased utilization of the private sector (de Costa et al. 2014; de Costa et al. 2015). However, Chiranjeevi Yojana did not significantly contribute to this shift, either for women in the target population or the broader population (Mohanan et al. 2016).

Regarding the goal of reducing out-of-pocket expenditure for delivery services, Mohanan et al.'s study found that implementation of the scheme had no significant relationship either with the probability that households reported any spending related to delivery services or with mean hospital spending on delivery services, including among the households of women who delivered in private hospitals. Over five years of Chiranjeevi Yojana's implementation, the researchers found that out-of-pocket expenditures for delivery services remained largely unchanged. Further, the study also found null effects on maternal and child health indicators, including the incidence of birth-related maternal complications, use of neonatal intensive care, or the use of antenatal and postnatal services. Here, it is worth noting that the evaluation assessed outcomes for all pregnant women across Gujarat State, rather than the scheme's target population, which could have influenced the study's conclusions (Temin 2016).

While Mohanan et al.'s evaluation provides rigorous evidence on the scheme, Chiranjeevi Yojana has been extensively studied by other researchers as a flagship public-private partnership for Gujarat State and for India, and there exists a wide body of additional evidence related to the scheme. In some cases, other studies have reached similar conclusions as Mohanan et al., and in others, researcher have come to supplementary and sometimes contradictory conclusions about the scheme's performance.

***Chiranjeevi Yojana may have had differential impacts on institutional delivery rates of population segments.*** Supporting Mohanan et al.'s findings, a 2014 evaluation used national family health survey data for Gujarat to compare the slopes of Gujarat's increasing institutional delivery rate pre- and post-Chiranjeevi Yojana implementation and found that the program had no statistically significant influence on the rate of increase of private institutional deliveries (de Costa et al. 2014).

Other evidence presents supplementary findings to Mohanan et al. including potential differential impacts on different population segments. A 2015 study found that receipt of Chiranjeevi Yojana or JSY significantly predicted institutional delivery among poor rural women in Gujarat, with scheme beneficiaries having four times higher odds of institutional delivery than non-participants (Vora et al. 2015). District Level Household and Facility Survey data from 2004-2006 showed a pre-program institutional delivery "baseline" of approximately one-third coverage of the target population; while Chiranjeevi Yojana similarly covered approximately one-third of deliveries for poor and tribal women, it is possible that the scheme shifted some women from home delivery or from higher-cost private deliveries, both of which could be considered a positive outcome (de Costa et al. 2014).

***Chiranjeevi Yojana may have reduced, but did not eliminate, out-of-pocket expenses for private institutional deliveries for BPL households.*** One study showed that Chiranjeevi Yojana helped to save approximately 75 USD per delivery among its beneficiaries, compared to those who delivered in non-participating private facilities and paid fully out-of-pocket (Yasobant et al. 2016). However, there are several important caveats that must be noted. The evidence shows that while beneficiaries experienced subsidized private delivery costs, they did not experience a completely free delivery as originally envisioned by the program: only about 24 percent of beneficiaries received a completely cashless delivery at participating facilities (Yasobant et al. 2016). Another study found that women who utilized Chiranjeevi Yojana for private sector delivery incurred significantly higher costs compared to those who delivered in a government facility; the same study found that of the one-third of eligible women who delivered in a participating facility, only half received subsidized services (Sidney et al. 2016).

***Some researchers found that Chiranjeevi Yojana may have positively contributed to other outcomes, including geographic availability of Caesarian section and other emergency obstetric services.*** In addition, as mentioned previously, some researchers considered improved geographic availability of comprehensive emergency obstetric care (CEmOC) to be a key outcome of the program. A study comprised of spatial and temporal analyses in three study districts found that prior to Chiranjeevi Yojana's implementation in 2006, only public sector facilities provided free CEmOC services to poor rural women in those areas. After the implementation of Chiranjeevi Yojana, the number of facilities providing free (noting the caveats in the above paragraph) CEmOC services in those areas increased significantly between 2006 and 2012, suggesting that Chiranjeevi Yojana was successful in increasing the geographic availability of CEmOC services for its target population (Vora et al. 2015). However, this increased availability remained compromised due to poor service quality and the clustering of private facilities in towns, limiting impact on more remote areas (Vora et al. 2015; Iyer et al. 2016).

Notably, Chiranjeevi Yojana did coincide with an increase in the Caesarian section rate for its target population. According to District Level Household and Facility Survey data, only 2 percent of women in the lowest two wealth quintiles reported delivery by Caesarian section prior to the implementation of Chiranjeevi Yojana. After the program's launch between 2006 and 2010, this figure increased to 6 percent of deliveries covered by the scheme, likely indicating a shift to institutional delivery where EmOC is available at lower cost (de Costa et al. 2015). Given the scheme's embedded disincentive for Caesarian sections, however, it is possible that not all vulnerable women who required a Caesarian section received one under the scheme (Yasobant et al. 2016; Salazar et al. 2019; Mohanan et al. 2013; de Costa et al. 2014).

**Limitations of the existing evidence.** It is important to note that quality of care was not explicitly assessed in any evaluation of the Chiranjeevi Yojana program. One community-based study found that when free delivery care was compared between the public and private sector, the private sector was perceived by the target population to have better quality of care for indicators such as mothers being allowed to eat or change positions during labor, weighing of the baby, and counseling on postnatal care. Basic infrastructure was also perceived to be better in the private sector than in public sector, a finding consistent with district-level household and facility-based survey findings that the public sector suffers from a lack of human resources and basic infrastructure (Vora et al. 2018). While this finding seems promising, it is limited to quality of care as perceived by the target population; the technical quality of care delivered by private facilities participating in Chiranjeevi Yojana has not been rigorously assessed.

As described in this section, there is a wide body of evidence on the impact of Chiranjeevi Yojana with two differing perspectives, the first being that Chiranjeevi Yojana was not successful in achieving its intended outcomes of increased institutional delivery rates, reduced out-of-pocket expenditures, and improved maternal and child health outcomes. Others take the view that Chiranjeevi Yojana was successful in increasing choice for poor and tribal women around where they accessed delivery and emergency obstetric care services, while avoiding debilitating loads of medical debt (Sidney et al. 2016). There is therefore mixed evidence around the contribution of Chiranjeevi Yojana to improved institutional delivery rates among poor and tribal women, and there is no existing evidence on whether the program directly improved maternal and neonatal health outcomes in Gujarat State.

## Key Success Factors

The available evidence highlights a number of factors that constitute areas for improvement for Chiranjeevi Yojana and that may have hindered its success, in addition to those that may have helped the scheme's effectiveness. These included factors related to the scheme's political context; the structure of the scheme; technical and managerial capacities of the public sector and participating private providers; trust between the sectors; and the scheme's intended beneficiaries. While some factor types were hindering—such as those related to the scheme's structure, mistrust between sectors, and uptake by intended beneficiaries—others were more dynamic and either helped or hindered the scheme at different points over the course of its implementation.

**Political context (environmental factors).** The political context in Gujarat was highly favorable to the Chiranjeevi Yojana scheme, which substantially benefitted from nearly unprecedented political support especially at its inception and in its early years of implementation. When the program was launched, Gujarat was a progressive state and open to public-private engagement, given its experiences with such partnerships in other sectors including infrastructure and energy; in the health sector, the government already had a culture of establishing memoranda of understanding (MOUs) with hospitals run by non-governmental organizations. A focus on achieving the Millennium Development Goals and on maternal and infant health issues, including during annual plan review meetings, further helped to align a recognized need for maternal health intervention with support for the scheme (SMHS key information interview 2020).

This support helped to facilitate the availability of central-level funds for the scheme from the National Rural Health Mission, which launched in 2005-6. High-level political support from the outset of the scheme—particularly from Gujarat's health commissioner—was instrumental in its



launch and sustainability. As the key political champion for the scheme, the health commissioner was able to liaise with public providers who initially opposed private sector involvement and eventually gain their support for the scheme. Further, this political support helped to ensure the program's survival and adaptation when null outcomes were reported through the COHESIVE-India evaluation (SMHS key informant interviews 2020).

However, it appears that this high level of political support for the scheme was not sustained in the long term. Over time, criticisms of the scheme arose that the state government was seeking to privatize health care and delivery services by directly paying private providers, raising concerns about a lack of focus on public sector improvement and questions of sustainability. Ultimately, these criticisms resulted in the funding for Chiranjeevi Yojana shifting from central to state levels, introducing new structural and operational challenges and complexities. Further, after 5-6 years of the scheme's implementation, Gujarat's health commissioner transferred positions from the state to central level; with the introduction of a new health commissioner, attention and prioritization of Chiranjeevi Yojana was reduced (SMHS key informant interviews 2020).

***Joint leadership and cross-sectoral support.*** In addition to high-level political support at the beginning of implementation, Chiranjeevi Yojana also benefitted substantially from the involvement of multiple cross-sectoral stakeholders in the scheme's design. Prior to the design and launch of the program, the state government was motivated by data—both from the United Nations Population Fund and from national family health service data—that showed Gujarat's worsening maternal health indicators, especially in rural areas (SMHS key informant interview 2020).

In response, the state government partnered and consulted with development partners, academic institutions, the Federation of Obstetric and Gynecological Societies of India (FOGSI), and other non-governmental or civil society organizations working to provide maternal health care in the state. This multistakeholder group explored potential options for addressing the problem, such as third party insurance and public sector capacity development, and developed a strong rationale around leveraging existing resources in the private sector to improve institutional delivery rates in the state. Subsequently, the scheme was jointly designed and piloted by the state government with support from other stakeholders, particularly academic institutions who helped to ensure that the design leveraged the global evidence base, including lessons from similar schemes implemented in other countries. This multistakeholder approach also likely helped to ensure buy-in from relevant stakeholders (SMHS key informant interviews 2020).

***Private sector rationale and willingness to engage.*** As described above, the state government had a strong rationale for public-private engagement under Chiranjeevi Yojana based on data and evidence; however, the heterogenous private sector in Gujarat had mixed perspectives and incentives related to the scheme. In a qualitative study that included interviews with private providers, many expressed a perceived tension between doing good and making a profit; the majority felt that the scheme was not economically viable or were deterred by perceived misuse (see sub-section on scheme structure); and some resented being asked to take on what they perceived to be the state's responsibility to care for poor women. Some providers, especially in urban settings, appeared concerned that participating in the Chiranjeevi Yojana scheme would damage their reputation and status, as they felt it was a "poor people's" scheme (Ganguly et al. 2014; Iyer et al. 2017). In terms of positive perspectives on the scheme—beyond altruism—many felt that participation in the scheme made more financial sense for younger obstetricians who were in the early stages of establishing their practices, and indeed the scheme was more popular among younger providers who wanted to build their client base (Ganguly et al. 2014; Mohanan et al. 2016; Iyer et al. 2017).

The mixed incentives and self-selection into the scheme of private sector providers in Gujarat may have contributed to poor geographic targeting. Ultimately, providers participating in

Chiranjeevi Yojana were clustered in urban areas, despite the goal of the scheme being to serve poor and tribal women who often lived in geographically remote locations (Vora et al. 2015; Mohanan et al. 2016). Few private providers practiced in remote areas, and it is possible that those who did already benefitted from pre-existing high demand and therefore lacked incentive to join Chiranjeevi Yojana. It is also possible that private providers were reluctant to work in rural locations and lacked motivation to establish new practices in more challenging remote areas (Vora et al. 2015; Iyer et al. 2017). While uptake was higher by women in rural areas—suggesting that some of these women found their way to urban providers (Temin 2016)—the clustering of participating providers in urban locations likely presented significant transport barriers, indicating a major limitation of the program (SMHS key informant interview 2020).

It is also interesting to note that participation in Chiranjeevi Yojana often appeared to be a group phenomenon. One study found that district headquarter towns with 20-30 private obstetricians collectively stayed out of the scheme, while smaller towns with 10 or fewer private obstetricians tended to collectively participate (Iyer et al. 2017). While there is no clear reason for this phenomenon identified in that study, another qualitative study found that enrollment decisions were greatly influenced by whether or not local FOGSI branches decided to support the scheme (Ganguly et al. 2014).

**Scheme structure.** Issues related to the engagement rationale of the private sector were underpinned by the structure of the scheme, with the reimbursement rate being one of the most frequently cited hindering factors that exacerbated the tension between doing good and making a profit. When considered at scale rather than the per case payment rate, Chiranjeevi Yojana did pay out large sums of money to private providers; when operating at scale, it was also possible for a participating private provider to recoup substantial payments from the scheme (SMHS key informant interview 2020).

However, despite several rate increases over the years, it is commonly agreed that the reimbursement rate set by the scheme was too low to cover the costs of services provided (Mohanan et al. 2016; Ganguly et al. 2014; Iyer et al. 2017; SMHS key informant interviews 2020). The reimbursement rate had originally been set in consultation with professional societies and large charitable hospitals, whose marginal costs for the provision of additional services to poor and tribal women were relatively low, especially compared to young private providers and those seeking to establish new practices in rural areas (SMHS key informant interview 2020). Remuneration was considered especially inadequate for complicated deliveries, particularly those that required blood transfusion or Caesarian section (Ganguly et al. 2014). This was exacerbated by the embedded disincentive for Caesarian sections in the scheme's pricing strategy and the lack of a mechanism for adjustment should a provider exceed the estimated proportion of complicated deliveries (SMHS key informant interview 2020). Further, private providers reported procedural burdens and delays in receiving their reimbursements from the government, an issue that was augmented when funding for the scheme shifted from central to state levels (Ganguly et al. 2014; SMHS key informant interview 2020).

Low rates and procedural burdens and delays related to reimbursement were a key disincentive to participation in the scheme by private providers, as well as a major driver of high rates of provider attrition from the scheme (Ganguly et al. 2014). It is also possible that some participating private providers may have compromised on quality of care, both due to low reimbursements in a context of constrained resources and the high volume of patients stemming from the scheme (Ganguly et al. 2014). While the scheme's embedded disincentive for Caesarian sections likely helped to prevent skyrocketing Caesarian section rates in Gujarat—as happened in other countries that experimented with similar schemes (SMHS key informant interview 2020)—some studies suggested that this disincentive caused harmful practices by some private providers to accept only uncomplicated cases, shifting potential complicated or Caesarian section patients out of the scheme by referring them to other

providers including government-run and charitable facilities (Yasobant et al. 2016; Salazar et al. 2019; Mohanan et al. 2013; de Costa et al. 2014). Other providers may have been deterred from participating in the scheme at all, as vulnerable women in the scheme's target population can be more at risk of complications (Ganguly et al. 2014).

It is also possible that low reimbursement rates hindered accountability around the scheme's goal of providing cashless delivery services to poor and tribal women. As described in the previous section on Results from Prior Evaluations, relatively few women participating in the scheme experienced a cashless delivery; some participating providers may have collected reimbursements from the state government while continuing to inappropriately bill beneficiaries for services. These providers may have passed some portion of their costs onto the women by charging them for services or keeping the portion of the reimbursement intended for women's transport and food costs (Mohanan et al. 2016; Temin 2016). A lack of clarity between the government and private providers around the specific services covered by the scheme may have contributed to these issues (SMHS key informant interview, 2020), in addition to information asymmetry between providers and their patients (Sidney et al. 2016). However, one study found that some private providers may have sought to personally profit from the scheme by paying community health workers to bring more patients to their hospitals, suggesting a variety of drivers and incentives (Ganguly et al. 2014). Such perceptions of misuse were another key deterrent to participation in the scheme.

Further, there was a lack of effective performance contracts, including risk mitigation strategies. A key implication of one evaluation (the COHESIVE-India study) was that Chiranjeevi Yojana needed to develop and pilot transparent and efficient mechanisms of contracting with private sector providers to avoid abuse of the scheme and inappropriate billing of patients (Mohanan et al. 2016). One key informant shared that the state government did seek to indemnify private providers in the event of adverse outcomes under certain circumstances—specifically if the pregnant woman was severely anemic (SMHS key informant interview 2020). However, it appears that private providers appeared to respond less to performance contracts that held a greater risk of not being financially rewarded (Mohanan et al. 2016); more specifically, some private providers held the view that they were shouldering the burden of risk without legal protections being provided by government especially in the event of maternal death or severe complications, signaling their lack of trust in the public sector (Ganguly et al. 2014).

Finally, the scheme also lacked a formalized accreditation process for empanelling private providers, which was a key area for improvement especially for ensuring an adequate level of quality of care (SMHS key informant interview 2020). The contracting mechanisms themselves did not include any component that explicitly addressed quality of care (Mohanan et al. 2016).

**Technical and managerial capacities.** Gaps in the technical and managerial capacities of actors in both sectors may have also hindered the effectiveness of the Chiranjeevi Yojana program. On the side of the state government, there may have been limitations on the government's ability to manage the MOUs or contracts used for public-private engagement. While evidence directly related to Chiranjeevi Yojana is limited, some researchers have found that low governmental management capacity is a common theme across PPEs in India (SMHS key informant interview 2020). Further, evidence around operational challenges and reimbursement delays signals additional challenges with scheme management.

Of particular importance were challenges related to the monitoring and evaluation of the scheme. While Chiranjeevi Yojana benefitted from the involvement of an academic research partner in scheme design and evaluation (SMHS key informant interview 2020), many studies reported that the program lacked effective monitoring mechanisms. This hindered the ability of the government to understand the quality of care delivered, track and improve the scheme's performance over time, enhance the efficiency and effectiveness of contracting mechanisms by monitoring provider compliance with contractual terms, and avoid abuse or misuse of the

scheme (Mohanani et al. 2016; Temin, 2016; Yasobant et al. 2016; de Costa et al. 2014; SMHS key informant interviews 2020).

In the private sector, there was significant variation in performance across participating private providers (SMHS key informant interview 2020). Especially among smaller providers, there may have been a lack of capacity to adapt to and manage the program successfully, including clinical management to cut costs given the low reimbursement rate (SMHS key informant interview 2020). Further, as mentioned, the scheme did not include a formal accreditation process, and the contracting mechanisms did not explicitly address quality of care (Mohanani et al. 2016). While evidence is limited, it is likely that poor quality of care in participating facilities hindered the overall impact of the program (Mohanani et al. 2016; Temin 2016). Interestingly, one respondent for this case study noted that the technical capacities of participating private providers may have improved over time as they engaged with the government and other actors around the program and carried out a large number of deliveries under the scheme (SMHS key informant interview 2020).

***Mistrust between sectors.*** There was also a clear issue of mistrust between the state government and private providers, which negatively impacted partnership between the sectors. A qualitative study found that some private obstetricians reported what they perceived to be willful delays in payments, uncooperative behavior, and abuse of the scheme by public officials. Private providers also reported perceptions of abuse of the scheme by public sector actors, who were reported to exert pressure and influence on participating providers to offer free services to their family members. Providers who had dropped out of the scheme also shared that perceptions of unwarranted government enquiries into their practices, perceived suspicion of the private sector, and fears of the negative publicity this could cause; some shared concerns about the balance of power within the partnership especially related to government monitoring of private practice. These perceptions likely contributed to private providers' skepticism of the rationale for participating in the scheme, deterred participation, and contributed to attrition. (Ganguly et al. 2014; SMHS key informant interview 2020)

On the side of the public sector, one key informant also noted resistance by government doctors to private sector collaboration, with the state able to successfully overcome this internal resistance prior to the launch of the scheme.

***Uptake by intended beneficiaries.*** While the majority of identified factors relate directly to the scheme itself and the actors within it, an additional important category of factors related directly to the beneficiaries and their demand for and uptake of the scheme. First, although community health workers were responsible for informing pregnant women of the Chiranjeevi Yojana benefit, multiple studies revealed a lack of awareness of the scheme or its requirements that hindered eligible women's ability to utilize it. Deficient information dissemination strategies may have contributed to this lack of awareness (de Costa et al. 2014); one study found that non-utilization of the Chiranjeevi Yojana benefit among eligible women delivering at a participating facility was 40 percent, with lack of awareness of the program cited as the reason by 10 percent of those women (Yasobant et al. 2016). Generally, it appears that there was a lack of systematic outreach by the Chiranjeevi Yojana program and participating providers to raise awareness among the target population (SMHS key informant interview 2020).

Even more impactful than a general lack of awareness of the scheme, however, was a lack of knowledge about how to prepare the required documentation proving eligibility. The same study found that 72 percent of eligible women cited having no documentation as the reason for not utilizing the scheme at the time of their delivery (Yasobant et al. 2016). As described, pregnant women must show proof of their eligibility in order to receive free services at participating facilities (Temin 2016). As proof of eligibility, the program relies on official documentation—BPL cards—issued by the Government of India to identify and confirm the status of families that are economically disadvantaged or members of scheduled castes or tribes (Yasobant et al. 2016). However, it has been found that around 40 percent of eligible households in Gujarat do not have

a BPL card, and about 40 percent of households that do have BPL do not formally meet the eligibility criteria (Temin 2016). Participating obstetricians also felt that women had little understanding of the documentation needed to receive the benefit (Ganguly et al. 2014). This issue may have contributed both to eligible women's struggle to receive the Chiranjeevi Yojana benefit and to poor targeting of the program (Temin 2016; Yasobant et al. 2016).

Even when pregnant women were aware of the scheme and its requirements, other barriers may have contributed to low uptake and utilization. Demand for institutional delivery among the target population may have been low due to perceptions of poor quality (Mohanani et al. 2013); cultural barriers such as those related to gender inequality and women's lack of decision-making power around their health care may also have played a role, in addition to other norms related to home delivery (Temin 2016).

Finally, as described in the section above on results from prior evaluations, Chiranjeevi Yojana may have subsidized delivery costs for some women, but few experienced a cashless delivery under the program. Informal fees and costs passed on to women by providers may have reduced the perceived benefit of the program (Temin 2016), and transport costs—especially when women in rural areas traveled longer distances to participating providers (Vora et al. 2015)—could have presented significant barriers (Yasobant et al. 2016). It is interesting to note that a complementary public-private partnership focused on free emergency transport services was also put in place during the time period, which may have helped some rural women to reach participating facilities (de Costa et al. 2014; SMHS key informant interview 2020); however, the impact of this parallel program on Chiranjeevi Yojana utilization is not clear.

## Discussion

Overall, the evidence explored in this case study indicates mixed success for Chiranjeevi Yojana: while the program may have helped to provide poor and tribal women with more choice around where to access obstetric care services, there is evidence that Chiranjeevi Yojana may not have achieved its intended outcomes of providing free delivery services, increasing institutional delivery rates, and improving maternal and neonatal health outcomes. Though the program benefitted substantially from high-level political support and multistakeholder cooperation in its design and rollout, factors such as low reimbursement rates, ineffective contracting and monitoring mechanisms, lack of uptake among intended beneficiaries, accountability issues, and mistrust between the public and private sectors ultimately hindered the impact of the scheme. Despite this, Chiranjeevi Yojana is an important example of how an idea about public-private engagement can gain buy-in from stakeholders and effectively put into practice and offers many valuable and practical lessons about public-private engagement in health, including its potential for enhancing the availability of specialist providers.

***When designing PPE, consider interrelationships between factors, especially related to structural factors.*** Notably, structural factors related to the scheme's design—particularly the pricing and reimbursement model, as well as contracting—had significant implications for both the participation of private providers and their accountability under the scheme. The scheme's low reimbursement rate hindered its ability to attract and retain providers, revealing that an over-reliance on their altruism was insufficient when reimbursement was not enough to cover costs. For providers that participated in the program, the pricing model undermined their adherence to the terms of the scheme, as some likely shifted costs onto their patients rather than offering free services or referred high-risk women out of the scheme altogether. The scheme's model also did not specifically incentivize providers in rural and remote areas to participate, hindering geographic targeting and limiting its impact for the women who likely needed it the most.

Further, Chiranjeevi Yojana's lack of transparent and effective contracting mechanisms also played out in poor accountability and contributed to mistrust between private providers and the government. Rigorous contracting mechanisms that clearly laid out the terms of the scheme, reporting requirements, reimbursement process, penalties for non-compliance, and recourse for grievances may have helped to overcome challenges related to non-compliance or misuse of the scheme, as well as ameliorated trust issues related to the payment process and perceived abuse. Further, the inclusion of legal protections by the state government may have helped overcome negative perceptions of disproportionate risk taken on by private providers, which also fueled mistrust between the sectors. Undoubtedly, these challenges related to accountability, poor geographic targeting, and mistrust were further compounded by Chiranjeevi Yojana's lack of effective monitoring mechanisms, highlighting the importance of ongoing monitoring and evaluation for public-private partnerships that involve the delivery of health services.

***PPE for health service delivery should maintain a focus on the quality of services provided.*** Issues related to scheme's structure and monitoring are also apparent when it comes to quality of care. As mentioned in the results section, Chiranjeevi Yojana's contracting mechanisms did not include explicit mention of quality, and the program did not have a formalized accreditation system in place. Evidence is limited given that quality of care under the scheme was not explicitly evaluated, but it is likely that gaps in quality of care existed in Gujarat's private sector. Further, some providers may have even compromised care quality due to low reimbursement rates. This suggests that even if the program was successful in increasing institutional delivery rates, impact on maternal and neonatal health outcomes may have been limited. This calls attention to the importance of including quality of care as a central focus in such public-private engagements, including in performance contracts, and establishing appropriate accreditation requirements and monitoring mechanisms to ensure adherence to standards.

***Intended beneficiaries should be a central focus of PPE design.*** In addition, the Chiranjeevi Yojana experience highlights the importance of designing public-private engagements around their intended beneficiaries, or even with the participation and input of the beneficiaries themselves. While the program sought to achieve the goal of improving access to care for tribal and below-poverty-line women, Chiranjeevi Yojana did not fully address barriers to institutional delivery faced by the intended beneficiaries—especially in remote areas—such as distance, transport, and other cultural barriers. Further, the program's reliance on BPL cards to confirm eligibility introduced problems with population targeting, given existing issues with targeting and eligibility in the wider BPL system: if not mitigated, problems within the wider system will become problems within the engagement.

***Subnational variation in PPE implementation can offer valuable future research.*** Finally, it is important to note that the evidence reviewed for this case study reveals a high level of disparity in Chiranjeevi Yojana's implementation, with wide variations in the proportion of deliveries covered by the scheme across districts. While the drivers of this variation are unclear, exploration of the specific factors that came into play in more or less successful districts could be an interesting area of future research.

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This case study is one of a series of six secondary cases written for the Strengthening Mixed Health Systems program, analyzing the factors helping and hindering the effectiveness of public-private engagements for health in low- and middle-income countries. All case studies, as well as a report presenting cross-cutting findings, can be found on the Strengthening Mixed Health Systems project website.

The Strengthening Mixed Health Systems project is supported by funding from Merck, through Merck for Mothers, the company’s global initiative to help create a world where no woman has to die while giving life. Merck for Mothers is known as MSD for Mothers outside the United States and Canada.







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