Different Strokes for Different Folks:
Experimental Evidence on the Effectiveness of Input and Output Incentive Contracts for Health Care Providers with Different Levels of Skills

Manoj Mohanan, Grant Miller, Katherine Donato, Yulya Truskinovsky, and Marcos Vera-Hernández

Abstract

A central issue in designing performance incentive contracts is whether to reward the production of outputs versus use of inputs: the former rewards efficiency and innovation in production, while the latter imposes less risk on agents. Agents with varying levels of skill may perform better under different contractual bases as well—more skilled workers may be better able to innovate, for example. We study these issues empirically through an experiment enabling us to observe and verify outputs (health outcomes) and inputs (guideline adherence) in Indian maternity care. We find that both output and input incentive contracts achieved comparable reductions in post-partum hemorrhage (PPH) rates, the dimension of maternity care most sensitive to provider behavior and the largest cause of maternal mortality. Interestingly, and in line with the theory, providers with advanced qualifications performed better and used new health delivery strategies under output incentives, while providers with and without advanced qualifications performed equally under input incentives.

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1. INTRODUCTION

Performance incentives have long been used to correct a range of principal-agent problems (Hall and Liebman 1998, Jensen and Murphy 1990, Lazear 2000, Roland 2004, Rosenthal et al. 2004). A central issue in the design of performance incentives is whether to reward an agent's use of inputs or instead to reward outputs directly (Khalil and Lawarree 1995, Prendergast 2002, 2011, Raith 2008).[1] A key underlying assumption in models of output incentive contracts is that workers know the production function, and if correctly incentivized, can find the optimal combination of inputs to produce a given level of output. However, if workers have low levels of human capital or skills, this assumption might be untenable, leading to suboptimal input choices. Alternatively, agents' knowledge of the production function is less relevant for them to be rewarded according to input use (following explicit guidelines given by better-informed principals). But an important drawback of input incentive contracts is that highly skilled agents are unable to take advantage of local contextual information that might be relevant when choosing optimal input combinations to achieve desired outputs.

In this paper, we study input- and output incentive contracts for maternal health care in India – and the ways in which health providers with varying levels of skill respond to them – through a field experiment. The production of good maternal and neonatal health is complex, and in India, there is considerable scope for improvement in performance and substantial variation in health providers' human capital. We randomly assign maternal health care providers to two treatment arms and a control arm. Providers in treatment arms were given incentive contracts rewarding performance either for input use (adherence to guidelines for best practices)

[1] The decision depends on a variety of considerations, including the costs of monitoring inputs relative to outputs; the degree of risk aversion of agents relative to principals; the riskiness of the output measure; the degree to which productivity is heterogeneous across agents; the extent of distortions due to multi-tasking; and the feasibility of principals dictating inputs to agents (Lazear 1986, Baker 2002, Prendergast 2002)

or production of outputs (good maternal and neonatal health – low levels of post-partum hemorrhage, sepsis, pre-eclampsia, or neonatal death). We also study how responses to performance contracts vary by levels of skills by comparing performance of providers with advanced medical training to those with basic medical training. We focus on providers' implementation of new strategies in the two contracts and how the effect of these innovations varies by providers' skill level.

We conducted our study in rural areas of Karnataka, an Indian state with poor levels of maternal and neonatal health. In 2013, Karnataka's maternal mortality rate (MMR) was 144 deaths per 100,000 live births, and its neonatal and infant mortality rates were 25 and 31 per 1,000 live births, respectively (Mony et al. 2015, NHM 2013). The top three causes of maternal mortality are post-partum hemorrhage, pre-eclampsia, and sepsis, and the major risk factors for neonatal mortality are infections (sepsis and tetanus, for example), pre-term births, and birth asphyxia. Policy efforts to improve maternal and neonatal health outcomes have long focused on promoting childbirth in medical facilities (rather than in private homes), where many of these causes can – in principle – be prevented or managed. However, despite rapidly rising institutional delivery rates (reaching 94.3% in 2015-16) (Government of India 2016), poor maternal and neonatal health outcomes persist because of low quality maternal health care in medical facilities (NRHM 2015).

The quality of public services such as health and education in developing countries is generally low (Chaudhury et al. 2006, Das and Hammer 2014, Das et al. 2012, Das et al. 2016, Mohanan et al. 2015), and the use of performance incentives is increasingly widespread (see Finan, Olken, and Pande (2015) and Miller and Babiarz (2014) for reviews). Output incentives are more common in the education sector (Behrman et al. 2015, Glewwe, Ilias and Kremer 2010,

Lavy 2002, Muralidharan and Sundararaman 2011), while incentives based on service delivery indicators such as institutional deliveries, delivery of prenatal care, vaccinations, and healthcare utilization are typically used in the health sector (Ashraf, Bandiera and Jack 2014, Basinga et al. 2011, Celhay et al. 2015, Dupas and Miguel 2016, Gertler, Giovagnoli and Martinez 2014, Gertler and Vermeersch 2013, Miller and Babiarz 2014, Miller et al. 2012, Olken, Onishi and Wong 2014, Sherry, Bauhoff and Mohanan 2017, Soeters et al. 2011).[2,3] The predominance of input incentive contracts in the health sector – an environment in which there is often considerable scope for innovation using local/contextual information[4] – underscores the importance of empirical research comparing contractual bases in health.

On average, we find that providers in both the input and output contract arms achieved similar improvements in maternal health, reducing rates of post-partum hemorrhage (PPH – the leading cause of maternal mortality both in India and globally) by approximately 21 percent. Performance on other dimensions of maternal and neonatal care (pre-eclampsia, sepsis, and neonatal survival) did not change in either contract group relative to the control group. In achieving PPH reductions, providers in both groups used similar strategies (and similar input combinations), focusing on stocking medicines that reduce bleeding after delivery, for example. Despite the flexibility to do so, we also find little evidence that output contract providers

[2] There have been few efforts to directly reward health outcomes in developing countries. Two recent exceptions in China and India study interventions outside the medical care system, focusing on childhood malnutrition. Primary school principals in China, who were offered performance incentives for reducing anemia, were able to reduce anemia prevalence by 25% by the end of the academic year (Luo et al. 2015, Miller et al. 2012). In India, Singh (2015) found that frontline workers in India's Integrated Child Development Services (ICDS) program who were offered high levels of incentives were able to reduce severe malnutrition by 6.3 percentage points. The Plan Nacer program in Argentina introduced performance incentives based on 10 indicators, of which two were outcomes (birth weight and APGAR scores) and the remaining 8 were self reported / administrative service delivery indicators (Gertler, Giovagnoli and Martinez 2014).

[3] Fritsche, Soeters, and Meessen (2014) report that the World Bank's health results trust fund, which supports performance based financing programs in health, had over 60 projects at various stages of development. Other examples of performance incentives in developing countries include: (Basinga et al. 2011, Peabody et al. 2011, Soeters et al. 2011, Van de Poel et al. 2016)

[4] See http://www.innovationsinhealthcare.org/ for examples of efforts that adopt novel approaches to improving access to care and improving quality of health care.

developed or implemented novel strategies on average to improve outcomes. Moreover, despite equivalent PPH reductions in both contract groups, input contract payments were substantially smaller than output ones: average payments for input and output contracts were INR 13,850 and 56,812 respectively (about US $252 and $1033 in 2010).[5]

Health providers with varying levels of skills responded very differently to input- and output incentive contracts, however. High skill providers with advanced medical training in obstetrics and gynecology in output contracts stated that they had implemented new health delivery strategies and produced better health outcomes, reducing PPH rates by 9 percentage points relative to lower skilled providers who have basic medical training but no advanced qualifications. In contrast, there were no significant differences in implementation of new strategies or health outcomes between high and low skilled providers in the input contracts group.

We also investigate two potential concerns with our study. First, because we reward providers according to contracted outcomes among their patients, providers could potentially manipulate the composition of their patients rather than improving their performance (selecting patients more likely to experience good health outcomes, for example). To address this concern, incentive contracts were explicitly structured to be nullified if providers diverted risky patients, and we collected population surveillance data to test for patient selection; we do not find evidence of providers in treatment arms referring high risk patients away to other hospitals. Second, a natural concern with performance incentives is the possibility of "multitasking," or the diversion of effort from unrewarded outcomes to rewarded ones (Holmstrom and Milgrom 1991,

[5] Our incentive contracts were not specifically designed to achieve identical levels of outcomes, since the underlying production function was unknown. The identical levels of performance in the two treatment arms is only a convenient accident that now enables us to directly compare the cost to the principal of these two types of contracts. However, since we do not observe providers' responses across a full range of rates for rewards, we are unable to draw inferences about efficiency of the two contract structures.

Mullen, Frank and Rosenthal 2010, Prendergast 1999). To minimize the possibility of multitasking, our incentive contracts covered all major inputs and outputs involved in maternity care including neonatal health, and maternity care was deliberately chosen as a relatively narrow area of medical practice.[6]

Our paper makes two contributions to existing literature. First, because we purposefully designed our study to observe and verify both input use (beyond what is ordinarily possible in real-world settings) and outputs, we are able to test the effectiveness of input and output incentive contracts.[7] While there is a wide theoretical literature on this topic (Hall and Liebman 1998, Holmstrom and Milgrom 1991, Jensen and Murphy 1990, Khalil and Lawarree 1995, Laffont and Martimort 2009, Lazear 2000, Prendergast 1999, 2002, 2011), the empirical literature that explores the relative effectiveness of contracting on inputs vs. outputs remains thin. To the best of our knowledge, this paper is the first to empirically compare the performance of agents under input and output contracts in a health care setting. Second, we study the important role of provider training and skill in differential behavioral responses to each type of contract. By focusing on how agents' performance varies by level of human capital, we extend the growing literatures on the impact of performance incentives and optimal contracts (Callen et al. 2015).

The rest of the paper proceeds as follows: Section 2 provides a simple conceptual framework of input and output contracts, followed by details of the study design, data collection,

[6] The restricted scope of pregnancy and maternity care was also a rationale for selecting obstetric providers for our study. Although obstetric care providers typically refer neonatal care to pediatricians, many of the providers in our sample are the only healthcare providers in their area. Hence we include neonatal health outcomes in the contracts to minimize concerns of multitasking.

[7] We collect detailed information on inputs, using 48 indicators for five key domains of medical care delivered to mothers and their infants throughout pregnancy, delivery, and post-natal care.

and analysis in Section 3. Section 4 presents results, including mechanisms that might explain our findings, and Section 5 concludes.

2. Conceptual Framework

In this section we outline a basic principal-agent framework to elucidate the trade-offs between input and output contracts and the role played by agent skill. In our set-up, a principal (health authority) hires an agent (health care provider) to maximize health, y, net of monetary costs paid to the agent, w. A health care provider produces health according to: $y = h(\theta_1 e_1, \theta_2 e_2, \varepsilon)$, where e_1 and e_2 are inputs chosen by the provider; θ_1 and θ_2 are productivity shifters that vary across providers; and ε is a random component with cumulative distribution function G_ε, which is strictly positive for all values of ε. The health production function $h(\cdot)$ is increasing in all of its arguments and strictly concave. The provider's objective is to maximize utility from payments, $U(w)$, net of input costs, $v_1(e_1) + v_2(e_2)$, where $U'(\cdot) > 0, U''(\cdot) < 0, v'_1(\cdot) > 0, v'_2(\cdot) > 0, v_1''(\cdot) > 0, v_2''(\cdot) > 0$.

We assume that there are two type of providers, *H* and *L*, with high and low levels of medical training (qualifications) corresponding to high and low levels of (clinical) skills. The proportion of low skill providers among all providers is π. Low skilled providers believe that the health production function is $y_i = h(\theta_1^L e_1, \theta_2^L e_2, \varepsilon)$, with $\theta_1^L \neq \theta_1$ and $\theta_2^L \neq \theta_2$. In other words, low skill providers have incorrect beliefs about the productivity shifters. Alternatively, high skill providers hold correct beliefs – that is, $\theta_1^H = \theta_1$ and $\theta_2^H = \theta_2$. We also assume that the distribution of ε as well as those of θ_1 and θ_2 are independent of provider skill.[8]

[8] By way of example, our set-up assumes that the effect of a certain medicine is the same independently of being prescribed by a high or low skill provider, but the two types of providers might differ in how effective they perceive the medicine to be.

We assume that both input choices (e_1, e_2) and output (y) are verifiable. Principals know the distribution of productivity shifters, $F_{\theta_{1,}\theta_2}$, but they cannot make contracts with agents contingent on the values of these productivity shifters. In other words, principals cannot take advantage of local/contextual information, reflected in θ_1 and θ_2, when writing contracts. Unlike the standard setting in which a contract can be made fully contingent on agents' production functions, this restriction implies that input incentive contracts will not necessarily be optimal (even if inputs are verifiable) and output incentive contracts can be more efficient (Khalil and Lawarree 1995, Prendergast 2002, 2011).

An input incentive contract is a function $w(e_1, e_2)$ that remunerates providers according to input levels. The principal will choose $w(e_1, e_2)$ such that

$$Max \iint h(\theta_1 e_1, \theta_2 e_2, \varepsilon)\, \partial F_{\theta_{1,}\theta_2}\, \partial G_\varepsilon - w(e_1, e_2)$$

$$st: Max_{\{e_1, e_2\}} [U(w(e_1, e_2) - v_1(e_1) - v_2(e_2)] \geq \overline{U},$$

where $\overline{U}$ is the provider's reservation utility. Implicitly, an input incentive contract is only feasible if the principal can observe input levels (e_1, e_2). Note that the provider does not bear any financial risk because payment is only contingent on input levels, which are completely under his/her control. Also, both high and low skill providers will choose the same input levels because both maximize the same function, $U(w(e_1, e_2)) - v_1(e_1) - v_2(e_2)$, which is independent of health outcomes produced – and hence their beliefs about the health production function.[9] Consequently, input-based payments allow the principal to circumvent low skill providers' incorrect beliefs about the productivity shifters. Under input incentive contracts, average health outcomes, $y = \iint h(\theta_1 e_1, \theta_2 e_2, \varepsilon)\, \partial F_{\theta_1 \theta_2}\, \partial G_\varepsilon$, are therefore also the same for high and low skill providers.

[9] This is true because we are assuming that providers are not altruistic. In other words, they will not provide additional, unrewarded inputs that they know to be beneficial if not compensated for doing so.

An output incentive contract is a function $w(y)$ that remunerates providers according to health outcomes produced. In this case, a provider of type $j \in \{H, L\}$ who wants to achieve average health outcome y and believe him/herself to have productivity shifters $\left(\theta_1^j, \theta_2^j\right)$ will choose inputs (e_1, e_2) to:

$$Max \int U(w(h(\theta_1^j e_1, \theta_2^j e_2, \varepsilon))) - v_1(e_1) - v_2(e_2)\, \partial G_\varepsilon$$

$$st: y = \int h(\theta_1^j e_1, \theta_2^j e_2, \varepsilon)\, \partial G_\varepsilon,$$

implying that provider input choices (e_1, e_2) depend on their beliefs about their productivity shifters (θ_1, θ_2).

The model above assumes that both input choices and outputs are verifiable and allows us to consider trade-offs between input- and output incentive contracts. On one hand, provider remuneration under the output incentive contract, $w(y)$, is partly random and not completely under the control of the agent. This risk introduces a distortion in the output incentive contract, requiring principals to compensate agents for this risk. On the other hand, because principals (health authorities) cannot take advantage of local/contextual information (reflected in θ_1 and θ_2) when establishing contracts, an input incentive contract could lead some providers to choose inefficient combinations of inputs (e_1, e_2). Output incentive contracts can circumvent this by allowing providers to choose (e_1, e_2) according to their own productivity shifters (θ_1, θ_2).

In the output contract case, high skill providers, who hold correct beliefs about the productive shifters (θ_1, θ_2) can make more efficient input choices than with input incentive contracts. The amount of inefficiency for low skill providers in our model depends on how

incorrect their beliefs about θ_1^L, and θ_2^L are. It therefore remains possible that input incentive contracts deliver more efficient input choices among low skill providers.[10]

A testable implication of our conceptual framework is that health outcomes will depend on provider skills under output incentive contracts (with better health outcomes for more skilled providers), but that health outcomes will be independent of provider skill with input incentive contracts. More generally, we expect higher skilled providers under output contracts to tailor their input choices to their local/contextual information.

3. Study Design, Incentive Contract Structure, Data Collection, and Estimation

3.1 Design and Implementation of the Experiment

Our experiment and data collection activities spanned two years, from late 2012 to late 2014.[11] The timeline of the project is shown in Figure 1, with details about when data were collected indicated at the bottom, and timing of the intervention visits indicated at the top.

3.1.a. Eligibility of providers

Using multiple data sources, we identified the potential universe of private obstetric care providers for inclusion in our study. The first source was data collected by the Karnataka state government on all private sector doctors who provided obstetric care (i.e., those who cared for pregnant mothers and conducted deliveries) in rural areas – at least 10 km away from district headquarters. Second, during field visits by our enumerators to verify these providers, our field teams located additional providers who were inadvertently missed in the government survey and conducted interviews with them to confirm eligibility. Further eligibility for providers' inclusion

[10] Ultimately, the relative efficiency of input- or output incentive contracts depends on a variety of parameters including the amount of risk, providers' degree of risk aversion, the variability in productivity shifters, the proportion of low skill providers, and how misinformed low skill providers are.

[11] This study was approved by Duke University Office of Human Subjects Research (Pro00031046).

in our study was based on conducting at least two deliveries per month, practicing primarily in OBGYN clinics[12], willingness to participate in the study (including responding to surveys and signing the incentive contracts), and continuing to practice in the same location over the study period.

3.1.b. Randomization

The set of providers that we randomize come from the two different sources mentioned above. Of the 120 eligible providers in the data from the state government, using simple randomization, 38 providers were assigned the input group, 40 to the output group, and 42 to the control group. Other eligible providers, who were inadvertently left out in the government-funded survey and identified by our field team during fieldwork, were randomized as follows: once the provider was confirmed to meet all eligibility criteria, the field team would call our project office to assign the provider to a study arm. This allocation was done according to a list of sequential unique identifiers, which were randomized prior to fieldwork (this list was unknown to field enumerators). Using this procedure, 2 providers were allocated to the input group, 13 to the output group, and 5 to the control.[13]

In all, 140 providers met all eligibility criteria and signed the incentive contracts in our study (note that the control group also signed a contract). Of these, 5 providers declined to participate over the course of the study, and were classified as attritors from the study (2 from the input incentive group and 3 from the control group). Our final analytical sample thus includes 135 providers: 53 providers in outputs arm, 38 providers in inputs arm, and 44 providers in

[12] Providers working in large multi-specialty hospitals were not included in our sample. We targeted smaller facilities in order to ensure that providers would have sufficient agency over their facilities' health provision.
[13] Note that we could not ensure an equal number of providers across arms because we did not know how many providers the field team would find, and we did not want to have a predictable sequence so that our field enumerators could anticipate the treatment allocation of a potential provider.

control arm.[14] Table 1 shows the number of providers who were identified in sampling and the attrition.

Table 2 reports summary statistics for our final sample of providers used for analysis. Just over half of providers were female. Nearly 60 percent had advanced qualifications in obstetrics or a related field – we refer to this group as "MBBS plus". Of the remaining, over half had either basic training in allopathic medicine, equivalent to an MD in USA or comparable training in Ayurvedic medicine – corresponding to MBBS and BAMS degrees respectively (Mahal and Mohanan 2006). The average provider had been practicing for nearly two decades. Joint tests of orthogonality show there are no significant differences in provider demographics between the three study arms (Appendix Table A1). The attrition of five providers across the three study groups was not statistically different at the 5% level (Appendix Table A2).

3.2. Study Arms / Contract Types

The three contracts (control, input incentive contract, and output incentive contract) were designed to be as comparable as possible other than the basis of payment. Providers were first introduced to the contracts during visits between February and April 2013 (Figure 1 shows our study timeline). During these initial visits, all providers (including those in the control group) were given copies of letters of support from the state government and a full set of reference materials including guidelines for maternity care from the World Health Organization (WHO) and Government of India (GoI).[15] These letters also provided a broad overview of what participation in the study would entail, including future meetings and payments to compensate participating providers for their time to compile patient lists and complete surveys.

[14] Further details on enrollment of providers and sample sizes at each stage are included in the pre-analysis plan (https://www.socialscienceregistry.org/trials/179).

[15] A complete set of guidelines was also provided to the providers on a CD. If a provider was unable to access the materials on the CD, she was offered the option of having the hard copy versions sent to her at no charge.

Each provider was also given a copy of his/her randomly assigned contract. Each treatment group contract explained the specific basis by which the provider would be rewarded at the end of the study period, including details of reward calculations and payments (Appendix 1 shows each type of contract and accompanying WHO guidelines). The contracts specified that the final payment will be made only at the end, and there were no interim incentive payments.

Input and output incentive contracts were designed to have equal maximum level of payments. Payment levels were also set to ensure that the project could meet payment obligations in the event that all providers achieved the maximum performance level. The resulting contracts offered providers the potential to earn up to approximately INR 150,000 (about US $2,700 at the time of the contract – slightly more than 15 percent of a specialist doctor's salary in Karnataka).

The control arm contract was designed to inform providers about our study of maternal and child health, to provide the same WHO and GoI guidelines, and to require control providers to sign an 'agreement' confirming their willingness to participate in a study of maternal and neonatal health. The control contract did not mention reward payments made to other providers in the study.

Enumerators were trained to ensure that the providers fully understood their contracts, including incentive payment basis and structure, the potential reward payments possible for strong performance, and the fact that providers would not lose money by participating in the study, regardless of their performance. Contracts also specified that providers' performance on rewarded outcomes would be evaluated using data collected from household surveys with their

patient population.[16] Finally, providers in all three arms were offered INR 2,500 (about US $45) at each visit as compensation for the time required to participate in the study. This small payment also aimed to develop credibility for future reward payments.

3.2.a. Output Contract Structure

Output incentive payments were offered for achieving low rates of four adverse health outcomes (post-partum hemorrhage (PPH), pre-eclampsia, sepsis, and neonatal mortality) during the study period among a provider's patients. Ideally, we would have set the reward levels for each health outcome optimally: the rewards that maximize the principal's utility subject to the participation constraint of the provider. However, this requires detailed knowledge of the production, utility, and cost functions, which are unknown to us. Our approach, which we describe below, resembles one of a cautious policy maker, ensuring that total incentive payments do not exceed a fixed budget constraint.

For neonatal mortality, a provider would receive INR 15,000 unless one of their newborn patients died. For each of the other three maternal health outcomes (PPH, Pre-eclampsia, and Sepsis,), the reward payment for output i, $P(x_i)$, was a decreasing linear function of incidence rate x_i, with payment increment α_i for incidence rates below a pre-established incidence rate ceiling $\overline{x_i}$:

$$P(x_i) = \begin{cases} \alpha_i(\overline{x}_i - x_i), & x_i \leq \overline{x}_i \\ 0 \quad\quad , & x_i > \overline{x}_i \end{cases}$$

We set $\overline{x}_i$ equal to the pre-intervention average rates, which we estimated using existing data from government surveys. To set levels of α_i, we first allocated the remaining available budget for output contracts (after deducting payment for neonatal mortality) to each of the 3 outputs

[16] To avoid possible collusion or gaming, information about specific survey questions used to calculate rewards was not shared with anyone outside of the study team, including the enumerators when they first met providers to implement the contracts.

equally. α_i for each output was then determined by dividing the available budget for that output by the potential improvement for that output (i.e., the difference between the pre-intervention average level of $\overline{x}_i$ and 0.05, which assumes providers would, on average, not be able to eliminate negative health outcomes completely): [17]

$$\alpha_{i=OUTPUT} = \frac{(Budget\ for\ output\ contracts - NMR\ payment)/3}{(\overline{x_i} - 0.05)}$$

The final reward payment for providers in the output group was then the sum of rewards for each of the four outputs.

3.2.b. Input Contract Structure

Providers assigned to the input treatment arm were offered incentive payments for health inputs provided to patients according to 2009 World Health Organization (WHO) guidelines.[18] These inputs are categorized into five domains: pregnancy care, childbirth care, counseling for postnatal maternal care, newborn care, and counseling for postnatal newborn care.[19] Analogous to the structure of output incentives, for each domain i, the input reward payment $P(x_i)$ was structured as an increasing linear function of the input level x_i – the share of measurable inputs for appropriate care for domain i, averaged over the provider's patients – with incremental payment α_i above a pre-established performance floor $\underline{x_i}$%:

$$P(x_i) = \begin{cases} \alpha_i\,(x_i - \underline{x_i}), & x_i \geq \underline{x_i} \\ 0, & x_i < \underline{x_i} \end{cases}.$$

[17] For example, pre-intervention rates of post-partum hemorrhage (PPH) were estimated at 35 percent ($\bar{x}_{PPH} = 35$) in the study area. Providers could earn α_{PPH} = Rs. 850 (equivalent to about $17 at the time of the contract) for every percentage point below 35 percent incidence of PPH in their patient population. If the rate of PPH measured in their patient population over the study period was 25 percent, they would earn $170; if they were able to completely eliminate PPH in their patient population, they would earn $595.

[18] These were the most up-to-date guidelines at the time of the intervention.

[19] Details of the measurement of these health inputs are below and in Appendix 2: Calculation of Inputs and Outputs.

As in the output contract case, α_i for inputs was calculated by dividing the available budget by the projected range of improvements from the pre-intervention average rates to an average of 90%.[20] The final reward payment for each provider was the sum of rewards earned for performance in each of the five domains of care.

3.2.c. Control Arm Contracts

Providers assigned to the control arm received contract agreements that provided the same information, guidelines, and participation payments as in the two incentive contract arms – but had no payments related to performance. Control providers were also told that the project team would collect survey data from their patients and received the same follow-up visits as intervention arm providers.

3.3. Data Collection, Household Sampling, and Measurement

We collected data from providers through multiple interviews over the study period and from households at end of study period (Figure 1 shows details of timing of data collection and intervention visits to providers). Through our provider surveys, we collected information about providers' medical practices, staffing, and infrastructure, as well as intended strategies for improving quality of care and health outcomes.

Additionally, we collected patient lists from providers to create our primary patient sampling frame. A natural concern with this approach is that providers would have incentives to selectively report only patients with relatively good performance indicators. To minimize this concern, we also collected data from approximately 75 households (not used in this analysis) in

[20] For example, pre-intervention coverage of the inputs in the Childbirth Care domain was estimated at about 65 percent ($\underline{x}_{Childbirth\ Care} = 65$) in the study area: patients receive 65% of appropriate childbirth care according to WHO guidelines. Providers earn $\alpha_{Childbirth\ Care}$ = Rs. 750 (equivalent to about $15 at the time of the contract) for every percentage point in coverage of these inputs above 65 percent. If 75 percent of a provider's patients had received appropriate level of inputs for the Childbirth Care domain, she would earn $150, and if she were able to provide this level of care for 100% of her patients, she would earn $525.

areas surrounding the clinic to ensure there were no cases with negative outcomes at the providers' facilities but were not reported by providers, or that were inappropriately referred away. The incentive contracts also clearly explained that any instances of patient list manipulation, either through selective referrals or reporting, would nullify the contracts.[21]

Using patient lists, we then sampled up to 25 women who had recently given birth at the provider's facility.[22] Enumerators collected the list of patients and a study team member managing the field project conducted random sampling of 25 patients. In instances where there were fewer than 25 deliveries over the timespan of data collection, all listed patients were surveyed. These surveys measured the four major health outcomes[23], input use in the five domains of maternity care, and basic socio-demographic information. We aimed to interview every mother within approximately 2 weeks after she gave birth to minimize recall inaccuracy (Das, Hammer and Sánchez-Paramo 2012). In practice, we conducted surveys with new mothers between 7-20 days after delivery, and also did a very brief follow up with these mothers after 28 days after birth to assess the infant's status. In total, we interviewed 2,895 new mothers.[24]

[21] See page 5 of sample contracts in Appendix 1 for exact language on selective referrals that would nullify contracts. Using data collected from communities around the provider, we verified that there were no unusual patterns of referral suggesting providers did not respond by selecting patients with better outcomes or selectively reporting by providers.

[22] Power calculations were conducted prior to the data collection. Estimated pre-intervention performance rates and feasible improvement levels (i.e., target levels) were determined using existing data from government surveys and calibrated through piloting with doctors in Karnataka and Delhi to ensure that they were locally appropriate. We assumed 25 mothers per provider and an intra-class correlation coefficient of 0.05. At the individual level, all five categories for quality of care have at least 85 percent power to detect improvements that reach the target levels, with the "Childbirth Care", "Postnatal Maternal Care", and "Postnatal Newborn Care" categories having at least 95 percent power. Two of the four outputs, post-partum hemorrhage and pre-eclampsia, have at least 85 percent power to detect improvements to the target levels. Note that these calculations do not take into account additional precision gained by including covariates.

[23] We collected data from household surveys about signs and symptoms for the health outcomes and used algorithms described in the appendix to establish whether a woman had each adverse health outcome or not.

[24] Some providers conducted fewer than 25 deliveries over the data collection period, resulting in fewer than the targeted 3,375 mothers (135 providers x 25 mothers). On average, we have data from 21.4 mothers per provider, with an interquartile range of 17 to 26 mothers per provider.

Measurement of health input use and outputs poses important challenges, especially in developing country contexts where reliable administrative data on input use are not available. Using providers' reports of outcomes leads to concerns of gaming when incentives are tied to performance. Furthermore, providers may not always be able to accurately identify some health outcomes. For example, in the case of maternal health, evidence from studies comparing actual blood loss to providers' visual estimates show that providers tend to underestimate the amount of blood loss by one third (Patel et al. 2006).

Given that we chose to measure health outcomes and health input use through household surveys, we relied on two general criteria for selecting our specific measures (which we use both for calculating incentive payments as well as for our empirical analysis). First, we chose questions previously validated through past research published in the clinical literature (Filippi et al. 2000, Stanton et al. 2013, Stewart and Festin 1995). Second, prior to our study, we conducted our own validation exercise. Specifically, we trained nurse enumerators to observe and code health input use in real-time during labor and delivery for 150 deliveries in rural Karnataka. Within two weeks after delivery, we then visited these new mothers and administered a set of survey questions intended to measure the same health input use, as reported by the mother. We then chose measures that performed well in our validation exercise as additional survey questions for the project.[25]

Mothers in our sample were classified as having an adverse health outcome based on a combination of her responses to relevant questions, following previous studies of the sensitivity and specificity of responses to these questions for clinical evaluation of the incidence of these outcomes (Filippi et al. 2000, Stanton et al. 2013, Stewart and Festin 1995). We evaluate inputs provided by each provider by measuring each provider's adherence to WHO guidelines. Given

[25] Results from this validation study to be published in a separate manuscript, and available upon request.

the criteria described above, we generated household survey questions that women could plausibly answer and that related to the guidelines. The responses to these questions were assigned a score of 1 if they adhered to the guidelines, and 0 otherwise.[26] A provider's performance in a particular domain was then the mean of these scores for all mothers who received care from the provider, where higher scores reflect greater adherence to the guidelines and better performance. For analysis of inputs within each domain, we aggregate the multiple measures into a summary index following Anderson (2008).[27]

3.4. Analysis

We use the estimation strategy that we specified in our pre-analysis plan published in the AEA RCT registry in December 2013 (prior to collecting any household-level data). To estimate the effect of each type of incentive contract on health outputs and health input use, we regress outcomes on dummy variables indicating treatment status with the following estimating equation:

$$y_{ip} = \alpha + \beta T_p + \theta X_p + \gamma Z_i + s_d + \lambda_e + u_{ip}, \qquad (1)$$

where y_{ip} is an outcome of interest (i.e. level of care – inputs – received or health outcomes) for woman i who received care from provider p, $T_p$is a vector of provider-level treatment indicators, X_p is a vector of baseline (pre-contract) provider characteristics, Z_i is a vector of time-invariant household characteristics (such as mother's age, education status, religion, and birth history), and s_d and λ_e represent district and enumerator fixed effects (respectively). We also show estimates

[26] For example, if a woman answered affirmatively to the question, "Was your blood pressure checked during labor?", the question was assigned a "1". Details about the specific questions used for each domain and how responses were coded are included in the Appendix on Calculation of Inputs and Outputs, also available at https://www.socialscienceregistry.org/trials/179.

[27] The Anderson index is calculated as a weighted mean of the standardized values of all inputs within each domain (with variables re-defined so that higher values imply a better/more desirable outcome). The weights are calculated to maximize the amount of information captured in the index, with highly correlated variables receiving less weight (Anderson 2008).

that do not condition on household or provider characteristics, but only include enumerator and district fixed effects, as specified in our pre-analysis plan. In all cases, we cluster standard errors at the provider level.

Given that we test multiple hypotheses across two treatment arms, we report p-values adjusted for multiple comparisons within each pre-specified family of hypotheses to control for the Familywise Error Rate (using the free step-down re-sampling method described in Westfall and Young (1993)) and across the two types of contracts. Following our pre-analysis plan, we consider PPH, sepsis, and neonatal death as one family of health outcomes influenced by medical care provided around the time of delivery (as opposed to care throughout pregnancy for pre-eclampsia, which we test across two types of contracts). Similarly, for input use, we consider three domains (childbirth care, postnatal maternal care, and newborn care) to be a family of outcomes because these are all inputs provided at the time of delivery.

As section 2 indicated, we expect health outcomes to vary according to a provider's skills under output incentive contracts, but to be independent of them under an input incentive contract. To test this hypothesis, we augment regression (1) with an indicator for higher provider qualification multiplied by each provider contract arm.

4. RESULTS

In this section, we first report how our incentive contracts influenced the production of health outputs and the provision of health inputs, investigate the mechanisms underlying these results, and examine the relative costs of the two types of contracts. We then study how providers with varying levels of qualifications and skills responded differently to each type of contract.

4.1 Health Outputs

Table 3 reports estimates of how each incentive contract influences maternal and child health outcomes. Our preferred (pre-specified) estimates from Equation 1, shown in even-numbered columns, condition on provider and patient characteristics as well as district and enumerator fixed effects (odd-numbered columns report estimates that condition only on district and enumerator fixed effects). The levels of statistical significance indicated reflect p-values adjusted for multiple comparisons within each family of hypotheses to control for the Familywise Error Rate. Appendix Table A3 shows the unadjusted as well as adjusted p-values for the main results.

In both incentive contract groups, post-partum hemorrhage (PPH) rates declined by nearly identical (and statistically indistinguishable) amounts relative to the control group.[28] Column 2 shows that input contract providers reduced PPH incidence among their patients by 8.4 percentage points, while output contract providers reduced PPH incidence by 7.4 percentage points. Compared to the control group mean (0.365), these reductions correspond to a 23% and 20% decline, respectively. Both are also statistically significant after correcting for multiple comparisons: adjusted p-values using the Westfall and Young (1993) step-down resampling method are 0.01 for the input group and 0.031 for the output group (p-values with and without multiple comparison corrections are reported in Appendix Table A3).

We do not find statistically significant changes for other health outcomes after adjusting for multiple comparisons.[29] This pattern of results is reasonable – in rural India, PPH is most amenable to improvement through changes in provider behavior at the time of delivery (with the use of drugs to control post-partum bleeding, for example, for which we find evidence in Section

[28] Testing $\beta_{output} = \beta_{input}$, we fail to reject the null hypothesis (p=0.897).
[29] Among the results for pre-eclampsia and sepsis for input and output contracts, only the pre-eclampsia result is marginally significant (p = 0.07) when not adjusting for multiple comparisons.

4.2). Alternatively, among the four domains of health outcome, providers have the least control over pre-eclampsia because it is a hypertensive disorder developed earlier during pregnancy – and women generally seek antenatal care from other providers. Furthermore, the biological causes of pre-eclampsia remain scientifically unclear, essentially making it impossible for providers to predict and prevent this condition, but it can be better managed if detected earlier in the pregnancy (Mol et al. 2016, Phipps et al. 2016, Steegers et al. 2010). For sepsis, a key preventive strategy (wearing gloves during delivery) was already practiced among 99% of control group providers, and prophylactic antibiotics are commonly used at high (and inappropriate) rates in rural India, including Karnataka.[30]

4.2 Health Input Use and Underlying Mechanisms

Table 4 then reports estimates from Equation 1 for provision of health inputs. Because we only find significant health improvements for PPH, we do not expect substantial improvements in input use across all five domains of maternal and neonatal care. Column 6 shows that in the output contract group, the postnatal maternity care index (which primarily reflects postnatal health counseling to mothers shortly after delivery) rose by 0.0773 index points relative to the control group; this estimate is statistically significant (unadjusted p-value = 0.033), but not at conventional levels after correcting for multiple hypotheses testing (p=0.156) – see Appendix Table A4 for full adjusted and unadjusted p-values.[31] There were no improvements in the five composite domains of maternal and neonatal care in the input incentive contract group. (In Section 4.5, we discuss the 0.14 point decline in the postnatal newborn care counseling index shown for the output contract group in Column 10, which we believe reflects a reduction in

[30] The other clinical action listed in the guidelines given to providers is handwashing, but provider handwashing behavior is not reliably observed by mothers or accompanying caregivers. Antibiotics are routinely overused in clinical settings in India (Ganguly et al. 2011).

[31] The magnitude of the increase (0.0773) is not directly interpretable because the weights used to compute the index change the scale (Anderson 2008) .

effort devoted to newborn care (i.e., 'multi-tasking' (Holmstrom and Milgrom 1991, Prendergast 2011)).

However, other than in postnatal maternity care, we do not observe significant improvements for indices in other domains of care. This is probably because the indices aggregate many inputs, only a subset of which directly influence PPH (those included in Active Management of Third Stage of Labor (AMTSL), for example).[32] Although not pre-specified, we therefore directly examine changes in two inputs most closely related to PPH: parenteral oxytocic drugs (whose administration is recommended universally for all mothers) and manual removal of placenta (which reflects complications that could potentially be avoided with better care).[33]

The first two columns of Table 5 report estimates for providers' stocking of parenteral oxytocic drugs at their clinics. Consistent with our PPH results in Section 4.1, we find that providers in both output and input contract groups were approximately 7 percentage points more likely to maintain stocks of parenteral oxytocic drugs in their clinics (an increase of 25 percent relative to the control group mean of 0.29). Consistent with this finding, Columns 3 and 4 also show estimates of patients' reported use of medicines to prevent bleeding, which are 6 percentage points higher in both incentive contract groups relative to the control group (estimates

[32] Active Management of Third Stage of Labor (AMTSL) recommended by WHO guidelines also includes early cord clamping, controlled traction of the umbilical cord, and trans-abdominal manual massage of the uterus (Urner, Zimmermann and Krafft 2014). Abdominal massage was included in the 2009 guidelines from Government of India (MOHFW 2009) and was also recommended by Am. Coll. of Obs. and Gyn. at the time (ACOG 2011). The 2012 revised guidelines from WHO no longer recommend cord traction or abdominal massage as standard practice (Tunçalp, Souza and Gülmezoglu 2013).

[33] Within the WHO guidelines that our input contracts reward, a clinical action closely related to the prevention of PPH – and recommended universally for all mothers – is the administration of medicines (parenteral oxytocic drugs), which are effective in stopping post-delivery bleeding. Clinical actions not universally recommended – ones that are clinically appropriate conditional on presence of a risk factor or manifestation of an adverse outcome, for example – are more difficult to interpret if the conditions requiring them are preventable.

are statistically indistinguishable from each other with and without conditioning on various control variables, but only statistically different from zero in Column 3).[34]

Additionally, a key corrective clinical action to prevent PPH when the placenta is not delivered normally is manual placenta removal (Urner, Zimmermann and Krafft 2014). ATMSL, which is recommended by WHO guidelines, minimizes the time required for normal delivery of an intact placenta, so reductions in manual placenta removal can be interpreted as improvements in maternity care related to PPH (Begley et al. 2011). Column 8 of Table 5 shows a statistically significant 7 percentage point decline in manual placenta removal in the output contract arm (26 percent reduction), suggesting fewer instances in which corrective action was needed.[35] The corresponding estimate in the input arm is less precise, but comparable in magnitude.

4.3 Relative Costs of Input and Output Contracts

Given that our input and output incentive contracts produced statistically indistinguishable improvements in maternal health, we next briefly compare the costs required to produce these health benefits. Figures 2 and 3 show the distributions of incentive payments made to providers in treatment arm. *Ex post*, the average payment was much higher in the output contract group (INR56,812, or USD 1033) than in the input contract group (INR13,850, or USD 252).[36] In each figure, we also construct counterfactual distributions that reflect hypothetical input contract payments to output contract group providers (and vice versa). In general, for the specific contracts that we study, payments for outputs are nearly four times as expensive as payments for inputs. Importantly, this potentially reflects a substantial risk premium required by

[34] This particular input is possibly measured with greater error than others because mothers and those accompanying them during childbirth are unable to observe the specific types of drugs administered.
[35] Although abdominal massaging is no longer a recommended best practice as per revised WHO guidelines, we also see in Table 5 that providers in input contract arm were 7 percentage points (18 percent) more likely to massage the mother's abdomen relative to control arm, while providers in output contracts arm had no significant change.
[36] Exchange rate 1USD = 55 INR in 2013.

providers accepting output payment contracts to compensate them for the risk that they are not rewarded for additional effort exerted (because outputs are not fully under their control).

In the setting of our study, the input contract was more efficient than the output incentive contract because it delivered the same health outcomes at much lower cost for the principal. However, it is important to note that this only applies to the input and output incentive contracts studied here, and it is not generalizable to comparing other input and output contracts. For instance, if the elasticity of an output with respect to the reward in the output contract is very low, a much less generous output contract could have delivered similar health improvements at a smaller cost to the principal.[37] Although we were unable to the experiment over a range of payment rates for inputs and outputs, we note that other studies that experimented with different payment rates for output contracts have found the relevant elasticity to be significant (Luo et al. 2015).

4.4 The Role of Skills in in Provider Responses to Output and Input Incentive Contracts

As our conceptual framework in section 2 suggests, we expect provider skills to play an important role in determining the effectiveness (and relative effectiveness) of output and input incentive contracts. With input incentive contracts, providers are paid to use explicitly-specified inputs ("follow orders"), hence provider skill may be less relevant. Alternatively, with output incentive contracts, provider skill may play a much more important role as more skilled providers are better able to choose the optimal combination of inputs using local/contextual information (albeit with less control over contracted outcomes – and therefore more uncertainty about incentive payments).

We examine differences in providers' behavioral responses to incentive contracts by level of skill, measuring skills according to whether or not providers have medical degrees with

[37] We are grateful to Oriana Bandiera and Paul Gertler for helpful discussions on this point.

specific obstetric training ("MBBS plus" providers) qualifying them to provide maternity care[38]. Table 6 shows that in the output contract group, "MBBS plus" providers (column 1) produced PPH rates that were 9 percentage points lower on average than providers without obstetric qualifications. In contrast, "MBBS plus" providers performed no better (or worse) than less qualified providers in the input contract group. These results are consistent with output incentive contracts leading providers to use local/contextual information to improve care beyond simple guideline adherence – but only when they also have sufficient complementary skills to do so.

To explore high-skilled provider use of local/contextual information under output incentive contracts further, we also directly examine providers' reports of implementing new delivery strategies since our baseline survey. Table 7 shows that output contracts increased the probability that "MBBS plus" providers implemented new strategies by 0.364 (0.364 = -0.165+0.529; se=0.142), which is statistically different from zero. In contrast, the input contract did not increase the use of new strategies among "MBBS plus" providers (0.143=-0.263+0.406; se = 0.167). The first two rows also show that neither type of contract increased the probability that less qualified providers implemented new strategies.

4.5 Expectations and Multi-tasking

Although our incentive contracts generally cover all domains of maternity care provision, a natural concern with performance incentives is 'multi-tasking' (or the reduction of effort on unrewarded margins – or those for which expected net benefits are lower) (Holmstrom and Milgrom 1991, Prendergast 1999). Without knowing the underlying production function and cost functions, it was not possible to know ex-ante if the contracts rewarded some outcomes more

[38] The basic medical education at the level of MBBS and BAMS includes a few months of training in obstetrics that gives only introductory level of skills. Such providers are able to conduct normal deliveries but do not have training in management of complications or the surgical skills that are acquired as part of advanced obstetric training programs (typically 2 to 3 years of training after completing medical school) (Mahal and Mohanan 2006).

generously (net of the full cost of providing them) than others. Importantly, this depends on providers' expectations about their ability to improve outcomes (in both absolute and relative terms).

In Table 4 Column 10, we find a 0.14 point decline in the postnatal newborn care counseling index among output contract group providers ($p<0.01$ after correcting for multiple comparisons), which may reflect a reduction in effort devoted towards newborn care. To explore this possibility further, we use measures of provider beliefs about their ability to improve each of the four major health outcomes (i.e., outputs) that we collected prior to introducing incentive contracts. About 35% of providers rated neonatal mortality as the most difficult one to improve among the four outcomes. Instead, providers generally attributed neonatal mortality to the actions of caregivers at home (driven by traditional beliefs that colostrum is 'witch's milk', for example) and beyond providers' control. Moreover, when asked which of the four major health outcomes was most important to improve based on patients' clinical needs, only 9% said neonatal mortality – while 75% said PPH (Figure 4). This pattern of beliefs is consistent with output contract providers diverting effort away from postnatal newborn care (and preventing neonatal mortality) and towards preventing and treating PPH. In contrast, Table 4, Column 10, shows no commensurate reduction in postnatal newborn care counseling delivered by providers in the input contract group. Because postnatal newborn care counseling largely comprised of giving information to mothers about how to care for the newborns and detect birth-related complications at home, it is reasonable that input contract providers responded to performance incentives to deliver this counseling despite believing that it would have little effect on mothers' care for their babies at home.

Taken together, our results suggest that improvements in PPH under incentive contracts may have come at the expense of some reduction in newborn care – and did so only under circumstances in which providers believed that effort on newborn care was particularly unlikely to be rewarded (i.e., output incentive contracts).

5. Conclusion

The use of performance incentives in public service delivery has grown rapidly in developing countries in recent years (Wagstaff 2015). The World Bank alone currently supports more than 40 such large-scale programs in the health sector (World Bank 2016). However, very little empirical research examines key contract design issues that should guide these programs (Miller and Babiarz 2014). Theory suggests that two central considerations are (a) the trade-off between rewarding the production of outputs versus the use of inputs and (b) how this trade-off may vary with worker/agent skill. While performance incentives rewarding outputs may encourage innovation and efficiency in context-dependent input choices, they also impose more risk on agents as well. Moreover, suitable skills may be necessary for agents to innovate or deviate efficiently from pre-specified input combinations.

Through a maternity care experiment in India, our paper provides empirical evidence that output and input incentive contracts produced comparable health gains – a reduction in post-partum hemorrhage (PPH) exceeding 20%. This result is important given that PPH is the leading cause of maternal mortality worldwide, and India's maternal mortality ratio continues to be very high (174 per 1000 live births in 2015) (World Health Organization 2015). Moreover, agents (health providers) responded very differently to the incentive contracts according to their underlying qualifications and skills. With output incentive contracts, those with advanced

qualifications reduced PPH substantially, implementing new delivery strategies to do so – while those lacking appropriate qualifications failed to reduce PPH. Alternatively, those with varying qualifications performed equivalently under input incentive contracts, following guidelines in similar ways.

Overall, our findings suggest that the focus on input incentives among many 'pay-for-performance' programs in developing country health sectors may be appropriate despite the lack of previous empirical evidence on the underlying rationale (Das, Gopalan and Chandramohan 2016, Fritsche, Soeters and Meessen 2014). In particular, health providers in low-income countries often have relatively little training, and our results suggest that output incentives may be particularly ineffective in improving their performance – but that incentives for adherence to established clinical guidelines may be an appropriate strategy.

SUPPLEMENTARY MATERIAL:

Appendix materials for online publication are included at the end of this manuscript.

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TABLE I
PROVIDER SAMPLING AND ATTRITION

	Control	Input contract	Output contract
A. Providers identified from government survey data	42	38	40
B. Additional eligible providers identified during fieldwork for verification	5	2	13
C. Attrited from survey	3	2	0
Final Analytical Sample (A + B - C)	44	38	53

Notes: This table reports counts of the universe of providers identified as eligible for the study by randomly assigned treatment arm. Because providers identified during fieldwork were assigned to study arms based on a randomized list of sequence numbers (unknown to field enumerators, and the sequence was not predictable) it was not possible to ensure an equal number of providers across arms. Providers identified as attritors in row C declined to participate in the study during or after signing the contract. The last row includes the final sample of providers used in the analysis.

TABLE II
SUMMARY STATISTICS AND BALANCE

Variables	All	Input Group	Output Group	Control Group	Test of Equality (p-value)
Female provider (percent)	0.56	0.55	0.57	0.55	0.98
	(0.5)	(0.5)	(0.5)	(0.5)	
MBBS plus (percent)	0.59	0.45	0.64	0.64	0.14
	(0.49)	(0.5)	(0.48)	(0.49)	
MBBS (percent)	0.21	0.26	0.19	0.2	0.71
	(0.41)	(0.45)	(0.39)	(0.41)	
BAMS (percent)	0.16	0.26	0.15	0.09	0.13
	(0.37)	(0.45)	(0.36)	(0.29)	
Other qualification (percent)	0.04	0.03	0.02	0.07	0.52
	(0.19)	(0.16)	(0.14)	(0.25)	
Provider Age (mean)	47.01	46.42	47.45	46.98	0.89
	(10.29)	(9.14)	(11.33)	(10.12)	
Years practicing (mean)	19.93	19.68	20.98	18.89	0.64
	(10.68)	(9.95)	(11)	(11.04)	
Years clinic operating (mean)	17.32	15.5	19.28	16.52	0.3
	(11.84)	(11.04)	(12.78)	(11.24)	
N	135	38	53	44	

Notes: This table reports mean provider characteristics by study group. Provider characteristics are self-reported and measured through interviews with the provider or with a staff member. Rows 2-4 refer to provider training: MBBS plus is a Bachelor of Medicine degree with a specialization such as obstetrics, MBBS is a Bachelor of Medicine degree with no additional specialization, BAMS is a degree in Ayurveda medicine. Standard deviations are reported in parentheses. P-values in the final column are associated with F-tests of joint equality across the three study groups.

TABLE III
IMPACT OF PROVIDER INCENTIVES ON OUTPUTS

	Postpartum Hemorrhage		Pre-eclampsia		Sepsis		Neonatal Death	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Input incentives	-0.0842***	-0.0843***	0.0312	0.0573	0.0333	0.0369	-0.0073	0.0032
	(0.0297)	(0.0284)	(0.0450)	(0.0434)	(0.0228)	(0.0253)	(0.0087)	(0.0051)
Output incentives	-0.0622**	-0.0742**	0.0466	0.0611	0.0065	0.0208	-0.0091	0.0079
	(0.0286)	(0.0294)	(0.0325)	(0.0328)	(0.0198)	(0.0225)	(0.0111)	(0.0067)
District & Enumerator fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household- and provider-level controls	No	Yes	No	Yes	No	Yes	No	Yes
Control mean	0.365	0.365	0.179	0.179	0.0651	0.0651	0.0121	0.0121
Observations	2890	2748	2894	2748	2891	2748	2894	2748
R^2	0.266	0.279	0.255	0.271	0.106	0.119	0.0582	0.0565

Notes: Estimates obtained through OLS. Robust standard errors, clustered at the provider level, are reported in parentheses.*, **, and *** denote statistical significance based on p-values less than 0.1, 0.05 and 0.01, adjusted for multiple hypotheses tested and calculated using the free step-down resampling method. Each specification includes district and enumerator fixed effects; even columns additionally include household-level controls (mother's age and education; household's caste and house type (houseless, kutcha, semi-pucca, or pucca); head of household's religion; mother's history of hypertension, diabetes, asthma, hyper- or hypothyroidism, and convulsions; whether the mother has had a previous stomach surgery; whether it is the mother's first pregnancy, number of previous pregnancies, whether the mother has had a stillbirth or abortion, and number of previous children birthed; whether the household owns land, has no literate adults, and owns a Below Poverty Line card) as well as provider-level controls (primary provider's gender, professional qualifications, number of years in practice, and number of years that the facility has been in operation). All dependent variables measured through household surveys fielded between November 2013 and July 2014; see appendix for details of measurement.

TABLE IV
IMPACT OF PROVIDER INCENTIVES ON INPUTS

	Pregnancy Care		Childbirth Care		Postnatal Maternal Care Counseling		Newborn Care		Postnatal Newborn Care Counseling	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Input incentives	-0.0106	0.0029	-0.0203	0.0146	0.0380	0.0422	-0.0545	-0.0288	-0.0650	-0.0065
	(0.0455)	(0.0458)	(0.0338)	(0.0284)	(0.0390)	(0.0392)	(0.0350)	(0.0371)	(0.0576)	(0.0577)
Output incentives	-0.0529	-0.0551	-0.0311	-0.0191	0.0674	0.0773	-0.0285	-0.0146	-0.1610***	-0.1386***
	(0.0373)	(0.0401)	(0.0268)	(0.0250)	(0.0354)	(0.0358)	(0.0322)	(0.0360)	(0.0435)	(0.0437)
District & enumerator fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household- and provider-level controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Control mean	-0.0621	-0.0621	-0.00480	-0.00480	-0.0876	-0.0876	-0.00203	-0.00203	-0.0680	-0.0680
Observations	2890	2748	2894	2748	2891	2748	2894	2748	2894	2748
R^2	0.355	0.361	0.356	0.382	0.406	0.422	0.427	0.447	0.471	0.490

Notes: Estimates obtained through OLS. Robust standard errors, clustered at the provider level, are reported in parentheses. *, **, and *** denote statistical significance based on p-values less than 0.1, 0.05 and 0.01, adjusted for multiple hypotheses tested and calculated using the free step-down resampling method. Each specification includes district and enumerator fixed effects; even columns additionally include household-level controls (mother's age and education; household's caste and house type (houseless, kutcha, semi-pucca, or pucca); head of household's religion; mother's history of hypertension, diabetes, asthma, hyper- or hypothyroidism, and convulsions; whether the mother has had a previous stomach surgery; whether it is the mother's first pregnancy, number of previous pregnancies, whether the mother has had a stillbirth or abortion, and number of previous children birthed; whether the household owns land, has no literate adults, and owns a Below Poverty Line card) as well as provider-level controls (primary provider's gender, professional qualifications, number of years in practice, and number of years that the facility has been in operation). All dependent variables measured through household surveys fielded between November 2013 and July 2014 and are based on WHO Guidelines (available at http://whqlibdoc.who.int/hq/2007/who_mps_07.05_eng.pdf); see appendix for details of measurement.

TABLE V
IMPACT OF PROVIDER INCENTIVES ON PPH PREVENTION AND MANAGEMENT

	Parenteral Oxytocic Drugs Available		Medicine Use to Reduce Bleeding After Delivery		Massage Abdomen After Delivery		Placenta Manually Removed	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Input incentives	0.0722*	0.0760*	0.0636**	0.0305	0.0518	0.0718*	-0.0786	-0.0504
	(0.0415)	(0.0443)	(0.0322)	(0.0290)	(0.0322)	(0.0427)	(0.0483)	(0.0437)
Output incentives	0.0730*	0.0694*	0.0623**	0.0382	0.00517	-0.0106	-0.0666*	-0.0722*
	(0.0422)	(0.0417)	(0.0286)	(0.0266)	(0.0289)	(0.0353)	(0.0386)	(0.0381)
District & enumerator fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household- and provider-level controls	No	Yes	No	Yes	No	Yes	No	Yes
Control mean	0.932	0.932	0.460	0.460	0.517	0.517	0.289	0.289
Observations	135	135	2791	2656	1707	1610	1665	1571
R^2	0.260	0.292	0.322	0.340	0.372	0.393	0.266	0.277

Notes: Estimates obtained through OLS. Robust standard errors, clustered at the provider level, are reported in parentheses. *, **, and *** denote statistical significance based on p-values less than 0.1, 0.05 and 0.01. All specifications include district and enumerator fixed effects; even columns additionally include household-level controls (mother's age and education; household's caste and house type (houseless, kutcha, semi-pucca, or pucca); head of household's religion; mother's history of hypertension, diabetes, asthma, hyper- or hypothyroidism, and convulsions; whether the mother has had a previous stomach surgery; whether it is the mother's first pregnancy, number of previous pregnancies, whether the mother has had a stillbirth or abortion, and number of previous children birthed; whether the household owns land, has no literate adults, and owns a Below Poverty Line card) as well as provider-level controls (primary provider's gender, professional qualifications, number of years in practice, and number of years that the facility has been in operation). Dependent variables for columns 1-6 are measured through household surveys fielded between November 2013 and July 2014; see appendix for details of measurement. Dependent variable for columns 7 & 8 measured through interviews with a member of the hospital personnel and is a binary indicator for whether the provider's facility had any parenteral oxytocic drugs available at the time of the survey at the end of the study period.

TABLE VI
IMPACT OF INCENTIVES ON POST PARTUM HEMORRHAGE,
BY PROVIDER QUALIFICATIONS

MBBS Plus	-0.002
	(0.052)
Input incentives	-0.052
	(0.043)
Output incentives	-0.007
	(0.044)
Input X MBBS-Plus	-0.054
	(0.054)
Output X MBBS-Plus	-0.094*
	(0.052)
District & Enumerator fixed effects	Yes
Household- and provider-level controls	Yes
Observations	2748
R^2	0.280

Notes: Estimates from OLS regression on PPH and includes an interaction with the indicated provider qualification category. The MBBS plus variable takes value 1 if the provider holds an MBBS degree (Bachelor of Medicine, Bachelor of Surgery) with advanced medical training in obstetrics and gynecology, 0 otherwise. Robust standard errors, clustered at the provider level, are reported in parentheses. Each specification includes district and enumerator fixed effects, household-level controls (mother's age and education; household's caste and house type (houseless, kutcha, semi-pucca, or pucca); head of household's religion; mother's history of hypertension, diabetes, asthma, hyper- or hypothyroidism, and convulsions; whether the mother has had a previous stomach surgery; whether it is the mother's first pregnancy, number of previous pregnancies, whether the mother has had a stillbirth or abortion, and number of previous children birthed; whether the household owns land, has no literate adults, and owns a Below Poverty Line card) as well as provider-level controls (primary provider's gender, number of years in practice, and number of years that the facility has been in operation). The dependent variable (PPH) is measured through household surveys fielded between November 2013 and July 2014; see appendix for details of measurement.

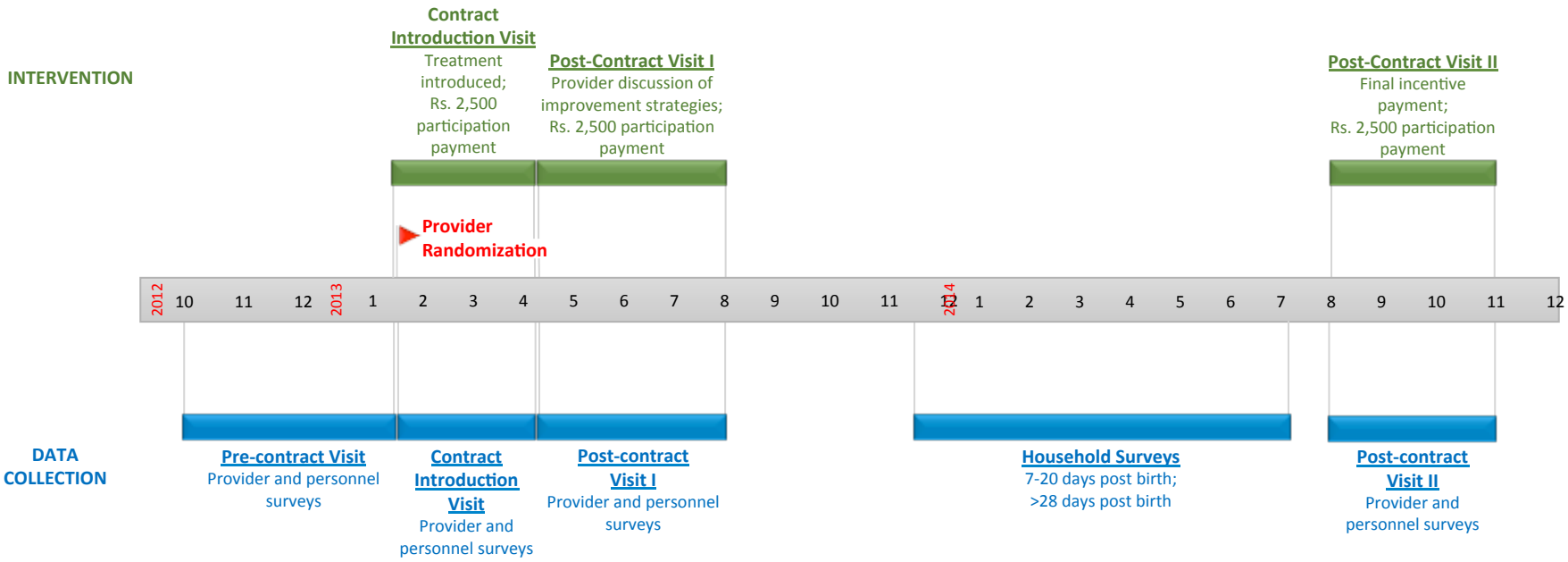
TABLE VII
PROVIDER QUALIFICATIONS AND ASSOCIATION WITH IMPLEMENTING NEW STRATEGIES

	Implement New Strategies
Panel A: Regressions	(1)
Input incentives	-0.263
	(0.168)
Output incentives	-0.165
	(0.158)
Input incentives X MBBS plus	0.406*
	(0.244)
Output incentives X MBBS plus	0.529**
	(0.218)
MBBS plus	-0.446***
	(0.150)
Panel B: Results from Linear Combinations	
Effect of Input Contracts on MBBS plus	0.143
	(0.167)
Effect of Output Contracts on MBBS plus	0.364***
	(0.142)
District fixed effects	Yes
Provider-level controls	Yes
Observations	135
R-squared	0.378

Notes: Estimates obtained through OLS. The dependent variable is an indicator for if the provider reported implementing any new strategies since signing the contract, measured through a survey at the first post-contract provider visit. The MBBS plus variable takes value 1 if the provider holds an MBBS degree (Bachelor of Medicine, Bachelor of Surgery) with advanced medical training in obstetrics and gynecology, 0 otherwise. The specification also includes district fixed effects as well as provider-level controls (primary provider's gender, number of years in practice, and number of years that the facility has been in operation). Robust standard errors, clustered at the provider level, are reported in parentheses.

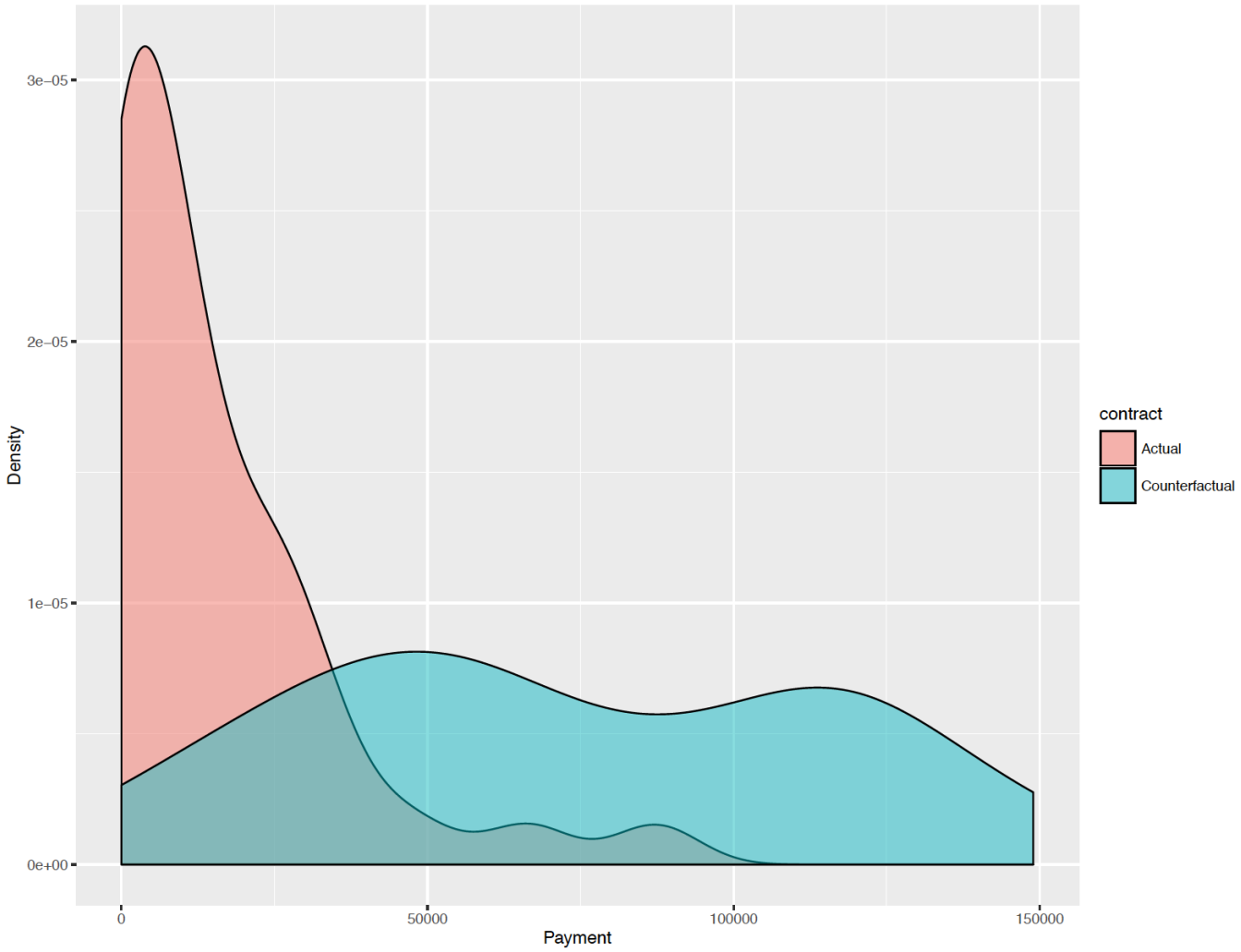
Figure

FIGURE I
TIMELINE OF INTERVENTIONS AND DATA COLLECTION



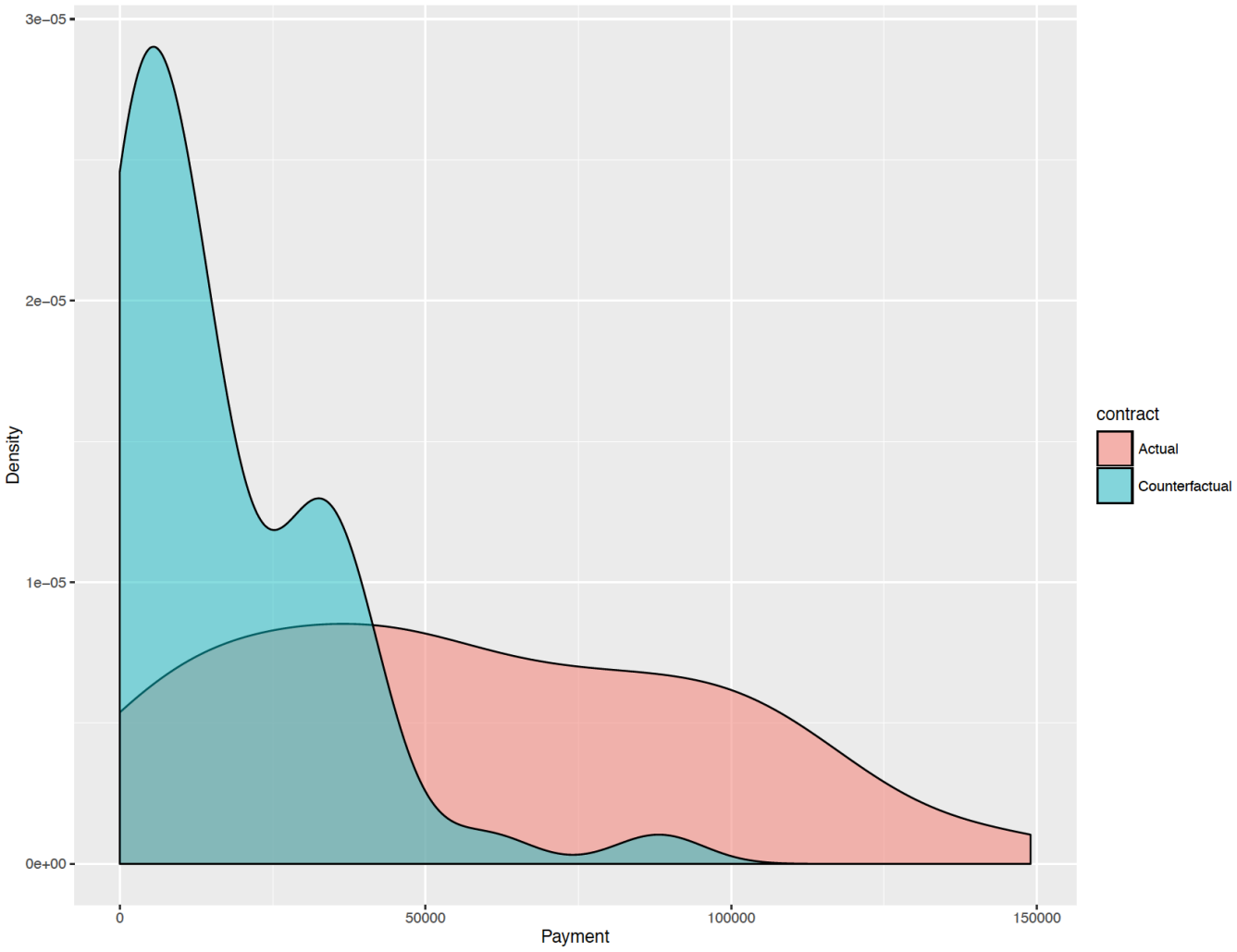
Notes: The timeline shows study implementation period from October 2012 to November 2014. The timing of interventions are labeled (in green) above the timeline, and all data collection and surveys are labeled (in blue) below the timeline. Providers were randomized into treatment arm in early 2014, and contracts signed during January - April 2013. Providers were visited again during May – August 2013 to discuss strategies and collect provider data. Household surveys (of mothers who delivered babies at study providers' facilities) were conducted between December 2013 and July 2014. The providers were visited again at the end of the study to make the incentive payments as specified in contracts, and collect data

FIGURE II
DISTRIBUTION OF ACTUAL AND COUNTERFACTUAL PAYMENTS FOR INPUTS GROUP



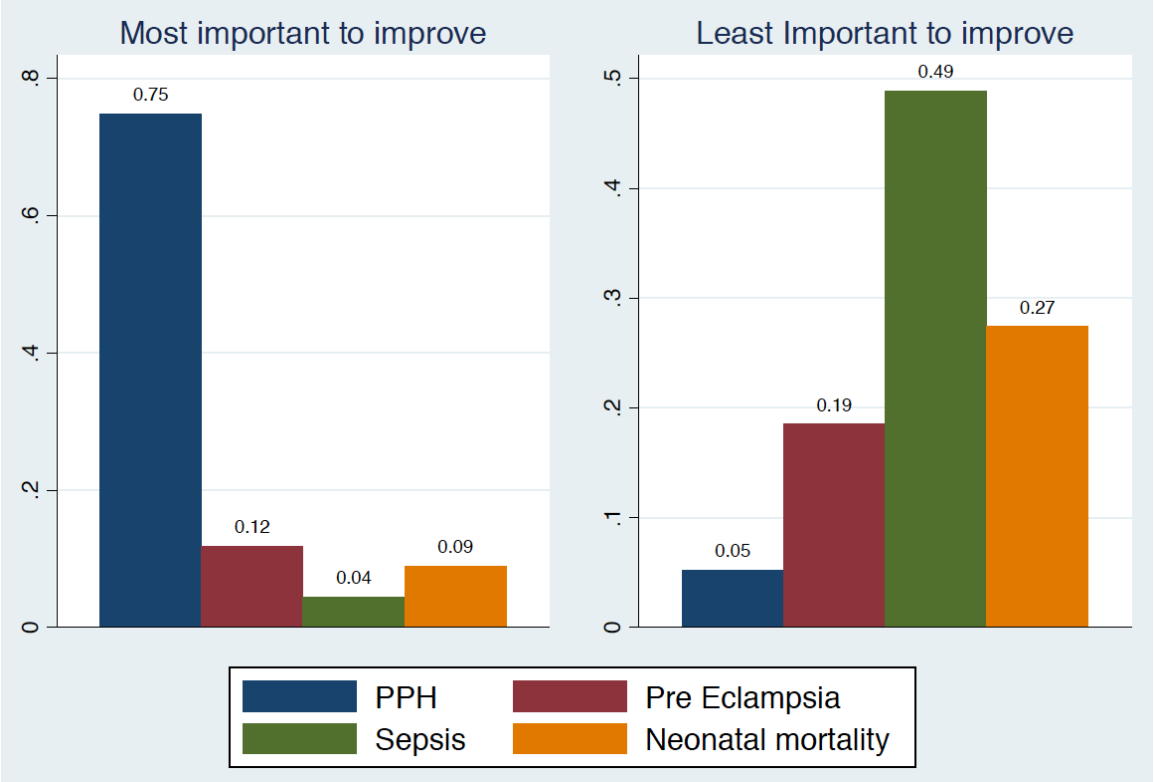
Notes: The distributions show payments made to providers in the input contracts arm. Actual payments are amounts paid out to providers at the end of the experiment based on levels of inputs provided. The distribution labeled "counterfactual" show the payments that might have been made to the same providers if they had been paid based on outcomes instead.

FIGURE III
DISTRIBUTION OF ACTUAL AND COUNTERFACTUAL PAYMENTS FOR OUTPUTS GROUP



Notes: The distributions show payments made to providers in the output contracts arm. Actual payments are amounts paid out to providers at the end of the experiment, based on their performance on contracted outputs. The distribution labeled "counterfactual" show the payments that might have been made to the same providers if they had been paid based on inputs provided instead.

FIGURE IV
PROVIDER EXPECTATIONS ABOUT IMPROVEMENTS IN OUTCOMES



Notes: Figure on the left shows providers' response to question asking them to rank the four outcomes based on which one was most important to improve among their own patients. Bars indicate percentage of providers who responded that a given outcome was most important. The bars in the figure on the right shows providers' responses indicating outcomes that they thought were least important to improve among their patients.

For Online Publication

Appendix Materials
For
Mohanan et al (2017) "Different strokes for different folks:
Experimental evidence on the effectiveness of input and output based contracts for health care providers with different levels of skills"

Contents:

- Appendix Tables 1-4
- Appendix 1: Sample Contracts and Guidelines
- Appendix 2: Calculations and Measurement of Inputs and Outputs

APPENDIX TABLE A1
JOINT TEST OF ORTHOGONALITY

	Treatment Group	Input Group	Output Group
	(1)	(2)	(3)
Female provider	0.034	-0.013	0.061
	(0.088)	(0.113)	(0.112)
MBBS plus	-0.082	-0.214	-0.003
	(0.110)	(0.136)	(0.139)
MBBS	0.357	0.299	0.378
	(0.251)	(0.261)	(0.277)
BAMS	0.402	0.362	0.436
	(0.254)	(0.278)	(0.293)
Years practicing	0.003	0.004	0.004
	(0.004)	(0.006)	(0.005)
Years clinic operating	0.002	-0.004	0.005
	(0.003)	(0.007)	(0.004)
Constant	0.258	0.275	-0.021
	(0.262)	(0.298)	(0.292)
Observations	135	82	97
R-squared	0.033	0.068	0.042
F stat	0.679	1.093	0.709
p-value	0.667	0.374	0.643

Notes: Robust standard errors are reported in parentheses. The dependent variable in the first specification is an indicator for being in the treatment group, in the second an indicator for being in the input treatment group (excluding those in the output group), and in the third it is an indicator for being in the output group (excluding those in the input group). Provider characteristics are self-reported and measured through interviews with the provider or with a staff member. The following variables measure provider training: MBBS plus is a Bachelor of Medicine degree with a specialization such as obstetrics, MBBS is a Bachelor of Medicine degree with no additional specialization, BAMS is a degree in Ayurveda medicine. The last two rows report the F-statistic and associated p-value associated with a test that all coefficients jointly equal zero.

APPENDIX TABLE A2
NUMBER OF PROVIDERS, BY TREATMENT GROUP

	Total (N)	Input (N)	Output (N)	Control (N)	Test of Equality (p-value)
In final sample	135	38	53	44	0.078
Attrition	5	2	0	3	
Total	140	40	53	47	

Notes: This table reports counts of the universe of providers identified as eligible for the study by randomly assigned treatment arm. Because providers identified during fieldwork were assigned to study arms based on a randomized list of sequence numbers (unknown to field enumerators, and the sequence was not predictable) it was not possible to ensure an equal number of providers across arms. Providers identified as attritors declined to participate in the study during or after signing the contract. The P-value in the final column is associated with F-tests of joint equality from a regression of treatment indicators on a binary indicator for refusing to participate.

APPENDIX TABLE A3
IMPACT OF PROVIDER INCENTIVES ON OUTPUTS - CORRECTING FOR MULTIPLE HYPOTHESIS TESTING

	Postpartum Hemorrhage	Sepsis	Neonatal Death	Pre-eclampsia
	(1)	(2)	(3)	(4)
Input incentives	-0.0843	0.0369	0.0032	0.0573
	(0.0284)	(0.0253)	(0.0051)	(0.0434)
Unadjusted p-value	0.004	0.147	0.532	0.189
Adjusted p-value	*0.010*	*0.441*	*0.611*	*0.188*
Output incentives	-0.0742	0.0208	0.0079	0.0611
	(0.0294)	(0.0225)	(0.0067)	(0.0328)
Unadjusted p-value	0.013	0.356	0.237	0.065
Adjusted p-value	*0.031*	*0.611*	*0.566*	*0.116*
District fixed effects	Yes	Yes	Yes	Yes
Enumerator fixed effects	Yes	Yes	Yes	Yes
Household- and provider-level controls	Yes	Yes	Yes	Yes
Control mean	0.365	0.0651	0.0121	0.179
Observations	2748	2748	2748	2748
R^2	0.280	0.119	0.0576	0.271

Notes: Each column reports estimates obtained through an OLD regression; robust standard errors, clustered at the provider level, are reported in parentheses and the associated p-value is reported below. The adjusted p-values are calculated *(in italics*) using the free step-down resampling method and implemented using code from Soledad Giardili and Marcos Vera Hernandez, accounting for the grouping of PPH, Sepsis and NNM into outputs that are primary influenced by care at the time of delivery across two treatment arms. Each specification includes district and enumerator fixed effects and household-level controls (mother's age and education; household's caste and house type (houseless, kutcha, semi-pucca, or pucca); head of household's religion; mother's history of hypertension, diabetes, asthma, hyper- of hypothyroidism, and convulsions; whether the mother has had a previous stomach surgery; whether it is the mother's first pregnancy, number of previous pregnancies, whether the mother has had a stillbirth or abortion, and number of previous children birthed; whether the household owns land, has no literate adults, and owns a Below Poverty Line card) as well as provider-level controls (primary provider's gender, professional qualifications, number of years in practice, and number of years that the facility has been in operation). All dependent variables are measured through household surveys fielded between November 2013 and July 2014; see appendix for details of measurement.

APPENDIX TABLE A4
IMPACT OF PROVIDER INCENTIVES ON INPUTS - CORRECTING FOR MULTIPLE HYPOTHESIS TESTING

	Childbirth Care	Postnatal Maternal Care	Newborn Care	Pregnancy Care	Postnatal Newborn Care
	(1)	(2)	(3)		
Input incentives	0.0146	0.0422	-0.0288	0.0029	-0.0065
	(0.0284)	(0.0392)	(0.0371)	(0.0458)	(0.0577)
Unadjusted p-value	0.608	0.283	0.439	0.949	0.910
Adjusted p-value	*0.879*	*0.781*	*0.879*	*0.948*	*0.910*
Output incentives	-0.0191	0.0773	-0.0146	-0.0551	-0.1386
	(0.0250)	(0.0358)	(0.0360)	(0.0401)	(0.0437)
Unadjusted p-value	0.447	0.033	0.686	0.172	0.002
Adjusted p-value	*0.879*	*0.156*	*0.879*	*0.276*	*0.003*
District fixed effects	Yes	Yes	Yes	Yes	Yes
Enumerator fixed effects	Yes	Yes	Yes	Yes	Yes
Household- and provider-level controls	Yes	Yes	Yes	Yes	Yes
Control mean	-0.00480	-0.0876	-0.00203	-0.0621	-0.0680
Observations	2739	2739	2740	2748	2748
R^2	0.383	0.423	0.449	0.361	0.490

Notes: Each column reports estimates obtained through an OLS regression; robust standard errors, clustered at the provider level, are reported in parentheses and the associated p-value is reported below. The adjusted p-values *(in italics)* are calculated using the free step-down resampling method and implemented using code from Soledad Giardili and Marcos Vera Hernandez, accounting for the grouping of childbirth care, postnatal maternal care, and newborn care into inputs that are primarily influenced by care at the time of delivery across two treatment arms. Each specification includes district and enumerator fixed effects and household-level controls (mother's age and education; household's caste and house type (houseless, kutcha, semi-pucca, or pucca); head of household's religion; mother's history of hypertension, diabetes, asthma, hyper- of hypothyroidism, and convulsions; whether the mother has had a previous stomach surgery; whether it is the mother's first pregnancy, number of previous pregnancies, whether the mother has had a stillbirth or abortion, and number of previous children birthed; whether the household owns land, has no literate adults, and owns a Below Poverty Line card) as well as provider-level controls (primary provider's gender, professional qualifications, number of years in practice, and number of years that the facility has been in operation). All dependent variables are measured through household surveys fielded between November 2013 and July 2014 and are based on WHO Guidelines (available at http://whqlibdoc.who.int/hq/2007/who_mps_07.05_eng.pdf); see appendix for details of measurement.

APPENDIX 1: Contracts

Contents:

1. WHO Guidelines (2009) - given to all providers
2. Sample Input contract
3. Sample Output contract
4. Sample Control contract

WHO/MPS/07.05

Integrated Management of Pregnancy and Childbirth

WHO Recommended Interventions for Improving Maternal and Newborn Health

First edition 2007
Second edition 2009

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World Health Organization

Department of Making Pregnancy Safer

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Maternal and newborn health care programmes should include key interventions to improve maternal and newborn health and survival. The five tables include these key interventions to be delivered through health services, family and the community.

Table 1 lists interventions delivered to the mother during pregnancy, childbirth and in the postpartum period, and to the newborn soon after birth. These include important preventive, curative and health promotional activities for the present as well as the future. *"Routine essential care"* refers to the care that should be offered to all women and babies, while *"situational care"* is dependent on disease patterns in the community. Some women and babies with moderately severe diseases or complications require *"additional care"* while those with severe diseases or complications require *"specialized care"*.

Table 2 lists the places where care should be provided through health services, the type of providers required and the recommended interventions and commodities at each level.

Table 3 lists practices, activities and support needed during pregnancy and childbirth by the family, community and workplace.

Table 4 lists key interventions provided to women before conception and between pregnancies.

Table 5 addresses unwanted pregnancies.

Further information on these interventions is available in WHO's Integrated Management of Pregnancy and Childbirth (IMPAC) clinical guidelines: Pregnancy, Childbirth, Postpartum and Newborn Care: a guide for essential practice, Managing Complications in Pregnancy and Childbirth: a guide for midwives and doctors, and Managing Newborn Problems: a guide for doctors, nurses and midwives". IMPAC guidelines are available at www.who.int/making_pregnancy_safer/en.

Table 1. Care in pregnancy, childbirth and postpartum period for mother and newborn infant

	Routine care (offered to all women and babies)	**Additional care** (for women and babies with moderately severe diseases and complications)	**Specialized - obstetrical and neonatal care** (for women and babies with severe diseases and complications)
Pregnancy care - 4 visits *Essential*	• Confirmation of pregnancy • Monitoring of progress of pregnancy and assessment of maternal and fetal well-being • Detection of problems complicating pregnancy (e.g., anaemia, hypertensive disorders, bleeding, malpresentations, multiple pregnancy • Respond to other reported complaints. • Tetanus immunization, anaemia prevention and control (iron and folic acid supplementation) • Information and counselling on self care at home, nutrition, safer sex, breastfeeding, family planning, healthy lifestyle • Birth planning, advice on danger signs and emergency preparedness • Recording and reporting • Syphilis testing	• Treatment of mild to moderate pregnancy complications: - mild to moderate anaemia - urinary tract infection - vaginal infection • Post abortion care and family planning • Pre-referral treatment of severe complications - pre-eclampsia - eclampsia - bleeding - infection - complicated abortion • Support for women with special needs e.g. adolescents, women living with violence • Treatment of syphilis (woman and her partner)	• Treatment of severe pregnancy complications: - anaemia - severe pre-eclampsia - eclampsia - bleeding - infection - other medical complications • Treatment of abortion complications
Situational	• HIV testing and counselling • Antimalarial Intermittent preventive treatment (IPT) and promotion of insecticide treated nets (ITN) • Deworming • Assessment of female genital mutilation (FGM)	• Prevention of mother to child transmission of HIV (PMTCT) by antiretroviral treatment (ART), infant feeding counselling, mode of delivery advice • Treatment of mild to moderate opportunistic infections • Treatment of uncomplicated malaria	• Treatment of severe HIV infection • Treatment of complicated malaria
Childbirth Care (labour, delivery, and immediate postpartum) *Essential*	• Care during labour and delivery - Diagnosis of labour - Monitoring progress of labour, maternal and fetal well-being with partograph - Providing supportive care and pain relief - Detection of problems and complications (e.g. malpresentations, prolonged and/or obstructed labour, hypertension, bleeding, and infection) - Delivery and immediate care of the newborn baby, initiation of breastfeeding - Newborn resuscitation - Active management of third stage of labour • Immediate postnatal care of mother - Monitoring and assessment of maternal well being, prevention and detection of complications (e.g. hypertension, infections, bleeding, anaemia) - Treatment of moderate post-haemorrhagic anaemia - Information and counselling on home self care, nutrition, safe sex, breast care and family planning - Postnatal care planning, advice on danger signs and emergency preparedness • Recording and reporting	• Treatment of abnormalities and complications (e.g. prolonged labour, vacuum extraction; breech presentation, episiotomy, repair of genital tears, manual removal of placenta) • Pre-referral management of serious complications (e.g. obstructed labour, fetal distress, preterm labour, severe peri- and postpartum haemorrhage) • Emergency management of complications if birth imminent • Support for the family if maternal death	• Treatment of severe complications in childbirth and in the immediate postpartum period, including caesarean section, blood transfusion and hysterectomy): - obstructed labour - malpresentations - eclampsia - severe infection - bleeding • Induction and augmentation of labour
Situational	• Vitamin A administration	• Prevention of mother-to-child transmission of HIV by mode of delivery, guidance and support for chosen infant feeding option	• Management of complications related to FGM

	Routine care (offered to all women and babies)	**Additional care** (for women and babies with moderately severe diseases and complications)	**Specialized - obstetrical and neonatal care** (for women and babies with severe diseases and complications)
Postnatal maternal care (up to 6 weeks) *Essential*	• Assessment of maternal wellbeing • Prevention and detection of complications (e.g. infections, bleeding, anaemia) • Anaemia prevention and control (iron and folic acid supplementation) • Information and counselling on nutrition, safe sex, family planning and provision of some contraceptive methods • Postnatal care planning, advice on danger signs and emergency preparedness • Provision of contraceptive methods	• Treatment of some problems (e.g. mild to moderate anaemia, mild puerperal depression) • Pre-referral treatment of some problems (e.g. severe postpartum bleeding, puerperal sepsis)	• Treatment of all complications - severe anaemia - severe postpartum bleeding - severe postpartum infections - severe postpartum depression • Female sterilization
Situational	• Promotion of ITN use	• Treatment of uncomplicated malaria	• Treatment of complicated malaria
Newborn care (birth and immediate postnatal) *Essential*	• Promotion, protection and support for breastfeeding • Monitoring and assessment of wellbeing, detection of complications (breathing, infections, prematurity, low birthweight, injury, malformation) • Infection prevention and control, rooming-in • Eye care • Information and counselling on home care, breastfeeding, hygiene • Postnatal care planning, advice on danger sign and emergency preparedness • Immunization according to the national guidelines (BCG, HepB, OPV-0) • Kangaroo Mother Care follow-up	• Care if moderately preterm, low birth weight or twin: support for breastfeeding, warmth, frequent assessment of wellbeing and detection of complications e.g. feeding difficulty, jaundice, other perinatal problems • Kangaroo Mother Care follow-up • Treatment of mild to moderate - local infections (cord, skin, eye, thrush) - birth injuries • Pre-referral management of infants with severe problems: - very preterm babies and/or birth weight very low - severe complications - malformations • Supporting mother if perinatal death	• Management of severe newborn problems - general care for the sick newborn and management of specific problems: - preterm birth - breathing difficulty - sepsis - severe birth trauma and asphyxia - severe jaundice - Kangaroo Mother Care (KMC) • Management of correctable malformations
Situational	• Promotion of sleeping under ITN	• Presumptive treatment of congenital syphilis • Prevention of mother-to-child transmission of HIV by ART • Support for infant feeding of maternal choice	• Treatment of: - congenital syphilis - neonatal tetanus
Postnatal newborn care (visit from/at home) *Essential*	• Assessment of infant's wellbeing and breastfeeding • Detection of complications and responding to maternal concerns • Information and counselling on home care • Additional follow-up visits for high risk babies (e.g. preterm, after severe problems, on replacement feeding)	• Management of: - minor to moderate problems and - feeding difficulties • Pre-referral management of severe problems: - convulsions - inability to feed • Supporting the family if perinatal death	• Management of severe newborn problems: - sepsis - other infections - jaundice - failure to thrive

Routine care **Additional care** **Specialized - Obstetrical and neonatal care**

Table 2. Place of care, providers, interventions and commodities

Health care	Level of health care	Venue / place	Provider	Interventions and commodities
Pregnancy (antenatal) care				
Routine	**Primary**	• Health centre in the community • Outpatient clinic of a hospital • Outreach home visit	• Health worker with midwifery skills*	• On site tests (Hb, syphilis) • Maternal health record • Vaccine • Basic oral medicines
Situational	**Primary**	• Health centre in the community • Outpatient clinic of a hospital • Outreach home visits	• Health worker with midwifery skills*	• On site tests (HIV) • Insecticide treated nets (ITN)
Additional	**Primary**	• Health centre in the community • Outpatient clinic of a hospital	• Health worker with midwifery and selected obstetric and neonatal skills*	• IV fluids • Parenteral drugs (antibiotics, MgSO4, antimalarial) • Manual Vacuum Aspiration (MVA) • Anti-retroviral therapy (ART)
Specialized	**Secondary**	• Hospital	• Team of doctors, midwives and nurses	All of the above plus: • Blood transfusion • Surgery • Laboratory tests • Obstetric care
Childbirth (mother and baby)				
Routine	**Primary**	• Health centre in the community • Maternity ward of a hospital • Outreach home care	• Health worker with midwifery skills*	• Delivery set • Oxytocin • Partograph
Situational	**Primary**	• Health centre in the community • Maternity ward of a hospital • Outreach home care	• Health worker with midwifery skills*	• ART
Additional	**Primary**	• Health centre in the community • Maternity ward of a hospital	• Health worker with midwifery and selected obstetric and neonatal skills*	• Vacuum extraction • Manual removal of placenta • Repair of genital tears • IV fluids • MgSO4, parenteral uterotonics, and antibiotics • Newborn resuscitation
Specialized Mother	**Secondary**	• Hospital	• Team of doctors, midwives and nurses with neonatal care skills	All of the above plus: • Surgery • Blood transfusion
Specialized Newborn	**Secondary**	• Hospital	• Team of doctors and nurses with obstetric and nursing skills	• Oxygen • IV fluids • Parenteral antebiotics • Blood transfusion • Laboratory - biochemical and microbiology (small blood samples)
Postpartum (mother), postnatal (newborn infant)				
Routine	**Primary**	• Health centre in the community • Outpatient clinic of a hospital • Outreach home visit	• Health worker with midwifery skills*	• On site tests (Hb, syphilis) • Vaccines • Basic oral medicines
Situational	**Primary**	• Health centre in the community • Outpatient clinic of a hospital	• Health worker with midwifery skills*	• On site tests (HIV) • ART
Additional	**Primary**	• Health centre in the community • Outpatient clinic of a hospital	• Health worker with midwifery and selected obstetric and neonatal skills*	• IV fluids • Parenteral drugs (antibiotics, MgSO4, antimalarial) • Manual removal of placenta
Specialized Mother	**Secondary**	• Hospital	• Team of doctors, midwives and nurses	All of the above plus: • Blood transfusion • Surgery • Laboratory tests • Obstetric care
Specialized Newborn	**Secondary**	• Hospital	• Team of doctors, midwives and nurses with neonatal skills	• Oxygen • IV fluids • Parenteral antebiotics • Blood transfusion • Laboratory - biochemical and microbiology (small samples)

* Health worker providing maternity care only or a health worker providing other services in addition to maternity care

Table 3. Home care, family, community and workplace support for the woman during pregnancy and childbirth and for the newborn infant

	Home/family	Community and workplace
Pregnancy	• Safe and nutritive diet • Safe sexual practices • Support for quitting smoking • Protection from passive tobacco smoking • Support for avoiding hard work • Planning for birth, and emergencies -mother and baby • Knowledge and support for the birth and emergency plan • Recognition of labour and danger signs • Support for compliance with preventive treatments • Support / accompaniment for pregnancy care visits • Adolescent girls encouraged to continue going to school • Participation in improving quality of services • Participation in transport and financing scheme	• Maternity protection • Time off for antenatal care visits • Safe and clean workplace • Tobacco free working environment • Pregnant adolescents kept at school
Situational	• Support for taking ART and for coping with its side effects	• Support for HIV positive women
Childbirth	• Accompanying and supporting the woman in childbirth • Support and care for the rest of the family • Organize transport and financial support	• Support for the family during childbirth and immediate postpartum
Postpartum and beyond	• Support for exclusive breastfeeding/replacement feeding • Personal hygiene • Safe disposal / washing of pads • Support for rest and less work load • Safe and nutritive diet • Safe sexual practices • Motivation for prescribed treatments • Recognition of dangers signs, including blues / depression • Optimal pregnancy spacing • Reporting birth and death (vital registration) • Participation in improving quality of services • Participation in transport and financing scheme	• Maternity leave • Breastfeeding breaks • Time off for postpartum and baby care visits • If mother referred to hospital, support that she is accompanied with the baby
Newborn and young infant	• Exclusive breastfeeding • Hygiene (cord care, washing, clothes) • Avoiding contacts with sick family members • Clean, warm and quiet place, tobacco and fire smoke free • Extra care for small babies (preterm, low birth weight) including KMC • Support for routine and follow up visits • Motivation for home treatment of minor problems • Recognition of danger signs • Safe disposal of baby stool • Care seeking at health facility or hospital	• Promotion, protection and support for breast feeding. • Keeping mother with the baby in hospital for breast-feeding • Supporting the family during maternal absence • Support for referral care for sick newborn.
Situational	• Sleeping under ITN	

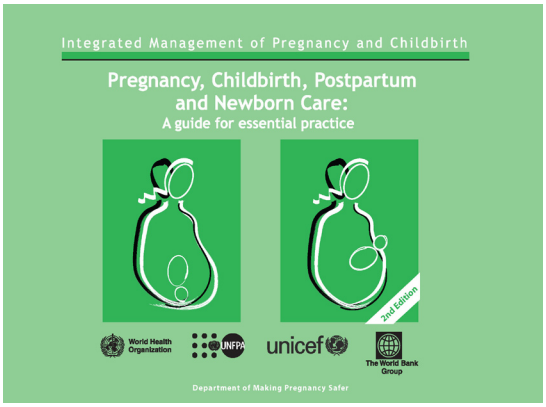
Table 4. Care for the woman before and between pregnancies

	Care by health services	Home/family	Community and workplace
Adolescence	• Immunization according to national policy (tetanus and rubella) • Family planning • HIV prevention including VCT	• Delayed childbearing • Healthy lifestyle • Balanced diet, including iodized salt	• Education • Information on prevention of HIV and STI infections
All women of reproductive age	• Family planning • Assessment and management of STIs • HIV prevention including testing and counselling	• Optimal pregnancy timing	

Table 5. Pregnant women not wanting child

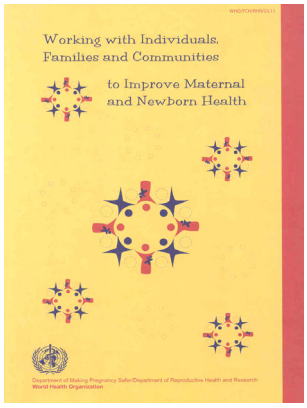
	Care by health services	Home/family	Community and workplace
Pregnant woman not wanting child	• Safe abortion (where legal) • Post-abortion care and family planning	• Care for unwanted pregnancy	

Integrated Management of Pregnancy and Childbirth (IMPAC) Guidelines



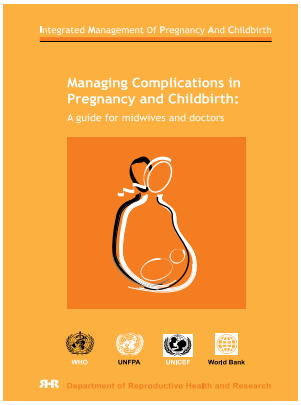
Pregnancy, childbirth, postpartum and newborn care: a guide for essential practice

This guide provides evidence-based recommendations to guide health-care professionals in the management of women during pregnancy, childbirth and postpartum, and post abortion, and newborns during their first week of life. It is a guide for clinical decision-making. It facilitates the collection, analysis, classification and use of relevant information by suggesting key questions, essential observations and/or examinations, and recommending appropriate research-based interventions. It promotes the early detection of complications and the initiation of early and appropriate treatment, including timely referral, if necessary.



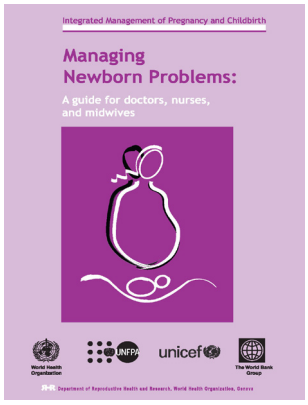
Working with individuals, families and communities to improve maternal and newborn health

The purpose of this document is to establish a common vision and approach, as well as to identify the role of maternal and newborn health programmes, for working with women, men, families and communities to improve maternal and newborn health. Part 1 of the document defines the concepts, values and guiding principles. Part 2 presents strategies, settings, and priority areas for intervention. Part 3 proposes an implementation process; and, finally, Part 4 considers the role and functions of WHO.



Managing complications in pregnancy and childbirth: a guide for midwives and doctors

This easy-to-use manual is arranged by symptoms (e.g. vaginal bleeding in early pregnancy). Because this symptom-based approach is different from most medical texts, which are arranged by disease, corresponding diagnosis tables are provided. Links have been used extensively to facilitate navigation between symptoms and diagnoses. The clinical action steps are based on clinical assessment with limited reliance on laboratory or other tests and most can be performed in a variety of clinical settings (e.g. district hospital or health centre).



Managing newborn problems: a guide for doctors, nurses and midwives

This guide is designed to assist countries with limited resources in their efforts to reduce neonatal mortality and to ensure care for newborn babies with problems due to complications of pregnancy and childbirth, such as asphyxia, sepsis, and low birth weight or preterm birth. The main section of this guide is arranged by clinical signs or findings, which facilitates early identification of illness, and provides up-to-date guidelines for clinical management.

INPUT CONTRACT

OFFER OF REWARD PAYMENTS FOR IMPROVEMENT IN PROVISION OF MATERNAL AND NEONATAL HEALTH CARE

ತಾಯಿ ಮತ್ತು ನವಜಾತ ಶಿಶುವಿನ ಆರೋಗ್ಯ ಸೇವೆಯ ನೀಡುವಲ್ಲಿ ಸುಧಾರಣೆ ಮಾಡುವುದಕ್ಕಾಗಿ ಪ್ರತಿಫಲ ಪಾವತಿಸುವಿಕೆಯ (ರಿವಾರ್ಡ್ ಪೇಮೆಂಟ್) ಪ್ರಸ್ತಾಪ

Date:

Dr. _____

_____

_____

_____

Dear _____

Thank you for taking the time today to learn about our ongoing project to develop innovative ways to partner with private sector doctors in Karnataka. This project has been jointly funded by the World Bank, the International Initiative for Impact Evaluation (3ie), the UK Department for International Development (DFID), and the Government of Karnataka and is focused on the health of women and infants in the time surrounding pregnancy, delivery, and the months following.

ಕರ್ನಾಟಕದಲ್ಲಿ ಖಾಸಗಿ ವಲಯದ ವೈದ್ಯರೊಂದಿಗೆ ಸಹಭಾಗಿಯಾಗಲು ಅವಿಷ್ಕಾರಿಯುತ ವಿಧಾನಗಳನ್ನು ಅಭಿವೃದ್ಧಿಪಡಿಸಲು ನಮ್ಮ ಪ್ರಗತಿಯಲ್ಲಿರುವ ಯೋಜನೆಗೆ ಈದಿನ ನೀವು ಸಮಯ ತೆಗೆದುಕೊಳ್ಳುತ್ತಿರುವುದಕ್ಕಾಗಿ ಧನ್ಯವಾದಗಳು. ಈ ಯೋಜನೆಗೆ ವಿಶ್ವ ಬ್ಯಾಂಕ್, ದಿ ಇಂಟರ್‌ನ್ಯಾಷನಲ್ ಇನಿಷಿಯೇಟಿವ್ ಫಾರ್ ಇಂಪ್ಯಾಕ್ಟ್ ಎವಾಲ್ಯುಯೇಷನ್(3ie), ಯುಕೆ ಡಿಪಾರ್ಟ್‌ಮೆಂಟ್ ಫಾರ್ ಇಂಟರ್‌ನ್ಯಾಷನಲ್ ಡೆವಲಪ್‌ಮೆಂಟ್ (DFID), ಮತ್ತು ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಜಂಟಿಯಾಗಿ ಅನುದಾನ ಮಾಡಲಾಗಿದೆ ಮತ್ತು ಗರ್ಭಿಣಿ, ಹೆರಿಗೆ, ಮತ್ತು ನಂತರದ ತಿಂಗಳುಗಳ ಸಮಯದಲ್ಲಿ ತಾಯಿಯ ಮತ್ತು ಎಳೆ ಮಕ್ಕಳ ಆರೋಗ್ಯದ ಮೇಲೆ ಕೇಂದ್ರೀಕರಿಸಿದೆ.

As part of this project, Sambodhi Research & Communications Pvt. Ltd (New Delhi), in collaboration with COHESIVE-India[1], is pleased to offer you reward payments based on the quality of medical care that your facility provides to pregnant women and infants. Quality of care is measured in terms of clinically relevant actions to promote a healthy pregnancy and delivery for mothers and infants. Following the WHO guidelines that we are pleased to share with you today, these actions fall into the following five domains:

ಈ ಯೋಜನೆಯ ಭಾಗವಾಗಿ, ಕೊಹೆಸಿವ್- ಇಂಡಿಯಾದ ಸಹಯೋಗದಲ್ಲಿ, ಸಂಬೋಧಿ ರಿಸರ್ಚ್ & ಕಮ್ಯುನಿಕೇಷನ್ಸ್ ಪ್ರೈವೇಟ್ ಲಿಮಿಟೆಡ್ (ನವ ದೆಹಲಿ), ಇವರು ಗರ್ಭಿಣಿ ಮಹಿಳೆ ಮತ್ತು ಎಳೆ ಮಕ್ಕಳಿಗೆ ನಿಮ್ಮ ಸೌಲಭ್ಯವು(ಆಸ್ಪತ್ರೆಯು) ಒದಗಿಸುವಂತಹ ವೈದ್ಯಕೀಯ ಸೇವೆಯ ಗುಣಮಟ್ಟದ ಮೇಲೆ ಆಧರಿಸಿ ಪ್ರತಿಫಲದ ಪಾವತಿಗಳನ್ನು ನಿಮಗೆ ಪ್ರಸ್ತಾಪಿಸಲು ಸಂತೋಷಿಸುತ್ತಿದ್ದಾರೆ. ಎಳೆಮಕ್ಕಳಿಗೆ ಮತ್ತು ತಾಯಂದಿರಿಗೆ ಆರೋಗ್ಯಕರ ಗರ್ಭಾವಸ್ಥೆ ಹಾಗೂ ಹೆರಿಗೆಯನ್ನು ಪ್ರಚಾರಪಡಿಸಲು ವೈದ್ಯಕೀಯವಾಗಿ ಪ್ರಸ್ತುತವಾದ ಕ್ರಮಗಳ ವಿಷಯಗಳಲ್ಲಿ ಆರೋಗ್ಯ ಸೇವೆಯ ಗುಣಮಟ್ಟವನ್ನು ಅಳೆಯಲಾಗುವುದು. ಇಂದು ನಿಮ್ಮೊಂದಿಗೆ ಹಂಚಿಕೊಳ್ಳಲು ನಾವು ಸಂತೋಷಿಸುತ್ತಿರುವಂತಹ ಡಬ್ಲ್ಯೂಎಚ್‌ಓ ಮಾರ್ಗಸೂಚಿಗಳನ್ನು ಅನುಸರಿಸಿ, ಕೆಳಗಿನ ಐದು ಕಾರ್ಯಕ್ಷೇತ್ರಗಳಲ್ಲಿ ಈ ಕ್ರಮಗಳು ಒಳಪಡುತ್ತವೆ:

[1] COHESIVE-India is a collaboration of researchers from Duke University (USA), Stanford University (USA), University

1. Pregnancy care ಗರ್ಭಿಣಿ ಆರೈಕೆ
2. Childbirth care ಪ್ರಸವ ಆರೈಕೆ
3. Postnatal maternal care ಪ್ರಸವ ನಂತರ ತಾಯಿಯ ಆರೈಕೆ
4. Newborn care, ನವಜಾತ ಶಿಶು ಆರೈಕೆ,
5. Postnatal newborn care. ಪ್ರಸವ ನಂತರ ನವಜಾತ ಶಿಶು ಆರೈಕೆ.

Structure of Payments: ಪಾವತಿಗಳ ರಚನೆ:

1. *Participation* (today's visit)
   ಭಾಗವಹಿಸುವಿಕೆ [ಇಂದಿನ ಭೇಟಿ]
   - You will receive Rs. 2,500 for agreement to participate in the reward payments program and for participation in a brief survey; you will be provided with documentation (paper and CD) on standard obstetric care and management of common obstetric complications and a general explanation of the program.
     ರಿವಾರ್ಡ್ ಪಾವತಿಸುವಿಕೆ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಒಪ್ಪಂದಕ್ಕಾಗಿ ಮತ್ತು ಸಂಕ್ಷಿಪ್ತ ಸಮೀಕ್ಷೆಯಲ್ಲಿ ಭಾಗವಹಿಸುವುದಕ್ಕಾಗಿ ನೀವು ರೂ.2500 ಪಡೆಯುತ್ತೀರಿ; ಗುಣಮಟ್ಟದ ಪ್ರಸೂತಿ ಆರೈಕೆ ಮತ್ತು ಸಾಮಾನ್ಯ ಪ್ರಸೂತಿ ತೊಡಕುಗಳ ನಿರ್ವಹಿಸುವಿಕೆ ಮತ್ತು ಕಾರ್ಯಕ್ರಮದ ಸಾಮಾನ್ಯ ವಿವರಣೆ ಮೇಲೆ ದಾಖಲು ಪತ್ರದೊಂದಿಗೆ (ಪೇಪರ್ ಮತ್ತು ಸಿಡಿ) ನಿಮಗೆ ಕೊಡಲಾಗುತ್ತದೆ.
2. *Discussion of Strategies* (1 – 2 months from now)
   ಕಾರ್ಯವಿಧಾನಗಳ ಚರ್ಚೆಸುವಿಕೆ (ಈಗಿನಿಂದ 1-2 ತಿಂಗಳು)
   - You will receive an additional Rs. 2,500 for discussing the strategies that you might pursue to provide the highest quality of care to pregnant women and infants who may come to you for care, and for participation in a brief survey.
     ಆರೋಗ್ಯ ಸೇವೆಯನ್ನು ಪಡೆದುಕೊಳ್ಳಲು ನಿಮ್ಮಲ್ಲಿಗೆ ಬರುವಂತಹ ಗರ್ಭಿಣಿ ಮಹಿಳೆ ಮತ್ತು ಎಳೆಮಕ್ಕಳಿಗೆ ಅತಿ ಹೆಚ್ಚು ಗುಣಮಟ್ಟದ ಆರೋಗ್ಯ ಸೇವೆಯನ್ನು ಒದಗಿಸಲು ನೀವು ಮುಂದುವರೆಸಬಹುದಾದ ಕಾರ್ಯವಿಧಾನಗಳನ್ನು ಚರ್ಚಿಸುವುದಕ್ಕಾಗಿ ಮತ್ತು ಸಂಕ್ಷಿಪ್ತ ಸಮೀಕ್ಷೆಯಲ್ಲಿ ಭಾಗವಹಿಸುವುದಕ್ಕಾಗಿ ನೀವು ರೂ.2,500 ಹೆಚ್ಚುವರಿಯಾಗಿ ಪಡೆಯುವಿರಿ.
3. *Reward Payment* (12 – 14 months from now)
   ಪ್ರತಿಫಲ ಪಾವತಿಸುವಿಕೆ (ಈಗಿನಿಂದ 12-14ತಿಂಗಳು)
   - You will receive Rs. 2,500 for participation in a brief survey and a final reward payment up to **Rs. 1,69,750**[2], based on your facility's performance in the five identified quality of care domains.
     ಸಂಕ್ಷಿಪ್ತ ಸಮೀಕ್ಷೆಯಲ್ಲಿ ಭಾಗವಹಿಸುವುದಕ್ಕಾಗಿ ನೀವು ರೂ.2500 ಪಡೆಯುತ್ತೀರಿ ಮತ್ತು ಐದು ಗುರುತಿಸಲಾದ ಗುಣಮಟ್ಟದ ಆರೋಗ್ಯ ಸೇವೆಯ ಕಾರ್ಯಕ್ಷೇತ್ರಗಳಲ್ಲಿ ನಿಮ್ಮ ಸೌಲಭ್ಯದ (ಆಸ್ಪತ್ರೆಯ) ಕಾರ್ಯಕ್ಷಮತೆಯ ಮೇಲೆ ಆಧರಿಸಿ, ರೂ.1,69,750 ವರೆಗೆ ಅಂತಿಮ ಪ್ರತಿಫಲ ಪಾವತಿಯನ್ನು (ರಿವಾರ್ಡ್ ಪೇಮೆಂಟ್‌ನ್ನು) ನೀವು ಪಡೆಯುತ್ತೀರಿ.

Reward Payment Calculation: ಪ್ರತಿಫಲ ಪಾವತಿ (ರಿವಾರ್ಡ್ ಪೇಮೆಂಟ್) ಲೆಕ್ಕ ಮಾಡುವಿಕೆ

The five domains of care are based on the priorities of the fourth and fifth Millennium Development Goals (MDGs) related to maternal and child health, with consideration for the specific health challenges in Karnataka and India in general. Performance in each domain is measured as the share of your patients receiving all of the recommended care that falls under that domain, as identified in the WHO pamphlet.
ಆರೋಗ್ಯ ಸೇವೆಯ ಐದು ಕಾರ್ಯಕ್ಷೇತ್ರಗಳು ಸಾಮಾನ್ಯವಾಗಿ ಕರ್ನಾಟದಲ್ಲಿ ಮತ್ತು ಭಾರತದಲ್ಲಿ ನಿಶ್ಚಿತ ಆರೋಗ್ಯ ಸವಾಲುಗಳ ಪರಿಗಣಿಸುವಿಕೆಯೊಂದಿಗೆ, ತಾಯಿ ಮತ್ತು ಮಗುವಿನ ಆರೋಗ್ಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ ನಾಲ್ಕನೇ ಮತ್ತು ಐದನೇ ಸಹಸ್ರಮಾನದ ಅಭಿವೃದ್ಧಿ ಗುರಿಗಳ (MDGs) ಆದ್ಯತೆಯ ಮೇಲೆ ಆಧರಿಸಿವೆ. ಡಬ್ಲ್ಯೂಎಚ್ಓ ಪಾಂಪ್ಲೆಟ್‌ನಲ್ಲಿ ಗುರುತಿಸಿದ ಹಾಗೆ, ಆ ಕಾರ್ಯಕ್ಷೇತ್ರದ ಅಡಿಯಲ್ಲಿ ಬರುವಂತಹ ಶಿಫಾರಿತ ಎಲ್ಲಾ ಆರೋಗ್ಯ ಸೇವೆಯನ್ನು ನಿಮ್ಮ ಪಾಲಿನ ರೋಗಿಗಳು ಪಡೆದುಕೊಳ್ಳುತ್ತಿದ್ದಾರೆ ಎನ್ನುವ ಹಾಗೆ ಪ್ರತಿ ಕಾರ್ಯಕ್ಷೇತ್ರದಲ್ಲಿ ಕಾರ್ಯಕ್ಷಮತೆಯನ್ನು ಅಳೆಯಲಾಗುವುದು.

[2] The amount for the final reward payment is linked to the USD-INR exchange rate and may vary slightly depending on the USD-INR exchange rate at the time of the third visit.

Column 2 of the table below lists the minimum performance levels in each domain that should already be easily attainable by the most doctors in Karnataka. Coverage at or below these Minimum Performance Levels will not receive any reward payments. Column 3 lists the amount of reward that will be paid for every percentage point in performance over the Minimum Performance Level listed in Column 2. The performance reward amounts in Column 3 take into account the relative difficulty of providing high quality care in each of the domains in Karnataka.

ಕರ್ನಾಟಕದಲ್ಲಿ ಸರಾಸರಿಯಾಗಿ ವೈದ್ಯರಿಂದ ಈಗಾಗಲೇ ಸುಲಭವಾಗಿ ಕಾರ್ಯಗತ ಆಗಬೇಕಿದ್ದ ಪ್ರತಿ ಕಾರ್ಯಕ್ಷೇತ್ರದಲ್ಲಿ ಕನಿಷ್ಠ ಕಾರ್ಯಕ್ಷಮತೆ ಮಟ್ಟಗಳನ್ನು ಕೆಳಗಿನ ಟೇಬಲ್‌ನ ಕಾಲಂ 2 ಪಟ್ಟಿ ಮಾಡಿದೆ. ಈ ಕನಿಷ್ಠ ಕಾರ್ಯಕ್ಷಮತೆಯ ಮಟ್ಟಗಳ ಕೆಳಗಿನ ಕವರೇಜ್ ಯಾವುದೇ ಪ್ರತಿಫಲ ಪಾವತಿಯನ್ನು (ರಿವಾರ್ಡ್ ಪೇಮೆಂಟ್‌ನ್ನು) ಪಡೆಯುವುದಿಲ್ಲ. ಕಾಲಂ 2ರಲ್ಲಿ ಪಟ್ಟಿ ಮಾಡಿದ ಕನಿಷ್ಠ ಕಾರ್ಯಕ್ಷಮತೆಯ ಮಟ್ಟಕ್ಕಿಂತ ಮೇಲ್ಪಟ್ಟ ಕಾರ್ಯಕ್ಷಮತೆಯಲ್ಲಿ ಪ್ರತಿ ಪ್ರತಿಶತದ ಪಾಯಿಂಟ್‌ಗಾಗಿ ಪಾವತಿಸುವಂತಹ ರಿವಾರ್ಡ್ (ಪ್ರತಿಫಲದ) ಮೊತ್ತವನ್ನು ಕಾಲಂ 3 ಪಟ್ಟಿ ಮಾಡಿದೆ. ಕಾಲಂ 3ರಲ್ಲಿನ ಕಾರ್ಯಕ್ಷಮತೆಯ ರಿವಾರ್ಡ್ (ಪ್ರತಿಫಲದ) ಮೊತ್ತಗಳು ಕರ್ನಾಟದಲ್ಲಿ ಪ್ರತಿಯೊಂದು ಕಾರ್ಯಕ್ಷೇತ್ರಗಳಲ್ಲಿ ಉನ್ನತ ಗುಣಮಟ್ಟದ ಆರೋಗ್ಯ ಸೇವೆಯನ್ನು ಒದಗಿಸುವುದರ ಪ್ರಸಕ್ತ ತೊಂದರೆಯನ್ನು ಲೆಕ್ಕದೊಳಕ್ಕೆ ತೆಗೆದುಕೊಳ್ಳುತ್ತದೆ.

Column 4 lists the Target Performance Levels that experts believe all doctors should be able to achieve with concerted effort to follow the WHO guidelines. Finally, Column 5 lists the amount that would be earned in each domain if these Target Performance Levels are obtained. (Note that reward payments could exceed those listed in Column 5 if performance levels exceed those of the targets in Column 4.)

ಡಬ್ಲ್ಯೂಎಚ್ಓ ಮಾರ್ಗಸೂಚಿಗಳನ್ನು ಅನುಸರಿಸಲು ಸಂಘಟಿತ ಶ್ರಮದೊಂದಿಗೆ ಸಾಧಿಸಲು ಎಲ್ಲಾ ವೈದ್ಯರು ಶಕ್ತರಾಗಿದ್ದಾರೆ ಎಂದು ಪರಿಗಣಿತರು ನಂಬುವಂತಹ ಉದ್ದೇಶಿತ ಕಾರ್ಯಕ್ಷಮತೆ ಮಟ್ಟಗಳನ್ನು ಕಾಲಂ4 ಪಟ್ಟಿ ಮಾಡುತ್ತದೆ. ಅಂತಿಮವಾಗಿ, ಒಂದುವೇಳೆ ಈ ಉದ್ದೇಶಿತ ಕಾರ್ಯಕ್ಷಮತೆ ಮಟ್ಟಗಳನ್ನು ಪಡೆದರೆ ಪ್ರತಿ ಕಾರ್ಯಕ್ಷೇತ್ರದಲ್ಲಿ ಗಳಿಸಲಿರುವಂತಹ ಮೊತ್ತವನ್ನು ಕಾಲಂ 5 ಪಟ್ಟಿ ಮಾಡುತ್ತದೆ. (ಕಾಲಂ 4ರಲ್ಲಿ ಆ ಉದ್ದೇಶಿತ ಆರೋಗ್ಯ ಸೇವೆಗಳನ್ನು ಮೀರಿಸುವಂತಹ ಕಾರ್ಯಕ್ಷಮತೆಯ ಮಟ್ಟಗಳು ಇದ್ದರೆ ಕಾಲಂ 5ರಲ್ಲಿ ಪಟ್ಟಿ ಮಾಡಿದ ಮೊತ್ತಗಳನ್ನು ರಿವಾರ್ಡ್ ಪ್ರತಿಫಲ ಪಾವತಿಗಳನ್ನು (ರಿವಾರ್ಡ್ ಪೇಮೆಂಟ್‌ಗಳನ್ನು) ಮೀರಬಹುದು ಎಂದು ಗಮನಿಸಿ.)

Table 1:

(1) **Maternal and Child Health Domains of Care** **ತಾಯಿ ಮತ್ತು ಮಗುವಿನ ಆರೋಗ್ಯ ಕಾರ್ಯಕ್ಷೇತ್ರಗಳ ಆರೋಗ್ಯ ಸೇವೆ**	**(2)** **Minimum Performance Level** **ಕನಿಷ್ಠ ಕಾರ್ಯಕ್ಷಮತೆ ಮಟ್ಟ**	**(3)** **Reward Payment per percentage point over Minimum Level** **ಕನಿಷ್ಠ ಮಟ್ಟಕ್ಕೆ ಮೇಲ್ಪಟ್ಟ ಪ್ರತಿ ಪ್ರತಿಶತ ಪಾಯಿಂಟ್‌ಗೆ ರಿವಾರ್ಡ್ ಪೇಮೆಂಟ್**	**(4)** **Target Performance Level** **ಉದ್ದೇಶಿತ ಕಾರ್ಯಕ್ಷಮತೆ ಮಟ್ಟ**	**(5)** **Example: Payment for Target Performance Level** **ಉದಾಹರಣೆ: ಉದ್ದೇಶಿತ ಕಾರ್ಯಕ್ಷಮತೆ ಮಟ್ಟಕ್ಕಾಗಿ ಪಾವತಿಸುವಿಕೆ**
1. Pregnancy care ಗರ್ಭಿಣಿ ಆರೈಕೆ	85%	Rs. 3,700	95%	Rs. 37,000
2. Childbirth care ಪ್ರಸವ ಆರೈಕೆ	65%	Rs. 750	85%	Rs. 15,000
3. Postnatal maternal care ಪ್ರಸವ ನಂತರ ತಾಯಿಯ ಆರೈಕೆ	50%	Rs. 450	75%	Rs. 11,250
4. Newborn care ನವಜಾತ ಶಿಶು ಆರೈಕೆ	80%	Rs. 1,850	90%	Rs. 18,500
5. Post natal newborn care ಪ್ರಸವ ನಂತರ ನವಜಾತ ಶಿಶು ಆರೈಕೆ	70%	Rs. 950	85%	Rs. 14,250

For example, if your facility's performance in Domain 1: Pregnancy Care is measured at 90%, your reward payment in that category will be Rs. 18,500 (5 * Rs. 3,700); if it is 95%, your reward payment in that category will be Rs. 37,000 (10 * Rs. 3,700); and if it is 100%, your reward payment in that category will be Rs. 55,500 (15 * Rs. 3,700).

ಉದಾಹರಣೆಗೆ, ನಿಮ್ಮ ಸೌಲಭ್ಯದ(ಆಸ್ಪತ್ರೆಯ) ಕಾರ್ಯಕ್ಷಮತೆಯ ಕಾರ್ಯಕ್ಷೇತ್ರ 1ರಲ್ಲಿ ಆಗಿದ್ದರೆ: ಗರ್ಭಿಣಿ ಆರೈಕೆ ಸೇವೆಯನ್ನು 90%ರಲ್ಲಿ ಅಳೆಯಲಾಗುವುದು, ಆ ವರ್ಗದಲ್ಲಿ ನಿಮ್ಮ ಪ್ರತಿಫಲ ಪಾವತಿಸುವಿಕೆಯು (ರಿವಾರ್ಡ್ ಪೇಮೆಂಟ್) ರೂ. 18,500 (5 * Rs. 3,700) ಆಗಿರುತ್ತದೆ; ಒಂದುವೇಳೆ ಅದು 95% ಆಗಿದ್ದರೆ, ಆ ವರ್ಗದಲ್ಲಿ ನಿಮ್ಮ ಪ್ರತಿಫಲ ಪಾವತಿಸುವಿಕೆಯು (ರಿವಾರ್ಡ್ ಪೇಮೆಂಟ್) ರೂ. 37,000 (10 * Rs. 3,700); ಮತ್ತು ಒಂದುವೇಳೆ ಅದು 10% ಆಗಿದ್ದರೆ, ಆ ವರ್ಗದಲ್ಲಿ ನಿಮ್ಮ ಪ್ರತಿಫಲ ಪಾವತಿಸುವಿಕೆಯು (ರಿವಾರ್ಡ್ ಪೇಮೆಂಟ್) ರೂ. 55, 500 (15 * Rs. 3,700).

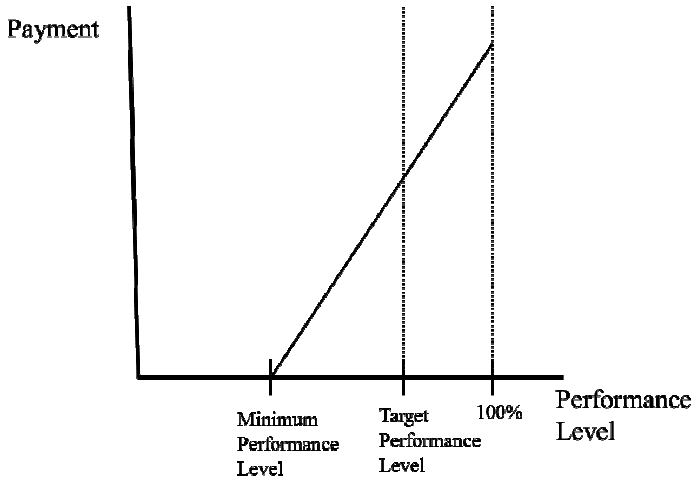
On the other hand, if your facility's performance in Domain 1: Pregnancy Care is measured at 70% (or any other level at or below 85%), you would not receive any reward payment for this domain because it is below the threshold set in Column 2. Note that performance below the thresholds set in Column 2 will never detract from your overall payout, and that you will never be in a position to owe money.

ಇನ್ನೊಂದು ಕಡೆಯಲ್ಲಿ, ನಿಮ್ಮ ಸೌಲಭ್ಯದ(ಆಸ್ಪತ್ರೆಯ) ಕಾರ್ಯಕ್ಷಮತೆಯ ಕಾರ್ಯಕ್ಷೇತ್ರ 1ರಲ್ಲಿ ಆಗಿದ್ದರೆ: ಗರ್ಭಿಣಿ ಆರೈಕೆ ಸೇವೆಯನ್ನು 70%ರಲ್ಲಿ (ಅಥವ 85% ಕೆಳಗೆ ಬೇರೆ ಯಾವುದೇ ಮಟ್ಟ) ಅಳೆಯಲಾಗುವುದು, ಈ ಕಾರ್ಯಕ್ಷೇತ್ರಕ್ಕಾಗಿ ನೀವು ಯಾವುದೇ ಪ್ರತಿಫಲ ಪಾವತಿಸುವಿಕೆ (ರಿವಾರ್ಡ್ ಪಾಯಿಂಟ್) ಪಡೆಯುವುದಿಲ್ಲ ಏಕೆಂದರೆ ಅದು ಕಾಲಂ 2ರಲ್ಲಿ ಇಟ್ಟಿರುವ ಮಿತಿಗಿಂತ ಕಡಿಮೆ ಆಗಿದೆ. ಕಾಲಂ 2ರಲ್ಲಿ ಇಟ್ಟಿರುವ ಮಿತಿಗಳ ಕೆಳಗೆ ಆಗಿರುವ ಕಾರ್ಯಕ್ಷಮತೆಯು ನಿಮ್ಮ ಒಟ್ಟಾರೆ ಪಾವತಿಯಿಂದ ಎಂದೂ ತೆಗೆದುಹಾಕುವುದಿಲ್ಲ, ಮತ್ತು ನೀವು ಹಣ ಪಡೆದುಕೊಳ್ಳುವ ಸ್ಥಾನದಲ್ಲಿ ಎಂದಿಗೂ ಇರುವುದಿಲ್ಲ ಎಂದು ಗಮನಿಸಿ.

A graphical representation of the reward payment strategy is shown in Figure 1 below.

ರಿವಾರ್ಡ್ ಪಾವತಿಯ ಯೋಜನೆಯ ರೇಖಾಚಿತ್ರವನ್ನು ಕೆಳಗಿನ ಚಿತ್ರ 1 ರಲ್ಲಿ ತೋರಿಸಲಾಗಿದೆ

Figure 1:



Over the next year, the quality of care provided in each of these domains will be measured through interviews with your patient population.

ಮುಂದಿನ ವರ್ಷದಲ್ಲಿ, ಈ ಪ್ರತಿಯೊಂದು ಕಾರ್ಯಕ್ಷೇತ್ರಗಳಲ್ಲಿ ಒದಗಿಸಲಾಗುವ ಆರೋಗ್ಯ ಸೇವೆಯ ಗುಣಮಟ್ಟವನ್ನು ನಿಮ್ಮ ರೋಗಿಗಳೊಂದಿಗೆ ಸಂದರ್ಶನಗಳ ಮೂಲಕ ಅಳೆಯಲಾಗುತ್ತದೆ.

NOTE: It is very important that (a) patients are not refused treatment from your facility other than in medically appropriate referrals, and (b) we are able to work with your administrative staff to follow up on all patients who deliver at your facility.

ಈ ಮಹತ್ವದ ಅಂಶಗಳನ್ನು ಗಮನಿಸಿ: ಎ) ಸೂಕ್ತವಾದ ವೈದ್ಯಕೀಯ ಕಾರಣಗಳಿಗಲ್ಲದೆ ರೋಗಿಗಳನ್ನು ನಿಮ್ಮ ಆಸ್ಪತ್ರೆಯಿಂದ ಚಿಕಿತ್ಸೆ ನಿರಾಕರಿಸುವಂತಿಲ್ಲ. ಬಿ) ನಿಮ್ಮ ಆಸ್ಪತ್ರೆಯಲಿ ಹೇರಿಗೆಯಾಗುವ ಎಲಾ ತಾಯಂದಿರನು ಭೇಟಿಮಾಡಲು ನಿಮ್ಮ ಸಿಬ್ಬಂದಿಯೊಂದಿಗೆ ಕೆಲಸನಿರ್ವಹಿಸುತೇವೆ.

An independent research team will regularly visit the communities around your facility. Any extraordinary patterns of referral will result in investigations into the reasons for these referrals. If it is found that women have been turned away from your facility for any reason other than medically appropriate referrals to higher-tier facilities, *then this can have an implication on your agreement with us and as a result no further payments will be made.* Similarly, if it is found that there is selective reporting of the births that have taken place in your facility, *then this can have an implication on your agreement with us and as a result no further payments will be made.*

ನಿಮ್ಮ ಸೌಲಭ್ಯದ(ಆಸ್ಪತ್ರೆಯ) ಸುತ್ತಲಿನ ಸಮುದಾಯಗಳನ್ನು ಸ್ವತಂತ್ರವಾದ ಸಂಶೋಧನ ತಂಡವು ನಿಯಮಿತವಾಗಿ ಭೇಟಿ ಮಾಡುತ್ತಾರೆ. ಅಸಾಧಾರಣವಾದ ವೈದ್ಯಕೀಯ ಶಿಫಾರಸುಗಳು ಕಂಡುಬಂದರೆ ಅದನ್ನು ಪರಿಶೀಲಿಸಲಾಗುವುದು. ನಿಮ್ಮ ಆಸ್ಪತ್ರೆಯಿಂದ ಮಹಿಳೆಯರನ್ನು ಸೂಕ್ತವಾದ ವೈದ್ಯಕೀಯ ಕಾರಣಗಳಿಲ್ಲದೇ ಉನ್ನತ ಮಟ್ಟದ ಆಸ್ಪತ್ರೆಗಳಿಗೆ ಕಳುಹಿಸಿಕೊಟ್ಟರೆ, *ಈ ಕರಾರು ಒಪ್ಪಂದವು ಮಾನ್ಯವಾಗುವುದಿಲ್ಲ ಮತ್ತು ಮುಂದಕ್ಕೆ ಯಾವುದೇ ಪಾವತಿಗಳನ್ನು ಮಾಡಲಾಗುವುದಿಲ್ಲ.* ಅದೇ ರೀತಿ, ಒಂದು ವೇಳೆ ನಿಮ್ಮ ಆಸ್ಪತ್ರೆಯಲ್ಲಿ ಅದ ಮಕ್ಕಳ ಜನನದ ಮಾಹಿತಿ ಪಟ್ಟಿಯನ್ನು ನಿರ್ಧಿಷ್ಟವಾಗಿ ಆಯ್ದು ಪಟ್ಟಿಮಾಡಿದ್ದೆಂದು ತಿಳಿದುಬಂದರೆ, *ಈ ಕರಾರು ಒಪ್ಪಂದವು ಮಾನ್ಯವಾಗುವುದಿಲ್ಲ ಮತ್ತು ಮುಂದಕ್ಕೆ ಯಾವುದೇ ಪಾವತಿಗಳನ್ನು ಮಾಡಲಾಗುವುದಿಲ್ಲ.*

Please do not hesitate to contact us in case you have any questions or require further information.
ಯಾವುದೇ ಪ್ರಶ್ನೆಗಳಿದ್ದರೆ ಮತ್ತು ಹೆಚ್ಚಿನ ಮಾಹಿತಿಗಾಗಿ ನಮ್ಮನ್ನು ಸಂಪರ್ಕಿಸಲು ಹಿಂಜರಿಯಬೇಡಿ.

Thank you for your cooperation. We look forward to working with you.
ನಿಮ್ಮ ಸಹಕಾರಕ್ಕಾಗಿ ಧನ್ಯವಾದಗಳು. ನಿಮ್ಮೊಂದಿಗೆ ಕಾರ್ಯ ನಿರ್ವಹಿಸಲು ನಿರೀಕ್ಷಿಸುತ್ತೇವೆ

Sincerely, ಇಂತೀ,

Kultar Singh
ಕುಲ್ತಾರ್ ಸಿಂಗ್
Chief Executive Officer
ಮುಖ್ಯ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಧಿಕಾರಿ

Anil M. Lobo
ಅನಿಲ್ ಎಮ್. ಲೋಬೊ
Manager – Research
ವ್ಯವಸ್ಥಾಪಕ ಅಧಿಕಾರಿ

Sambodhi Research and Communications Pvt. Ltd.
ಸಂಬೋಧಿ ರಿಸರ್ಚ್ ಎಂಡ್ ಕಮ್ಯುನಿಕೇಷನ್ ಪ್ರೈವೇಟ್ ಲಿಮಿಟೆಡ್
O-2, 2nd Floor, Lajpat Nagar-II, New Delhi 110024
ಒ -2, ಸೆಕೆಂಡ್ ಫ್ಲೋರ್, ಲಾಜಪತ್ ನಗರ್ - 2, ನ್ಯೂ - ಡೆಲ್ಲಿ 110024

I agree to participate in the above mentioned study.
ನಾನು ಮೇಲೆ ತಿಳಿಸಿದ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಒಪ್ಪಿಕೊಳ್ಳುತ್ತೇನೆ.

_____	_____	_____
Name of Provider (Print)	**Signature of Provider**	**Date**
ಆರೋಗ್ಯ ಸೇವೆ ಒದಗಿಸುವವರ ಹೆಸರು	ಸಹಿ	ದಿನಾಂಕ

WHO Recommended Interventions for Improving Maternal and Newborn Health
Routine Care in Pregnancy, Childbirth and Postpartum Period for Mother and Newborn Infant

Pregnancy care – 4 visits	• Confirmation of pregnancy • Monitoring of progress of pregnancy and assessment of maternal and fetal well-being • Detection of problems complicating pregnancy (e.g., anemia, hypertensive disorders, bleeding, malpresentations, multiple pregnancy) • Respond to other reported complaints • Tetanus immunization, anemia prevention and control (iron and folic acid supplementation) • Information and counseling on self care at home, nutrition, safer sex, breastfeeding, family planning, healthy lifestyle • Birth planning, advice on danger signs and emergency preparedness • Recording and reporting • Syphilis testing
Childbirth Care (labor, delivery, and immediate postpartum)	• Care during labor and delivery o Diagnosis of labor o Monitoring progress of labor, maternal and fetal well-being with partograph o Providing supporting care and pain relief o Detection of problems and complications (e.g. malpresentations, prolonged and/or obstructed labor, hypertension, bleeding, and infection) o Delivery and immediate care of the newborn baby, initiation of breastfeeding o Newborn resuscitation o Active management of third stage of labor • Immediate postnatal care of mother o Monitoring and assessment of maternal well being, prevention and detection of complications (e.g. hypertension, infections, bleeding, anemia) o Treatment of moderate post-hemorrhagic anemia o Information and counseling on home self care, nutrition, safe sex, breast care and family planning o Postnatal care planning, advice on danger signs and emergency preparedness • Recording and reporting
Postnatal maternal care (up to 6 weeks)	• Assessment of maternal wellbeing • Prevention and detection of complications (e.g. infections, bleeding, anemia) • Anemia prevention and control (iron and folic acid supplementation) • Information and counseling on nutrition, safe sex, family planning, and provision of some contraceptive methods • Postnatal care planning, advice on danger signs and emergency preparedness • Provision of contraceptive methods
Newborn care (birth and immediate postnatal)	• Promotion, protection and support for breastfeeding • Monitoring and assessment of wellbeing, detection of complications (breathing, infections, prematurity, low birth weight, injury, malformation) • Infection prevention and control, rooming in • Eye care • Information and counseling on home care, breastfeeding, hygiene • Postnatal care planning, advice on danger signs and emergency preparedness • Immunization according to the national guidelines (BCG, HepB, OPV-O) • Kangaroo Mother Care follow-up
Postnatal newborn care (visit from/at home)	• Assessment of infant's wellbeing and breastfeeding • Detection of complications and responding to maternal concerns • Information and counseling on home care • Additional follow-up visits for high risk babies (e.g. preterm, after severe problems, on replacement feeding)

OUTPUT CONTRACT

OFFER OF REWARD PAYMENTS FOR IMPROVEMENT IN PROVISION OF MATERNAL AND NEONATAL HEALTH CARE

ತಾಯಿ ಮತ್ತು ನವಜಾತ ಶಿಶುವಿನ ಆರೋಗ್ಯ ಸೇವೆಯ ನೀಡುವಲ್ಲಿ ಸುಧಾರಣೆ ಮಾಡುವುದಕ್ಕಾಗಿ ಪ್ರತಿಫಲ ಪಾವತಿಸುವಿಕೆಯ (ರಿವಾರ್ಡ್ ಪೇಮೆಂಟ್) ಪ್ರಸ್ತಾಪ

Date: _____

Dr. _____

_____

_____

Dear _____

Thank you for taking the time today to learn about our ongoing project to develop innovative ways to partner with private sector doctors in Karnataka. This project has been jointly funded by the World Bank, the International Initiative for Impact Evaluation (3ie), the UK Department for International Development (DFID), and the Government of Karnataka and is focused on the health of women and infants in the time surrounding pregnancy, delivery, and the months following.

ಕರ್ನಾಟಕದಲ್ಲಿ ಖಾಸಗಿ ವಲಯದ ವೈದ್ಯರೊಂದಿಗೆ ಸಹಭಾಗಿಯಾಗಲು ಅವಿಷ್ಕಾರಿಯುತ ವಿಧಾನಗಳನ್ನು ಅಭಿವೃದ್ಧಿಪಡಿಸಲು ನಮ್ಮ ಪ್ರಗತಿಯಲ್ಲಿರುವ ಯೋಜನೆಗೆ ಈದಿನ ನೀವು ಸಮಯ ತೆಗೆದುಕೊಳ್ಳುತ್ತಿರುವುದಕ್ಕಾಗಿ ಧನ್ಯವಾದಗಳು. ಈ ಯೋಜನೆಗೆ ವಿಶ್ವ ಬ್ಯಾಂಕ್, ದಿ ಇಂಟರ್‌ನ್ಯಾಷನಲ್ ಇನಿಷಿಯೇಟಿವ್ ಫಾರ್ ಇಂಪ್ಯಾಕ್ಟ್ ಎವಾಲ್ಯುಯೇಷನ್(3ie), ಯುಕೆ ಡಿಪಾರ್ಟ್‌ಮೆಂಟ್ ಫಾರ್ ಇಂಟರ್‌ನ್ಯಾಷನಲ್ ಡೆವಲಪ್‌ಮೆಂಟ್ (DFID), ಮತ್ತು ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಜಂಟಿಯಾಗಿ ಅನುದಾನ ಮಾಡಲಾಗಿದೆ ಮತ್ತು ಗರ್ಭಿಣಿ, ಹೆರಿಗೆ, ಮತ್ತು ನಂತರದ ತಿಂಗಳುಗಳ ಸಮಯದಲ್ಲಿ ತಾಯಿಯ ಮತ್ತು ಎಳೆ ಮಕ್ಕಳ ಆರೋಗ್ಯದ ಮೇಲೆ ಕೇಂದ್ರೀಕರಿಸಿದೆ.

As part of this project, Sambodhi Research & Communications Pvt. Ltd (New Delhi), in collaboration with COHESIVE-India[1], is pleased to offer you reward payments based on the share of women and infants receiving care in your facility who face adverse health outcomes. Based on health statistics and expert judgment, the four most serious adverse health outcomes are:

ಈ ಯೋಜನೆಯ ಭಾಗವಾಗಿ, ಕೊಹೆಸಿವ್- ಇಂಡಿಯಾದ ಸಹಯೋಗದಲ್ಲಿ, ಸಂಬೋಧಿ ರಿಸರ್ಚ್ & ಕಮ್ಯುನಿಕೇಷನ್ಸ್ ಪ್ರೈವೇಟ್ ಲಿಮಿಟೆಡ್ (ನವ ದೆಹಲಿ), ಇವರು ಪ್ರತಿಕೂಲ ಆರೋಗ್ಯ ಪರಿಣಾಮಗಳನ್ನು ಕಂಡಂತಹ ನಿಮ್ಮ ಆಸ್ಪತ್ರೆಯಿಂದ ಸೇವೆ ಪಡೆಯುತ್ತಿರುವ ಮಹಿಳೆ ಮತ್ತು ಮಕ್ಕಳ ಅಂಶದ ಮೇಲೆ ಆಧರಿಸಿ ರಿವಾರ್ಡ್ ಪಾವತಿಗಳನ್ನು ನಿಮಗೆ ಪ್ರಸ್ತಾಪಿಸಲು ಸಂತೋಷಿಸುತ್ತಿದ್ದಾರೆ. ಆರೋಗ್ಯ ಸಂಖ್ಯಾ ಶಾಸ್ತ್ರಜ್ಞರ ಮತ್ತು ತಜ್ಞರ ಪ್ರಕಾರ ಪ್ರತಿಕೂಲ ಆರೋಗ್ಯ ಪರಿಣಾಮಗಳೆಂದರೆ:

1. Post-partum hemorrhage, ಪ್ರಸವದ ನಂತರ ರಕ್ತಶ್ರಾವ
2. Pre-eclampsia, ಬಸಿರು ನಂಜು
3. Sepsis among women who have just given birth, ಪ್ರಸವದ ನಂತರ ತಾಯಿಯಲ್ಲಿ ಕೀವು / ನೆತ್ತರು ನಂಜಾಗುವುದು
4. Neonatal death ಆಗ ತಾನೇ ಜನಿಸಿದ ಮಗುವಿನ ಮರಣ

[1] COHESIVE-India is a collaboration of researchers from Duke University (US), Stanford University (US), University College

Structure of Payments:

1. *Participation* (today's visit)
   - You will receive Rs. 2,500 for agreement to participate in the reward payments program and for participation in a brief survey; you will be provided with documentation (paper and CD) on standard obstetric care and management of common obstetric complications and a general explanation of the program

     ರಿವಾರ್ಡ್ ಪಾವತಿಸುವಿಕೆ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಒಪ್ಪಂದಕ್ಕಾಗಿ ಮತ್ತು ಸಂಕ್ಷಿಪ್ತ ಸಮೀಕ್ಷೆಯಲ್ಲಿ ಭಾಗವಹಿಸುವುದಕ್ಕಾಗಿ ನೀವು ರೂ.2500 ಪಡೆಯುತ್ತೀರಿ; ಗುಣಮಟ್ಟದ ಪ್ರಸೂತಿ ಆರೈಕೆ ಮತ್ತು ಸಾಮಾನ್ಯ ಪ್ರಸೂತಿ ತೊಡಕುಗಳ ನಿರ್ವಹಿಸುವಿಕೆ ಮತ್ತು ಕಾರ್ಯಕ್ರಮದ ಸಾಮಾನ್ಯ ವಿವರಣೆ ಮೇಲೆ ದಾಖಲು ಪತ್ರದೊಂದಿಗೆ (ಪೇಪರ್ ಮತ್ತು ಸಿಡಿ) ನಿಮಗೆ ಕೊಡಲಾಗುತ್ತದೆ.

2. *Discussion of strategies* (1 – 2 months from now)
   - You will receive an additional Rs. 2,500 for discussing the strategies that you might pursue to minimize adverse health outcomes among women and infants receiving care at your facility and for participation in a brief survey

     ನಿಮ್ಮ ಆಸ್ಪತ್ರೆಯಿಂದ ಸೇವೆಯನ್ನು ಪಡೆಯುವ ತಾಯಿಯ ಮತ್ತು ಮಕ್ಕಳ ಪ್ರತಿಕೂಲ ಆರೋಗ್ಯ ಪರಿಣಾಮಗಳನ್ನು ಕಡಿಮೆ ಮಾಡಬಹುದಾದ ಕಾರ್ಯವಿಧಾನಗಳನ್ನು ಚರ್ಚಿಸುವುದಕ್ಕಾಗಿ ಮತ್ತು ಸಂಕ್ಷಿಪ್ತ ಸಮೀಕ್ಷೆಯಲ್ಲಿ ಭಾಗವಹಿಸುವುದಕ್ಕಾಗಿ ನೀವು ರೂ.2,500 ಹೆಚ್ಚುವರಿಯಾಗಿ ಪಡೆಯುವಿರಿ.

3. *Reward Payout* (12 – 14 months from now)
   - You will receive Rs. 2,500 for participation in a brief survey and a final reward payment up to **Rs. 148,950**[2], based on your facility's rates of the four identified adverse health outcomes among women and infants at your facility.

     ಸಂಕ್ಷಿಪ್ತ ಸಮೀಕ್ಷೆಯಲ್ಲಿ ಭಾಗವಹಿಸುವುದಕ್ಕಾಗಿ ನೀವು ರೂ.2500 ಪಡೆಯುತ್ತೀರಿ ಮತ್ತು ಮಹಿಳೆ ಮತ್ತು ಮಕ್ಕಳಲ್ಲಿ ಗುರುತಿಸಲಾದ 4 ಪ್ರತಿಕೂಲ ಆರೋಗ್ಯ ಪರಿಣಾಮಗಳ ಮೇಲೆ ನಿಮ್ಮ ಆಸ್ಪತ್ರೆಯು ಪಡೆಯುವ ಫಲಿತಾಂಶಗಳನ್ನು ಆಧರಿಸಿ, ರೂ.148,950 ವರೆಗೆ ಅಂತಿಮ ಪ್ರತಿಫಲ ಪಾವತಿಯನ್ನು (ರಿವಾರ್ಡ್ ಪೇಮೆಂಟ್‌ನ್ನು) ನೀವು ಪಡೆಯುತ್ತೀರಿ.

Reward Payment Calculation: ಪ್ರತಿಫಲ ಪಾವತಿ (ರಿವಾರ್ಡ್ ಪೇಮೆಂಟ್) ಲೆಕ್ಕ ಮಾಡುವಿಕೆ

The four adverse health outcomes are based on the priorities of the fourth and fifth Millennium Development Goals (MDG's) related to maternal and child health, with consideration for the specific health challenges in Karnataka and India in general. Performance for each maternal health outcome is measured by the percentage of women who suffer from each of the identified adverse health outcomes.

ನಾಲ್ಕು ವ್ಯತಿರಿಕ್ತ ಆರೋಗ್ಯ ಫಲಿತಾಂಶಗಳು ಸಾಮಾನ್ಯವಾಗಿ ಕರ್ನಾಟದಲ್ಲಿ ಮತ್ತು ಭಾರತದಲ್ಲಿ ನಿಶ್ಚಿತ ಆರೋಗ್ಯ ಸವಾಲುಗಳ ಪರಿಗಣಿಸುವಿಕೆಯೊಂದಿಗೆ, ತಾಯಿ ಮತ್ತು ಮಗುವಿನ ಆರೋಗ್ಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ ನಾಲ್ಕನೇ ಮತ್ತು ಐದನೇ ಸಹಸ್ರಮಾನದ ಅಭಿವೃದ್ಧಿ ಗುರಿಗಳ (MDGs) ಆದ್ಯತೆಯ ಮೇಲೆ ಆಧರಿಸಿವೆ. ಗುರುತಿಸಲಾದ ಪ್ರತಿಯೊಂದು ವ್ಯತಿರಿಕ್ತ ಆರೋಗ್ಯ ಫಲಿತಾಂಶಗಳಿಂದ ಬಳಲುತ್ತಿರುವಂತಹ ಮಹಿಳೆಯರ ಪ್ರತಿಶತದಿಂದ ಪ್ರತಿ ತಾಯಿಯ ಆರೋಗ್ಯ ಫಲಿತಾಂಶಕ್ಕಾಗಿ ಕಾರ್ಯಕ್ಷಮತೆಯನ್ನು ಅಳೆಯಲಾಗುವುದು.

Column 2 of Table 1 below lists the Baseline Performance Levels in each maternal adverse health outcome that should already be easily attainable by the average doctor in Karnataka. Adverse health outcome rates above these baseline performance levels will not receive any reward payments. Column 3 lists the amount of reward that will be paid for every percentage point in performance under the baseline performance level listed in Column 2. The performance reward amounts in Column 3 take into account the relative difficulty of preventing each of the three maternal adverse health outcomes in Karnataka.

ಕರ್ನಾಟಕದಲ್ಲಿ ಸಾಧಾರಣ ವೈದ್ಯರಿಂದ ಈಗಾಗಲೇ ಸುಲಭವಾಗಿ ಕಾರ್ಯಗತ ಆಗಬೇಕಿದ್ದ ಪ್ರತಿ ತಾಯಿಯ ವ್ಯತಿರಿಕ್ತ ಆರೋಗ್ಯ ಫಲಿತಾಂಶದಲ್ಲಿನ ಮೂಲ ಕಾರ್ಯಕ್ಷಮತೆ ಮಟ್ಟಗಳನ್ನು ಕೆಳಗಿನ ಟೇಬಲ್‌ನ ಕಾಲಂ 2ರಲ್ಲಿ ಪಟ್ಟಿ ಮಾಡಿದೆ. ಈ ಮೂಲ ಕಾರ್ಯಕ್ಷಮತೆಯ ಮಟ್ಟಗಳ ಮೇಲ್ಪಟ್ಟ ವ್ಯತಿರಿಕ್ತ ಆರೋಗ್ಯ ಫಲಿತಾಂಶದ ಪ್ರಮಾಣಗಳು ಯಾವುದೇ ಪ್ರತಿಫಲ ಪಾವತಿಯನ್ನು (ರಿವಾರ್ಡ್ ಪೇಮೆಂಟ್‌ನ್ನು) ಪಡೆಯುವುದಿಲ್ಲ. ಕಾಲಂ 2ರಲ್ಲಿ ಪಟ್ಟಿ ಮಾಡಿದ ಮೂಲ ಕಾರ್ಯಕ್ಷಮತೆಯ ಮಟ್ಟದ ಕೆಳಗೆ ಪ್ರತಿ ಪ್ರತಿಶತದ ಪಾಯಿಂಟ್‌ಗಾಗಿ ಪಾವತಿಸುವಂತಹ ರಿವಾರ್ಡ್ (ಪ್ರತಿಫಲದ) ಮೊತ್ತವನ್ನು ಕಾಲಂ 3ರಲ್ಲಿ ಪಟ್ಟಿ ಮಾಡಿದೆ. ಕಾಲಂ 3ರಲ್ಲಿನ ಕಾರ್ಯಕ್ಷಮತೆಯ ರಿವಾರ್ಡ್ (ಪ್ರತಿಫಲದ) ಮೊತ್ತಗಳು ಕರ್ನಾಟದಲ್ಲಿ ತಾಯಿಯ ಮೂರು ವ್ಯತಿರಿಕ್ತ ಆರೋಗ್ಯ ಫಲಿತಾಂಶಗಳಲ್ಲಿ ಪ್ರತಿಯೊಂದರ ಪ್ರಸಕ್ತ ತೊಂದರೆಯನ್ನು ಲೆಕ್ಕದೊಳಕ್ಕೆ ತೆಗೆದುಕೊಳ್ಳುತ್ತದೆ.

[2] The amount for the final reward payment is linked to the USD-INR exchange rate and may vary slightly depending on the USD-INR exchange rate at the time of the third visit

Column 4 lists the Target Performance Levels that experts believe all doctors should be able to achieve with concerted effort. Finally, Column 5 lists the amount that would be earned for each of the maternal adverse health outcomes if these Target Performance Levels are obtained. (Note that reward payments could exceed those listed in Column 5 if performance is better than the targets in Column 4.)

ಸಂಘಟಿತ ಶ್ರಮದೊಂದಿಗೆ ಸಾಧಿಸಲು ಎಲ್ಲಾ ವೈದ್ಯರು ಶಕ್ತರಾಗಿದ್ದಾರೆ ಎಂದು ಪರಿಗಣಿತರು ನಂಬುವಂತಹ ಉದ್ದೇಶಿತ ಕಾರ್ಯಕ್ಷಮತೆ ಮಟ್ಟಗಳನ್ನು ಕಾಲಂ 4 ಪಟ್ಟಿ ಮಾಡುತ್ತದೆ. ಅಂತಿಮವಾಗಿ, ಒಂದುವೇಳೆ ಈ ಉದ್ದೇಶಿತ ಕಾರ್ಯಕ್ಷಮತೆ ಮಟ್ಟಗಳನ್ನು ಪಡೆದರೆ, ಪ್ರತಿ ಕಾರ್ಯಕ್ಷೇತ್ರದಲ್ಲಿ ಗಳಿಸಲಿರುವಂತಹ ಮೊತ್ತವನ್ನು ಕಾಲಂ 5 ಪಟ್ಟಿ ಮಾಡುತ್ತದೆ. (ಕಾಲಂ 4ರಲ್ಲಿ ಗುರಿಗಳನ್ನು ಮೀರಿಸುವಂತಹ ಕಾರ್ಯಕ್ಷಮತೆಯು ಇದ್ದರೆ ಕಾಲಂ 5ರಲ್ಲಿ ಪಟ್ಟಿ ಮಾಡಿದ ಮೊತ್ತಗಳನ್ನು ರಿವಾರ್ಡ್ ಪ್ರತಿಫಲ ಪಾವತಿಗಳನ್ನು (ರಿವಾರ್ಡ್ ಪೇಮೆಂಟ್‌ಗಳನ್ನು) ಮೀರಬಹುದು ಎಂದು ಗಮನಿಸಿ).

Table 1:

(1)	(2)	(3)	(4)	(5)
Maternal Adverse Health Outcomes **ತಾಯಿಯ ವ್ಯತಿರಿಕ್ತ ಆರೋಗ್ಯ ಫಲಿತಾಂಶಗಳು**	**Baseline Performance Level** **ಮೂಲ ಕಾರ್ಯಕ್ಷಮತೆಯ ಮಟ್ಟ**	**Reward Payment per percentage point under Baseline Level** **ಮೂಲ ಮಟ್ಟದ ಅಡಿಯಲ್ಲಿ ಪ್ರತಿ ಪ್ರತಿಶತ ಪಾಯಿಂಟ್‌ಗೆ ರಿವಾರ್ಡ್ ಪೇಮೆಂಟ್**	**Target Performance Level** **ಉದ್ದೇಶಿತ ಕಾರ್ಯಕ್ಷಮತೆ ಮಟ್ಟ**	**Example: Payment for Target Performance Level** **ಉದಾಹರಣೆ: ಉದ್ದೇಶಿತ ಕಾರ್ಯಕ್ಷಮತೆ ಮಟ್ಟಕ್ಕಾಗಿ ಪಾವತಿಸುವಿಕೆ**
1. Post-partum hemorrhage ಪ್ರಸವದ ನಂತರ ರಕ್ತಸ್ರಾವ	35%	Rs. 850	15%	Rs. 17,000
2. Pre-eclampsia ಬಸಿರು ನಂಜು	20%	Rs. 1,750	10%	Rs. 17,500
3. Sepsis among women who have just given birth ಪ್ರಸವದ ನಂತರ ತಾಯಿಯಲ್ಲಿ ಕೀವು /ನೆತ್ತರು ನಂಜಾಗುವುದು	8%	Rs. 8,650	4%	Rs. 34, 600

For example, if your facility's rate of Outcome 1: Post-partum hemorrhage is measured at 30%, your reward payment in that category will be Rs. 4,250 (5 * Rs. 850); if it is measured at 25%, your reward payment in that category will be Rs. 8,500 (10 * Rs. 850); and if it is measured at 20%, your reward payment in that category will be Rs. 12,750 (15 * Rs. 850).

ಉದಾಹರಣೆಗೆ, ನಿಮ್ಮ ಸೌಲಭ್ಯದ(ಆಸ್ಪತ್ರೆಯ) ಫಲಿತಾಂಶ ಪ್ರಮಾಣವು 1ರಲ್ಲಿ ಆಗಿದ್ದರೆ: ಪ್ರಸವದ ನಂತರ ರಕ್ತಸ್ರಾವವನ್ನು 30%ರಲ್ಲಿ ಅಳೆಯಲಾಗುವುದು, ಆ ವರ್ಗದಲ್ಲಿ ನಿಮ್ಮ ಪ್ರತಿಫಲ ಪಾವತಿಸುವಿಕೆಯು (ರಿವಾರ್ಡ್ ಪೇಮೆಂಟ್) ರೂ. 4,250 (5 * ರೂ. 850) ಆಗಿರುತ್ತದೆ; ಒಂದುವೇಳೆ ಅದು 25% ಆಗಿದ್ದರೆ, ಆ ವರ್ಗದಲ್ಲಿ ನಿಮ್ಮ ಪ್ರತಿಫಲ ಪಾವತಿಸುವಿಕೆಯು (ರಿವಾರ್ಡ್ ಪೇಮೆಂಟ್) ರೂ. 8,500 (10 * ರೂ. 850); ಮತ್ತು ಒಂದುವೇಳೆ ಅದು 20% ಆಗಿದ್ದರೆ, ಆ ವರ್ಗದಲ್ಲಿ ನಿಮ್ಮ ಪ್ರತಿಫಲ ಪಾವತಿಸುವಿಕೆಯು (ರಿವಾರ್ಡ್ ಪೇಮೆಂಟ್) ರೂ. 12,750 (15 * ರೂ. 850).

On the other hand, if your facility's rate of Outcome 1: Post-partum hemorrhage measured at 40% (or any other rate above 35%), you would not receive any reward payment for this outcome because it is above the threshold set in Column 2. Note that performance rates above the thresholds set in Column 2 will never detract from your overall payout, and that you will never be in a position to owe money.

ಇನ್ನೊಂದು ಕಡೆಯಲ್ಲಿ, ನಿಮ್ಮ ಸೌಲಭ್ಯದ(ಆಸ್ಪತ್ರೆಯ) ಫಲಿತಾಂಶ ಪ್ರಮಾಣವು 1ರಲ್ಲಿ ಆಗಿದ್ದರೆ: ಪ್ರಸವದ ನಂತರ ರಕ್ತಸ್ರಾವವನ್ನು 40%ರಲ್ಲಿ (ಅಥವ 35% ಕೆಳಗೆ ಬೇರೆ ಯಾವುದೇ ಮಟ್ಟ) ಅಳೆಯಲಾಗುವುದು, ಈ ಫಲಿತಾಂಶಕ್ಕಾಗಿ ನೀವು ಯಾವುದೇ ಪ್ರತಿಫಲ ಪಾವತಿಸುವಿಕೆ (ರಿವಾರ್ಡ್ ಪೇಮೆಂಟ್) ಪಡೆಯುವುದಿಲ್ಲ ಏಕೆಂದರೆ ಅದು ಕಾಲಂ 2ರಲ್ಲಿ ಇಟ್ಟಿರುವ ಮಿತಿಗಿಂತ ಹೆಚ್ಚು ಆಗಿದೆ. ಕಾಲಂ 2ರಲ್ಲಿ ಇಟ್ಟಿರುವ ಮಿತಿಗಳ ಮೇಲೆ ಆಗಿರುವ ಕಾರ್ಯಕ್ಷಮತೆಯು ನಿಮ್ಮ ಒಟ್ಟಾರೆ ಪಾವತಿಯಿಂದ ಎಂದೂ ತೆಗೆದುಹಾಕುವುದಿಲ್ಲ, ಮತ್ತು ನೀವು ಹಣ ಪಡೆದುಕೊಳ್ಳುವ ಸ್ಥಾನದಲ್ಲಿ ಎಂದಿಗೂ ಇರುವುದಿಲ್ಲ ಎಂದು ಗಮನಿಸಿ.

As shown in Table 2 below, a reward payment of Rs.15, 000 will be paid if there are 0 neonatal deaths over the course of the study.
ಟೇಬಲ್ 2ರಲ್ಲಿ ತೋರಿಸಿದ ಹಾಗೆ, ಅಧ್ಯಯನದ ಅವಧಿಯಲ್ಲಿ ಶೂನ್ಯ ನವಜಾತ ಶಿಶು ಮರಣಗಳು ಇದ್ದರೆ ರೂ.15,000 ಪ್ರತಿಫಲ ಪಾವತಿಸುವಿಕೆ (ರಿವಾರ್ಡ್ ಪೇಮೆಂಟ್) ಪಾವತಿಸಲಾಗುತ್ತದೆ.

Table 2:

(1)	(2)	(3)
Neonatal Adverse Health Outcome **ನವಜಾತ ಶಿಶುವಿನ ವ್ಯತಿರಿಕ್ತ ಆರೋಗ್ಯ ಫಲಿತಾಂಶ**	**Performance during the study** **ಅಧ್ಯಯನದ ಸಂದರ್ಭದಲ್ಲಿ ಕಾರ್ಯಕ್ಷಮತೆ**	**Reward Payment ಪ್ರತಿಫಲ ಪಾವತಿಸುವಿಕೆ (ರಿವಾರ್ಡ್ ಪೇಮೆಂಟ್)**
4. Neonatal mortality ನವಜಾತ ಶಿಶುವಿನ ಮರಣ	0 neonatal deaths ಶೂನ್ಯ ನವಜಾತ ಶಿಶು ಮರಣಗಳು	Rs. 15,000

Over the next year, the rates of these maternal and neonatal adverse health outcomes will be measured through interviews with your patient population.
ಮುಂದಿನ ವರ್ಷದಲ್ಲಿ, ಈ ತಾಯಿ ಮತ್ತು ನವಜಾತ ಶಿಶುಗಳ ವ್ಯತಿರಿಕ್ತ ಆರೋಗ್ಯ ಫಲಿತಾಂಶಗಳ ಪ್ರಮಾಣಗಳನ್ನು ನಿಮ್ಮ ರೋಗಿಗಳೊಂದಿಗೆ ಸಂದರ್ಶನಗಳ ಮೂಲಕ ಅಳೆಯಲಾಗುತ್ತದೆ.

NOTE: It is critical that (a) patients are not refused treatment from your facility other than in medically appropriate referrals, and (b) we are able to work with your administrative staff to follow up on all patients who deliver at your facility.
ಈ ಮಹತ್ವದ ಅಂಶಗಳನ್ನು ಗಮನಿಸಿ: ಎ) ಸೂಕ್ತವಾದ ವೈದ್ಯಕೀಯ ಕಾರಣಗಳಿಗಲ್ಲದೆ ರೋಗಿಗಳನ್ನು ನಿಮ್ಮ ಆಸ್ಪತ್ರೆಯಿಂದ ಚಿಕಿತ್ಸೆ ನಿರಾಕರಿಸುವಂತಿಲ್ಲ. ಬಿ) ನಿಮ್ಮ ಆಸ್ಪತ್ರೆಯಲ್ಲಿ ಹೇರಿಗೆಯಾಗುವ ಎಲ್ಲಾ ತಾಯಂದಿರನ್ನು ಭೇಟಿಮಾಡಲು ನಿಮ್ಮ ಸಿಬ್ಬಂಧಿಯೊಂದಿಗೆ ಕೆಲಸನಿರ್ವಹಿಸುತ್ತೇವೆ.

An independent research team will regularly visit the communities around your facility. Any extraordinary patterns of referral will result in investigations into the reasons for these referrals. If it is found that women have been turned away from your facility for any reason other than medically appropriate referrals to higher-tier facilities, *then this can have an implication on your agreement with us and as a result no further payments will be made.* Similarly, if it is found that there is selective reporting of the births that have taken place in your facility, *then this can have an implication on your agreement with us and as a result no further payments will be made.*
ನಿಮ್ಮ ಸೌಲಭ್ಯದ(ಆಸ್ಪತ್ರೆಯ) ಸುತ್ತಲಿನ ಸಮುದಾಯಗಳನ್ನು ಸ್ವತಂತ್ರವಾದ ಸಂಶೋಧನ ತಂಡವು ನಿಯಮಿತವಾಗಿ ಭೇಟಿ ಮಾಡುತ್ತಾರೆ. ಅಸಾಧಾರಣವಾದ ವೈದ್ಯಕೀಯ ಶಿಫಾರಸುಗಳು ಕಂಡುಬಂದರೆ ಅದನ್ನು ಪರಿಶೀಲಿಸಲಾಗುವುದು. ನಿಮ್ಮ ಆಸ್ಪತ್ರೆಯಿಂದ ಮಹಿಳೆಯರನ್ನು ಸೂಕ್ತವಾದ ವೈದ್ಯಕೀಯ ಕಾರಣಗಳಿಲ್ಲದೇ ಉನ್ನತ ಮಟ್ಟದ ಆಸ್ಪತ್ರೆಗಳಿಗೆ ಕಳುಹಿಸಿಕೊಟ್ಟರೆ, *ಈ ಕರಾರು ಒಪ್ಪಂದವು ಮಾನ್ಯವಾಗುವುದಿಲ್ಲ ಮತ್ತು ಮುಂದಕ್ಕೆ ಯಾವುದೇ ಪಾವತಿಗಳನ್ನು ಮಾಡಲಾಗುವುದಿಲ್ಲ.* ಅದೇ ರೀತಿ, ಒಂದು ವೇಳೆ ನಿಮ್ಮ ಆಸ್ಪತ್ರೆಯಲ್ಲಿ ಅದ ಮಕ್ಕಳ ಜನನದ ಮಾಹಿತಿ ಪಟ್ಟಿಯನ್ನು ನಿರ್ಧಿಷ್ಟವಾಗಿ ಆಯ್ದು ಪಟ್ಟಿಮಾಡಿದ್ದೆಂದು ತಿಳಿದುಬಂದರೆ, *ಈ ಕರಾರು ಒಪ್ಪಂದವು ಮಾನ್ಯವಾಗುವುದಿಲ್ಲ ಮತ್ತು ಮುಂದಕ್ಕೆ ಯಾವುದೇ ಪಾವತಿಗಳನ್ನು ಮಾಡಲಾಗುವುದಿಲ್ಲ.*

Please do not hesitate to contact us in case you have any questions or require further information.
ಯಾವುದೇ ಪ್ರಶ್ನೆಗಳಿದ್ದರೆ ಮತ್ತು ಹೆಚ್ಚಿನ ಮಾಹಿತಿಗಾಗಿ ನಮ್ಮನ್ನು ಸಂಪರ್ಕಿಸಲು ಹಿಂಜರಿಯಬೇಡಿ.

Thank you for your cooperation. We look forward to working with you.
ನಿಮ್ಮ ಸಹಕಾರಕ್ಕಾಗಿ ಧನ್ಯವಾದಗಳು. ನಿಮ್ಮೊಂದಿಗೆ ಕಾರ್ಯ ನಿರ್ವಹಿಸಲು ನಿರೀಕ್ಷಿಸುತ್ತೇವೆ

Sincerely, ಇಂತೀ

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ಸಂಬೋಧಿ ರಿಸರ್ಚ್ ಎಂಡ್ ಕಮ್ಯುನಿಕೇಷನ್ ಪ್ರೈವೇಟ್ ಲಿಮಿಟೆಡ್
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ಒ -2, ಸೆಕೆಂಡ್ ಫ್ಲೋರ್, ಲಾಜಪತ್ ನಗರ್ - 2, ನ್ಯೂ - ಡೆಲ್ಲಿ 110024

I agree to participate in the above mentioned study.
ನಾನು ಮೇಲೆ ತಿಳಿಸಿದ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಒಪ್ಪಿಕೊಳ್ಳುತ್ತೇನೆ.

_____	_____	_____
Name of Provider (Print) ಆರೋಗ್ಯ ಸೇವೆ ಒದಗಿಸುವವರ ಹೆಸರು	**Signature of Provider** ಸಹಿ	**Date** ದಿನಾಂಕ

CONTROL CONTRACT

Date:

Dr. _____

_____

_____

_____

Dear _____

Thank you for taking the time today to learn about our ongoing project to develop innovative ways to partner with private sector doctors in Karnataka. This project has been jointly funded by the World Bank, the International Initiative for Impact Evaluation (3ie), the UK Department for International Development (DFID), and the Government of Karnataka and is focused on the health of women and infants in the time surrounding pregnancy, delivery, and the months following. To this end, over the next year we would like to learn more from you and from your obstetric patients.

ಕರ್ನಾಟಕದಲ್ಲಿ ಖಾಸಗಿ ವಲಯದ ವೈದ್ಯರೊಂದಿಗೆ ಸಹಭಾಗಿಯಾಗಲು ಅವಿಷ್ಕಾರಿಯುತ ವಿಧಾನಗಳನ್ನು ಅಭಿವೃದ್ಧಿಪಡಿಸಲು ನಮ್ಮ ಪ್ರಗತಿಯಲ್ಲಿರುವ ಯೋಜನೆ ಬಗ್ಗೆ ತಿಳಿದುಕೊಳ್ಳಲು ಈದಿನ ನೀವು ಸಮಯ ತೆಗೆದುಕೊಳ್ಳುತ್ತಿರುವುದಕ್ಕಾಗಿ ಧನ್ಯವಾದಗಳು. ಈ ಯೋಜನೆಗೆ ವಿಶ್ವ ಬ್ಯಾಂಕ್, ದಿ ಇಂಟರ್‌ನ್ಯಾಷನಲ್ ಇನಿಷಿಯೇಟಿವ್ ಫಾರ್ ಇಂಪ್ಯಾಕ್ಟ್ ಎವಾಲ್ಯುಯೇಷನ್(3ie), ದಿ ಯುಕೆ ಡಿಪಾರ್ಟ್‌ಮೆಂಟ್ ಫಾರ್ ಇಂಟರ್‌ನ್ಯಾಷನಲ್ ಡೆವಲಪ್‌ಮೆಂಟ್ (DFID), ಮತ್ತು ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಜಂಟಿಯಾಗಿ ಅನುದಾನ ಮಾಡಲಾಗಿದೆ ಮತ್ತು ಗರ್ಭಿಣಿ, ಹೆರಿಗೆ, ಮತ್ತು ತದನಂತರದ ತಿಂಗಳುಗಳ ಸಮಯದಲ್ಲಿ ತಾಯಿಯ ಮತ್ತು ಎಳೆ ಮಕ್ಕಳ ಆರೋಗ್ಯದ ಮೇಲೆ ಕೇಂದ್ರೀಕರಿಸಿದೆ. ಇದರ ಕೊನೆಗೆ, ಮುಂದಿನ ವರ್ಷದಲ್ಲಿ ನಿಮ್ಮಿಂದ ಮತ್ತು ನಿಮ್ಮ ಪ್ರಸೂತಿ ರೋಗಿಗಳಿಂದ ಹೆಚ್ಚಿಗೆ ತಿಳಿದುಕೊಳ್ಳಲು ನಾವು ಇಷ್ಟಪಡುತ್ತೇವೆ.

As part of this project, Sambodhi Research & Communications Pvt. Ltd (New Delhi), in collaboration with COHESIVE-India[1], would like to work with you over the year to understand the conditions of rural obstetric health care and maternal and neonatal health in the private sector, the difficulties that providers face in trying to provide care, and to investigate strategies to improve the quality of care and maternal and child health outcomes.

ಈ ಯೋಜನೆಯ ಭಾಗವಾಗಿ, ಕೊಹೆಸಿವ್-ಇಂಡಿಯಾದ ಸಹಯೋಗದಲ್ಲಿ, ಸಂಬೋಧಿ ರಿಸರ್ಚ್ & ಕಮ್ಯುನಿಕೇಷನ್ಸ್ ಪ್ರೈವೇಟ್ ಲಿಮಿಟೆಡ್ (ನವ ದೆಹಲಿ), ಇವರು ಖಾಸಗಿ ವಲಯದಲ್ಲಿ ಗ್ರಾಮೀಣ ಪ್ರಸೂತಿ ಆರೋಗ್ಯ ಸೇವೆ ಹಾಗೂ ತಾಯಿ ಮತ್ತು ಶಿಶುವಿನ ಆರೋಗ್ಯ ಪರಿಸ್ಥಿತಿಗಳನ್ನು ಅರ್ಥ ಮಾಡಿಕೊಳ್ಳುವ ಸಲುವಾಗಿ, ಆರೈಕೆಯನ್ನು ಒದಗಿಸಲು ಪ್ರಯತ್ನಿಸುವುದರಲ್ಲಿ ಆರೋಗ್ಯ ಸೇವೆ ಒದಗಿಸುವವರು (ವೈದ್ಯರು) ಎದುರಿಸುವಂತಹ ಕಷ್ಟಗಳನ್ನು ಅರ್ಥ ಮಾಡಿಕೊಳ್ಳುವ ಸಲುವಾಗಿ, ಹಾಗೂ ಆರೈಕೆಯ ಗುಣಮಟ್ಟ ಹಾಗೂ ತಾಯಿ ಮತ್ತು ಮಕ್ಕಳ ಆರೋಗ್ಯ ಫಲಿತಾಂಶಗಳನ್ನು ಸುಧಾರಿಸಲು ಕಾರ್ಯವಿಧಾನಗಳನ್ನು ಪರೀಕ್ಷಿಸುವ ಸಲುವಾಗಿ ಮುಂದಿನ ಒಂದು ವರ್ಷದಲ್ಲಿ ನಿಮ್ಮೊಂದಿಗೆ ಕೆಲಸ ನಿರ್ವಹಿಸಲು ಬಯಸುತ್ತಾರೆ.

[1] COHESIVE-India is a collaboration of researchers from Duke University (USA), Stanford University (USA), University

Structure of Payments: ಪಾವತಿಗಳ ರಚನೆ:

1. *Participation* (today's visit)
   ಭಾಗವಹಿಸುವಿಕೆ [ಇಂದಿನ ಭೇಟಿ]
   - You will receive Rs. 2,500 for agreement to participate in the research study and for participation in a brief survey; you will be provided with documentation (paper and CD) on standard obstetric care and management of common obstetric complications
     ಈ ಸಂಶೋಧನ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಒಪ್ಪಿದಕ್ಕಾಗಿ ಮತ್ತು ಸಂಕ್ಷಿಪ್ತ ಸಮೀಕ್ಷೆಯಲ್ಲಿ ಭಾಗವಹಿಸುವುದಕ್ಕಾಗಿ ನೀವು ರೂ.2500 ಪಡೆಯುತ್ತೀರಿ; ಗುಣಮಟ್ಟದ ಪ್ರಸೂತಿ ಆರೈಕೆ ಮತ್ತು ಸಾಮಾನ್ಯ ಪ್ರಸೂತಿ ತೊಡಕುಗಳ ನಿರ್ವಹಿಸುವಿಕೆ ಮತ್ತು ಕಾರ್ಯಕ್ರಮದ ಸಾಮಾನ್ಯ ವಿವರಣೆ ಮೇಲೆ ದಾಖಲು ಪತ್ರಗಳನ್ನು (ಪೇಪರ್ ಮತ್ತು ಸಿಡಿ) ನಿಮಗೆ ಕೊಡಲಾಗುತ್ತದೆ.

2. *Discussion of strategies* (1 – 2 months from now)
   ಕಾರ್ಯವಿಧಾನಗಳ ಚರ್ಚಿಸುವಿಕೆ (ಈಗಿನಿಂದ 1-2 ತಿಂಗಳು)
   - You will receive an additional Rs. 2,500 for discussing the strategies that you might pursue to improve the health of women and infants who may come to you for care in the time surrounding pregnancy, delivery, and the months following, and for participation in a brief survey
     ಗರ್ಭಿಣಿ ಆಗಿರುವ ಸಮಯದಲ್ಲಿ, ಹೆರಿಗೆ ಸಮಯದಲ್ಲಿ ಮತ್ತು ತದನಂತರದ ತಿಂಗಳುಗಳಲ್ಲಿ ಆರೋಗ್ಯ ಸೇವೆಯನ್ನು ಪಡೆದುಕೊಳ್ಳಲು ನಿಮ್ಮಲ್ಲಿಗೆ ಬರುವಂತಹ ಗರ್ಭಿಣಿ ಮಹಿಳೆ ಮತ್ತು ಎಳೆಮಕ್ಕಳಿಗೆ ಅತಿ ಹೆಚ್ಚು ಗುಣಮಟ್ಟದ ಆರೋಗ್ಯ ಸೇವೆಯನ್ನು ಒದಗಿಸಲು ನೀವು ಮುಂದುವರೆಸಬಹುದಾದ ಕಾರ್ಯವಿಧಾನಗಳನ್ನು ಚರ್ಚಿಸುವುದಕ್ಕಾಗಿ ಮತ್ತು ಸಂಕ್ಷಿಪ್ತ ಸಮೀಕ್ಷೆಯಲ್ಲಿ ಭಾಗವಹಿಸುವುದಕ್ಕಾಗಿ ನೀವು ರೂ.2,500 ಹೆಚ್ಚುವರಿಯಾಗಿ ಪಡೆಯುವಿರಿ.

3. *Final Debriefing* (12 – 14 months from now)
   ಅಂತಿಮ ಸಂಕ್ಷಿಪ್ತ ಮಾಹಿತಿ ನೀಡುವಿಕೆ (ಈಗಿನಿಂದ 12-14 ತಿಂಗಳು)
   - You will receive an additional Rs. 2,500 for discussing your experiences with the strategies you identified in the second visit, and for participation in a brief survey
     ಎರಡನೇ ಭೇಟಿಯಲ್ಲಿ ನೀವು ಗುರುತಿಸಿರುವ ಕಾರ್ಯವಿಧಾನಗಳೊಂದಿಗೆ ನಿಮ್ಮ ಅನುಭವಗಳನ್ನು ಚರ್ಚಿಸುವುದಕ್ಕಾಗಿ ನೀವು ರೂ.2,500 ಹೆಚ್ಚುವರಿಯಾಗಿ ಪಡೆಯುವಿರಿ.

As part of this project, we would like to separately follow up with all women who come to your facility to deliver their babies. In our second visit to you 1-2 months from now, we will establish a mutually agreeable strategy for confidentially conveying your obstetric patient lists to our research team.
ಈ ಯೋಜನೆಯ ಭಾಗವಾಗಿ, ಹೆರಿಗೆಗಾಗಿ ನಿಮ್ಮ ಸೌಲಭ್ಯಕ್ಕೆ(ಆಸ್ಪತ್ರೆಗೆ) ಬರುವಂತಹ ಎಲ್ಲಾ ಗರ್ಭಿಣಿ ಮಹಿಳೆಯರೊಂದಿಗೆ ಪ್ರತ್ಯೇಕವಾಗಿ ಅನುಸರಿಸಲು ನಾವು ಇಷ್ಟಪಡುತ್ತೇವೆ. ಈಗಿನಿಂದ 1-2 ತಿಂಗಳಲ್ಲಿ ನಿಮ್ಮೊಂದಿಗೆ ನಮ್ಮ ಎರಡನೇ ಭೇಟಿಯಲ್ಲಿ, ನಮ್ಮ ಸಂಶೋಧನಾ ತಂಡಕ್ಕೆ ನಿಮ್ಮ ಪ್ರಸೂತಿ ರೋಗಿಗಳ ಪಟ್ಟಿಯನ್ನು ಗೌಪ್ಯವಾಗಿ ತಿಳಿಸುವುದಕ್ಕಾಗಿ ಪರಸ್ಪರ ಒಪ್ಪಬಹುದಾದ ಕಾರ್ಯತಂತ್ರವನ್ನು ನಾವು ಹುಟ್ಟುಹಾಕುತ್ತೇವೆ.

NOTE: It is critical that (a) patients are not refused treatment from your facility other than in medically appropriate referrals which we will verify through independent visits in the community around you, and (b) we are able to work with your administrative staff to follow up on all patients who deliver at your facility.
ಈ ಮಹತ್ವದ ಅಂಶಗಳನ್ನು ಗಮನಿಸಿ: ಎ) ಸೂಕ್ತವಾದ ವೈದ್ಯಕೀಯ ಕಾರಣಗಳಿಗಲ್ಲದೆ ರೋಗಿಗಳನ್ನು ನಿಮ್ಮ ಆಸ್ಪತ್ರೆಯಿಂದ ಚಿಕಿತ್ಸೆ ನಿರಾಕರಿಸುವಂತಿಲ್ಲ. ಬಿ) ನಿಮ್ಮ ಆಸ್ಪತ್ರೆಯಲ್ಲಿ ಹೆರಿಗೆಯಾಗುವ ಎಲ್ಲಾ ತಾಯಂದಿರನ್ನು ಭೇಟಿಮಾಡಲು ನಿಮ್ಮ ಸಿಬ್ಬಂಧಿಯೊಂದಿಗೆ ಕೆಲಸನಿರ್ವಹಿಸುತ್ತೇವೆ.

Please do not hesitate to contact us in case you have any questions or require further information.
ಯಾವುದೇ ಪ್ರಶ್ನೆಗಳನ್ನು ನೀವು ಹೊಂದಿದ್ದ ಪಕ್ಷದಲ್ಲಿ ಅಥವ ಇನ್ನೂ ಹೆಚ್ಚಿನ ಮಾಹಿತಿಯು ಅವಶ್ಯವಿದ್ದ ಪಕ್ಷದಲ್ಲಿ ನಮ್ಮನ್ನು ಸಂಪರ್ಕಿಸಲು ದಯವಿಟ್ಟು ಹಿಂಜರಿಯಬೇಡಿ.

Thank you for your cooperation. We look forward to working with you.
ನಿಮ್ಮ ಸಹಕಾರಕ್ಕಾಗಿ ಧನ್ಯವಾದಗಳು. ನಿಮ್ಮೊಂದಿಗೆ ಕಾರ್ಯ ನಿರ್ವಹಿಸಲು ನಿರೀಕ್ಷಿಸುತ್ತೇವೆ

Sincerely, ಇಂತೀ ,

Kultar Singh
ಕುಲ್ತಾರ್ ಸಿಂಗ್
Chief Executive Officer
ಮುಖ್ಯ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಧಿಕಾರಿ
Sambodhi Research and Communications Pvt. Ltd.
ಸಂಬೋಧಿ ರಿಸರ್ಚ್ ಎಂಡ್ ಕಮ್ಯುನಿಕೇಷನ್ ಪ್ರೈವೇಟ್ ಲಿಮಿಟೆಡ್
O-2, 2nd Floor, Lajpat Nagar-II, New Delhi 110024
ಒ -2, ಸೆಕೆಂಡ್ ಫ್ಲೋರ್, ಲಾಜಪತ್ ನಗರ್ - 2, ನ್ಯೂ - ಡೆಲ್ಲಿ 110024

Anil M. Lobo
ಅನಿಲ್ ಎಮ್. ಲೋಬೊ
Manager – Research
ವ್ಯವಸ್ಥಾಪಕ ಅಧಿಕಾರಿ

I agree to participate in the above mentioned study.
ನಾನು ಮೇಲೆ ತಿಳಿಸಿದ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಒಪ್ಪಿಕೊಳ್ಳುತ್ತೇನೆ.

_____	_____	_____
Name of Provider (Print)	**Signature of Provider**	**Date**
ಆರೋಗ್ಯ ಸೇವೆ ಒದಗಿಸುವವರ ಹೆಸರು	ಸಹಿ	ದಿನಾಂಕ

Appendix 2: Calculation and Measurement of Inputs and Outputs

Performance Based Contracts in Healthcare: Experimental Evaluation of Contracting Based on Inputs and Health Outcomes

October 2014

Inputs Performance Calculations

Evaluation of inputs is based on responses to questions asked during household interviews 7 – 20 days after delivery. Rules for evaluating each domain of inputs are described in the fourth column and last two rows of each section. "Don't know/can't remember" responses are treated as missing; there is no penalty/gain to performance for missing responses, whether they arise from skip patterns or "don't know/can't remember" responses. Questions have been chosen to reflect factors that women could conceivably answer reliably and that do not depend on whether an adverse outcome occurred.

SECTION A: PREGNANCY CARE (ANC)

WHO Recommendation	Qn #	Question	One point if: (0 otherwise)
Monitoring of progress of pregnancy and assessment of maternal and fetal well-being	Q301	During this pregnancy, did any health worker see you/provide checkups or advice?	A1. Yes
	Q304	How many months were you when you received first checkup for this last pregnancy?	A2. < 5
	Q305	How many times were you checked up during this pregnancy?	A3. > 3
Detection of problems complicating pregnancy (e.g., anemia, hypertensive disorders, bleeding, malpresentations, multiple pregnancy)	Q306B	As part of your checkups during this pregnancy, were any of the following tests or exams done at least once: weight?	A4. Yes
	Q306C	As part of your checkups during this pregnancy, were any of the following tests or exams done at least once: blood pressure?	A5. Yes
	Q306D	As part of your checkups during this pregnancy, were any of the following tests or exams done at least once: urine?	A6. Yes
	Q306E	As part of your checkups during this pregnancy, were any of the following tests or exams done at least once: blood test?	A7. Yes
	Q306F	As part of your checkups during this pregnancy, were any of the following	A8. Yes

		tests or exams done at least once: abdomen/ internal/ vaginal exam?	
	Q306H	As part of your checkups during this pregnancy, were any of the following tests or exams done at least once: ultrasound/ sonogram?	A9. Yes
	Q306I	As part of your checkups during this pregnancy, were any of the following tests or exams done at least once: anemia test (in this test, blood is taken from your finger tip or your eyes and palm are checked)?	A10. Yes
Tetanus immunization, anemia prevention and control (iron and folic acid supplementation)	Q313	During this pregnancy, were you given an injection in the arm or shoulder or other part of the body to prevent getting tetanus?	A11. Yes
	Q314	During this pregnancy, did you consume any iron tablets or iron syrup?	A12. Yes
	Q315	During this pregnancy, did you consume folic acid?	A13. Yes
Information and counseling on self care at home, nutrition, safer sex, breastfeeding, family planning, healthy lifestyle	Q308	During your ANC checkups, were you given any guidance about what kinds of things you should eat during pregnancy?	A14. Yes
	Q309	During your ANC checkups, were you given any guidance about breastfeeding?	A15. Yes
	Q310	During your ANC checkups, were you given any guidance about family planning?	A16. Yes
Birth planning, advice on danger signs and emergency preparedness	311	During your ANC checkups, were you given any guidance about birth planning?	A17. Yes
	312	During your ANC checkups, were you given any advice on danger signs during pregnancy and emergency preparedness?	A18. Yes

Individual Level Inputs, Section A: Pregnancy Care (e.g., y_{ip}, y_{ic}):	$\boldsymbol{IndInput_A = \frac{\sum A1:A18}{18}}$
Provider Level Inputs, Section A: Pregnancy Care (e.g., $\mathbf{y_p}$): [Evaluated based on women who delivered at the provider's facility]	$\boldsymbol{ProvInput_A = \frac{\sum IndInput_A}{\#\ patients}}$

SECTION B: CHILDBIRTH CARE

WHO Recommendation	Qn #	Question	One point if: (0 otherwise)
Diagnosis of labor	Q404	[For institutional deliveries] When you arrived at the facility for delivery, were you asked about the details of the pain (onset/type, association of pain with leaking) while the child was in your womb? [For attended home deliveries] When the health provider reached your home for delivery, were you asked about the details of the pain (onset/type, association with leaking) while the child was in your womb?	B1. Yes
Monitoring progress of labor, maternal and fetal well-being with partograph	Q405	Were you asked about the movement of your baby in your womb?	B2. Yes
	Q413	Was the heart rate of the baby checked while the baby was still in your womb?	B3. Yes
	Q416	Was a per vaginal examination (the healthcare provider inserting fingers in the mother's vagina) done to you?	B4. Yes
Providing supportive care and pain relief	Q419	Were you encouraged to bear down?	B5. Yes
Detection of problems and complications (e.g., malpresentations, prolonged and/or obstructed labor, hypertension, bleeding, and infection)	Q407	Were you asked about your previous deliveries including live birth/stillbirth/abortion, etc.?	B6. Yes
	Q408	Were you asked if you have ever had hypertension or high blood pressure?	B7. Yes
	Q409	Were you asked whether you are diabetic?	B8. Yes
	Q410	Were you asked about whether you have hyper or hypo thyroidism (increased/decreased palpitation & perspiration for which is on treatment)?	B9. Yes
	Q411	Were you asked whether you have asthma?	B10. Yes
	Q412	Was your blood pressure checked?	B11. Yes
	Q414	Was an anemia test done on you? In this test, blood is taken from your finger tip, your eyes and palm are checked, or blood sample.	B12. Yes
	Q415	Was a per abdominal examination (touched and examined the bare abdomen) done to you?	B13. Yes
Delivery and immediate care	Q502	Was the baby dried immediately after	B14. Yes

of the newborn baby, initiation of breastfeeding		birth?	
	Q503	Was the baby subsequently wrapped in different clothes from what were used to dry the baby?	B15. Yes
	Q504	Was the head of the baby covered?	B16. Yes
	Q506	Was the heart rate of the baby checked during the first five minutes after birth?	B17. Yes
	Q507	Were you counseled to start breastfeeding shortly after delivery?	B18. Yes
	Q508	How long after birth did you put (BABY NAME) to the breast?	B19. Imme-diately (within 1 hr)
	Q510	Was (BABY NAME) weighed at birth?	B20. Yes
Active management of third stage of labor	Q423	Did the doctor/other assistants/nurses press your abdomen after the delivery?	B21. Yes
	Q605	After delivery of your baby were you given medicine/injections/drip (oxytocin) to decrease bleeding?	B22. Yes
Monitoring and assessment of maternal well being, prevention and detection of complications (e.g., hypertension, infections, bleeding, anemia)	Q601	Was your blood pressure monitored after delivery?	B23. Yes
	Q602	Was a vaginal examination done after delivery?	B24. Yes
	Q603	Was your episiotomy checked?	B25. Yes
	Q417	Did the healthcare provider wear gloves while doing the per vaginal examination?	B26. Yes
Individual Level Inputs, Section B: Childbirth Care (e.g., y_{ip}, y_{ic}):			$IndInput_B = \frac{\sum B1:B26}{26}$
Provider Level Inputs, Section B: Childbirth Care (e.g., $\mathbf{y_p}$): [Evaluated based on women who delivered at the provider's facility]			$ProvInput_B = \frac{\sum IndInput_B}{\#\ patients}$

SECTION C: POSTNATAL MATERNAL CARE

WHO Recommendation	Qn #	Question	One point if: (0 otherwise)
Anemia prevention and control (iron and folic acid supplementation)	Q802-3	[For institutional deliveries] Before discharge, were you given counseling by hospital staff on any of the following topics? Iron and calcium intake for 3 months [For home deliveries] Before the attending healthcare provider left, did she give you any counseling on any of the following topics? Iron and calcium intake for 3 months	C1. Yes
Information and counseling on nutrition, safe sex, family planning and provision of some contraceptive methods	Q802-2	[For institutional deliveries] Before discharge, were you given counseling by hospital staff on any of the following topics? Normal diet [For home deliveries] Before the attending healthcare provider left, did she give you any counseling on any of the following topics? Normal diet	C2. Yes
	Q802-4	[For institutional deliveries] Before discharge, were you given counseling by hospital staff on any of the following topics? Family planning [For home deliveries] Before the attending healthcare provider left, did she give you any counseling on any of the following topics? Family planning	C3. Yes
Postnatal care planning, advice on danger signs and emergency preparedness	Q807-1	Were you advised to report immediately if you had any of the following? High grade fever	C4. Yes
	Q807-2	Were you advised to report immediately if you had any of the following? Foul smelling vaginal discharge	C5. Yes
	Q807-3	Were you advised to report immediately if you had any of the following? Excessive bleeding	C6. Yes
	Q807-4	Were you advised to report immediately if you had any of the following? Wound gaping or oozing wound	C7. Yes
	Q807-5	Were you advised to report immediately if you had any of the following? Convulsions	C8. Yes
Individual Level Inputs, Section C: Postnatal Maternal Care (e.g., y_{ip}, y_{ic}):			$IndInput_C = \frac{\sum C1:C8}{8}$

Provider Level Inputs, Section C: Postnatal Maternal Care (e.g., $\mathbf{y_p}$): [Evaluated based on women who delivered at the provider's facility]	$ProvInput_C = \frac{\sum IndInput_C}{\#\ patients}$

SECTION D: NEWBORN CARE

WHO Recommendation	Qn #	Question	One point if: (0 otherwise)
Promotion, protection, and support for breastfeeding	Q704	In the first 12 hours after birth, did the health care provider/staff ask whether the baby had been fed?	D1. Yes
	Q803	[For institutional deliveries] Did you receive advice on breastfeeding during your stay in the hospital? [For attended home deliveries] Before the attending health care provider left, did she give you any advice on breastfeeding?	D2. Yes
Monitoring and assessment of wellbeing, detection of complications (breathing, infections, prematurity, low birth weight, injury, malformation)	Q701	Was the baby's heart rate checked during the first 6 hours after birth?	D3. Yes
	Q702	Was the baby's temperature measured with a thermometer during the first 12 hours after birth?	D4. Yes
	Q703	Did the healthcare provider ask the mother whether the baby has urinated or was the urine checked directly by the healthcare provider?	D5. Yes
Infection prevention and control, rooming-in	Q708	Was the baby bathed within 6 hours after birth?	D6. No
Eye care	Q701A	Was the baby given eyedrops in the first 6 hours after birth?	D7. Yes
Information and counseling on homecare, breastfeeding, hygiene	Q802-1	[For institutional deliveries] Before discharge, were you given counseling by hospital staff on any of the following topics? Exclusive breastfeeding [For home deliveries] Before the attending healthcare provider left, did she give you any counseling on any of the following topics? Exclusive breastfeeding	D8. Yes
	Q804	Were you told that breast milk or formula milk is better?	D9. Breast milk
	Q802-5	[For institutional deliveries] Before discharge, were you given counseling by hospital staff on any of the following topics? Hygiene [For home deliveries] Before the attending healthcare provider left, did she give you any counseling on any of the following topics? Hygiene	D10. Yes
Postnatal care planning, advice on danger signs and	Q802-8	[For institutional deliveries] Before discharge, were you given counseling by	D11. Yes

emergency preparedness		hospital staff on any of the following topics? Warning signs indicating that you should take the baby to see a doctor [For home deliveries] Before the attending healthcare provider left, did she give you any counseling on any of the following topics? Warning signs indicating that you should take the baby to see a doctor	
Immunization according to the national guidelines	Q706-1	What immunizations did the baby receive? BCG (right upper arm)	D12. Yes
	Q706-2	What immunizations did the baby receive? HEP-B1	D13. Yes
	Q706-3	What immunizations did the baby receive? Polio (oral drops)	D14. Yes
Individual Level Inputs, Section D: Newborn Care (e.g., y_{ip}, y_{ic}):			$IndInput_D = \frac{\sum D1:D14}{14}$
Provider Level Inputs, Section D: Newborn Care (e.g., y_p): [Evaluated based on women who delivered at the provider's facility]			$ProvInput_D = \frac{\sum IndInput_D}{\#\ patients}$

SECTION E: POSTNATAL NEWBORN CARE

WHO Recommendation	Qn #	Question	One point if: (0 otherwise)
Detection of complications and responding to maternal concerns	Q808	Were you given any contact number to call during the time of emergency/need?	E1. Yes
Information and counseling on home care	Q805	Did the hospital staff/health care provider advise you to keep the baby warm?	E2. Yes
Individual Level Inputs, Section E: Postnatal Newborn Care (e.g., y_{ip}, y_{ic}):			$IndInput_E = \frac{\sum E1:E2}{2}$
Provider Level Inputs, Section E: Postnatal Newborn Care (e.g., y_p): [Evaluated based on women who delivered at the provider's facility]			$ProvInput_E = \frac{\sum IndInput_E}{\#\ patients}$

Health Outcomes Calculations

Evaluation of inputs is based on responses to questions asked during household interviews 7 – 20 days after delivery. Every output is a binary adverse health outcome when evaluated at the individual level (e.g., y_{ip}, y_{ic}). Provider level outputs (e.g., y_p) represent the share of respondents who delivered at the provider's facility evaluated to have experience the health outcome. "Don't know/can't remember" responses are treated as missing; there is no penalty/gain for missing responses, whether they arise from skip patterns or "don't know/can't remember" responses.

Pre-Eclampsia

Qn #	Question
Q206	Have you ever had a fit/convulsion when you were not pregnant?
Q316	At any point during pregnancy did you have a fit/convulsion?
Q629	Did you experience convulsions? [within 24 hrs of delivery, 24 hrs post-delivery – 1 week post]

Pre-eclampsia Identification Rule	• **No fit or convulsion when not pregnant (206 = no), and**
	• **At least one of:**
	  ○ **Fit or convulsion during pregnancy (316 = yes)**
	  ○ **Convulsion within 24 hours of delivery (629a = yes)**
	  ○ **Convulsion in period from 24 hours post-birth to 1 week post-birth (629b = yes)**

Sepsis

Qn #	Question
Q426	At any point during labor and delivery, did you have a fever?
Q627	Did you experience high grade fever? [within 24 hrs of delivery, 24 hrs post-delivery – 1 wk post]
Q636	Did you have foul smelling vaginal discharge or pus?

Sepsis Identification Rule	• **At least one of:**
	  ○ **Fever during labor or delivery (426 = yes)**
	  ○ **High grade fever from 24 hours post-birth to 1 week post-birth (627b = yes)**
	  ○ **Foul smelling vaginal discharge or pus (636 = yes)**

Postpartum Hemorrhage

Qn #	Question
622	Did you have any bleeding along with experiencing dizziness? [within 24 hrs of delivery, 24 hrs post-delivery – 1 wk post]
623	Did you have any bleeding along with experiencing weakness? [within 24 hrs of delivery, 24 hrs post-delivery – 1 wk post]
624	Did you have any bleeding along with losing consciousness? [within 24 hrs of delivery,

	24 hrs post-delivery – 1 wk post]

PPH Identification Rule	• **At least one of:**
	  ○ **Bleeding along with experience dizziness (622a or 622b = yes)**
	  ○ **Bleeding along with experiencing weakness (623a or 623b = yes)**
	  ○ **Bleeding along with losing consciousness (624a or 624b = yes)**

Neonatal Mortality

Qn #	Question
117a	Did the baby cry immediately after delivery?
118	Was the baby born alive?
118a	Did the doctor/health care provider do anything to attempt to resuscitate the baby?
119	How is the baby doing now?
MU 201	Is the baby still alive? [note this question is asked at least 28 days post birth]
MU 204	When did the baby die? [note this question is asked at least 28 days post birth]
28-Day Neonatal Mortality Identification Rule	• **Baby cried immediately after delivery and has now passed away (117a = Yes & 119 = Passed Away), or** • **Baby did not cry immediately after delivery, was born alive, and has now passed away (117a = No & 118 = Yes & 119 = Passed Away), or** • **Baby did not cry immediately after delivery, and doctor/health care provided attempted to resuscitate the baby (117a = No & 118 = No & 118a = Yes), or** • **Baby was alive at time of initial survey, but has died within one month of delivery (119 = alive and healthy or alive and sick & MU201 = No & MU204 < 1 month)**
Stillborn Death Identification Rule	• **Baby did not cry immediately after delivery, was not born alive, and doctor did not do anything to attempt to resuscitate the baby (117a = No & 118 = No & 118a = No), or** • **Baby did not cry immediately after delivery, baby was not born alive, and question about resuscitating the baby was not applicable (117a = No & 118 = No & 118a = Not applicable)**