Promoting prenatal health care in poor rural areas through conditional cash transfers: evidence from JUNTOS in Peru

Díaz, Juan José; Saldarriaga, Víctor

Veröffentlichungsversion / Published Version
Forschungsbericht / research report

Avances de Investigación

Metodologías de investigación y evaluación de políticas y programas sociales

Promoting prenatal health care in poor rural areas through conditional cash transfers: evidence from JUNTOS in Peru

Juan José Díaz y Víctor Saldarriaga

25

GRADE
Grupo de Análisis para el Desarrollo

Promoting prenatal health care in poor rural areas through conditional cash transfers: evidence from JUNTOS in Peru

GRADE
Grupo de Análisis para el Desarrollo

Avances de Investigación 25

Promoting prenatal health care in poor rural areas through conditional cash transfers: evidence from JUNTOS in Peru

Juan José Díaz and Víctor Saldarriaga[1]

1 Juan José Díaz is Senior Researcher at the Group for the Analysis of Development (GRADE). Victor Saldarriaga is a Consultant in the Social Sector at the Inter-American Development Bank. Díaz appreciates the support provided by the International Development Research Center (IDRC), Canada, with a grant awarded to senior researchers by the Think Tank Initiative through GRADE.

GRADE´s research progress papers have the purpose of disseminating the preliminary results of research conducted by our researchers. In accordance with the objectives of the institution, their purpose is to perform rigorous academic research with a high degree of objectivity, to stimulate and enrich the debate, design and implementation of public policies. The opinions and recommendations expressed in this document are those of the authors and do not necessarily represent the views of GRADE or of the institutions that support it.

This study and its publication were conducted with funds designated by the Think Tank Initiative from the International Development Research Centre in Canada.

Lima, January 2017

GRADE, Group for the Analysis of Development
Av. Almirante Grau 915, Barranco, Lima, Peru
Phone: (51-1) 247-9988
Fax: (51-1) 247-1854
www.grade.org.pe

Research director: Santiago Cueto
Text and style edition: Natalie Povilonis
Edition assistance: Diana Balcázar T.
Cover design: Elena González
Design of layout: Amaurí Valls M.
Print: Impresiones y Ediciones Arteta E.I.R.L
Cajamarca 239 C, Barranco, Lima, Perú. Phone: (51-1) 247-4305 / 265-5146

Index

ABSTRACT

We assess the effects of JUNTOS, a conditional cash transfer program targeted to poor rural households in Peru, on the utilization of prenatal health care by women exposed to the program during their most recent pregnancy. We implement a difference-in-differences estimation technique to uncover the effects of JUNTOS on the utilization of prenatal health care, the quality of prenatal health care, utilization of health care at birth, and obstetric complications at birth. We use data from the publicly available Demographic and Health Surveys (DHS) from the period 2000-2014. Our results suggest that the program has increased prenatal health care utilization. Even more salient, our results also suggest an improvement in the quality of health care received and a reduction of obstetric complications at birth.

JEL Codes: I12, I15, O1, O15.
Keywords: Health, Medical Care, Developing Countries, Human Development.

1. INTRODUCTION

A large proportion of pregnant women around the world do not receive prenatal medical care or the recommended minimum number of prenatal check-ups by skilled personnel, and many of them have no access to emergency obstetric care. Access to and quality of prenatal health care are directly related to maternal and neonatal health. In addition, late detection of pregnancy increases the risk of miscarriage as well as maternal and perinatal mortality.[2]

Poverty is among the leading causes of lack of access to maternal health care. Cultural and information barriers are other relevant factors that halt modern health care utilization, especially among the poor in rural areas. Although efforts have been made to reduce maternal morbidity and mortality in low-income settings, there are still considerable gaps to be closed between the rich and the poor.[3]

Conditional Cash Transfer Programs (CCTs) may constitute an effective policy tool for boosting demand for health care from the poor. CCTs operate by providing poor households with a periodical stipend conditional upon their meeting a set of requirements, such as

---

2 Nearly 300,000 women die every year due to complications during pregnancy and childbirth. Most of these deaths could have been prevented through adequate prenatal care and skilled assistance at birth (WHO 2015).

3 Target 3.1 of the Sustainable Development Goals consists of reducing the global maternal mortality ratio to less than 70 per 100,000 live births by the year 2030. Target 3.8 consists of achieving universal health coverage, including financial risk protection, access to quality essential healthcare services, and access to quality, safe, effective, and affordable essential medicines and vaccines for all.

school attendance for children and medical check-ups for children, pregnant and nursing women. Recent assessments of programs such as *Oportunidades* in Mexico or *Bolsa Familia* in Brazil indicate that CCTs have been important in reducing poverty levels and increasing the demand for health care in countries adopting such programs (Fiszbein and Schady 2009; Adato and Hoddinott 2010), and have been regarded as "a magic bullet in development" by policy makers and academics (Dugger 2004).

Most CCTs worldwide include behavior requirements, conditions, or co-responsibilities aimed at increasing maternal care. Specifically, these requirements include prenatal visits to health facilities on a regular basis to monitor the nutritional and health status of the mother and her child, and to check for potential complications during pregnancy and delivery.[4] Also, nursing women are required to attend postnatal appointments to monitor the child's health status and growth, as well as the mother's health condition.

Despite the fact that many CCTs have well-established objectives of increasing the demand for prenatal and postnatal health care, only a few studies have focused their attention on assessing the accomplishment of such objectives and their implications. Moreover, review studies point out that "little is written on the effects of such programs on maternal and newborn health" (Glassman et al. 2013). A more accurate picture of such effects would allow health stakeholders to make cost-effective decisions regarding the inclusion of program-specific components aimed at improving maternal and neonatal health.

In this paper we assess the effects of JUNTOS, a CCT program targeted to poor households in rural Peru, on prenatal health care.

4 Additional components may include counseling and the promotion of healthy practices, intended to improve the health status of the fetus as well as reducing the risk of obstetric complications during childbirth.

JUNTOS is by and large the most important social protection program focused on reducing poverty and promoting the generation of human capital. Moreover, program conditions target maternal and infant wellbeing. We exploit the geographical expansion of the program over time to estimate the effect of JUNTOS on a comprehensive set of indicators measuring adequate prenatal as well as postnatal health care utilization.

There are two aspects of the analysis that make our paper informative. First, we use publicly available datasets to analyze the effect of JUNTOS on a range of outcomes happening before, during, and after childbirth. These outcomes include: adequate antenatal monitoring, check-ups and births attended to by skilled personnel, institutional delivery, obstetric complications during labor, amid others. Second, the richness of our data allows us to explore the effects of the program on birth outcomes, and thus have a comprehensive picture of whether the effects of JUNTOS on health inputs such as prenatal health care translate into a better health status for newborns.

Using a difference-in-differences approach, we find that JUNTOS increased the demand for health care during pregnancy. In particular, we find a 4.3 percent increase in adequate antenatal monitoring, defined by the WHO as having at least four antenatal visits with an appropriate healthcare provider (WHO 2007). We also find an increase in the probability of having a prenatal check-up during the first trimester of pregnancy, suggesting an improvement in early pregnancy detection among program participants. Results also indicate that JUNTOS increased the probability of receiving skilled medical attention during pregnancy. These positive results from JUNTOS in terms of health care utilization during pregnancy also led to a reduction of 15 percent in the probability of having obstetric complications at birth.

We also find an increase in the demand for postnatal care. In particular, we find that women who were exposed to JUNTOS during pregnancy were 7 percent more likely to take their children to a postnatal check-up at a health facility.

We argue that these positive effects of JUNTOS on pre and postpartum healthy practices result from a combination of program conditions, reduced cost barriers, and increased information about the benefits of utilizing health care at different stages of pregnancy. In fact, if pregnant women receive adequate antenatal monitoring beginning in early stages of pregnancy, then it is also more likely that they will receive information about the reduced risks of giving birth in a health facility and being assisted by skilled personnel; moreover, they will also become familiar with modern medical attention. Thus, early exposure to institutionalized health care during pregnancy brought about by the program can also be reinforced by decreasing cultural barriers that may help reduce reluctance to being examined in a health facility.

Although we document positive impacts from the use of health care, we do not find a corresponding improvement in the birth outcomes of children whose mothers were exposed to JUNTOS during pregnancy. Further analysis of the data indicates that mothers who were eligible for program participation, exposed to JUNTOS during pregnancy, and were surveyed shortly after giving birth do not differ from their non-exposed counterparts in terms of nutritional status. This finding suggests that health care and maternal health might be complementary rather than substitute inputs for newborn health, and thus an improvement in both inputs is necessary to obtain positive impacts on health status at birth.

The paper proceeds as follows. In Section 2, we discuss the channels through which CCTs can increase the demand for health care

from pregnant women and briefly describe the Peruvian JUNTOS program. In Section 3, we describe our data and introduce our empirical methodology to estimate the effects of JUNTOS on prenatal care. Results are presented in Section 4. Section 5 concludes.

2. CONDITIONAL CASH TRANSFERS AND PRENATAL CARE

2.1 Previous empirical evidence

CCTs can affect demand for prenatal health care via several channels. On the one hand, the benefit stipend increases household income, allowing households to spend more money on health care. Moreover, the cash transfer can also reduce cost barriers to access to medical care. For instance, women living far away from a health facility may attend their prenatal appointments more often, given that the cash transfer allows them to allocate part of the household's income to transportation.

On the other hand, program conditionalities act as a mechanism that boosts demand for maternal health care. By imposing conditions such as regular attendance at prenatal appointments in exchange for the benefit stipend, pregnant women are more exposed to skilled medical assistance in an optimal environment (i.e., a health facility). This way, pregnant women are also more likely to receive nutritional supplements and a complete vaccination schedule, reducing the risk of obstetric emergencies.

CCTs can also affect demand for maternal care by providing information. Some programs, such as the *Red de Protección Social* in Nicaragua, include components like health education workshops intended to inform pregnant women about the basic health services

they should receive at prenatal appointments. These components also serve to increase the quality of health care received during pregnancy.[5]

On the supply side, CCTs can also put pressure on the health care system. In many instances, healthcare providers are periodically visited by the program's field personnel or have to provide data on healthcare procedures and/or the number of services performed in a given period. These data usually serve as the principal method for verifying beneficiaries' compliance with program conditions. Moreover, some countries include supply-side conditions or additional benefits such as improvement of healthcare facilities to make them compatible with the requirements of CCTs and incentive payments to healthcare providers based on the number of services performed.[6]

Empirical evidence indicates that CCTs have increased the demand for health care from pregnant women (Morris et al. 2004; Barber and Gertler 2010; Powell-Jackson and Hanson 2012; Lim et al. 2010). Positive impacts of CCTs on birth and postnatal care have also been documented, with several studies finding an increase in the probability of skilled assistance at birth, an increase in the probability of giving birth in a hospital, and an increase in the number of medical appointments that women attended after birth (Urquieta et al. 2009; Lim et al. 2010; de Brauw and Peterman 2011).[7] Most of these studies, though, focus on the quantity rather than the quality of care received.

5 An increase in the demand for prenatal care brought about by CCTs can also lead to a reduction in the quality of care (Cutler and Zeckhauser 2000; Finkelstein 2007). In particular, increased demand for health care can reduce per-patient spending and medical resources available in health facilities. This could lead to an increase in average wait times, discouraging pregnant women from attending their prenatal appointments.

6 For instance, the *Programa de Asignación Familiar* in Honduras included a component aimed at improving the quality of health facilities due to program expansion. Also, the *Safe Delivery Incentive Program* (SDIP) in Nepal includes provider incentives for each delivery assisted.

7 For a detailed discussion of these studies, see Glassman et al. (2013).

To our knowledge, only two studies have analyzed the impact of CCTs on the quality of health care received by examining program impacts on the provision of nutritional supplements and preventive care. Barber and Gertler (2010) studied Mexico's *Oportunidades* program and found an increase in the number of iron supplements provided as well as an increase in the number of recommended prenatal procedures provided during prenatal visits, based on protocols from the Mexican Ministry of Health. Likewise, Gutierrez (2011) reported positive effects from Guatemala's *Mi Familia Progresa* on the probability of receiving folic acid and iron supplements, as well as an increase in the number of prenatal visits at healthcare centers.

Whether this increase in the demand for health care during pregnancy and childbirth generated by CCTs has improved the health condition of the mother and her child remains an open question. Only three studies have analyzed the effect of CCTs on newborn health, all of them finding modest or no improvements in health status at birth (Barber and Gertler 2008; Amarante et al. 2016; Triyana, forthcoming). However, no study has analyzed whether the increase in the demand for prenatal care led to an improvement in maternal health, which is part of the analysis that we perform in this paper.

2.2 The Peruvian JUNTOS Program

JUNTOS was created in April 2005 and launched in September of that year. As with all CCTs, JUNTOS integrates two broad objectives: in the short run, it aims to reduce poverty by providing households with cash transfers; and in the long run, it aims to break the intergenerational transmission of poverty by promoting human capital through improving access to education and health services.

By 2015 the program had reached all municipalities classified as poor. JUNTOS was first implemented in 70 rural municipalities with high poverty rates and limited access to State services. The relative success of the program encouraged rapid expansion, reaching more than 1,000 municipalities or roughly 60 percent of the Peruvian territory in the year 2013. Today, around 700 thousand households or 1.7 million individuals are JUNTOS beneficiaries.

Households are selected for program participation based on poverty status. A poverty score is constructed using an algorithm that predicts income based on a linear combination of household characteristics. A threshold rule defined by the program's administration is then used to determine a household's eligibility condition based on the poverty score. Once the household is enrolled in the program, transfers are given --preferably-- to the female head. Eligible households are entitled to a monthly cash transfer, the value of which was originally set at PER$ 100 (roughly US$ 35). In the year 2010, however, the transfer schedule changed so that beneficiaries receive PER$ 200 bimonthly. The benefit stipend is one of the most generous in Latin America, representing over 30 percent of the average household's pre-program income.

JUNTOS does not impose any constraint on the use of the money. However, all beneficiaries must meet the following conditions: (i) all children ages 6 to 14 (also including children ages 15 to 18 since the year 2011) must attend at least 85 percent of school classes; (ii) children ages 0 to 5 years must visit health centers for growth checkups; (iii) pregnant women must visit healthcare centers for antenatal care; and (iv) nursing women must visit healthcare centers for postnatal care.

Regarding prenatal care, there are no additional requirements for pregnant women other than attending their prenatal appointments

to receive medical attention according to the Peruvian Ministry of Health's Protocol for Attention to Maternal and Newborn Health.[8] Although no conditions are imposed in terms of the health care services a women should receive, JUNTOS creates complementarities with the health sector, the Peruvian Ministry of Health (MINSA by its Spanish acronym), which can further improve the quality of health care provided.

The protocol indicates that pregnant women should attend at least 6 prenatal appointments and should be examined by a physician or an obstetrician at specialized medical facilities or by a nurse/sanitary inspector/*laborist* at health posts at every prenatal appointment. Furthermore, health practitioners are responsible for educating women about the importance of health care during pregnancy and childbirth, educating women to detect symptoms associated with pregnancy complications, performing a nutritional assessment, providing nutritional supplements—such as folic acid, calcium, and iron tablets—when required, and promoting healthy breastfeeding practices.

Finally, compliance with program conditions for pregnant women is verified directly with the healthcare provider. According to the program's operational guidelines, visits to healthcare centers should occur bimonthly.[9] The program's field personnel are responsible for gathering information about attendance at prenatal appointments by beneficiary women; no additional information other than verifying attendance at prenatal check-ups is collected by the field personnel.

8 *Guías Nacionales de Atención Integral de la Salud Sexual y Reproductiva* (MINSA 2004); Resolución Ministerial 827-2013 MINSA.

9 Resolución de Dirección Ejecutiva 171-2015 MIDIS/JUNTOS.

3.1 Data and descriptive statistics

We bring together information from two data sources. Our main source of information is the Peruvian Demographic and Health Surveys (DHS) spanning the period from 2000 to 2014. The DHS are publicly available and contain information about health care received by women ages 15 to 49 (childbearing ages) before, during, and after childbirth. This survey is nationally representative and has been conducted on an annual basis since the year 2004.

Data from the DHS 2000, 2004, and 2005 correspond to the pre-intervention period. Although the deployment of JUNTOS began during the last quarter of 2005, none of the municipalities incorporated into the program that year were part of the 2005 DHS sampling frame. Data from the DHS 2006-2014 correspond to the post-intervention period. However, since the DHS asks each woman in the sample for her latest pregnancy during the last five years, there are women in the 2006-2009 DHS data whose most recent pregnancy was prior to 2005. In addition, given that JUNTOS was deployed across municipalities on different dates, some pregnancies reported after 2006 were not exposed to the program.

Information on maternal care during pregnancy includes the number of prenatal visits, the month of pregnancy when the woman attended her first prenatal appointment, the place of prenatal check-

up, and the person who performed the prenatal check-up. Additional information includes the place of delivery, the person who assisted in childbirth, any obstetric complications during labor, birth weight, and health care received after birth. All this information, though, is only available for the woman's most recent pregnancy within the five years prior to the survey.

The DHS also contains detailed information about the woman and her household's characteristics, which is used to construct an indicator for their eligibility to participate in the program. A household is eligible for program participation if its corresponding poverty score, constructed using the SISFOH's algorithm for defining poverty based on observable household characteristics, is greater than or equal to a threshold level determined by the program's administration.[10] Details on the calculation of the poverty score and the indicator for eligibility are described in Appendix A. Given that JUNTOS is not experimentally designed but the rules for defining eligibility are well established, this indicator will be useful for our empirical setup.

Our sample includes all women living in municipalities where JUNTOS had been deployed up to the year 2012. We further restrict the sample to include women who lived in rural areas, whose last birth happened in the year 2000 or later, and who reported having lived in the municipality for at least one year before giving birth. These restrictions ensure that estimates are not contaminated by migratory decisions made based on arrival of the program, and are thus closer to identifying program-specific intention to treat effects on maternal health care.[11]

10 SISFOH (the acronym for *Sistema de Focalización de Hogares*) is a proxy means test system used by the Peruvian government for targeting poor households.

11 In particular, pregnant women can move to a municipality where JUNTOS has been deployed with the objective of getting the benefit stipend. In this case, estimates would be affected by the selection of women who migrated to a different municipality because of

Information obtained from the DHS is then combined with administrative records from JUNTOS on paydays at each municipality. This constitutes our second source of information, which we use to establish the exact month and year when JUNTOS reached the municipality. Specifically, for each municipality we calculate the earliest date in which a payment was observed, and define this month and year as the date on which JUNTOS reached the municipality. Together with the month and year of birth, this information allows for determining whether or not a woman was exposed to JUNTOS during the pregnancy of her most recently born child.

The final sample comprises information about prenatal and newborn healthcare for 15,308 women during their latest pregnancy. In Table 1, we present descriptive statistics for the women included in our sample. The descriptive factors are divided according to eligibility for program participation and exposure to JUNTOS (i.e., an indicator for whether JUNTOS reached the municipality at some point during the pregnancy or before conception).

3.2 Estimation framework

The selection of beneficiaries and the deployment of the program were not random. Therefore, we implement quasi-experimental techniques to pin down the effect of JUNTOS on prenatal health care. Our identification strategy exploits variation in the eligibility condition over time across households in different geographic regions.

JUNTOS. By restricting the sample to include women who were living in the municipality for at least one year before they gave birth, we ensure that migration decisions were made before conception, and we discard the possibility of migration during pregnancy happening because of program arrival.

In practice, what we do is compare inter-temporal variation in indicators for maternal health care across women who were and were not eligible for program participation. The temporal dimension in this particular case is given by the exposure to JUNTOS during the most recent pregnancy. With observations for woman *i*, living in municipality *j*, interviewed in year *t*, we estimate linear regressions of the form:

$$Health\ Care_{ijt} = \beta_0 + \beta_1 (Eligible_{ijt} \times Exposed_{ijt}) + \beta_2 \cdot Eligible_{ijt} + \beta_3 \cdot Exposed_{ijt} + X'_{ijt}\gamma + I_j + I_t + \varepsilon_{ijt}$$

where $Health\ Care_{ijt}$ is an indicator for health care at different stages of gestation, $Eligible_{ijt}$ is an indicator for eligibility based on observable household characteristics, $Exposed_{ijt}$ is an indicator for whether the woman was exposed to JUNTOS during her most recent pregnancy, X_{ijt} is a vector of the woman's and municipality's characteristics, I_j and I_t are municipality and time (unrestricted) fixed effects respectively, and ε_{ijt} is an error term capturing all other omitted factors.

In the vector X_{ijt} we include several covariates in order to account for potential confounding factors in our regression. One set of covariates comprises the woman's characteristics: we include indicators for her year of birth (1960-1969; 1970-1979; 1980-1989; 1990 or later years; base: born before 1960), indicators for her age at her first birth (20-29; 30-39; 40 or older; base: 19 or younger), indicators for educational attainment (incomplete primary; complete primary; some high school; high school degree; some college; base: no education), and an indicator for Spanish as the mother tongue. Educational attainment variables are included because more educated mothers might have more knowledge and information about care during pregnancy and also might be more prone to using modern health care. The woman's mother tongue is included to control for any potential language barrier that might halt the use of modern health care.

Another set of covariates includes characteristics related to the last pregnancy: indicators for the child's birth order (2, 3, 4, or more; base: firstborn child) and indicators for the woman's age at the child's birth (20-29; 30-39; 40 or older; base: 19 or younger). These indicators are intended to capture knowledge about health care during pregnancy, which can increase with the number of pregnancies and the mother's age. A final set of covariates is intended to measure the availability of health facilities in the municipality where the mother resided during her lastborn child's year of birth. We include an indicator for the presence of any health facility (health post, health center, clinic, or hospital) in the municipality during the child's year of birth and an indicator for the presence of a health facility prepared for obstetric emergencies in the municipality during the child's year of birth.

In addition, we include a municipality-specific linear trend, common to all women in the municipality, as a control variable. This variable allows for the removal of confounding secular time trends, as it captures the evolution of unobserved municipality-level characteristics potentially related to changes in the outcomes of interest and the deployment of JUNTOS over time.

Equation (1) resembles a difference-in-differences specification. Because JUNTOS was deployed in different municipalities at different times, we compare women eligible and not eligible for program participation by virtue of their exposure to the program and municipality of residence. In this specification, the comparison group is composed of: (i) non-eligible women living in the same municipality, and (ii) eligible women living in a different municipality not yet exposed to JUNTOS in the same year.

We are interested in estimating the coefficient associated with the interaction term between eligibility and exposure to JUNTOS, β_1. If this coefficient is positive and statistically significant, then this would

imply that JUNTOS increased demand for prenatal health care. The consistency of our parameter of interest relies on the "parallel trends" assumption. This assumption requires that outcome variables have common time trends for treatment and control groups in the pre-intervention period. In Appendix B we explain in detail the empirical analysis that we conduct to provide evidence against diverging pre-existing time trends between treatment and control groups.

A final comment relates to the way of estimating the standard errors. Since our empirical methodology heavily relies on exposure to JUNTOS for identification of program effects, and exposure is defined by the date in which JUNTOS reached the municipality, standard errors are clustered at the municipality level. This way we allow for an arbitrary correlation of the errors between women residing in the same municipality.

4.1 Main results

In this section we discuss the main results of the effect of JUNTOS on pregnant women's demand for health care. We begin the discussion by presenting the results for prenatal care. We next turn to discuss the impacts on healthcare and obstetric complications at birth. Lastly, we extend the analysis to explore the program's effects on postnatal care.

Prenatal care. We begin the discussion of the results by presenting estimates of the effect of JUNTOS on adequate prenatal care. In Table 2, we present estimates of the effects of JUNTOS on the probability of attending a prenatal check-up, the number of prenatal check-ups the woman attended, the probability of reporting at least four visits to a health facility, and the probability of reporting at least one visit to a health facility during the first trimester of pregnancy.

Results indicate that eligible women who were exposed to JUNTOS during their most recent pregnancy are 2.9 percentage points more likely to attend a prenatal check-up, and attend 0.31 more check-ups during pregnancy on average, relative to their non-exposed counterparts. These results, although positive, are likely small given the high number of women that attend prenatal check-ups on a regular basis during pregnancy. Yet, we do find positive and sizable effects in terms of adequate antenatal care. In particular, we find that

JUNTOS increased the probability of attending at least 4 prenatal check-ups by 3.8 percentage points (4.3 percent), and increased the probability of having a prenatal check-up during the first trimester of pregnancy by 7.7 percentage points (11.5 percent).

In Table 3 we present estimates of the effect of JUNTOS on access to skilled assistance and health facilities during pregnancy. Results indicate that JUNTOS increased the probability of receiving skilled medical attention during prenatal visits by 2.4 percentage points, or 3 percent, relative to the pre-intervention mean. We do not find a statistically significant effect on the probability that a women was attended to by a physician, an obstetrician, or a nurse (specialized medical attention) during the prenatal visit. Finally, we find a 1.9 percentage points (1.7 percent) increase in the probability that a woman was checked into a health facility during gestation.

We next explore the effects of JUNTOS on the quality of health care received during the prenatal visits. In Table 4, we present estimates of the effects of JUNTOS on indicators for the basic health services a pregnant women must receive during prenatal visits, according to the Peruvian Ministry of Health's Protocol for Attention to Maternal and Newborn Health.

Overall, we find positive effects on the probability of checking weight gain (3.8 percent), the probability of measuring the belly circumference (2.5 percent), the probability of checking blood pressure (3.2 percent), and the probability of checking the baby's heartbeat (3.9 percent). We also find that eligible women who were exposed to JUNTOS during pregnancy are 6 percent more likely to receive iron supplements and tetanus vaccine injections during a prenatal appointment, relative to their non-exposed counterparts.

These results are indicative of potentially positive effects in terms of a demand-induced supply of health care brought about by

JUNTOS. Since healthcare providers are constantly visited by the program's field workers, this might put pressure on the supply side of health care, leading to an improvement in the quality of care received by pregnant women. Also, frequent use of health care in early stages of pregnancy can raise awareness about the medical procedures that should be followed at each prenatal appointment, as women become more informed about and experienced with the health services.

Health care at birth. An open question in the literature studying the effects of CCTs on health is whether the increase in the demand for maternal health care is driven by the program conditions or by the reduction in the cost of accessing health care brought about by the benefit stipend. A particular feature of JUNTOS is that no conditions are imposed for childbirth. Thus, any medical attention observed at birth can happen either because of decreasing cost barriers or because of increased information about the reduced risks of giving birth in a health facility. We explore whether pregnant women were more likely to attend health facilities to give birth and whether these births were attended to by skilled healthcare personnel.

In Table 5, we show estimates of the effect of JUNTOS on health care at birth. Results suggest no effects in the probability of institutional delivery (defined as births attended to by skilled personnel in a health facility), in the probability of skilled assistance during childbirth, nor in the probability of giving birth in a health facility.

Obstetric complications at birth. We also explore whether the increase in health care during pregnancy and childbirth led to a reduction in obstetric emergencies. We present estimates of the effect of JUNTOS on the probability of obstetric complications happening during labor in Table 6.

For women who were exposed to JUNTOS during pregnancy, we find a 2.7 percentage point reduction in the probability of prolonged labor, a 2.4 percentage point reduction in the probability of having a fever with vaginal bleeding, and a 1 percentage point reduction in the probability of having other complications during labor. Although the point estimates are negative for excessive bleeding and other complications during labor (suggesting a reduction in the probability of observing these obstetric emergencies), they are imprecisely estimated. Overall, we find that the probability of observing any obstetric complication during labor decreased by nearly 16 percent for eligible women exposed to JUNTOS during pregnancy.

The results presented thus far indicate that JUNTOS has increased utilization of maternal health care during pregnancy with no associated increase in the utilization of health care at childbirth. Moreover, women benefitting from JUNTOS are more likely to receive better quality services during their medical appointments, which is reflected in the fact that they have more access to skilled attention in health facilities, receive a complete health assessment during prenatal visits, and receive the recommended supplements and vaccinations for a healthy pregnancy. This improvement in the quantity and quality of maternal health for program participants has probably led to a reduction in obstetric complications at birth.

Postnatal Care. Lastly, we investigate whether the observed increase in the demand for prenatal care also continued during the postnatal period. In Table 7 we present estimates of the effect of JUNTOS on indicators measuring healthy breastfeeding practices, and on indicators measuring adequate postnatal care.

Results indicate that eligible women exposed to JUNTOS were not more likely to receive breastfeeding training supervised by

skilled staff during pregnancy. In addition, there is no effect in the probability that a women breastfed her child within one hour after birth—a breastfeeding practice considered healthy and promoted by the WHO (WHO 2003). Results also indicate that eligible women exposed to JUNTOS during pregnancy were 7 percent more likely to take their children to a postnatal check-up, with a high probability of the postnatal visit occurring within one week after childbirth.[12]

4.2 Robustness

Identification of causal relations in the difference-in-differences approach is based on the so called "parallel trends assumption." This assumption requires time trends of outcome variables across treatment and control groups to have been the same in the absence of the program. We conduct a series of falsification tests to check for the presence of diverging pre-existing trends across treatment and control groups. The analysis is explained with more detail in Appendix B.

We begin the analysis by presenting estimates based on pre-implementation survey years. We restrict our attention to four indicators summarizing maternal health care observed in the years prior to program implementation: the probability of attending a prenatal check-up, the probability of attending a prenatal check-up during the first trimester of pregnancy, the probability of delivery being assisted by skilled personnel, and the probability of giving birth in a health facility. The results are presented in Appendix Table B1.1.

12 Further analysis of the data indicates that postnatal check-ups for women exposed to JUNTOS while pregnant were 4.5 percent more likely to be attended by skilled personnel (not shown in the tables).

In Panel A, we restrict the sample to include observations only from the years 2000 and 2004. In Panel B, we include observations only from the years 2000 and 2005. Lastly, in Panel C we include observations from all three years—namely, 2000, 2004, and 2005. We report the coefficient associated with the interaction between the indicator for eligibility for program participation and the indicator for the survey year. Using year 2000 as the baseline year and years 2004/2005 as false post-intervention years, we fail to reject the null hypothesis that the estimated coefficients are different from zero.

We augment the analysis by graphically presenting evidence against pre-existing diverging trends between treatment and control groups. In Appendix Figure B2.1, we plot estimates of coefficients associated with the interaction term between the indicator for eligibility and the year of birth (along with their corresponding 95% confidence intervals), based on a parametric event study specification examining how eligibility affected utilization of prenatal health care for pregnancies before JUNTOS was implemented (see Appendix B.2 for additional details of the regression specification). In this analysis, data come from DHS from the years 2000-2009, provided that these surveys include information about children born in or before the year 2005.[13] Given that these children were never exposed to JUNTOS during gestation, we should expect these estimates to be statistically insignificant.

Results indicate that prenatal care and health care at birth were similar between the eligible and non-eligible populations during the pre-intervention period. We do not find any statistically significant effect when comparing adequate prenatal care, early prenatal care, and institutional delivery across treatment groups for children born before

13 We restrict the sample to include all births that happened before September of the year 2005.

the year 2005. Moreover, F-tests do not reject the null hypothesis that the coefficients associated with the interaction term between the indicator for eligibility and the year of birth were jointly different from zero for years of birth prior to 2005, in any of the four regressions. We interpret these results as evidence in favor of no pre-existing trends across treatment groups.

4.3 Additional results

We close the discussion on the effects of JUNTOS on the demand for maternal health care by presenting additional results related to the timing of interventions, newborn health outcomes, and maternal nutrition. The results presented in this section are relevant for determining whether there is a critical period of intervention that would potentiate the results in terms of increasing maternal health care, and also for discussing whether the observed increase in health inputs such as health care yield an improvement in the health status of newborns (or more broadly, health outputs).

Timing of intervention. Does the timing of intervention matter for determining adequate maternal health care? We investigate this enquiry by presenting estimates of the effect of JUNTOS on health care at different stages of gestation in Appendix Table C1.1, according to the timing of the intervention: full exposure (i.e., women participating before conception), exposure starting from the 1st trimester of pregnancy, and exposure starting from the 2nd trimester of pregnancy.

Results indicate that the positive effect of JUNTOS on maternal health care is mainly driven by the group of women who exposed to the program since before the date of conception. We do not find

statistically significant effects for women who were exposed to JUNTOS starting in the first or second trimester of pregnancy. These results suggest that the timing of intervention does matter for determining adequate maternal health care, and that CCTs may only be effective in increasing the demand for health care from pregnant and nursing women when the intervention covers the whole gestational period.

Newborn health and maternal nutrition. Does the increase in the demand for prenatal care lead to an improvement in maternal and newborn health? We address this question by presenting estimates of the effect of JUNTOS on newborn health outcomes in Appendix Table D1.1 and on indicators for maternal nutrition in Appendix Table D2.1.

We do not find statistically significant effects of JUNTOS on indicators of newborn health—namely, birth weight (in logs.) and the incidence of low birth weight. These results suggest that even though JUNTOS has increased demand for prenatal care, it has not improved the health status of newborns.

We further explore whether JUNTOS affected the mother's nutritional status in Appendix Table D2.1. Measures of the mother's nutritional status include her Body Mass Index, probability of being underweight, and hemoglobin level; and an indicator for anemia status. These measures were taken at the time the woman was surveyed and do not correspond to the pregnancy period. We apply different filters to the sample in order to have a clearer picture of whether JUNTOS affected the woman's nutritional status during pregnancy. These filters are explained with more detail in Appendix D.

In Panel A, the sample is composed of all women ages 15 to 49 who lived in rural municipalities where JUNTOS had been deployed up to the year 2012 and who are part of JUNTOS' target population, regardless of whether or not they had given birth within the five years

prior to the survey. In Panel B, the sample is composed of all women satisfying the aforementioned restrictions, who had given birth within the five years prior to the survey. All of these women are included in the sample we use to estimate the effect of JUNTOS on maternal care.[14] In Panel C, we restrict the sample to include only women from Panel B who had given birth within the last twelve months prior to the survey. Because those women had recently been pregnant, estimates arising from this sample come closer to capturing the program's effect on nutritional status during the gestational period.

Results indicate that JUNTOS has not affected the nutritional status of women who were recently pregnant. These results can be used to explain why JUNTOS has not improved the health status of newborns who were exposed to the program while in-utero, even though there has been an increase in demand for prenatal care. If prenatal care and maternal nutrition are complementary rather than substitute inputs for newborn health, then an improvement in both inputs is needed for better health status at birth. However, we found an increase only in prenatal care, with no apparent effect on maternal nutrition during the period when these women were pregnant.

14 The sample size in Appendix Table D2.1 is smaller than those from previous tables because measures of height and weight were not taken for all women in the sample. In particular, only a few women in each dwelling were randomly selected for the anthropometry and anemia questionnaire section. In addition, the woman's consent was required for the extraction of blood samples to measure hemoglobin levels.

5. CONCLUSION

Several developing countries around the world are currently implementing Conditional Cash Transfer programs to fight poverty. By providing poor households with cash transfers, usually targeted to women, these programs aim to reduce poverty in the short run. By requiring co-responsibilities or behavior conditions, these programs aim to reduce poverty in the next generation since co-responsibilities promote long-term investments in human capital, most saliently on children's health and education.

Many studies show that CCTs indeed help in reducing poverty, while also improving input and output indicators related to children's health and education. However, relatively less attention has been given to the study of the effects of CCTs on health-related behaviors and outcomes for pregnant women and their babies.

It is common for CCTs to require pregnant women to attend prenatal health check-ups. In most cases, behavior conditions are complemented by the provision of information or educational talks related to health care practices. These features are common in several different countries implementing this kind of program. Recently, however, a new kind of CCTs that specifically promote maternal and neonatal health care have appeared, such as *Janani Suraksha Yojana* in India and the *Safe Delivery Incentive Program* in Nepal. As Glassman et al. (2013) point out, these "narrow scope" CCTs transfer cash under the condition that pregnant women comply with specific behaviors

such as accessing antenatal health care and using assisted delivery for childbirth.

In this paper we contribute to expanding the evidence of the impacts of CCTs on prenatal health care by assessing the case of JUNTOS. JUNTOS is a CCT that began to be implemented in rural areas of Peru starting in late 2005. The program provides monthly cash transfers of about 30 percent of the average consumption expenditure of a poor rural household (US$ 35). Among the health-related behavior conditions, JUNTOS requires that pregnant women attend prenatal check-ups and nursing women attend postnatal check-ups. We implemented a difference-in-differences approach to estimate the effects of JUNTOS on prenatal health care use and health care at birth indicators using data from the Peruvian Demographic and Health Surveys from the period of 2000-2014.

We found that eligible women exposed to JUNTOS increased their use of prenatal health care services. Our results suggested that the likelihood of having a prenatal health check-up as well as the number of prenatal check-ups increased after exposure to the program during pregnancy. Our results also showed that the likelihood of having a prenatal check-up during the first trimester of pregnancy and having at least four prenatal check-ups increased following program exposure. The latter two are among the desirable or good health care practices recommended by the WHO.

We also found that the quality of the health care received at prenatal check-ups increased. This was measured by the likelihood that a mother received specific prenatal care services as stipulated in the Protocol for Attention to Maternal and Newborn Health by the Ministry of Health, including checks of weight gain, blood pressure, and the baby's heartbeat, as well as provision of iron supplementation and tetanus vaccination. Even more startling, we found a sizable reduction

in obstetric complications at birth, such as prolonged labor, fever with vaginal bleeding, and seizures.

It is necessary to emphasize that while JUNTOS requires pregnant women to attend prenatal health check-ups, the program conditions do not impose requirements on the number of check-ups or on completion of the stipulated MINSA prenatal health care protocol. In particular, the program does not require pregnant women to comply with specific elements of that protocol, such as being attended to by skilled healthcare personnel (professional physician, obstetrician, or nurse), taking blood or urine tests, or receiving nutritional supplements such as iron tablets or the tetanus toxoid vaccination. Moreover, the program does not impose requirements on the use of health care at the time of delivery. In particular, there are no requirements for institutional delivery.

We argue that the observed increase in prenatal health care use can be explained by the combination of the behavior condition of receiving cash transfers that requires pregnant women to attend prenatal check-ups and the information that pregnant women receive from JUNTOS field personnel. Cash transfers help to reduce economic/financial barriers to health care use—in particular, transportation costs, fees for some medical procedures or services, and the cost of medicine. Behavior co-responsibilities and informational talks, in turn, help to reduce cultural and information barriers that usually deter the use of modern health care in rural areas. In addition, the program helps to promote women's empowerment (through increasing income under her control, informational talks, contact with program field workers, contact with other beneficiaries, etc.), a reinforcing mechanism that should promote higher demand for health care.

Observed improvements in the quality of health care received during prenatal health check-ups, we speculate, are related to two

aspects. First, it is likely that pregnant women exposed to JUNTOS are more aware of the health care services they should receive and thus more actively demand their right to receive adequate care. This might be the result of the informational talks provided by JUNTOS's field personnel. Second, it is likely that JUNTOS puts pressure on healthcare providers. In order to verify that beneficiaries are complying with program conditions, field personnel from JUNTOS regularly visit health facilities to retrieve information about pregnant and nursing women's attendance at prenatal and postnatal check-ups, as well as about attendance by children under the age of five to their regular growth monitoring and vaccination check-ups. This constant presence of and contact with JUNTOS's personnel may induce healthcare providers to exert more effort and increase compliance with the stipulated health care protocol.

The observed reduction in obstetric complications at birth should be directly related to better care during pregnancy and increased use of health assistance by skilled healthcare personnel.

Unfortunately, the positive results we found for prenatal health care do not translate into improvements in newborn health. In particular, we did not find a corresponding increase in birth weight, a key indicator of neonatal health. A potential explanation for this result is the lack of improvement in maternal health, given that prenatal care and maternal health are likely complements in improving neonatal health. However, we take this argument with caution as our data only provided information on maternal health around the time of the last pregnancy; therefore, our results are not conclusive.

In summary, our analysis suggests that JUNTOS helps to increase demand for prenatal health care. Moreover, exposure to the program helps to increase the quality of health care received during pregnancy and reduce the likelihood of obstetric complications at birth. Our

results are aligned with evidence provided by studies of similar CCTs implemented in rural areas in Latin America such as *Oportunidades* in Mexico, *Red de Proteccion Social* in Honduras, *Red Solidaria* in El Salvador, and *Mi Familia Progresa* in Guatemala.

REFERENCES

Adato, Michelle and John Hoddinott (Eds.) (2010). *Conditional cash transfers in Latin America*. Baltimore, MD: Johns Hopkins University Press 2010.

Amarante, Veronica; Marco Manacorda, Edward Miguel, and Andrea Vigorito (2016). Do cash transfers improve birth outcomes?: evidence from matched vital statistics, program, and social security data. *American Economic Journal: Economic Policy, 8*(2), 1-43.

Barber, Sarah and Paul Gertler (2008). The impact of Mexico's conditional cash transfer programme, Oportunidades, on birthweight. *Tropical Medicine & International Health, 13*(11), 1405-1414.

Barber, Sarah and Paul Gertler (2009). Empowering women to obtain high quality care: evidence from an evaluation of Mexico's conditional cash transfer programme. *Health Policy and Planning, 24*(1), 18-25.

Barber, Sarah and Paul Gertler (2010). Empowering women: how Mexico's conditional cash transfer programme raised prenatal care quality and birth weight. *Journal of Development Effectiveness, 2*(1), 51-73.

Cutler, David M. and Richard J. Zeckhauser (2000). The anatomy of health insurance. In Anthony Culyer and Joseph Newhouse (Eds.), *Handbook of health economics, volume 1* (pp. 563-643). Amsterdam: Elsevier Science.

de Brauw, Alan and Andrea Peterman (2011). *Can conditional cash transfers improve maternal health and birth outcomes?: evidence from El Salvador's Comunidades Solidarias Rurales*. IFPRI Discussion Paper, 01080. Washington, DC: International Food and Policy Research Institute.

Dugger, Celia (2004). To help poors be pupils, not wage earners, Brazil pays parents. *The New York Times*, January 3.

Ensor, Tim and Stephanie Cooper (2004). Overcoming barriers to health care service access: influencing the demand side. *Health Policy and Planning, 19*(2), 69-79.

Finkelstein, Amy (2007). The aggregate effects of health insurance: evidence from the introduction of medicare. *The Quarterly Journal of Economics, 122*(1), 1-37.

Fiszbein, Ariel and Norbert Schady (Eds.) (2009). *Conditional cash transfers: reducing present and future poverty*. Washington, DC: World Bank.

Glassman, Amanda; Denizhan Duran, Lisa Fleisher, Daniel Singer, Rachel Sturke, Gustavo Angeles, Jodi Charles, Bob Emrey, Joanne Gleason, Winnie Mwebsa, Kelly Saldana, Kristina Yarrow, and Marge Koblinsky (2013). Impact of conditional cash transfers on maternal and newborn health. *Journal of Health Population and Nutrition, 31*(4) Suppl. 2, S48-S66.

Gutierrez, Juan Pablo (2011). *Evaluación externa de impacto del programa de transferencias monetarias condicionadas: Mi Familia Progresa. Síntesis ejecutiva*. Washington, DC: Banco Interamericano de Desarrollo.

Johnson, Erin; Marit Rehavi, David Chan, and Daniela Carusi (2016). A doctor will see you now: physician-patient relationships and

clinical decisions. NBER Working Paper, 22666. National Bureau of Economic Research.

Lim, Stephen; Lalit Dandona, Joseph Hoisington, Spencer James, Margaret Hogan, and Emmanuela Gakidou (2010). India's Janani Suraksha Yojana, a conditional cash transfer programme to increase births in health facilities: an impact evaluation. T*he Lancet, 375*(9730), 2009-2023.

Ministerio de Desarrollo e Inclusión Social (2015). *Resolución de Dirección Ejecutiva 171-2015-MIDIS-JUNTOS.* Available at http://www.juntos.gob.pe/modulos/mod_legal/archivos/171-2015%20Aprba%20Dirctva%20Procesos%20UVCC.pdf.

Ministerio de Salud (2004). *Guías nacionales de atención integral de la salud sexual y reproductiva*. Lima: Ministerio de Salud. Available at http://bvs.minsa.gob.pe/local/dgsp/63_guiasnac.pdf.

Ministerio de Salud (2013). *Resolución Ministerial 827-2013-MINSA.* Available at ftp://ftp2.minsa.gob.pe/descargas/Prevencion_salud/salud_bucal/ESNSB/RM159_2014_MINSA%20ATENCION%20MATERNA.pdf.

Morris, Saul; Rafael Flores, Pedro Olinto, and Juan Manuel Medina (2004). Monetary incentives in primary health care and effects on use and coverage of preventive health care interventions in rural Honduras: cluster randomised trial. *The Lancet, 364*(9450), 2030-2037.

Powell-Jackson, Timothy and Kara Hanson (2012). "Financial incentives for maternal health: impact of a national programme in Nepal," *Journal of Health Economics*, 2012, 31(1): 271-284.

Stecklov, Guy; Paul Winters, Jessica Todd, and Ferdinando Regalia (2007). Unintended effects of poverty programmes on childbearing

in less developed countries: experimental evidence from Latin America. *Population Studies, 61*(2), 125-40.

Urquieta, José; Gustavo Angeles, Thomas Mroz, Héctor Lamadrid-Figueroa, and Bernardo Hernández (2009). Impact of oportunidades on skilled attendance at delivery in rural areas. *Economic Development and Cultural Change, 57*(3), 539-558.

Triyana, Margaret (Forthcoming). Do health care providers respond to demand-side incentives?: evidence from Indonesia. *American Economic Journal: Economic Policy.*

World Health Organization (2003). *Global strategy for infant and young feeding*. Available at http://www.who.int/nutrition/publications/infantfeeding/9241562218/en/.

World Health Organization (2007). *Standards for maternal and neonatal care*. Available at http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/a91272/en/.

World Health Organization (2015). *Trends in maternal mortality: 1990 to 2015*. Available at http://www.who.int/reproductivehealth/publications/monitoring/maternal-mortality-2015/en/.

Table 1
Descriptive statistics

	Non-eligible		Eligible	
	Not exposed	**Exposed**	**Not exposed**	**Exposed**
Panel A: Health care during pregnancy				
Prenatal check-up	0.958	0.980	0.882	0.938
Number of prenatal check-ups	7.220	8.060	5.860	7.110
At least 4 check-ups	0.886	0.931	0.772	0.864
Pregnancy check-up in 1st trimester	0.666	0.691	0.571	0.649
Attended to by skilled personnel	0.899	0.970	0.777	0.912
Attended to in a health facility	0.942	0.976	0.848	0.917
Panel B: Health care at birth				
Institutional delivery	0.166	0.222	0.097	0.177
Attended to by skilled personnel	0.548	0.650	0.342	0.487
Attended to in a health facility	0.606	0.728	0.364	0.535
Panel C: Health care after birth				
Postnatal check-up	0.835	0.918	0.632	0.807
Check-up ~1 week after birth	0.688	0.813	0.458	0.674
Attended to by skilled personnel	0.790	0.895	0.563	0.751
N	4,518	4,537	3,354	2,899

Notes: The table shows descriptive statistics on indicators for maternal care at different stages of gestation, according to eligibility for program participation and exposure to JUNTOS. The sample includes women ages 15 to 49, who lived in rural municipalities where JUNTOS had been deployed before the year 2012, who had given birth within the five years prior to the survey, whose most recent birth had happened in the year 2000 or following years, and who reported living in the municipality for at least one year before the birth of her lastborn child. Eligibility is constructed based on the poverty score obtained by replicating the SISFOH's algorithm for defining poverty based on observable household characteristics (see Appendix A). Exposure to JUNTOS is defined as being whether JUNTOS had reached the municipality at any point before the birth of the woman's lastborn child. The data come from the 2000-2014 Peruvian Demographic and Health Surveys.

Table 2
Prenatal care

Dependent variable:	Pre-natal check-up	Number of check-ups	At least 4 check-ups	Check-up in 1st. trimester
Eligible x Exposed to JUNTOS	0.029***	0.311**	0.038***	0.077***
	(0.010)	(0.129)	(0.015)	(0.020)
N	15,308	15,308	15,308	15,308
Number of clusters	750	750	750	750
R-squared	0.182	0.272	0.222	0.120
Pre-treatment mean	0.958	7.220	0.886	0.666

Notes: The table shows estimates of β_1 from estimating the difference-in-differences specification in the form of Equation (1). The dependent variable of each regression is listed at the top of the column. Clustered standard errors at the municipality level are reported in parentheses. See the notes in Table 1 and the main text for information about the composition of the sample. All regressions include indicators for the woman's year of birth (1960-1969; 1970-1979; 1980-1989; 1990 or later years; base: born before 1960), indicators for the woman's age at 1st birth (20-29; 30-39; 40 or older; base: 19 or younger), indicators for the woman's educational level (incomplete primary; complete primary; some high school; high school degree; some college; base: no education), an indicator for Spanish as the woman's mother tongue, indicators for the child's birth order (2, 3, 4 or more; base: firstborn child), indicators for the child's year of birth, indicators for the woman's age at the child's birth (20-29; 30-39; 40 or older; base: 19 or younger), an indicator for the presence of a health post in the municipality in the child's year of birth, an indicator for the presence of a health facility attending obstetric emergencies in the municipality in the child's year of birth, and a municipality-specific linear trend as a control variable. Sampling weights provided by the DHS are used in all regressions. The pre-treatment mean corresponds to the mean of the control group (non-eligible women) observed during the pre-intervention period. Additional features of each specification are described within the table. The data used for the regressions come from the 2000-2014 Peruvian Demographic and Health Surveys (DHS).

* Statistically significant at p< 0.10 level.

** Statistically significant at p<0.05 level.

*** Statistically significant at p<0.01 level.

Table 3
Access to prenatal medical care

Dependent variable:	Skilled personnel	Phys. / Obstet. / Nurse	Health care facility
Eligible x Exposed to JUNTOS	0.024**	0.010	0.019*
	(0.012)	(0.016)	(0.010)
N	15,308	15,308	15,308
Number of clusters	750	750	750
R-squared	0.235	0.282	0.263
Pre-treatment mean	0.899	0.818	0.942

Notes: The table shows estimates of β_1 from estimating the difference-in-differences specification in the form of Equation (1). The dependent variable of each regression is listed at the top of the column. Clustered standard errors at the municipality level are reported in parentheses. See the notes in Table 1 and the main text for information about the sample composition. See the notes in Table 2 for information about the control variables included in the regressions. Sampling weights provided by the DHS are used in all regressions. The pre-treatment mean corresponds to that of the control group (non-eligible women) observed during the pre-intervention period. Additional features of each specification are described within the table. The data used for the regressions come from the 2000-2014 Peruvian Demographic and Health Surveys (DHS).

* Statistically significant at p< 0.10 level.

** Statistically significant at p<0.05 level.

*** Statistically significant at p<0.01 level.

Table 4
Quality of prenatal medical care

Dependent variable:	Maternal Health Attention Protocol				Supplemental Care	
	Check mom's weight gain	Measure mom's belly circum-ference	Check mom's blood pressure	Check baby's heartbeat	Receive iron supplement	Receive Tetanus vaccine
Eligible x Exposed to JUNTOS	0.036*** (0.011)	0.024** (0.011)	0.030*** (0.011)	0.036*** (0.012)	0.048*** (0.018)	0.052*** (0.019)
N	15,308	15,308	15,308	15,308	15,308	15,308
Number of clusters	750	750	750	750	750	750
R-squared	0.197	0.182	0.194	0.360	0.206	0.118
Pre-treatment mean	0.946	0.950	0.946	0.912	0.758	0.723

Notes: The table shows estimates of β_1 from estimating the difference-in-differences specification in the form of Equation (1). The dependent variable of each regression is listed at the top of the column. Clustered standard errors at the municipality level are reported in parentheses. See the notes in Table 1 and the main text for information about the sample composition. See the notes in Table 2 for information about the control variables included in the regressions. Sampling weights provided by the DHS are used in all regressions. The pre-treatment mean corresponds to that of the control group (non-eligible women) observed during the pre-intervention period. Additional features of each specification are described within the table. The data used for the regressions come from the 2000-2014 Peruvian Demographic and Health Surveys (DHS).

* Statistically significant at p< 0.10 level.

** Statistically significant at p<0.05 level.

*** Statistically significant at p<0.01 level.

Table 5
Medical care at birth

Dependent variable:	Institutional delivery	Skilled personnel	Phys. / Obstet. / Nurse	Health care facility
Eligible x Exposed to JUNTOS	0.018	0.012	0.029	0.026
	(0.019)	(0.020)	(0.020)	(0.019)
N	15,308	15,308	15,308	15,308
Number of clusters	750	750	750	750
R-squared	0.304	0.361	0.299	0.397
Pre-treatment mean	0.492	0.625	0.548	0.606

Notes: The table shows estimates of β_1 from estimating the difference-in-differences specification in the form of Equation (1). The dependent variable of each regression is listed at the top of the column. Clustered standard errors at the municipality level are reported in parentheses. See the notes in Table 1 and the main text for information about the sample composition. See the notes in Table 2 for information about the control variables included in the regressions. Sampling weights provided by the DHS are used in all regressions. The pre-treatment mean corresponds to that of the control group (non-eligible women) observed during the pre-intervention period. Additional features of each specification are described within the table. The data used for the regressions come from the 2000-2014 Peruvian Demographic and Health Surveys (DHS).

* Statistically significant at p< 0.10 level.

** Statistically significant at p<0.05 level.

*** Statistically significant at p<0.01 level.

Table 6
Obstetric complications at birth

Dependent variable:	Prolonged labor	Excesive bleeding	Fever with vaginal bleeding	Seizures	Other	Any complication
Eligible x Exposed to JUNTOS	-0.027*	-0.021	-0.024**	-0.009	-0.009*	-0.051**
	(0.015)	(0.017)	(0.011)	(0.006)	(0.006)	(0.021)
N	15,308	15,308	15,308	15,308	15,308	15,308
Number of clusters	750	750	750	750	750	750
R-squared	0.090	0.109	0.080	0.092	0.067	0.108
Pre-treatment mean	0.170	0.175	0.0489	0.0254	0.0199	0.310

Notes: The table shows estimates of β_1 from estimating the difference-in-differences specification in the form of Equation (1). The dependent variable of each regression is listed at the top of the column. Clustered standard errors at the municipality level are reported in parentheses. See the notes in Table 1 and the main text for information about the sample composition. See the notes in Table 2 for information about the control variables included in the regressions. Sampling weights provided by the DHS are used in all regressions. The pre-treatment mean corresponds to that of the control group (non-eligible women) observed during the pre-intervention period. Additional features of each specification are described within the table. The data used for the regressions come from the 2000-2014 Peruvian Demographic and Health Surveys (DHS).

* Statistically significant at p< 0.10 level.

** Statistically significant at p<0.05 level.

*** Statistically significant at p<0.01 level.

Table 7
Postnatal care

Dependent variable:	Breastfeeding		Timing of Postnatal Check-up			
	Trained	Breastfed ~1 hour	~24 hours	~48 hours	~1 week	Any checkup
Eligible x Exposed to JUNTOS	0.028	0.026	0.038*	0.034	0.056***	0.063***
	(0.020)	(0.020)	(0.020)	(0.021)	(0.020)	(0.018)
N	15,306	15,308	15,308	15,308	15,308	15,308
Number of clusters	750	750	750	750	750	750
R-squared	0.174	0.137	0.166	0.228	0.316	0.322
Pre-treatment mean	0.482	0.738	0.335	0.473	0.688	0.835

Notes: The table shows estimates of β_1 from estimating the difference-in-differences specification in the form of Equation (1). The dependent variable of each regression is listed at the top of the column. Clustered standard errors at the municipality level are reported in parentheses. See the notes in Table 1 and the main text for information about the composition of the sample. See the notes in Table 2 for information about the control variables included in the regressions. Sampling weights provided by the DHS are used in all regressions. The pre-treatment mean corresponds to that of the control group (non-eligible women) observed during the pre-intervention period. Additional features of each specification are described within the table. The data used for the regressions come from the 2000-2014 Peruvian Demographic and Health Surveys (DHS).

* Statistically significant at p< 0.10 level.

** Statistically significant at p<0.05 level.

*** Statistically significant at p<0.01 level.

A. Construction of the poverty score

JUNTOS is a means-tested program. Selection of beneficiary households consists of three stages. The first stage relates to the selection of eligible municipalities, which is based on three criteria: (i) exposure to the armed conflict during the late 1980s and early 1990s; (ii) poverty level; and (iii) chronic malnutrition for children under age 5. JUNTOS was initially deployed in municipalities with poverty rates under 50 percent. This cutoff changed in the year 2011 to include municipalities with poverty rates between 40 and 50 percent.

Household targeting is the second stage performed after selecting municipalities where the program will be deployed. The objective is to determine household eligibility, taking into account the socioeconomic and demographic characteristics of the population. For this purpose, a census was carried out in selected municipalities by the *Instituto Nacional de Estadística e Informática* (INEI).

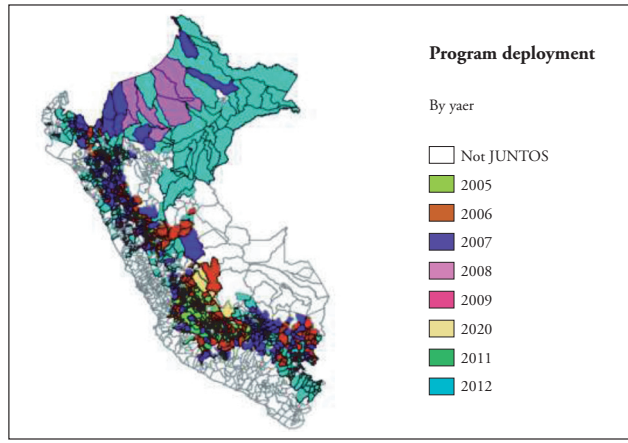
Until the year 2010, the first filter was made for households with the presence of a mother or a pregnant woman, a widowed father, or a caregiver with children 14 years of age or younger. From the year 2011 onwards, the rule was changed to include households with children ages 18 or under. Information collected from the census was then used for the computation of an algorithm that classifies poor and non-poor households.

As starting point, the procedure took the results from a Logit model that estimates the probability of a household being poor based on observable characteristics. Estimations were performed by the program's administration in the year 2005, using information from the Encuesta Nacional de Hogares (Enaho) over the period 2001-2004. The household variables included in the Logit model were: the ratio of illiterate adult women over the total number of adults living in the household, the ratio of children (ages 17 or less) attending school over the total number of children in the household, an indicator for whether the household uses industrial fuels for cooking (i.e., gas, electricity, kerosene), the number of durable assets (i.e., TV, refrigerator, iron, gas stove, motor vehicle, non-motor vehicle), the number of basic services available in the house 24 hours per day (i.e., electricity, water, sanitation), and indicators for different combinations of materials used for constructing the house, including materials used for the floor, ceilings, and walls.

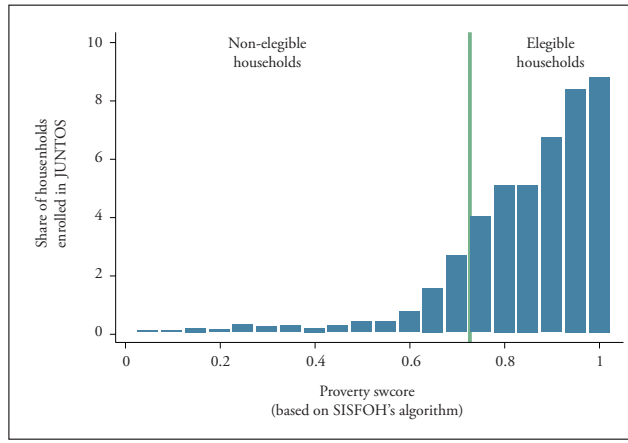
The resulting coefficient estimates were used for predicting a poverty score with a value ranging between 0 and 1. The eligibility threshold was established by the program's administration, based on the poverty rate of rural municipalities. A household was considered eligible for program participation if its corresponding standardized poverty score was greater than or equal to 0.7567. Appendix Figure A.1 depicts the program's expansion over time and the share of JUNTOS beneficiary households according to the predicted poverty score.

Figure A1.
Program expansion and enrollment

(a) JUNTOS deployment over time



(b) Program enrollment and poverty score



Notes: The figure shows the program expansion over time (top panel) and the share of households enrolled in JUNTOS according to the poverty score predicted by replicating the SIFOH's algorithm based on observable household characteristics (bottom panel).

Source: Authors' own calculations based on JUNTOS (http://www.juntos.gob.pe) and the Peruvian Demographic and Health Surveys over the period of 2008-2014.

B. Robustness checks

We performed different robustness checks to provide evidence against the pre-existence of diverging trends between eligible and non-eligible groups. We focused primarily on the pre-intervention period, spanning the time frame between the years 2000 and 2005. Also, due to the large number of indicators we used for measuring maternal care, we restricted our attention to four indicators measuring the adequacy of health care during pregnancy and childbirth: an indicator for having at least four prenatal check-ups, an indicator for having a prenatal check-up in the 1st trimester of pregnancy, an indicator for delivery assisted by skilled personnel, and an indicator for delivery at a health facility.

B1. Using information from DHS from the years 2000, 2004, and 2005

Our first robustness analysis used information from DHS from the years 2000, 2004, and 2005. These years correspond to the pre-intervention period.[15] We followed a parametric event study to summarize the magnitude of estimated effects (and their statistical significance) of JUNTOS on maternal health.

With observations for woman *i*, living in municipality *j*, who was interviewed in year *t*, we performed linear regressions in the form:

$$Health\ Care_{ijt} = \sum_{t \neq T} \theta_t \cdot \left(Eligible_{ijt} \times I_t\right) + \delta_1 \cdot Eligible_{ijt} + X'_{ijt}\psi_1 + I_j + I_t + e_{ijt}$$

15 Although JUNTOS was created in 2005, by chance none of the municipalities included in the 2005 DHS sampling frame were incorporated into the program that year. Thus, all DHS survey observations from 2005 correspond to non-exposed women.

where all the variables were defined the same as in Equation (1) in Section 3.2 of the main text, and e_{ijt} was an error term. The specification described in Equation (B1.1) compares indicators for health care across eligible and non-eligible women in the years prior to program implementation. If the "parallel trends" assumption underlying our main empirical specification holds, then we expect estimates of θ_t to be statistically not significant.

The terminal period T depended on the surveys we used to estimate the coefficients of interest. We used three different combinations of the survey years to perform the regressions; specifically, we used observations from the years 2000 and 2004, 2000 and 2005, and all three years. In all specifications we clustered standard errors at the municipality level. In Appendix Table B1.1, we present estimates of θ_t according to the different combinations of the survey years.

Appendix Table B1.1
Pre-implementation period

Dependent variable:	Prenatal Health Care		Health Care at Birth	
	At least 4 check-ups	Check-up in 1st trimester	Skilled personnel	Health facility
Panel A: Years 2000 & 2004				
Eligible x Year 2004	0.146	0.068	-0.017	-0.055
	(0.107)	(0.121)	(0.084)	(0.080)
N	1,032	1,032	1,032	1,032
Number of clusters	237	237	237	237
Panel B: Years 2000 & 2005				
Eligible x Year 2005	0.011	0.021	-0.071	-0.068
	(0.113)	(0.099)	(0.074)	(0.070)
N	1,239	1,239	1,239	1,239
Number of clusters	239	239	239	239
Panel C: Years 2000, 2004 & 2005				
Eligible x Year 2004	0.149	0.058	-0.004	-0.039
	(0.110)	(0.110)	(0.080)	(0.091)
Eligible x Year 2005	0.029	-0.007	-0.004	0.038
	(0.104)	(0.093)	(0.071)	(0.087)
N	1,770	1,770	1,770	1,770
Number of clusters	276	276	276	276

Notes: The table shows estimates of θ_t from estimating a parametric event study in the form of Equation (B1.1). The dependent variable of each regression is listed at the top of the column. Clustered standard errors at the municipality level are reported in parentheses. See the notes in Table 1 and the main text for information about the sample composition. See the notes in Table 2 for information about the control variables included in the regressions. Sampling weights provided by the DHS are used in all regressions. Additional features for each specification are described within the table. The data used for the regressions come from the 2000, 2004, and 2005 Peruvian Demographic and Health Surveys (DHS).

* Statistically significant at p< 0.10 level.

** Statistically significant at p<0.05 level.

*** Statistically significant at p<0.01 level.

B2. Children born during the pre-implementation period

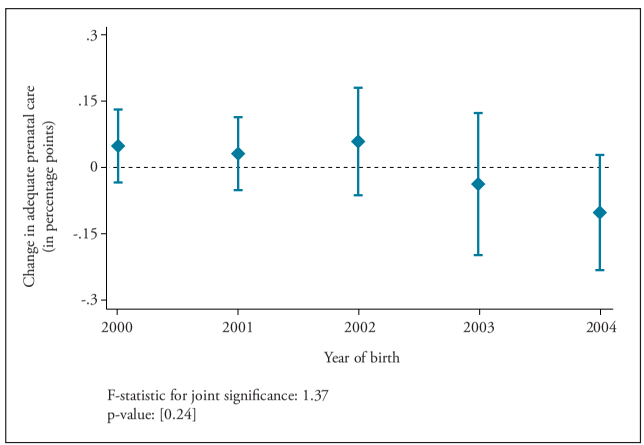
In our second robustness analysis we utilized information about women giving birth in and before the year 2005. With information for woman *i*, living in municipality *j*, whose youngest child was born in year τ, in Appendix Figure B2.1 we present graphical evidence of the estimated coefficients and their corresponding 95% confidence intervals, arising from a parametric event study in the form:

$$Health\ Care_{ij\tau} = \sum_{\tau \neq 2005} \phi_\tau \cdot \left(Eligible_{ij\tau} \times I_\tau\right) + \delta_2 \cdot Eligible_{ij\tau} + X'_{ij\tau}\psi_2 + I_j + I_\tau + u_{ij\tau}$$

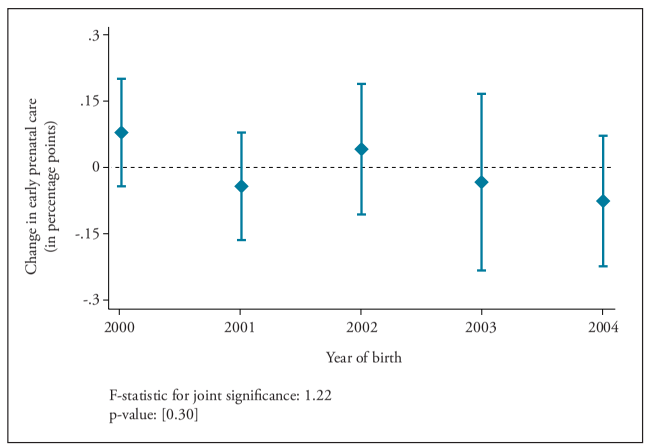
where I_τ are indicators for year of birth, $u_{ij\tau}$ is an error term, and all the remaining variables are defined the same as in Equation (1) in Section 3.2 of the main text. In this specification, we compared health care indicators across eligible and non-eligible women who were pregnant before program implementation. Given that these women were never exposed to JUNTOS during the pregnancy of their lastborn child, we should expect estimates of ϕ_τ to be statistically not significant. In all specifications we clustered standard errors at the municipality level.

Figure B2.1
Children born during the pre-implementation period

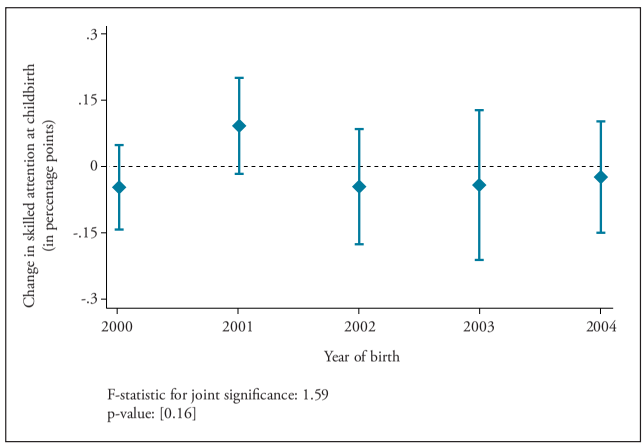
(a) At least 4 check-ups



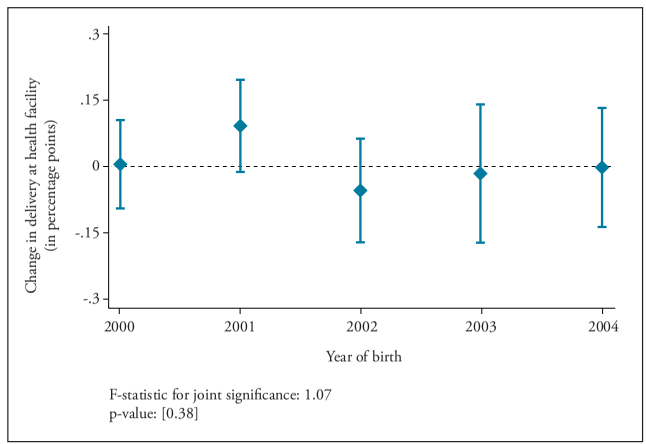
(b) Check-up in 1st trimester of pregnancy



(c) Delivery assisted by skilled personnel



(d) Delivery at health facility



Notes: The figure shows estimates of ϕ_τ, along with their corresponding 95% confidence intervals, from estimating a parametric event study in the form of Equation (B2.1). The dependent variable of each regression is listed at the top of each graph. See Appendix B.2 for information about the composition of the sample. Standard errors are clustered at the municipality level. See the notes in Table 2 for information about the control variables included in the regressions. All estimates should be interpreted relative to the year of birth of 2005. F-statistics for the joint significance test and their associated p-values are reported at the bottom of each graph. Source: Authors' own calculations based on the Peruvian Demographic and Health Surveys over the period of 2000-2009, for children born between the years 2000 and 2005.

C. Estimation framework assessing the timing of intervention

We also investigated whether the effect of JUNTOS on maternal care differed based on the timing of intervention. To do so, we broke down the indicator for exposure to the program according to the gestational period when JUNTOS reached the municipality. In particular, we created three indicators of exposure to JUNTOS: (i) full exposure (i.e., exposed to JUNTOS since before conception), (ii) exposed starting in the first trimester of pregnancy, and (iii) exposed starting in the second trimester of pregnancy.

We slightly altered Equation (1) from Section 3.2 of the main text to estimate linear regressions in the form:

$$Health\ Care_{ijt} = \beta_0 + \sum_g \beta_{\{1,g\}} \cdot \left(Eligible_{ijt} \times I_{ijt}^g\right) + \beta_2 \cdot Eligible_{ijt} + X'_{ijt}\gamma + I_j + I_t + \varepsilon_{ijt}$$

where I^g_{ijt} are the indicators for exposure to JUNTOS, and all the remaining variables are defined the same as in Equation (1) in Section 3.2 of the main text. Like in the robustness analysis described in Appendix B, we focused on indicators measuring the adequacy of health care during pregnancy and childbirth. In all specifications we clustered standard errors at the municipality level. The results are presented in Appendix Table C.1.

Appendix Table C1.
Timing of intervention

Dependent variable:	Prenatal health care		Health care at birth	
	At least 4 check-ups	Check-up in 1st trimester	Skilled personnel	Health facility
Eligible x	0.032**	0.075**	0.040**	0.039**
Fully exposed to JUNTOS	(0.014)	(0.019)	(0.019)	(0.020)
Eligible x Exposed starting in	0.019	0.078	-0.035	-0.021
1st trimester of pregnancy	(0.036)	(0.052)	(0.048)	(0.039)
Eligible x Exposed starting in	0.022	0.040	0.048	0.036
2nd trimester of pregnancy	(0.029)	(0.040)	(0.032)	(0.038)
N	15,308	15,308	15,308	15,308
Number of clusters	750	750	750	750
Sample weights	Yes	Yes	Yes	Yes

Notes: The table shows estimates of $\beta_{\{1,g\}}$ from estimating the difference-in-differences specification in the form of Equation (C.1). The dependent variable of each regression is listed at the top of the column. Clustered standard errors at the municipality level are reported in parentheses. See the notes in Table 1 and the main text for information about the composition of the sample. See the notes in Table 2 for information about the control variables included in the regressions. Sampling weights provided by the DHS are used in all regressions. The pre-treatment mean corresponds to that of the control group (non-eligible women) observed during the pre-intervention period. Additional features of each specification are described within the table. The data used for the regressions come from the 2000-2014 Peruvian Demographic and Health Surveys (DHS).

* Statistically significant at p< 0.10 level.

** Statistically significant at p<0.05 level.

*** Statistically significant at p<0.01 level.

D. Newborn health and maternal nutrition

D1. Newborn health

The DHS also provide information about newborn health. Specifically, the birth weight (in grams) is provided for the lastborn child. However, this information is only available for the sub-group of children who were measured at birth.

We used this information to assess the effect of JUNTOS on newborn health. For this purpose, we constructed two indicators measuring newborn health: the birth weight (in logs.) and an indicator for low birth weight (birth weight was less than 2.5 kilograms). We performed linear regressions based on Equation (1) in Section 3.2 of the main text and on Equation (C.1) in Appendix C. The results are presented in Appendix Table D1.1.

D2. Maternal nutrition

We explored whether JUNTOS had an effect on maternal nutrition. The DHS provide information about height, weight, and hemoglobin level (including anemia status) for women ages 15 to 49 who were selected for the anthropometric and blood sample questionnaire sections. Selection of women within a dwelling was randomly performed. Around 90 percent and 85 percent of women in our main sample reported anthropometric measures and hemoglobin levels, respectively.[16]

16 In addition to the selection process, the woman's consent was required for the extraction of blood samples for measuring the hemoglobin level.

Ideally, we would have liked to observe a woman's weight at different points in time during the gestational period. However, we were only able to observe indicators for the woman's nutritional status at the time of the survey. We applied several cuts to the sample in order to have a clearer picture of whether JUNTOS affected the nutritional status of women during pregnancy.

Our most comprehensive sample—the "all women" sample—is composed of all women ages 15 to 49 who lived in rural municipalities where JUNTOS was deployed up until the year 2012, and who belonged to JUNTOS' target population, regardless of whether or not they had given birth within the five years prior to the survey. Our second sample resulted from restricting the "all women" sample to the sample of women reporting information on maternal care for their pregnancy with their lastborn child, occurring within the five years prior to the survey. This sample corresponded to the one we used in our main empirical analysis of the effect of JUNTOS on maternal care, provided that the woman was selected for the anthropometric questionnaire section. For our last sample, we applied one additional filter, we restricted the sample to only women who had given birth within the twelve months prior to the survey date. Because these women had recently been pregnant, estimates arising from this sample came closer to capturing the effect of JUNTOS on women's nutritional status during pregnancy.

We constructed four indicators measuring nutritional status. The first two indicators are related to weight gain, and correspond to Body Mass Index and an indicator for being underweight (a BMI of less than 18.5).[17] The last two indicators measure iodine deficiency in the

17 Body Mass Index (BMI) is a measure of body mass—including muscle, fat, and bones—derived for classifying a person as underweight, normal weight, or overweight. The BMI is calculated by dividing the body weight (measured in kilograms) over the square of the body height (measured in meters).

white blood cells, and correspond to the hemoglobin level (measured in grams per deciliter of blood) and an indicator for anemia status.

With information for woman *i*, living in municipality *j*, who was interviewed in year *t*, we performed linear regressions based on the difference-in-differences specification in the form:

$$Nut\ Status_{ijt} = \alpha_0 + \alpha_1 \cdot \left(Eligible_{ijt} \times Post_{ijt}\right) + \alpha_2 \cdot Eligible_{ijt} + X'_{ijt}\omega + I_j + I_t + \epsilon_{ijt}$$

where $Nut\ Status_{ijt}$ is the indicator for the woman's nutritional status, $Post_{ijt}$ is an indicator for whether the woman was surveyed after the date when JUNTOS reached the municipality, ϵ_{ijt} is an error term, and all the remaining variables are defined the same as in Equation (1) in Section 3.2 of the main text. In all specifications we cluster standard errors at the municipality level. The results are presented in Appendix Table D2.1.

Appendix Table D1.
Newborn health

Dependent variable:	Birth weight (logs.)	Birth weight < 2.5 Kg	Birth weight (logs.)	Birth weight < 2.5 Kg
Eligible x Exposed to JUNTOS	-0.003	0.008		
	(0.010)	(0.013)		
Eligible x			-0.003	0.009
Fully exposed to JUNTOS			(0.010)	(0.013)
Eligible x Exposed starting in 1st trimester			0.003	0.001
of pregnancy			(0.024)	(0.041)
Eligible x Exposed starting in 2nd trimester			-0.005	0.008
of pregnancy			(0.016)	(0.031)
N	12,103	12,103	12,103	12,103
Number of clusters	746	746	746	746
Sample weights	Yes	Yes	Yes	Yes

Notes: The table shows estimates of β_1 (Columns 1 and 2) and $\beta_{\{1,g\}}$ (Columns 3 and 4) from estimating the difference-in-differences specification in the form of Equation (1) in Section 3.2 of the main text and of (C.1) in Appendix C, respectively. The dependent variable of each regression is listed at the top of the column. Clustered standard errors at the municipality level are reported in parentheses. See the notes in Table 1 and the main text for information about the composition of the sample. See the notes in Table 2 for information about the control variables included in the regressions. Sampling weights provided by the DHS are used in all regressions. The pre-treatment means of the logarithm of birth weight and the indicator for low birth weight of the control group (non-eligible women) are 8.045 and 0.074, respectively. Additional features of each specification are described within the table. The data used for the regressions come from the 2000-2014 Peruvian Demographic and Health Surveys (DHS).

* Statistically significant at p< 0.10 level.

** Statistically significant at p<0.05 level.

*** Statistically significant at p<0.01 level.

Appendix Table D2.1
Maternal nutrition

Dependent variable:	Weight gain		Anemia status	
	BMI	Underweight (BMI < 18.5)	(g./dl.)	Hemoglobin Anemia
Panel A: All women				
Eligible x Post-intervention	0.150	0.004	0.065	-0.025
	(0.109)	(0.002)	(0.065)	(0.016)
N	37,203	37,203	32,636	32,636
Number of clusters	747	747	744	744
Panel B: Matched with pre-natal care dataset				
Eligible x Post-intervention	0.084	-0.001	0.078	-0.005
	(0.195)	(0.004)	(0.076)	(0.025)
N	13,812	13,812	12,941	12,941
Number of clusters	727	727	712	712
Panel C: Matched with pre-natal care dataset & child's age 1 year				
Eligible x Post-intervention	-0.222	0.008	0.101	0.045
	(0.333)	(0.011)	(0.144)	(0.048)
N	3,895	3,895	3,369	3,369
Number of clusters	680	680	656	656

Notes: The table shows estimates of α_1 from estimating a difference-in-differences specification in the form of equation (D2.1). The dependent variable of each regression is listed at the top of the column. Clustered standard errors at the municipality level are reported in parentheses. See Appendix D.2 for information about the composition of the sample. See the notes in Table 2 for information about the control variables included in the regressions. Sampling weights provided by the DHS are used in all regressions. Additional features of each specification are described within the table. The data used for the regressions come from the 2000-2014 Peruvian Demographic and Health Surveys (DHS)

* Statistically significant at p< 0.10 level.

** Statistically significant at p<0.05 level.

*** Statistically significant at p<0.01 level.

PROMOTING PRENATAL HEALTH CARE IN POOR RURAL AREAS
THROUGH CONDITIONAL CASH TRANSFERS:
EVIDENCE FROM JUNTOS IN PERU

se terminó de editar en el
mes de enero del 2017.