



FINAL REPORT PAK-22079 | JANUARY 2023

# INFORMING THE DESIGN OF A CONDITIONAL CASH TRANSFER TO IMPROVE MOTHER AND CHILD HEALTH OUTCOMES IN SINDH

## AUTHORS

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# FINAL REPORT FOR PAK-22079, C-0003416 - SINDH MATERNAL AND CHILD HEALTH CCT

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## A. Project Motivation and Overview

Improvements in maternal and child health indicators remain a priority area in developing countries. The gaps in accessing proper maternal and newborn care and the consequent adverse effects on the health of the woman and child are not only a violation of basic human rights but are also found to have far reaching implications on their overall quality of life. Studies have found adverse effects on earnings potential (Hoddinott et al., 2008), mental health (Baranov et al., 2020), and cognitive development (Paxson & Schady, 2010). Despite the numerous benefits, progress in the healthcare utilization during and after pregnancy continues to be a struggle in our study area, the south-eastern province of Sindh in Pakistan. Sindh is the second most populated province of the country where 30 percent of women receive no prenatal care, 60 percent do not give birth in a health facility, and the maternal mortality ratio is thrice the SDG3 target (Demographic and Health Survey, 2018). The proportion of stunted children is over 45 percent (Demographic and Health Survey, 2018). Unsurprisingly, these indicators further deteriorate in the rural regions of the province. To improve the state of these health outcomes, the provincial government has decided to launch a “Mother and Child Health Conditional Cash Transfer (CCT)” program as a policy response, the pilot of which is underway in the poorest two districts of the province. This project supports the baseline data collection for the CCT’s impact evaluation to study the impact of the cash transfer on healthcare utilization and health outcomes, with a particular emphasis on the interaction of cash receipt with the underlying norms captured by a household’s decision-making structure and attitudes towards formal obstetric care.

The CCT is expected to encourage the uptake of institutional obstetric care by mainly alleviating liquidity constraints, but economic costs are only part of the explanation for the sparse healthcare utilization. Another equally important factor is the norms and attitudes around formal healthcare which not only shape people’s beliefs about the importance of availing obstetric care but also dictate who will make these decisions for the mother-child dyad. In fact, social constraints may even interact with the economic constraints to make the latter more or less binding – for example, in a household where a woman is not allowed to visit the health facilities alone, it becomes costlier for her to go for her checkups as the cost will also include the missed earnings of the person accompanying her. Similarly, in a household where baseline measures of healthcare utilization are satisfactory to begin with, whether or not the cash from the CCT is used to further facilitate a woman during her pregnancy, such as through better nutrition or time off work, may depend on her decision-making power in the household. While the cash receipt from the program will create the standard income and price effects that can have a positive impact on the health care utilization of services such as prenatal care, institutional deliveries, postnatal care, and child vaccinations, and the health outcomes of mortality, morbidity, and child growth, there is much to learn about the role played by these norms in mediating the impact of a CCT on the outcomes of interest.

The research questions are:

- i. Does the CCT improve the rates of pre- and post-natal checkups, in-facility delivery, immunization and growth monitoring trips, with downstream effects on child health?
- ii. How does the treatment effect differ when we interact the cash receipt with the underlying norms and household tensions captured by the attitudes of the decision makers and the empowerment measures for the pregnant woman?
- iii. How effective is the CCT at alleviating the economic costs of travel and forgone earnings to increase the utilization of obstetric care? We focus on these two costs because they have important synergies with a household's norms and decision-making structure.

The crux of this study however, is the second and third question where we add to the existing work by taking a holistic approach towards the theory of change connecting the cash transfer to the eventual outcomes. Most papers that have evaluated a CCT in this context have explored heterogenous treatment effects by a mother's education, pregnancy risk, mother's age, household wealth, and quality of care (see for example, Powell-Jackson & Hanson, 2012; Powell-Jackson, Mazumdar & Mills, 2015), but the focus on norms that greatly shape the demand for formal preventive and obstetric care has been limited. De Brauw and Peterman (2020) in their evaluation of El Salvador's Comunidades Solidarias Rurales program take a closer look at the causal pathways including the decision-making power of the woman, an increase in which is identified as an important factor behind the improvements in the healthcare outcomes. But their conclusion rests on qualitative results in the absence of precise measures (de Brauw & Peterman, 2020; Peterman et al., 2015). We fill this gap using detailed data on empowerment measures and the attitudes of individuals (who make decisions about a woman's maternal health) on the importance of prenatal care, institutional deliveries, and postnatal care. The analysis here further deviates from the existing work in first understanding how the cash receipt interacts with the existing norms and decision making structure, instead of estimating a change in them: household bargaining models dictate that a resource for the woman may tilt the bargaining position in her favor (Chiappori, 1988; McElroy & Horney, 1981; Manser & Brown, 1980) which can then translate into higher demand for health care. We take a step back from this to determine how the demand for formal healthcare shapes up in the presence of restrictive norms, multiple decision-makers and a disparity in what they prefer.

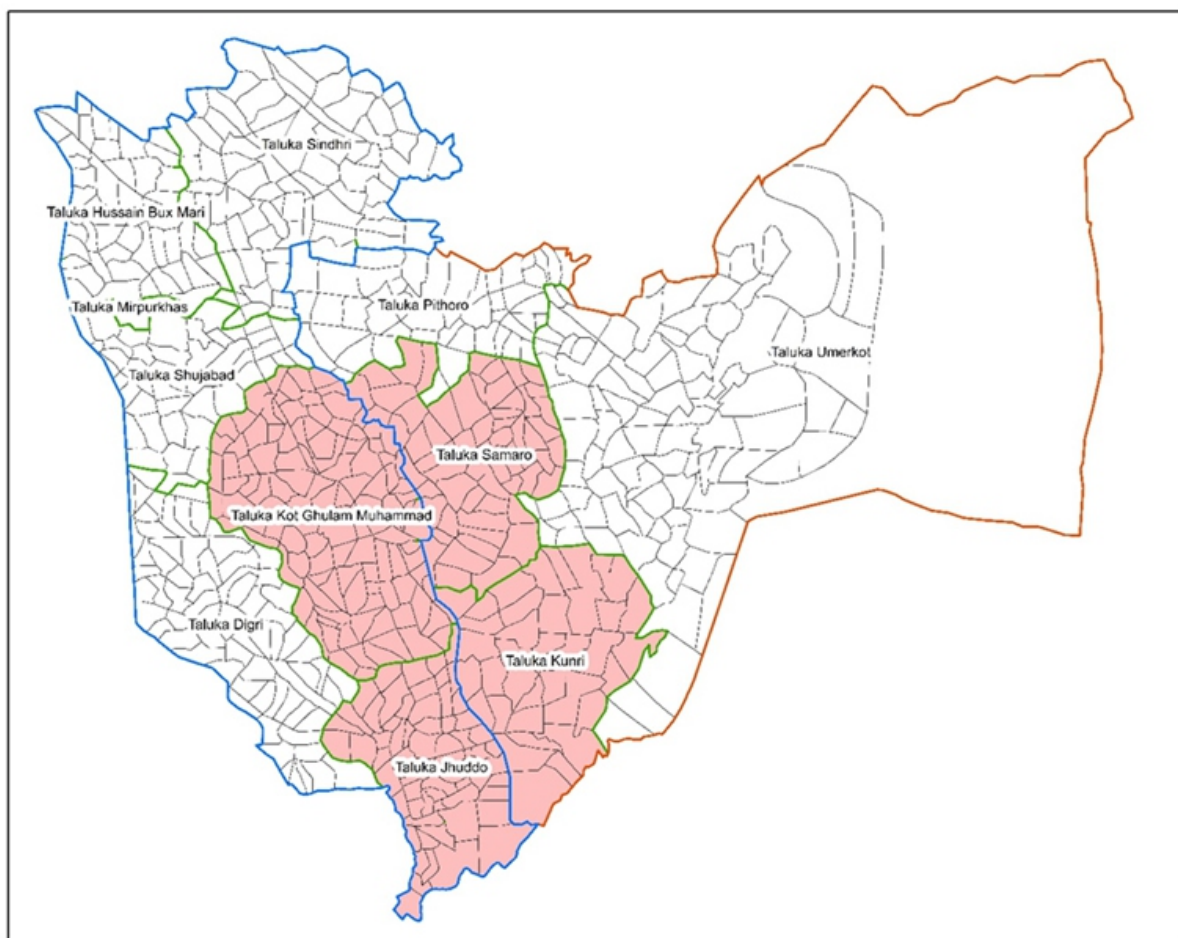
The final contribution of this study is in estimating the heterogeneity in treatment effects by how costly it is for a woman to utilize formal healthcare where the focus is on travel costs and the loss in earnings for the woman and the person accompanying her on the day of the checkup. While existing studies have looked at the impact of distance on healthcare (Manang & Yamauchi, 2020; McGuire, Krief & Smith, 2021), the issue of missed wages has not been taken up in the literature. Not only do these costs depend on each other - the farther the health facility, the longer the break from work, but they are also arguably correlated with the underlying norms which dictate how much control a woman has on her mobility and job. Moreover, evaluating these costs are informative with respect to a discussion around the adequacy of the cash transfer amount.

## **B. Program Overview**

The program under evaluation is a conditional cash transfer introduced by the

Government of Sindh, Pakistan, and is aimed at improving maternal and child health against the backdrop of dismal health indicators. It was introduced in June 2021 in four Union Councils of the poorest two districts, Tharparkar and Umerkot. At this stage, the implementing partners wanted to test the registration and payment disbursement process with the scale-up in these two districts and the remaining 20 districts planned for early 2022 and 2023, respectively. While the province has a total of 29 districts, the CCT will roll out in 22 districts which have functional and improved rural health facilities.

We take advantage of this staggered rollout to obtain the source of identification given the client-imposed constraints against randomization. The evaluation in this paper is based on the scale-up in Umerkot which took place in April 2022. We obtain the control group from the adjacent district of Mirpurkhas in line with the Spatial Regression Discontinuity Design. Umerkot has four Talukas and Mirpurkhas has six. The ones relevant for this study are Taluka Samaro and Taluka Kunri in District Umerkot, and Taluka Kot Ghulam Muhammad and Taluka Jhuddo in District Mirpurkhas. The map below shows the two districts, Mirpurkhas bounded in blue and Umerkot bounded in orange, and the 4 Talukas of interest shaded in pink. The other Taluka boundaries are in green. The finer divisions in black are dehs which are relevant at the stage of drawing the sampling frame.



As already noted, the CCT beneficiaries will register and avail healthcare at the designated health facilities. Besides this, there are three main eligibility conditions to become a beneficiary:

- The woman must be pregnant at the time of registration.
- The woman must be a CNIC [Computerized National Identity Card] bearer (i.e., at least 18 years of age).
- The woman must be a resident of the treatment Taluka which will be verified against her CNIC.

Pregnant women will receive regular payments at the various trigger points during a pregnancy: they get PKR 1000 (USD 6) at each pre-natal visit, PKR 4000 (USD 24) for delivery at a health facility, PKR 2000 (USD 12) upon obtaining the birth certificate, PKR 1000 (USD 6) at each post-natal visit, and PKR 1000 (USD 6) at each child immunization and growth monitoring visit. At the time of registration, women are supposed to provide a mobile number on which they will receive the payment details. The announcement for the program is made in an English, Urdu (national language), and Sindhi (local language) newspaper.



## Mother & Child Support Programme

### Health & Nutrition Conditional Cash Transfer (H&N CCT)



The Government of Sindh announces the expansion of its Mother and Child Support Programme in the districts of Tharparkar and Umerkot. Expectant mothers can register for the programme at designated public health facilities where they will receive a complete package of maternal, newborn and child healthcare as per WHO recommended standards and free of cost. Registered expectant mothers who visit the designated health facility will also receive cash support to ensure that they and their families do not face economic impediments to availing these essential health services.

### Salient Features of the Programme

- Under the programme, expectant mothers will be registered at selected health facilities and their health visits will be digitally recorded
- Once registered, expectant mothers will be offered cash support for the prescribed health check-ups, including delivery at a designated health facility
- Registered mothers will also receive cash support at recommended visits for newborn and child healthcare
- Cash support will also be offered upon obtaining a newborn's birth registration certificate
- The cash support offered at each stage will be disbursed through a Payment Service Provider

### Who is this Programme for?

- Expectant mothers with a valid CNIC
- Resident of Taluka Islamkot & Chachro (Tharparkar District) Taluka Pithoro, Taluka Kunri, Taluka Samaro & Taluka Umerkot (Umerkot District)

### Selected Health Facilities

PITHORO	KUNRI	SAMARO	UMERKOT	ISLAMKOT	CHACHRO
THQ Hospital Pithoro	THQ Hospital Kunri	THQ Hospital Samaro	RHC Chhore	RHC Islamkot	THQ Hospital Chhchro
BHU Siddique Abro	RHC Nabi Sar Road	BHU Saleh Bhambro	RHC Khokhrapar	BHU Venjhiyaree	BHU Chelhar
BHU Haji Pir Shah	BHU Kunri Memon	BHU Samaro Road	BHU Fakir Abdullah Janhero	BHU Doonjh	BHU Kantio
BHU Shadi Palli	BHU Talhi	BHU Toben Wari	BHU Haji Fateh Muhammad Rajar	BHU Wakrio	BHU Mubarak Rind
BHU Ghulam Nabi Shah	BHU Nabisar Thar		BHU Khararo Syed	BHU Khario Ghulam Shah	
GD Amin Mohammad Rajar			BHU Rana Jageer	GD Jogi Mahri	
			BHU Shewani Mohallah		
			G.D Digu		



Call us at 1054  
For information or assistance

Registration in selected health facilities starts:  
25th April 2022 and onwards

Social Protection Strategy Unit, Chief Minister's Secretariat,  
Government of Sindh



## ماء ۽ ٻار لاءِ سپورٽ پروگرام

هيلٽ اينڊ نيوتريشن ڪنڊيشنل ڪيش ٽرانسفر (H&N CCT)



سنڌ حڪومت پاران ٿر پار ڪر ۽ عمر ڪوٽ ضلعن ۾ ماءُ ۽ ٻار لاءِ سپورٽ پروگرام بر واداري جو اعلان. حامله مائرون مقرر ڪيل سرڪاري صحت مرڪز بر پنهنجي رجسٽريشن ڪرائي سگهن ٿيون جتي ڪين صحت جي عالمي اداري (WHO) طرفان منظور ٿيل معيار مطابق حمل دوران، وير ۽ ٻار جي پيدائش کان پوءِ علاج جون مڪمل سهولتون مفت فراهم ڪيون وينديون. رجسٽرڊ حامله مائرن جي مقرر ڪيل سرڪاري صحت مرڪز بر معائني لاءِ اچڻ جي صورت مي مالي مدد پڻ ڪئي ويندي ته جيئن ان ڳالهه کي يقيني ڪري سگهجي ته حامله مائرون ۽ انهن جو خاندان بنيادي طبي سهولتون حاصل ڪرڻ لاءِ ڪنهن معاشي تڪلين جو شڪار نه ٿئي

### پروگرام جون اهم خاصيتون

- هن پروگرام تحت حامله مائرن کي مقرر ڪيل سرڪاري صحت مرڪز بر رجسٽر ڪيو ويندو ۽ صحت مرڪز تي سندن اچڻ کي ڊيجيٽل طريقي سان ريكارڊ ڪيو ويندو.
- هڪ ڀيرو رجسٽريشن کان پوءِ حامله مائرن کي تجويز ڪيل طبي معائني لاءِ هر قسمر جي مالي مدد ڏني ويندي جنهن ۾ ڄاڻايل صحت مرڪز بر وير جي سهولت پڻ شامل هوندي
- رجسٽرڊ حامله مائرن کي وير دوران ۽ ٻار جي پيدائش کان پوءِ علاج لاءِ تجويز ڪيل طبي معائني لاءِ صحت مرڪز بر اچڻ تي مالي مدد به ڪئي ويندي
- نئين ڄاول ٻار جي پيدائش جو رجسٽريشن سرٽيفڪيٽ حاصل ڪرڻ تي به امدادي رقم ڏني ويندي
- هر مرحلي تي مالي امداد پئمڻت سروس پرووائڊر ذريعي ڏني ويندي

### هن پروگرام لاءِ ڪيراهل آهن

- قومي شناختي ڪارڊ رکندڙ حامله مائرون
- تعلقي ڇاپرو ۽ اسلام ڪوٽ (ضلعو ٿرپارڪر) تعلقي پٿورو، تعلقي ڪنڙي، تعلقي سامارو ۽ تعلقي عمر ڪوٽ (ضلعو عمر ڪوٽ) جا رهواسي.

### چونڊيل سرڪاري صحت مرڪز

پٿورو	اسلام ڪوٽ	عمر ڪوٽ	سامارو	ڪنڙي	پٿورو
تي ايج ڪيو اسپتال پٿورو بي ايج يو صديق اٺو بي ايج يو حاجي پير شاهه بي ايج يو شادي پلي بي ايج يو غلام نبي شاهه جي دي امين محمد راجو	آر ايج سي اسلام ڪوٽ بي ايج يو وينجهنياري بي ايج يو ڏوڏجهه بي ايج يو وڪرو بي ايج يو ڪارو غلام شاهه جي دي جوڳي مهري	آر ايج سي جوڙ آر ايج سي ٽو ڪراپ بي ايج يو فقير عبدالله جانهرو بي ايج يو حاجي فتح محمد راجو بي ايج يو ڪارو سيد بي ايج يو رانا جاگير بي ايج يو شيوڙي محلو جي دي ڏوڳو	تي ايج ڪيو اسپتال سامارو بي ايج يو صالح پٿورو بي ايج يو سامارو روڊ بي ايج يو توڙين واري	تي ايج ڪيو اسپتال ڪنڙي آر ايج سي نبي سرور بي ايج يو ڪنڙي جيڻ بي ايج يو ٽالهي بي ايج يو نبي سرٿر	

چونڊيل صحت مرڪز تي رجسٽريشن 25 اپريل 2022ء کان شروع ٿيندي  
سوشل پروٽيڪشن اسٽريٽجي يونٽ، چيف منسٽر سيڪريٽريٽ، حڪومت سنڌ

وڌيڪ ڄاڻ ۽ رهنمائي لاءِ

هيلپ لائن 1054 تي ڪال ڪريو



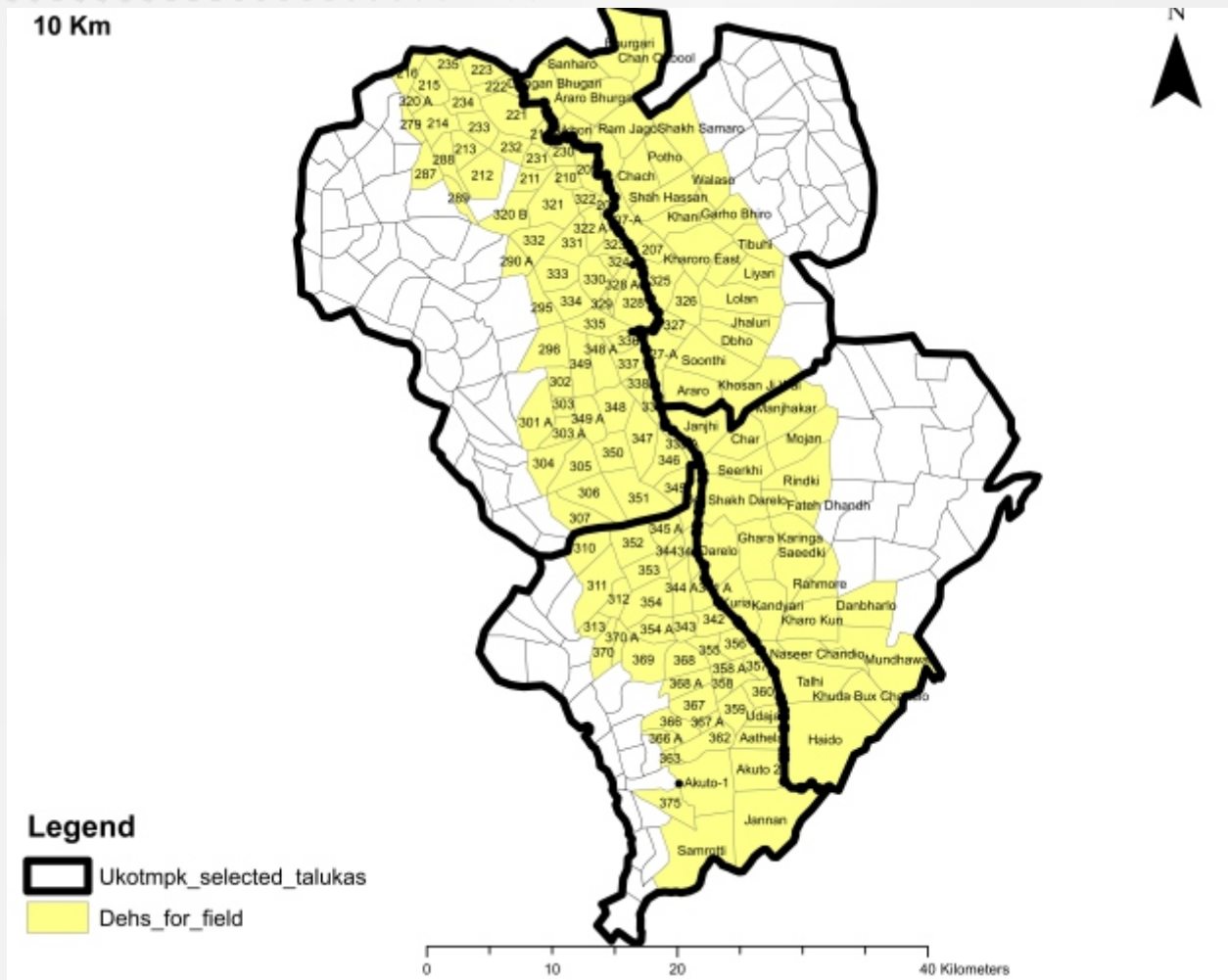
## C. Data Collection Process

As mentioned, the source of identification relies on the similarity of pregnant women separated by an administrative border between Umerkot and Mirpurkhas which motivated the choice of 10 km as the bandwidth. But this choice was also guided by the sample size and power requirements to study the questions at hand. The sample for the study was drawn in two stages. In the first stage, a census listing exercise was undertaken in the total area of 20 km to compile a list of pregnant women after which the list became the sampling frame from where the evaluation sample was drawn. Even under conservative assumptions, the study is adequately powered to statistically detect a treatment effect of about 7 to 11 percent increase in the number of antenatal visits, 7 to 9 percent increase in institutional delivery, and an effect of 12 to 17 percent decrease in severe stunting among children aged less than 5.

## D. Listing

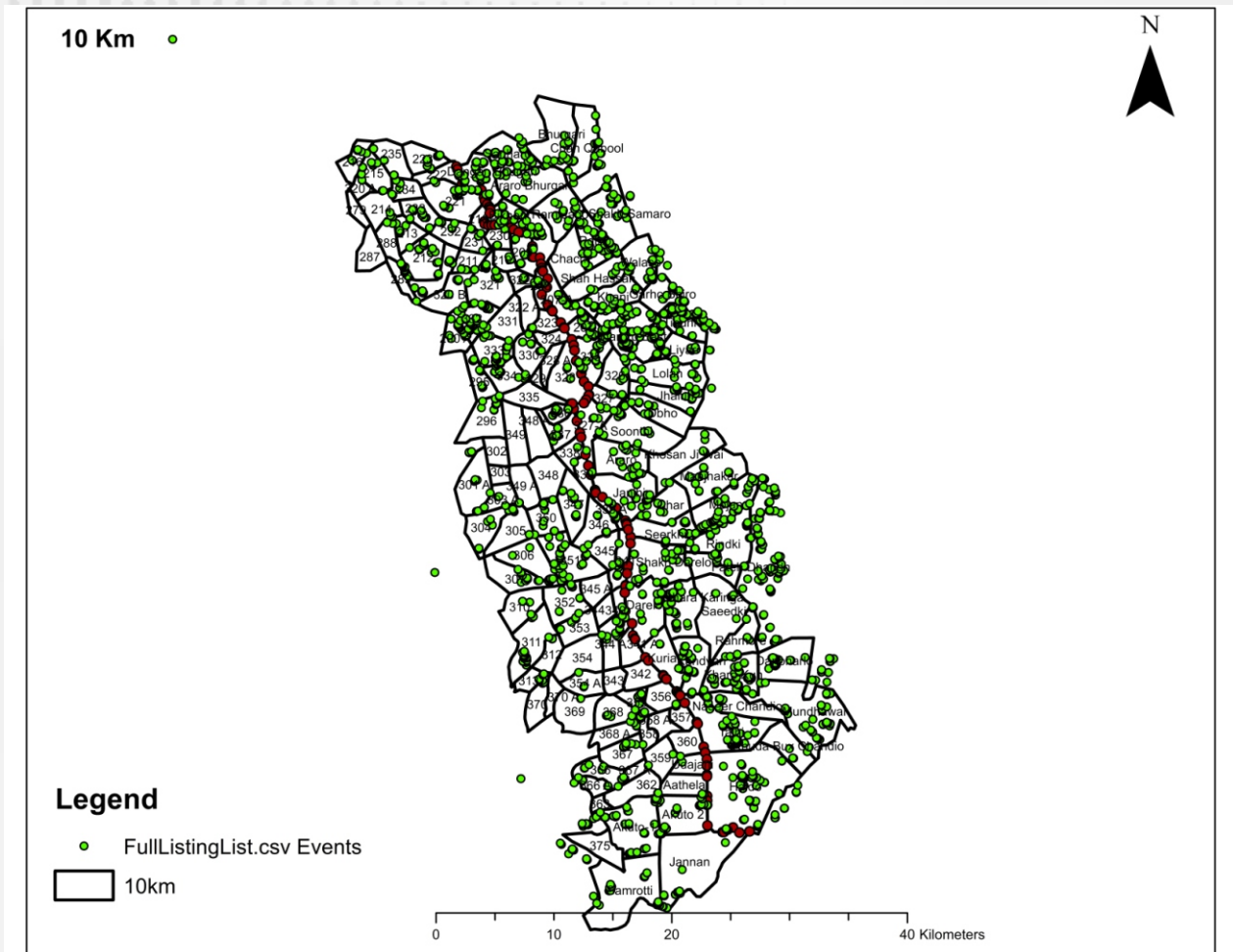
In the first stage, a census listing exercise is undertaken on both sides of the border. To ease the logistics, it was feasible for the enumerator teams to know which areas they would be surveying as opposed to staying within an arbitrary 10 km boundary. For the

same reason, we identified 158 dehs whose centroid falls within 10 km of the border for the enumerators to go to. These dehs are marked in yellow in the figure below.



The listing activity in of itself was carried out in two steps. As a first step, the enumerators identified a local resource person, such as a lady health worker or a community worker, in the area who would have information about pregnant women and where they reside. The listing of pregnant women did not solely rely on the information provided by the local resource persons, but every pregnant woman interviewed was also asked if she knows anyone in her household and community who is also pregnant, i.e., a snowballing approach. In areas without lady health workers or community organizers, our enumerators identified individuals, such as elderly women, who would have the information about other women residing in their settlements. The enumerators would then go to the identified households and conduct a short questionnaire confirming the woman’s pregnancy status, her term, her age, and her CNIC/birth certificate ownership status. The term of pregnancy was asked so that women who are too close to their delivery date could be dropped from the final sample as prenatal care is an important outcome of this study.

The listing coverage based on precise household location measures can be seen below.



**Note: The red dots are the boundary points**

## E. Baseline

Given the time sensitivity of this project, the survey was moved as close as possible to the rollout date of the CCT which was not known with certainty because of the various bureaucratic processes outside of anyone's control. The rollout happened on April 25, 2022 by when the listing was done and the baseline was underway making it a pseudo baseline survey. Since the time lag between listing, baseline, and the intervention collapsed to not more than 4 weeks, we only dropped women in their ninth month of pregnancy from the listing sampling frame and decided to administer the baseline survey to the rest. Unsurprisingly, several women in their seventh and eight months had also delivered when we contacted them for the survey, but the main rationale behind keeping them in the baseline was because they were eligible for the fourth antenatal visit, institutional delivery, and all of postnatal care.

The baseline questionnaire was designed to gather information on two types of variables. The first category of variables are the ones on which the balance between treatment and control will be validated and may be used as controls in the regressions. The second category of variables includes measures using which the main research questions on norms, attitudes, and economic costs will be answered. Hence, the questionnaire includes modules on household composition and characteristics, economic activity of the



woman and her spouse, decision-making, intimate partner violence, attitudes to health care and care seeking behavior in the previous and current pregnancy present.

## **F. Sample Overview**

As already described above, this project is at its baseline stage and the endline survey is planned for a year from now only after which the main results on the main outcomes of healthcare utilization can be estimated. However, we can identify the profile of the households in our sample which sheds light on their vulnerability.

The final sample is of 4014 pregnant women out of which 1951 are in the treatment group and 2063 are in the control group. The sample consists of women who are vulnerable on several accounts: over 88 percent have never been to school and the average cohabitation age is 19 years which suggests a strong prevalence of child marriages. Over 82 percent have highlighted not having enough money as a big problem in accessing healthcare and with the high poverty burdens, over 78 percent of the working women found themselves with no reduced work burdens even after getting pregnant. Only 30 percent of the women make decisions about their own healthcare and about 26 percent make decisions about their children's health care and even when they do, about one-fifth of them do not have a lot of influence. The poverty profiling of the households in our sample reveals that the average score is 23.13, and 75 percent of the households have a score of less than 30 which lends support to the universal targeting mechanism instead of spending resources on verifying households' poverty status.

## **G. Policy Lessons**

a) The important aspect of our study is the focus on norms and attitudes which are relevant for all social protection programs especially when the burden of navigating the conditions is left upon the recipients without any supplementary interventions. By collecting detailed data to proxy for norms and attitudes around women's empowerment, we can determine if CCT programs like these are sufficient to shift the needle on them which is also one of the important goals of introducing such programs and target them to women. However, in a context like ours where access to a resource does not necessarily translate into control and exit options from a marriage are not fully viable, the effect of this CCT and others like it can inform the policy discourse around tools that can be used to empower women.

b) Our engagement with Social Protection Strategy Unit, the key stakeholder, provided the government with an alternative to engage in Evidence Based Policy Planning. While provincial governments are, in principle, very interested in systematic evaluations and evidence based policymaking, processes of due diligence around procurement often impose a time frame that is inconsistent with systematic evaluations. Collaborating with academia and accessing research grants ameliorates these concerns, while, at the same time, builds capacity for local resources and increases the academic value of the work.

c) With the rising inflation and difficult economic conditions putting the poor and vulnerable segments of the country further at risk, the government is looking for ways to alleviate those burdens and cash transfers are one possible tool of doing that. However, a more sustainable policy is to support individuals that can help them overcome the vicious circles of poverty through investments in health and education which is why conditionalities are encouraged. These conditions also help give the programs greater legitimacy. While this study will eventually identify the effects on healthcare utilization, the

detailed data on poverty indicators will inform how effective the targeting of these programs are in reaching the economically and socially marginalized sections of the society which is the first order of information that our stakeholders in the government expect from us to take into account for future initiatives. We collect data on CNIC ownership, caste, and household locations which will help us get a holistic view of people's marginalization and the reach of the government's social protection programs in that context will be critically studied.

d) Even though, we do not collect data on food consumption and food insecurity, the poverty distribution in the sample suggests it to be a significant problem (see our blog for a discussion on the two).

e) We have been in constant touch with the Coordinator to the Sindh Chief Minister on Social protection, who is very keen to use our analysis for scaling up the CCT, eventually to the entire province of Sindh. Currently, the Coordinator is discussing a scale up to 10 districts next year.



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