How Mexico's conditional cash transfer program raised health care quality and birth weight

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May 4, 2010

Outline

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5. How did Oportunidades work? Relative importance of quality and nutrition
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Oportunidades

Initiated in 1997 ("*Progresa*") *to* develop human capital through cash transfers, health services, nutrition, and education

Cash transfers as financial incentives for attending health clinics, health education meetings, and keeping children in school

- Health transfer US$ 15/mo/household
- Education transfer per child by grade, sex
- Total transfers averaged 17-20% of pre-program rural per capita consumption (Gertler et al 2006)

97% of those eligible enrolled; households could expect a minimum of 9 years of program support conditional on meeting program requirements

Coverage: 5 million families (20% of all families in Mexico), with operational budget of US$ 3 billion

Targeting the extreme poor

Explicit aim to reach the poorest and most marginalized households

Targeting in 2-stages:

- poorest geographic regions/*localidades*
- poorest households within these regions

Successful in reaching the extreme poor (lowest income quintile) –those with insufficient resources to cover basic needs

Sample socioeconomic characteristics	
Internal water source at home (1997) (%)	6.1
Dirt floor at home (1997) (%)	62.9
Educational level of household head (yrs)	3.6
	[2.6]
Indigenous-speaking household (%)	33.0

Health requirements

Ministry of Health Basic Health Service Package

- Prevention and treatment of common communicable diseases, including diarrhea, parasitic infections, ARI, etc.
- Prevention and control of high blood pressure and diabetes
- Hygiene and sanitation at household level
- Family planning
- Prenatal care health care after delivery
- Child growth monitoring and immunizations
- Accident prevention training, first-aid

Years of age	No. of consultations required
0-11 years	
0-1	7: at 7 and 28 days; and at 2, 4, 6, 9 & 12 months
1 to 3	4: every 3 mos
3 to 5	3:every 4 mos
6 to 11 years	2: every 6 mos
Women	
15 to 44 years	4: every 3 mos
During pregnancy	5 as per prenatal guidelines
Post-pregnancy	2: after birth and while breastfeeding
Other adults	Once per year

Age	No. Visits	Content defined
Pregnant women	5 visits	• nutritional assessment • monitoring the progression of pregnancy • administration of iron and folic acid • immunizations, nutritional supplements • information, education and communication to the couple to promote healthy behavior during pregnancy, delivery, post-partum • prevention, detection and control of obstetrical and perinatal risk factors • family planning advice

Nutrition Component

- Pregnant and lactating women also required to accept nutritional supplements
- Beneficiaries collect one-month's supply in health centers

- Ingredients: whole dry milk, sugar, vitamins, minerals, maltodextrin, and flavors
- 52 grams daily ration: 250 kilocalories of energy, 12-15 grams of protein, and includes iron, zinc, vitamin B12, vitamin C, vitamin E, folic acid, iodine
- 20% of caloric requirements and 100% of necessary micronutrients

Empowerment component

-Targeting to the extreme poor

-Tiered of system of health quality: wealthy and poor, where access to services and quality is considered a privilege for higher social classes.

*"..due to being poor, they …content themselves with bad-quality medical care."**

Program designed under this social context of poor women in Mexico

-Improving health outcomes requires moving beyond traditional health / supply interventions but strengthening capacity to take action.

-Recognized that women/female HH played a key role in improving welfare of their families.

*Tezoquipa IH, Monreal LA, Treviño-Siller S

Strengthen capacity to take action

a) Allocation of cash transfers to female head of household

Rationale that women are more likely than men to spend resources under their control on family well-being.

b) Mandated attendance at *pláticas*, or monthly health education meetings, for mothers as primary caregivers (25 themes).

i.e, pregnant women are required to attend *pláticas* that provide information about requirements for prenatal consultations, what to expect, the clinical content of this care, nutrition, and other reproductive health information.

c) Monthly meetings with *promotoras*, elected representatives of beneficiaries

Ensure that program benefits are understood, encourage women to ask for their right to public services. Serve as a link between health centers and beneficiaries (appt reminders).

***d) Faenas*, monthly voluntary community activities**

Promotoras encourage beneficiaries to participate in monthly activities such as cleaning up schools, clinics, or streets to promote community improvements and promote social cohesion.

Aim: to increase women's capabilities to take action that positively affects their welfare and living standards.

-Provide information about rights to public services

-Make explicit beneficiary entitlements and requirements

-Provide forum to discuss personal and community issues

-Strengthen social support mechanisms

Identity. *Promotoras* and beneficiaries reported personal changes, including increased self-confidence, and freedom of movement and association (Adato et al 2000).

Objective of the study

To evaluate the impact of *Oportunidades* on birth outcomes for rural beneficiaries and examine the pathways by which the program worked.

Interventions for low-birth weight infants

20 million LBW infants: 95% among lower-income populations

Primary causes of low-birth weight among poor populations:
IUGR: low maternal nutritional intake, low pre-pregnancy BMI, hypertensive disorders of pregnancy, other untreated illnesses and infections

Interventions:

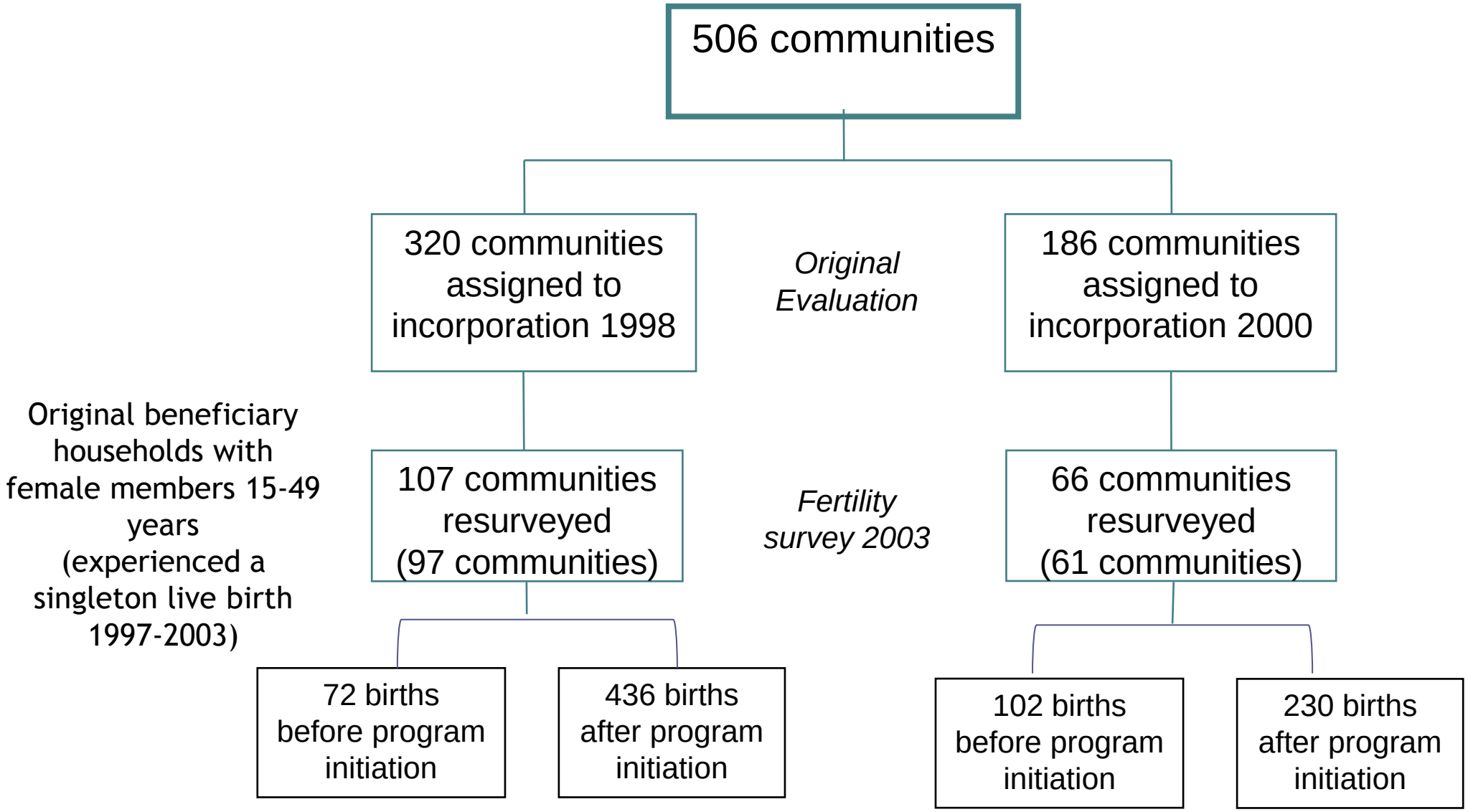
a) Nutrition: nutritional supplements (micro-nutrients) or increased food intake

b) Prenatal care utilization: weak evidence

c) Improved health care quality: routinely measured as structure vs provider practice variation

-Wide variation in health care quality in Mexico

Study design



Methods

- Randomization should provide a consistent estimate of program impact.
- Since the level of randomization was at the community level, models are estimated using random effects clustered at the community level.
- To improve the power of the estimates, models include 22 covariates: individual and maternal (fertility module), and pre-intervention household and community covariates (1997 census).
- Beneficiary status is identified by the date of receipt of the first cash transfer and date of delivery: “beneficiaries” are eligible women that received their first cash transfer before date of delivery

Methods, cont

Dependent variables

- Birth weight (in grams)
- Low birth weight (<2500 grams)
- Utilization (decision to seek prenatal care, no. of consultations)
- Quality of medical care
    a) Procedures patients received that correspond with the Mexican clinical guidelines for best practices in prenatal care.
    b) Procedures are those routinely conducted during visits: history-taking and diagnostics, physical examination, and other preventive procedures
    c) Composite index, which is a sum of positive responses of procedures received (13 procedures) expressed as a proportion of the total.
    d) Index is standardized to a mean of 0, SD 1.

Table 1. Comparison of Means (Std Dev) of Characteristics (N = 840)

Variables	Non-beneficiaries	Beneficiaries	Difference	p-value
Maternal age (yrs)	29.48 [6.38]	29.22 [6.75]	-0.25	0.659
Total prior pregnancies	5.05 [2.42]	4.62 [2.59] ∞	-0.43	0.041
Household socioeconomic index (0-1) ‡	0.42 [0.18]	0.41 [0.18]	-0.02	0.359
Indigenous-speaking household (%)	27.01	34.53	7.52	0.067
Household head years of schooling	3.70 [2.71]	3.60 [2.57]	-0.10	0.725
Age of household head (yrs)	41.32 [8.91]	40.17 [9.92]	0.15	0.153
Household size	6.51 [2.23]	6.53 [2.43]	0.03	0.908
Health center in community (%)	78.13	81.23	3.10	0.321
Male wage (pesos per mo)	221.10 [1218.51]	267.29 [1140.06]	46.19	0.417
Sample Size	**174**	**666**		

Did the program improve birth weight?

	1	2
	Birth weight (in grams)	**Low-birth weight (<2500 grams)**
Beneficiary (=1)	127.3	-0.046
	[54.0]	[0.024]
Controls	YES	YES

Program impact represents

- 4.1 per cent increase in mean
- Reduction in low birth weight by 44.5 per cent

Falsification test

- Was there another change in the environment such as improvement in quality or economic boom that could result for the improvements in birth outcomes?
- To test this, we examine whether women not eligible for Oportunidades but living in the same treatment and control communities also experienced better birth outcomes.
- Defined hypothetical beneficiaries and non-beneficiaries
  - Hypothetical beneficiaries: non-eligible women that delivered after program initiation
  - Hypothetical non-beneficiaries: non-eligible women that delivered before program initiation
- Replicated the birth weight models with the same sets of controls.

No impact on hypothetical beneficiaries

	1	2
	Birth weight (in grams)	**Low-birth weight (<2500 grams)**
Hypothetical Beneficiary (=1)	37.12 [79.01]	-0.0093 [0.0343]
Controls	YES	YES

Suggests that the differences in birth outcomes are a result of the program rather than other changes in the communities.

Did the program improve utilization?

a) No program impact was found on the

- decision to seek prenatal care
- minimum number of consultations required by the program (5)
- total no. of consultations

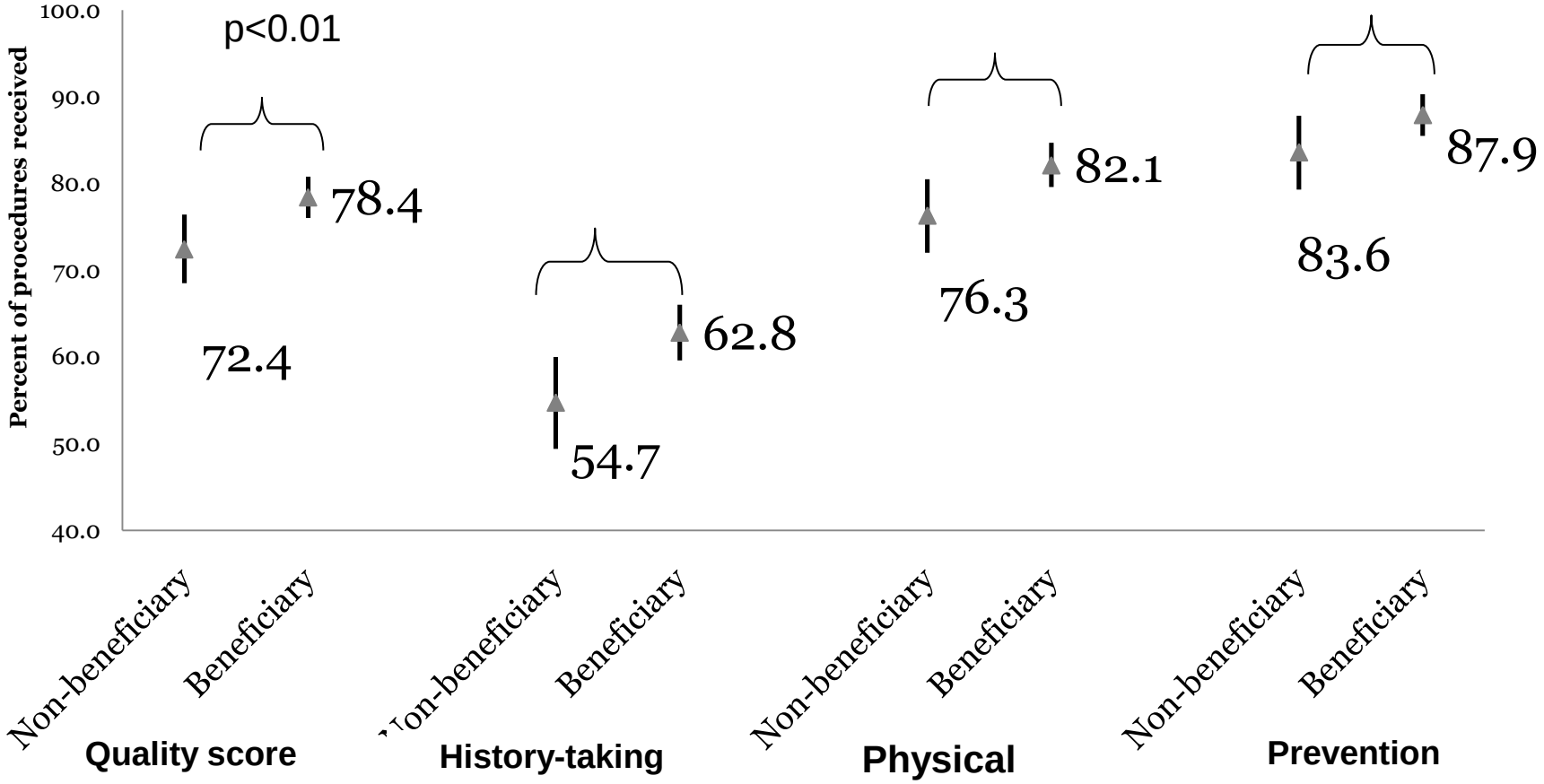
b) Most women in the sample were already complying with the requirements before they became program beneficiaries

- 94.3 per cent of non-beneficiaries were accessing PNC
- Average no. of consultations was 6.4 visits

c) The program impact on birth weight is not attributable to changes in utilization among beneficiaries or compliance with program requirements.

Did beneficiaries get higher quality?

Beneficiaries received significantly more procedures on average (p<0.01), and for each domain (p<0.01): history-taking, physical examination, diagnostics



Beneficiaries received 0.36 SD higher quality

	Eligible Population	
	1	**2 (FE)**
Beneficiary (=1)	0.3632 [0.0784]	0.4050 [0.0810]
Controls	YES	YES

Different pathways to better birth weight

Three pathways: Utilization, Quality, Nutrition

a) Utilization: ruled out

b) Quality: not allocated randomly as a part of the program and may be affected by systematic differences related to the women's characteristics.

- Estimated using Instrumental Variables
- Generated instruments: average community quality supplied in public and private clinics adjusted for the observed characteristics of the mothers
- Estimated fixed effects regressions that predicted quality on individual household characteristics by clinical setting
- public provider FE, private provider FE, and the weighted average of the public and private FE*maternal education

The different pathways to better birth weight

c) Nutrition: monthly nutritional supplements and families purchase of more and more nutritious food

a) used the time spent on participating in the program as a proxy for nutritional supplements and additional food purchases

b) No. of months from initial cash payments to delivery.

c) Previous studies report no relationships between program and fertility decisions.

Re-estimate our BW regressions with same sets of controls, replacing the beneficiary dummy variable with time on program and quality.

Estimating length of time on program and quality on BW and LBW

	Birth weight in grams	Birth weight in grams	Low birth weight	Low birth weight
Program months	0.31 [1.55]	--	-0.000 [0.001]	--
Standardized quality (SD)	387.76 [193.36]	409.66 [165.17]	-0.112 [0.085]	-0.140 [0.070]
Controls	Yes	Yes	Yes	Yes

Program impact operating through quality improvements

a) Beneficiaries received 0.364 SD higher quality

b) Suggests that program impact operating through quality amounts to 148.8-gram impact on birth weight and 5.1 percentage point reduction in low birth weight

c) Similar to reduced form BW models estimating overall program impact of 127.3-gram and 4.6 percentage point reduction

d) Suggests that program impact on birth weight operated through improvements of quality of care

e) No impact from nutritional supplements probably related to problems with supply, acceptance, culture of food sharing

How did beneficiaries get higher quality?

a) *Program requirements to get care in the public sector.* If the quality is higher in the public sector compared with the private sector, the compliance requirements to get public are could have resulted in higher quality received.

b) *Supply-side improvements in supplies, equipment, human resources.* Quality could have been improved if the Ministry of Health had made supply-side investments in response to the program and expected increases in demand.

c) *Empowerment: pláticas, promotoras, faenas,* cash transfers to female HH. Oportunidades could have empowered women to demand better care through information and education, resources and a sense of entitlement

Were there differences in public/private utilization?

Quality is higher in the public sector for rural poor.

Public clinical quality scores (std)	0.15 (95% CI: 0.07, 0.23)
Private clinical quality scores (std)	-1.09 (95% CI: -1.59, -.58)

No significant differences in the use of public services between non-beneficiaries and beneficiaries.

Care seeking	**Non-beneficiary**	**Beneficiary**	p-value
Sought care in public sector (=1)	0.872	0.879	0.774

Compliance requirement to get public care does not explain the differences in quality received

Was there an increase in health supply?

a) Intention to increase supply to respond to increase demand as a result of the program
b) No evidence from program documents that quality improvement occurred in program areas.
c) If there were a supply side increase, non-beneficiaries living in the same communities would have also benefitted.
d) Used hypothetical beneficiaries to test whether ineligible women living in program areas also received higher quality.

	Eligible Population		Ineligible Population	
	1	2 (FE)	3	4 (FE)
Beneficiary (=1)	0.3632 [0.0784]	0.4050 [0.0810]	0.1015 [0.1572]	0.1827 [0.1894]
Control Variables	YES	YES	Yes	Yes

No significant differences in quality received among hypothetical beneficiaries.

Suggests that supply-side improvements do not explain higher quality among beneficiaries.

Empowered to get better care

*Oportunidade*s could have empowered women to demand better care through

- Cash transfers to female HH: financial resources
- *Pláticas:* health education and information about rights to public services
- *Promotoras:* make explicit beneficiary entitlements and requirements
- *Faenas:* provide forum to discuss personal and community issues, and strengthen social support mechanisms

Supporting research

Beneficiaries became more active health consumers

- Health providers discussed beneficiary patients as “very demanding.” (Adato *et al* 2000)
- Doctors commented that “beneficiaries are the ones who request the most from us”

More proactive in maintaining health

- Medical doctors providing care to beneficiaries describe positive attitudinal changes with regard to healthcare, prevention and self-care, and patient participation.

Change in their identity

- *Promotoras* and beneficiaries reported personal changes, including increased self-confidence, and freedom of movement and association.

Conclusions and policy implications

Oportunidades beneficiary births were 127.3-grams higher than non-beneficiaries and 44.5 % less likely to be low birth weight than non-beneficiary births.

Improvements in birth outcomes are primarily due to improvement in the quality of health care received.

Improved quality is probably a result of the program's empowerment activities to inform beneficiaries about the importance of health care, their rights to this care, the content, and by providing social support and resources to become more active health care consumers.

Conclusions and policy implications

Improving health outcomes among the poorest and most marginalized groups goes beyond traditional programs to broader social support mechanisms.

Unable to separate out the effect of information alone from the social support to act on that knowledge.

Oportunidades provided beneficiaries with both information and the incentives and support to take actions that improve their health.

Thank you!

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