Using demand-side incentives in Chiapas to improve maternal and neonatal health

Global MNH Conference 2015

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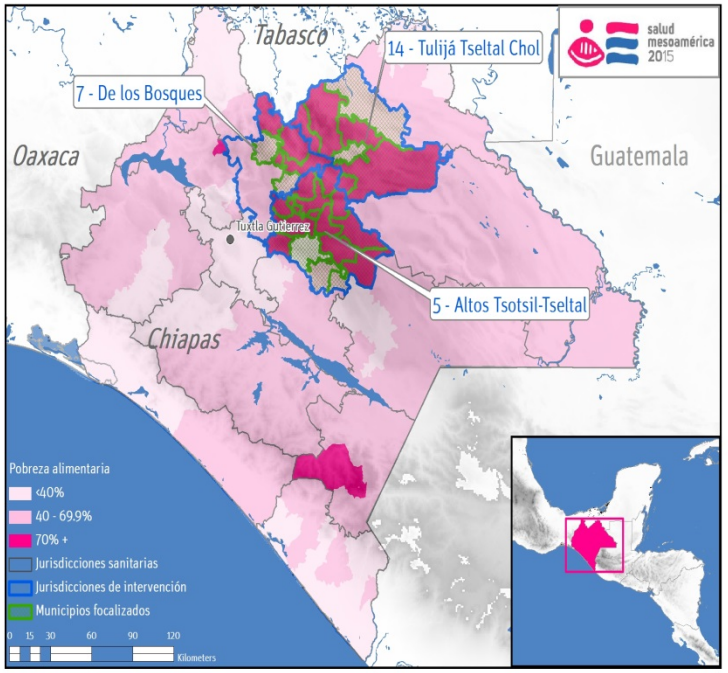
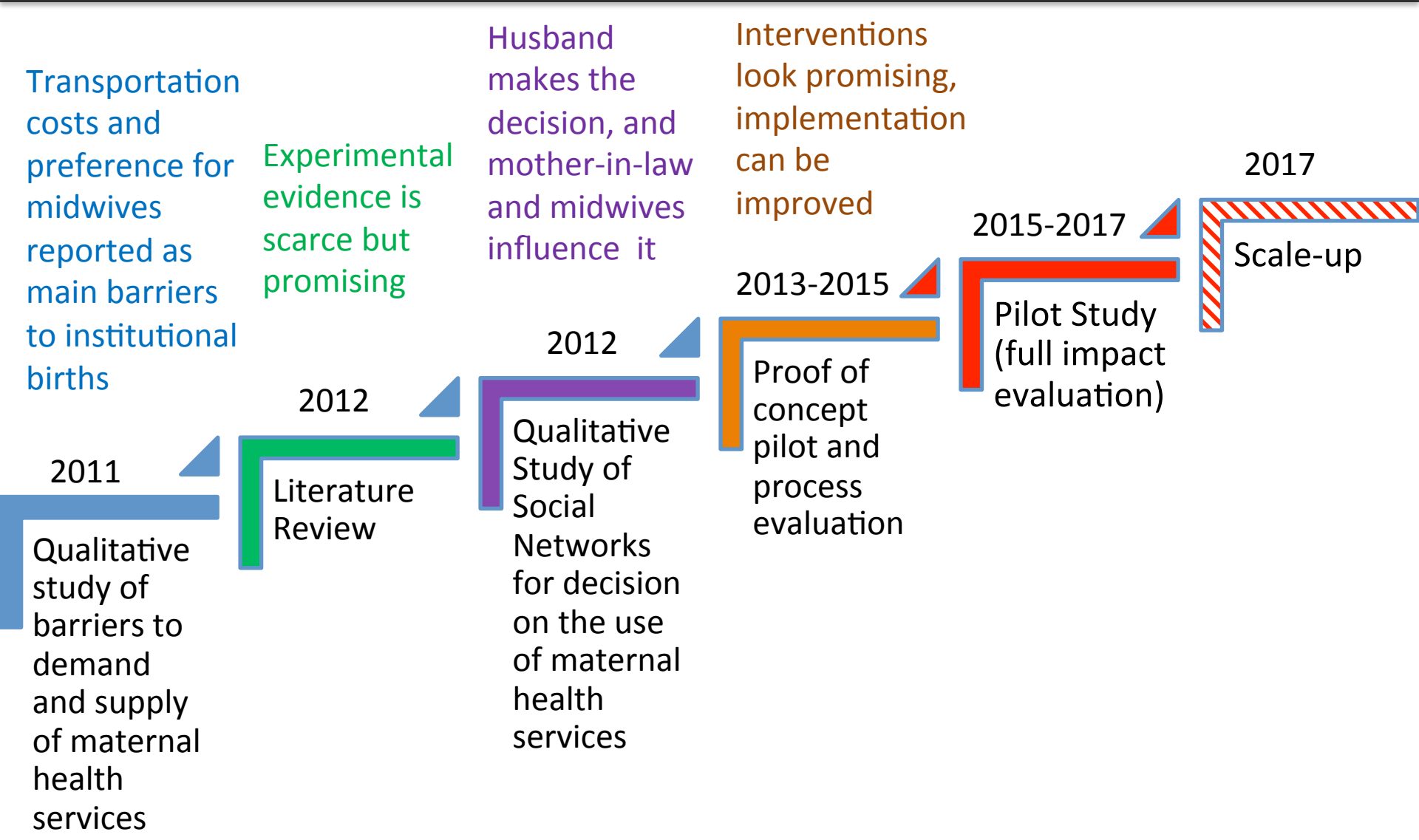
Motivation

Chiapas, 30 poorest municipalities:



- High poverty rate (> 70%)
- Mostly indigenous population (70-95%)
- High dispersion of population (50% of population lives in areas with less than 2,500 people)
- Very low institutional birth rate despite available supply of health services (29%)

Critical Path



Previous evidence

- Multiple demand-side financing (DSF) mechanisms have been implemented in different contexts to promote the utilization of maternal health care services.
- These include conditional cash transfers (CCTs), vouchers for maternal services, and transportation vouchers among others.
- While there is more evidence on the effect of the first two, there is limited solid evidence on the effect of transportation vouchers. Experimental evidence is scarce (Gupta et al 2010; Jehan et al 2012; Murray et al 2014).
- A similar picture emerges from schemes that provide payments or incentives to midwives or community health workers to promote the utilization of maternal care services (Mushi et al 2010; Varma et al 2010; Setti et al 2010).

Intervention

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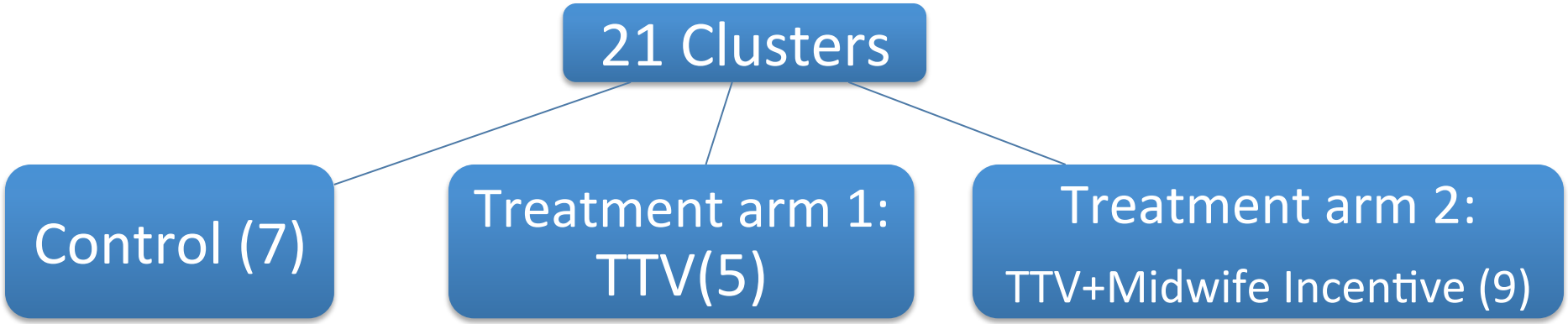
Treatment	TTV	TTV + Midwife Incentive
Description	- Voucher to cover ***private*** transportation costs for institutional delivery given to pregnant women - Voucher to cover ***public*** transportation costs for post-natal check-up given to pregnant women	- Voucher to cover transportation costs for institutional delivery + incentive for midwife given to midwife
Eligibility	Pregnant women after 22 weeks of gestation	Pregnant women after 22 weeks of gestation
Distribution	In primary health centers or mobile units by health workers to eligible women	In primary health centers or mobile units by health workers to midwives of eligible women
Average Face-Value	TTV Institutional delivery: 44 USD TTV Post-natal check-up: 7 USD	69 USD (around 19 USD for midwife incentive)

Methodology

- Proof-of-concept with 21 participating primary health clusters, randomly assigned to 3 groups:



- Small-sample allowed to test the implementation and guide a larger pilot with appropriate power.
- Data:
  - Quantitative analysis:
    - Administrative census data from pregnant and postpartum women matched with records on distribution and redemption of vouchers.
  - Qualitative analysis:
    - Interviews of women and midwives in eligible communities and key health personnel from health centers and reference facilities.

Methodology

- We estimate the intent-to-treat effect (ITT) of the intervention using the following equation:

$$Y_{ic}=\alpha+\delta D_c+\beta X_{ic}+\varepsilon_{ic}$$

Y_{ic}=Outcome of interest of women i in cluster c
D_c=Treatment assignment in cluster c
X_{ic}=Controls
$\varepsilon_{ic=}$Error term

- Estimation is done using OLS
- Controls allow to increase precision of estimates and account for any baseline imbalance
- Standard errors are clustered at the health cluster level
- To account for the small number of clusters we compute p-values with 10,000 random permutations of treatment assignment at the cluster level.

Take-up and Redemption of Vouchers after a Year of Intervention

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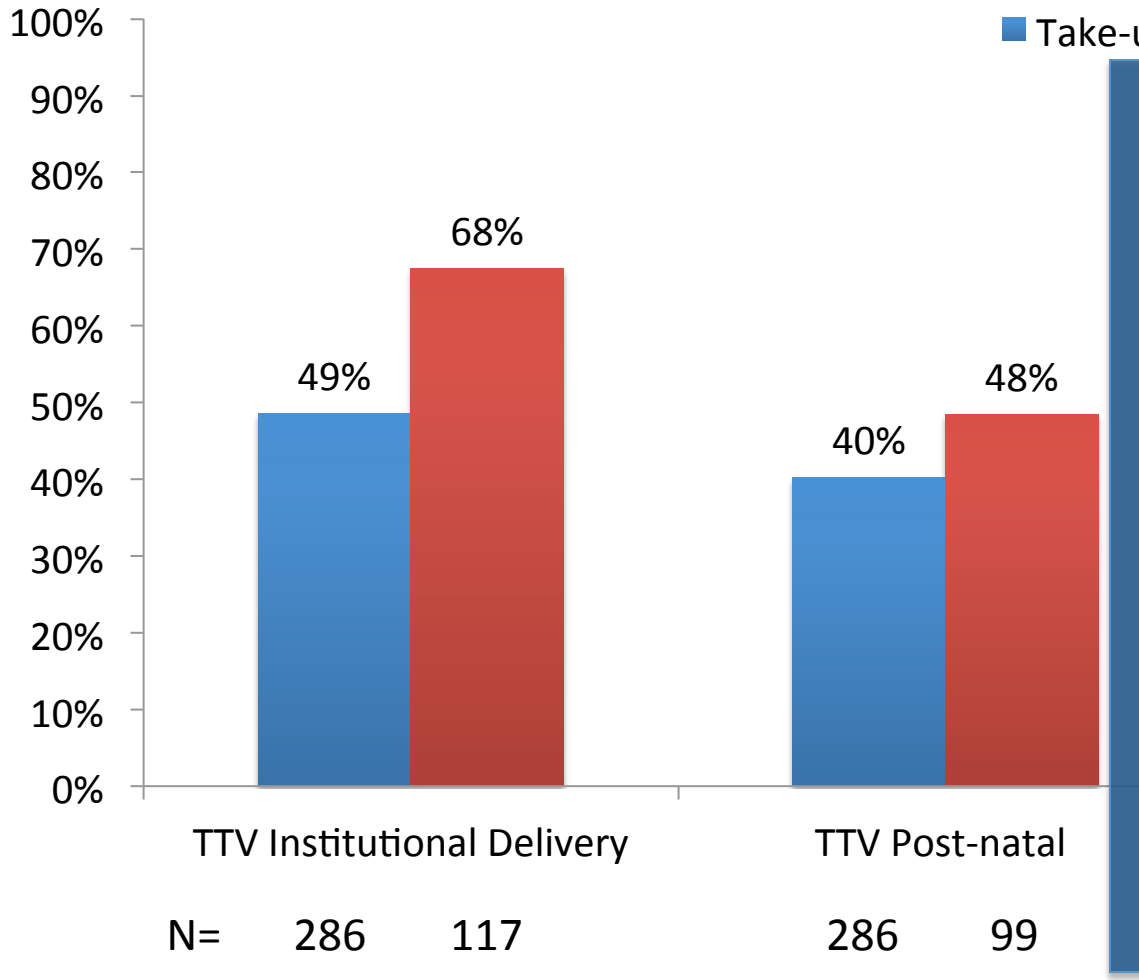

TTV

Barriers for Take-up

- Distance
- Language
- Eligibility rule (22gw)
- Confusion with Post-Natal

Barriers for Redemption

- Mostly administrative
- Cultural for post-natal ("Cuarentena")
- Place of redemption for post-natal

Notes: Estimates based on administrative data from November 2013 to October 2014. The take-up rate is the total of vouchers distributed over the total of eligible women, i.e., those with 22 weeks or more of pregnancy. The redemption rate is the total of redeemed over the total delivered to women that gave birth. Women that gave birth can be considered those that in the pregnancy census had 42 weeks of gestations or more in October 31, 2014 or that were registered in the post-natal census. The N represents the number of eligible women for take-up rates and the number of vouchers delivered to women that gave birth for redemption rates.

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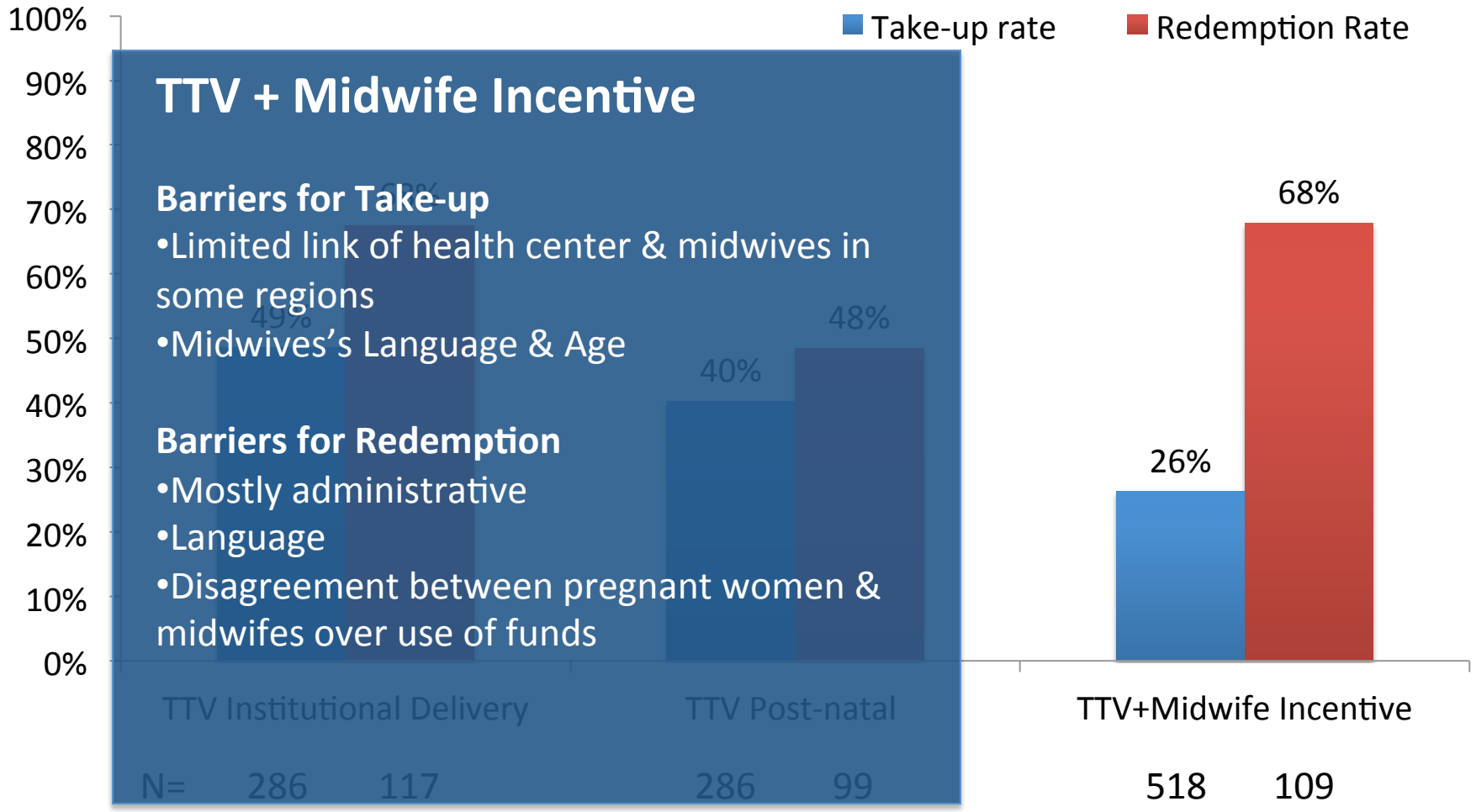

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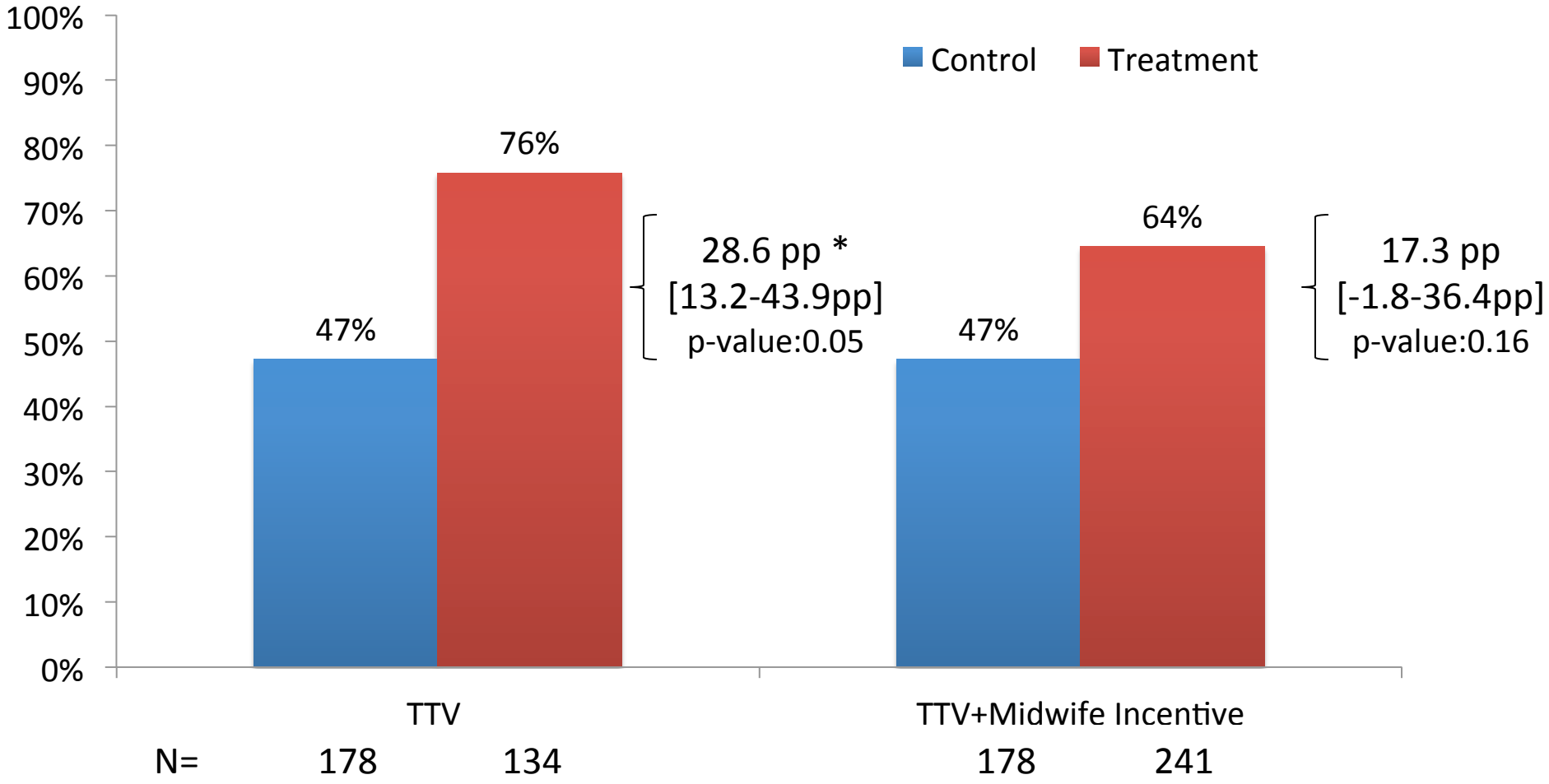
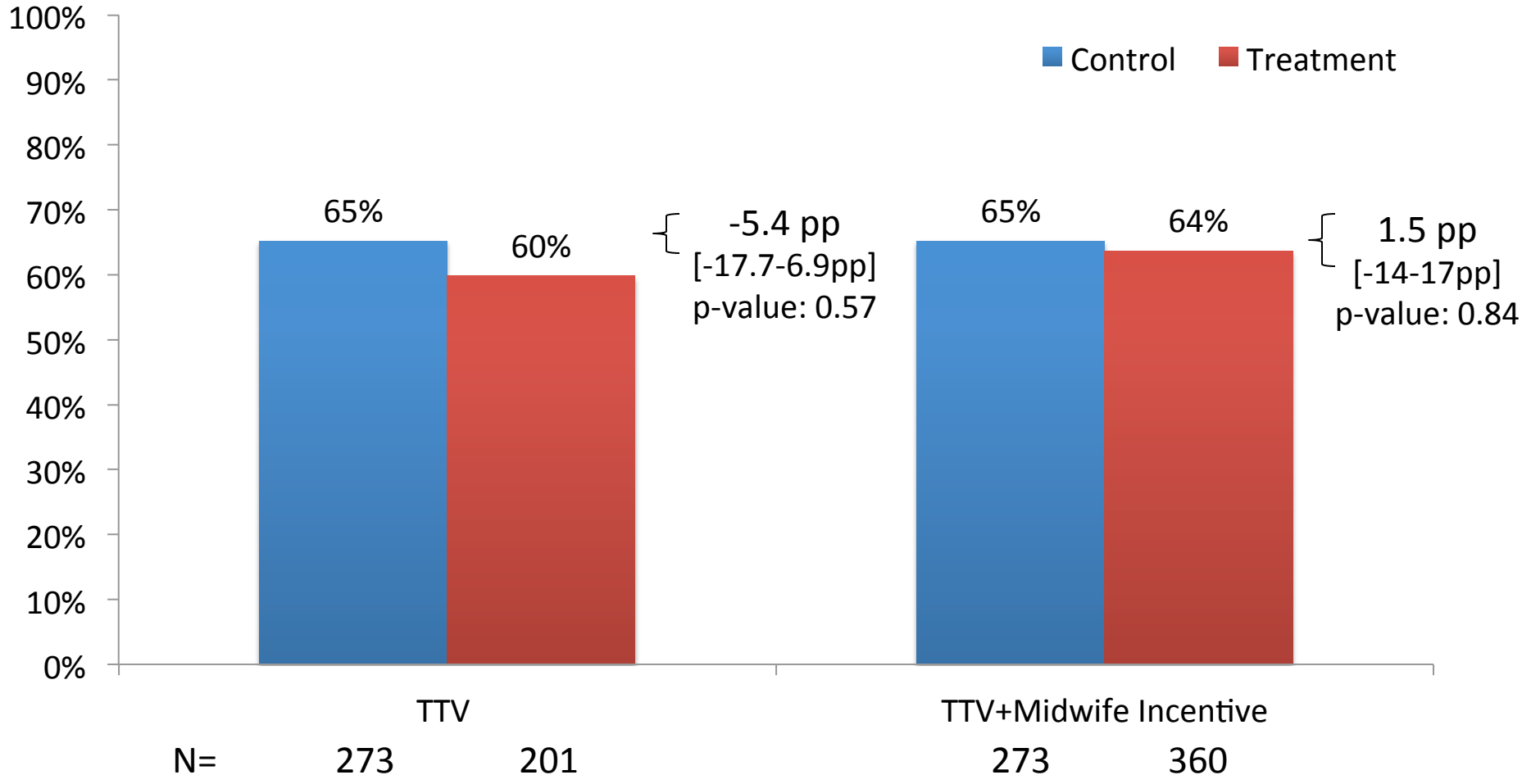
Intent-to-Treat of Institutional Delivery Rate after a Year of Intervention



Notes: : Estimates based on administrative data from November 2013 to October 2014. Around 63 percent of women in the pregnancy census that as of December 31st, 2014 should have 42 gestation weeks according to the date of last menstruation are registered in the puerperal women census, where the data on place of delivery is registered. The blue bar represents the control group mean, the red bar represents the control mean plus the estimate of the ITT from the model including controls for women and locality characteristics. Individual level controls include women characteristics such as education, main language, age, type of medical insurance (IMSS, Seguro Popular, None), and whether it was her first pregnancy. Locality level controls include locality size, share of women age 15-49, share of dwellings with dirt floor, share of dwellings with electricity, and crow-fly distance from locality of residence to reference hospital. Confidence interval in brackets cluster standard errors at the health cluster level. The p-value refers to a two-sided p-value obtained from 10,000 random permutations of treatment assignment at the cluster level. The N refers to the number of women in the puerperal women census with data on the place of delivery.

Intent-to-Treat of Post-Natal Checkup after a Year of Intervention



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Main Conclusions and Next Steps

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1) Transportation costs can be a main barrier to institutional birth even in settings where cultural aspects are believed to be the most relevant

2) Proof of concept study combined with process evaluation are very useful to inform intervention design and implementation:

- only TTV in pilot study
- in-kind incentive ("baby-basket") for postnatal check-ups

3) Transportation vouchers can be a promising intervention to increase institutional births in similar communities

Next:

- Scale proof of concept to a pilot evaluation
- Depending on results, policy dialogue to institutionalize intervention for sustainability


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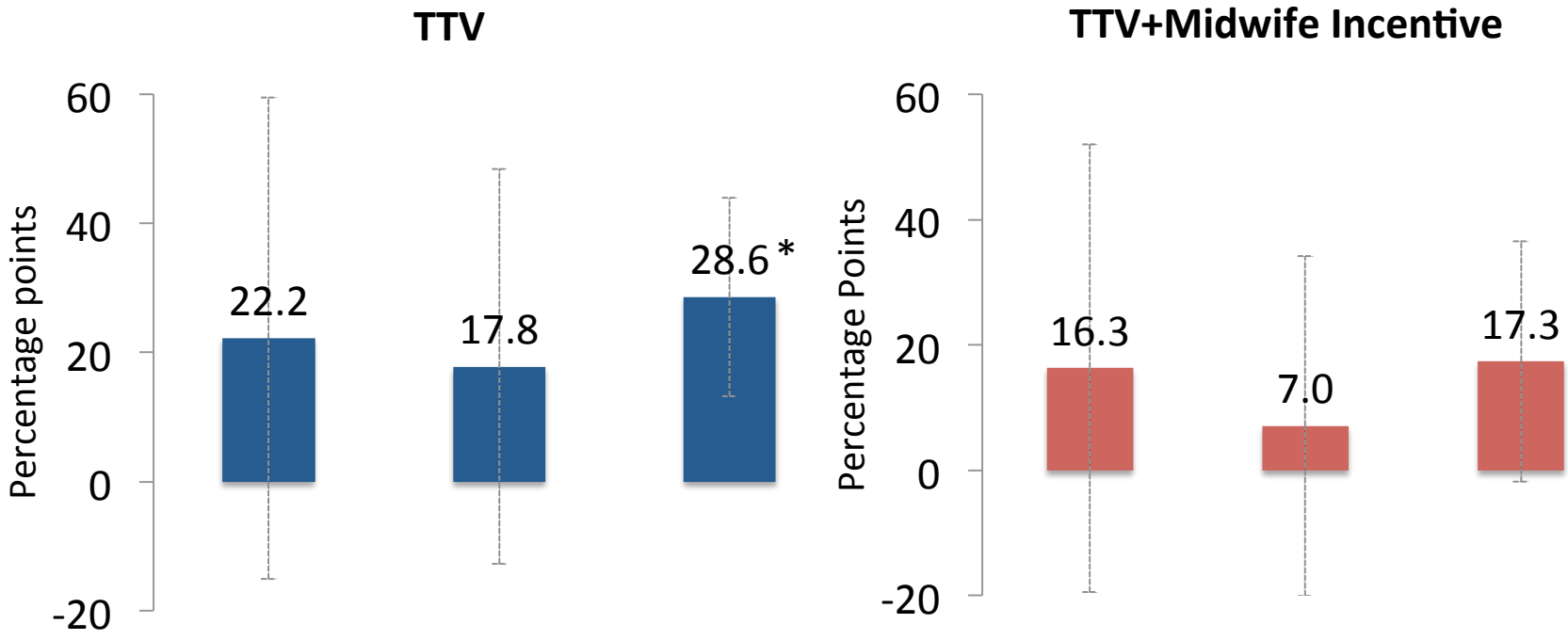

Control Mean			**47.2 %**			
Controls						
Individual		X	X		X	X
Locality			X			X
N	312	312	312	419	419	419

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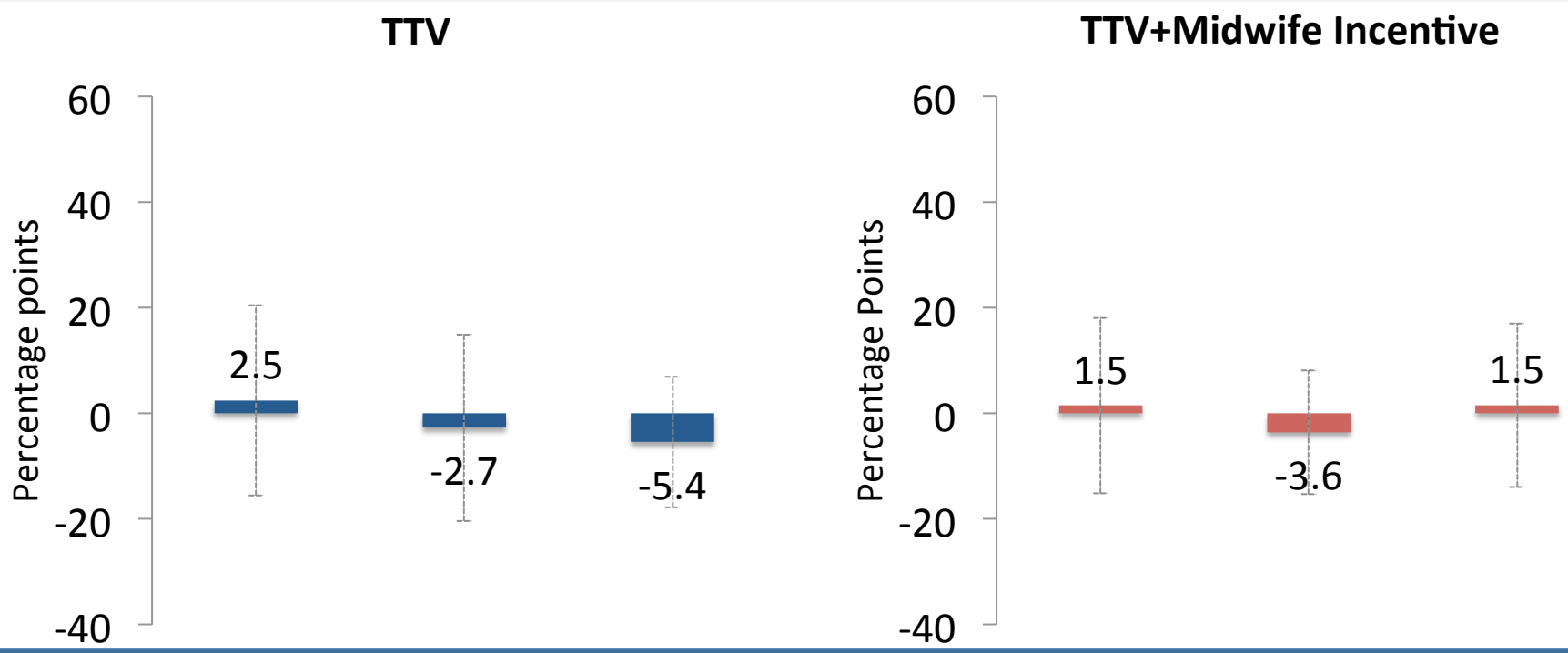

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