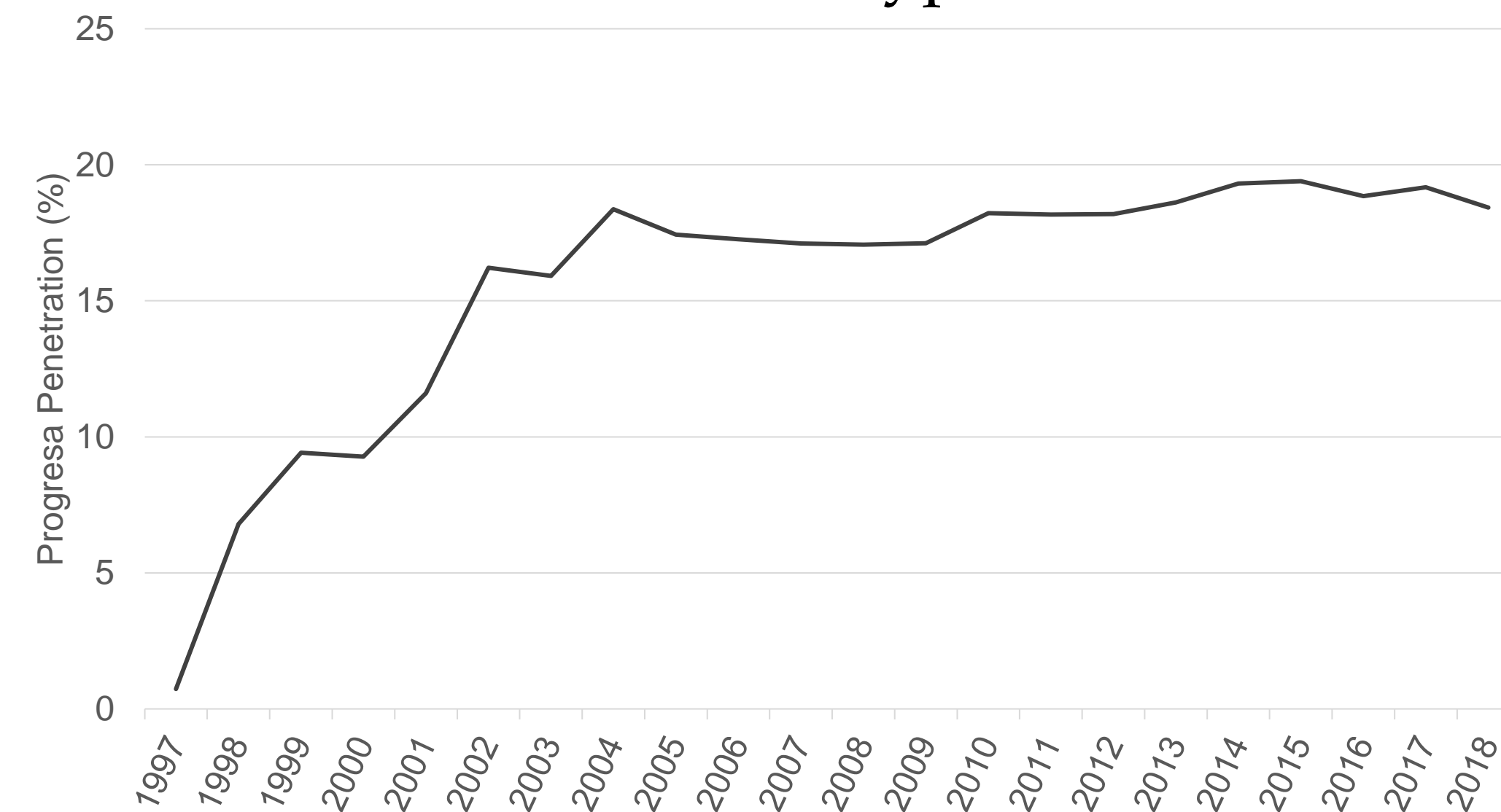


# Do Conditional Cash Transfers Reduce Hypertension?

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## Motivation & Question

- Hypertension is estimated to account for 14% of all global mortality and significant morbidity. (Fisher and Curfman, JAMA 2018)
- Mexico's Progresa-Oportunidades-Prospera Conditional Cash Transfer Program improved preventive service use and health (Parker & Todd, JEL 2017).
- We test if Progresa improved diagnosis, treatment, and levels of hypertension.

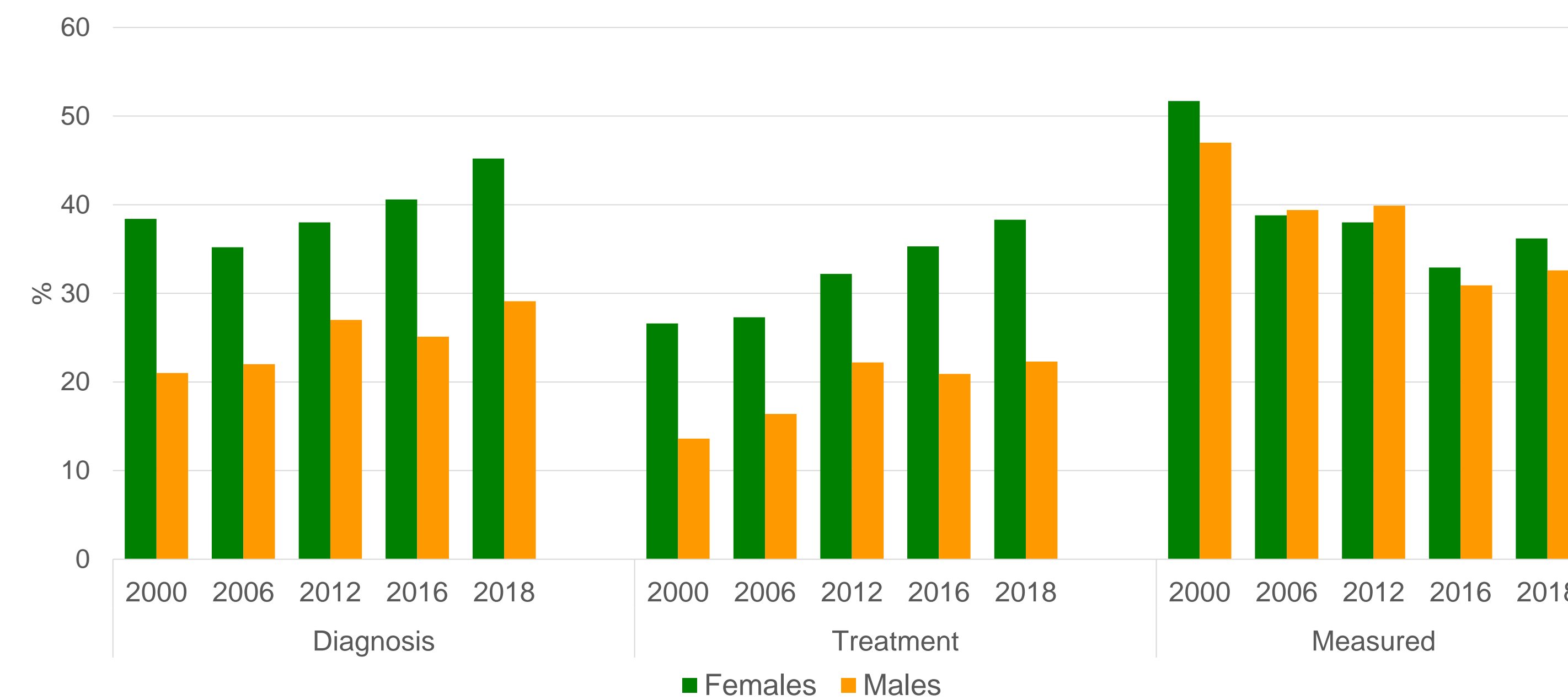


## Data & Methods

- Outcomes data: adults ages 50+ in Mexican National Survey on Health and Nutrition (ENSANUT). Weighted data from pooled cross-sections in 2000, 2006, 2012, 2016, 2018.
- Progresa penetration at municipality-level.
- Causal design: Generalized difference-in-differences (DiD) models controlling for municipality and wave fixed effects.

## Results

Over the study period more older adults in ENSANUT reported physicians having diagnosed their hypertension, and being treated with anti-hypertensive medications. Objectively measured hypertension rates also improved (average of two measures >140 systolic or >90 diastolic).



- DiD models find Progresa improved diagnosis and treatment: Each 10 percentage point expansion in Progresa penetration raised diagnosis by 2.4 percentage points and treatment by 2.7 percentage points. But measured hypertension did not improve.

Dependent Variable: HTA

	Diagnosis			Treatment			Measured		
	All	Females	Males	All	Females	Males	All	Females	Males
Progresa penetration	0.2389** (0.08907)	0.1951 (0.13586)	0.2841* (0.13011)	0.2708*** (0.08111)	0.3269** (0.11156)	0.1785 (0.11719)	0.0994 (0.11238)	0.1101 (0.14177)	0.0441 (0.17319)
Constant	-0.1750* (0.06915)	0.0330 (0.09913)	-0.2352* (0.09241)	-0.3169*** (0.06792)	-0.1252 (0.09805)	-0.3698*** (0.08408)	-0.0027 (0.07737)	0.0330 (0.09650)	0.0242 (0.12055)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographic									
Municipality Level	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	52761	30608	22153	52761	30608	22153	37335	22340	14995

Standard errors in parentheses

Linear regression models controlling for municipality and wave fixed effects, weighted by sampling weights

Individual controls: Age, sex and education attainment

Municipality controls: Totals of Hospitals, Medical Residents, Health Brigades, Nurses, Doctors and Margination Index

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

## Discussion & Conclusions

- Results shows that Progresa had large benefits in terms of improved hypertension diagnosis and treatment among older adults. The likely mechanism is through increased incomes which facilitate better health care access.
- But these improvements did not result in better hypertension outcomes. It is unclear whether this is due to insufficient medication selection and dosage titration, or due to insufficient medication adherence by patients.

## Implications

- Income support programs in low-income settings can substantially improve health care access and prevention among older adults, including for high priority conditions such as hypertension.
- Further research is needed to better understand how to ensure that improved access also results in improved health outcomes.