

BACKGROUND

Public health insurance is a key mechanism for strengthening health systems for low-income populations. In Peru, Integral Health Insurance (Seguro Integral de Salud, SIS) is provided to support healthcare of low-income populations. Evaluating the health impact of SIS relative to the lack of coverage, or other coverage schemes such as Social Health Insurance (Seguro Social de Salud, EsSalud), is important for understanding the health equity implications of public health coverage in Peru.

OBJECTIVE

This paper investigates the effect of public health insurance on the hypertension control cascade to better inform health policy for reducing health disparities in low-income populations.

METHODS

- Individual-level data on hypertension prevalence and three outcomes that describe the hypertension care cascade (undiagnosed, treated, and controlled) is obtained from the Peru Demographic and Health Survey, 2013-2019.
- Augmenting the dataset with GPS coordinates, we first conduct a spatial analysis to explore spatial correlations between health coverage types and hypertension outcomes (**Figure 1**).
- We then employ a district fixed effects regression model to examine the effects of health coverage on hypertension outcomes while controlling for individual characteristics and district-level heterogeneity (**Table 1**).
- We investigate how these effects vary across populations with different socioeconomic characteristics such as wealth, employment, and education level (**Figure 2**).

RESULTS

- Spatial analysis reveals higher rates of prevalence, lower rates of diagnosis, and higher rates of uncontrolled hypertension in areas of Peru with lower SIS coverage, particularly in coastal areas (**Figure 1**).
- The models demonstrate a strong contribution of SIS on improving hypertension outcomes, even after accounting for individual socio-economic confounding factors (**Table 1**).
- The SIS effect is more pronounced in poorer populations. Prevalence exhibits a stronger association with SIS in less educated and unemployed populations, while the associations with undiagnosed, treated, and controlled hypertension are not significantly differentiated across education and employment status (**Figure 2**).

CONCLUSIONS

The spatial distribution of health coverage in Peru aligns with patterns of hypertension outcomes, underscoring the importance of controlling for fixed spatial characteristics when estimating the health impacts of coverage. The findings provide evidence that public health coverage targeting vulnerable population in Peru can help to improve health equity in the context of hypertension.

RESULTS

Figure 1. Hypertension prevalence and the hypertension Care Cascade (Green) and Insurance Coverage (Red), by Region

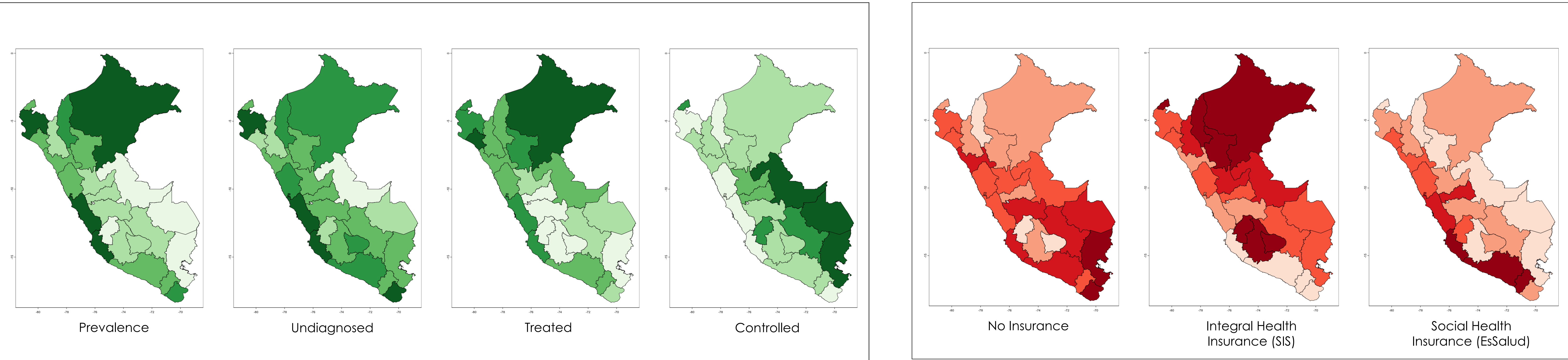


Figure 2. Variability in the Impact of SIS on Hypertension Outcomes Across Wealth, Employment, and Education levels

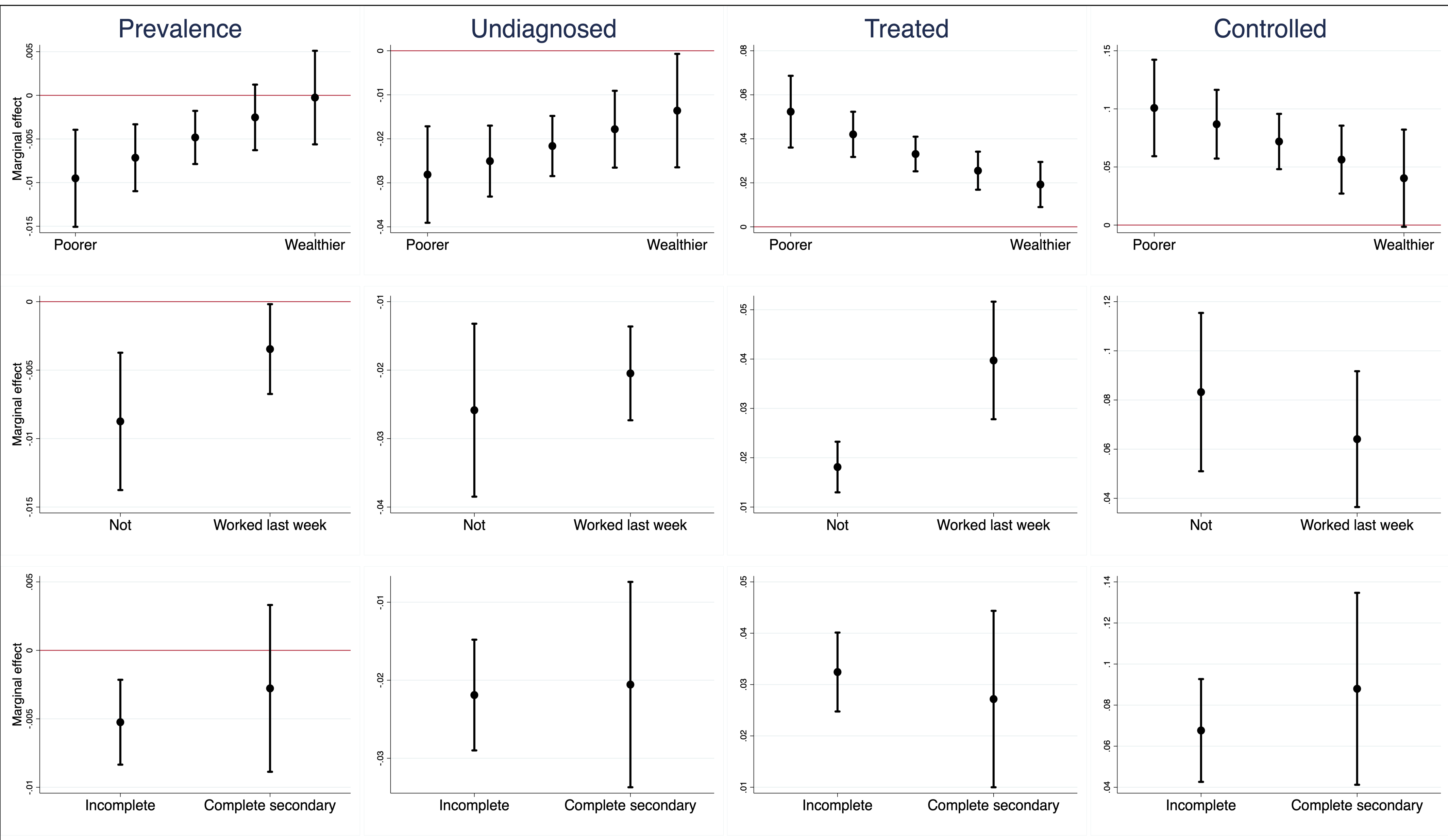


Table 1. Estimated effects of SIS on Hypertension Outcomes

	Prevalence (1)	Undiagnosed (2)	Treated (3)	Controlled (4)
SIS holder	-0.0984*** (0.0248)	-0.211*** (0.0276)	0.455*** (0.0512)	0.323*** (0.0508)
ESSALUD holder	-0.0277 (0.0241)	-0.258*** (0.0273)	0.547*** (0.0476)	0.396*** (0.0485)
<i>Socio-economic characteristics</i>				
Wealth index	0.00469 (0.0107)	-0.0696*** (0.0120)	0.209*** (0.0213)	0.108*** (0.0213)
Worked in the last week	-0.107*** (0.0229)	0.194*** (0.0269)	-0.207*** (0.0437)	-0.0704 (0.0440)
Completed primary education	0.00668 (0.0286)	-0.0858*** (0.0332)	0.215*** (0.0513)	0.223*** (0.0527)
Completed secondary education	-0.0862*** (0.0237)	-0.0556** (0.0267)	0.144*** (0.0497)	0.158*** (0.0483)
<i>Risk factors</i>				
Obesity indicator	0.773*** (0.0205)	0.597*** (0.0234)	0.269*** (0.0390)	-0.149*** (0.0392)
Had alcohol during past 30days	0.0737*** (0.0211)	0.178*** (0.0236)	-0.236*** (0.0435)	-0.229*** (0.0437)
Smoked during past 30days	0.0844*** (0.0286)	0.110*** (0.0307)	-0.218*** (0.0656)	-0.184*** (0.0652)
<i>Other demographics</i>				
Age	0.0635*** (0.000742)	0.0371*** (0.000804)	0.0409*** (0.00158)	-0.00558*** (0.00147)
Female	0.523*** (0.0226)	0.866*** (0.0270)	-0.908*** (0.0416)	-1.057*** (0.0433)
Single	0.394*** (0.0295)	0.353*** (0.0319)	-0.366*** (0.0716)	-0.509*** (0.0683)
District FE	Yes	Yes	Yes	Yes
Observations	84470	81782	17729	18558
Pseudo R ²	0.186	0.0810	0.202	0.0724

Note. * p<0.1, ** p<0.05, *** p<0.01.

REFERENCES

- Bernal, N., Carpio, M.A. and Klein, T.J., 2017. The effects of access to health insurance: evidence from a regression discontinuity design in Peru. *Journal of Public Economics*, 154, pp.122-136.
- Bernal, N., Costa-i-Font, J. and Ritter, P., 2022. The Effect of Health Insurance on Child Nutritional Outcomes. Evidence from a Regression Discontinuity Design in Peru (No. 9887). CESifo Working Paper.
- Hernández-Vásquez, A., Chacón-Torrico, H. and Bendezu-Quispe, G., 2022. Geographic and socioeconomic inequalities in cesarean birth rates in Peru: A comparison between 2009 and 2018. *Birth*, 49(1), pp.52-60.
- Peru Demographic and Family Health Survey 2013-19, National Institute of Statistics and Informatics (Peru)

CONTACT

Thomas Taeksung Kim (PhD), Economist / ufg8@cdc.gov

Office of Monitoring and Evaluation / DGHP / CDC