



# Challenges facing hypertension control goes beyond primary care services

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## Introduction

Hypertension is a severe challenge to low and middle-income countries including China. To better control high blood pressure among other chronic conditions, China launched nationwide the essential public health services (EPHS). The EPHS was initiated in a comprehensive health reform launched nationwide in 2009 and has been funded equally for a universal package of services provided to all population as a public good. The service package of the EPHS includes management for hypertension.

This study looks at the effects of the essential public health services as well as the influences of other social determinants on hypertension control.

## Methods

The study used a multistage cluster random sample representative of the population in 34 municipalities across 17 provinces in China. The survey involved 20,777 households in 2014 among which 20,547 households were followed up in 2016, giving a total of 120,358 interviewees. 1801 among them were hypertensive patients who had not received hypertension management services in 2014 and were followed up in 2016.

We conducted a difference-in-differences analysis to identify the effects of hypertension management services on hypertension control, measured by self-reported normality of blood pressure.

## Results-1

As our descriptive analysis suggests (Figure 1), patients in remote villages were more likely to receive hypertension management services. They were less likely to have regular use of hypertensive drugs and see their blood pressure controlled in comparison with urban residents. This is likely to be relate to the gaps in the health literacy across socio-geographical strata.

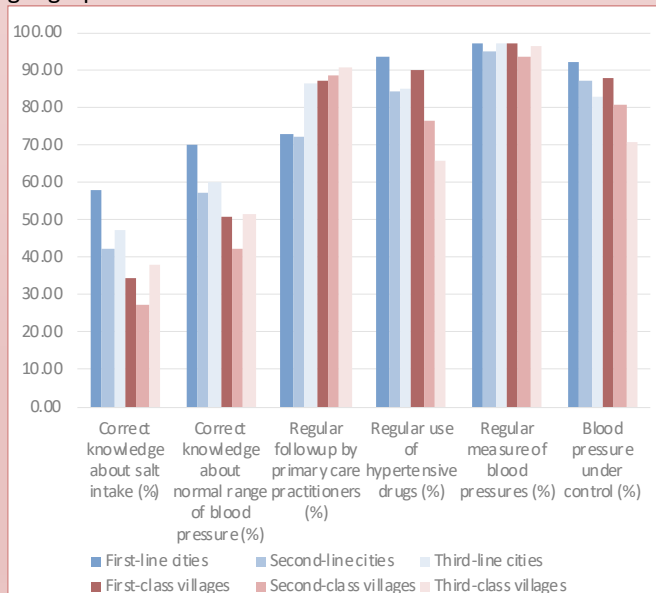


Figure 1. Comparing factors and outcome related to blood pressure control among hypertensive patients across socio-geographical strata

## Results-2

The difference-in-differences analysis suggested that the hypertension management services contributed to an increase of hypertension control odds by 1.67 times (p=0.028). Meanwhile, socio-economic status (represented by education and income quantile) and health literacy (represented by correct knowledge about salt intake) are also significant contributors to hypertension control.

Variables	Odds Ratio	(95% CI)	P
Treatment*After	1.67	(0.96-2.89)	0.069
Education (year)	1.04	(1.00-1.08)	0.028
Income level	1.31	(1.19-1.44)	<0.001
Correct knowledge about salt intake			
No	1		
Yes	1.48	(1.13-1.95)	0.004

## Conclusions

We have confirmed the effectiveness of hypertension management provided by primary care doctors and that the program has been pro-poor in hypertension management coverage in China. Our findings imply that providing universal coverage of essential health services is important but insufficient. Controlling NCDs in low and middle-income settings requires greater social and health systems changes, including empowering the patients with better health literacy and extending access to quality services to people with lower-income and minority ethnicity groups.

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