

Social Health Insurance Inequalities in China

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Health Insurance Policy Background in China

– National basic health insurance enrolment

- Hukou (household registration) based: **NRCMI, URBMI**
- Employment based: **UEBMI**
- Provincially various

* **NRCMI**: New Rural Cooperative Medical Insurance

* **URBMI**: Urban Residents Basic Medical Insurance

* **UEBMI**: Urban Employee Basic Medical Insurance

* **Private health insurance** (All available, but much more expensive than national basic health insurances)

Health insurance: entitlement and availability

	Entitled	Available
Urban local	URBMI, UEBMI	URBMI, UEBMI
Urban-to-urban migrants	URBMI, UEBMI	UEBMI
Rural local	NRCMI	NRCMI
Rural-to-urban migrants	NRCMI, UEBMI	UEBMI



* **NRCMI:** New Rural Cooperative Medical Insurance

* **URBMI:** Urban Residents Basic Medical Insurance

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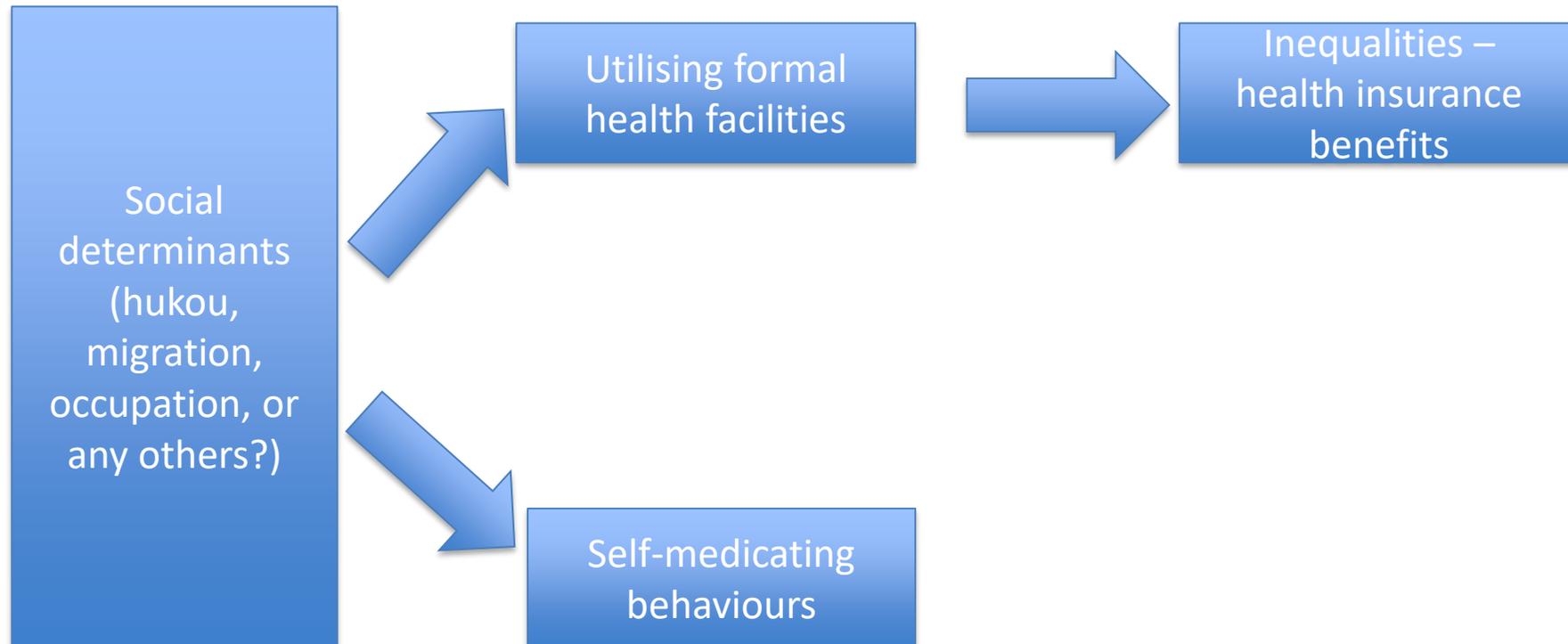
* **Private health insurance** (All available, but much more expensive than national basic health insurances)

Hypothesis

– Data source:

- Chinese Livelihood Survey 2014, 8 Provinces, 9283 observations.

– Hypothesis:



Main aims of this research:

- Examine health insurance inequalities both as to the level of benefits and the social consequences of health seeking behaviours (self-medicating behaviours);
- Identify the key social determinants (socio-demographic characteristics) of these inequalities; and
- Identify health insurance policy issues in China.

Methods

- Multilevel linear regression modelling for health insurance benefits level
- Multilevel logistic regression for self-medicating behaviour

Description: health insurance types

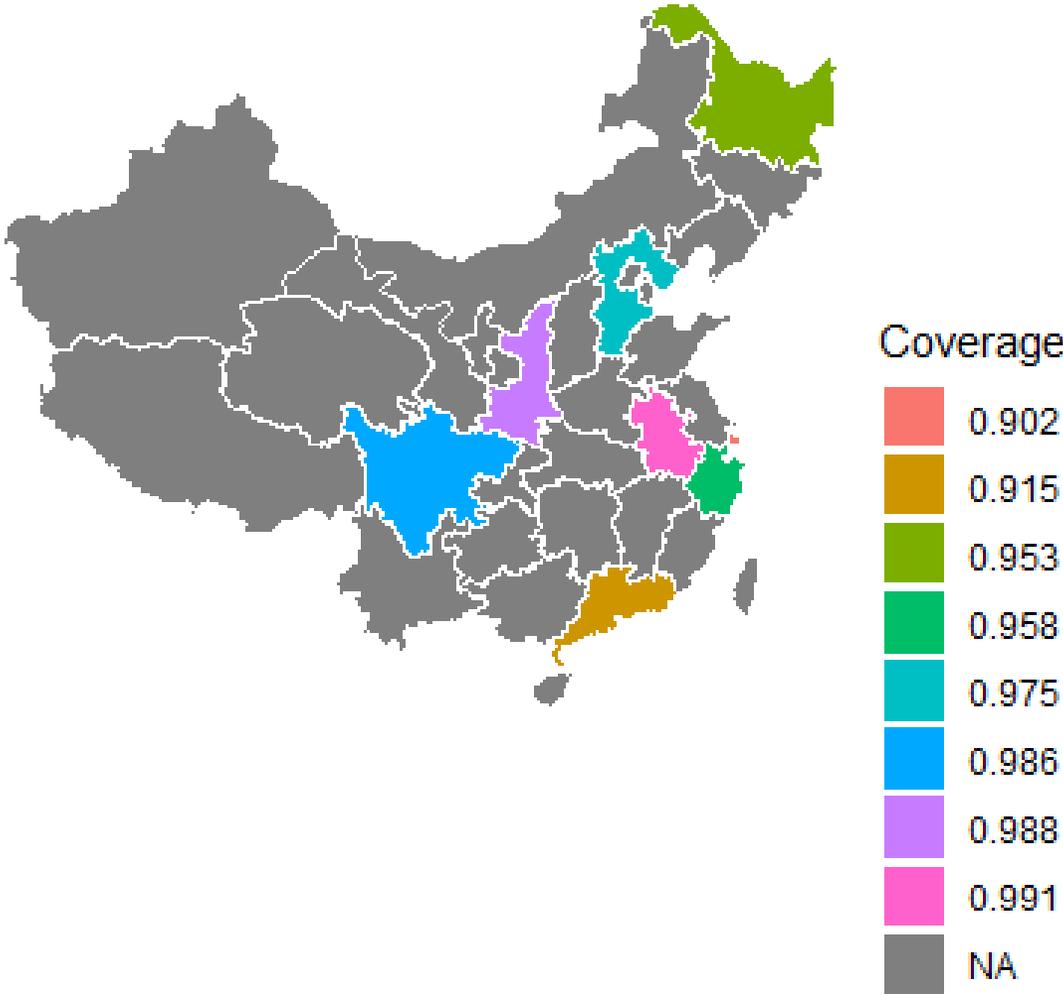
Health insurance types	URBMI	1= yes, 0= no	16.6%
	UEBMI	1= yes, 0= no	23.4%
	NRCMI	1= yes, 0= no	58.1%
	Private	1= yes, 0= no	1.5%
	No insurance	1= yes, 0= no	3.9%

Description: sample provinces

Provincial level groups	Province	1 Anhui	12.6%
		2 Guangdong	11.5%
		3 Hebei	12.7%
		4 Heilongjiang	13.3%
		5 Shanghai	12.2%
		6 Shannxi	12.1%
		7 Sichuan	12.9%
		8 Zhejiang	12.6%

Sample provinces

Description:
Health
Insurance
Enrolment



Modelling: dependent variables

1. Health insurance benefit level: reimbursement ratio

(continuous variable, only for observations who attended hospitals)

$$\frac{\text{paid by medical insurance}}{\text{paid by medical insurance} + \text{paid out of pocket}} \times 100\%$$

2. Health seeking behaviours: self-medication (binary variable)

Health seeking patterns	Self-medication	1= yes, 0= no	24.2%
	PHNs	1= yes, 0= no	66.5%
	Tertiary hospitals	1= yes, 0= no	9.3%

When you or your family members are ill, what is your first option?

1. Self-medication: dealing with it yourself (**health insurance not involved**);
2. PHNs: visiting primary health networks doctors (hospitals or clinics in community and township level)
3. Tertiary hospitals: visiting the tertiary general hospitals (province or national level general hospitals)

Demographic characteristics	Female	1= Female 0= Male	45.6%
	Age	minors ($X \leq 18$);	0.4%
		young ($18 < X \leq 40$);	26.4%
		middle-aged ($40 < X \leq 60$);	53.2%
		elderly ($X > 60$)	20%
	Hukou	rural local	54.8%
		rural-to-urban migrants	7.2%
urban local		36.1%	
Urban-to-urban migrants			1.8%
Socioeconomic status	Education level	Primary	30.7%
		Middle	38.4%
		Secondary	19.5%
		Colleges	11.4%
	Income level (annual family income, Chinese Yuan)	low income ($X \leq 30,000$)	32.3%
		middle low ($30,000 < X < 80,000$)	45.1%
		middle ($80,000 \leq X < 150,000$)	18.9%
		middle high ($150,000 \leq X < 250,000$)	2.8%
		high ($X \geq 250,000$)	1%
	Occupational class	other	29.7%
		informal sector	13.5%
private sector		11.6%	
rural sector		34.7%	
State-owned			10.6%

Health insurance benefit level: multilevel linear regression results

Categories	Variables	Estimate	P value
Demographic characters	Intercept	0.19	.
	Female	-0.01	
	Age minors	0	
	Age young	0.06	
	Age middle-aged	0.1	
	Age elderly	0.14	
	urban local	0	
	rural local	-0.05	*
	rural-to-urban migrants	-0.11	**
	urban-to-urban migrants	0.11	
Socioeconomic status	Edu-primary	0	
	Edu-middle	0.02	
	Edu-secondary	0.05	**
	Edu-college	0.05	
	Income low	0	
	Income middle low	0.02	
	Income middle	0.03	*
	Income middle high	0.02	
	Income high	-0.07	
	Other	0	
	Informal sectors	-0.05	**
	Private sectors	0.02	
	Rural sectors	0	
State-owned	-0.02		
Medical insurance types	No insurance	0	
	NRCMI	0.13	***
	Private insurance	0.24	***
	UEBMI	0.19	***
	URBMI	0.16	***
Number of observations:	2434	Groups:	Province, 8

Significance codes: 0 '***', 0.001 '**', 0.01 '*', 0.05 '.'

**Self-medication:
multilevel
logistic
regression
results**

Categories	Variables	Odds Ratio*	P value
Demographic characters	Intercept	-1.01	.
	Female	1.06	
	Age minors	1	
	Age young	1.25	
	Age middle-aged	1.56	
	Age elderly	1.42	
	urban local	1	
	rural local	0.89	
	rural-to-urban migrants	3.05	***
	urban-to-urban migrants	2.10	***
Socioeconomic status	Edu-primary	1	
	Edu-middle	0.93	
	Edu-secondary	0.78	**
	Edu-college	0.92	
	Income low	1	
	Income middle low	0.91	
	Income middle	0.75	***
	Income middle high	0.41	***
	Income high	0.32	**
	Other	1	
	Informal sectors	1.39	***
	Private sectors	1.16	
	Rural sectors	1.00	
State-owned	1.02		
Medical insurance types	No insurance	1	
	NRCMI	0.45	***
	Private insurance	0.40	***
	UEBMI	0.64	**
	URBMI	0.89	
Number of observations:	9283	Groups:	Province, 8

Significance codes: 0 '***', 0.001 '**', 0.01 '*', 0.05 '.'

*Intercept excluded.



Results

Negative indicators that significantly lower medical insurance benefit levels:

- Hukou status (migration): rural residents & rural-to-urban migrants
- Occupation: informal sectors

Self-medicating behaviours are significantly encouraged by:

- Hukou status (migration): rural-to-urban migrants & urban-to-urban migrants
- Occupation: informal sectors

Summary

- Hukou status, migration and occupations are the main social determinants of health inequalities in China;
- Rural-to-urban migrants & informal labourers have both significant lower health insurance benefit levels and higher self-medicating behaviours. They are not well protected by health insurance and more likely to resort to self-medication;
- Health insurance policy in China needs to be adjusted to tackle migration-related challenges and informal employment challenges.

Summary

- This is an unpublished paper, you are welcome to give suggestions or ask any questions.
- All data analyses and slides are produced in R, all r coding scripts are available on my website:
- <https://jtlyu.com/>

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