

Dr. Yang Yang



Yang Yang obtained his Ph.D degree of Social Medicine and Health Policy from Sichuan University (2013). He is currently Associate Professor at School of Public Health, Sichuan University. Dr. Yang's research focuses on urban neighborhood effects on health in china background. Now he is doing a research on spatial features of internal migrants in urban china and the relations to the health. As aging is a very urgent issues for china, He will continue his research on aging friendly communities in urban settings.

Publications

- Yang Yang, Xing Zhao, PeiYuan Qiu, Xiao Ma and Chih-Ping Chou(2015), Integrating spatial technology into studying the generational differences of migrants' health protection status in urban China, International Journal for Equity in Health , 14:27
- Yang Yang, Research on rural to urban migrants' residential models, spatial patterns and urban assimilation(2013), Journal of Sichuan University (Social Science Edition), 186:112-120(in Chinese)
- Yang Yang, Ma Xiao(2012), migrants and relative poverty in urban area. GuiZhou Social Science,274:125-128(in Chinese)
- Peiyuan Qiu, Yang Yang, Xiao Ma, Fang Wu(2012). Respondent-driven sampling to recruit in-country migrant workers in China: A methodological assessment. Scandinavian Journal of Public Health, February 40: 92-101
- Peiyuan Qiu, Yang Yang, Juying Zhang and Xiao Ma(2011), Rural-to-urban migration and its implication for new cooperative medical scheme coverage and utilization in China, BMC Public Health 2011, 11:520



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Integrating spatial technology into studying the generational differences of migrants' health protection status in urban China

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Background

- The largest internal migrants in the world, in 2015 a total of 277 million migrant workers existed in China.
- The urbanization of China has been driven by migrants, many big cities have expanded dramatically in past decades.
- Migrants have faced many problems in urban areas such as social insurance, children education, health issues, housing etc.

- Existing studies is viewing migrants as a homogeneous group, and seldom examining the differences and needs across migrant subgroups
- Another motivation of this study is from the “segmented assimilation” theory from western countries which found that immigrants’ spatial dimension are closely related to their social status as well as their health status(ghetto in US).The spatial segmented assimilation suggests the importance of urban space on the SES difference of migrant subgroups.

Objectives

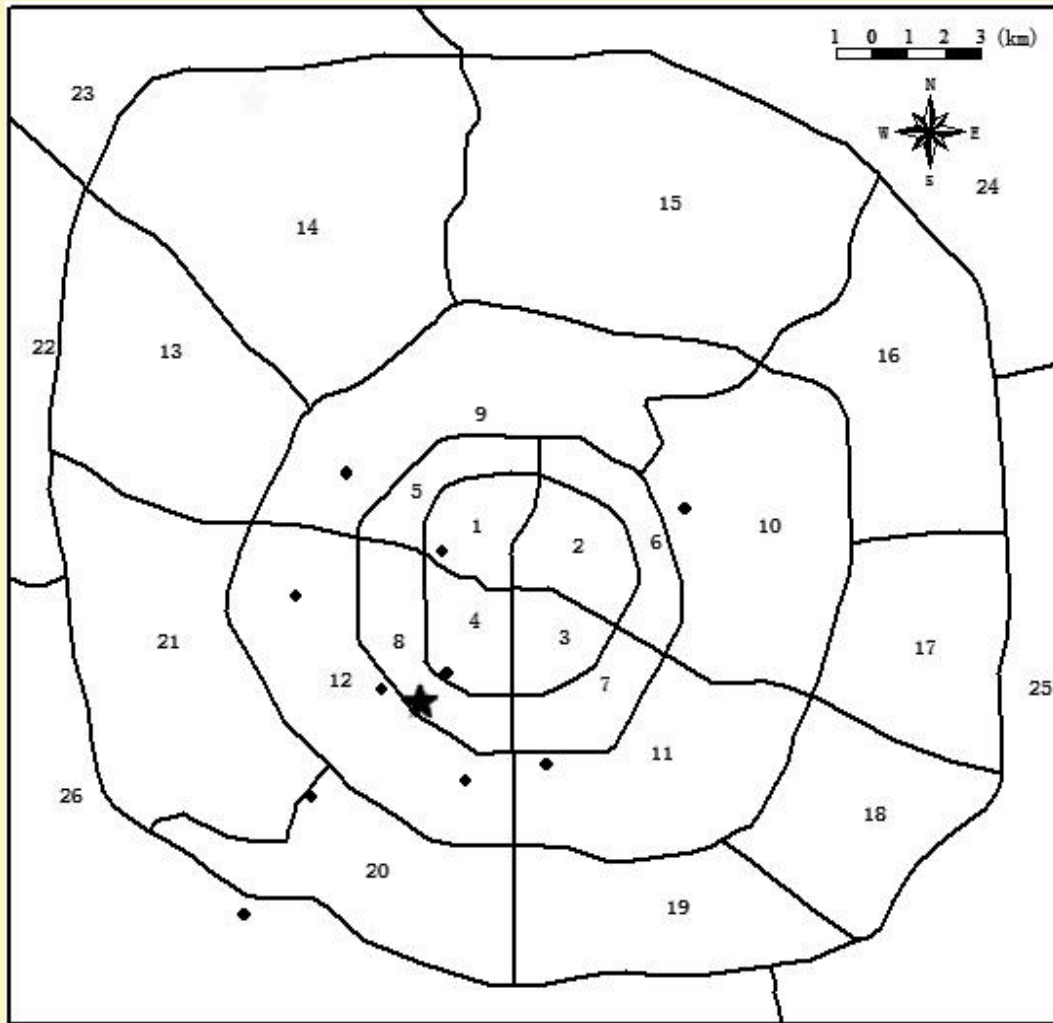
- The objectives of this study were to investigate differences on health protection status between two generations (born pre- vs. post- 1980) of rural-to-urban migrants in China, and whether the differences are associated with spatial contexts.
- Hepatitis B Vaccination serves as a surrogate for the Health protection status

- Hepatitis B Vaccination (HBV) serves as a surrogate for the Health protection status.
- The ‘China National Hepatitis Epidemiological Survey 1992’ found that the prevalence of HBsAg for population aged 1–59 was 9.8%. Due to the high prevalence of Hepatitis B, the immunization was first recommended for routine vaccination of infants in China in 1992.
- Our participants were not covered by newborn infants Hepatitis B Immunization Program, as they are from western rural areas, and 99% of them were born before 1992.

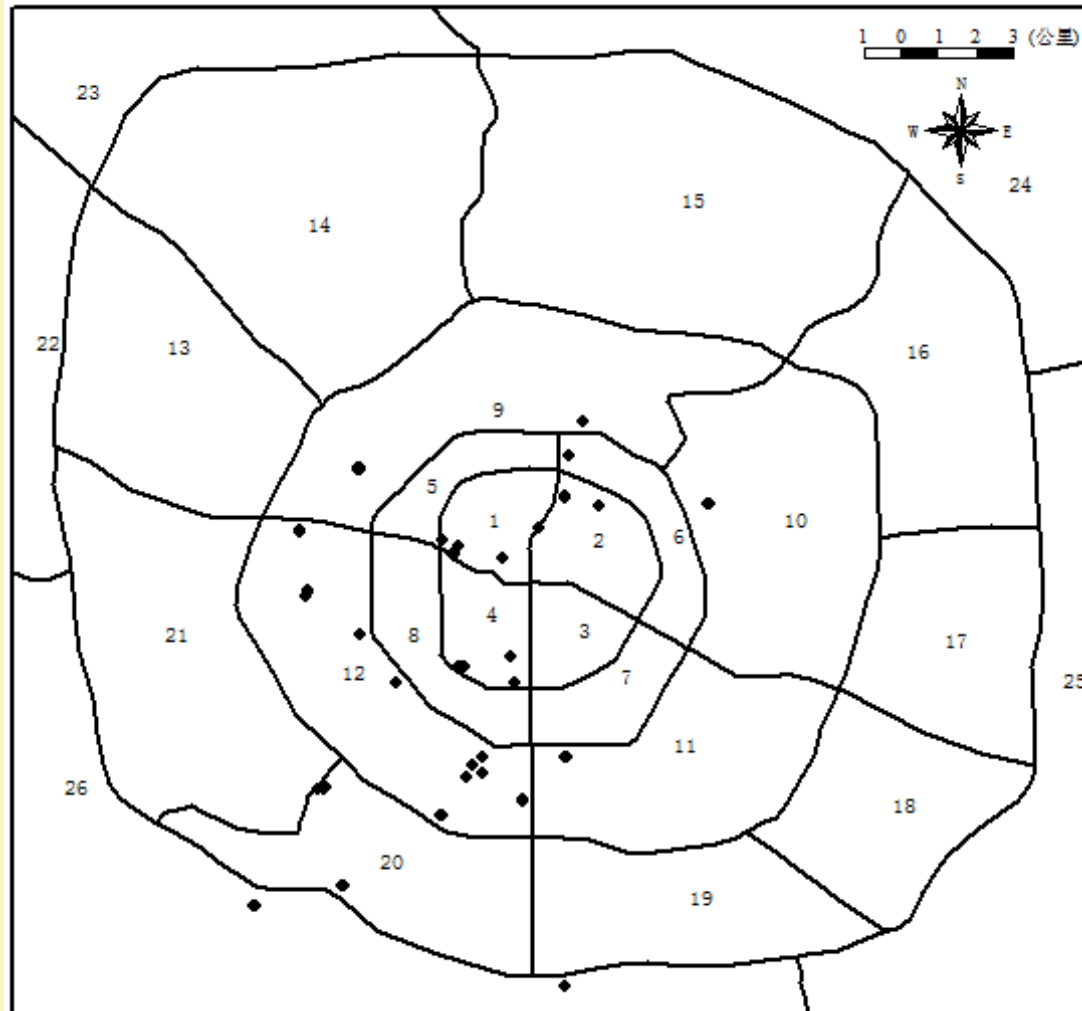
- Respondent-Driven Sampling (RDS) approach was used to recruit migrants in Chengdu city from September 2008 to July 2009. All migrants' residences were geo-coded on the map.
- RDS is considered a good strategy for hard to reach population.

- RDS is a chain-referral procedure.
- A total of 12 seeds were selected after considering gender, age, occupation, and living sites.
- Each seed was given three coded coupons to recruit peers. We then consented and enrolled persons who presented one of these valid coupons and who we deemed eligible; in turn, each new enrollee was given three coded coupons for the purpose of recruiting peers.
- Theoretical, it usually has been considered can obtain representative samples after repeated six round procedure

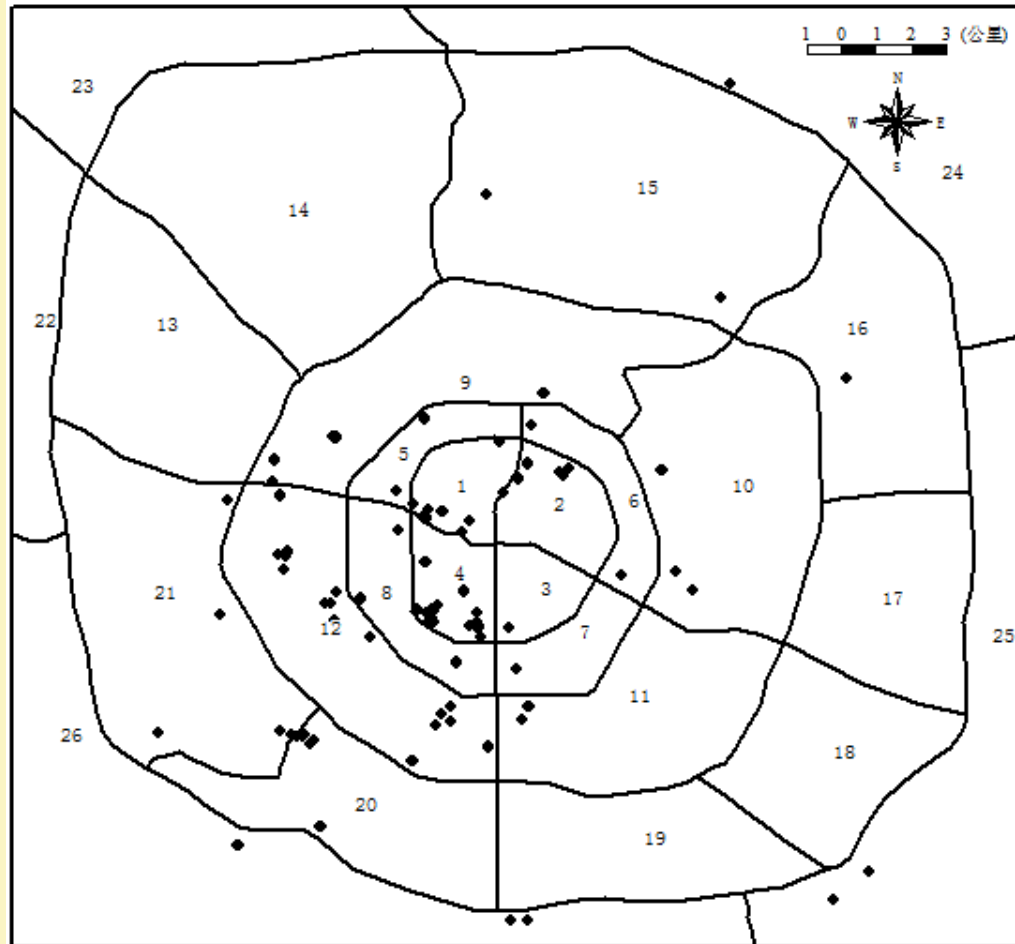
Seed



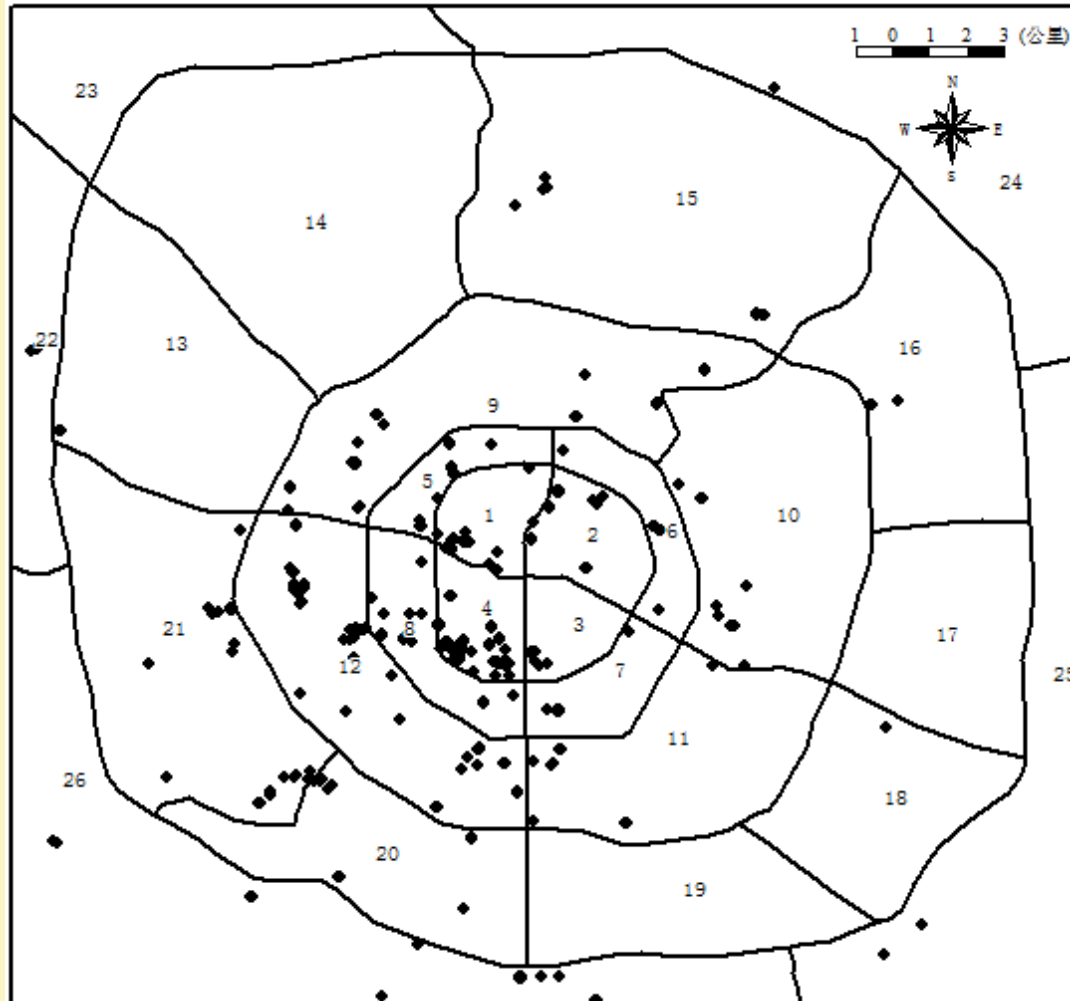
First wave



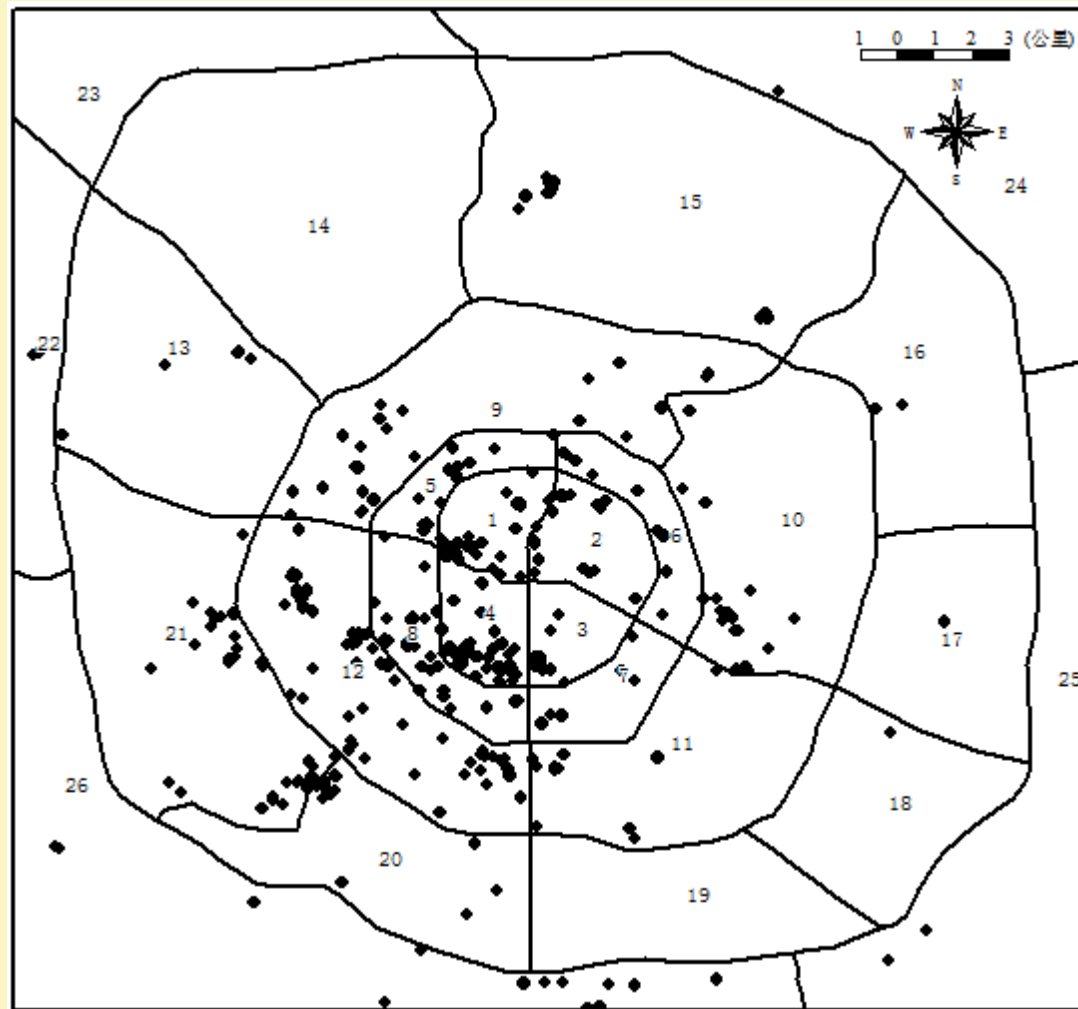
Second wave



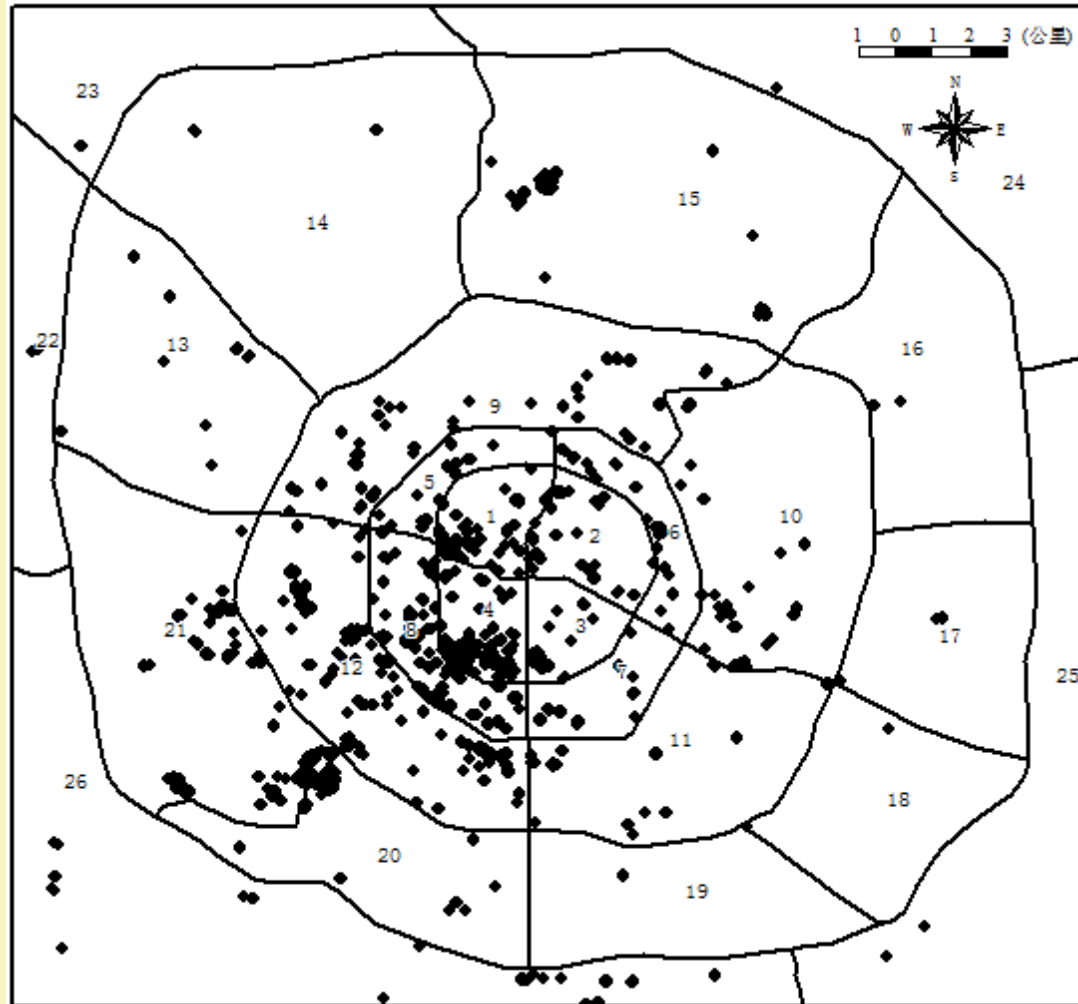
Third wave



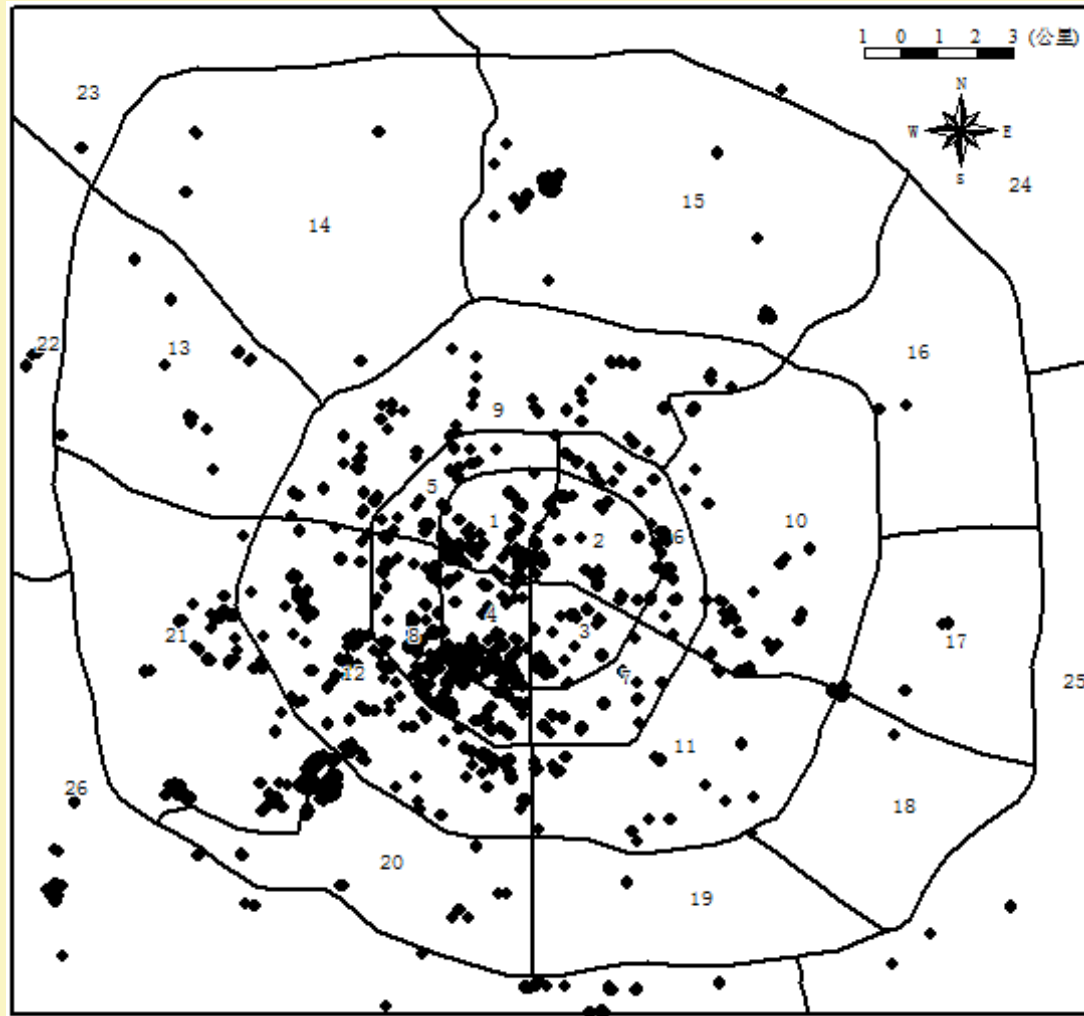
Forth wave



Fifth wave



Sixth wave



- In total, 1055 rural-to-urban migrants were recruited. Among them, 10 people reported being infected by Hepatitis B, and had been excluded for the analysis.

- The new generation consists of 53.5% (559/1045) of the study sample.
- 37.7% (394/1045) migrants had been Vaccinated.

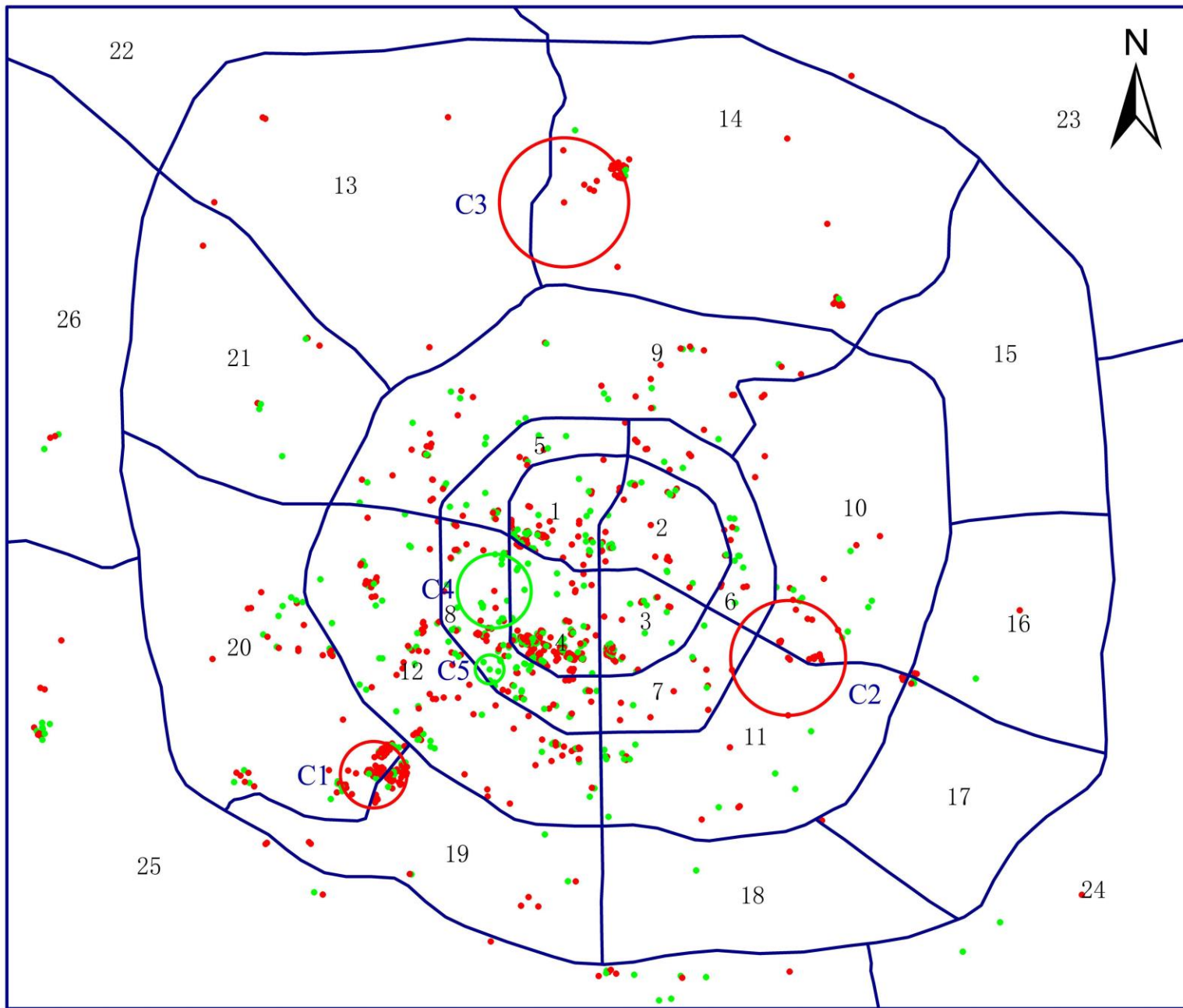
Odds Ratios of the logistic regression model

Parameter	DF	Estimate	Standard error	Wald	Pr > ChiSq	Odds Ratio	95% Interval	Confidence
Intercept	1	-1.87	0.22	71.43	<.01			
Education	1	0.67	0.17	14.82	0.01	1.96	1.39	2.76
Marriage status	1	0.20	0.21	0.95	0.33	1.22	0.82	1.83
income	1	0.09	0.05	2.78	0.10	1.09	0.98	1.22
Employment condition		--						
	1	0.60	0.23	6.85	0.01	1.82	1.16	2.84
	1	0.65	0.26	6.10	0.01	1.92	1.14	3.22
Generation	1	0.68	0.20	11.15	0.01	1.98	1.33	2.95
Insurance status	1	0.16	0.20	0.61	0.43	1.17	0.79	1.73

--. Reference group.

Spatial Cluster analysis

The spatial scan statistics identified three spatial clusters of low vaccination rate and two clusters of high vaccination rate (see red circles and green circles, respectively, in Figure). With the significance level of 0.05, only one cluster of low vaccination rate was detected.



- Unvaccinated individuals
- Vaccinated individuals

0 2.5 5 10 Kilometers

Summary Information of Clusters

Cluster	Population	Number of cases	of Expected cases	Observed expected	/ Relative risk	Log likelihood ratio	P value
1	94	80	58.73	1.36	1.41	12.80	0.0023
2	19	19	11.87	1.60	1.62	9.04	0.077
3	19	19	11.87	1.60	1.62	9.04	0.077
4	21	4	13.12	0.30	0.30	8.49	0.152
5	7	0	4.37	0	0	6.90	0.553

Contrast of Characteristic variables between Clusters and the remaining area

		Low Vaccination Clusters (%)	Other regions (%)
Education	high school or above	10 (7.6%)	339 (37.3%)
	middle school or below	122 (92.4%)	571 (64.7%)
Employment condition	precarious employment	35 (26.5%)	117 (12.9%)
	informal employment	79 (59.8%)	486 (53.4%)
	formal employment with labor contract	18 (13.7%)	307 (33.7%)
Generation	Post-1980 generation	21 (15.9%)	462 (50.8%)
	Pre-1980 generation	111 (74.1%)	448 (49.2%)

Discussion

- Our work demonstrates the positive associations between the Hepatitis B vaccination and educational level and employment condition.
- The generation variable (born before vs. after 1980) is still associated with the vaccination status after adjusting for the socioeconomic variables

- Our data shows that 53.6% of participants are living in downtown areas, while cluster analysis demonstrates that most deprived migrants concentrated in urban villages.
- the spatial analysis implies strategies for further health intervention. In 2012, the Chinese CDC begun promoting adult HBV immunization to reduce the deaths (300,000) from HBV related liver diseases. The spatial clusters of low vaccination rate can help us target the high priority area for the vaccination promotion.