

The China Health Policy and Management Society  
中国卫生政策与管理协会(海外)

# China Health Review

## 中国卫生评论

Volume 5 Issue 1, June 2014

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China Health Review (CHR), published quarterly, is the official online magazine of the China Health Policy and Management Society (CHPAMS). The CHR is intended to promote health research, policy, practice, and education related to China and the general population health sciences by providing research and policy updates, topical reviews, and other appropriate information. Targeted audience includes (1) academic researchers within and outside of China; (2) policymakers within China; (3) other interested parties including nonprofit organizations and business leaders as appropriate.

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## EDITORIAL INTRODUCTION

The June 2014 issue of China Health Review includes an interview with **Dr. Belton Fleisher** (Executive Editor, the China Economic Review), a research article on the positive externality of smoking cessation, an article on the application of Innovative Care for Chronic Conditions (ICCC) to China's diabetes management, in addition to the other usual sections.

In *Interview* section, **Dr. Belton Fleisher**, Executive Editor of the China Economic Review, outlined the features and direction of the journal and advised Chinese scholars on manuscript preparation.

In *Research Article* section, **Dr. Donglan Zhang** and **Dr. Lu Shi** developed a hypothetical intervention experiment and provided insight for the potential impact of reducing active smoking prevalence on passive smoking prevalence. By considering the positive externality of smoking cessation, public health stakeholders could enhance the return on health investment and strategize their approaches to design tobacco control programs. The other article in this section, authored by **Dr. Chien-Ching Li**, discussed the feasibility and potential of application of ICCC framework to China's diabetes management based on an integrative multi-level literature review, and provided suggestions on how ICCC framework can serve as the conceptual basis for chronic conditions situation analysis and health care system design in China. Both articles were Honorable Mentions of the 2013 CHPAMS Best Papers Award.

*Research Twitter* provides summaries of ten recent publications, covering topics such as BMI and risk of death in Asian Americans, the potential effects of tobacco control in China, China's health system strengthening and hypertension, capitation combined with pay-for-performance Improving antibiotic prescribing practices in rural China, bicyclist mortality in China, effect of short message service on infant feeding practice in Shanghai, epidemiology of human infections with H7N9 in China, an Enterovirus 71 Vaccine in China, effect of closure of live poultry markets on poultry-to-person transmission of H7N9, tuberculosis prevalence in China from 1990 to 2010.

*Policy Practice and Updates* includes six updates concerning topics including the newly released *2013 Analysis of Local Level Health Institution Reform, Urban and Rural Residents Critical Illness Insurance Piloting Methods* released by the Beijing Municipal Government, *Proposal for Grading Health Insurance Designated Medical Institutes*, government and market collaboration for Medical Reform, urban and rural residents and retirees enabled to interchange their pension insurance plans, and the five key points for deepening the Medical Reform in 2014 announced by State Council Executive Committee.

In *About CHPAMS* section, we announce the transition of the CHPAMS Planning Committee leadership. **Dr. Zhuo (Adam) Chen** will no longer serve as the Chair of the CHPAMS Planning Committee and the Editor-in-Chief of the China Health Review. **Dr. Qi (Harry) Zhang** will assume the responsibilities of chairing the Planning Committee and managing the Review. The Feature Member section showcases a Go master among us, **Dr. Feijun Luo** of the US Centers for Disease Control and Prevention. We share news about **Dr. Donglan Zhang, Shuli Qu, Professors Qi (Harry) Zhang, Youfa Wang**, and **Xinlin Feng** in the Member's Updates section.

Enjoy Reading!

## 导读：

2014年6月刊《中国卫生评论》除常规栏目外，还包括对《中国经济评论》执行主编 **Belton Fleisher** 博士的专访、关于戒烟项目正外部性的研究文章、以及慢性疾病创新照护模式在中国糖尿病管理方面应用的文章。

在*访谈*部分，我们邀请到《中国经济评论》执行主编 **Belton Fleisher** 博士对该期刊的特点和发展历史进行介绍，并且根据他多年以来对中国经济的研究经验，向中国的学者就科研方向和文稿提交提供了具体的建议。

在*研究文章*部分，**张冬兰**博士和**史律**博士模拟了一项假设的干预实验，就降低主动吸烟对降低被动吸烟率的影响提供了深入见解。考虑到戒烟项目的正外部性，公共卫生利益相关者可以提高健康投资的回报，并且为控烟项目设计制定相应策略。**Chien-Ching Li** 博士在综合多层次文献综述的基础上，讨论了慢性疾病创新照护模式应用于中国糖尿病管理领域的可行性及潜力，并且就慢性疾病创新照护模式如何成为中国慢性疾病情况分析和卫生保健系统设计的概念基础提供了政策建议。这两篇文章均获2013年CHPAMS最佳论文奖荣誉奖。

*研究动态*栏目提供了对10篇近期学术文章的总结，涉及的话题包括：BMI与亚裔美国人死亡率之间的关系、中国控烟的潜在影响、中国卫生系统的完善与高血压、按人头付费和绩效考核降低了中国农村地区的抗生素滥用情况、中国自行车骑行的死亡分析、短信服务对婴儿喂养方式的影响、人类感染H7N9病毒在中国的流行状况、肠病毒71型疫苗在中国的现况、关闭活禽市场对H7N9通过家禽向人类传播的效果、以及中国1990至2010年肺结核患病率。

*政策与新闻*栏目提供了包括《2013年基层医疗机构清理整顿分析报告》出炉、北京发布城乡居民大病医保试行办法、医保定点机构拟分级、医改要发挥好政府和市场作用、职工城乡养老保险将可相互转换个人账户随同转移、以及国务院常务会关于“今年深化医改5重点”等6个方面的最新信息。

CHPAMS *之声*栏目宣布了中国卫生政策与管理学会筹备会主席职务的交接。本期《中国卫生评论》为**陈茁**博士主编之最后一期。此后，**张琪**博士将接任中国卫生政策与管理学会筹备会主席及《中国卫生评论》的管理工作。栏目还介绍了美国疾病控制与预防中心的**罗飞军**博士以及有关**张冬兰**的工作变动，**曲姝丽**，**张琪**，**王友发**，和**冯星林**教授的最新学术成果。

阅读愉快！

## INTERVIEW

### Interview with Dr. Belton Fleisher (Executive Editor, China Economic Review)

Belton Fleisher 博士（《中国经济评论》执行主编）

Interviewed by Ms. Lua Wilkinson

**Belton Fleisher** serves as the Executive Editor for China Economic Review. His research has focused on China's economy since 1990, and he has authored and co-authored over 40 articles in professional journals. One of his books, "Labor Economics: Theory and Evidence" (1970) is considered by many to be the first modern labor economics textbook. He is currently a professor of economics at the Ohio State University (OSU), where he has been working on faculty since 1965.

Dr. Fleisher received his PhD in economics from Stanford University (1961), and has worked at the University of Chicago, the London School of Economics, and Renmin University of China in Beijing, as well as OSU. He is also a Senior Fellow and Special Term Professor of the China Center for Human Capital and Labor Market Research at the Central University of Finance and Economics in Beijing.



**Dr. Belton Fleisher**

Belton Fleisher 担任《中国经济评论》的执行主编。自 1990 年以来，他的研究主要集中在中国经济领域，并且撰写和合作撰写了 40 余篇专业期刊文章。他编著的《劳动经济学：理论与实证》（1970）一书是公认的第一部现代劳动经济学教程。他从 1965 年起在俄亥俄州立大学（Ohio State University）担任教职，目前是该校的经济学教授。

Fleisher 教授 1961 年在斯坦福大学获得经济学博士，并且曾经在芝加哥大学、伦敦经济学院、中国人民大学（北京）以及俄亥俄州立大学任职。此外，他还是中央财经大学中国人力资本与劳力经济研究中心（北京）的资深研究员和特聘教授。

Lua: Can you tell us a bit about the China Economic Review? What makes it different from other economic journals?

Lua: 您能否简单介绍一下《中国经济评论》？与其它经济学期刊相比，《中国经济评论》有哪些不同？

Dr. Fleisher: China Economic Review (CER) is the first journal to detail solely with topics on the Chinese economy rather than more general topics on China or Asia or East Asia with a mixture of other subjects such as history/sociology, etc. It remains the only journal dealing exclusively with the Chinese economy with an editorial board that is located principally in centers outside China.

Fleisher 博士：《中国经济评论》是第一个深入并且完全关注中国经济相关主题的学术期刊，而不像其它杂志那样宽泛地介绍中国、亚洲或东亚地的一系列混合话题，诸如历史、社会等领域。时至今日，《中国经济评论》依然是唯一的编辑委员会主要位于中国以外研究中心的、专门介绍中国经济的期刊。

Lua: How has CER grown over the last ten years, particularly with the popularity of economic research coming out of China?

Lua: 在过去十年中，特别是随着来自中国的经济学研究的盛行，《中国卫生评论》的成长情况如何？

Dr. Fleisher: I don't have any data in my files on this, but my recollection from the annual reports provided by Elsevier is that the number of submissions has perhaps doubled in 10 years, and the rejection rate has grown from approximately 80% to 90% or so. The number of articles published per year has grown, too, possibly doubling, with each issue becoming larger. I recall that 15 years ago, we had a low point, with difficulty in assuring there would be enough papers for the next issue.

Fleisher 博士：关于这个问题，我手头没有任何数据。但我印象里，Elsevier 提供的年度报告显示，在过去十年中，期刊收到的投稿数量增加了大约一倍，我们的拒稿率大约从 80% 增加到 90% 左右。每年发表的文章数量也有所增加，可能增加了一倍，每一期的刊载量都更大。我记得在 15 年之前我们曾经有过低谷，当时我们都很难保证有足够的文章用于下一期发表。

Lua: What do authors need to pay attention to when submitting a paper on economic policies to China Economic Reviews? Where do people typically get their data from (secondary data, surveys, etc.)?

Lua：当作者向《中国经济评论》提交有关经济政策的稿件时，需要注意哪些方面？他们获取数据的来源通常有哪些（二手数据、调查等）？

Dr. Fleisher: Non-native English writers must get substantial help from professional language and scientific writing experts or obtain co-authorship with a scholar who is expert in these tools. Data most frequently are from published sources (secondary data) with perhaps 30% coming from authors' surveys or access to original survey data.

Fleisher 博士：非英语母语的作者必须从专业的英文学术写作专家那里得到实质性的修改帮助，或者与熟悉英语写作规范的学者合作。数据主要来源于公开的数据库（二手数据），大约 30% 的数据来源于作者的调查研究或者原始的调查数据。

Lua: With regards to the Chinese economic system especially in the area of economic health policy, what is China Economic Review most interested in?

Lua：关于中国经济体制特别是卫生经济政策方面，《中国经济评论》最感兴趣的话题有哪些？

Dr. Fleisher: We look for papers that draw useful policy implications from appropriately designed empirical studies. "Treatment effects" as spelled out in the econometric literature are valued highly as are studies of the impact of organization of the health-care industry on health-care delivery.

Fleisher 博士：我们比较期待能够从合理设计的实证研究中获取对政策建议有帮助的文章。例如我们对计量经济学文献中阐述的“干预效果”高度重视，因为这是关于医疗卫生行业的组织方式对医疗卫生行业产出影响的研究。

Lua: How does China Economic Review choose reviewers, especially when the paper is from Chinese researchers?

Lua：《中国经济评论》如何选择审稿人，尤其审理那些来自中国研究人员的投稿？

Dr. Fleisher: Every editor has his/her own technique. An obvious first choice is to select reviewers who have published papers in China Economic Review, because they "owe" us some service. Personally I don't distinguish my reviewer search regarding the nationality of the author.

Fleisher 博士：每个编辑都有各自的专长。很明显，第一选择是以前在《中国经济评论》上发表过文章的学者，因为这是他们“欠”我们的服务。个人而言，我并没有针对作者的国籍来区别选择审稿人。

Lua: Do you have specific suggestions for researchers from China regarding article topics and research projects?

Lua：对于中国的研究人员，您有没有关于文章主题和研究项目的具体建议？

Dr. Fleisher: Try to avoid applications of an "off the shelf" technique to Chinese data, with this application to Chinese data as compared to data from somewhere else being the only distinguishing feature of the research. Try to find topics that use the situations in China as analogous to a laboratory for general research in economics.

Fleisher 博士：尽量不要将一种“现成的”方法应用到以中国为背景的数据，即与其他研究相比，唯一的区别是将该方法应用到了中国的数据上。应当尽可能发现以中国的情况为主题的研究，做类似实验室的一般性经济研究。

Lua: Many journals are using social media to promote findings and call for submissions. Can you tell us about CER's social media presence, including Chinese social media?

Lua: 很多期刊都在利用社交媒体来推广研究发现和征稿。您能告诉我们《中国经济评论》正在使用的社交媒体，包括中国的社交媒体吗？

Dr. Fleisher: Calls are distributed through the Chinese Economists Society and other research organization with which we have connections. I also have my own mailing list.

Fleisher 博士：征稿是通过中国留美经济学会以及其它与我们有联系的机构进行的。我也有我自己的相关邮件组。

Lua: Does the journal face potentially politically contentious issues? How does it face a possibly controversial conclusion?

Lua: 《中国经济评论》是否会面临潜在的政治性争议？如何对待可能有争议的结论？

Dr. Fleisher: We have not received manuscripts that deal with potentially inflammatory topics that would, for example, point fingers at politically connected agents. We publish papers generally dealing with corruption, inefficiency, political economy, etc., and to my knowledge have never considered political sensitivity. Our publisher's home is in Amsterdam and our publisher has never conveyed any message regarding possibly controversial topics/conclusions (which I assume you mean to refer to politically sensitive, not scientifically controversial).

Fleisher 博士：我们还没有收到过具有政治冲突话题的投稿，比如说将矛头指向相关政策机构。我们发布的政策性文章通常会涉及腐败、低效率、政治经济学等方面，并且就我所知，从来没有需要考虑政策敏感性的情况出现。我们杂志刊发的总部位于阿姆斯特丹，我们的发行商从来没有表达对可能会引发争议的话题或结论的担心（我认为这里指的是政治敏感，而非学术争议）。

Lua: China's economy seems to be changing at lightning speed. How do you make sure that your articles are timely and up-to-date?

Lua: 中国经济正在以迅雷之势发生改变。您如何确保您刊载的文章是有时效性并且与时俱进的？

Dr. Fleisher: We are pro-active in attempting to organize and solicit manuscripts for topics that the editors believe are important for the rapidly changing Chinese economy. We tend to reject papers that are mainly replication of off-the-shelf topics and methods to Chinese data, with the change in data being the only distinguishing characteristic.

Fleisher 博士：我们积极主动地组织并根据一些我们的编辑认为对反映快速变化的中国经济极为重要的话题来征稿。我们倾向于拒绝那些基本上只是将现成的话题和方法复制到中国的数据上、数据的改变是唯一的区别的文章。

# RESEARCH ARTICLE

## An Agent-based Model to Evaluate Positive Externality of Smoking Cessations 采用个体为本模型评估戒烟服务的正外部性

By Donglan Zhang, PhD, Lu Shi, PhD\*

### Abstract

**Introduction:** Cigarette smoking can be viewed as a contagious disease whereby an active smoker will turn nonsmokers into passive smokers. Agent-based models (ABM) have been shown to have the advantage of exploring heterogeneity and inter-agent interaction, as compared with more aggregate models. In this study, we use an ABM framework and simulate a hypothetical tobacco control program in a multiunit dwelling, to examine the program's "return on investment" in terms of passive smoking reduction. **Method:** We assume that in a multiunit building of 121 people there are 30 active smokers, with their neighbors as passive smokers. We simulate different spatial distributions of these 30 active smokers. **Results:** Helping the last active smoker quit smoking gave us a net reduction of four passive smoking cases, revealing a pattern of marginal increase in return to smoking cessation efforts. For population segments where active smokers are more likely to be clustered together (in households, work sites, residential units, etc.) this pattern of "increasing returns to health investments" will be even stronger. **Discussion:** This hypothetical intervention experiment provides an insight for the potential impact of reducing active smoking prevalence on reducing passive smoking prevalence. A model-based discussion can help public health stakeholders strategize their approaches to design tobacco control programs.

### Introduction

As the world's largest tobacco market, China had a smoking prevalence around 52.9% among men and 2.4% among women in 2010 [1]. As estimated in 2005, an annual total of 673,000 deaths in China were attributable to tobacco smoking [2]. This number may still be a serious underestimate since the high prevalence of passive smoking was not accounted for. Airborne nicotine was detected among 91% of the sampled public indoor environments [3], making the vast majority of the Chinese people potential victims of passive smoking.

Studies showed that participation and success rates of many smoking-cessation programs were considerably low [4, 5]. In the United States where one in five persons is a smoker [6], only 2-3% of smokers succeed to quit smoking each year [7]. This low cessation rate could be one reason why policy-makers have little incentive and are sometimes hesitate to promote expensive anti-tobacco interventions. However, evaluations of tobacco control programs typically did not accounted for the potential external benefits gained by passive smokers [8-10]. In other words, the positive externality of passive smoking reduction, whereby passive smokers are freed from secondhand smoke exposure because someone else quits smoking, has been often overlooked when researchers evaluate the effect of smoking cessation programs.

Accounting for passive smoking reduction associated with smoking cessation might not be an easy task, though, partly because there is a spatial aspect when counting the number of passive smokers around an active smoker. For instance, active smokers can turn their neighboring nonsmokers into passive smokers: if one active smoker quits smoking, the number of passive smoking cases averted will depend on the spatial distribution of smokers. Another complicating situation is that one active smoker surrounded by other active smokers will find himself a passive smoker once he quits smoking, adding a case of passive smoking to the pool of passive smokers

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\* Dr. Donglan Zhang recently graduated from at the Department of Health Policy and Management, Fielding School of Public Health, University of California Los Angeles, and Lu Shi is an assistant professor with the Department of Public Health Sciences, College of Health Education and Human Development, Clemson University.



rather than subtracting a case from it. Such spatial component cannot easily be addressed using conventional statistical methods.

Agent-based models (ABM) have been shown to have the advantage of exploring heterogeneity and inter-agent interaction, as compared with more aggregate models like differential equations. ABM has been applied in infectious diseases control [11], drinking behavior [12], adolescent sexual initiation [13] and health care management [14]. As cigarette smoking can be viewed as a contagious disease whereby an active smoker can change the cigarette smoke exposure status of nonsmokers around him or her, it is plausible to use ABM to simulate the scenarios of passive smoking. In this study, we use an ABM framework simulating passive smoking and conduct a hypothetical tobacco control program in a multiunit dwelling of 121 people. We show that a marginal increase in the return of passive smoking reduction for every additional case of smoking cessation.

### **Method**

We assume that in a multiunit building of 121 people there are 30 active smokers randomly distributed throughout (where the smoking prevalence equals 24.8%), with their 4 closest neighbors ("Von Neumann neighborhood [15]," or sometimes referred to as "rook's neighborhood") as passive smokers, which is, each active-smoker can only affect his or her 4 adjacent neighbors. We will discuss the implication of assuming a "queen's neighborhood" (each smoker turning all 8 surrounding neighbors into passive smokers) in our future studies.

Initially, the model sets all 30 active smokers to be randomly distributed in an 11\*11 grid. At each time step, the model allows one random active-smoker to quit smoking and reassigns passive smoker status to the quitter's neighbors. The model stops when all 30 active smokers, along with all passive smokers, become tobacco-free non-smokers. To understand the sensitivity of model results to the active smokers' spatial distribution patterns, we further explore alternative scenarios: an even distribution of active smokers throughout and a spatial distribution whereby active smokers are clustered together.

### **Results**

We simulate the model for 100 times with randomized spatial distribution of active smokers in the population, and then calculated the average net reduction of passive smokers for every additional case of smoking cessation (Figure 1 & 2). We find that initially the first few cases of smoking cessations do not lead to a substantial reduction of passive smokers in an environment where active smokers are more clustered. But the "tipping point" [16] comes in when a threshold percentage of active smokers have quit. As shown in Figure 2, the first 15 smoking cessations only result in a net reduction of around 20 passive smokers, meaning that on average only 1.33 passive smokers return to the non-smoker status for each smoking cessation happening in his or her neighborhood. The next 15 smoking cessations give us a net reduction of 40 passive smokers, meaning that the number of passive smoking cases averted per smoking cessation now increases to 2.67. Not surprisingly, helping the last active smoker quit smoking results in a net reduction of 4 passive smoking cases, in sharp contrast to the small reduction of passive smokers as the first 15 active smoker quits. These results reveal a pattern of marginal increase in return ("return" here refers to the number of passive smoking cases averted) to smoking cessation efforts.

Based on our simple agent-based model, we further explore alternative scenarios. Two scenarios are evaluated. Under the first scenario, 30 active-smokers are evenly dispersed in the multi-unit dwelling of 121 people in total (Figure 3). Under Scenario 2, the active smokers are clustered together, which we mimic a space where smoking and non-smoking areas tend to be separated (Figure 4). We use the average Euclidean distance (AED) to define the spatial distances among active smokers. The AED in Cluster 1 is 6.297 (95% CI: 6.028 – 6.566), compared to 3.293 (95% CI: 3.156-3.430) in Cluster 2, meaning that active smokers in Cluster 1 is much less clustered than in Cluster 2. The model outputs two graphs for the two scenarios, respectively. The first graph (Figure 5)

shows that the number of passive-smokers decreases with reduction of active smokers in a linear pattern first, and then this number decreases at an accelerated rate when the intervention has successfully made a threshold proportion (nearly 50%) of active smokers quit smoking.

Figure 1: Number of Passive Smokers Reduction due to Every Successful Smoking Cessation (100 Simulations)

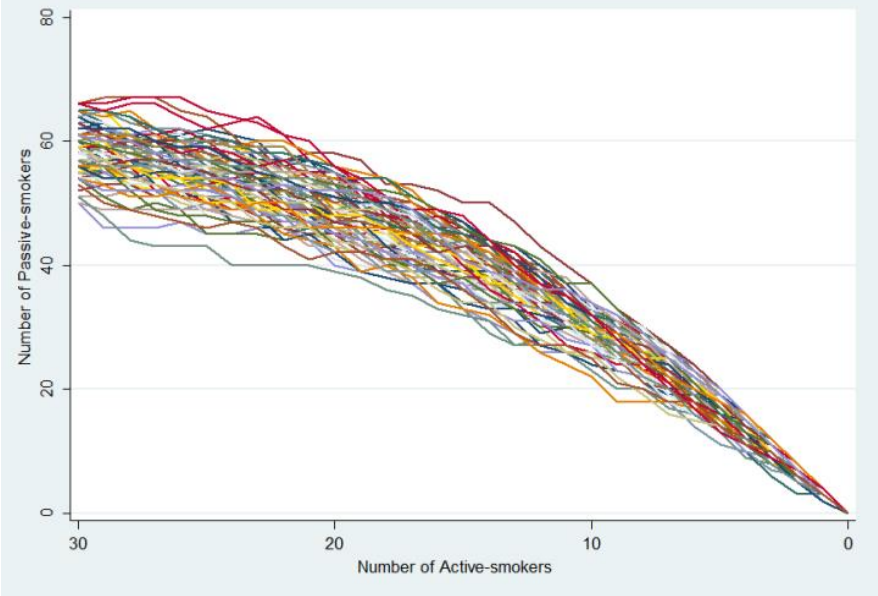


Figure 2: Marginal Increase in Return to Every Successful Smoking Cessation (100 Simulations)

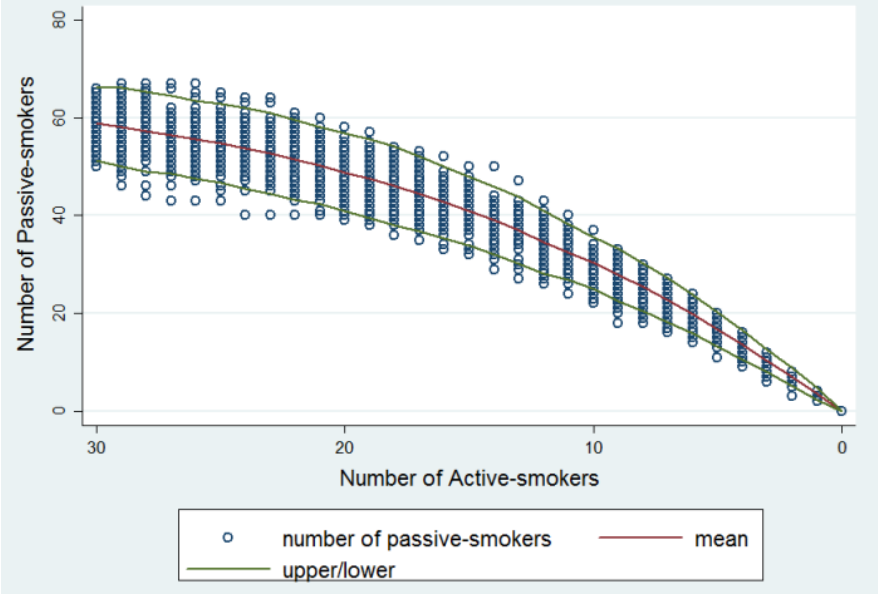


Table 1. Average Euclidean Distance among Active-smokers in Different Cluster Patterns

	Mean	Standard Error	95% Confidence Interval	
Cluster Pattern 1	6.297	0.137	(6.028	6.566)
Cluster Pattern 2	3.293	0.070	(3.156	3.430)

Figure 3: Cluster Pattern 1 (Even dispersion of active smokers)

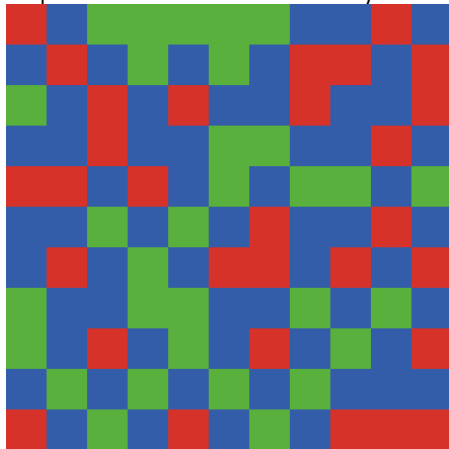
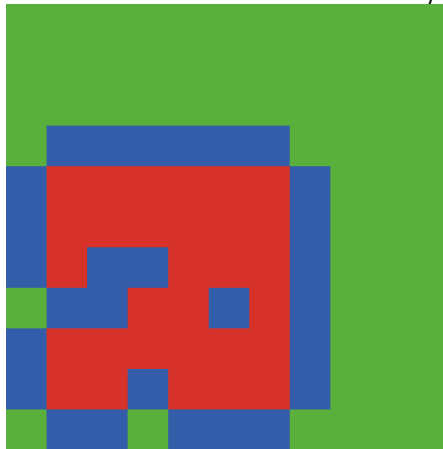


Figure 4: Cluster Pattern 2 (Spatial concentration of active smokers)



In the second graph (Figure 6) where smokers are more clustered together, we see no passive-smoker reduction at first when the intervention achieves only a few smoking cessations. The reason is that active smokers are clustered together with many “shared” neighboring passive smokers, and active smokers may actually become passive smokers when they quit smoking but have a neighbor who remains an active smoker. In other words, when active smokers are highly clustered together, having one active smoker quit might actually increase rather than decrease the total number of passive smokers. However, at a certain “tipping point” when a critical proportion of active smokers quit smoking, we see that the number of passive smokers decreases rapidly for every additional success of smoking cessation. Figure 7 shows that the two clustering patterns generate two very different curves of passive-smoking reduction. Under the scenario where active smokers are highly clustered, we find that the intervention is effective in reducing passive smokers only when it reaches a tipping point – a threshold number of active smokers (around 20) successfully quit smoking.

Figure 5: Model output 1 for Pattern of Decline in Passive Smoking

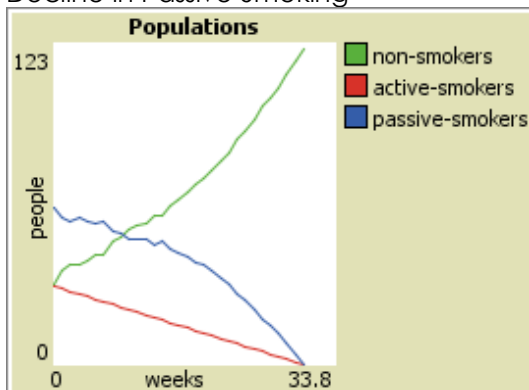


Figure 6: Model output 2 for Pattern of Decline in Passive Smoking

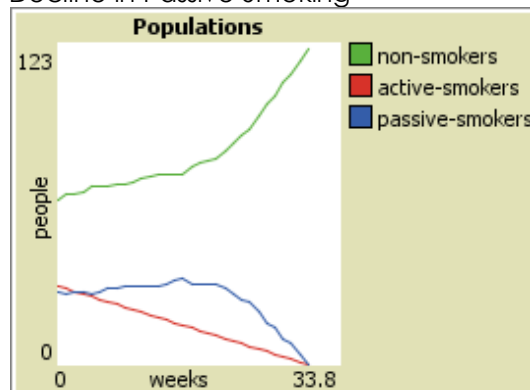
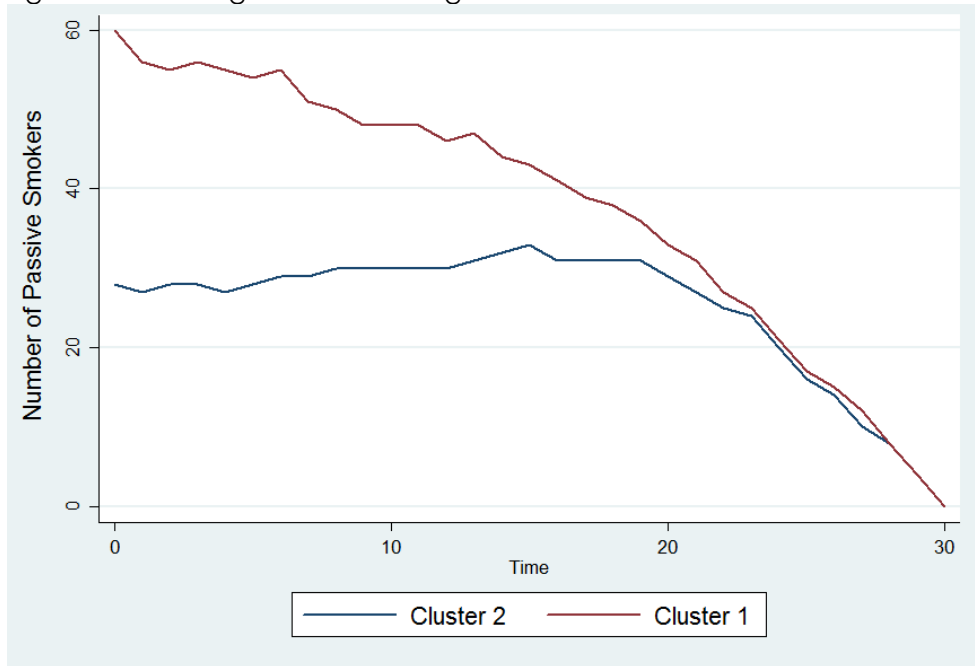


Figure 7: Reducing Passive Smoking in Two Different Cluster Patterns of Active Smokers



### Discussion

This hypothetical intervention experiment provides an insight for researchers to forecast the potential impact of smoking cessations on reducing passive smoking prevalence. In the short-term, tobacco control interventions may not be very effective in changing the environment and reducing number of passive smokers, especially when the active smokers are spatially clustered together. However, with a steady rate of achieving more and more smoking cessations, a rapid reduction in passive smokers will be observed after the “tipping point.” Such phenomenon was actually witnessed in the US history of tobacco control. From year 1980 to 1990, the total percent of adults who smoked in the US was decreased from 33.2% to 25.5% [17], while the prevalence of secondhand smoking remained approximately 87.9% in the late 1980s [18]. But from 1990 to 2000, the prevalence of tobacco smoking was reduced only from 25.5% to 23.3% [17], secondhand smoke rate was steadily decreased to approximately 52.5% during the 1999-2000 period [18]. Even though this reduction in passive smoking coincided with the introduction of smoking ban in public places, it is plausible to hypothesize that there has been increasing returns of smoking cessation when a tipping point was reached in the 1990s, given that household exposure remains a dominant source of passive smoking [19].

Our model has the following limitations. We does not consider the peer effect of smoking cessation among active-smokers, i.e., we assume that seeing other smokers quit smoking has zero effect in increasing one’s likelihood of smoking cessation. This assumption is likely to be an overly pessimistic one compared with the real world. If we have accounted for this peer effect, the rate of return on passive-smoking reduction would be even larger. , we make an arbitrary assumption that one active smoker only affects his or her 4 neighbors, but we can enhance the model by parameterizing the distance of passive-smoking exposure, as well as defining the exact spatial location of a population to make the model a better approximation of a real setting.

The finding of this study holds certain policy significance. First, it means that regular smoking cessation programs may be more cost-effective than researchers and policy-makers may have previously supposed, as the effectiveness extends beyond the quitter himself. Helping an active smoker quit smoking also benefits secondhand and even third-hand smokers who are affected by

the active smoker. Second, the spatial distribution of smokers may have implications for intervention design. For example, in regions when active smokers are highly clustered, it is very important to maintain the smoking cessation intervention to see the “tipping point” appear in passive smoking prevalence trend. Or if there is limited budget, it may be possible to first focus the intervention on those active smokers who are located among nonsmokers (e.g., husbands of nonsmoking wives, smoking parents of nonsmoking children, etc.). In general, we hope that a model-based discussion of this vital issue can help policy-makers and public health stakeholders strategize their approaches to design tobacco control programs.

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# RESEARCH ARTICLE

## An Overview of Diabetes Management in China: The Application of Innovative Care for Chronic Conditions Framework

### 中国糖尿病管理概述：慢性病创新照护模式的应用

By Chien-Ching Li\*, PhD

#### ABSTRACT

China has the largest number of people with diabetes in the world. In the past, no overall assessment of diabetes management efforts has been done in China. Today diabetes has become a significant public health problem in China. It is imperative to gain a comprehensive view of diabetes management efforts within China's specific socio-political infrastructure. In this study, the Innovative Care for Chronic Conditions framework (ICCC) comprised of Macro (policy environment), Meso (health care organization and community), and Micro (patient interaction) levels developed by World Health Organization was used as an analytic framework to demonstrate status and gaps in existing diabetes management in China. An integrative multi-level literature review was conducted using the ICCC framework. Multiple resources, including English and Chinese-language references databases and information from China governmental health websites, were used. Today, responsibilities for diabetes management in China are mainly delegated to health care providers. This effort could be enhanced and complemented by increased support from the government, more resources for diabetes management in the community; structures from health organizations, and stronger partnerships between health care organizations and the community. The roles of patients and their families in diabetes management should also be elevated. Researchers, health practitioners, policy makers and other stakeholders are able to use the findings to delineate optimal strategies for diabetes prevention and management. In the future, the ICCC framework can serve as the conceptual basis for chronic conditions situation analysis and health care system design in China.

#### BACKGROUND

China has the largest number of people with diabetes in the world. The diabetes population is estimated to grow to 129.7 million in 2030 from 90 million in 2011 (Whiting, Guariguata, Weil, & Shaw, 2011), which will have a dramatic impact on the health of people and on healthcare costs in China. To respond to the current situation, efforts toward diabetes management should be made across different levels of the health care system. Prior studies had been done in identifying the prevalence, mortality, risk factors, and the complications of diabetes in China (Chan & Cockram, 1997). However, there has been no overall assessment of diabetes management efforts in China. Since diabetes has become a significant public health problem in China, it is imperative to gain a comprehensive view of diabetes management efforts within China's specific socio-political infrastructure.

In 2002, the World of Health Organization (WHO) proposed the "Innovative Care for Chronic Conditions framework (ICCC)" comprised of macro (policy environment), meso (health care organization and community), and micro (patient interaction) levels (Figure 1) to improve care for chronic conditions in middle or low income countries (WHO, 2002). Within the macro-level, policy activities including legislation, leadership, policy integration, partnerships, financing, and allocation of human resources, on diabetes prevention and control will be identified. A positive policy environment will optimize health care for diabetes and reduce the burden of diabetes. In addition, various activities for diabetes prevention and control that occur in health care organizations and communities are within the meso-level. Appropriate, sufficient, and timely care and services provided by health care organizations will improve the health condition of people with diabetes. Additionally, most diabetic patients spend majority of their time living in the community. Comprehensive community resources are vital to the management of diabetes. Regarding the

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micro-level, patient interventions include the activities between patients and families, healthcare teams, and community partners. Better outcome for diabetes will be obtained from good interaction with patients. Finally, better outcome for chronic conditions can be achieved when each level works effectively and interacts well with other levels. ICCC is now being used as a conceptual framework for health care system design and health care situation analysis around the world (Epping-Jordan, Pruitt, Bengoa, & Wagner, 2004). The International Diabetes Federation (IDF) indicates that ICCC can be used to improve health services for people with diabetes and to provide population-based interventions for the prevention of diabetes (IDF, 2009).

The purpose of this paper is to demonstrate the status and gaps in existing diabetes management in China by conducting a situation analysis using ICCC as an analytical framework. Researchers, health practitioners, policy makers and other stakeholders are able to use the findings to delineate optimal strategies for diabetes prevention and management.

## **METHODS**

### **Data sources**

Two reference databases, PubMed (<http://www.ncbi.nlm.nih.gov/pubmed>) and ProQuest Health Management (<http://www.proquest.com>), were used to search English-language literature. Chinese-language literature from VIP Information (<http://www.cqvip.com>), one of the largest online databases in China, was identified as significant complementary resources to obtain a depth and breadth of vision. In addition, diabetes-related information on governmental health websites was searched through the Google search engine to explore the content of diabetes-related programs and activities found on web sites. Articles and web pages that relate to diabetes management in China and discussed at least one of the specific levels of the diabetes management in macro-level, meso-level, and/or micro-level were selected. In total, 85 references, including 66 journal articles and 19 web pages, were determined to be the most relevant (Figure 2).

### **Analytical framework**

Based on the collected information, any effort made within the macro, meso, and micro levels were identified according to the level of institutions that govern and develop programs and activities for diabetes management in China. Within the macro-level, diabetes efforts made by governmental health-sectors and governmental non-health sectors were identified. In terms of meso-level, efforts made by formal health care organizations, community organizations, health vendors, nonprofit organizations, and education institutions were included. Regarding the micro-level, grassroots efforts presented by patients and families and collective efforts between patient and family, community partners, and health care teams were identified. Finally, various sources of information were further classified into specific principles under each level of macro, meso, and micro of ICCC. Existing programs and activities of diabetes management are summarized according to ICCC principles within macro, meso, and micro level.

## **RESULTS**

In the following, we described diabetes prevention and management efforts in China that are consistent with the specific ICCC principles under Macro (policy environment), Meso (health care organization and community), and Micro-level (patient and family).

### **Macro Level: Policy Environment**

#### Supporting Legislative Framework

- Bans on Tobacco Uses
- Promotion of Physical Activities

Legislation and regulation can reduce the burden of chronic conditions and can protect the rights of people with chronic conditions (WHO, 2002). The lack of physical activities, smoking, and obesity has been identified as the primary risk factors of developing diabetes (Epping-Jordan et al., 2004).



China government issues bans on smoking in schools and public places and cigarettes selling to adolescent, and promotes physical activity among people. All the efforts are helpful to reduce people's risk of developing diabetes (Zhai et al., 2002).

#### Developing and Allocating Human Resources

- National Personnel Training of Integrative Diabetes Prevention and Control
- Workshop of Diabetes Prevention for Healthcare Professionals
- Integration of Community and Hospital Health Education

The care of chronic conditions can be enhanced by training health care professionals or workers through means such as upgrading medical or nursing school curricula and mandating continuing education for other healthcare professionals in the specific area of chronic conditions (WHO, 2002). In China, several types of training for healthcare professionals are provided by government sectors such as the Ministry of Health (MOH), the Chinese Center for Disease Control and Prevention (CDC), and the National Center for Chronic and Non-communicable Disease Control and Prevention (NCNCD). The training mainly focused on the enhancement of knowledge and skills of diabetes management (Chinese CDC, 2006; MOH, 2009) and the collaboration between multidisciplinary healthcare professionals in diabetes care (Chinese CDC, 2007).

#### Strengthening Partnerships

- Dietary Guidelines for Chinese Residents (the Chinese Food Pagoda)
- National Plan of Action for Nutrition
- International Meeting on Nutrition and Agriculture
- Self-Management Program in Chronic Disease in Beijing
- Incentive Project of Dissemination of Diabetes Knowledge
- Integration of Community and Hospital Health Education
- Health Education Intervention on Patients with Diabetes

Within the policy environment, strong partnerships among government sectors (e.g., education, agriculture, etc.) have the potential to influence health and chronic conditions. It is also imperative to work with non-government health sectors (e.g., health care providers, non-profit organizations etc.) and community entities, including residential committee, schools, etc (WHO, 2002). In preventing diabetes, nutrition management plays an important role. Three notable actions of nutrition management have been taken in China. First of all, the Institute of Nutrition and Food Hygiene at the Chinese Academy of Preventive Medicine (INFH-CAPM) developed the "Dietary Guidelines for Chinese Residents and Chinese Pagoda" with the Chinese Nutrition Society to delineate a good diet (Chinese Nutrition Society, 1999; Zhai et al., 2002). The second was the "National Plan of Action for Nutrition" implemented by the collective efforts of governmental sectors, including the INFH-CAPM, the MOH, the Ministry of Agriculture (MOA), and the State Council (Ge & McNutt, 2000; Zhai et al., 2002). The major goal of the plan is to improve the nutritional status of people and to prevent diet-related non-communicable diseases (DR-NCDs). Third, the international meeting on nutrition and agriculture was launched by INFH-CAPM, the MOH and the MOA to identify new nutrition related issues and to prevent and control DR-NCDs (Zhai et al., 2002). Additionally, some programs and activities on diabetes management were carried out. For example, a series of self-management programs was initiated under the collaboration between the CDC and the Community Health Services Center (CHSC) in Beijing to provide patients a strategy of chronic disease prevention and control (NCNCD, 2007b). Information on diabetes prevention and control was disseminated to patients and the general public through the partnerships among government sectors and pharmaceutical companies (J. Huang, 2008; L. Zhu et al., 2004). The MOH also collaborated with the World Diabetes Foundation (WDF) to train physicians and nurses in community hospitals in order to let low-income diabetic patients get economic and efficient treatments (MOH, 2009).



### Providing Leadership and Advocacy

- National Plan of Prevention and Control of Diet-Related Non-Communicable Diseases
- National Project for Diabetes Management
- United Nations World Diabetes Day-China Action in Beijing
- Country-Wide Diabetes Media Intervention
- Dissemination of Diabetes Prevention and Control Knowledge
- Shanghai Resident Medical and Health File System
- Health Education Intervention on Diabetes
- National Plan of Action for Nutrition
- International Meeting on Nutrition and Agriculture

Decision-makers not only can influence senior political leaders to advance care for chronic conditions, but also can increase awareness among policy-makers, health care leaders, health care workers, community, patients, and families (WHO, 2002). In the past 10 years, DR-NCDs, including diabetes, have increased rapidly in China. Several national programs and activities have been implemented to advocate the prevention and control of DR-NCDs. In 1996, the “National Plan of Prevention and Control of DR-NCDs” as a large scale of national program was issued by the MOH. Activities including policy reform, environment development, disease surveillance, and integrated intervention, were carried out across 17 provinces in China (Zhai et al., 2002). Moreover, some diabetes-specific interventions and programs have been conducted. In 2003, a 5-year “National Project for Diabetes Management” was initiated by NCNCD to explore and build the diabetes management model by integrating community and hospital (NCNCD, 2003a, 2003b). Starting in 2007, the MOH has undertaken the promotion of “United Nations World Diabetes Day” to enhance the public awareness of diabetes and to promote people’s health behaviors (NCNCD, 2007a, 2008). The MOH is also in charge of the work of diabetes knowledge and information dissemination to the public via mass media in China (J. Huang, 2008; MOH, 2008; Pan, 2005). To educate diabetic patients, a large diabetes health education plan carried out by the Chinese CDC and was delivered to patients via hospitals from 20 cities (L. Zhu et al., 2004). In order to identify people at high risk for diabetes and to facilitate the follow-up services for existing diabetic patients, Shanghai CDC developed the “Resident Medical and Health File System” to collect people’s health information, family history, and health related risk factors (R. Li, Li, & Wang, 2002).

### Integrating Policies

- Diagnosis and Treatment Guideline for Non-Communicable Disease
- Chinese Diabetes Prevention and Control Guideline
- National Plan of Prevention and Control of Diet-Related Non-Communicable Diseases
- National Project for Diabetes Management

Policies are most effective when they emphasize population-based management and encompass prevention, promotion, and control strategies (WHO, 2002). The Chinese CDC introduced the “Guideline for Diagnosis and Treatment of Non-Communicable Disease” to healthcare professionals working in different institutions concerned with disease control and prevention. This guideline clearly delineates the steps and strategies for prevention and treatment of diabetes, including health education, dietary and progress monitoring, mental consultation, etc (NCNCD, 2002). In addition, the Chinese CDC also compiled the “Guideline for Chinese Diabetes Prevention” based on medical evidence to provide the strategies of primary, secondary and tertiary prevention of diabetes to healthcare professionals (Chinese CDC, 2003).

### Promoting Consistent Financing

- Increasing Health Insurance Coverage in Urban and Rural Areas
- Governmental Grant for Diabetes Research

Financing decisions based on principles of equity and effectiveness can ensure adequate access to health care and coverage for all segments of the population (WHO, 2002). China’s government

implemented a series of health insurance initiatives such as “Basic Medical Insurance” and “New Cooperative Medical Scheme” to facilitate affordable health care services in urban and rural areas (Eggleston, Ling, Qingyue, Lindelow, & Wagstaff, 2008; Fan, 2007). In order to support and encourage healthcare professionals and researchers devoting themselves to diabetes-related research, many national grant opportunities for diabetes-related research are offered by the National Natural Science Foundation of China (China NSF, 2008).

### **Meso Level: Health care Organization**

#### Promoting Continuity and Coordination

- Integration of Community and Hospital Diabetes Management
- Network of Chronic Conditions Control Focusing on Diabetes and Hypertension
- Comprehensive Community Management of Diabetes
- Diabetes Group Management

Patients with chronic conditions need coordinated services across primary, secondary, and tertiary care. Continuity of care is also important for patients with chronic illnesses (WHO, 2002). In China, hospitals and CHSC have made efforts to coordinate health care services. Integrated diabetes interventions, including health education, diet and exercise treatment, medication consultation, and blood glucose monitoring were implemented in hospitals and CHSC and demonstrated positive effects in diabetes management (Cui, 2007; J. He, Zhu, & Pu, 2005; G. Li et al., 2008; B. Lin, Bin, & Tao, 2006; Zhang, Du, Qiang, Wu, & Ding, 2005; X. Zhao, Wu, Wu, Li, & Zhang, 2007; L. Zhou, 2007). The “Network of Chronic Conditions Control” was collaboratively established by 222 CHSC in Guangxi to provide health care services for patients with diabetes and hypertension (“Health Message,” 2006). Additionally, the integration of community-based and hospital-based diabetes management can facilitate the coordination of health care services. In Guangdong, hospitals and CHSC worked together on the establishment of the diabetes information system and referral system, the training of healthcare professionals, the standardization of outpatient and inpatient services, etc. Patients’ control of blood glucose and the ability of self-management were improved (Z. Chen, Zhao, Yin, & Lin, 2007; M. Li, Xu, & Sun, 2009). Regarding the continuity of health care, diabetes group management is emerging. A health care team consisting of various healthcare professionals such as physicians, nurses, and dieticians provides comprehensive diabetes management for patients with diabetes (Fang & Fang, 2006; J. Huang, Sunyan, Liu, Zhao, & Fu, 2007; Yu et al., 2009). Numerous studies have showed that diabetes group management was beneficial for improving patients’ diabetes knowledge (J. Huang et al., 2007; J. Zhou, Gao, Fong, Song, & Chen, 2004), weight (Ai & Yang, 2008; Tang & Qiu, 2004), self-management ability (C. Huang et al., 2005; Yu et al., 2009), and for controlling of blood glucose (Ai & Yang, 2008; Fang & Fang, 2006; J. Gu, 2001; C. Huang et al., 2005; Tang & Qiu, 2004; C. Yang, 2008; Yu et al., 2009; C. Zhao, 2009; H. Zhou et al., 2004).

#### Using Information System

- Health File System
- Diabetes and Complication Management System
- Outpatient Hotline for Appointment
- Electronic Database for the Diabetes Clinic

Timely information about patients with chronic conditions is a critical component of effective care. Information systems that gather and organize data about epidemiology, treatment, and health outcomes and the system that lists patients with chronic conditions (e.g., patient registry) can serve a reminder function for prevention and follow-up services (WHO, 2002). In China, the adoption of hospital information systems is still in the early stage. Some local hospitals developed the “Health File System,” which records diabetic patients’ health information, to facilitate the clinical diagnosis and follow-up services (Hong, Zhong, & Wang, 2004; Miu, Zheng, & Tao, 2008; Y. Wang, 2008). Using the system, physicians are able to monitor patients’ health condition and treatment progress, and to delay and reduce the risk of developing complications. Patients’ blood glucose and diabetes

knowledge were improved after adopting a health file system (Miu et al., 2008; Y. Wang, 2008). In 2005, the “Diabetes and Complication Management System” was collaboratively developed by 60 hospitals from 28 cities to build a database linking medical and health files to monitor patients’ blood glucose, blood pressure, weight, medication, diet, etc (Chinese CDC, 2005).

#### Supporting Diabetes Self-Management and Prevention

- Integrated Diabetes Education by Hospitals and Community Health Services Centers
- Diabetes Clubs by Hospitals and Community Health Services Centers
- Diabetes Self-Management Programs
- Center for Diabetes Prevention in Hospitals

Effective self-management can minimize the complications, symptoms, and disability associated with chronic conditions. Therefore, patients and their caregivers need to be informed about the strategies of self-management and need to be motivated to implement self-management on a daily basis (WHO, 2002). Education is an important part of self management. In China, diabetes education is primarily implemented by hospitals and CHSC. The content covers self-management education, the knowledge of diabetes prevention and control, the development of a healthy lifestyle, the use of medication, regular monitoring of blood glucose, etc. The effectiveness of diabetes education has been recognized in improving blood glucose control (An & Deng, 2008; Y. Chen, 2007; Chu, 2004; Deng, 2008; S. He, 2004; A. Wang et al., 2005; Y. Wang & Zhang, 2006; Wei et al., 2008; Wu et al., 2006; L. Zhu et al., 2005), health behaviors (A. Wang et al., 2005; Y. Wang & Zhang, 2006; Wu et al., 2006), diabetes knowledge (An & Deng, 2008; Dong, Sun, Ying, & Lou, 2008; S. He, 2004; A. Wang et al., 2005; Y. Wang & Zhang, 2006; Wu et al., 2006), and adherence to physician’s advice (Y. Chen, 2007; Dong et al., 2008; S. He, Huang, Li, & Li, 2009; A. Wang et al., 2005; Wu et al., 2006; Yuan, Shen, & Meng, 2004). In addition, there is some initial recognition of the value of diabetes support groups such as diabetic patient clubs formed by hospitals and CHSC. In diabetes clubs, patients and their families are provided with services such as diabetes education, self-management training, dietary treatment, exercise treatment, and medication treatment from the multidisciplinary health care team. Recent studies have shown performance of diabetes clubs in glucose control (Gao, Yang, Hu, & Gao, 2005; S. He et al., 2009; J. Lin, Li, Wang, Zhu, & Lin, 2008; Luo & Yu, 2006; Yan, Li, & Wang, 2008; Y. Zhao, Li, Yan, & Wang, 2008), diabetes knowledge (J. Lin et al., 2008; L. Yang, He, & Lin, 2009), dietary control and exercise enhancement (Yan et al., 2008; Y. Zhao et al., 2008), and other health indicators (S. He et al., 2009; L. Yang et al., 2009).

#### Organizing and Equipping Health Care Teams

- Evaluation Diabetes Knowledge of Healthcare Professionals
- Examining the Role of Local Hospitals in Diabetes Prevention and Control

Health care teams need necessary supplies, medical equipment, laboratory access, and essential medications to manage chronic conditions (WHO, 2002). They also need guidelines for care and diagnostic and treatment algorithms to make optimal decisions. Regarding the diabetes knowledge of healthcare professionals, one recent study indicated that more than half of the nurses in China did not have adequate diabetes knowledge and skills before they received training provided by physicians (Xi & Hu, 2005). This is alarming, since there is evidence to suggest that the physicians’ level of diabetes prevention and treatment knowledge in community hospitals is also low (X. Chen, Su, Liu, Guo, & Tao, 2006; Y. Gu, Zhao, Wang, Wang, & Cheng, 2008). Regarding the existing equipment in hospitals, challenges exist. Some local hospitals lack diabetes medical equipment (e.g., poor testing equipment in laboratory). As a result, patients cannot obtain required examinations, which affect the development of patients’ diabetes care in China (T. Wang, 2005).

#### **Meso Level: Community**

##### Raising Awareness, Reducing Stigma, and Encouraging Better Outcomes through Leadership and Support

- Diabetes Prevention and Control Efforts in Boulevard Block Office

- Diabetes Clubs
- Shanghai Chronic Disease Self-Management Program

Communities play a crucial role in improving the quality of life of patients with chronic diseases. The leaders of community organizations (e.g., international organizations, community development groups) can raise awareness about chronic conditions, reduce stigma associated with chronic conditions, and advocate better health care for chronic problems (WHO, 2002). In China, Boulevard Block Office (BBO) is the formal organization and area community unit. One of its responsibilities is to develop, organize, and coordinate health related tasks in the community. In the community, some education activities such as seminars and lectures of diabetes prevention and control were provided by BBO (Dongliu BBO, 2006; Shiyuan BBO, 2008; Xiluoyuan BBO, 2007). In addition, some higher education institutions have also made some efforts. The College of Nursing at Hangzhou Normal University organized a diabetes club to provide knowledge and information of diabetes care to patients and their families, and patients' medication compliance and health behaviors were enhanced after receiving health education from the diabetes club (B. Zhu, 2006). Additionally, the School of Public Health at Fudan University introduced the "Chronic Disease Self-Management Program (CDSMP)." Patients with diabetes were also involved. CDSMP provided patients courses regarding the concepts and tools of self-management. The program has shown evidence in promoting patients' disease knowledge, self-management skills, positive health behavior, self-confidence, health status, and quality of life (Dongbo, Ding, McGowan, & Fu, 2006; Fu et al., 2003).

#### Providing Complementary Services

- China Diabetes Education Program
- Beijing Diabetes Care and Education to Community Program
- Improving Diabetes Education and Care in China Program
- Bayer Diabetes Houses

Local and international non-government organizations can provide complementary services to reduce the redundancies in services between health care organizations and community organizations (WHO, 2002). Regarding personnel training for diabetes management in China, some great efforts are made by Project HOPE, an international non-profit organization dedicated to achieving sustainable advances in health care around the world. Project HOPE partnered with the MOH to establish the Beijing HOPE Project office and initiated several multi-collaborative diabetes related programs, including "China Diabetes Education Program," "Beijing Diabetes Care and Education to Community Program," and "Improving Diabetes Education and Care in China Program", to train diabetes educators and community physicians to be skillful in diabetes prevention and control, and to improve the overall quality of diabetes care (Hope Project, 1997, 2007, 2008). Furthermore, health care vendors have intervened in terms of both providing advanced training for diabetes and providing equipment. Bayer HealthCare launched the diabetes prevention plan called "Bayer Diabetes Houses" in Beijing, Shanghai and Guangzhou. They partnered with local community hospitals to provide patients with comprehensive diabetes care and disease management information as well as glucose monitoring equipment. Additionally, diabetes related training was also provided to community physicians (Shui, 2006).

#### **Micro Level: Patient and Family**

##### Interaction between Patient, Health Care Organization, and Community

- Diabetes Friends and Chinese Diabetes Club
- Hospital-Community-Family based Behavioral Intervention

Better outcomes for chronic conditions are achieved only when patients and their families, community supporters, and health care teams are informed, motivated, prepared, and are working together (WHO, 2002). To achieve better chronic outcome, the role of patient and family

should be elevated. Today some grass roots efforts are presenting by patients and their families. With the rapid development and widespread use of the internet in China, some self-help groups such as "Diabetes Friends" and "Chinese Diabetes Club" that have been formed by patients and their families use online blogs and discussion boards to communicate with each other and with physicians (Association of Diabetic Patients, 2008; Diabetes Friends, 2008). This would enable patients and their family members to share experience with others who have diabetes and receive timely professional answers to their questions.

As for the triad at the center of the ICCC framework, it is important to facilitate collaboration among the patient and family, community partners, and health care team. In order to enhance the interaction between patients and health care team, physicians cooperated with diabetic patients to identify appropriate lifestyle, develop the ability of self-management, and to provide correct diabetes knowledge in Jiaozuo People's Hospital of Henan. After the implementation of collaborative diabetes management, over half of patients knew how to apply diabetes knowledge and self-management skills to maintain their health after discharge from the hospital (P. Zhao, Wang, Wang, & Cui, 2006). In Hubei, Wuchang Hospital implemented the hospital-community-family-based diabetes intervention to improve patients' quality of life. In the intervention, nurses provided patients with health education and the monitoring of physical indicators. The family intervention group consisted of community nurses and one of the family members was established to enhance the family support system, facilitate self-management, and to improve health lifestyles. After the intervention, patients' lifestyle and physical indicators such as blood glucose, blood pressure, and HbA1c were significantly improved (You, Zhu, Zeng, & Pan, 2009).

## **DISCUSSION**

Based on the situation analysis of diabetes management in China, it is evident that some efforts have been made to manage diabetes. However, several challenges or problems are illustrated through the lens of the ICCC framework.

At the macro level, several policy elements within China's current infrastructure of diabetes care are weak and need to be enhanced. First, national and integrated diabetes programs are limited. Most diabetes prevention and management activities were sponsored by commercial pharmaceutical companies. Collaborative efforts between governmental sectors, health care providers, and community organizations on diabetes prevention and control are limited. To optimize care for diabetes, the government should provide leadership in establishing a system of integrated diabetes management through the alignment of governmental organizations, health care organizations, and community organizations (Song, Jin, Wang, Wang, & Wang, 2005; X. Wang, Song, & Jin, 2005). Second, diabetes is a complicated chronic disease and health providers need to provide continuous and coordinated care services for patients to maintain or improve their health. Although the urban and rural health insurance has been implemented in China, the integrated financing structure for diabetes care has not been established in the health delivery system. Pay-for-performance (P4P), which aligns providers' incentives with quality improvement agenda, is a good option to be implemented within current health insurance programs in China (Rosenthal, Fernandopulle, Song, & Landon, 2004) and P4P has shown improvements in HbA1c values among diabetic patients (Coleman, Reiter, & Fulwiler, 2007). Third, the fundamental element of diabetes prevention and management is the training of healthcare professionals. In China, the lack of diabetes continuous education for healthcare professionals is an important issue. It is imperative for Education authorities to upgrade the model curricula and adopt active teaching techniques in medical and nursing schools. For example, the adoption of the case study method for nursing students may better enable students to understand the difficulty in taking care of clients with chronic illnesses (Sandstrom, 2006). Additionally, the development of additional continuing education programs for healthcare professionals in health care organizations is another important task that needs to be initiated. The diabetes education programs and workshops can be established inside or outside the organization to provide current diabetes management skills to healthcare professionals (Valdez et al., 2007).

Within the meso-level of healthcare, the most common problem is the failure to organize care for chronic conditions. First, the lack of incentives, organizational goals, and improvement strategies for diabetes care in health care organizations is a significant problem in China. This will impede the provision of organized and coordinated diabetes care services. Also, physicians and other healthcare professionals should play the role of leaders in improving the care of chronic conditions by establishing and adopting evidence-based guideline. In China, physicians provide diabetes care by using general guidelines rather than evidence-based guidelines. Without available evidence-based guideline, it will be difficult for healthcare professionals to make effective treatments and interventions in diabetes care. The American Diabetes Association and the American Association of Clinical Endocrinologists has outlined an evidence-based guide for managing patients with diabetes while maintaining the clinical practice guidelines (Fisher & Kapustin, 2007). This could serve as a good foundational reference for healthcare professionals to adopt and develop appropriate diabetes guidelines according to China's health care context. Regarding improvement strategies, continuous quality monitoring and quality improvement projects via rewards (i.e., P4P) should be implemented to improve the quality of diabetes care. Second, health care teams are not well organized and equipped in China. Most education training programs for healthcare professionals are led by governmental sectors. Only a few education efforts have been implemented or led by health care organizations. The Ministry of Education and health care organizations should work together to design effective training curriculum and to develop continuing education programs for healthcare professionals in order to increase the capability of healthcare professionals to provide better diabetes care. Third, health care organizations need to enhance the continuity and coordination of health services and the use of information systems. In China, follow-up work as part of continuity of care does not seem to be a focal issue in health care organizations. This can be facilitated and enhanced by incorporating the role of care coordinator in the health care system. Besides, one of the stated reasons for the lack of continuity is not having a structured management of records to be used in follow-up (H. Li, Yang, & Shen, 2006; J. Lin, 2007). In China, hospital information systems are just starting to take hold. In April 2009, the Chinese government approved a new health care plan. The plan encourages the use of modern information technology to enhance the development of a medical record-keeping system ("Healthy Outlook," 2009). The design of appointment and reminder systems can also be used to provide a structure supporting follow-up for patients with chronic conditions.

Within the meso level of community block, community resources can fill the gap of services or resources not provided by healthcare organizations. However, less diabetes management efforts (i.e. mobilization and coordination of resources in diabetes management) were made by community organizations and groups. Profit organizations (e.g. Bayer HealthCare) and non-profit organizations (e.g. Project HOPE) can be the invaluable resources used to fill the gap. Community units (e.g. BBO) can collaboratively work with Bayer HealthCare to raise funds for diabetes prevention to provide the newest medicine and treatment to support better diabetes care in the community. In addition, there is no formal linkage between health care organizations and community health services centers. To be more effective in promoting diabetes management, a solid and strong connection should be established with health care organizations in the future.

At the micro level, patients and families have strong impacts on health outcomes. In China, internet-based self-help groups organized by patients and their families are now becoming a trend. This would enable diabetics and their family members to exchange diabetes management information with healthcare professionals and others. It is possible to expand the social networking of diabetes care broadly and quickly. Additionally, in order to have successful outcomes for patients, the partnership between patients and families, community partners, and health care teams needs to be enhanced. In China, this partnership is not well established because no formal link exists between communities and health care organizations. In order to make the partnership work optimally, it is imperative to establish an integrated system between health care organizations

and community organizations and to have prepared, informed, and motivated patients and families, community partners, and health care teams.

This paper used the ICCC framework to help us better understand the strengths and weaknesses of the current environment of diabetes care in China. Today, responsibilities for diabetes prevention and control in China are mainly delegated to health care providers. This effort could be enhanced and complemented by increased support from the government; resources for diabetes management in the community; additional resources and structures from health organizations, and stronger partnerships between health care organizations and the community. The roles of patients and their families in diabetes management should also be elevated. When all the components of macro, meso, and micro level in the ICCC framework are integrated and working together, better outcomes for Chinese diabetics will be achieved.

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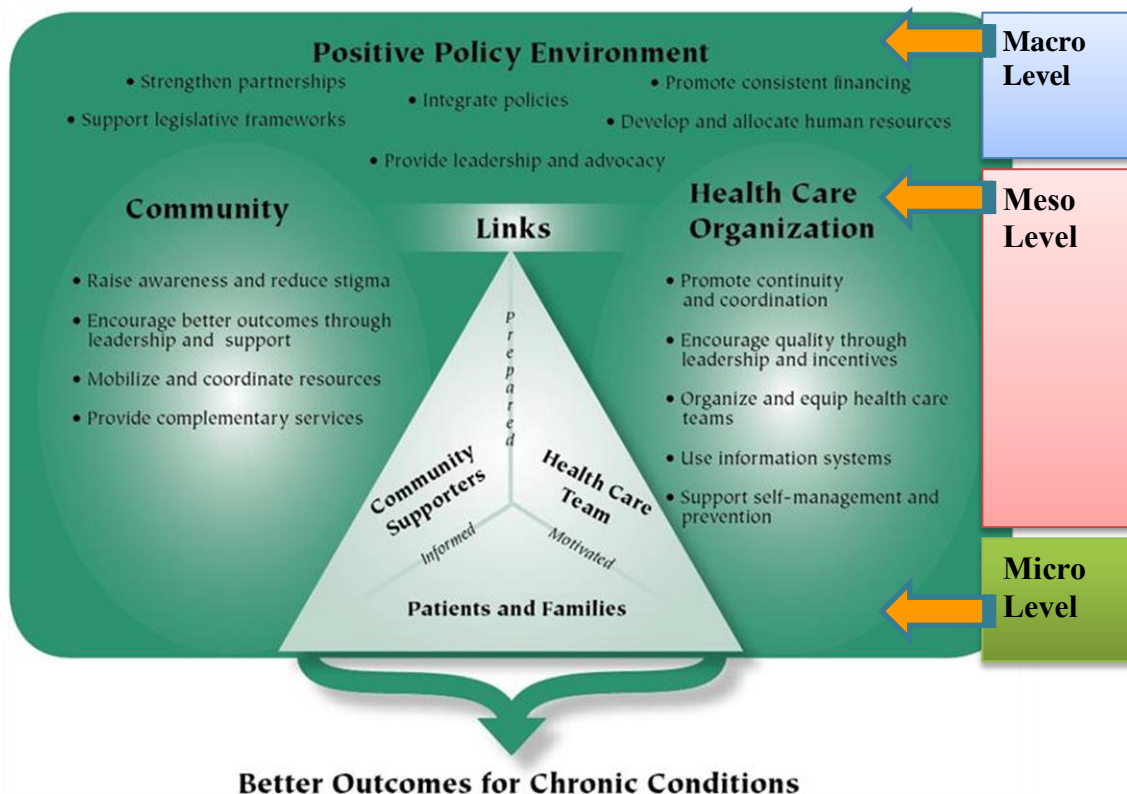


Figure 1. Innovative Care for Chronic Conditions Framework (ICCC)

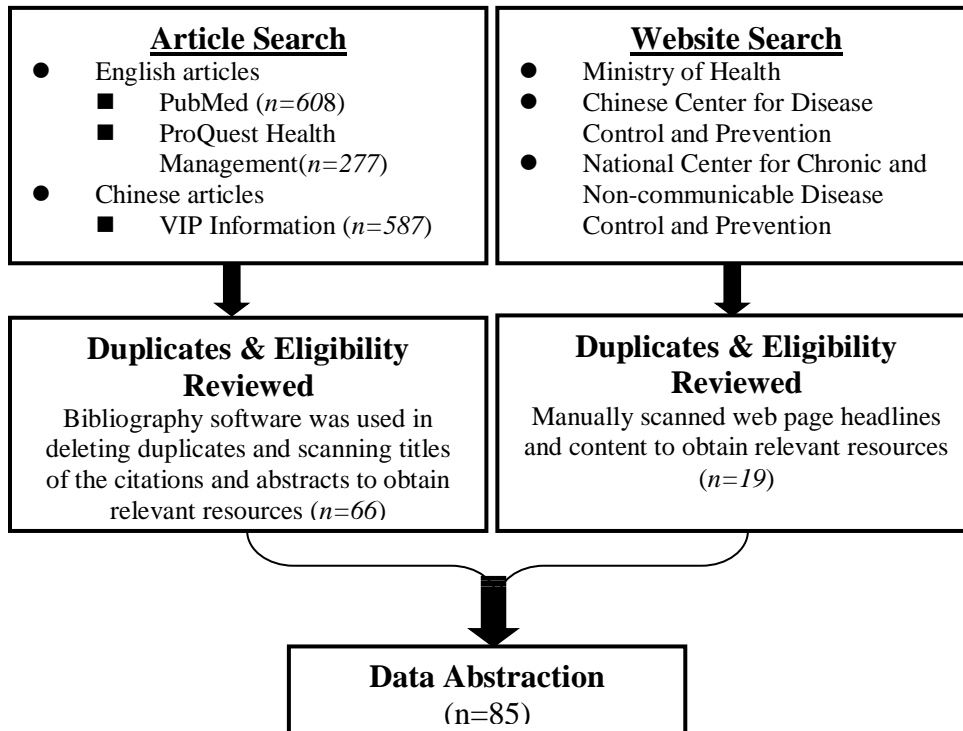


Figure 2. Resources Search and Selection Flow Chart

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## RESEARCH TWITTER

Yikyung Park, Sophia Wang, Cari M. Kitahara, Steven C. Moore, Amy Berrington de Gonzalez, Leslie Bernstein, Ellen T. Chang, Alan J. Flint, D. Michal Freedman, J. Michael Gaziano, Robert N. Hoover, Martha S. Linet, Mark Purdue, Kim Robien, Catherine Schairer, Howard D. Sesso, Emily White, Bradley J. Willcox, Michael J. Thun, Patricia Hartge, and Walter C. Willett. **"Body Mass Index and Risk of Death in Asian Americans."** *American Journal of Public Health*, 2014, 104: 520-25.

The authors investigated the association between body mass index (BMI) and mortality among Asian Americans. They pooled data from prospective cohort studies with 20,672 Asian American adults with no baseline cancer or heart disease history. They found that a high, but not low, BMI was associated with increased risk of total mortality among individuals aged 35 to 69 years. The BMI was not related to total mortality among individuals aged 70 years and older. With a BMI 22.5 to <25 as the reference category among never-smokers aged 35 to 69 years, the hazard ratios for total mortality were 0.83 (95% CI=0.47, 1.47) for BMI 15 to <18.5; 0.91 (95% CI=0.62, 1.32) for BMI 18.5 to <20; 1.08 (95% CI=0.86, 1.36) for BMI 20 to <22.5; 1.14 (95% CI=0.90, 1.44) for BMI 25 to <27.5; 1.13 (95% CI=0.79, 1.62) for BMI 27.5 to <30; 1.82 (95% CI=1.25, 2.64) for BMI 30 to <35; and 2.09 (95% CI=1.06, 4.11) for BMI 35 to 50. Higher BMI was also related to increased cardiovascular disease and cancer mortality. The authors concluded that high BMI is associated with increased mortality risk among Asian Americans.

David Levy, Ricardo L Rodríguez-Buño, Teh-Wei Hu, Andrew E Moran. **"The potential effects of tobacco control in China: projections from the China SimSmoke simulation model."** *BMJ*, 2014, 348:g1134.

The authors used a computer simulation model to project the potential impact in China of tobacco control measures on smoking, as recommended by the World Health Organization Framework Convention on Tobacco Control (FCTC). Status quo tobacco policy simulations projected a decline in smoking prevalence from 51.3% in 2015 to 46.5% by 2050 in males and from 2.1% to 1.3% in females. Of the individual FCTC recommended tobacco control policies, increasing the tobacco excise tax to 75% of the retail price was projected to be the most effective, incrementally reducing current smoking compared with the status quo by 12.9% by 2050. Complete and simultaneous implementation of all FCTC policies was projected to incrementally reduce smoking by about 40% relative to the 2050 status quo levels and to prevent approximately 12.8 million smoking attributable deaths and 154 million life years lost by 2050. The authors concluded that complete implementation of WHO FCTC recommended policies would prevent more than 12.8 million smoking attributable deaths in China by 2050. Implementation of FCTC policies would alleviate a substantial portion of the tobacco related health burden that threatens to slow China's extraordinary gains in life expectancy and prosperity.

Xing Lin Feng, Mingfan Pang & John Beard. **"Health system strengthening and hypertension awareness, treatment and control: data from the China Health and Retirement Longitudinal Study."** *Bulletin of the World Health Organization*, 2014, 92: 29-41.

This paper used a national survey conducted in 2011–2012 among Chinese people aged 45 years or older to estimate the prevalence of hypertension and the percentages of hypertensive individuals who were unaware of, receiving no treatment for, and/or not controlling their hypertension well. It found that nearly 40% of Chinese people aged 45 years or older had a hypertensive disorder. Of the individuals with hypertension, more than 40% were unaware of their condition, about 50% were receiving no medication for it and about 80% were not controlling it well. Compared with the other hypertensive individuals, those who were members of insurance schemes

that covered the costs of outpatient care were more likely to be aware of their hypertension (adjusted RR, aRR: 0.737; 95% CI: 0.619–0.878), to be receiving treatment for it (aRR: 0.795; 95% CI: 0.680–0.929), and to be controlling it effectively (aRR: 0.903; 95% CI: 0.817–0.996). This paper concluded that many cases of hypertension in China were undetected and untreated. A reduction in the costs of outpatient care to patients would probably improve the management of hypertension in China.

Winnie Yip, Timothy Powell-Jackson, Wen Chen, Min Hu, Eduardo Fe, Mu Hu, Weiyan Jian, Ming Lu, Wei Han, and William C. Hsiao. **“Capitation Combined With Pay-For-Performance Improves Antibiotic Prescribing Practices In Rural China.”** *Health Affairs*, 2014, 33: 502-10.

In collaboration with the government of Ningxia Province, a predominantly rural area in northwest China, the authors conducted a matched-pair cluster-randomized experiment between 2009 and 2012 to evaluate the effects of capitation with pay-for-performance on primary care providers' antibiotic prescribing practices, health spending, outpatient visit volume, and patient satisfaction. They found that the intervention led to a reduction of approximately 15 percent in antibiotic prescriptions and a small reduction in total spending per visit to village posts. They found no effect on other outcomes. The results suggest that capitation with pay-for-performance can improve drug prescribing practices by reducing overprescribing and inappropriate prescribing.

Maigeng Zhou, Guoqing Hu, Lijun Wang, Sai Ma, Lin Wang, Qingfeng Li, Adnan A Hyder. **“Bicyclist mortality between 2006 and 2010 in China: findings from national Disease Surveillance Points (DSP) data.”** *Injury Prevention*, 2014, 20: 7-10.

This paper examined changes in bicyclist mortality between 2006 and 2010 in China using the Disease Surveillance Points (DSP) data of China. It analyzed mortality data of 2006–2010 from DSP data that covered 73 million population, using Poisson regression to examine the significance of year after controlling for sex, age and urban/rural location. It found that between 2006 and 2010, the mortality rate for bicyclists increased from 1.1 to 1.6 per 100,000 population. Between 2006 and 2010, more than 90% of bicyclist deaths were undercounted by the police compared to the findings from DSP data. Contrary to the 34% increase between 2006 and 2010 reflected by DSP data (adjusted mortality rate ratio (MRR): 1.34, 95% CI 1.23 to 1.46), police data revealed a 64% decrease in bicyclist mortality (unadjusted MRR: 0.36, 95% CI 0.32 to 0.40) in the study time period. This paper concluded that health data should be used to assess the road traffic injuries in China. The recent increase in bicyclist mortality merits attention from policy makers and researchers.

Hong Jiang, Mu Li, Li Ming Wen, Qiaozhen Hu, Dongling Yang, Gengsheng He, Louise A. Baur, Michael J. Dibley, Xu Qian. **“Effect of Short Message Service on Infant Feeding Practice: Findings From a Community-Based Study in Shanghai, China.”** *JAMA Pediatrics*, published online March 17, 2014. doi:10.1001/jamapediatrics.2014.58.

This paper assessed the effect of a short message service (SMS) intervention on infant feeding practices. Quasiexperimental design with follow-up measures scheduled at 4, 6, and 12 months at 4 community health centers in Shanghai, China. Two community health centers represented the intervention group, and 2 other community health centers represented the control group. In total, 582 expectant mothers were recruited during the first trimester. Mothers in the intervention group received weekly SMS messages about infant feeding from the third trimester to 12 months' post partum. The primary outcome was the duration of exclusive breastfeeding (EBF). Compared with the control group, the intervention group had a significantly longer median duration of EBF at 6 months (11.41 [95% CI, 10.25-12.57] vs 8.87 [95% CI, 7.84-9.89] weeks). The hazard ratio for stopping EBF in the intervention group was 0.80 (95% CI, 0.66-0.97). The intervention resulted in a significantly

higher rate of EBF at 6 months (adjusted OR, 2.67 [95% CI, 1.45-4.91]) and a significantly lower rate of the introduction of solid foods before 4 months (adjusted OR, 0.27 [95% CI, 0.08-0.94]). This paper concluded that an SMS intervention may be effective in promoting EBF, delaying the introduction of solid foods, increasing awareness of the World Health Organization breastfeeding guidelines, and improving knowledge of appropriate infant feeding practices for new mothers.

Qun Li, Lei Zhou, Minghao Zhou, Zhiping Chen, Furong Li, Huanyu Wu, Nijuan Xiang, Enfu Chen, Fenyang Tang, Dayan Wang, Ling Meng, Zhiheng Hong, Wenxiao Tu, Yang Cao, Leilei Li, Fan Ding, Bo Liu, Mei Wang, Rongheng Xie, Rongbao Gao, Xiaodan Li, Tian Bai, Shumei Zou, Jun He, Jiayu Hu, Yangting Xu, Chengliang Chai, Shiwen Wang, Yongjun Gao, Lianmei Jin, Yanping Zhang, Huiming Luo, Hongjie Yu, Jianfeng He, Qi Li, Xianjun Wang, Lidong Gao, Xinghuo Pang, Guohua Liu, Yansheng Yan, Hui Yuan, Yuelong Shu, Weizhong Yang, Yu Wang, Fan Wu, Timothy M. Uyeki, and Zijian Feng. **“Epidemiology of Human Infections with Avian Influenza A(H7N9) Virus in China.”** *New England Journal of Medicine*, 2014, 370: 520-32.

The authors analyzed data obtained from field investigations to describe the epidemiologic characteristics of avian influenza A (H7N9) cases in China identified as of December 1, 2013. Among 139 persons with confirmed H7N9 virus infection, the median age was 61 years (range, 2 to 91), 71% were male, and 73% were urban residents. Confirmed cases occurred in 12 areas of China. Nine persons were poultry workers, and of 131 persons with available data, 82% had a history of exposure to live animals, including chickens (82%). A total of 137 persons (99%) were hospitalized, 125 (90%) had pneumonia or respiratory failure, and 65 of 103 with available data (63%) were admitted to an intensive care unit. A total of 47 persons (34%) died in the hospital after a median duration of illness of 21 days, 88 were discharged from the hospital, and 2 remain hospitalized in critical condition; 2 patients were not admitted to a hospital. In four family clusters, human-to-human transmission of H7N9 virus could not be ruled out. Excluding secondary cases in clusters, 2675 close contacts of case patients completed the monitoring period; respiratory symptoms developed in 28 of them (1%); all tested negative for H7N9 virus. The authors concluded that most persons with confirmed H7N9 virus infection had severe lower respiratory tract illness, were epidemiologically unrelated, and had a history of recent exposure to poultry. However, limited, nonsustained human-to-human H7N9 virus transmission could not be ruled out in four families.

Fengcai Zhu, Wenbo Xu, Jielai Xia, Zhenglun Liang, Yan Liu, Xuefeng Zhang, Xiaojuan Tan, Ling Wang, Qunying Mao, Junyu Wu, Yuemei Hu, Tianjiao Ji, Lifei Song, Qi Liang, Baomin Zhang, Qiang Gao, Jingxin Li, Shenyu Wang, Yuansheng Hu, Shanru Gu, Jianhua Zhang, Genhong Yao, Jianxiang Gu, Xushan Wang, Yuchun Zhou, Changbiao Chen, Minglei Zhang, Minquan Cao, Junzhi Wang, Hua Wang, and Nan Wang. **“Efficacy, Safety, and Immunogenicity of an Enterovirus 71 Vaccine in China.”** *New England Journal of Medicine*, 2014, 370: 818-28.

The authors conducted a randomized, double-blind, placebo-controlled, multicenter trial to evaluate the efficacy, safety, and immunogenicity of an Enterovirus 71 (EV71) vaccine. In the trial 10,007 healthy infants and young children (6 to 35 months of age) were randomly assigned in a 1:1 ratio to receive two intramuscular doses of either EV71 vaccine or placebo, 28 days apart. During the 12-month surveillance period, EV71-associated disease was identified in 0.3% of vaccine recipients (13 of 5041 children) and 2.1% of placebo recipients (106 of 5028 children) in the intention-to-treat cohort. The vaccine efficacy against EV71-associated hand, foot, and mouth disease or herpangina was 94.8% (95% CI, 87.2 to 97.9) in this cohort. Vaccine efficacies against EV71-associated hospitalization (0 cases vs. 24 cases) and hand, foot, and mouth disease with neurologic complications (0 cases vs. 8 cases) were both 100% (95% CI, 83.7 to 100 and 42.6 to 100, respectively). Serious adverse events occurred in 111 of 5044 children in the vaccine group (2.2%) and 131 of 5033 children in the placebo group (2.6%). In the immunogenicity subgroup (1291 children), an anti-EV71 immune response was elicited by the two-dose vaccine series in 98.8% of

participants at day 56. An anti-EV71 neutralizing antibody titer of 1:16 was associated with protection against EV71-associated hand, foot, and mouth disease or herpangina. The authors concluded that the EV71 vaccine provided protection against EV71-associated hand, foot, and mouth disease or herpangina in infants and young children.

Hongjie Yu, Joseph T Wu, Benjamin J Cowling, Qiaohong Liao, Vicky J Fang, Sheng Zhou, Peng Wu, Hang Zhou, Eric H Y Lau, Danhuai Guo, Michael Y Ni, Zhibin Peng, Luzhao Feng, Hui Jiang, Huiming Luo, Qun Li, Zijian Feng, Yu Wang, Weizhong Yang, Gabriel M Leung. **“Effect of closure of live poultry markets on poultry-to-person transmission of avian influenza A H7N9 virus: an ecological study.”** *The Lancet*, 2014, 383: 541-48.

The authors aimed to quantify the effect of live poultry markets (LPMs) closure on poultry-to-person transmission of avian influenza A H7N9 virus in the major Chinese cities of Shanghai, Hangzhou, Huzhou, and Nanjing where most human cases of infection had occurred. They obtained information about every laboratory-confirmed human case of avian influenza A H7N9 virus infection reported in the four cities by June 7, 2013, from a database built by the Chinese Center for Disease Control and Prevention. They found that 85 human cases of avian influenza A H7N9 virus infection were reported in Shanghai, Hangzhou, Huzhou, and Nanjing by June 7, 2013, of which 60 were included in the main analysis. Closure of LPMs reduced the mean daily number of infections by 99% (95% credibility interval 93—100%) in Shanghai, by 99% (92—100%) in Hangzhou, by 97% (68—100%) in Huzhou, and by 97% (81—100%) in Nanjing. Because LPMs were the predominant source of exposure to avian influenza A H7N9 virus for confirmed cases in these cities, they estimated that the mean incubation period was 3.3 days (1.4—5.7). The authors concluded that LPM closures were effective in the control of human risk of avian influenza A H7N9 virus infection in the spring of 2013. In the short term, LPM closure should be rapidly implemented in areas where the virus is identified in live poultry or people. In the long term, evidence-based discussions and deliberations about the role of market rest days and central slaughtering of all live poultry should be renewed.

Lixia Wang, Hui Zhang, Yunzhou Ruan, Daniel P Chin, Yinyin Xia, Shiming Cheng, Mingting Chen, Yanlin Zhao, Shiwen Jiang, Xin Du, Guangxue He, Jun Li, Shengfen Wang, Wei Chen, Caihong Xu, Fei Huang, Xiaoqiu Liu, Yu Wang. **“Tuberculosis prevalence in China, 1990—2010; a longitudinal analysis of national survey data.”** *The Lancet*, Early Online Publication, 18 March 2014, doi:10.1016/S0140-6736(13)62639-2.

China scaled up a tuberculosis control programme (based on the directly observed treatment, short-course [DOTS] strategy) to cover half the population during the 1990s and to the entire population after 2000. The authors assessed the effect of the programme. In the longitudinal analysis, they compared data from three national tuberculosis prevalence surveys done in 1990, 2000, and 2010. The 2010 survey screened 252,940 eligible individuals aged 15 years and older at 176 investigation points, chosen by stratified random sampling from all 31 mainland provinces. The 1990 and 2000 surveys were reanalysed and compared with the 2010 survey. From 1990 to 2010, the prevalence of smear-positive tuberculosis decreased from 170 cases (95% CI 166—174) to 59 cases (49—72) per 100 000 population. During the 1990s, smear-positive prevalence fell only in the provinces with the DOTS programme; after 2000, prevalence decreased in all provinces. The percentage reduction in smear-positive prevalence was greater for the decade after 2000 than the decade before (57% vs 19%;  $p < 0.0001$ ). 70% of the total reduction in smear-positive prevalence (78 of 111 cases per 100,000 population) occurred after 2000. Of these cases, 68 (87%) were in known cases—ie, cases diagnosed with tuberculosis before the survey. Of the known cases, the proportion treated by the public health system (using the DOTS strategy) increased from 59 (15%) of 370 cases in 2000 to 79 (66%) of 123 cases in 2010, contributing to reduced proportions of treatment default (from 163 [43%] of 370 cases to 35 [22%] of 123 cases) and retreatment cases (from 312 [84%] of 374 cases to 48 [31%] of 137 cases; both  $p < 0.0001$ ). The authors concluded that in 20 years China

more than halved its tuberculosis prevalence and marked improvement in tuberculosis treatment, driven by a major shift in treatment from hospitals to the public health centres, was largely responsible for this epidemiological effect.



## **POLICY AND PRACTICE UPDATES**

### **2013 Analysis of Local Health Institution Reform Released**

The recently released report showed that local health institutions still need to strengthen their management of healthcare-associated infections, establish rational use of medicines, and increase the number of qualified medical professionals; there is still a long way to go before a functional monitoring and management system can be put in place.

According to the report, there were 858,440 local level medical institutions audited from January to September 2013. Among these, 805,209 met the standard (91.4%) while 17,218 institutions had their licenses revoked. The audit also identified medical malpractice cases, with 304 cases transferred to criminal investigation, 5,825 cases transferred for further supervision, and 4,996 people were investigated for administrative responsibilities.

The report also pointed out that local health institutions need to build a standardized physical environment and be furnished with necessary equipment such as emergency care equipment.

### **2013 年基层医疗机构清理整顿分析报告出炉**

《中国医疗保险》2014-02-12

[http://www.zgylbx.com/wmswwlnjnew60428\\_1/](http://www.zgylbx.com/wmswwlnjnew60428_1/)

报告显示，基层医疗机构准入及动态管理、院感管理等均有待加强，基层合理用药、医疗专业队伍总量不足问题突出，完善对基层医疗机构的监督管理任重道远。

报告显示，2013年1月—9月，基层医疗机构数量共计880786家，通过整顿，现有机构858440个；其中合格805209家，占91.42%；注销执业许可证机构17218家，占1.95%。在所有检查的医疗机构中，共吊销医师执业证书258人，吊销医疗机构执业许可证2387家，移送公安案件304件，移送监察案件5825件，追究行政责任4996人。

报告还显示，在标准化建设达标方面，基层医疗机构最为突出的问题是急救设备不全，占总检查机构的7.36%。其他问题依次为医疗用房布局不合理，医疗用房面积不足，未建立健全技术操作规范，基本设备不全等。

### **Beijing Releases Urban and Rural Residents Catastrophic Insurance Pilot Model**

On February 8, National Health and Family Planning Commission released "State Council Medical Reform Office Notice about Accelerating Urban and Rural Residents Catastrophic Insurance Plan". The city of Beijing started the work in the early part of 2014, allowing urban and rural residents to make claims for unpaid, qualifying medical expenses from 2013.

The city of Beijing also released its own pilot model, announcing that all Beijing residents can put in claims for medical expenses not covered in the previous year, and certain percentages will be paid, with no cap on the total amount.

### **北京发布城乡居民大病医保试行办法**

《新华网》2014-02-13

[http://news.xinhuanet.com/yzyd/tech/20140213/c\\_119308641](http://news.xinhuanet.com/yzyd/tech/20140213/c_119308641)

2月8日，国家卫生和计划生育委员会发布了《国务院医改办关于加快推进城乡居民大病保险工作的通知》。北京市大病保险政策已于2014年初开始实施，城乡居民去年由基本医保报销后符合规定的高额费用，2014年可领到大病保险的二次报销。

随后，《北京市城乡居民大病医疗保险试行办法》对外发布，凡北京市城镇居民基本医保和新农合参保人，年度医疗费用超过指定额度，超出支出可按比例报销，且报销不设封顶线。2013年的大病今年即可报销，一年

一结算。其中城镇居民大病险资金实行全市统筹，由城镇居民基本医疗保险基金按照当年筹资标准 5%的额度划拨，农村的大病险资金则由新农合基金按照 5%划拨。

### **Proposal for Grading Health Insurance Designated Medical Institutes**

The city of Guangzhou's Human Resources and Social Security Bureau opened for public comments on the document "City of Guangzhou Plan for Grading Medical Institutions That Are Designated by Social Health Insurance". Grades of these institutions will be an important factor in determining their budgets and auditing process. The grades will be determined on multiple factors, including medicine prices and quality of services provided for in- and outpatient care.

The initial plan is to grade the medial institutions as AAA, AA, A, or no grade, and these institutions will be graded independently of their scale and attributes. Institutions that receive AAA grade could also be designated to receive patients from out of the local jurisdiction.

#### **医保定点机构拟分级**

《广州日报》2014-02-13

<http://www.people.com.cn/24hour/n/2014/0213/c25408-24343037.html>

广州市人社局公开征求《广州市社会医疗保险定点医疗机构分级管理办法》意见，提出对定点医疗机构实行分级管理，等级评定结果将作为预拨周转金和医疗费用年终清算的重要参考指标，药价收费、门诊住院等医疗服务情况占考核分数最高。

意见稿拟规定，定点医疗机构按 AAA 级、AA 级、A 级、无级别四个等级实施管理。定点医疗机构分级的等级评定与医疗机构等级和属性均不相关，即能否评上 AAA 级与是否三甲医院无关。

等级评定结果将作为对定点医疗机构预拨周转金和医疗费用年终清算的重要参考指标。AAA 级、AA 级定点医疗机构可优先开展医疗费结算新项目试点，优先将其作为异地就医合作的定点医疗机构。

### **Government and Market Need to Work Hand in Hand for Medical Reform**

Vice Premier Yandong Liu, member of the Politburo, while visiting the Province of Fujian, emphasized the importance of top-level design and system innovation as part of the medical reform, enabling both the government and the market to play their role in the reform.

As the reform continues, medicine distribution needs to be standardized and barriers removed, reducing the inflated prices of medicine. Multiple channels need to be pursued to allow quality health care to reach residents of remote and poor areas. Public hospitals need to adopt modern management systems to provide better care to local populations.

At the same time, privately or societally funded hospitals should be strongly encouraged. Private and public hospitals should be competing on a level playing field.

#### **医改要发挥好政府和市场作用**

《中国医疗保险》2014-02-24

[http://www.zgylbx.com/vfyxoggnew60704\\_1/](http://www.zgylbx.com/vfyxoggnew60704_1/)

中共中央政治局委员、国务院副总理刘延东 2 月 18 日至 20 日在福建省考察时强调，加强医药卫生体制改革的顶层设计和制度创新，发挥好政府和市场在医改中的作用。

对此，要进一步规范药品流通秩序，减少流通环节，切实降低虚高的药价。要统筹推进公立医院各项改革，完善基层首诊、分级诊疗、双向转诊的医疗模式，采取多种措施使优质医疗资源能够服务农村、社区和边远贫困地区。建立现代医院管理制度，使公立医院更有效地保好基本、造福群众。

同时，要积极鼓励社会力量举办医疗事业，扶持民营医疗机构发展。要优先发展非营利性医疗机构，引导民营医疗机构与公立医院公平发展、互利共赢。

### **Urban and Rural Residents and Retirees Enabled Portability of Their Pension Insurance Plans**

Ministry of Human Resources and Social Security and Ministry of Finance, with approval from the State Council, jointly released "Interim Measures for Linking Urban and Rural Pension Insurance System". The Interim Measures clearly stated that pension insurance plans for urban residents and retirees and rural residents can be freely interchanged once certain criteria have been met. All interchanges will be carried out with full transfer of pension savings accounts, complete with the compound interests.

The Interim Measures states that all pensioners can apply for the pension interchanging process once they reach the legal retirement age. Pensioners who have paid insurance premiums for more than 15 years can change their pension insurance plan from the one for urban and rural residents to the one for urban retirees, and enjoy the corresponding benefits. For pensioners who have paid insurance premiums for less than 15 years, they can transfer from urban retiree plan to urban and rural resident plan.

#### **职工城乡养老保险将可相互转换个人账户随同转移**

《环球网》 2014-02-27

<http://china.huanqiu.com/hot/2014-02/4863065.html>

经国务院同意，人社部、财政部联合印发了《城乡养老保险制度衔接暂行办法》（以下简称《暂行办法》）。

《暂行办法》明确规定，城镇职工养老保险与城乡居民养老保险，只要满足一定条件即可自由衔接转换，且无论如何转变，都将个人账户全部储存额随同转移，累计计算权益。

据《暂行办法》规定，参保人员达到城镇职工养老保险规定的法定退休年龄后，可申请办理城乡养老保险制度衔接手续，只要城镇职工养老保险缴费年限满 15 年，就可从城乡居民养老保险转入城镇职工养老保险并享受相应的待遇，如不满 15 年，可从城镇职工养老保险转入城乡居民养老保险。

### **State Council Executive Committee: 5 Key Points for Deepening the Medical Reform in 2014**

Premier Keqiang Li presided over the State Council Executive Meeting on March 25 and announced the focus areas for deepening the medical reform for the year of 2014. The following are the five main areas of interest:

1. Promote building the infrastructure of universal health care system, with components such as smoothly linking the basic insurance and social protection, building the critical illness insurance system, augmenting the emergency care system, establishing the medical information system, and pushing for real-time insurance payment for medical treatments received outside the insured catchment area.
2. Speed up the reform for public hospitals.
3. Relax the requirements for establishing privately funded hospitals in a slow and orderly fashion; provide the same treatments to public and private hospitals with regard to becoming health insurance designated hospitals, career advancement for medical professionals, and grading for the medical institutions.
4. Perfect the basic drug system, stabilize and improve rural medical teams, and increase the compensation for medical professionals working in remote, poor, or minority areas.
5. Standardize medicine circulation system, crack down on illegal activities related to medicine circulation, and prevent inflated medicine prices.

## 国务院常务会：今年深化医改 5 重点

《中国政府网》 2014-03-26

[http://www.ch.xinhuanet.com/2014-03/26/c\\_119944272.htm](http://www.ch.xinhuanet.com/2014-03/26/c_119944272.htm)

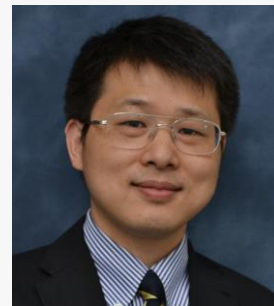
国务院总理李克强 3 月 25 日主持召开国务院常务会议，确定今年深化医药卫生体制改革重点工作。会议指出，医改是全面深化改革的重要内容：

- 一、推进全民医保体系建设。做好基本保障和社会保险的衔接，健全重特大疾病保障机制，建立疾病应急救助制度。建立医疗信息化系统，推动异地就医即时结算。
- 二、加快公立医院改革。
- 三、有序放宽社会力量办医准入，在医保定点、职称评定、等级评审等方面给予同等待遇。
- 四、完善基本药物制度，稳定和优化乡村医生队伍，提高偏远、艰苦及少数民族等地区乡村医生待遇。
- 五、规范药品流通秩序，严厉打击违法违规行为，防止药价虚高。

## ABOUT CHPAMS: FROM THE CHPAMS PLANNING COMMITTEE CHPAMS Leadership Transition

The CHPAMS Planning Committee held a conference call on April 17<sup>th</sup>, 2014, 9:30-11PM.

Dr. Zhuo (Adam) Chen, a senior health economist with the U.S. Centers for Disease Control and Prevention, announced his decision to leave the Chair position of the CHPAMS Planning Committee. [Professor Qi \(Harry\) Zhang](#) was nominated and confirmed to serve as the Chair of CHPAMS Planning Committee. Dr. Chen briefly reviewed the success of CHPAMS in the past five years, including the Westlake Forums CHPAMS assisted, the founding and publication of the China Health Review (CHR), the establishment of the CHPAMS Best Papers Award, and the CHPAMS Monthly newsletter. Dr. Chen expressed his gratitude to everyone who have helped CHPAMS and volunteered his/her service to CHPAMS.



**Zhuo (Adam) Chen, Ph.D.**

Dr. Chen updated the group on the current financial status of CHPAMS and the next round of CMB funding application, as well as CHPAMS projects that will be continued under the new leadership. He introduced Dr. Qi (Harry) Zhang to the meeting participants.



**Qi (Harry) Zhang, BA, PhD**

Dr. Qi Zhang received his Ph.D. in economics from University of Alabama at Tuscaloosa. He is an Associate Professor with the School of Community and Environmental Health at Old Dominion University (ODU) in Virginia. Before joining ODU, he worked at the University of Chicago as a Senior Health Outcome Researcher. His research focuses on socioeconomic determinants of health.

Dr. Zhang praised the accomplishments of CHPAMS under Adam's efforts and leadership. He looked forward to working with the CHPAMS colleagues in the next two years. Mr. Dong (Roman) Xu, former Director of the China Medical Board Beijing Office, expressed his appreciation of Adam's leadership and efforts for CHPAMS in the past five years and welcomed Dr. Zhang as the new leader of CHPAMS. Dr. Youfa Wang, Professor and Chair of the Department of Epidemiology and Environmental Health at SUNY Buffalo, supported the transition of the leadership and would like to contribute more to CHPAMS.

Dr. Qi (Harry) Zhang summarized topics that had been discussed by the meeting participants.

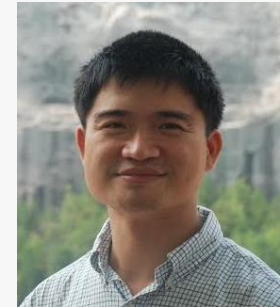
(1) Organization (registration and applying for 501c3 status); (2) Fund raising (exploring different ways to raise funds for CHPAMS, including possible surveys among members and contacting potential donors); (3) Website (4) CHR (maintaining the regular publications, exploring the PubMed or SCI indexing); (5) Membership drive (recruiting new members or developing a membership database); and (6) Newsletter (maintaining the regular publications and experimenting new ways to attract readers).

Conference call participants include Dr. Zhuo Chen (Senior Health Economist, CDC), Zongshan Duan (Emory University), Yunwei Gai (Associate Professor, Babson College), Dr. Xuesong Han (American Cancer Society), Jing Hao (University of Massachusetts, Amherst), Dr. Zheng Li (Research Chemist, CDC), Lu Shi (Assistant Professor, Clemson University), Yanfang Su (Harvard University), Roman Xu (UW, Seattle), Youfa Wang (Professor, State University of New York at Buffalo), Donglan Zhang (UCLA), Dr. Kun Zhang (CDC), and Qi Zhang (Associate Professor, Old Dominion University).

## ABOUT CHPAMS: FEATURE MEMBER

### Feijun (Frank) Luo, Ph.D.

Feijun (Frank) Luo is a health economist in National Center for Injury Prevention and Control at The Centers for Disease Control and Prevention. He received his Ph.D. in Economics from the University of Alabama in 2001, and B.A. in International Economics from Wuhan University in 1997. Prior to joining CDC, he had worked at East Carolina University, Duke University, and Mid-Continent University where he taught courses in economics and finance and conducted his research. His research interests include socioeconomic determinants and economic consequences of injury and violence, evaluations of injury and violence prevention programs and policies, and associations of injury and violence with other health outcomes. He has published many peer-reviewed articles on journals such as *American Journal of Public Health*, *Pediatrics*, *Journal of Women's Health*, *Morbidity and Mortality Weekly Report*, *Review of Income and Wealth*, etc. His research was frequently reported on mainstream media including USA Today, New York Times, Wall Street Journal, Los Angeles Times, Bloomberg, etc.



Feijun (Frank) Luo, Ph.D.

Frank is also active in community services and enjoys doing voluntary works. He is President of the Wuhan University Alumni Association of Georgia, a Steering Committee member of the CDC Health Economics Research Group, and a Board member of China Health Policy and Management Society. Previously, he was the President of the CDC Chinese Scholars Association, Vice President of the Atlanta Chinese Go (Weiqi) Association, Chair of the CDC Self-Directed Violence Prevention Workgroup, and President of the Western Kentucky Chinese Advancement Association. Frank has a broad range of hobbies, including playing board games (Weiqi, Chess, etc.), investing, reading, traveling, hiking, and most important, making friends.

1. *Who is your favorite politician and why?*

胡耀邦(Yaobang Hu) is my favorite politician because he was a statesman having conscience, integrity, and a loving heart.

2. *What would be your advice to a newly qualified doctor?*

Put patients' interests above yours.

3. *How do you relax?*

Play weiqi (围棋) is one of my favorite ways to relax.

4. *What one discovery or invention would most improve your life?*

A robot that can do all household chores.

5. *If you knew you had a week to live, how would you live those days?*

If I could still stay at home, I would do things as usual to my kids ---- read books, play games, cook meals, etc. Before I had my last breath, I would simply tell them that I am ready to leave for the most wonderful place and we will be reunited there later.

# ABOUT CHPAMS: MEMBERS' UPDATE

## CAREER AND PROFESSIONAL APPOINTMENT

Dr. Donglan Zhang, the Fielding School of Public Health, University of California, Los Angeles, will join the U.S. Centers for Disease Control and Prevention in August 2014 as a Prevention Effectiveness Fellow.

## MEDIA REPORTS

Dr. Qi (Harry) Zhang' study titled "Associations between U.S. Adult Obesity and State and County Economic Conditions in the Recession" was published in the *Journal of Clinical Medicine* in January 2014. Dr. Zhang's findings was recently referenced in a *Washington Post* story examining how the jobless deal with weight gain as they search for work. Dr. Zhang also was interviewed by the *National Public Radio (NPR)*.

## NEW PUBLICATIONS

**Zhang Q**, Lamichhane R, **Wang YF**. Associations between U.S. adult obesity and state and county economic conditions in the recession. *Journal of Clinical Medicine*. 2014;3(1): 153-166.

**Feng XL**, Pang M, Beard J. Health system strengthening and hypertension awareness, treatment and control: data from the China Health and Retirement Longitudinal Study. *Bull World Health Organ*. 2014;92(1):29-41.

Bergen G, Pitan A, **Qu S**, Shults RA, Chattopadhyay SK, Elder RW, et al. (2014). Publicized sobriety checkpoint programs: a Community Guide systematic review. *American Journal of Preventive Medicine*, 46(5):529-539

### Author affiliation:

Qi Zhang: School of Community and Environmental Health, Old Dominion University;

Youfa Wang: School of Public Health, State University of New York at Buffalo;

Xinglin Feng: School of Public Health, Peking University Health & Science Center;

Shuli Qu: The Community Guide Branch, The Centers for Disease Control and Prevention.