



中南财经政法大学  
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# 城镇居民医疗服务需求研究

## ——基于全国9个城市的实证分析

薛新东 著

中国社会科学出版社



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## 总 序

一个没有思想活动和缺乏学术氛围的大学校园，哪怕它在物质上再美丽、再现代，在精神上也是荒凉和贫瘠的。欧洲历史上最早的大学就是源于学术。大学与学术的关联不仅体现在字面上，更重要的是，思想与学术，可谓大学的生命力与活力之源。

中南财经政法大学是一所学术气氛浓郁的财经政法高等学府。范文澜、嵇文甫、潘梓年、马哲民等一代学术宗师播撒的学术火种，五十多年来一代代薪火相传。世纪之交，在合并组建新校而揭开学校发展新的历史篇章的时候，学校确立了“学术兴校，科研强校”的发展战略。这不仅是对学校五十多年学术文化与学术传统的历史性传承，而且是谱写 21 世纪学校发展新篇章的战略性手笔。

“学术兴校，科研强校”的“兴”与“强”，是奋斗目标，更是奋斗过程。我们是目的论与过程论的统一论者。我们将对宏伟目标的追求过程寓于脚踏实地的奋斗过程之中。由学校斥资资助出版《中南财经政法大学青年学术文库》，就是学校采取的具体举措之一。

本文库的指导思想或学术旨趣，首先，在于推出学术精品。通过资助出版学术精品，形成精品学术成果的园地，培育精品意识和精品氛围，提高学术成果的质量和水平，为繁荣国家财经、政法、管理以及人文科学研究，解决党和国家面临的重大经济、社会问题，作出我校应有的贡献。其次，培养学术队伍，特别是通过对一批处在“成长期”的中青年学术骨干的成果予以资助推出，促进学术梯队的建设，提高学术队伍的实力与水平。再次，培育学术特色。通过资助在学术思想、学术方法以及学术见解等方面有独到和创新之处的成果，培育科研特色，力争通过努力，形成有我校特色的学术流派与学术思想体系。因此，本文库重点面向中青年，重

点面向精品，重点面向原创性学术专著。

春华秋实。让我们共同来精心耕种文库这块学术园地，让学术果实挂满枝头，让思想之花满园飘香。



2009年10月



## Preface

A university campus, if it holds no intellectual activities or possesses no academic atmosphere, no matter how physically beautiful or modern it is, it would be spiritually desolate and barren. In fact, the earliest historical European universities started from academic learning. The relationship between a university and the academic learning cannot just be interpreted literally, but more importantly, it should be set on the ideas and academic learning which are the so-called sources of the energy and vitality of all universities.

Zhongnan University of Economics and Law is a high education institution which enjoys rich academic atmosphere. Having the academic germs seeded by such great masters as Fanwenlan, Jiwenfu, Panzinian and Mazhemmin, generations of scholars and students in this university have been sharing the favorable academic atmosphere and making their own contributions to it, especially during the past fifty-five years. As a result, at the beginning of the new century when a new historical new page is turned over with the combination of Zhongnan University of Finance and Economics and Zhongnan University of Politics and Law, the newly established university has set its developing strategy as "Making the University Prosperous with academic learning; Strengthening the University with scientific research", which is not only a historical inheritance of more than fifty years of academic culture and tradition, but also a strategic decision which is to lift our university onto a higher developing stage in the 21st century.

Our ultimate goal is to make the university prosperous and strong, even through our struggling process, in a greater sense. We tend to unify the destination and the process as to combine the pursuing process of our magnificent goal with the practical struggling process. The youth's Academic Library of Zhongnan University of Economics and Law, funded by the university, is one of our specific

measures.

The guideline or academic theme of this Library lies first at promoting the publishing of selected academic works. By funding them, an academic garden with high - quality fruits can come into being. We should also make great efforts to form the awareness and atmosphere of selected works and improve the quality and standard of our academic productions, so as to make our own contributions in developing such fields as finance, economics, politics, law and literate humanity, as well as in working out solutions for major economic and social problems facing our country and the Communist Party. Secondly, our aim is to form some academic teams, especially through funding the publishing of works of the middle - aged and young academic cadreman, to boost the construction of academic teams and enhance the strength and standard of our academic groups. Thirdly, we aim at making a specific academic field of our university. By funding those academic fruits which have some original or innovative points in their ideas, methods and views, we expect to engender our own characteristic in scientific research. Our final goal is to form an academic school and establish an academic idea system of our university through our efforts. Thus, this Library makes great emphases particularly on the middle - aged and young people, selected works, and original academic monographs.

Sowing seeds in the spring will lead to a prospective harvest in the autumn. Thus, Let us get together to cultivate this academic garden and make it be opulent with academic fruits and intellectual flowers.

Wu Handong



## 中文摘要

医疗服务是人类的一种基本需要，直接关系到国民的生命健康和生活质量，而国民健康水平的提高有助于减少贫穷、缩小社会不平等和促进经济增长。因此，确保所有人获得基本的医疗服务是一个国家和社会的重要政策目标。近年来，我国的卫生费用快速上涨，居民个人医疗负担不断加重，“看病难、看病贵”和“因病返贫、因病致贫”现象日益突出，已成为当前我国医疗卫生体制改革中亟须解决的重大问题。居民医疗保障问题的解决，要从需方的角度对居民的医疗服务需求状况及其影响因素进行深入分析，以科学配置卫生资源、保证各项改革政策的合理性和可行性。

本书利用 2007 年国务院城镇居民基本医疗保险入户调查数据，对城镇居民的医疗服务需求及其影响因素进行实证研究，以为政府制订和完善相关政策提供科学依据。结构安排如下：第一章是导论，介绍研究背景、目的、意义以及研究思路和内容安排。第二章回顾我国城市医疗体制的历史沿革，分析存在的问题，并介绍了城镇居民基本医疗保险的实施情况；第三章，是本书的理论基础和实证文献综述。在理论基础部分，在格罗斯曼（Grossman）健康和医疗服务需求理论的基础上进行扩展，把家庭看作健康的生产单位，分析家庭成员的健康生产过程。同时，在委托—代理框架下分析供方诱导需求理论，以为实证分析奠定理论基础。在文献综述部分，总结了国内外有关医疗服务需求的研究，并介绍了国外的最新研究趋势。第四章介绍了本研究的数据来源、变量选取以及样本居民的基本特征。在变量选取上，讨论了保险状况和自评健康状况等变量可能产生的内生性问题，并利用豪斯曼进行内生性检验。第五章是实证分析。从四个方面对居民的医疗服务需求进行实证分析。第一部分利用 Logit 模型分析居民的两周患病概率及其影响因素；第二部分利用多元 Logit 模型分析两周患病居民的就医行为；第三部分分析居民的住院服务利用情况，分别讨论了泊松模型、负二项模型、两部分模型和隐性群体模型在处理计数数据上

的优点和不足之处,并利用贝叶斯信息准则(Bayesian Information Criterion; BIC)和赤池信息准则(Akaike Information Criterion; AIC)对这些模型的估计效果进行比较;第四部分分析居民的医疗费用支出情况。讨论了处理医疗费用数据的常用模型:样本选择模型、两部分模型和广义线性模型。并结合数据分析进行模型选择;第六章全面总结了实证分析中得出的结论,并对目前我国医改中的相关问题进行讨论。

本书的实证分析结果稳健可靠,对于如何在宏观层面适当控制我国医疗费用和在微观层面更好地满足居民医疗需求具有直接的现实意义。通过对数据的描述性分析和计量模型估计,我们发现,居民的医疗服务需求受保险状况、家庭收入水平、地区、慢性病状况、性别、年龄、婚姻状况、工作状况、家庭规模和医疗机构距离等多种因素的影响。

1. 医疗保险能显著提高居民患病后去医疗机构的就诊概率,降低居民自我医疗的概率和医疗费用负担;保险的保障水平越高,医疗服务利用和医疗总费用支出越多,但居民自付负担越低。

2. 家庭收入水平越高,居民的两周患病概率越低,患病后去医疗机构就诊的概率越高;对居民医疗服务需求的收入弹性估计表明,居民两周患病后去医疗机构就诊的收入弹性为0.026,住院概率的收入弹性为0.069,门诊费用支出的收入弹性为0.034,住院费用支出的收入弹性为0.046。居民住院服务需求的收入弹性略高于门诊服务的收入弹性,但都接近于0。说明,对城镇居民来说,医疗服务是一种必需品。

3. 中、西部地区居民的两周患病概率显著地高于东部地区居民,但中、西部地区居民两周患病后去医疗机构就诊的概率低于东部地区居民;在住院概率上,中、西部地区居民的住院概率高于东部地区居民。这说明,“有病不医、小病拖成大病”的现象在中、西部地区更为严重;在住院费用支出上,中、西部地区居民的住院总费用支出低于东部地区居民,但其自付费用负担和东部地区居民不存在显著差异。

4. 慢性病是造成居民医疗需求较高、医疗费用负担较重的重要因素。慢性病居民在门诊就诊概率、住院服务利用和医疗费用支出等方面均显著高于非慢性病居民。

5. 低保户居民的两周患病概率高于非低保户居民,但患病后去医疗机构就诊概率和住院概率低于非低保户居民;低保户居民一旦住院,住院总费用显著低于非低保户居民,但自付费用负担却显著地高于非低保户居

民。医疗保险的缺失和保障水平较低是造成低保户家庭“因病致贫、因病返贫”的主要原因。

6. 居民在私立医疗机构的住院总费用比公立医疗机构的总费用低34%左右。这可能说明, 民营医院进入医疗服务市场可以有效地降低医疗费用价格, 缓解“看病难”、“看病贵”问题。

7. 医疗机构的可及性对居民就医行为有显著影响。医疗机构距离越远, 两周患病居民去医疗机构就诊的概率越低, 而进行自我医疗的概率越高。

在对以上结果进行讨论和解释的基础上, 本书就完善我国医疗卫生体制的相关政策进行讨论并提出如下建议:

1. 继续推动“补需方”为主的医疗保险制度; 改革支付方式, 由后付制改为预付制; 取消个人账户和按比例付费。

2. 发挥公共财政的职能, 建立以政府为主导的医疗救助制度, 以满足城镇弱势群体的医疗服务需求; 在救助模式上, 应以综合型救助模式代替目前实行的大病救助模式。

3. 重视慢性病给居民所带来的疾病负担, 应把慢性病的预防和治疗当作政府优先投资的领域, 逐步把所有慢性病纳入门诊报销范围; 加强基层医疗服务体系建设, 建立社区守门人制度, 实现由治病看病到健康管理的模式转变。

4. 进一步开放医疗服务市场, 鼓励民营资本兴办医院; 同时推进公立医院法人治理模式的变革, 实行管办分离, 以促进医疗服务市场的竞争, 提高医疗机构的运行效率, 降低医疗服务价格。

本书的创新之处主要有:

1. 较为前沿的计量方法。目前国内的同类研究大多都没有考虑变量的内生性、样本选择性偏差等问题。本书关注这些问题, 并提出处理方法。在计量模型选取上, 本书讨论和比较了医疗服务需求研究中较为前沿的计量模型, 力求选择最为有效的估计方法。因此能帮助我们更准确地进行模型估计, 得到准确的估计结果。

2. 综合性。本书把居民的两周患病情况、患病后的就医行为、住院服务利用和医疗费用支出放在医疗服务需求的统一框架下进行研究, 从而更能全面地反映居民的医疗服务需求状况。而目前大多的同类研究往往只关注其中的某一方面, 因而不能从总体上反映居民的医疗服务需求情况。

3. 新的发现。虽然这项研究是建立在许多前人研究的基础上,但通过本书所作的计量分析,发现了一些与国外同类研究的不同之处。主要有:在对居民年住院服务利用的分析中,本书发现两部分模型的估计效果要优于其他模型;在对居民医疗费用支出的分析中,本书发现居民医疗费用支出数据不存在样本选择性偏差、私立医疗机构的费用低于公立医疗机构等。这些发现不仅让我们更好地分析影响居民医疗服务需求的因素,而且有助于加深我们对计量方法的认识,从而丰富已有的研究文献。

当然,本研究也存在一些不足之处。首先,本书研究的对象局限于城镇居民。因此,所得出的研究结论并不一定具有普遍的推广性;其次,本书的研究数据是横截面数据(cross-sectional data),并不能完全排除不可观察的异质性(unobserved heterogeneity)所带来的估计偏差,未来研究可以采用较长时期的面板数据(panel data)进行此类研究,以控制不可观察异质性的影响;再次,由于受数据本身所限,本书没有将医疗服务价格和质量的变量纳入到实证模型中,这在一定程度上影响本书结论的可靠性和有效性;最后,供方诱导需求是卫生经济学中一个颇具争议的问题。如果在研究中能加入有关医疗供方的相关数据,如某一地区每千人医生数、医院每千人床位数等变量,来研究供方因素对居民医疗服务需求的影响,这将为研究中国医疗卫生体制中是否存在供方诱导需求及其存在程度提供重要的实证证据。

**关键词:** 就医行为 住院服务利用 医疗费用支出 医疗卫生体制改革

## 英文摘要

Health care is human's basic need. It has direct bearings on people's health and living standards. The improvement of people's health is conducive to eliminating poverty, narrowing social inequality and promoting economic growth. Therefore, it's government and society's major policy objective to ensure people's access to basic health care. In recent years, China's health expenditure is soaring and people's medical burden is increasing. As a result, the difficulty and high costs of getting medical treatment is increasingly serious and the poverty caused by disease is becoming prominent. How to solve these problems is one of the urgent issues in reforming China's health care system. To solve these problems, it is necessary to analyze the factors affecting people's demand for health care so that we can allocate medical resources scientifically and ensure the reasonability and feasibility of reform policies.

Using the data of Urban Resident Basic Medical Insurance Survey (URBMI) organized by State Council in 2007, this dissertation aims to conduct an empirical study on the demand for health care among urban residents so as to provide scientific evidences for policy makers. The structure of dissertation is as follows: Chapter one introduces the background, aims, significance and layout of the study. Chapter two presents a historical view on the evolution of health care system in urban China and its existing problems. Chapter three reviews the theoretical and empirical study on the health care demand. We first introduce Grossman's model of demand for health and health care and Supplier-induced Model (SID) so that it provides theoretical foundation for econometric analysis, then summarize the empirical studies both at home and abroad and introduces latest development. Chapter four introduces the data source, variable selection and characteristics of the population. Chapter five is empirical study, which is also

the main body of the dissertation. In the first part, we use Logit model to analyze whether residents reported illness in past two weeks. In the second part, we use Multinomial Logit Model (MNL) to analyze the health care-seeking behavior by the residents who reported illness. The third part analyzes the inpatient health care utilization by urban residents over the past year. We discuss four models that are commonly used to deal with count data, which are Poisson Model, Negative Binomial model, Two-Part Model and Latent Class Model. We use AIC and BIC to compare the performance of these models and found two-part model performs best. In part four, we analyze both the outpatient and inpatient expenditures by urban residents, discuss and compare the strong points and weak points of Sample Selection Model, Two-Part Model and Generalized Linear Model in dealing with health care expenditure data. In chapter six, conclusions and policy implications from the empirical study are summarized and some policies in reforming China's health care system are discussed.

The empirical analysis is robust and reliable, which can give us meaningful directions to control health care expenditures and meet people's health care demand. With descriptive analysis and econometric modelling, it is found that the demand for health care is affected by insurance, age, income, sex, marital status, work status, region, distance and chronic disease. The major conclusions are as follows:

1. Health insurance can effectively reduce the disease burden of insured people. The more generous the health insurance plan, the more health care utilization and expenditure the insured use and the less self-paid money by the people.
2. The higher level the household's income, the lower probability the people reported disease. The higher income increases people's probability of going to see doctor after they got ill. The income elasticity of medical care is near zero, implying that health care is a normal good for urban residents.
3. There exist regional differences in people's demand for health care. The phenomenon of "did not see care after getting ill and minor disease is delayed into catastrophic disease" is more serious in middle and western areas. Inequality in health care expenditure also exists in different regions.
4. Chronic disease is major factor causing the higher demand for health care



and heavy medical burden for urban residents.

5. The rate of self-reported disease is higher among the poorest people. The poorest people are less likely to see doctor after they got ill. However, the self-paid inpatient cost of the poorest people is higher than non-poorest people, which cause the poorer to subsidize the non-poor and make the inequality in health care more serious.

6. The privatization of hospitals can effectively reduce the cost of medical care; alleviate the problem of "the difficulty and high costs of getting medical treatment". The inpatient cost of private hospital is 34% lower than that of public hospital after we control the disease patterns.

7. The distance of nearest medical institutions can affect people's health care seeking behavior. The farther the medical institutions, the lower probability the people went to see doctor and the higher probability to seek self-medication.

After discussing and explaining the above results, we propose several suggestions for pushing forward China's health care reform.

1. Continue to push forward the basic health insurance programme featured by subsidizing the demand side; conduct payment reform, changing from retrospective payment into prospective payment; cancel Medical Savings Account (MSAs) and proportional payment.

2. Put the public finance into full play; establish government-financed medical system and take comprehensive medical aid as the major approach.

3. Attach great importance to chronic disease burden and include outpatient services into the payment plan. At the same time, channel more resources into primary health care institutions and introduce gatekeeper and capitation so as to change disease treatment into health promotion and management.

4. Further open the medical care market, encourage the entry of private resources so as to promote the competition of medical institutions and reduce medical prices.

The originalities of this dissertation are:

1. Econometric Methodology. Among the relevant studies in China, most of which didn't treat the problems such as endogeneity, sample selection bias etc. This study focuses on these problems and uses the latest econometric models to



compare and find the best model. Therefore, it can help us to estimate the model more accurately.

2. Comprehensiveness. This dissertation studies the demand for health care among urban residents from four aspects: whether the residents reported illness in the past two weeks, the health care-seeking behavior by illness-reported residents, inpatient health care utilization and health care expenditure, thus it can give us a more general understanding of the residents' demand for health care.

3. Some novel findings. Although this study is based the many other studies, it reveals some novel results. For example, in analyzing the inpatient health care utilization, we found the two-part model performs better than other models; in analyzing the health care expenditure, we found that there is no selection bias in health care expenditure data. These findings not only help us better analyze the factors affecting health care demand, but also help us deepen the understandings of econometric methodology.

However, there are some shortcomings in this dissertation. First, the study is limited to urban residents and cannot be generalized to the whole population; Second, the data used is a cross-sectional data, thus cannot fully eliminate the bias caused by the unobserved heterogeneity; Future studies can use the panel data. Third, owing to the data limitation, we cannot include the price and quality variable in econometric models; future studies can collect the price and quality information; Fourth, supplied-induced demand (SID) is a controversial topic in health economics. If the variables about suppliers such as physicians per capita, hospital beds per capita are included in this study, it is very meaningful to conduct an empirical study on whether SID exists in China, and if it exists, what is the extent.

**Key words:** health care-seeking behavior; inpatient health care utilization; health care expenditure; health care reform

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