COMPARISON OF THE THREE TIER HEALTH CARE SYSTEMS IN TWO RURAL COUNTIES IN HUNAN PROVINCE IN THE PEOPLE'S REPUBLIC OF CHINA

by

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A thesis submitted to the

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University of Colorado in partial fulfillment

of the requirements for the degree of

Master of Science in Public Health

Department of Preventive Medicine and Biometrics

1990

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Comparison of the Three Tier Health Care Systems in Two Rural Counties in Hunan Province in the People's Republic of China.

Thesis directed by Professor Miriam Orleans.

The three tier health care systems in two rural counties in Hunan Province in the People's Republic of China were compared. The per capita income in Yuan Jiang County was 77% higher than that found in Heng Dong County. Health care expenditures were 100% higher. Key informants in eight villages, four townships, and two counties were surveyed by questionnaire and interview.

Higher expenditures were found to be associated with greater availability and capability of medical services delivered at a higher level of the three tier system in Yuan Jiang County. These were associated with only modest improvements in available health outcomes: a lowered death rate, a lower proportion of the few low birthweight babies, and little change in higher life expectancy. Both had immunization rates above 95%. Inequity was evident between the two counties, with reduced access, a higher proportion of expenditures borne out-of-pocket by individuals and lower utilization at all levels in Heng Dong County. Fee-for-service is the major payment method in both counties.

A viable first tier was found in both counties, delivering both medical treatment and preventive programs. In Yuan Jiang County, rural doctors were found to receive comparatively less income than the county average; health officials and key informants throughout the three tiers put more emphasis on treatment compared to

prevention; doctors provided preventive programs, though not as convincingly as in Heng Dong; and patients chose care in the first tier--their home village--and in the third tier--the county or district, perhaps often bypassing the second tier which carries a major part of the burden in Heng Dong County. While Yuan Jiang County appears to be moving more rapidly to improve medical capability, the comprehensive functions of the first tier are being maintained.

The form and content of this abstract are approved.

Signed Miriam Orleans
Faculty member in charge of thesis

DEDICATION

I dedicate this thesis to my family--to my husband John and to my children, Rob, Martha, David and Will--who have consistently supported and encouraged my fascination with the larger world and my intent to improve my capacity to act in it.

I also dedicate this to my father and mother, Charles and Mildred Robinson, who started it all. My father was a general practitioner for over fifty years, taking care of North Carolina farmers and small town folk. My mother has gladly created and given the gifts of her love--to all of us.

L. R. S.

So many deeds cry out to be done,
And always urgently;
The world rolls on,
Time presses.
Ten thousand years are too long,
Seize the day, Seize the hour!

From "Reply to Comrade Kuo Mo-Jo"
Mao Tse-tung
January 9, 1963

ACKNOWLEDGEMENTS

The barriers of differing language and culture are formidable in research as in any other interactive activity. In addition to these, this research faced the difficulty of immediately following the Tiananmen Square Turmoil of June, 1989. It was an uneasy time in Hunan Province as in all of China. To work with a foreigner, and a student at that, was a risk that did not necessarily promise benefits, other than the opportunity to practice English. Nevertheless, I found competent assistance and encouragement from the faculty at Hunan Medical University and gracious hospitality in the countryside. I particularly wish to acknowledge and express my gratitude to the following:

To Dr. Sun Zhen Qiu, my Chinese faculty adviser; Dr. Xiao Shui Yuan, tireless research assistant and interpreter; Dr. Yan Zhongshu, Foreign Affairs Officer at Hunan Medical University; and Yan Xiang Dong for putting the questionnaires on a computer in Chinese.

To the China Rural Health Association, both at the provincial and county levels, for hosting my research, and especially to Dr. Zhou Chen Qin, Vice-Director of the Hunan Rural Health Association who accompanied me to the countryside and made excellent arrangements.

My thesis committee also faced the difficulty of new information and the added practical problems of overcoming long distance mails and changes in direction as new information and limitations in China prompted rethinking and re-rethinking the

study. I thank each of you, but especially you, Dr. Orleans, for your patience and guidance.

Finally, I acknowledge the contribution which my experience in China and my friendship with many Chinese has made to my understanding of the needs of a majority of the world's citizens and the abundance of spirit, courage, quiet determination, and intelligence with which, daily most find ways of improving their lives and those of their communities.

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INTRODUCTION

On October 1, 1989, the People's Republic of China celebrated the 40th anniversary of the founding of New China, the Revolution of 1949. For many of those years, China has been closed to western view, and even when open, access to information--particularly about the countryside--has been difficult to obtain. Beginning with Joshua Horn's account of China's post-revolutionary health care system, Away with All Pests, published in 1969,[1] people interested in providing health care to vast underserved populations with very limited resources have been interested in China's innovative experiment. Further work by Victor and Ruth Sidel in the 70's and early 80's,[2,3] the extensive Shanghai Counties study in 1982[4], the report of the World Health Organization Inter-regional Seminar on Primary Health Care[5] in 1983 and a thoughtful article by Dr. William Hsiao in 1984[6], among others, have given excellent descriptions of many aspects of the system as it developed. In 1989, the system has matured and is in the process of change. We still have very limited information in the English literature about it, particularly about changes since 1983.

This study is concerned with the three tier rural primary health care system as it existed in the fall of 1989 in two rural

counties of Hunan Province, one with a higher and one a lower per capita income. It will examine the comparative effect of the amount of money spent on health care and who pays it on availability, capability, and utilization of services, health outcomes, and the survival of the comprehensive responsibilities of the first tier or village services after the change from the collective to the production or family responsibility system. These data (from 1988) form the basis for drawing several conclusions about the effect which the differences in resources available at the local level have on health outcomes and on the way which the health system has developed since the change to the production responsibility system in the early 1980's.

The first section of the background will provide comparative 1987 health indicators for China, India, and the United States, the first two having very similar per capita gross national products (GNP). Health indicators for China and India for 1960 and 1987 are also compared to demonstrate comparative improvement over time.

The second section of the background will provide essential information for understanding the three tier primary care model which developed over 40 years since 1949 and the change in payment system caused by economic and poltical structural changes in the early '80's.

The final section of the introduction will state the problems behind the questions to be investigated by this study.

Background

Comparison of Health Indicators.

Eighty percent of China's 1.1 billion people live in rural areas. In 1987, China had a per capita gross national product (GNP) of $300/year while that of India was $290 and the United States was $17,480.[7] Yet health indicators in China in 1987 are much closer to those of developed industrialized countries than to low income nations. For example, although China's maternal mortality rate per 100,000 in 1987 was more than four times as high and the infant mortality rate per 1000 live births was three times as high as the rate in the United States, rates in India were, respectively, 55 and 10 times as high as the United States.[7] Other comparative rates are found in Table 1.1.

Table 1.1

Comparative Health Indicators for China, India, and USA, 1987[7]

INDICATOR	CHINA	INDIA	USA
Crude birth rate	20/1000	32/1000	15/1000
Crude death rate	7/1000	11/1000	9/1000
Life expectancy	70	59	76
Maternal mortality rate/100,000	44	500	9
Infant mortality rate/1000 live births	33	100	10
Under 5 mortality rate/1000 live births	45	152	13

Since 1960, China has made remarkable strides as demonstrated by the following comparisons between 1960 and 1986. India has had less impressive improvement (Table 1.2). Infant mortality has decreased in China by 350% compared to 65% in India. The crude death rate in China decreased 171% compared to 90% in India. Life expectancy in China has risen 49% compared to 34% in India and stands at 70, only 6 years less than that in the United States compared to 59 years in India, which is still 17 years less than can be expected by a citizen in the US.

Table 1.2

Comparison of Health Indicators for China and India, 1960 and 1987[7]

INDICATOR	CHINA		INDIA	
	1960	1986	1960	1986
Crude death rate per 1000	19	7	21	11
Crude birth rate per 1000	37	20	42	32
Life expectancy	47	70	44	59
Infant mortality rate/1000 live births	150	33	165	100
Under 5 mortality rate/1000 live births	202	45	282	152

Why has this difference developed in a 25 year period while per capita GNP's have remained similar? Evans et al., in an article about the role of financial resources and choice in bringing about an effective health care system in developing countries says that money is not the only ingredient which is lacking in many countries.

> Few developing countries have the institutional capability to select health interventions on the basis of expected health impact, least cost, and feasibility of implementation, and to integrate independent facilities, practitioners, and disease-specific programs into a more coherent, economical, multi-purpose system.[8]

China's Health Care System

China has made many strides in providing such a system. Dr. William Hsiao in 1984 summarized the reasons for its effectiveness: emphasis on prevention; an organized, decentralized system; community organization; cooperative methods of financing; and limitation of professional independence of health personnel.[6] The Report of An Inter-regional Seminar published by the World Health Organization in 1983 names four different aspects of emphasis that have been important: 1) a comprehensive approach to the training of health personnel for rural areas; 2) the establishment and improvement of a three-level rural medical and health network; 3) development of rural health services through the joint efforts of the state, the collectivity, and the individual, using multi-sectoral collaboration; and 4) broad mobilization of the masses to ensure their involvement in, and management of, rural health services.[5] Many observers have said that improvements are the result of the "most extensive public-health program ever undertaken in a developing country."[9]

Evolution of the Current Health Care System. In the 40 years since the revolution, there have been major changes in the political, economic, and ideological evolution of the People's Republic of China. The resulting emphases have affected the development of today's health care system. Table 1.3 summarizes the characteristics and contributions of major periods of history.