Restoring the balance: The Dynamics of decline of China's Health System with Economic Market Reforms

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Abstract: China's economic transition from a planned soviet economy to a socialist market economy has resulted in substantial changes to its health system, with a significant impact on health outcomes and equity of access. This paper extends recent US health reform system dynamics work to synthesise the China health reform story in causal loop diagrams and illustrate it with available trend data. The analysis is based on translated papers from a high level Chinese Government think tank to plan health system changes for the next Five Year Period (the Flourishing Society). Its main recommendations include extending financial coverage, focus on upstream interventions (public health, prevention and common disease interventions), and strengthening government responsibility) This natural experiment can provide insights into the problems associated with transition from hierarchical to market control mechanisms and the linkage between the overall socio-economic context and health care.

KEYWORDS: Health Policy Dynamics, China Health Reform, Socio-Economic Context

"China's newly privatized health care delivery system suffers from all the problems of its distant US cousin, but more so" –Blumenthal and Hsaio, 2005

"China's medical system has contracted the 'American sickness' ... medical prices increased drastically, health services were very unfair, medical resources had a low utilization rate, people's health indexes were stagnant and even worsened." -- Professor Wang Shaoguang, 2003

The substantial changes to China's health system associated with the country's economic transition from a planned soviet economy to a socialist market economy provide a unique natural experiment in health policy. Of major interest are the associated failure of health outcome indicators to improve and the markedly increased inequities in access to health services between the urban rich and the rural poor. This story has recently been well researched and documented by a high level Chinese government think-tank in planning health system changes for China for the next Five Year Period of "The Flourishing Society". This account of the impact of China's economic transition on China's health system is based on access of one of the authors to English translations of these papers and another author's prior involvement in developing a systems approach to US Health Reform.

Recent Chinese Economic and Political Timeline

1949-1976 Mao Zedong, Chairman
- 1949-1957 Establishment Phase
  - 1st Five Year Period 52-57
- 1958-1962 Great Leap Forward
  - 2nd Five Year Period 58-62 (abandoned)
- 1962-1966 Recovery
- 1966-1976 Cultural Revolution
  - 3rd Five Year Period 66-70
  - 4th Five Year Period 71-75
  - 5th Five Year Period 76-80

1977- 1997 Deng Xiaoping, Chairman
- 1978-84 Initial Economic Reform
  - 6th Five Year Period 81-85
- 1984-91 Planned Commodity Economy
  - 7th Five Year Period 86-90
  - 8th Five Year Period 91-95
- 1992- Socialist Market Economy
  - 9th Five Year Period 96-00

1993-2003 Jiang Zemin President
- 10th Five Year Period 2001-05

1998 Zhu Rohgji Premier

2003- Hu Jintao President
- 11th Five Year Period 2006-11 (Xiaokang "Flourishing" Society)

The Soviet style Economy under Mao

The key features included:

- State control with strong hierarchical mechanisms for administration
- Social (and political) rather than economic focus
- Strong social value of fairness including access to health services
- Distorted macroeconomic policy with large structural imbalances due to planned resource allocation. Like the USSR, most capital investment went to heavy industry rather than agriculture (it is estimated that 10% of investment went into rural agriculture, which employed 75% of the population).

Strong state controls resulted in "puppet-like" micro-management. There were low incentives for individuals and households to increase productivity. These features combined to achieve an overall low Total Factor Productivity Growth Rate of 0.5%pa during the Mao years. Much of this GDP growth was in heavy polluting industries located in cities. The State was also able to mandate and enforce limitation of population growth by draconian measures so this produced some positive effect on GDP per capita.

China's Health System under a Planned Economy

In August 1950, at the First National Health Conference of the newly established People's Republic of China, four principles were laid down to guide the development of the country's health services:

(1) to focus on serving workers, farmers and soldiers;
(2) to give priority to preventive over curative medicine;
(3) to foster unity between traditional Chinese medicine and Western medicine; and
(4) to combine health work with mass movements.

Mass "patriotic health campaigns" aimed at improving the low level of environmental sanitation and hygiene and attacking certain diseases reflected the commitment to public health. Personal health care was delivered through a three level health care system:

(1) The state owned, state provided and state financed public medicine system was initiated in 1951 to provide free medical and health care to state officials, civil servants, workers in public agencies and universities, disabled senior military personnel and university students.

(2) The collective medicine system catered for employees and retirees of state and collective enterprises. Services were largely state-provided, but financed wholly or partially by the enterprises drawing on their own "welfare funds". Initially free, in 1966 fees for service were introduced, but these were nominal and far below the actual cost of care.

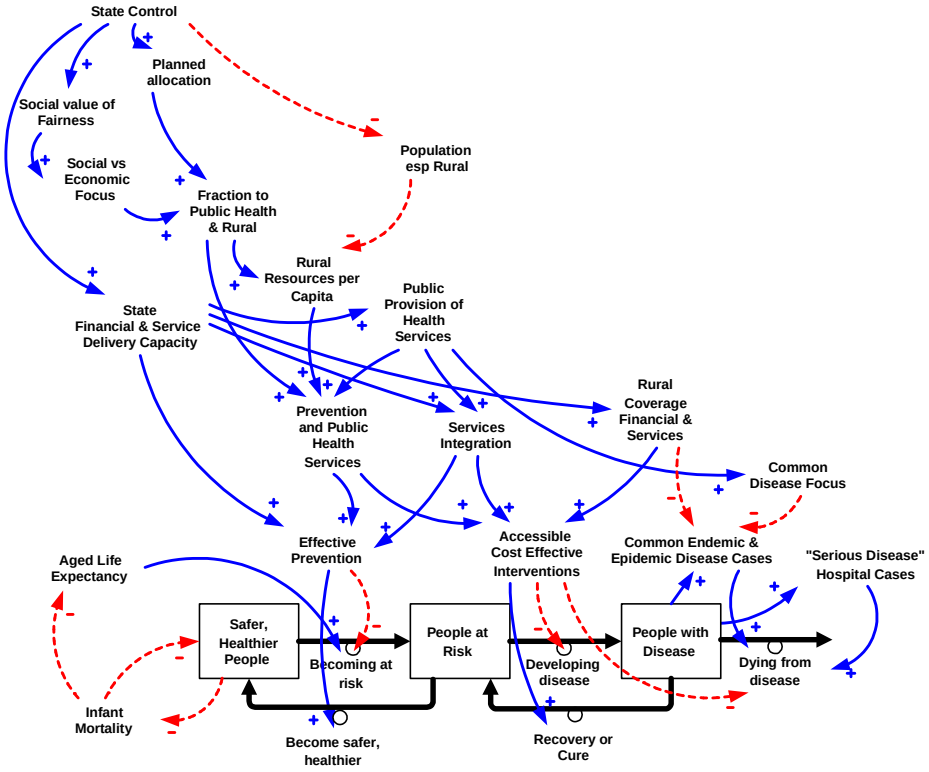
(3) For the great majority of China's population the cooperative medicine system provided free or subsidized health care, financed from funds collected from individual peasant households, brigade (village) and commune (county) welfare funds and small subsidies from the various levels of government. The barefoot doctors staffing township and village health centres provided both Chinese and Western medical care and also many public health services.

The planned allocation mechanism and social focus provided a larger public resource fraction to prevention and public health for all, including rural people. Total health expenditure was around 3% of GDP, Government dominated healthcare funding and delivery with a social focus on public welfare and public health improvement, mass public health campaigns, prevention esp epidemics, maternal and child health, common endemic disease control, cost effective appropriate technology interventions for common diseases based around the 'barefoot doctors', with supply constraints on high technology hospital-based interventions.
Single public government and collective ownership and management made integration of public health and medical service organs easy. Price and wage controls kept healthcare broadly accessible, but meant there were no practitioner incentives for individual efficiency.
Urban health financing and facilities included medical security for labourers and their families and a network of city hospital, district hospitals, street front outpatient and related epidemic prevention. Rural financing and service delivery consisted of the co-operative medical system - county hospital, township health centre, village clinics.

Despite the disastrous agricultural and industrial mismanagement of the The Great Leap Forward (1958-60), with estimates of the death toll from starvation ranging from 20 to 50 million, and the massive disruption of the health care system during the Cultural Revolution (1966-1976), the first three decades of the People's Republic saw a very marked improvement in the health status of China's population. During this period the health care system provided broader population coverage, improved access and notable reductions in infectious disease mortality and reported morbidity. Infant mortality fell from 200 to less than 40 per 1000 live births and life expectancy increased from around 35 to more than 65 years.

Nevertheless, there were problems in the system. Because cities had more resources, health facilities were more extensive here; conversely there was poor risk pooling in small rural collectives. Price controls exacerbated the potential for overuse in well-supplied cities. Wage and supply constraints produced stagnant technical expertise and low staff efficiency with no practitioner incentives to improve. Changes in national economic policy were, beginning in the late nineteen-seventies, were to bring about radical reform of the health care system and its functioning.

China's planned health system in a soviet economy is represented here using the same disease progression chain used in a previous US health reform paper (Hirsch et al 2005), using the language of Chinese health policy.



The nature of the Economic Transition

In contrast to the Eastern European Big Bang, China instituted gradual sustained incremental reforms, initially microeconomic reforms, improving incentives and fixing structural imbalances. It has been aptly described as "To cross a river by groping the stones".

Agriculture was decollectivised and ownership given to households.

State owned enterprises and Township and Village Enterprises were able to retain profits and bonuses, with a transition period of "dual track" prices (creating separate on and off plan markets). Above all this transition was guided by pragmatism, colourfully explained as:

"No matter a white cat or a black cat, as long as it can catch mouse it is a good cat"

Later State owned enterprises (SOE) were eased into the market using contract responsibility and gradually changed to modern corporations by the mid-1990s

Foreign exchange and special export regions and development banks were set up, with interim artificially low interest rates and fixed exchange rates. This caused some excessive growth,

supply shortages, rationing and side payments. For these SOEs, incentive structures and competition were more important than privatisation.

For the majority of China's population, the most momentous change in economic policy was the privatization of the agricultural economy. The sudden dismantling of the communes was to produce not only an enormous change in the challenges facing the rural population regarding agricultural production and marketing, but also to tear away the basis of a major support of the health care system.

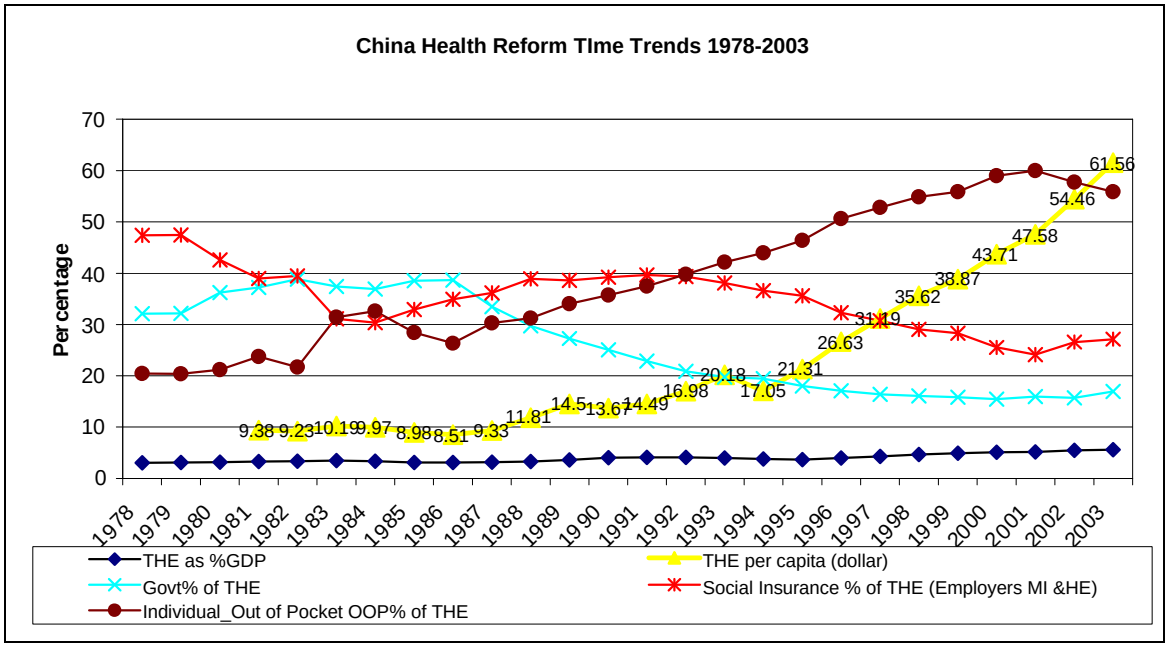


Table 1.2. **Chronology of economic reforms in China**

Year	Policy change
1978	"Open door" policy initiated, allowing foreign trade and investment to begin
1979	Decision to turn collective farms over to households
	Township and village enterprises (TVEs) given stronger encouragement
1980	Special economic zones created
1984	Self-proprietorships (*getihu*) encouraged, of less than 8 persons
1986	Provisional bankruptcy law passed for state owned enterprises
1987	Contract responsibility system introduced in state owned enterprises
1988	Beginning of retrenchment of TVEs
1990	Stock exchange started in Shenzhen
1993	Decision to establish a "socialist market economic system"
1994	Company law first introduced
	Renminbi begins to be convertible on current account
	Multiple exchange rates ended
1995	Shift to contractual terms for state owned enterprise staff
1996	Full convertibility for current account transactions
1997	Plan to restructure many state-owned enterprises begins
1999	Constitutional amendment passed that explicitly recognises private ownership
2001	China accedes to the World Trade Organisation (WTO)
2002	Communist party endorses role of the private sector, inviting entrepreneurs to join
2003	Decision to "perfect" the socialist market economic system
2004	Constitution amended to guarantee private property rights

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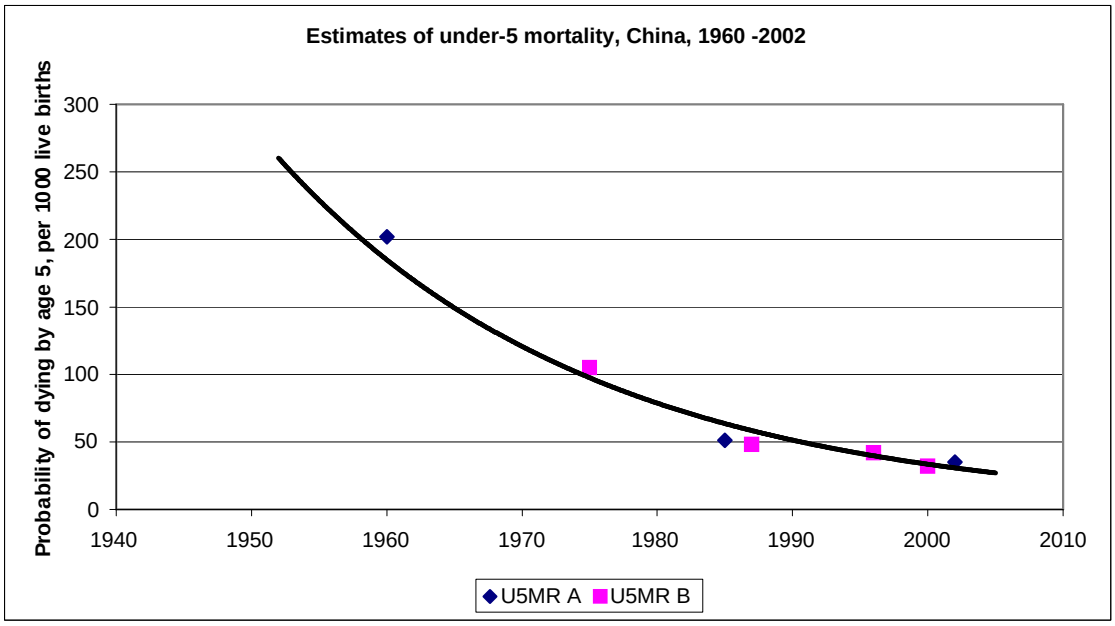
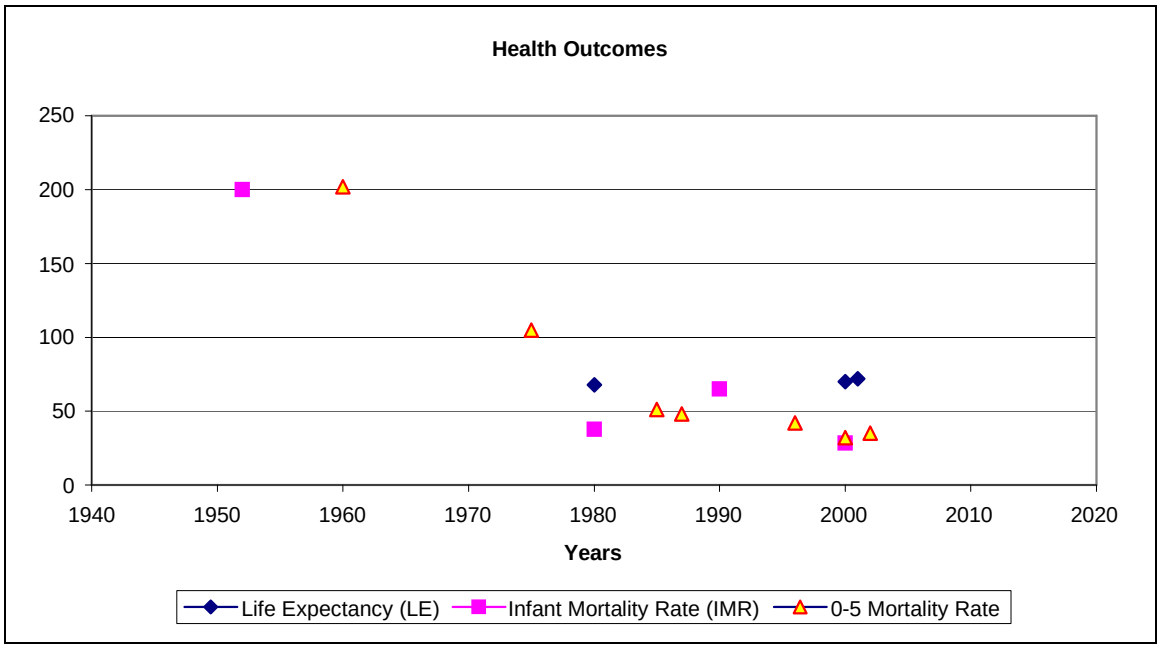
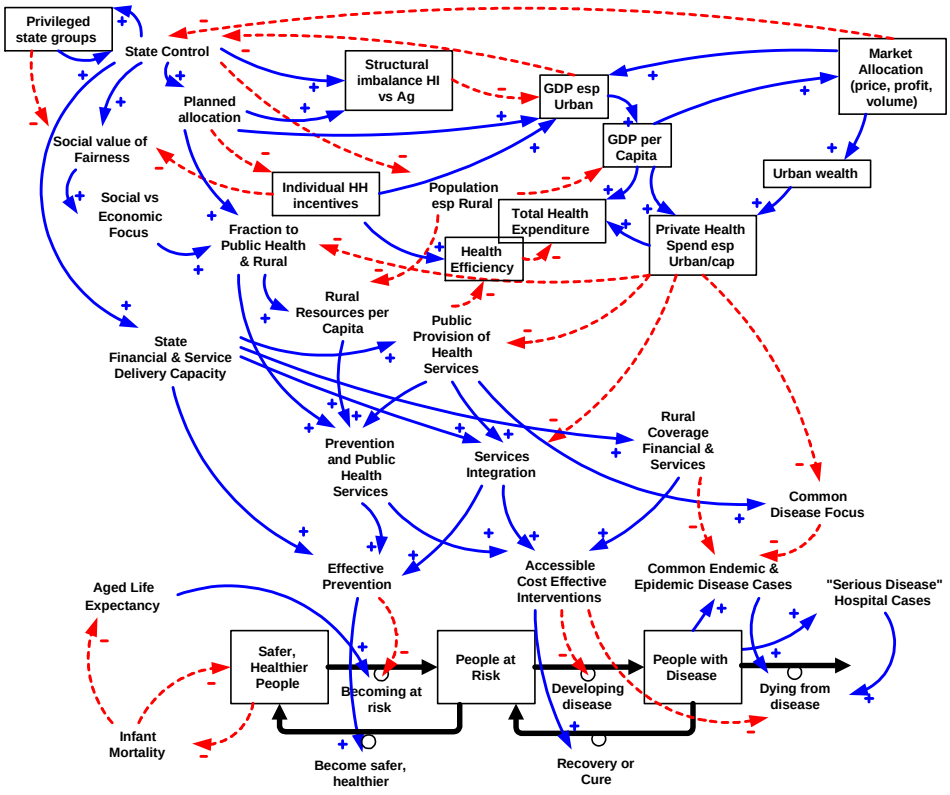
Impact of the Economic Transition on China's Health System







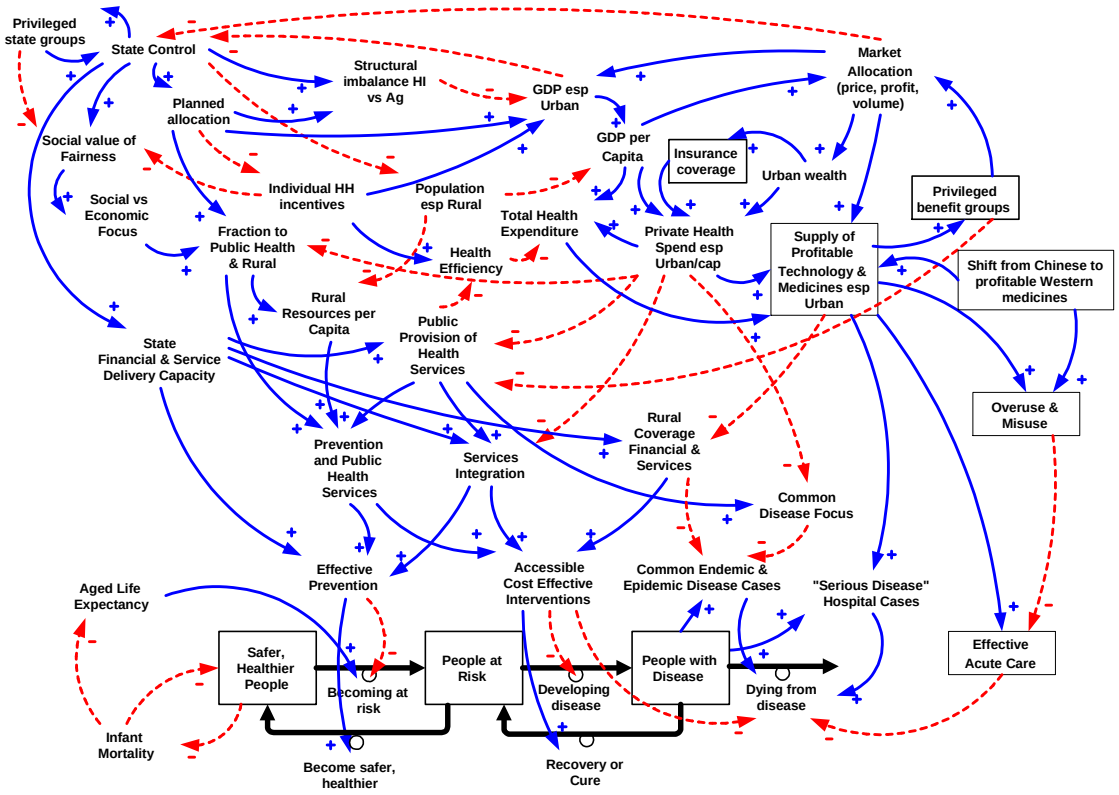
The move from single state to multiple ownership resulted in fragmentation of services; and commercial market mechanisms reduced access for rural and poor urban people at the same time as public resources for rural public health disappeared with the loss of state administrative and financial controls and service delivery capacity.

Focus on commercial goals rather than public health goals promoted overuse of profitable services at the expense of unprofitable yet cost-effective necessary services. The growth of the health industry sector also resulted in the formation of vested benefit groups.

GDP growth in private consumption increased market demand for medical services in the urban rich. Total health expenditure grew to 5.42% GDP but state financing fell to 0.75% of GDP) with greater inequity in financial ability to pay and prepay and inequity in hospital and medical service provision between the urban rich and the rural poor.

Clinical intervention focus shifted to serious "downstream" diseases with complications rather than common diseases and prevention, and high tech profitable drugs, and medical diagnoses and treatment for the urban rich in hospitals. Overuse of profitable unnecessary medicines, injections, hospital antibiotic overuse and resistance, CT scans, Caesarean deliveries was estimated at least 20% in cities. This emphasised the conflict between the commercial industry goal of health care – to increase profit and wages by providing more treatments) and the public good goal of health care – to improve health and reduce economic inputs

On the health financing side, state administrative and financial decentralization and reduction in state workers reduced medical security insurance coverage; both these effects reduced risk pooling.



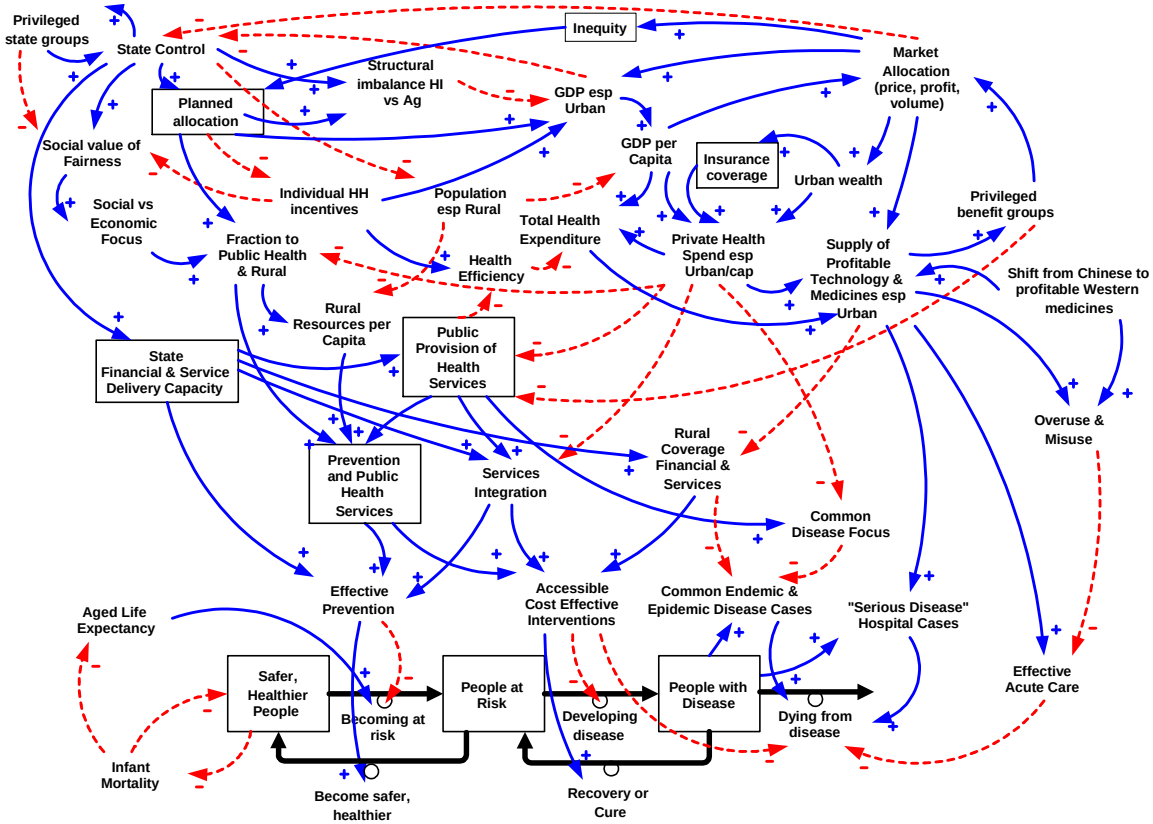
Price controls were abolished but there was no but no price reduction via market competition, possibly due to the information asymmetry between provider and purchaser and price collusion. Prevention services were reduced; it appeared that individual providers despised common low technology interventions and valued "serious" new high technology interventions above cheap and effective, but unprofitable preventive services.

Health status indicators fell or sluggishly improved during this period of health privatization from the 1990s. Weakened government reduced the control of health as a public good; user payments and private insurance premiums were too high for the poor and resulted in underuse. In sparse rural areas there was low risk pooling and low management capacity, so the rich urban and poor rural divide widened.

Now voluntary insurance coverage is around 100m in cities (25% of the urban population, and 50% of the urban employed) and 10% of the rural population, attributed to unaffordable premiums.

There has been a resurgence of contagious and endemic diseases, poverty due to illness, and reduced social cohesion. There is a danger that increased resistance to further economic reforms and reduced consumption could result in slowing of economic growth.

Reforms for 11th Five Year Period (Flourishing Society)



These recommended reforms focus on three major areas.

1. Financial coverage (equal, limited services for all)

- Government transfer payments will flow from rich to poor, rather than voluntary annual premiums with subsidy, which benefit the rich.
- There will be better risk pooling for rural communities and broader urban social pooling.
- Complementary individual accounts will be expanded to cover non-hospital services in addition to hospitals.

2. Shift in the Focus and Methods of Health Intervention

- More upstream prevention and public health and cost-effective common diseases for all including the rural population.
- The SARS outbreak in 2003 displayed deficiencies but a subsequent focus on emergency response could result in emergency rather than regular public health prevention.
- There is also a need for a split between medicines prescribing and dispensing to audit and curb overuse of profitable western medicines.

3. Strengthen Government Responsibility

- Slow or reverse the growth in vested interest groups and their coalescence (provider hospital and privileged access groups) -- it reduces capacity to reform.
- Integrate rural and urban financing and delivery systems.
- Government provision of integrated public health and basic medical services
- Government quality price and technology regulation

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