Health Management and China’s Sustainable Development

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Health Reform

- For what?
- Sustainable development
- Health for all Chinese.
Proposition

• Health is one of the most important resources for sustainable development in China.
• We must invest in health to increase its value.
• We must manage health scientifically to reduce resource waste.
• Goal: sustainable development, health for all Chinese.
I will discuss...

- Health resource plays a key role in China’s economic rise.
- The existing health resource cannot support sustainable development in China.
- It is desperate to invest/manage health resources for sustainable development in China.
Published in 2005

CHINA INC.

HOW THE RISE OF THE NEXT SUPERPOWER CHALLENGES AMERICA AND THE WORLD

TED C. FISHMAN
Three hundred million rural Chinese will move to cities in the next fifteen years. China must build urban infrastructure equivalent to Houston’s every month in order to absorb them.

220 billion text messages were sent over mobile phones in China last year.

General Motors expects the Chinese automobile market to be bigger than the U.S. market by 2025. Some 74 million Chinese families can now afford to buy cars.

China has more speakers of English as a second language than America has native English speakers.

China has more than 300 biotech firms that operate unhindered by animal rights lobbies, religious groups, or ethical standards boards.

On average, American companies make a 42 percent return on their China operations.

There are 220 million “surplus workers” in China’s central and western regions. The number of people working in the United States is about 140 million.


One in ten American jobs is at risk of being “offshored.”

There are 186 MBA programs in China.

China’s sex industry alone needs 1 billion condoms a year.

China has 320 million people under the age of fourteen, more than the entire population of the United States.

More people use the Internet in China than in the United States.
How strong is China’s national power?

<table>
<thead>
<tr>
<th></th>
<th>USA</th>
<th>Japan</th>
<th>France</th>
<th>UK</th>
<th>Germany</th>
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What does China’s rise base on?

- Leadership
- Huge healthy population!
- Others
Healthy manpower is a key resource

• Healthy manpower is
  – Main body of productive force
  – The base and important determinant for productive force development
  – The basic element and the most valuable resource for state and nation’s survival and development.
Economic Model

Economic growth → Health

Economic growth ← Health
THE DEMOGRAPHIC TRANSITION
Age Distribution of Populations, 1990 and 2025
STYLIZED MODEL OF ECONOMIC GROWTH AND THE DEMOGRAPHIC TRANSITION

Income growth rate

Youth demographic burden

Other transitional factors

Demographic Dividend

Sustainable Growth

Rough Timeline

1945  1960  2010  2025

Bloom, D, J. Williamson, and Canning, D. *Rand Reports*, *World Bank Report*
Life Expectancy and Income Per Capita

Life Expectancy (Years)

Income Per Capita (1991 International Dollars)

International dollars are derived from national currencies by assessment of purchasing power, not by exchange rates. This measurement returns higher incomes for poorer countries.

Source: *World Development Report 1993* p. 34.
GDP Per Capita and Life Expectancy

Source: Wang, Shaoguan, Comparative Studies, #7, 2003
Economic Impact of Life Expectancy Increase

- Elasticity of manpower productivity is about three times of that of material productivity.
- Manpower capital value may increase by increase of productivity.
- Function of total human capital is determined by educational investment and life expectancy.
- Life expectancy increases 10%, GDP increases 1.1%, according to UNDP.
Life Expectancy, China, 1960-2001

Source: Wang, Shaoguan, Comparative Studies, #7, 2003
2002年部分国家5岁以下儿童死亡率和人均期望寿命分布图

Death rate of Children under 5 and Life Expectancy, 2002
Health Expenditure
Countries with Different Income Level, 2001

Health Expenditure (USD)

<table>
<thead>
<tr>
<th>Country</th>
<th>Health Expenditure</th>
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<tr>
<td>Low Income</td>
<td>23</td>
</tr>
<tr>
<td>Medium income</td>
<td>118</td>
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<tr>
<td>High income</td>
<td>2841</td>
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<tr>
<td>China</td>
<td>49</td>
</tr>
<tr>
<td>Brazil</td>
<td>222</td>
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<tr>
<td>Cuba</td>
<td>185</td>
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<td>Chile</td>
<td>296</td>
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</table>

Data Source: World Development Indicators 2004, World Bank
Gap Increased between China and International on Health Investment

投入比例与国际水平差距越来越大

我国与世界不同发展水平国家政府及个人卫生负担比较：2003年
Proportion of government and individual health care burden, different countries, 2003
China’s Health Status Before Economic Rise

• Life expectancy increase rapidly, close to the level of developed counties.
• 1983: Health insurance covered almost all city’s population and 85% of rural population.
China’s Economic Rise is Closely Related to Chinese Health Status

- 30 yrs of health accumulations: LE ↑ from 35 yrs in 1949 to 67.9 yrs in 1981 (33 yrs), provided rich healthy resources
- 30 yrs of health achievements: Major ID: under control. 20% of a nation’s economic increase is depended on ↑ human productivity due to reduction of mortality and morbidity
- 20 yrs of health sacrifice: Minimum Health investment during economic rise period.
Economic Rise, to Some Extend, Used Up Existing Health Resources

• What will we face re: sustainable development today?
• Do we still have sufficient health resources to support development?
Do we still have sufficient health resources to support?

- Delay effect of health investment or health overdraw: consequences occurs 15-20 ys or longer.
- Consequences of 20 ys health overdraw are coming:
  - Double threats by ID and Non-ID
  - Aged without wealth
  - Huge pop., Unbalanced gender distribution, low pop. quality.
Do we still have sufficient health resources to support?

Double threats by ID and Non-ID
Double threats by ID and Non-ID(1)

- No. of HIV infection increased rapidly
- No. of active TB: world No. 2
- Hepatitis B carrier: world 1/3
- Old ID come back: TB, Measles
- New ID come out: SARS, Avian Flu
Double threats by ID and Non-ID(1)

Cancer death 1.5 mi.
CVD and stroke: about 3 mi.
Economic burden of above 2: hundreds bi.
Diabetes M. 40 mi.
Hypertension: 150 mi.
Psychological and mental problems increases.
Do we still have sufficient health resources to support?

Aged without wealth
Proportion of Elderly (≥60岁)

1999
- China: 126 mi.
- Asia: 314 mi.
- World: 593 mi.

2050
- China: 410 mi. (30%)
- Asia: 1240 mi.
Aged without wealth (1)

<table>
<thead>
<tr>
<th>Year</th>
<th>World pop (100 mi)</th>
<th>China pop. (100 mi.)</th>
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<tr>
<td></td>
<td>Tot./Aged (Proportion)</td>
<td>Tot./Aged (Proportion)</td>
</tr>
<tr>
<td>1980</td>
<td>50/4 (1/12)</td>
<td>10.0/0.8 (1/1(2))</td>
</tr>
<tr>
<td>2000</td>
<td>61/5.9 (1/11)</td>
<td>12.9/1.3 (1/10)</td>
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<tr>
<td>2020</td>
<td>75/10 (1/8)</td>
<td>14.2/2.1 (1/7)</td>
</tr>
<tr>
<td>2040</td>
<td>90/16 (1/6)</td>
<td>15.3/3.8 (1/4)</td>
</tr>
<tr>
<td></td>
<td>Annual increase (%)</td>
<td>1.3/2.5</td>
</tr>
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</table>

(中华老年医学杂志 2001)
Aged without wealth (2)

- Over 60: >10%, 140 mi.
- Over 65: >7.5%, closed to 100 mi.
- Aged without wealth: China enters aging society with low per capita income, poor social security system and weak health care system.
- Aging brings health and care problems: heavy social and health burdens.
Do we still have sufficient health resources to support?

Huge population
Unbalanced gender distribution
low pop. quality
Huge Pop. Unbalanced Gender Distribution, Low Pop. Quality

- Sex ratio at birth (M:F)
  - 1982, 108.47
  - 1990, 111.30
  - 2000, 116.86
- Birth defect: 800,000 ~ 1 mi./y
- Disabled 70 mi. Of them 70% due to Birth Defect
- Prop. with BS: 3.6%, USA: 25%
- High tech talent 0.67% of pop., USA or Canada: 300-600 times more than China
### Health Indicators of Different Countries

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<tr>
<td>China</td>
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<td>70</td>
<td>42</td>
<td>31</td>
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<td>Australia</td>
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<tr>
<td>South Korea</td>
<td>67</td>
<td>73</td>
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<td>Malaysia</td>
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<td>72</td>
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<tr>
<td>New Zealand</td>
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<td>77</td>
<td>13</td>
<td>5</td>
<td>4</td>
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<tr>
<td>Singapore</td>
<td>71</td>
<td>77</td>
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<td>4</td>
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<tr>
<td>Sri Lanka</td>
<td>68</td>
<td>73</td>
<td>34</td>
<td>16</td>
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<tr>
<td>Low Income Co.</td>
<td>51</td>
<td>55</td>
<td>108</td>
<td>79</td>
<td>4</td>
<td>-29</td>
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<tr>
<td>Medium Income Co.</td>
<td>64</td>
<td>69</td>
<td>53</td>
<td>30</td>
<td>5</td>
<td>-23</td>
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<tr>
<td>High Income Co.</td>
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<td>77</td>
<td>15</td>
<td>6</td>
<td>4</td>
<td>-9</td>
</tr>
<tr>
<td>World Average</td>
<td>61</td>
<td>65</td>
<td>67</td>
<td>44</td>
<td>4</td>
<td>-23</td>
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</table>
So...

We May Not Have Sufficient Health Resources To Support Sustainable Development in China!
Not Only Without Sufficient Health Resources, But Also Health Overdraw!

Urbanization is the No 1 challenge China has to face during 21th Century.

Nobel Laureate, US Economist J . Stiglitse
Urbanization 1% increase per year

City 502 mi.  →  37 mi. (Natural Increased Pop.)  →  City 828 Mi.

Rural 782 mi.  →  289 mi. (Immigration pop.)  →  Rural 622 mi.

2002  →  2020
Approx. 300 Mi. Rural Pop. Immigrate to City

- Pop. Move, crowded pop., housing, traffic, limited living space, increased work pressure provided excl. condition for ID
- Urbanization and globalization bring about the disease of modernization: Epidemic of Obesity.
Also...

• Annual economic lost due to envirn. Pollution: 3–8% GDP.

• 2002, 343 cities surveyed, only 1/3 air quality meet required standards, suitable for living.

• According to WB, by 2020, China has to pay 390 bi USD for coal burning pollution, approx. 13% of GDP at that time.
Also...

- Lost in cancer 143.2 bi. RMB, by 2020 年 ,6072.5 bi. , 24.4 % GDP (WB,1990)。
- Direct lost from hepatitis: 100 bi./y.
- Lost from smoking: 560 bi.
Reality is...

- We almost used up all 30 years of health resource accumulation.
- Current health resources are overdrawn.
- Increase of GDP is not able to catch up with increase of health needs and demands.
Reality is...

• China did not do a good job in health resource investment and management.
• Current health status is not able to support sustainable development in China.
Will China Be Able to Have Sustainable Development?

China’s sustainable development depends on whether we can manage Chinese health issues because national health resource is the base for China’s sustainable development.
Theories and Practice Tell Us...

- Follow west model: No way (USA, Canada, UK all have their own health headache)
- Using 1950s approach: impossible.
- Health investment and health management is the best choice for China's sustainable development
- Health investment and health management can mobilize individual and society to improve citizen's and nation's health status.
How to mobilize to improve health?

- What is health investment?
- What is health management?
What is health investment?

- Investment is to put resource for return.
- Health investment is to put health resource for health return.
What is Health Management?

- Key to management is to “make right persons do right things at right time and in the right place”.
- Health management is a process to monitor, analyze, evaluate, predict, and prevent individual and population’s health risk factors. (韩启德. 中华医学信息导报, 20:16, 2005)
What is Health Management?

• The goal is to mobilize individual, collectives, and society to effectively use limited resources to maximize health effect.
• Specific approach is to provide accurate individualize health information to individual, collectives, and government timely and to facilitate actions to improve health.
Health Investment/Health Management

• Micro: Individual/Collectives
• Macro: Government/Society
What is individual health management?

• Research based, evidence based medicine and health informatics as the main approaches
• Qualitatively evaluate intervention, incl./ disease control and cost containment
• Standardized operation procedures as communication platform for physician and clients.
• Clearly identified target population therefore it will use limited resources effectively.
完全健康 → 绝对死亡

预防干预

低危状态 → 危险状态 → 早期改变 → 临床症状 → 疾病

临床干预

应开始健康投资

投资机会不多!
Individual Health Management

Complicate case management
Pt. Case management
Chronic dis management
Routine health management
Preventive management

应开始健康投资　投资机会不多！
How to manage individual health resource?

• To majority, modern high tech is useless.

• What most of us needed is accurate individualized health information.

• Health is on your own hand.
What is macro health investment/health management?

From disease centered to pay close attention to the entire life process through health surveillance, disease control and prevention.
Nation’s health resource management

- China needs an authoritative coordination agency to organize and manage nation’s health resources
- Example: Educational commission in 1980s
Life Expectancy Increase 10%,
GDP Increase 1.1%

- Infant mortality and ID are the main factor influencing China’s LE
- Mainly due to lack of health investment, low primary health care coverage, weak public health system, especially in rural areas.
No Matter Micro or Macro Health Management

Focused, accurate population health information is vital
No data on health resources

• No modernization of health management
• Health data is highway of health management.
• No national vital statistics system is the major obstacle to the modernization of health resource management in China
Health Model

Determinants of Health
- Environment
  - Physical
  - Social
- Human Biology
- Life Style/Behavior Risk Factors
- Health Care System

Health Status
- Subjective Health
- Mortality
- Morbidity
- Injury
- MCH/Others

Consequences of Health
- Quality of Life
- Health Service Utilization
- Use of Medication
- Others
Summary

• Health resource is one of the most important contributing factor to China’s economic rise.
• Current health resource is not able to support China’s sustainable development.
• China need to invest in health and to manage health resource scientifically to maintain sustainable development
• We have no choice.
Thank You

Q & A