

# The Health Care System and Public Health in China

---

**Jesse Huang, MB, MHPE, MPH, MBA**

Assistant President and Dean for Continuing Education

Professor of Epidemiology

Chinese Academy of Medical Sciences

Peking Union Medical College

Email: [pumcjesse@yahoo.com.cn](mailto:pumcjesse@yahoo.com.cn)

Tel: 6529-5986 13910822961

# I will discuss...

---

- **China's Health Care System**
- **Public Health in China**



# China and its Health Care System

---

- **Basic Statistics/Economic status**
- **System overview**
- **Who pay for health services?**
- **Government's health policies**



# China: Basic Statistics

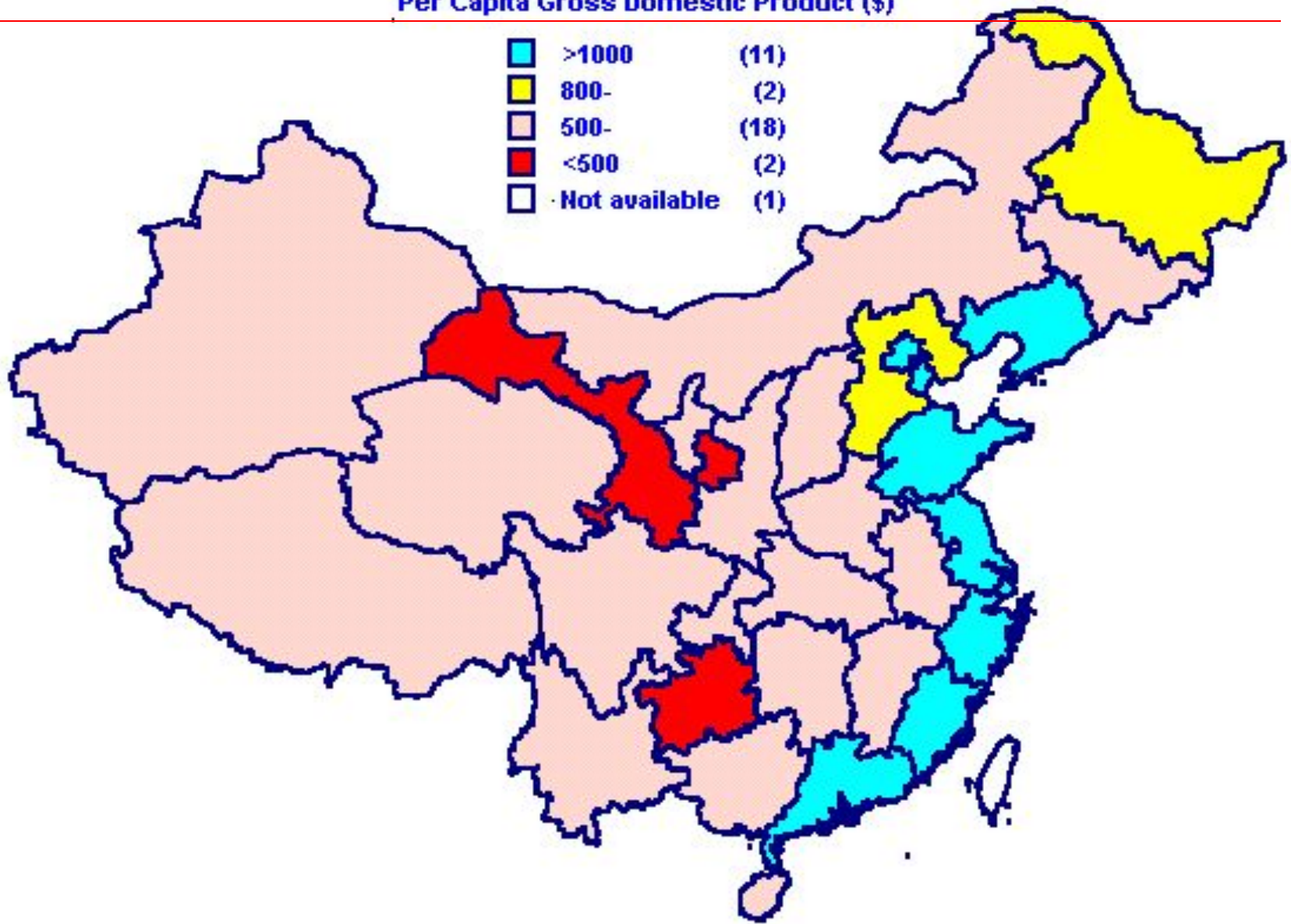
---

- 
- **Area: 9.6 million km<sup>2</sup>**
  - **Total population: 1.27 billion (2000)**
  - **Population in rural areas: 63.8%**
  - **Administrative Region: 31 provinces**
  - **GDP: 8,940.4 billion RMB**
  - **Number of health agencies: 330 thousand**
  - **Number of health workers: 5.568 million**
  - **Number of school of public health: 36**

# Economic Status by Province, 1999

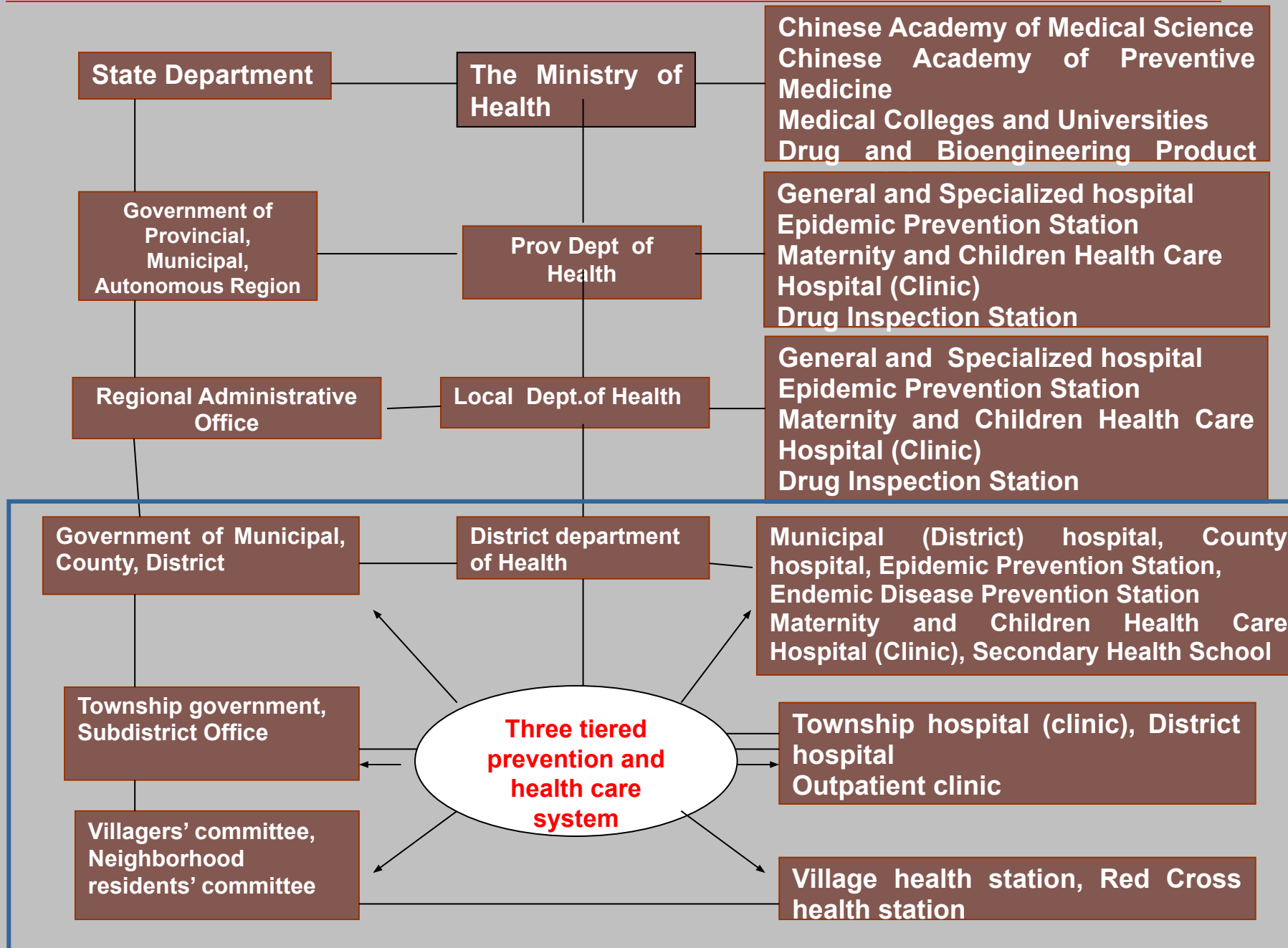
Per Capita Gross Domestic Product (\$)

	>1000	(11)
	800-	(2)
	500-	(18)
	<500	(2)
	Not available	(1)

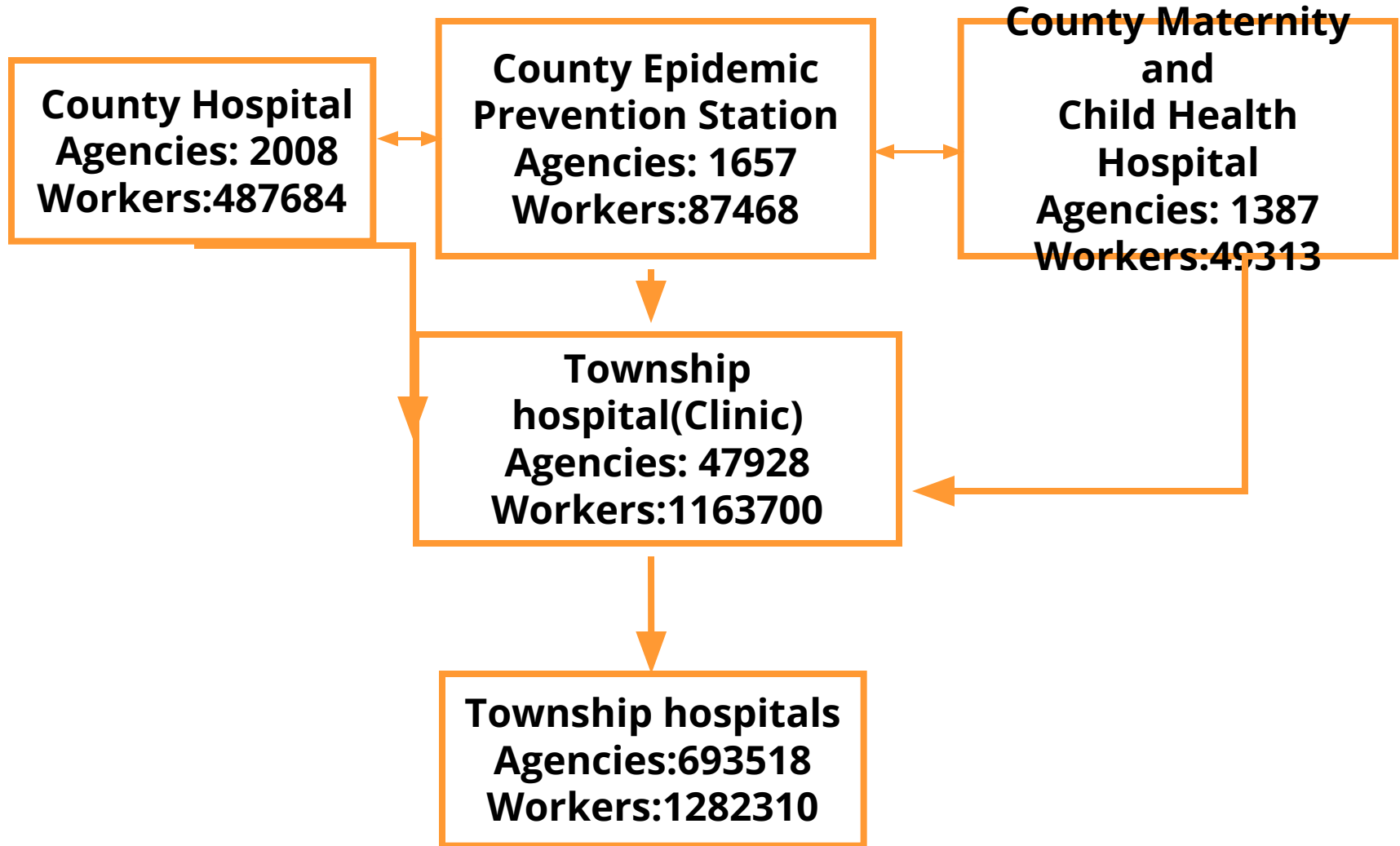


Source : China statistical year book,2000

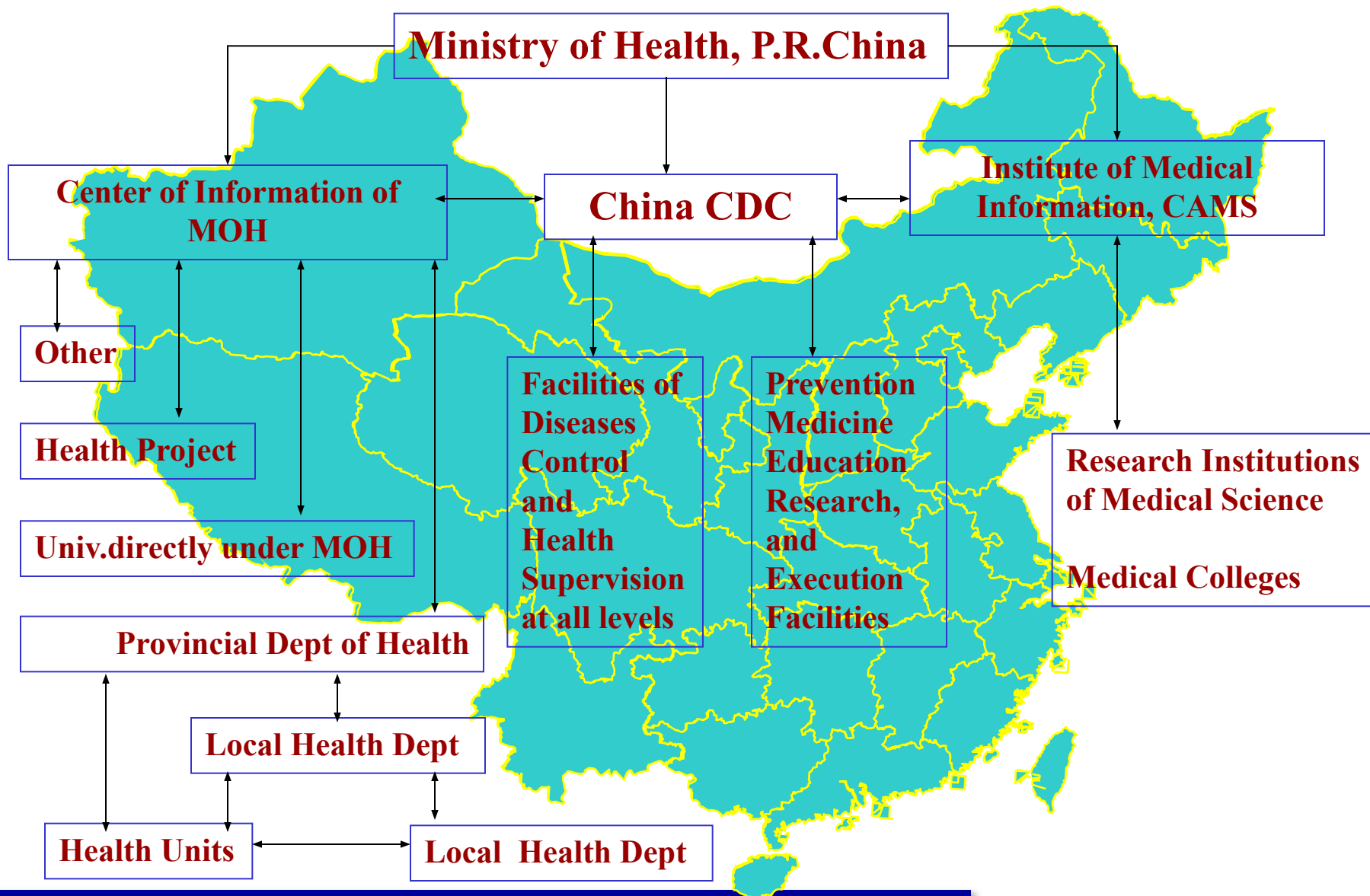
# The organization structure of Chinese health Care system



# Health Network of Three Tiered in Rural Area



# China Health Information System





# Who pay for health services ?

---

- **1949-1977 free health services for the entire urban population, government pay system**
- **1978-1996 government & hospital paid health services**
- **1996-now government, collective & individual paid health services**

# The Medical Expenditure Per Capital Outpatient (Unit: RMB)

	Average medical expenditure to per person-time	Contain				The range of increase (%)
		The cost of drug		The cost of Treatment and examination		
		Absolute number	proportion	Absolute number	proportion	
1990	10.9	7.4	67.9	2.1	19.3	12.4
1995	39.9	25.6	64.2	9.1	22.8	33.8
1997	61.6	37.8	61.4	9.7	15.7	17.4
1999	79.0	47.4	59.5	14.4	18.2	14.8
2000	85.8	50.3	58.6	16.8	19.6	8.6

# Change Trend of the Medical Expenditure Per Capital Outpatient and Inpatient (Unit: RMB)

	Treatment of Person-Time Out-Patient		Expenditure of Patient In- Patient	
	Treatment expenditure	Cost of Drug	Treatment expenditure	Cost of Drug
<b>1990</b>	<b>10.9</b>	<b>7.4</b>	<b>473.0</b>	<b>260.6</b>
<b>1998</b>	<b>68.8</b>	<b>42.7</b>	<b>2596.8</b>	<b>1278.8</b>
<b>1999</b>	<b>79.0</b>	<b>47.4</b>	<b>2891.1</b>	<b>1363.6</b>
<b>2000</b>	<b>85.8</b>	<b>50.3</b>	<b>3083.7</b>	<b>1421.9</b>
<b>Rate of increase (%)</b>				
<b>Average rate 90-98</b>	<b>25.9</b>	<b>24.5</b>	<b>23.7</b>	<b>22.0</b>
<b>Average rate 1999</b>	<b>14.8</b>	<b>11.0</b>	<b>11.3</b>	<b>6.6</b>
<b>Average rate 2000</b>	<b>8.6</b>	<b>6.1</b>	<b>6.7</b>	<b>4.3</b>

# Total Health Expenditure 1995-2000 Unit:RMB

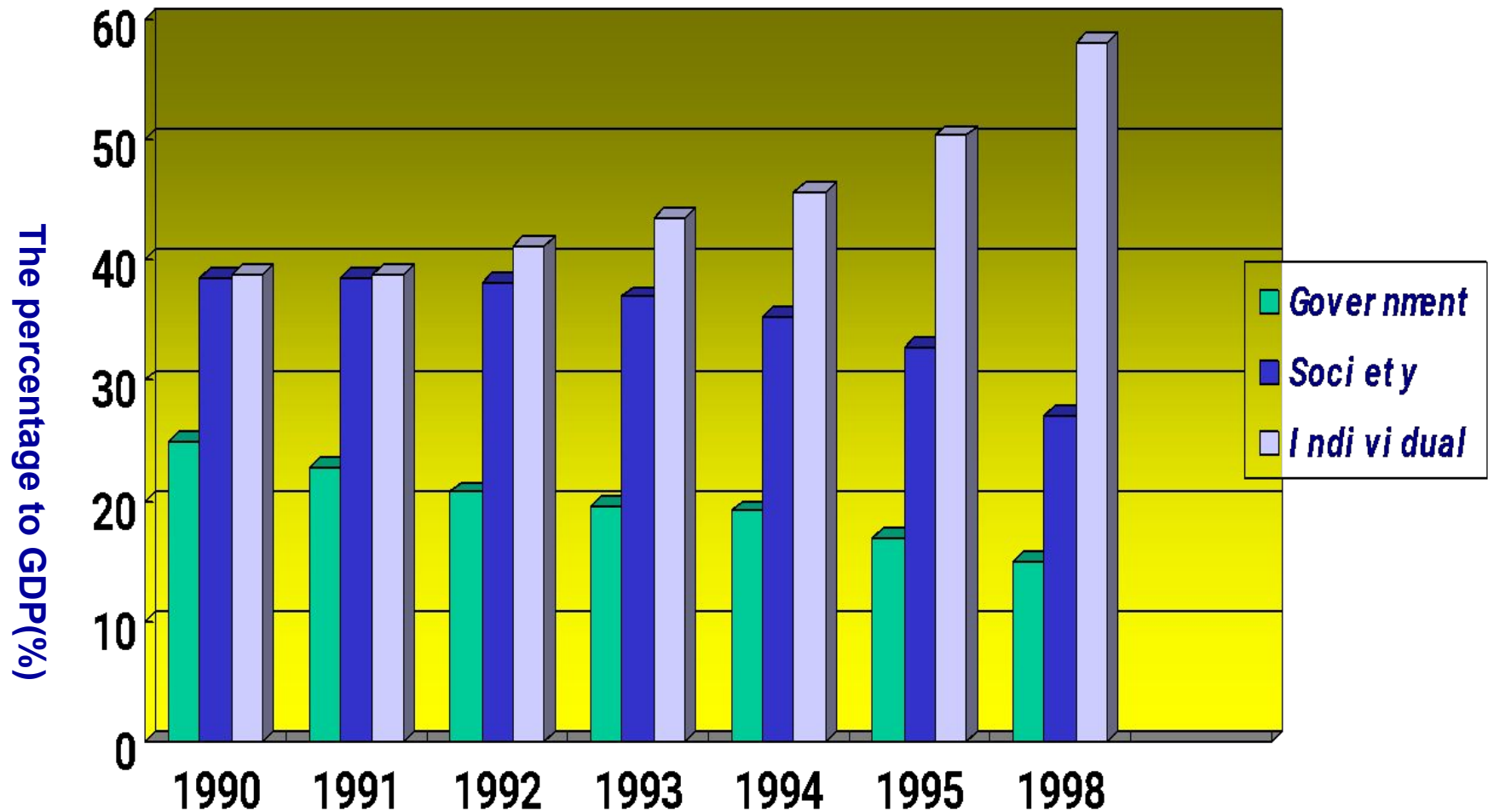
The absolute value of the national total health expenditure and total health expenditure per capita increased in successive years

This proportion of GDP showed increasing trend, but it is still lower than that of the countries of OECD.

Index	1995	1996	1997	1998	1999	2000
1.Total health expenditure (100 000 000) 卫生总费用	2257.8	2811.1	3211.1	3511.1	3811.1	4111.1
The budgetary health expenditure by Gov.(%) 政府预算支出	17.0	16.1	15.4	15.6	15.3	14.9
Health expenditure by society (%) 社会卫生支出	32.7	29.6	27.7	26.6	25.5	24.5
Health expenditure by individual (%) 个人卫生支出	50.3	54.3	57.7	58.6	59.5	60.5
2.The total health expenditure by per capita 人均卫生总费用	110.1	143.3	179.7	205.2	245.6	318.1
3. The percentage to GDP by health expenditure(%) 卫生总费用占GDP%	3.86	4.21	4.55	4.82	5.10	5.33
4. GDP(100 000 000) 国内生产总值	58478	67885	74463	78345	82068	89404

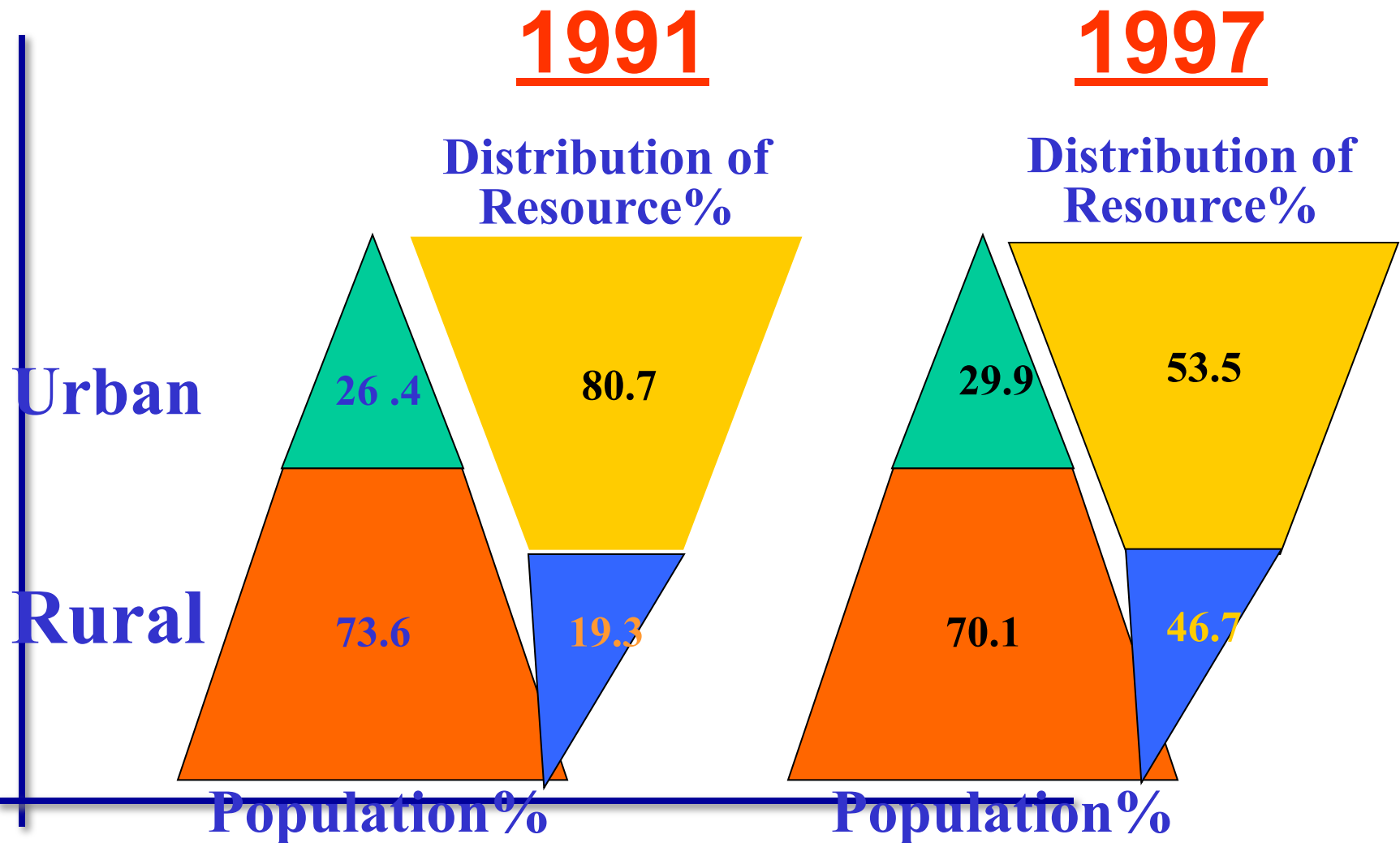
The percentage of the individual expenditure showed increasing, Gov. and society expenditure showed decreasing trend

# The proportion of the total health expenditure in China 1990-1995



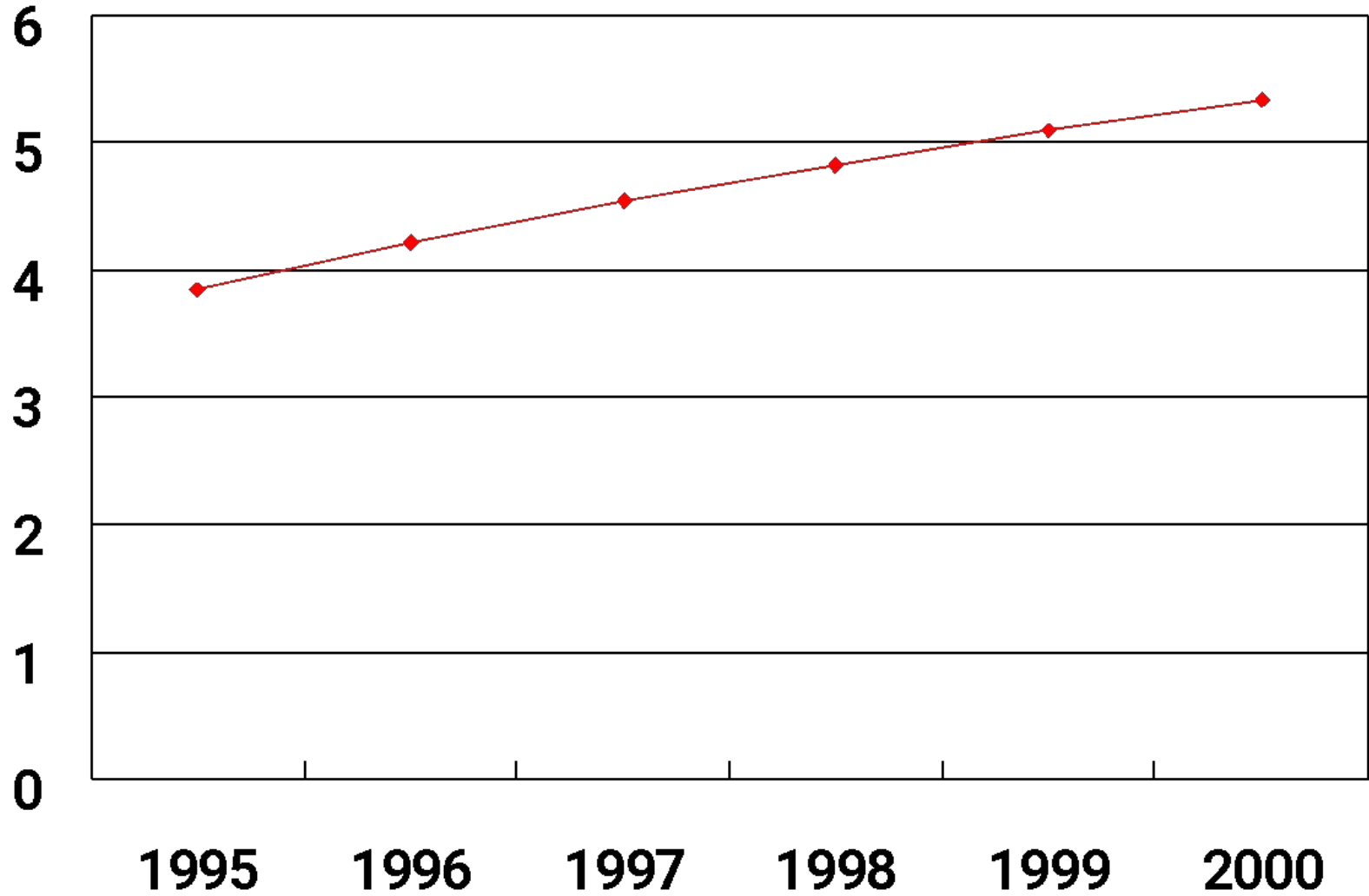
# Maldistribution of Health Resources

---

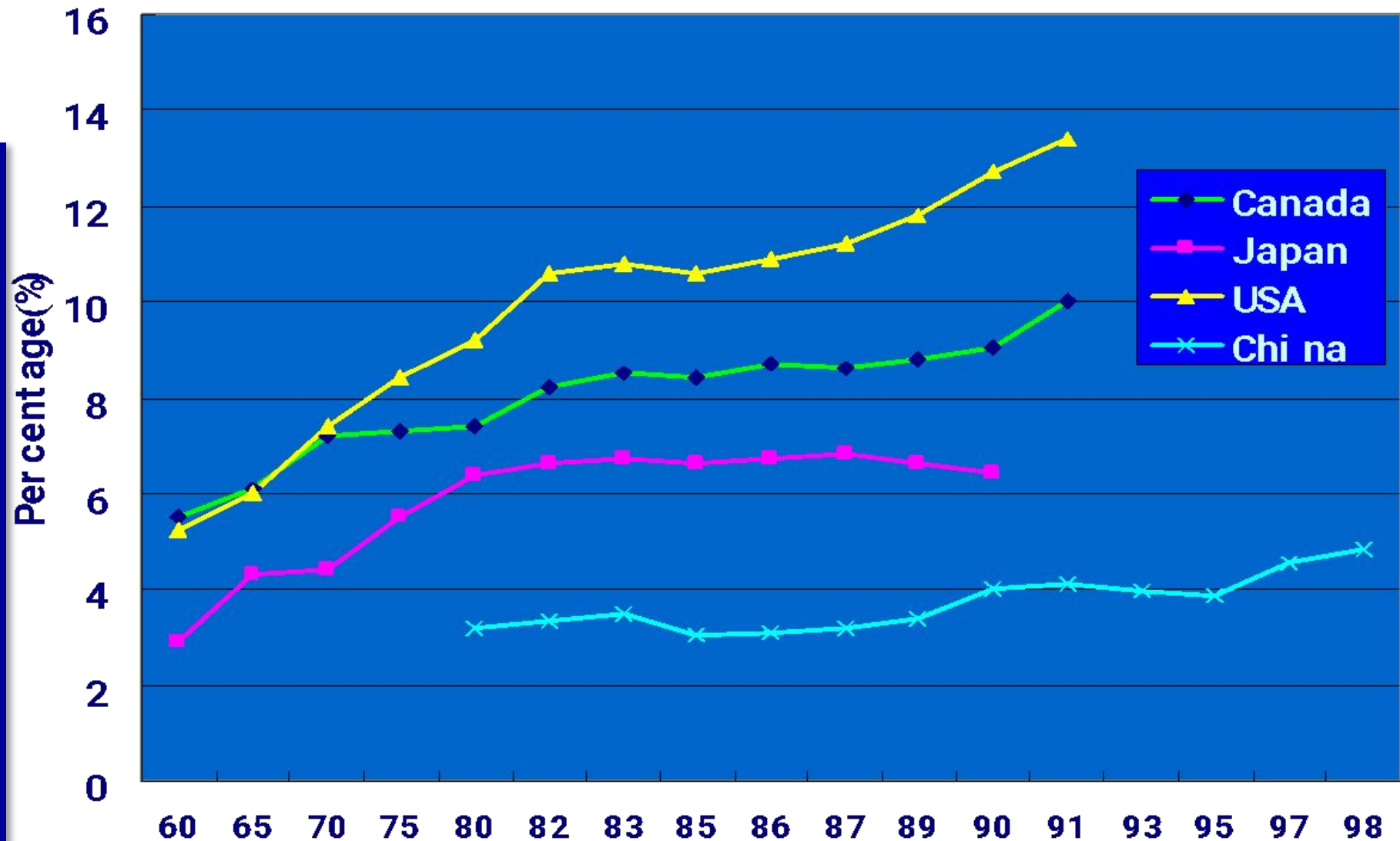


# Total Health Expenditure As Percentage of GDP

---



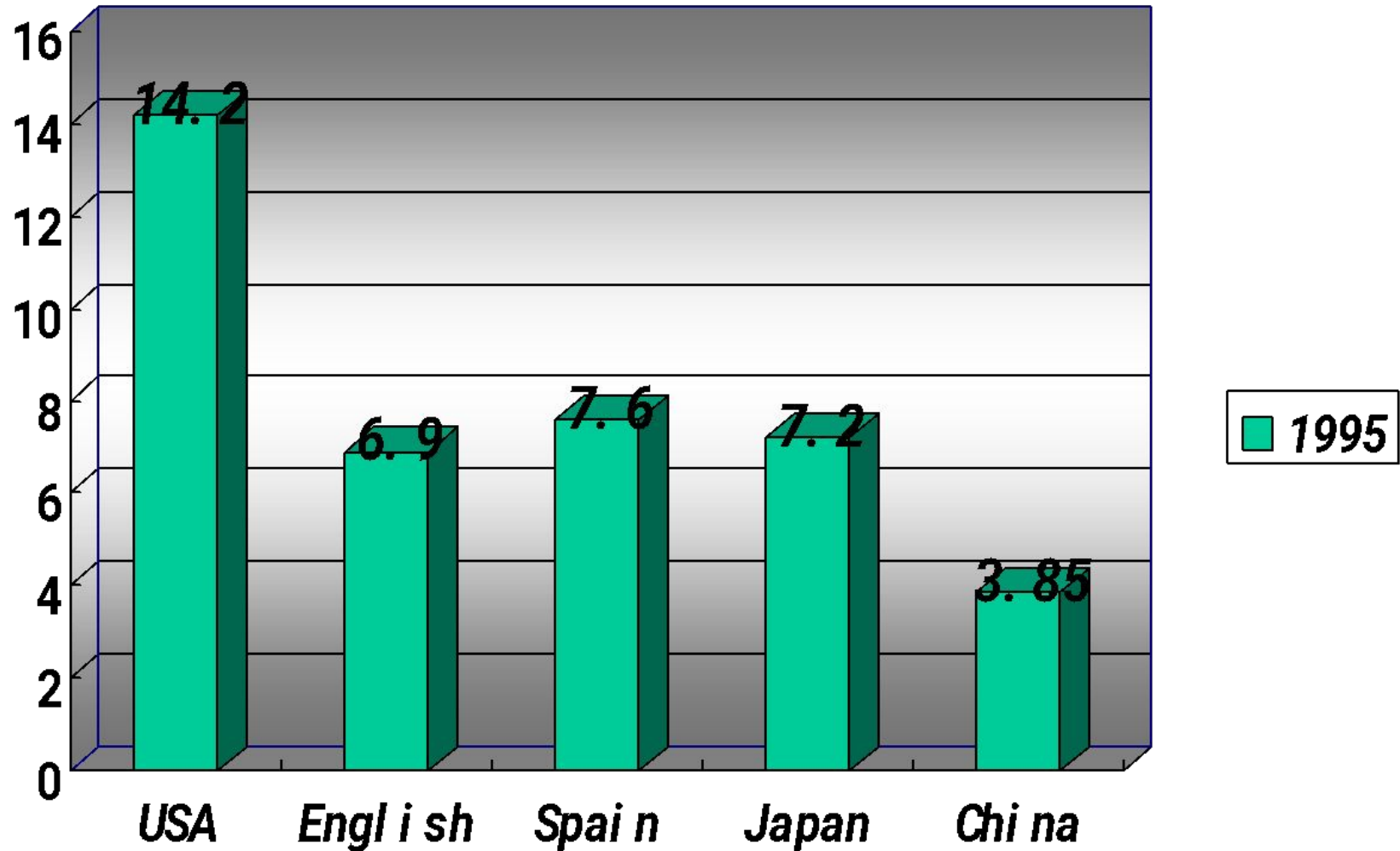
# The Percentage of Total Expenditure to GDP





# Comparison the proportion of health expenditure to GDP in Five Countries in 1995

---



# Health Policy in China(1950s)

---

- **Meet health needs of the workers, peasants and soldiers**
- **Put the prevention first**
- **Combine the Western and Chinese Traditional Medicine**
- **Link the health care work with the mass movement**

# Health Policy in China(1980s)

---

- **Put the prevention first**
- **Rely on the advanced scientific progress**
- **Mobilize the whole society to participate in**
- **Equal emphasis on the Western and Chinese Traditional Medicine**
- **Serve for people's health**

# Health Policy in China(2000s)

---

--The 1996 Health Meeting of China's Central Gov.

- **Emphasize on the health work in the rural areas**
- **Put the prevention first**
- **Equal emphasis on the Western and Chinese traditional medicine**
- **Rely on the science and education**
- **Mobilize the whole society to participate in**

# Public Health in China

---

- **History of Public Health**
- **Public Health Achievements**
- **Public Health Challenges**



# Brief History of PH in China

---

- **Before the Eighteenth Century**
- **The Eighteenth –Nineteenth Century**
- **The 20s-30s of the Twentieth Century**
- **The 50s-70s of the Twentieth Century**
- **The 80s-90s of the Twentieth Century**

# Brief History of PH in China

---

*--before of the eighteenth century*

- **The Yellow Emperor's Canon Medicine – the earliest and most comprehensive theory of traditional Chinese medicine**  
**The Ancient philosophy of PH: The best medical doctor should know how to deal a disease before it developed**
- **Disease involves two aspects: pathogen and body resistance, both should be considered when dealing with disease prevention.**
- **Holistic health: regular life, a proper diet, an appropriate exercise, harmony in mental and emotional activities**

# **Brief History of PH in China**

---

*-- the 18<sup>th</sup> –19<sup>th</sup> century*

- **Book on epidemic febrile diseases**
- **Experience of diagnosing and treating**
- **Western(modern) medicine into China in 1830s,  
by Christian missionaries**



# Brief History of PH in China

---

*-- the 20s-30s of 20<sup>th</sup> century*

- **The western medical hospital in China, represented by Peking Union Medical College Hospital**
- **The first Department of Public Health within PUMC in 1921, by Dr. John B. Grant, who was the Far-East representative of RF**
- **A model of health-care community in Ding County, Hebei province, as an educational field of department of PH in 1928**
- **An early example of primary health care system was established in Ding county during 1932-1937 by Prof. Chen Zhi-qian**

# Brief History of PH in China

---

*-- the 50s-70s of 20<sup>th</sup> century*

- **Coping the public health system of the former Soviet Union in 1950s**
- **Setting up an anti-epidemic system in 1950s**
- **Separate public health school from clinical medicine in 1950s**
- **Forming Patriotic Health Campaign, established PHC**
- **Barefoot doctor system in rural areas in 1960s**
- **Red cross clinic system in urban areas in 1960s**

# Brief History of PH in China

---

*-- the 50s-70s of 20<sup>th</sup> century*

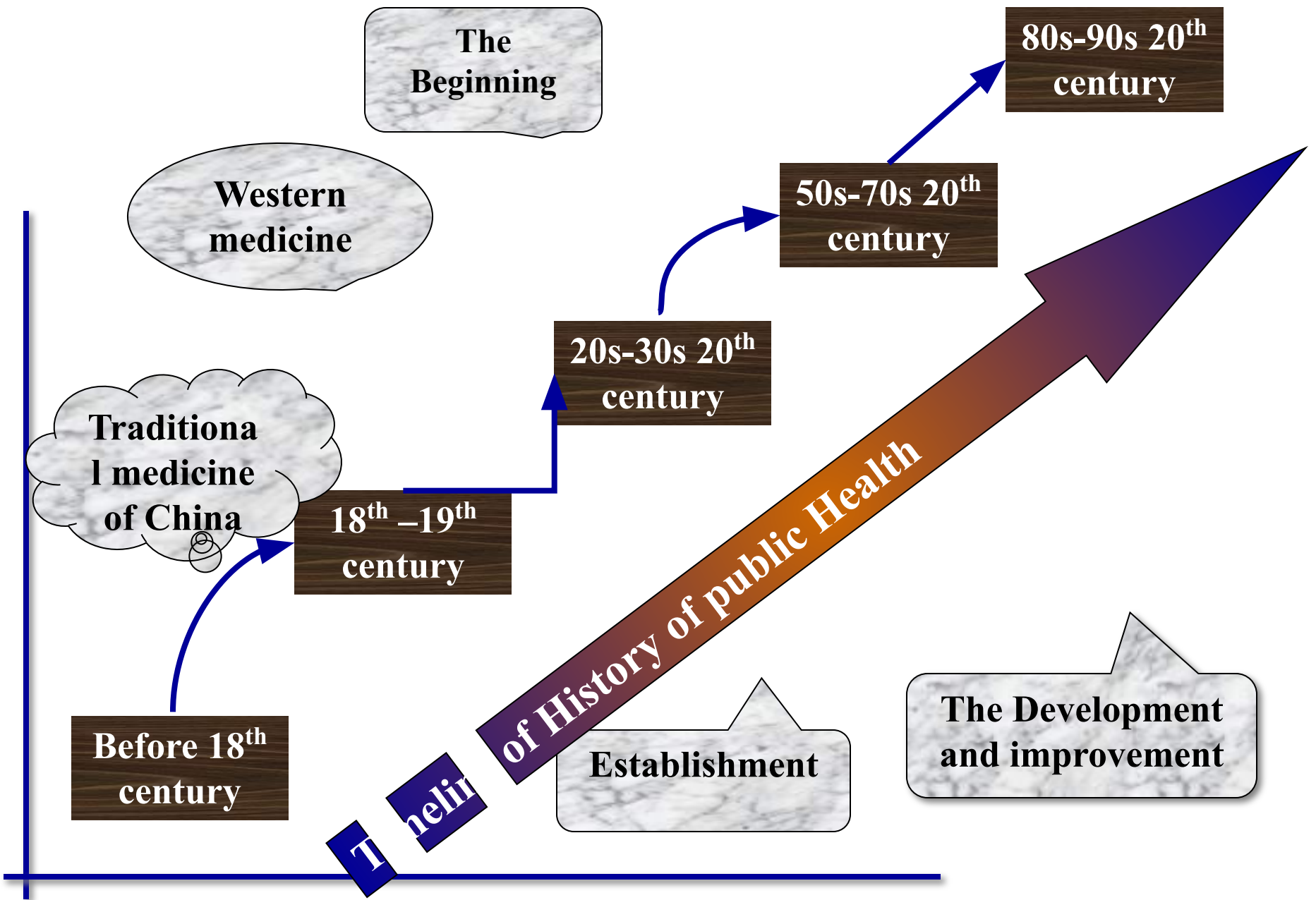
- **The great sanitary awakening**
- **Preventing acute infectious diseases**
- **Health education**
- **Free basic immunization**
- **Established three-tiered PHC network**
- **A war against ‘four devils’: flies, mice, mosquitoes and sparrows**
- **In the 1960s-1970s**
  - controlled many serious epidemics of communicable diseases, such as cholera, plague and malaria**

# Brief History of PH in China

---

*-- the 80s-90s of 20<sup>th</sup> century*

- **The rapid development of public health in China**
  - reform and open policy
  - development of science and technology and education
  - the primary health care in China
  - international collaboration
- **Established and perfected health three-tiered network**
- **Strengthened maternal and child health**
- **Expanded program immunization**



# **Birth rate(BR). Infant mortality rate(IMR). Crude death rate(CDR). Life expectancy(LE)**

<b>Year</b>	<b>BR(%)</b>	<b>IMR(‰)</b>	<b>DR(‰)</b>	<b>LE(Year)</b>
<b>1950</b>	<b>37.0</b>	<b>195</b>	<b>18.0</b>	<b>40.8</b>
<b>1960</b>	<b>20.9</b>	<b>121</b>	<b>25.4</b>	<b>49.5</b>
<b>1970</b>	<b>33.4</b>	<b>61</b>	<b>7.6</b>	<b>63.2</b>
<b>1980</b>	<b>18.2</b>	<b>47</b>	<b>6.3</b>	<b>67.8</b>
<b>1990</b>	<b>21.1</b>	<b>38</b>	<b>6.7</b>	<b>70.9</b>
<b>1999</b>	<b>15.32</b>	<b>33</b>	<b>6.46</b>	<b>72.0</b> <b>(1998)</b>

# Leading Causes of Death

---

**Order**

**Urban**

**Rural**

**1**

**Cancer**

**COPD**

**2**

**Stroke**

**Cancer**

**3**

**Heart Dis.**

**Stroke**

**4**

**COPD**

**Heart Dis.**

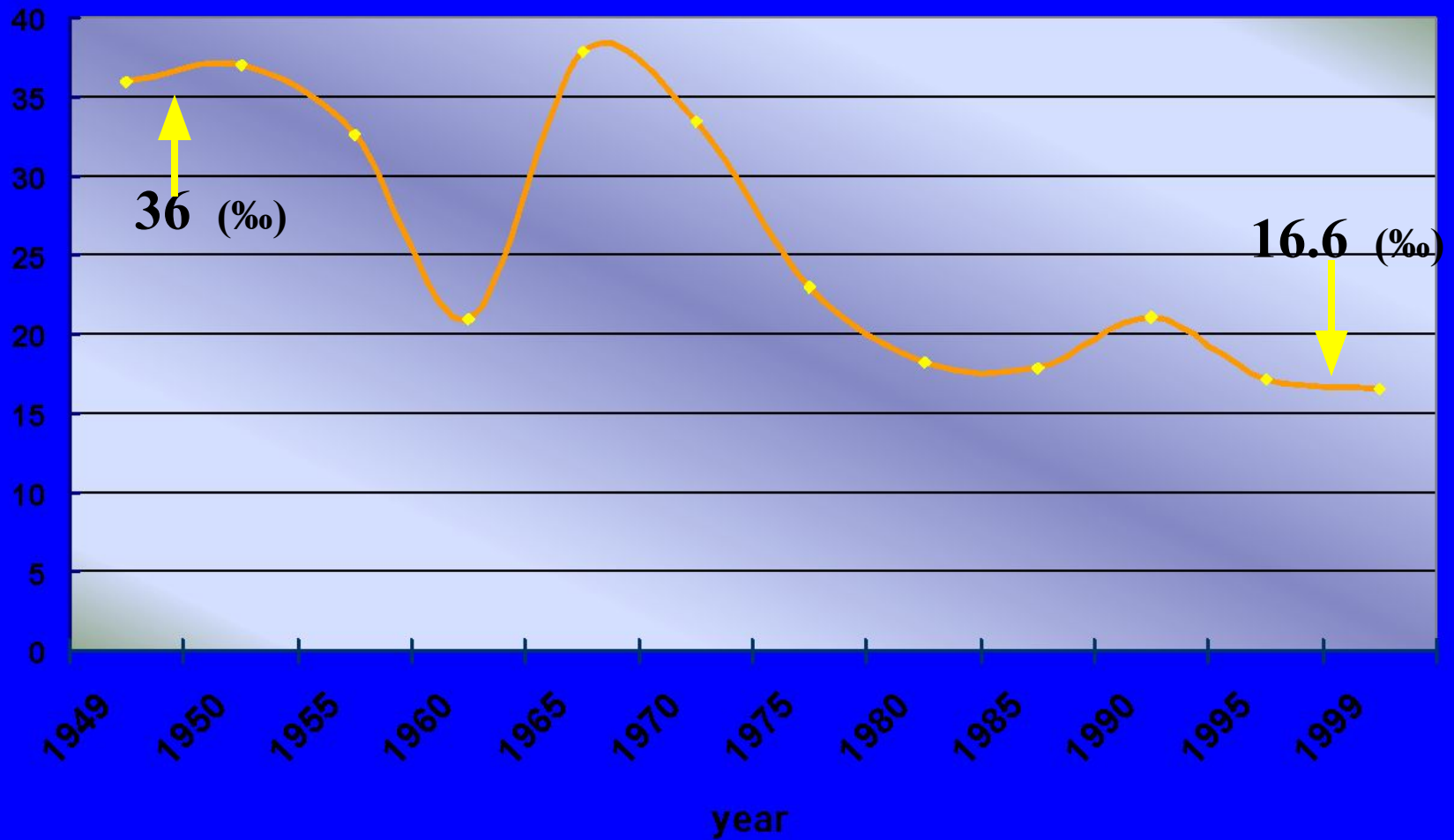
**5**

**Injury**

**Injury**

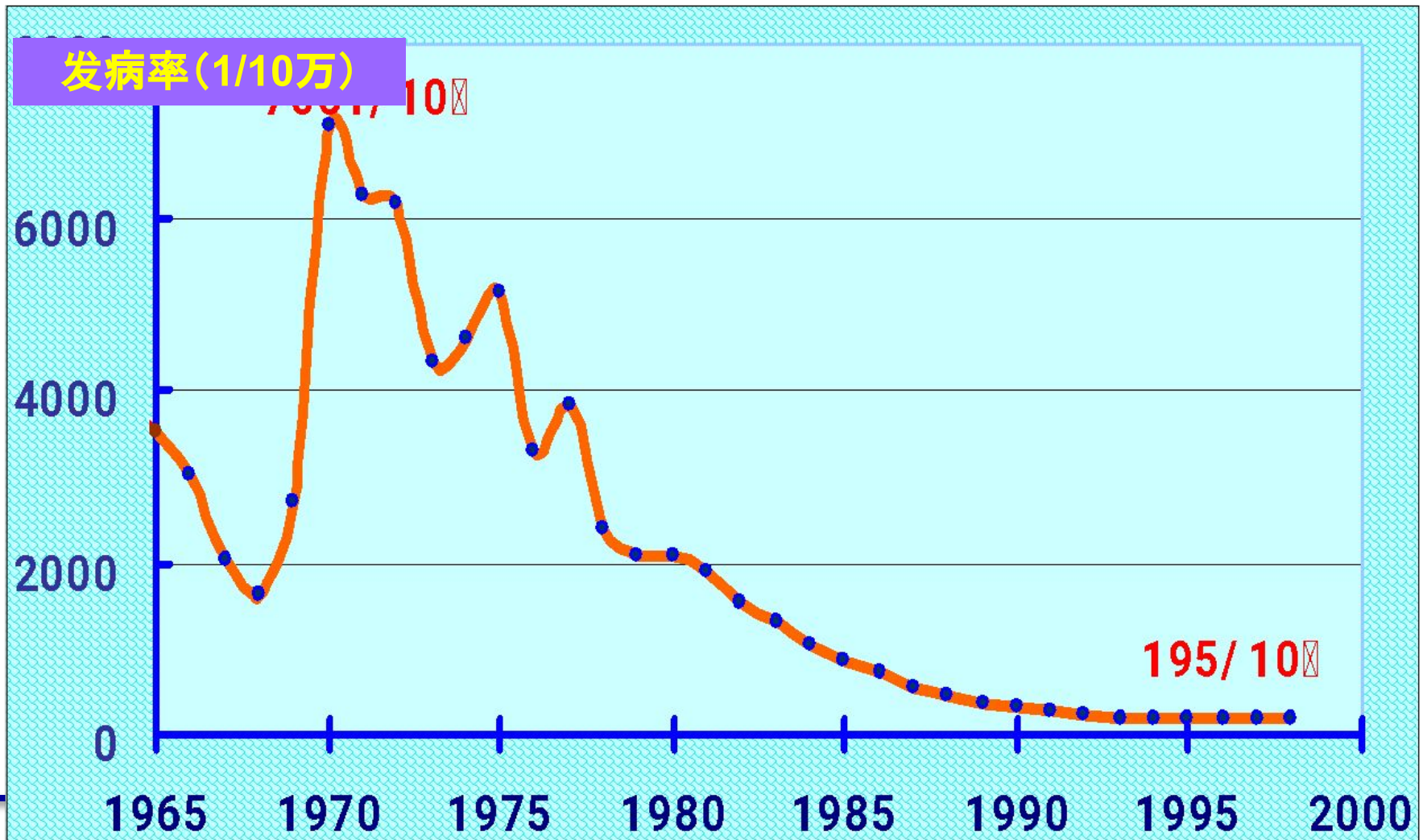
# Birth Rate Decreased

Birth Rate (‰)



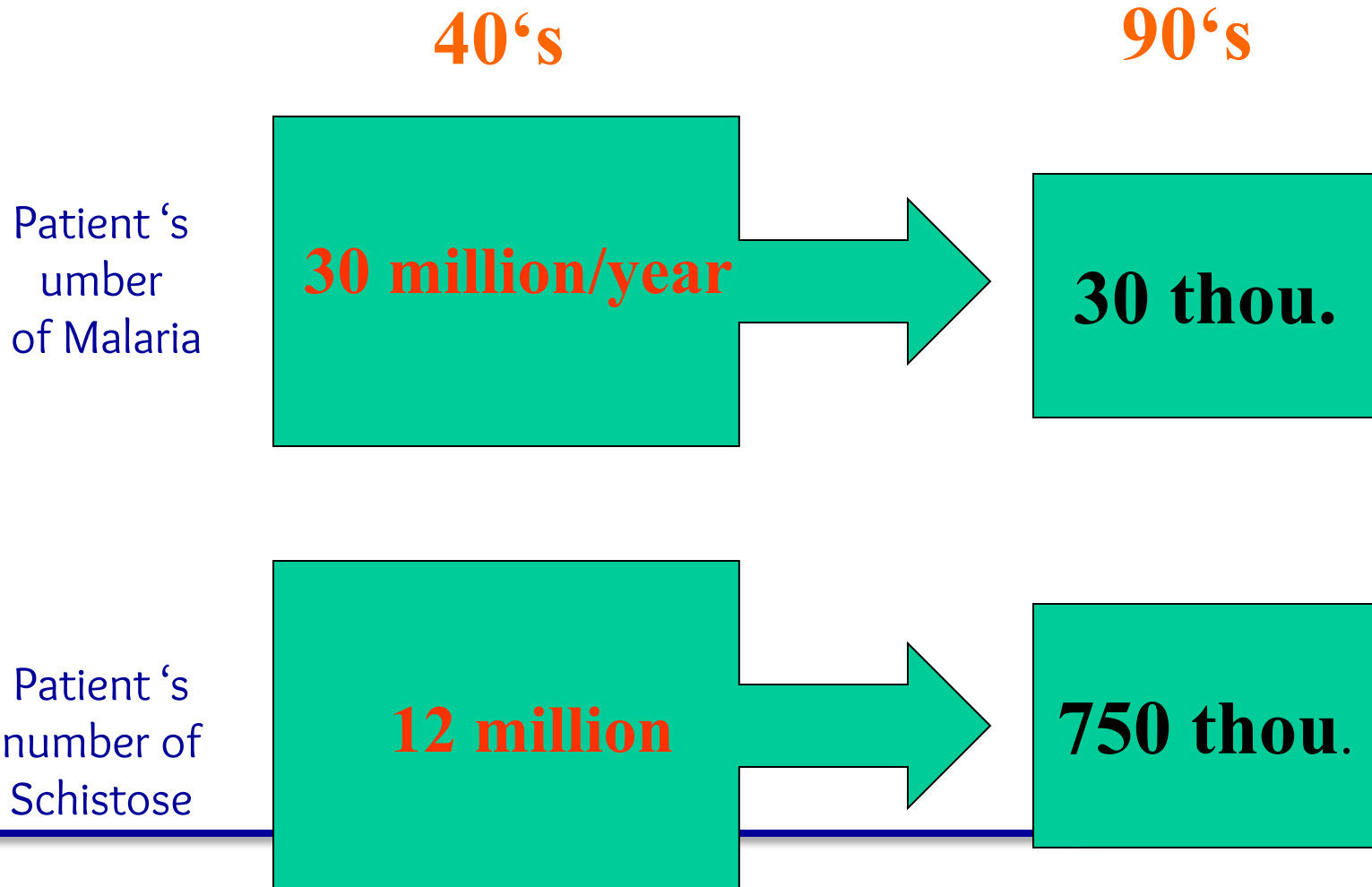


# The Incident Rate of Communicable Disease in China(1965~1998)

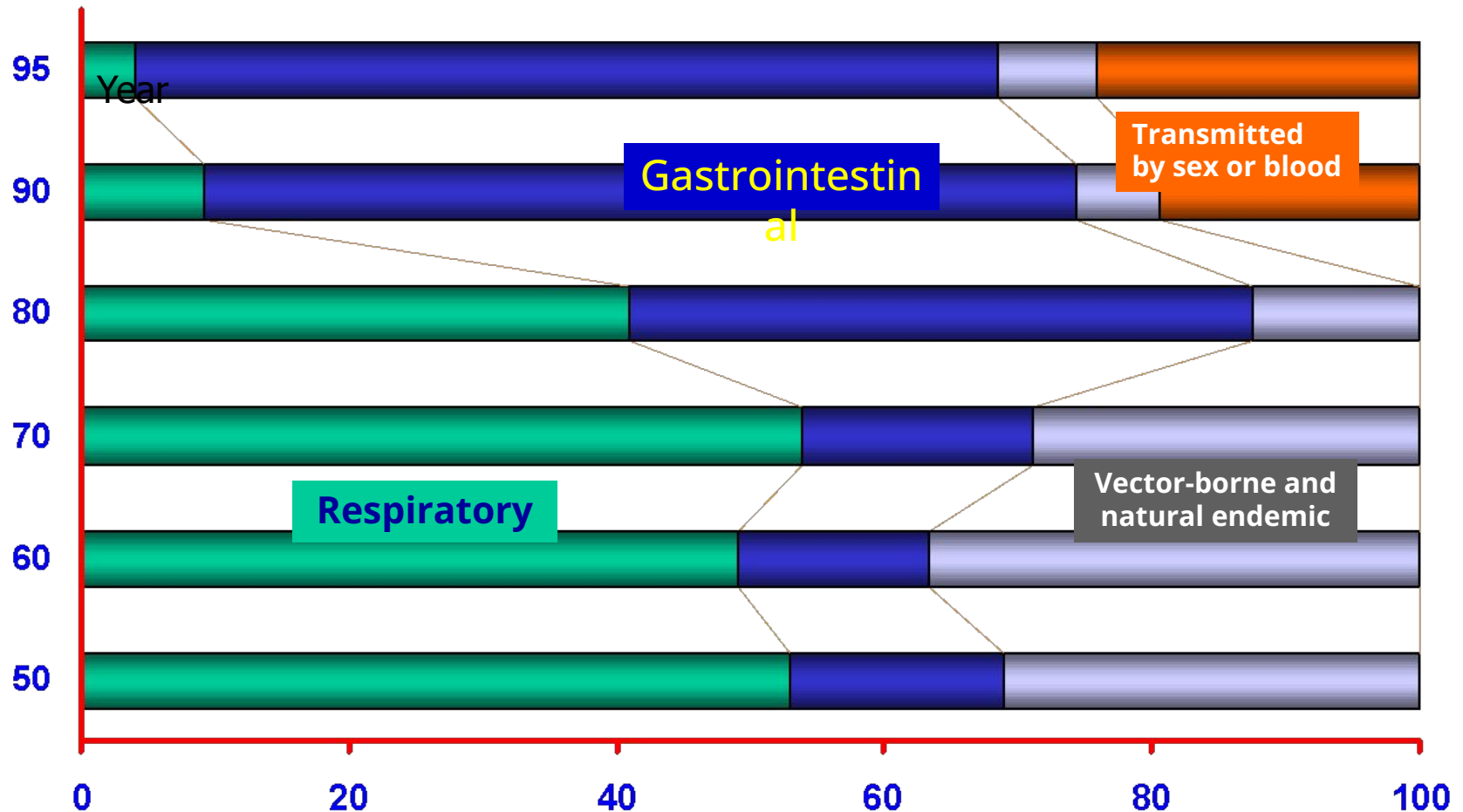


# Parasitic Diseases: Under Control

---



# Proportion of different infectious disease cases 1965-1995 (%)

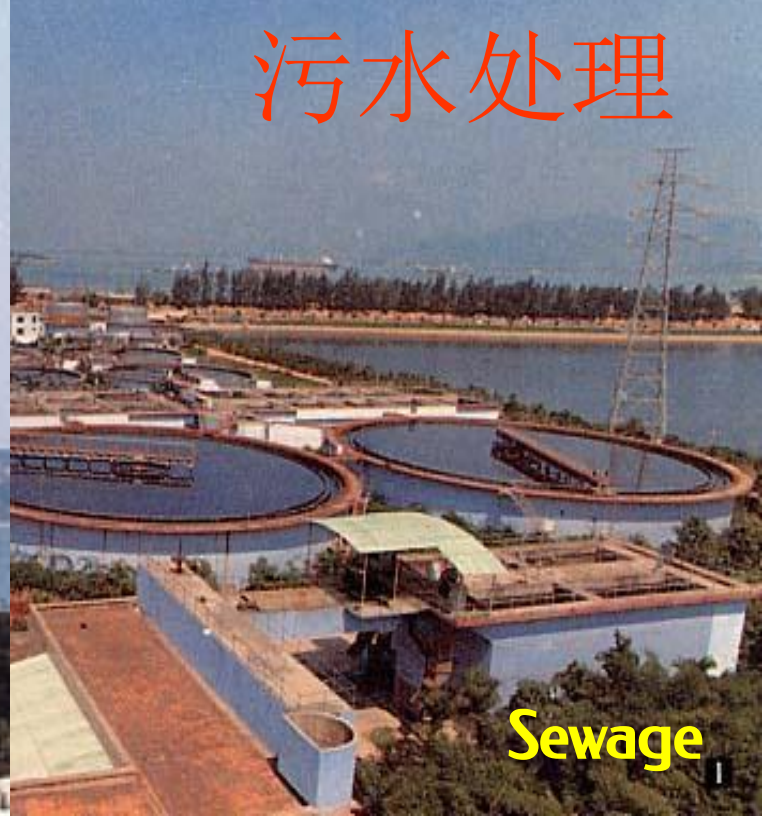




# Patriotic Sanitation Campaign



Sanitary privy



污水处理

Sewage

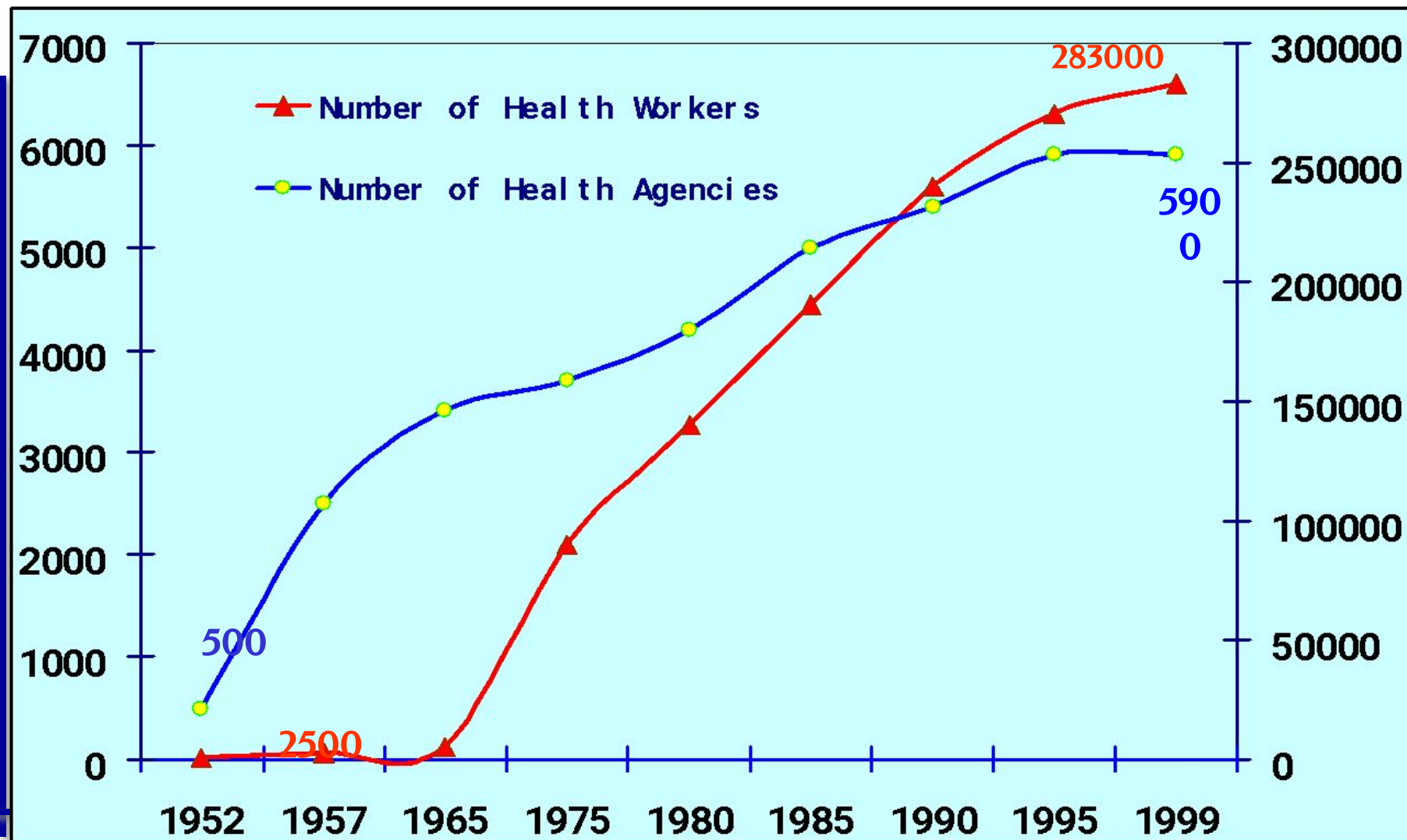
# Strengthening Health legislation

- issued 9 laws, 24 rule of laws and more than 400 regulations





# Development of Epidemic Prevention Institutions



# World Health Report 2000 Selected Indicators

	Attainment of Goals 达标成就			Performance 效能	
	Health level 健康水平 DALY	Responsiveness 反应性水平	Fairness in financial contribution 资金捐助 公正性	On level of health 按健康水平评估	Overall health system 整体效能
<b>USA</b>	24	1	54-55	72	37
<b>Sweden</b>	4	10	12-15	21	23
<b>Japan</b>	1	6	8-11	9	10
<b>China</b>	82	88-89	188	61	144
<b>Thailand</b>	100	33	128-130	102	47

# **The Experts of the World Bank Evaluate Primary Health Care in China:**

---

**“Truly, Declare of Alma-Ata in 1978  
about the realization ‘Health for all by  
the year 2000’ by primary health care  
was deeply influenced by Chinese  
model”**

---

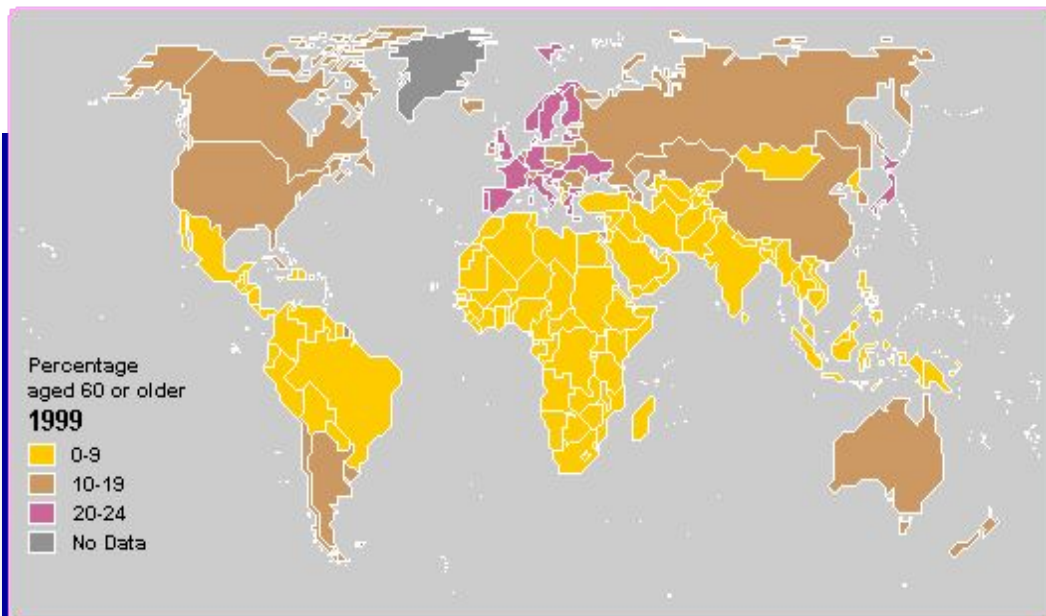


# Challenges

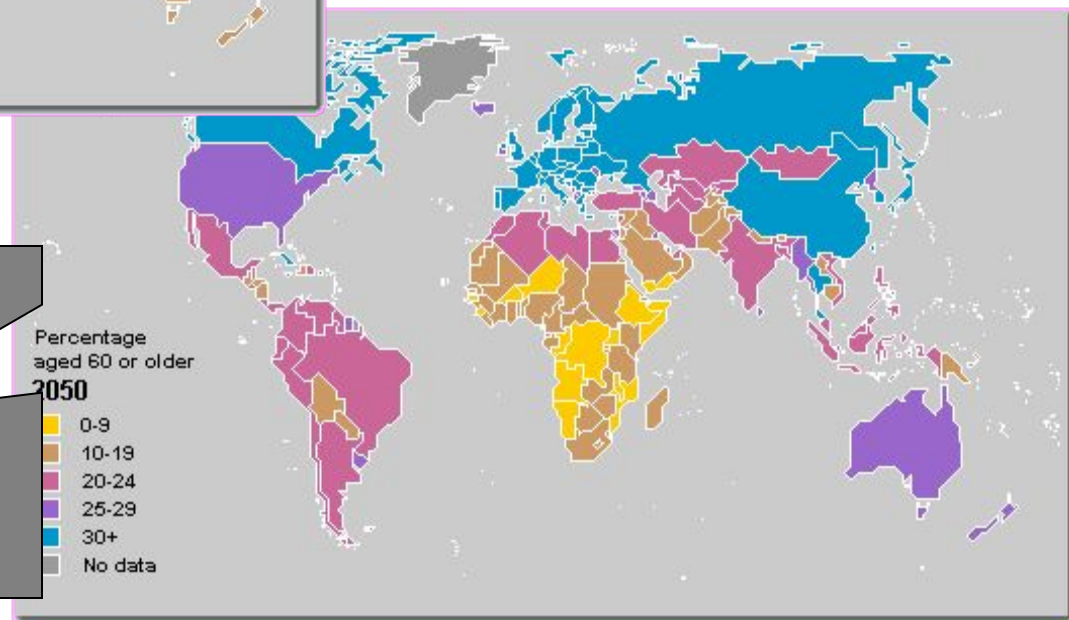
---

- **Change of Population**
  - **Urbanization and industrialization**
  - **Double burdens of diseases**
  - **Behavioral and Environmental**
  - **Unreasonable of allocation**
-

# Trend of Age Composition Change



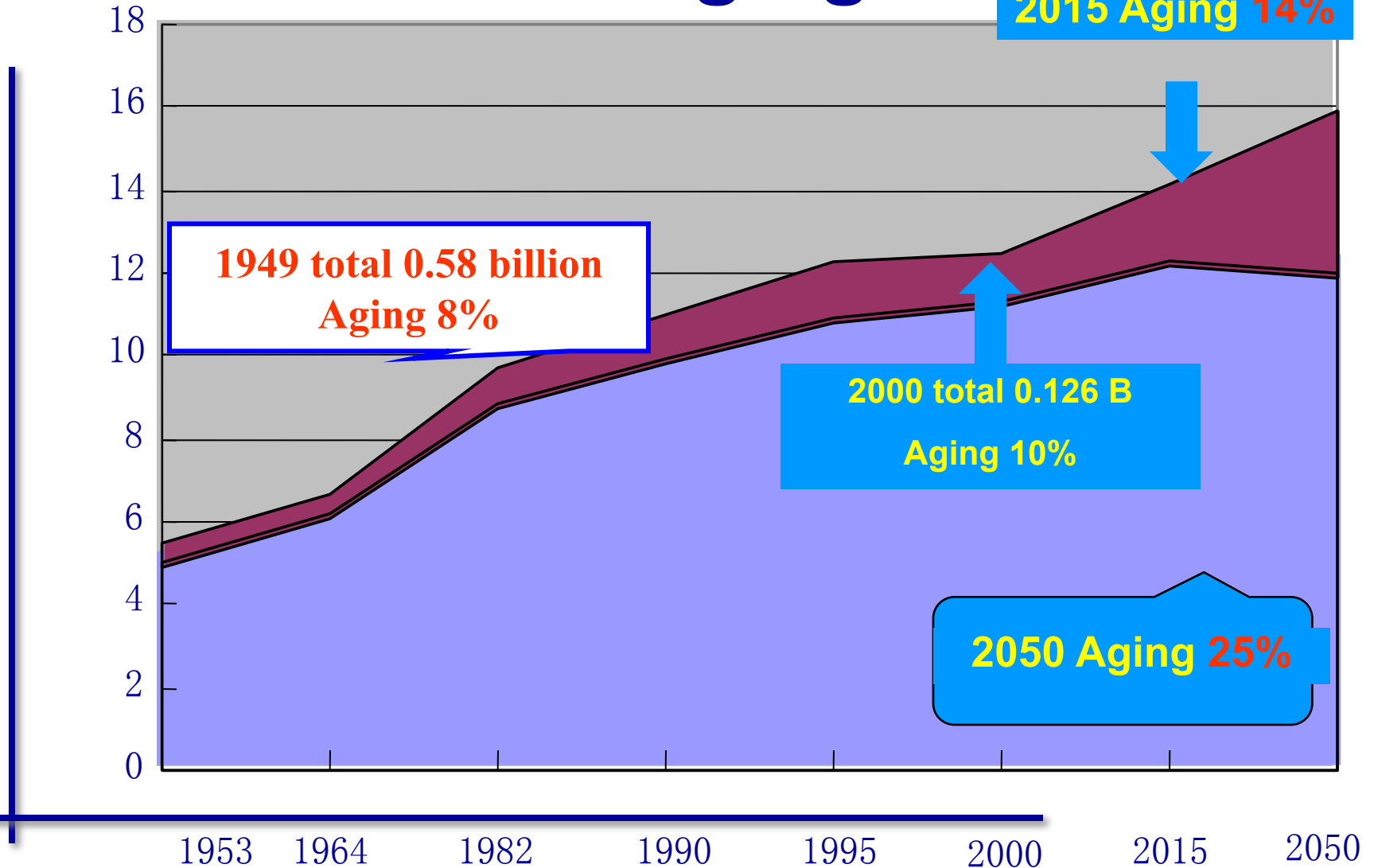
**1999 year**  
China: 0.126 billion  
Asia: 0.314 billion  
World: 0.593 billion



**2050 year**  
China: 0.440 billion  
Asia: 1.239 billion  
World: 1.969 billion

# Trend of Population and Aging

(0.1 Billion)



# The change trends of the structure of population, dependency ratio and medical vulnerable population in China from 1980 to 2025

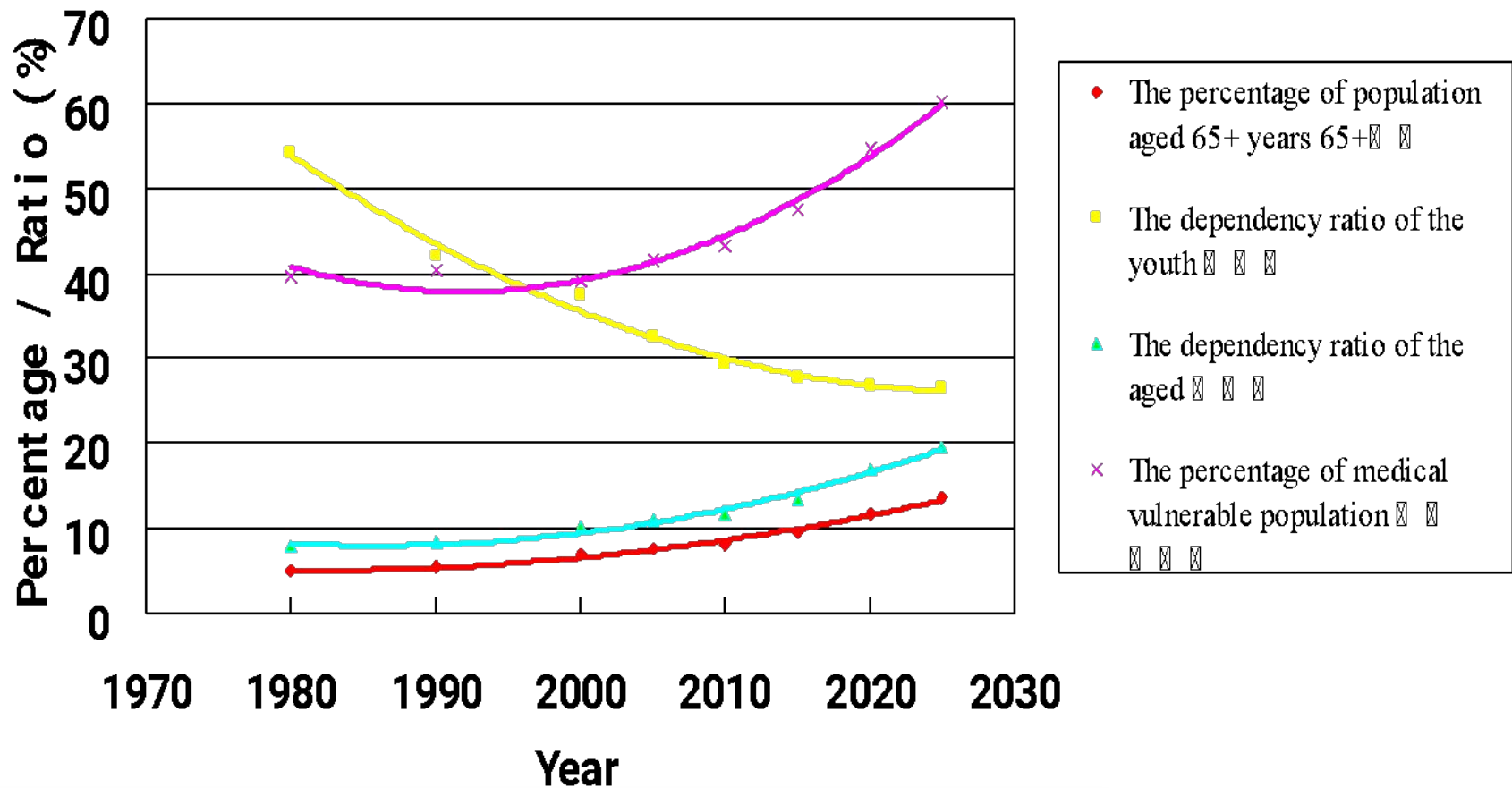
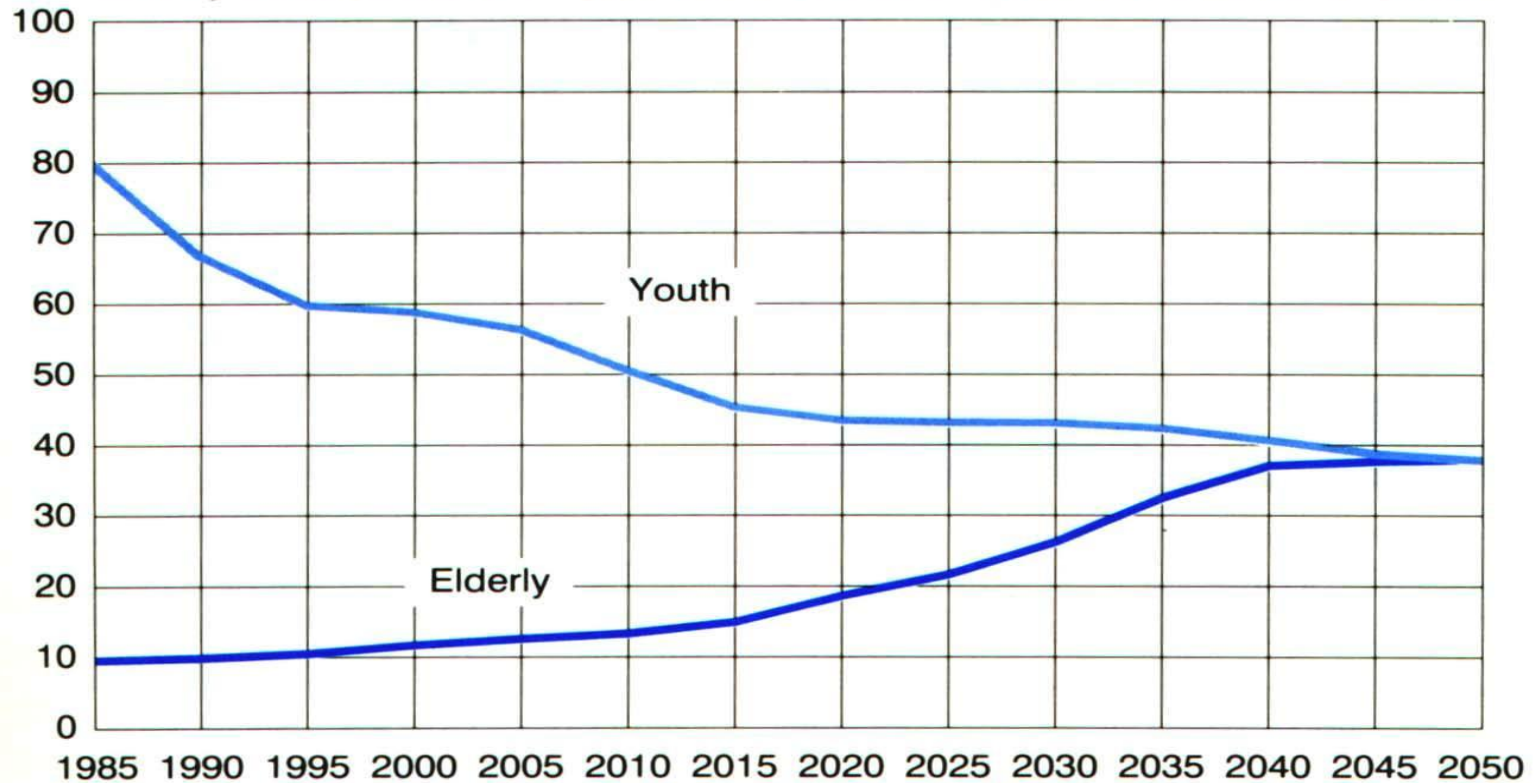


Figure 7-3.

### Youth and Elderly Support Ratios in China: 1985 to 2050

(Youth ratio: persons 0 to 19 years per 100 persons 20 to 64 years;  
Elderly ratio: persons 65 years and over per 100 persons 20 to 64 years)



Source: U.S. Bureau of the Census, Center for International Research, International Data Base on Aging.



# Urbanization and Industrialization

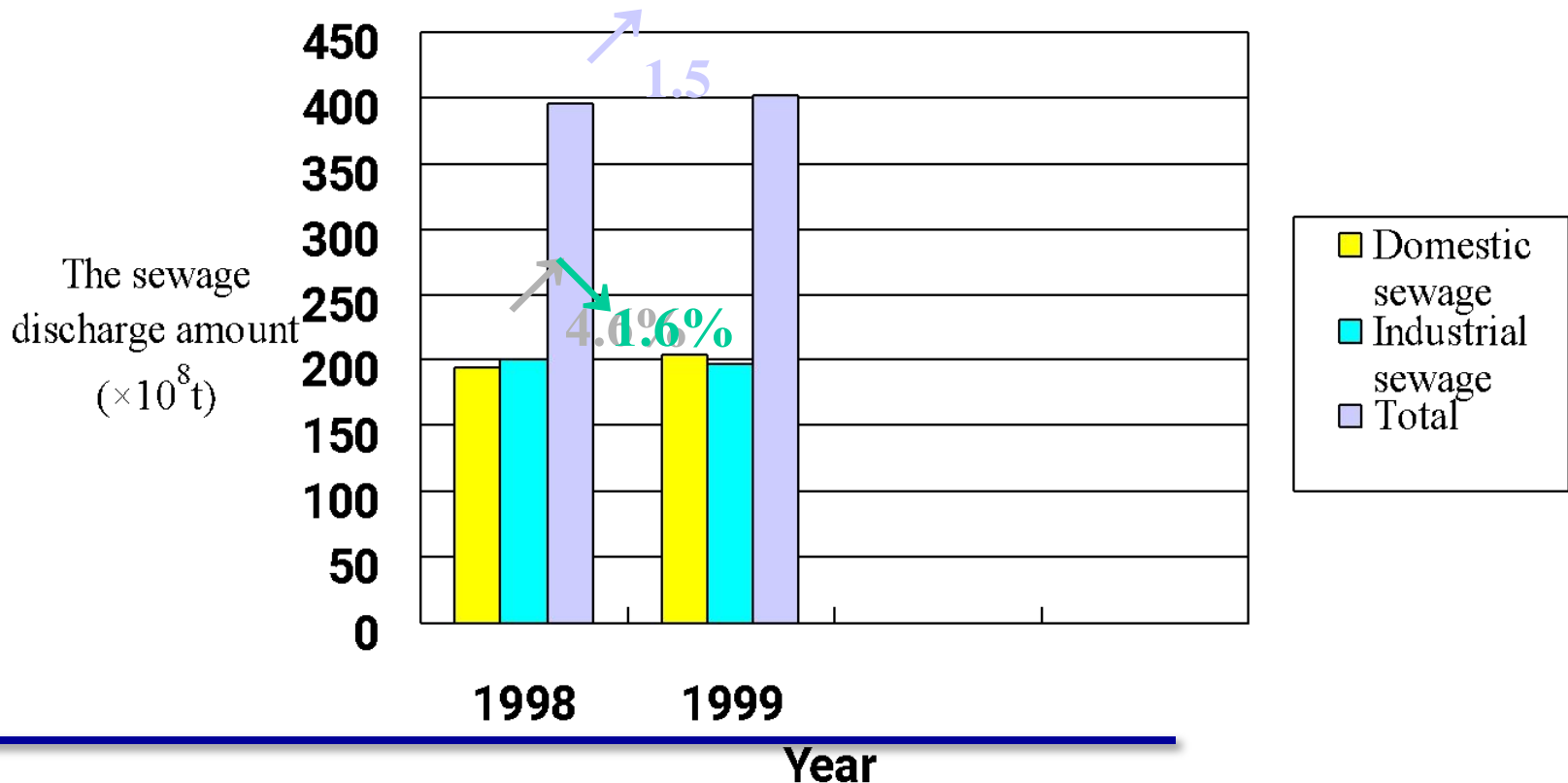
- **Environmental pollution**
- **Life and work stress**
- **Injury**
- **Immigrant**

# The Natural Ecological Environment

## — Pollution

### ⇒ Wastewater

The comparison of the sewage discharge between 1998 and 1999



⇒ Waste residue

□ The amount of urban refuse in China

↑ 8.98%

☞ Beijing

↑ 15%~20%

□ In 1996 the amount of urban refuse cleared and transported

$1.08 \times 10^8$  t

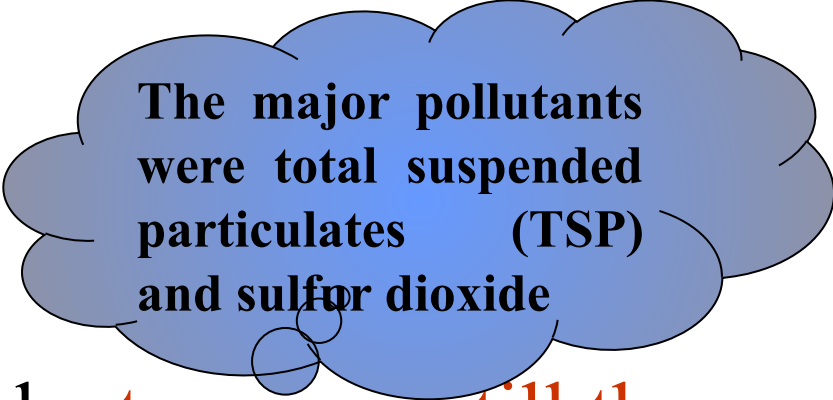
☞ In 2000

$1.2 \times 10^8$  t

$\sim 1.4 \times 10^8$  t



## ⇒ Waste gas



The major pollutants were total suspended particulates (TSP) and sulfur dioxide

- In 1999, the coal smoke type was still the main type of air pollution in China
- A few megalopolises were the complex type of coal smoke and automobile exhaust pollution

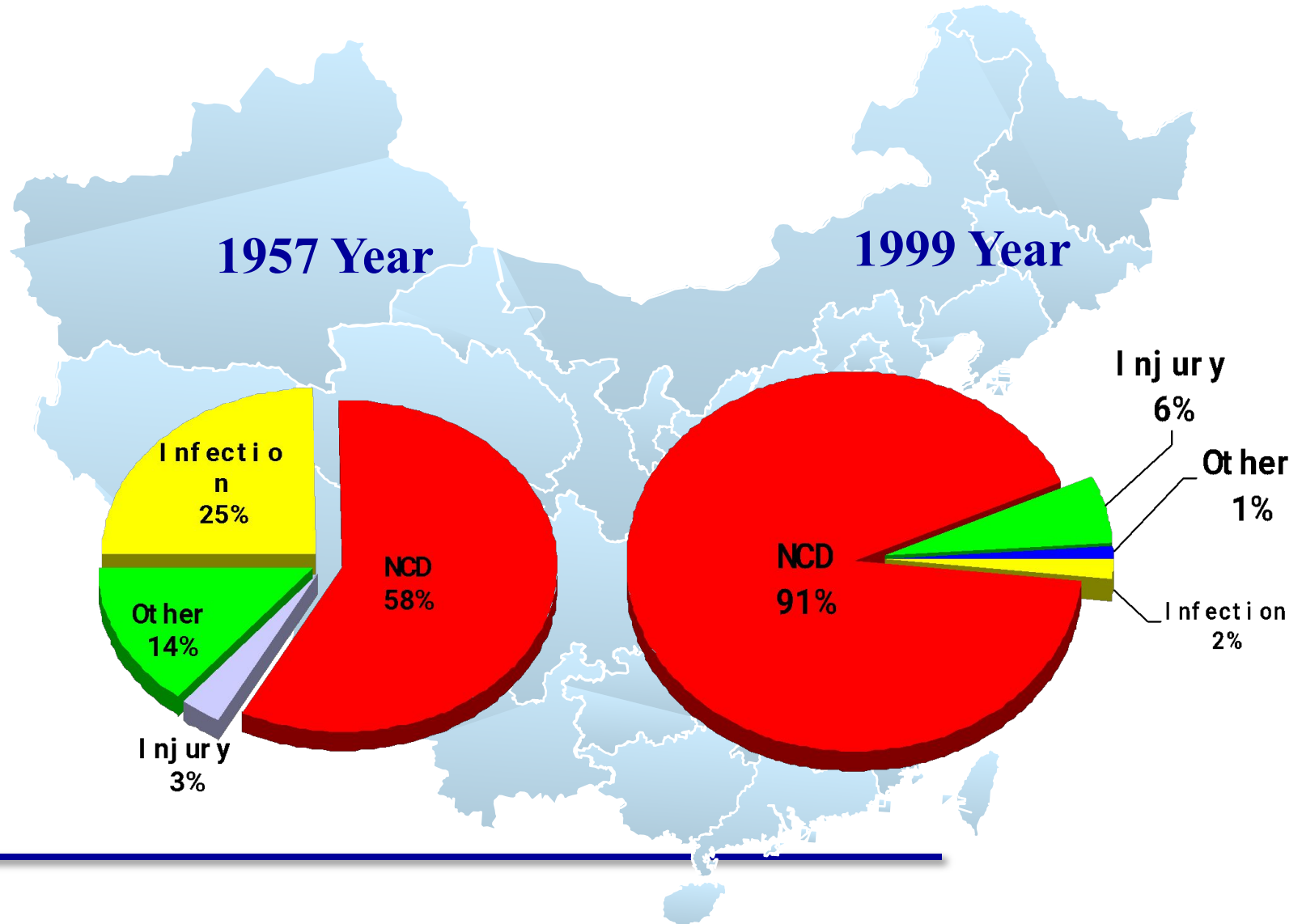
# Double Burdens of Disease

- **Threats of communicable disease and parasitic disease still exists**
- **Chronic and non-communicable disease growth rapidly**

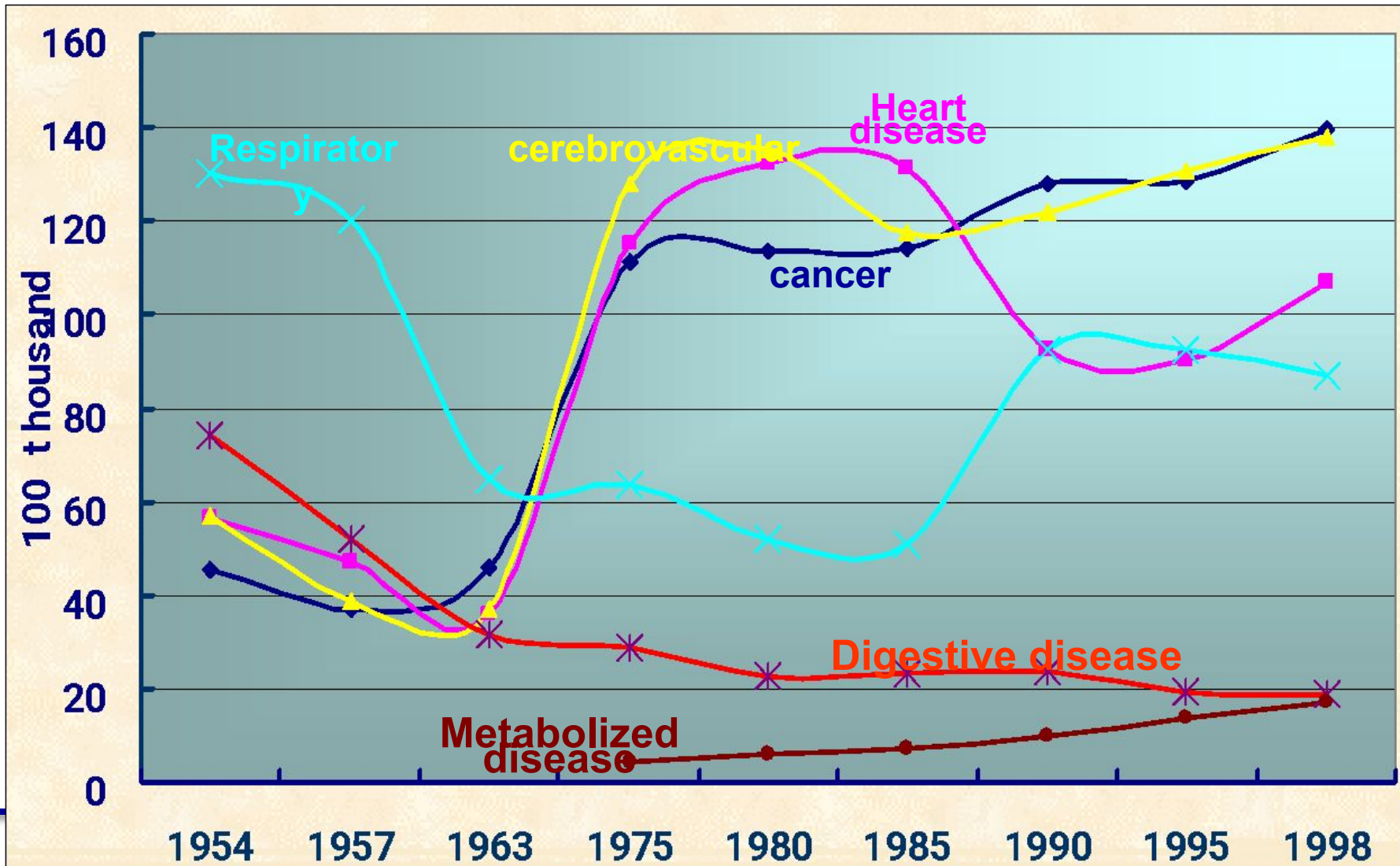
# Threats of Infectious Disease and Parasitic Disease Still Exists

- Threats from old infectious diseases such as Tuberculosis and hepatitis still exists
- New threats from new arising communicable diseases such as AIDS

# Changing Trend of Case of Death In urban



# The prevalence and mortality rate of chronic and non-communicable diseases rises continuously ( In urban areas, 1954-1998)



# Behavioral Risk Factors

☹ Smoking

☹ Drinking

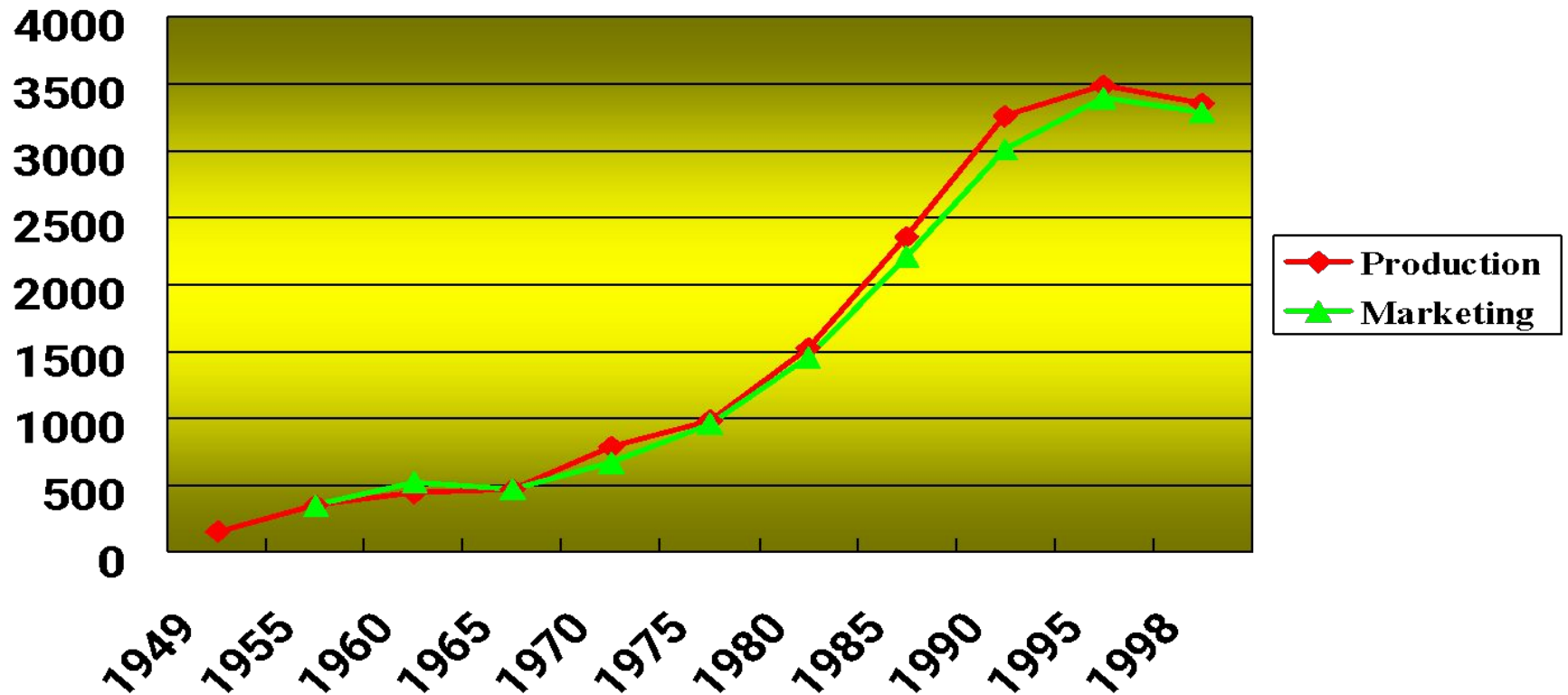
☹ Dirt

# Smoking

At present China has turned into the biggest country of tobacco consumption in the world

- ❖ Accounting for more than 30% of the total tobacco consumption in the whole world
- ❖ Increasing at the speed of 5.3% annually

# Production and Marketing of tobacco in China



Source: The Report of Tobacco in China



It is expected that it will reach 47.2624 million tons in 2000

# Drinking

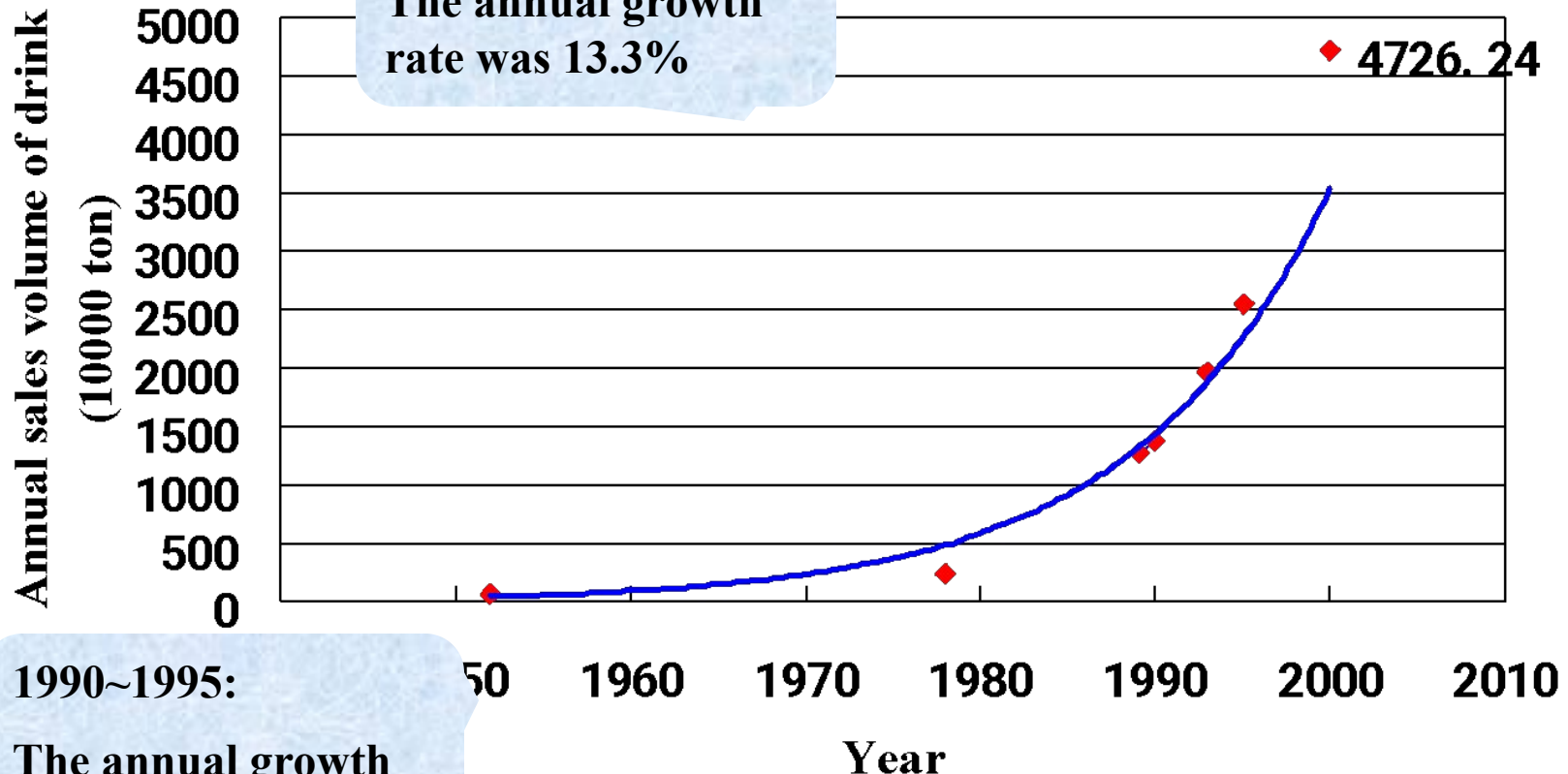
1952~1978:

The annual growth rate was 5.3%

## The statistics of the annual sales volume of drink in China

1982~1989:

The annual growth rate was 13.3%



1990~1995:

The annual growth rate was 13.1%

# Diet

The comparison of food consumption by residents between 1991 and 1997 in the city and country of Chongqing municipality (kg/year·person)



**Grain**

City



117.9→71.1

Country



250.3→245.5

**Overweight: BMI  $\geq 25$  kg/m<sup>2</sup>**

**Obesity: BMI  $\geq 30$  kg/m<sup>2</sup>**

**The prevalence of overweight**

**The prevalence of obesity**

**18.28%**

**2.48%**

**In Chinese population aged 20+**

**Overweight**

**Obesity**

**240 million**

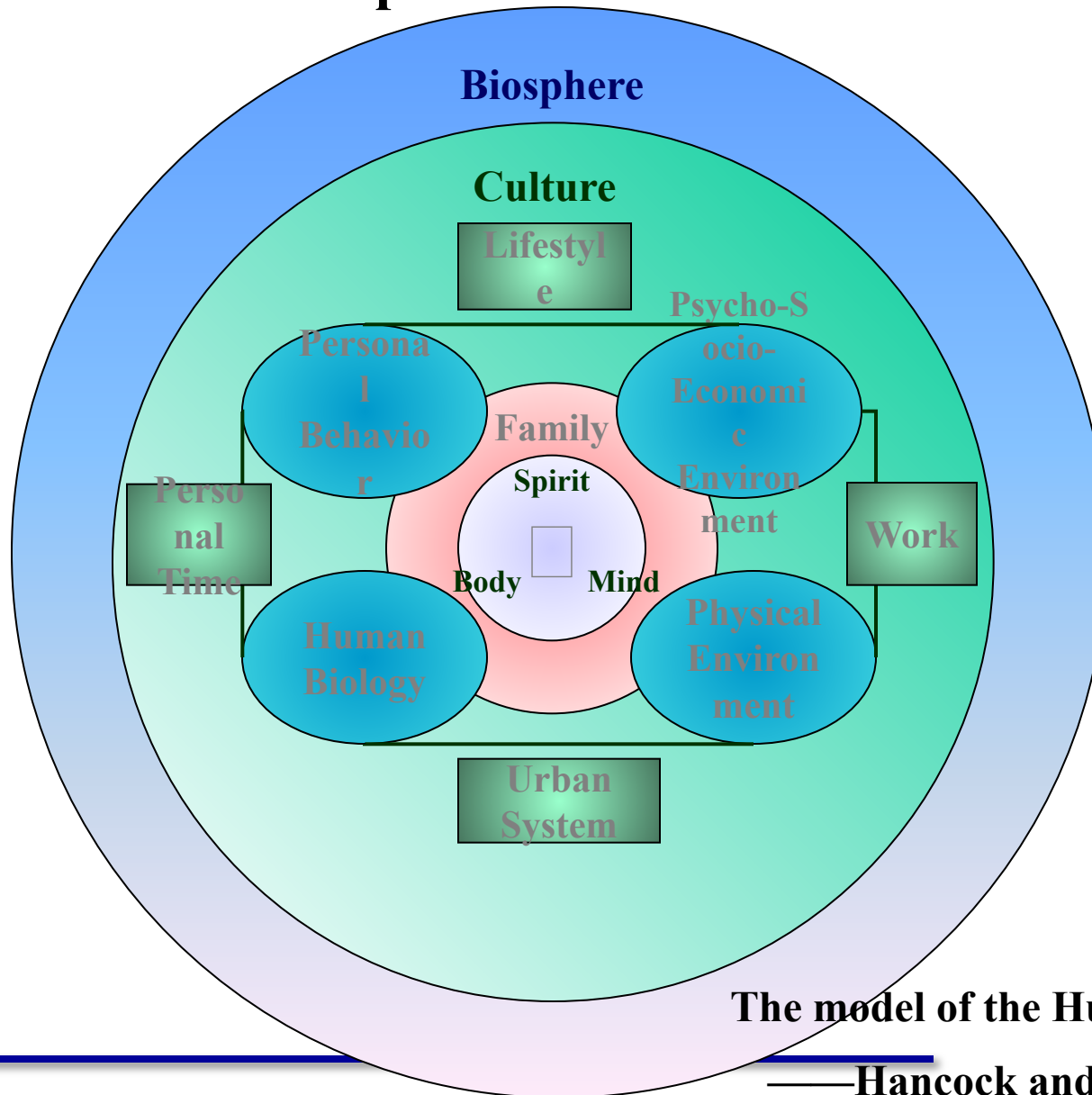
**More than 30 million**



# Environments Risk Factors

- ☹ Social population environment
- ☹ Natural ecological environment
- ☹ Working environment
- ☹ Living environment

# The new concept of environment and health



The model of the Human Ecosystem

— Hancock and Perkins, 1985