

Challenge from Aging Society---The Urgency and Strategy of China's Health Industry Development

Prof. Weihai Ying

School of Biomedical Engineering and Med-X Research

Institute, Shanghai Jiao Tong University

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1. Introduction

Fundamental differences between Health and Medicine

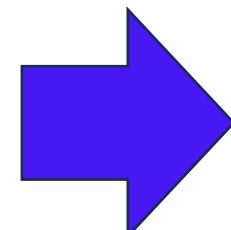
Health	Medicine	Health
1. Healthy state; 2) Pre-disease State; 3) Disease; 4. rehabilitation	3) Disease;	4. rehabilitation

Sun Simiao: ‘*Qian Jin Yi Fang*’

‘Up-stream doctors prevent diseases;

**Medium-stream doctors treat the
diseases before it is evident;**

**Down-stream doctors treat the
full-blown diseases.’**



Health



Medicine

The health industry and the medical field serve completely different human populations:

The health industry serve the non-patient populations ('未病')

Medical field serves patient populations

The health industry is fundamentally different from the medical field in terms of evaluation criteria, assessment methods, and recuperating methods.

In the field of standards, evaluation methods, and recuperating methods of Health Industry, China and the world are still in fairly weak state.

These studies in Health Industry may become a major core of future global industrial development, thus constituting “Age of Health” that is parallel to the ‘Information Age’.

How to develop Health Industry?

**Promoting the development of the three major sections of
Health Industry:**

Section 1: Developing Health Industry Research Institute

Section 2: Developing key technology of Health Industry

Section 3: Developing ‘National Health Management Center System’

2. Why is it extremely important and urgent for China to develop Health Industry?

1) China and many other countries around the world are aging rapidly

- (1) China has at least 267 million people over the age of 60;**
- (2) In 2025, 40% of Shanghai's population will be over 60 years old;**
- (3) It is predicted that by the middle of this century, the elderly population aged 60 years and above in China will reach 487 million; ;**
- (4) At least 75% of them suffer from chronic diseases such as diabetes and hypertension.**

2) Aging is a major risk factor for many major diseases

3) The number of serious diseases related to aging is increasing

Development trend of stroke incidence in China, 1990-2019

The increasing trend of stroke incidence from

1990 to 2019: an increase of 86%

The increasing trend of stroke mortality from

1990 to 2019: an increase of 32.3%

Stroke incidence in 2019: 3.94 million

Stroke deaths in 2019: 2.19 million

The mortality of myocardial infarction in China has been increasing

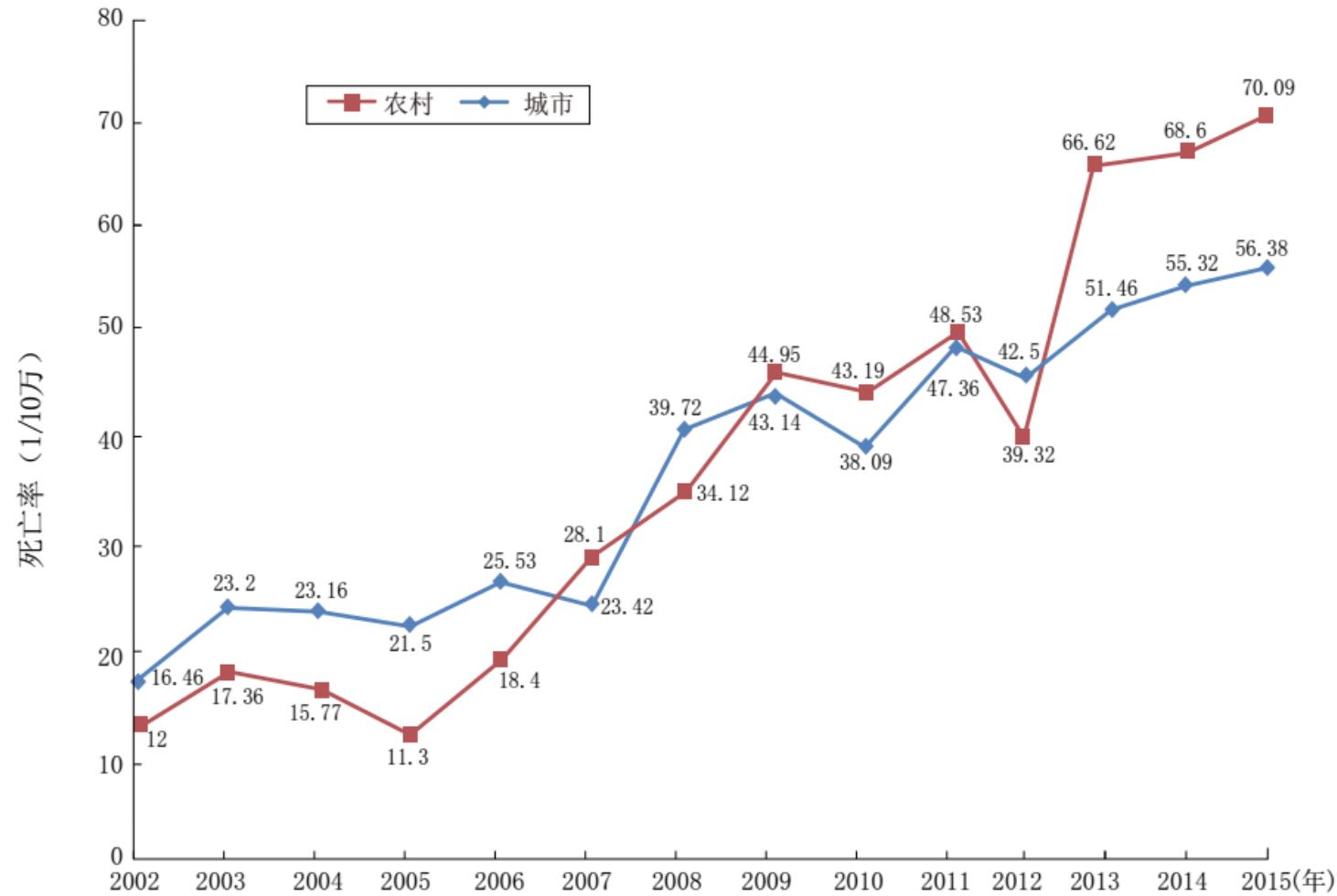


图3-2-3 2002~2015年城乡地区急性心梗死亡率变化趋势

4) Health Management is a key factor in preventing serious diseases and reducing mortality

From 1975 to 2006, the overall incidence of colorectal cancer in the United States decreased by 3% per year, and the mortality rate decreased by 2.5% per year. The reasons are:

Primary prevention (general health): life intervention, accounting for 34.6%;

Secondary prevention (health): universal screening, accounted for 53.3%;

Tertiary prevention: scientific and standardized diagnosis and treatment, accounted for 12.1%.

5) The world still lacks effective treatments for major diseases

- * Less than 5% of acute stroke patients can be treated with the only FDA-approved drug;
- * More than a hundred clinical trials of stroke drugs over the last three decades have failed.
- * The one-year survival rate for advanced lung cancer is less than 20%.

**While the development of new therapeutic approaches remains critical,
The health industry that focuses at prevention of diseases has become
core reliance for both preventing the continuous increases in the
number of major diseases and reducing mortality.**

Conclusions

It is highly urgent and critical to develop the Health Industry to prevent the aging-caused increases in the number of mortality of major diseases.

Conclusions

- 1) Health industry and Medical Field are two critical and parallel industries for human health in China and around the world.**
- 2) The Health Management Centers that are supported by key technologies are equally important organizations as Medical Centers around China and the world.**

3. What is the current state of Health Industry?

**China and global health industry is still facing
serious problems:**

- 1) Serious lack of evaluation standards for health industry.**
- 2) Serious lack of core technologies and instruments.**

- 3) The closed-loop system consisting of disease risk assessment method and recuperating methods has not been established.**

- 4) There is a serious lack of health management centers with core technical support.**

- 5) There is a serious lack of institutional mechanisms that can promote the development of Health Industry.**

4. What distinct characteristics must the core technology of Health Industry have?

- 1) Economy:** Since the Great health must serve most people (including many retirees with low income), the evaluation technology and nursing technology of Health Industry must be economical.
- 2) Non-invasiveness:** For the health status of the elderly, it is necessary to evaluate relatively frequently. Hence, the detection technology should be non-invasive.

- 3) **Simplicity of operation:** Due to the limited number of health professionals, testing techniques need to be easy to learn.
- 4) **Efficiency:** For frequent tests, the technology should not be time-consuming.
- 5) **Objectivity:** Data should be objective and minimize subjective factors.

5. What are the key strategic steps to develop Health Industry?

- 1) As the underlying structure carrying the functions of the big health industry, it is necessary to accelerate the establishment of the 'Health Management Center System' across the country.
- 2) It is necessary to provide core technology and instrument support for the 'Health Management Center System'.

3) It is necessary to establish a dynamic industrial chain and ecological group of comprehensive health technology companies as soon as possible.

4) It is necessary to establish ‘Health Industry Research Institutes’.

6. Establish the internationally leading ‘remote health assessment terminal’ and ‘intelligent health closed-loop management ecological chain’

The Research Goals of Our Team

- 1) Continue to promote our internationally original 'remote health assessment terminal' for major diseases such as stroke – 'Pattern of Autofluorescence Technology and Instrument'.
- 2) Promote the establishment of a 'smart health management ecosystem' that consists of "assessment - recuperation - reassessment".

In 2022, our project was recognized by the Ministry of Science and Technology as one of the 73 '13th Five-Year Scientific and Technological Achievements' in Shanghai, and our team was one of only two teams interviewed by Shanghai TV



科技部推出“国家科技计划成果常态化路演机制”上海地区首次路演优中选优

第一财经 · 2022-08-30 12:54

作者：下午市场零距离 责编：郝云颖



为落实党中央、国务院“建立健全科技成果常态化路演和科技创新咨询制度”的决策部署，科技部建立了“国家科技计划成果常态化路演机制”，推动科技成果与风险投资对接，加速他们

As a guest specially invited by Academician Li Jin, this project was demonstrated in the 'Zhi Niu Er Zhe' project of Shanghai TV Station as the industrialization representative of 'International Human Phenome Project (Shanghai)'



In 2019, our team, together with unicorn companies such as CATL, won one of the seven 'Science and Technology Innovation Awards' at the 21st International Industry Fair



For consecutive three years, Shanghai's top media, Jiefang Daily-Shangguan News, has featured our international original discoveries

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人类表型组研究发现：皮肤自发荧光是脑卒中、肺癌等疾病的生物标志物

创新之城
2021-01-31 19:31

来源：上观新闻 作者：俞陶然

除了脑卒中、肺癌、帕金森病等疾病的辅助诊断，人体自发荧光检测仪还可用于大健康管理。



近日，上海交通大学教授殷卫海和中国科学院院士、复旦大学教授金力等人合作发表的论文《角蛋白的表皮绿色自发荧光是器官损伤的共同生物标志物》引发业内关注，这篇论文介绍了上海市级科技重大专项“国际人类表型组计

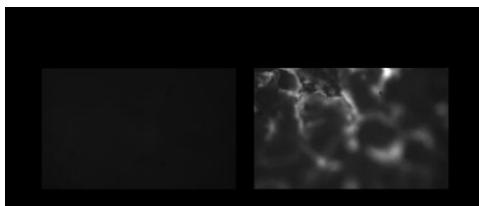
2. Establishing a 'Closed-Loop Health Management Ecosystem' for diseases such as stroke

Goal: To reduce the risk of developing stroke

Detection and analysis ————— Recuperate ————— Re-detection



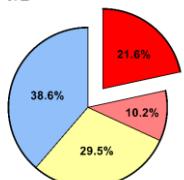
Popular Lecture



Doctor's Consultation



■ 健康
■ 低危
■ 高危
■ 极高危



Chinese Medicine and Nutrition



**The CDC and other authoritative agencies have found
that approximately 80% of the risk factors of stroke
can be regulated.**

**We believe that we can build an internationally leading
closed-loop health management system consisting of
"assessment - recuperation - reassessment"**