

中国糖尿病防治现状和挑战

Status and Challenges in DR ,China

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Outline

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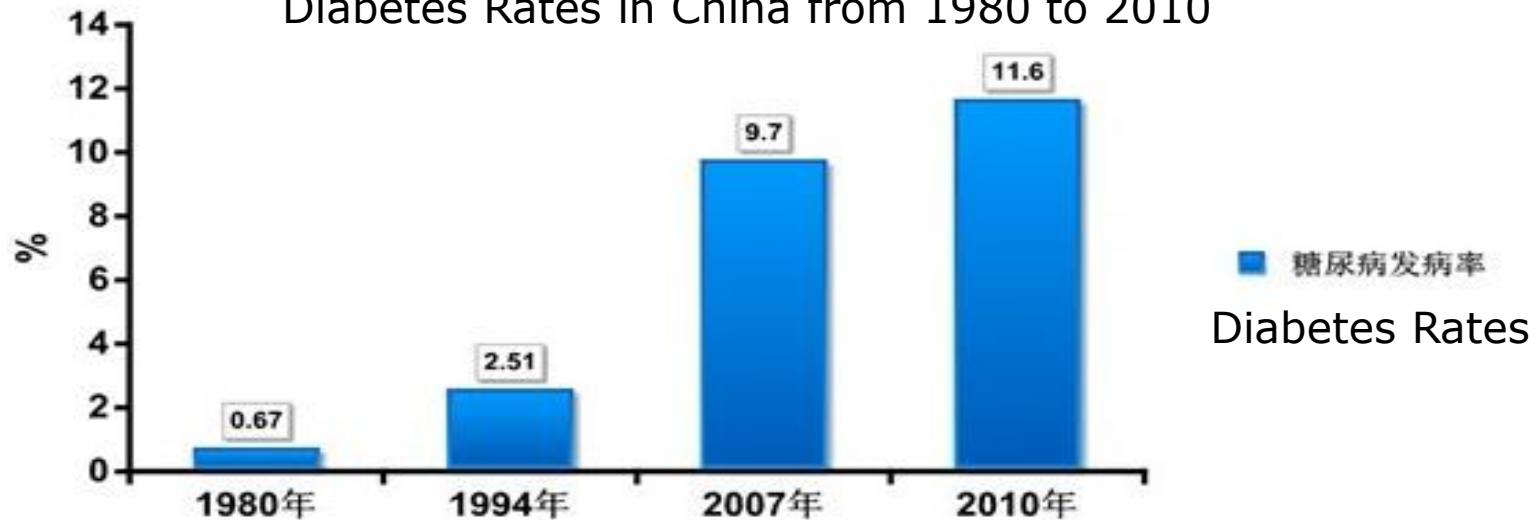
- The summary of DR
- The prevention and pattern of DR
- The challenge of the prevention of DR
- The suggestions and countermeasures

The Summary and the Harm of DR

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1980年—2010年我国糖尿病发病率变化

Diabetes Rates in China from 1980 to 2010



- According to WHO's announcement, 1 person died of diabetes per 10 seconds in the world, per 30 seconds a person amputates because of diabetes, even get heart and cerebrovascular complications and blindness. Diabetes has become a serious public health problem.
- In China, the prevalence of retinopathy in diabetes patients reach to 24.7% - 37.5% (DR clinical guidelines in China (2014))

Summary and Harm of Diabetic Retinopathy

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- In 2002, a study of 11 cities in China (Hu Shanlian, 2002) shows that the money spending on diabetes and the complications nearly 4% of the total health expenses, in which the complications of costs are more than 80%. The ministry of health's data shows that in China the costs related to diabetes treatment reached more than 20 billion yuan every year, in which the diabetes complications related fees are more than 80%.
- It's a pity that we don't have the evaluation of the damage caused by DR.

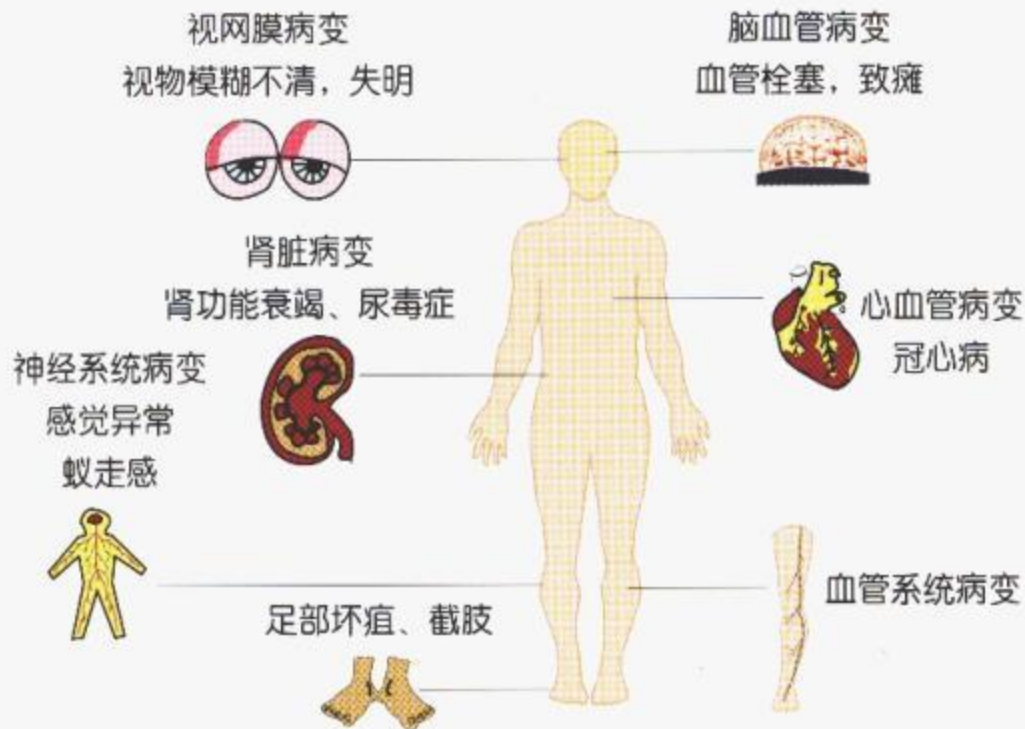
The Summary and the Harm of DR

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糖尿病

基础

糖尿病的危害



Diabetes can cause various ocular complications.

DR is most serious, irreversible blindness, but can be prevented.

The Epidemiology Research of DR(China)

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In China

- In the 1990 s there was no epidemiological study of DR. Until 1991 the investigators of diabetic chronic complications investigating team of the Chinese diabetes society branch examined the hospitalized diabetic patients' DR rates in China over the following ten years.
- Early epidemiological investigation and study of DR was mainly in hospitalized patients with diabetes or outpatients for small sample. In recent years, a large number of natural population as the research object of large sample of DR epidemiological investigation appear.
- Many multicenter, randomized controlled clinical study abroad did research about DR early screening, condition evaluation and treatment of ebm guidelines, while in China we gave priority to the retrospective study and case series studies.
- DR prevalence exists significant regional differences in China. The prevalence rate in the city is higher than in the rural areas , in northern prevalence is higher than the south , although the prevalence of differences is also related to the respondents' nature of survey and the DR check method.

Diabetic retinopathy epidemiology study (developed countries)

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International

- Due to the DR is the leading cause of blindness in the developed countries such as Europe and the United States adults, the European and American countries gave the earlier concern to DR, so in terms of epidemiology, European and American countries have in-depth study of the DR . Two famous researches are: (1) DR vitreous art research (DRVS) (Arch Ophthalmol, 1990) (2) early treatment DR study (ETDRS), was organized by the U.S. national eye institute, and America's 22 clinical institutions participating in a treatment of early DR multicenter randomized clinical trial. It lasted for five years from 1979 to 1985.
- The early treatment DR study (ETDRS) and the United States Wisconsin DR epidemiology research (WESDR) method and the results have been widely used.
- In Asia, also exists the epidemiological study of DR. Study of diabetes complications such as Japan (JDCS) that 59 diabetes specialist outpatient service by Japan research institutions participate in a randomized multicenter prospective clinical research.

DR Prevention Strategy (China)

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China
Strategy

- In 2009 issued by the national bureau of the ministry of health, disease prevention and control of the diabetes management model to promote the project implementation plan and technical operation manual "[who dinner-table CDC slow disease (2009) 103], and in the first place in liaoning, heilongjiang, Shanghai, zhejiang and chongqing start in five provinces and cities and diabetes management mode to promote projects.
- In July 2012, China issued by the ministry of health and the China disabled persons' federation, the country of blindness blinding planning (2012-2015), "clearly put forward medical institutions generally attach importance to early screening and early treatment of diabetic retinopathy, strengthen health education, improve the public's awareness of prevention and control

DR Prevention Strategy (China)

The first DR guidelines released in November 2014, in reference to the Chinese diabetes related guidelines and international DR guidelines as well as many literature, on the basis of the fundus of the Chinese medical association academy of ophthalmology group established the China diabetic retinopathy clinical guidelines (2014), including the prevention, screening, referral, DR intervention, patient education, general management, etc., to standardize and guide the clinical diagnosis and treatment of diabetic retinopathy in our country.

In the "Manual", the item 1 of the chronic complications of diabetes screening for retinopathy screening, which describe the details the screening of the preparation, visual acuity, ophthalmoscope examination, free of mydriatic fundus photograph method, and the diagnostic criteria of retinopathy. This is a great event in prevention and control of diabetes and its complications, and the relevant domestic fundus diseases prevention and control of a landmark event in the history, which marked China has a huge impact on chronic diseases and begun to strengthen prevention and control from the administrative intervention.

Diabetic retinopathy prevention strategy (developed countries)

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WHO Strategy

- In May 2013, WHO approved the "For general eye health: global action plan (2014-2019). The eyesight damage caused by diabetes according to the plan has become the world increasingly serious challenge. It is necessary to improve screening and prevention methods.
- In the western Pacific region for general eye health: action plan (2014-2019), "one task of the member countries of blindness prevention is to develop/enhance national diabetes/noncommunicable diseases prevention and control of projects, and integrated system, so that through regular screening, timely and appropriate referral treatment to prevent blindness caused by diabetic retinopathy.

Foreign countries and academic groups published the guidelines

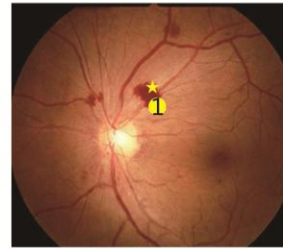
- In 2010 the royal ophthalmic medical school of the diabetic retinopathy screening practice guidelines".
- In 2011, the American society of telemedicine remote medical practice Suggestions of diabetic retinopathy.
- 2012 Canadian association of ophthalmology of the management of diabetic retinopathy of evidence-based clinical practice guidelines".
- In 2013, the British royal ophthalmic medical school updated and released the

Diabetic Retinopathy Treatment

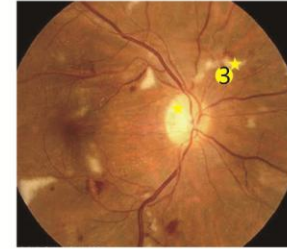
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□ Treatment

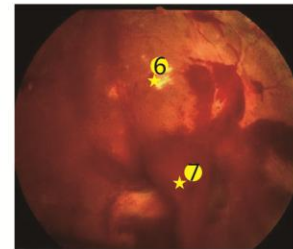
- Basic treatment: control blood sugar
- Drug treatment: improve the ischemic state , such as Candesartan, Difrarel , etc.
- Laser treatment
- Surgical treatment: Vitreous retinal surgery



红 病变Ⅰ期（出血、微血管瘤期）
① 出血



花 病变Ⅲ期（微动脉梗死期）
③ 棉绒斑



病变Ⅴ期（玻璃体积血期）
⑥ 硬性渗出 ⑦ 玻璃体腔出血



黄 病变Ⅱ期（硬性渗出期）
② 硬性渗出



病变Ⅳ期（视网膜新生血管期）
④ 新生血管 ⑤ 激光斑



病变Ⅵ期（视网膜脱离期）
⑧ 牵拉性视网膜脱离

□ 【糖尿病视网膜病变小贴士】糖网病，分六期，一二三，红黄花。单纯期，年年查。四五六，已恶化。保视力，激光佳。待到五期或六期，病急投医没办法。万般无奈做手术，劳命伤财疗效差。疗效差，莫放弃，一线光明亦无价。有光知昏晓，无亮苦难熬。白天不知夜的黑。不到极逆之境，不知和顺之安。

[DR Tips] DR ,6 stages; at stage I , II and III, red yellow flower. The type of Simplicity disease should be check every year. At stage IV, V and VI, the patient's condition grew worse. Laser treatment is a way to protect the eye. It's no way to cure when the disease at stage V and VI.

DR Prevention and Control of main body (China)

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□ The main force——public hospital

■ Regular pattern

Hospital is the core ,every diabetic patient gets systematic check and eye exam registration files, and then start regular screening for DR.

Process is simple and highly targeted, but may miss those not check in time or unwilling to check diabetes residents ; it is not the best way for older people and disabled person

DR Prevention and Control of Main Body (developed countries)

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The main force social organizations+communities+ hospitals

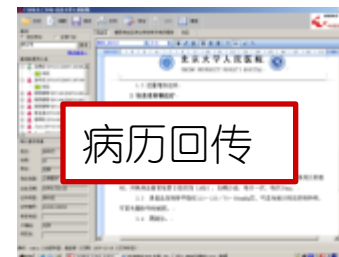
In the United States, Britain and other developed countries, on the basis of community health service organization, diabetes screening and regular follow-up system have been widely established. For disease control and prevention and the interests of the patients, each patient life is "management".

Prevention and Cure of DR and pattern exploration (China)

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■ Remote mode

- Xi 'an eye hospital wuhan university
people's hospital eye center
- Take a fundus image in community hospitals, by the software after collecting, transmission through the network to the large general hospital with specialist ophthalmologist, real-time read, after diagnosis and evaluation of fundus images, and doctor will give a feedback to the patient immediately and guide the patients for treatment.



Prevention and Cure of DR and Pattern Exploration (China)

- Diabetes as one of the chronic diseases for a long time management for the grass-roots level doctors. Regularly check the fundus of digital image information, through three-level hospital's DR remote diagnosis center, get experts timely feedback to the remote diagnosis and treatment area, realize the first option at the grass-roots level, fluctuation of medical mode.

Prevention and Cure of DR and Pattern Exploration (China)

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■ The community pattern

- From 1995 to 1995, the first people's hospital affiliated to Shanghai jiaotong university school of medicine, ophthalmology and beixin hengjing community health service center, beixin hengjing community formed in Shanghai community diabetic eye disease level 3 of blindness network, covering the area associated with community of blindness, street, neighborhood committees, such as administrative management at all levels, tertiary hospital professional eye, the prevention and cure of primary hospital, the medical prevention and care are the main line of grassroots medical corpsman all personnel, administrative personnel to be responsible for the security, medical staff responsible for diagnosis and operation;By organic combination and close cooperation, rapid promotion of community diabetic eye disease of blindness.

Prevention and Cure of DR and Pattern Exploration (China)

- Community is the core to DR screening. The advantages can be incorporated into the most diabetes residents, not only to avoidable blindness prevention got eye disease screening (glaucoma, diabetic retinopathy), but also combined with hypertension, hyperglycemia, hyperlipidemia, detection of retinal microvascular changes, cardiovascular and cerebrovascular diseases. To achieve this model, base on the medical staffs participate, it must be in a good community primary health care work experience, get administrative department of the support. Moreover, the guidance of experienced professional ophthalmologist and training are essential guarantee of the quality of the work.

Prevention and Cure of DR and Pattern Exploration (China)

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- powerful alliances and common development

1) Jilin Baicheng region relying on the founding of eye center' support

2) health express and other NGO organizations, etc.

Local parties, combined with local diabetes hospital, make full use of their source; To strengthen in the clinical diagnosis and treatment of confirmed the patient and family education guidance; With the support of the local health authority and establish a net which extends to county, township, village .

A strong combination, build in many obvious advantages, obvious effect. And it is critical to optimize and sustained in the future.

Prevention and Cure of DR and Pattern Exploration (China)

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Private eye hospital

Heshi、Aier、Chaoju、Purui、Huaxia、Aishi etc. a large number of private hospitals in development has its own characteristics, at the same time, set up the blindness of blind three/four/five levels network system.



municipal hospitals : provides medical technology, academic exchanges, training support, difficult eye diseases consultation center and clinical research, expanding of radiation to the surrounding area.

County level: the system provides basic eye disease medical service, health education and consultation.

Rural system: screening and missionary work, is a sugar prevention and control of network information to all the people of the most important one annulus.

- Private eye hospitals pay attention to the sustainability of the project
 - Standardized chain management, market-oriented operation, with the aid of word of mouth effect and brand, provide convenience for the DR patients to make sure efficient, accessible, excellent medical services.
 - Set up DR club, provide patients with more detailed, accurate and effective treatment, adopt flexible and varied way of health education on the patients
 - With the aid of national good policy and integration of social resources, promote blindness prevention project.

- Although much work has been done, we made great achievements, but
- China has no DR screening and prevention service system. The focus of the prevention and control work mainly concentrate on the treatment of DR.
- In the DR epidemiological investigation, we pay attention to the screening, control and management, etc. There is a larger gap compared with developed countries and regions.

The challenge for the Chinese diabetic retinopathy

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- A large number of people with diabetes -- more than 100 million
- East and west , urban and rural dual structure----- knowledge gap, gap of population structure , gap of human resources
- The whole society has not realized the gravity of the situation and emergency - less to participate in the organization.

The challenge for the Chinese diabetic retinopathy

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- Lack of professional talents
- Imbalance of the medical resources in allocation
- The community medical institutions service ability is low.
- Primary eye care is weak

The challenge for the Chinese diabetic retinopathy

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■ Patients pay no sufficient attention on DR

表 1 500 例糖尿病患者对 DR 防治知识的问卷调查[例数(%)]

糖尿病视网膜病变防治知识	回答知道人数	回答不知道人数
什么是糖尿病视网膜病变	186 (37.2)	314 (62.8)
糖尿病可引起视力损害	234 (46.8)	266 (53.2)
DR 是引起视力下降和失明的主要原因	176 (35.2)	324 (64.8)
DR 根本防治是有效、全面控制血糖、血压、血脂等指标	198 (39.6)	302 (60.4)
DR 发生发展的影响因素	256 (51.2)	244 (48.8)
DR 的临床表现和体征	112 (22.4)	388 (77.6)
糖尿病患者需定期行眼科检查	214 (42.8)	286 (57.2)
糖尿病患者定期眼科检查的周期	187 (37.4)	313 (62.6)
早期治疗 DR 是防治视力损害及失明的的重要手段	98 (19.6)	402 (80.4)
DR 是糖尿病的微血管并发症之一	223 (44.6)	277 (55.4)
平均分	188.4	311.6
平均百分比(%)	37.68	62.32

(资料来源：“糖尿病视网膜病变防治知识问卷调查分析” 《中国现代医生》)

Countermeasures and Suggestions: strengthen the research

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- Diabetic retinopathy clinical epidemiological information in China far from comprehensive and complete, and there is no large sample survey data and the long term follow-up results. Progress in pathogenesis, pathological changes and disease burden also have more topic is yet to be explored.
- Strengthen the DR standardization method popularized and prevention and control of research
- Strengthen the DR prevention and control of health economics research

Countermeasures and Suggestions: advocacy and lobbying

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- Accurately explain current DR prevention and treatment of the severe situation
- Promote the prevention and control of all kinds of resources to DR

Countermeasures and Suggestions the gap

- Internet +
- Human resources training, especially for the community
- Carrying out health education
- The construction of hospital DR control capacity

Countermeasures and Suggestions interested parties to participate in sustainable operation

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Countermeasures and Suggestions

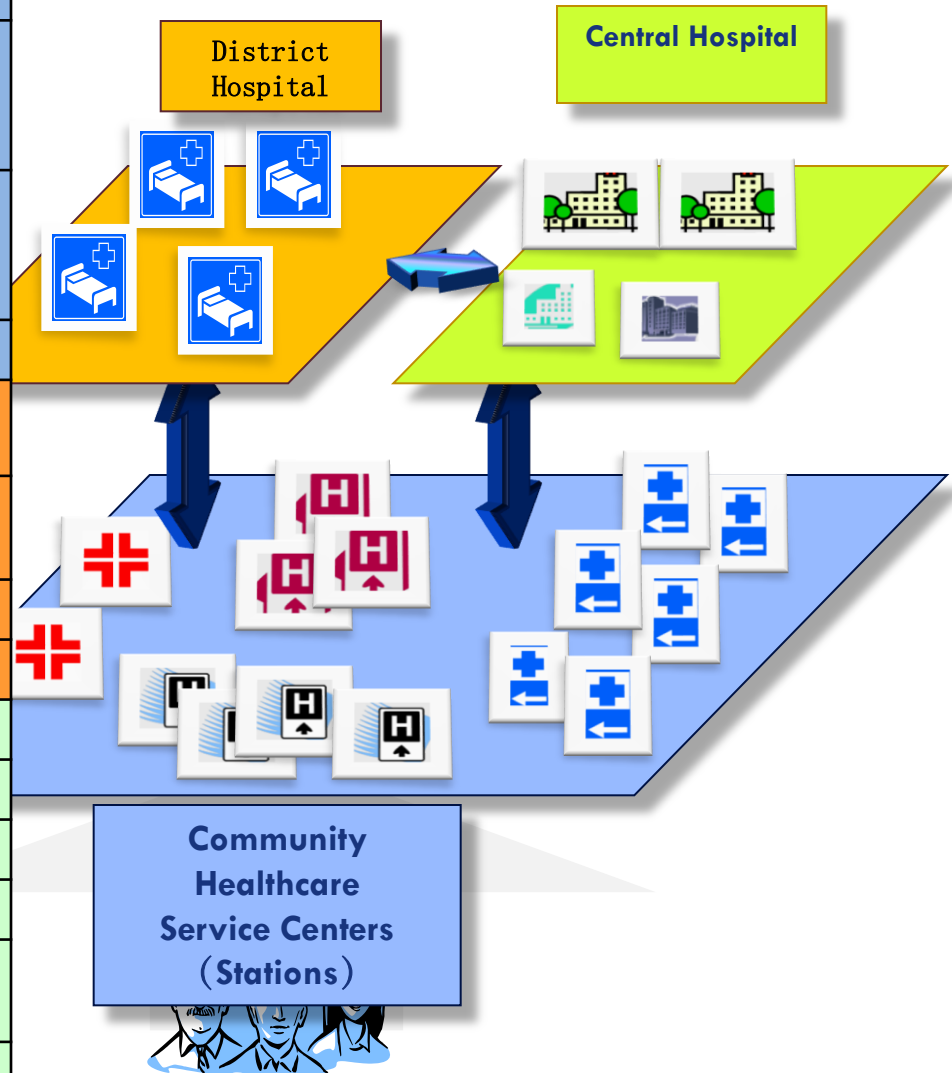
establish a unified, standard control system

- ❑ Focus on prevention
- ❑ Priority to community-oriented primary care
- ❑ Multi-participation (government ,hospital ,NGO,etc.)
- ❑ Must be sustainable

Clinical Care Integration

continuum of care

Health management
Disease prevention
Public health
Birth control
Individual health education
Basic medical care
Preliminary diagnosis and treatment
Rehabilitation of chronic diseases
Appointment with doctor and examination, transfer diagnosis bilaterally sharing description and medical history
Video consultation
The diagnosis and treatment and rehabilitation of chronic diseases
The guidance and consulting of health education
Sub-health intervention
The implementation of rehabilitation
Emergency green channel
Emergent, serious or difficult out-patient
Emergent, serious or difficult in-patient
The designation of health education program
The designation of rehabilitation program and technical guidance
The designation of health maintenance program



Patient-Centric Care Management System

Talking about the past is not easy-Sorry
Designing future is much harder - Responsible

Share with everyone!
Thank you!