



Exploration of Prevention and Treatment Model for Visual Impairment Children

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“Vision 2020” and 2014-2019 Global Plan

- Chinese government concluded the “VISION 2020” in 1999: The Right to Sight
- Geneva, 2013.5.22 —— Draft action plan for the prevention of avoidable blindness and visual impairment 2014–2019. Universal eye health: a global action plan 2014–2019. Minister of NHFPC attended the conference.
- “As a global target, the reduction in prevalence of avoidable visual impairment by 25% by 2019 from the baseline of 2010 has been selected for this action plan.”





Plan for Blindness Prevention of China

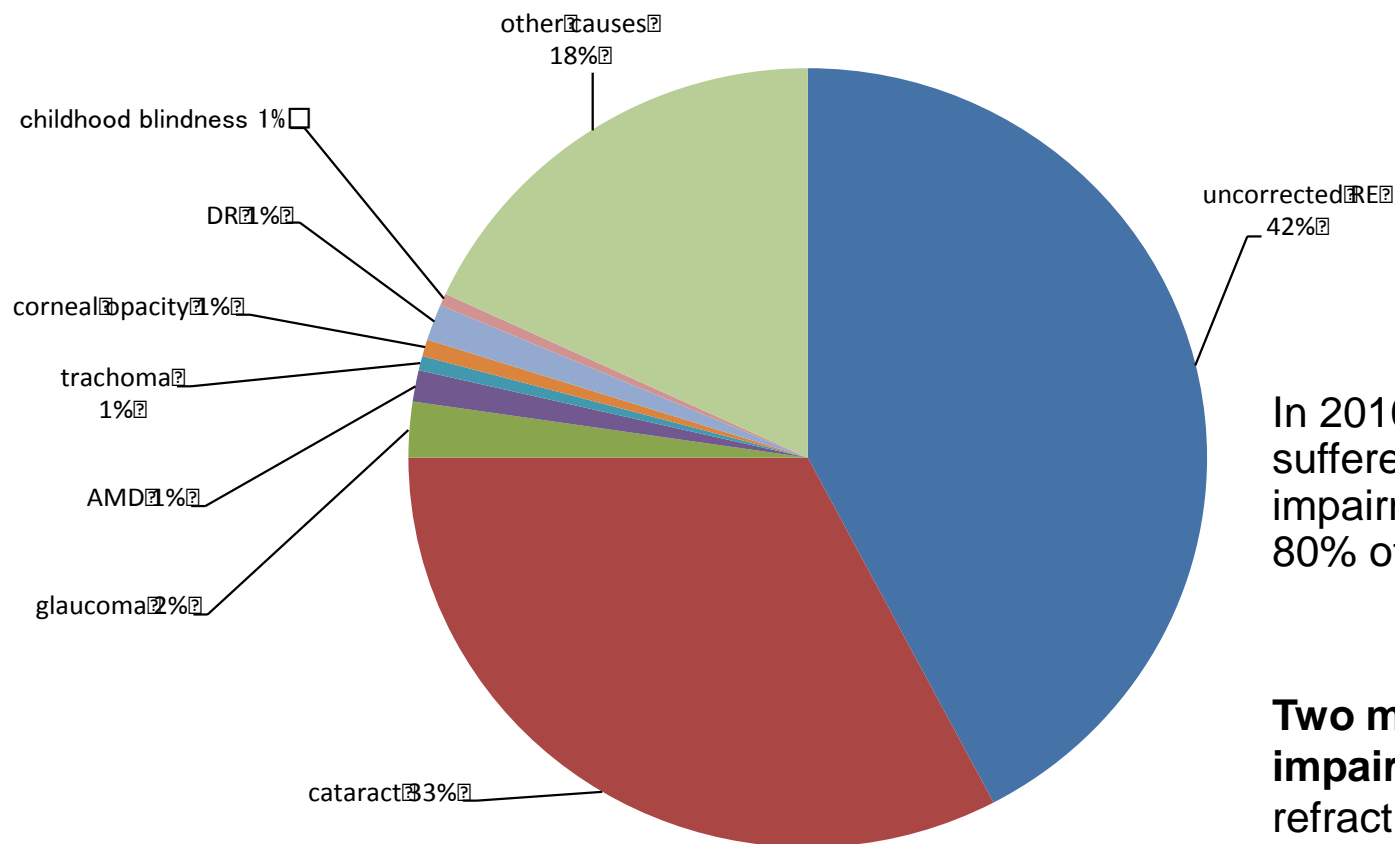
NHFPC: work arrangements based on “Draft action plan for the prevention of avoidable blindness and visual impairment 2014–2019” and “National Plan for Preventing and Treating Blindness(2012-2015) ”

- Bringing eye care into the overall development of medical service system.
- Improving ophthalmic service ability in grass-roots, especially in county level.Starting national survey of ophthalmic resources and epidemiological study of eye diseases.
- Focusing on preventing and treating blinding eye diseases: cataract, trachoma, refractive errors, childhood blindness, glaucoma and diabetic retinopathy.





Causes of global visual impairment in 2010



In 2010, 285 million people suffered from visual impairment all over the world, 80% of which were avoidable.

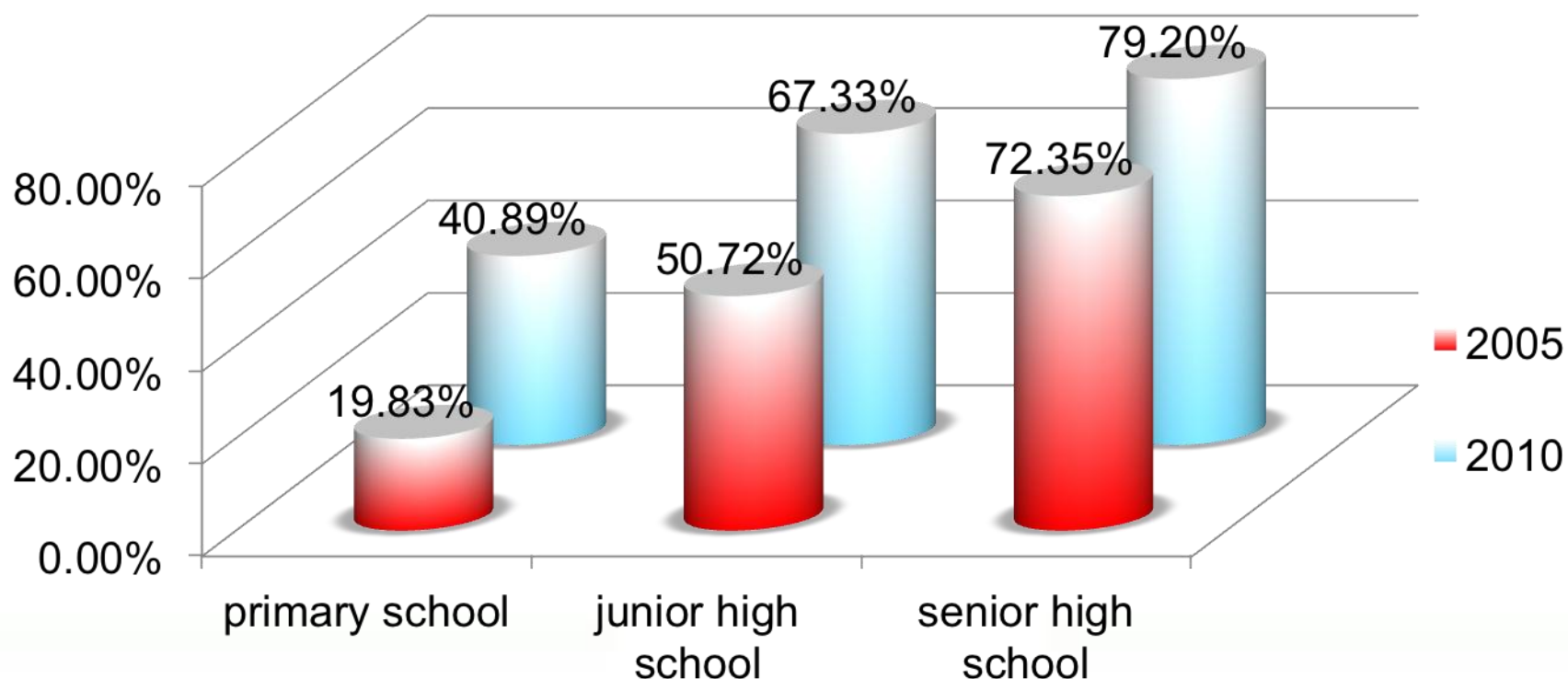
Two main causes of visual impairment : Uncorrected refractive errors (42%) and cataract (33%)



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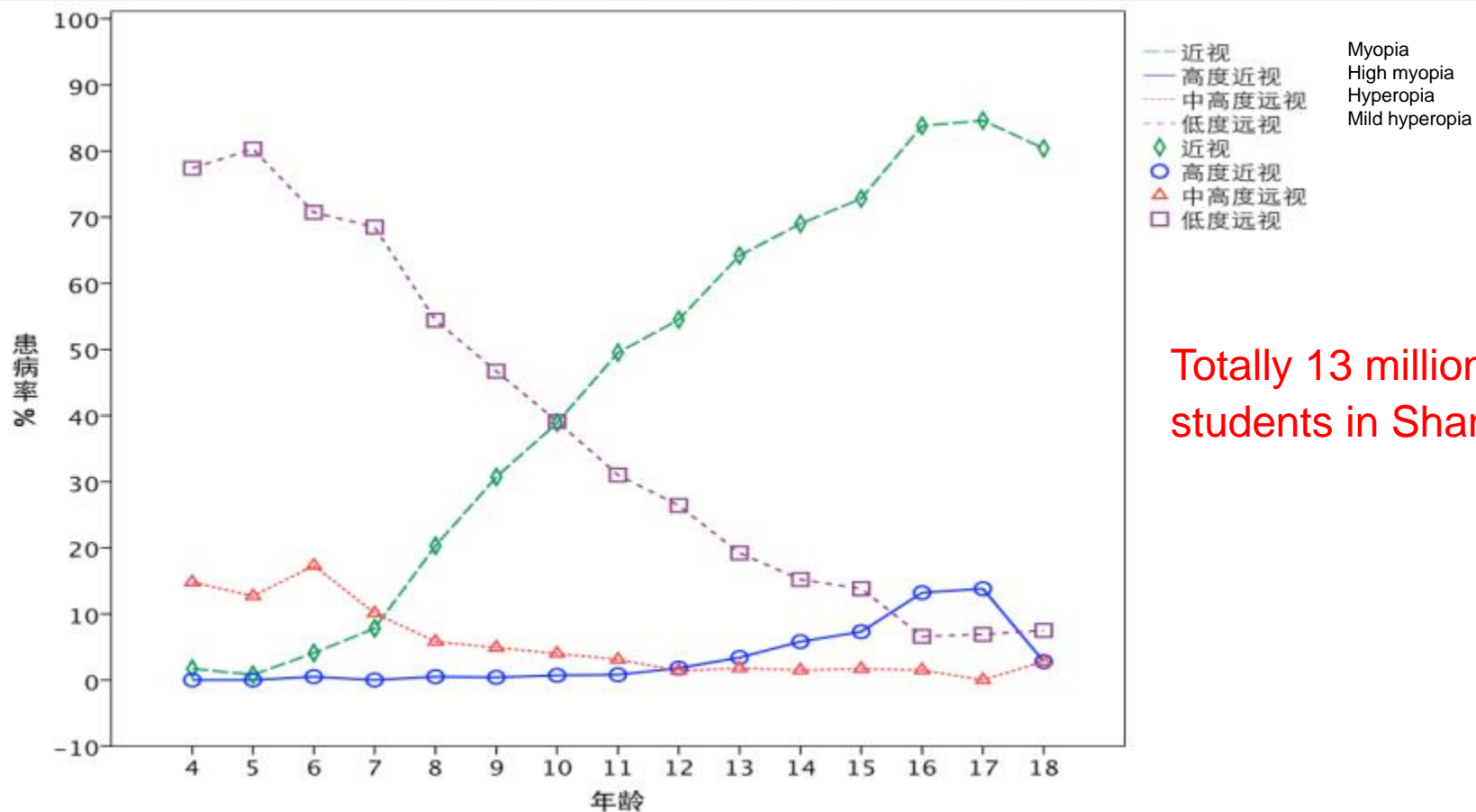
Prevalence of Visual Impairment in Chinese Students



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Prevalence of Refractive Errors of Shandong Students



Totally 13 million
students in Shandong

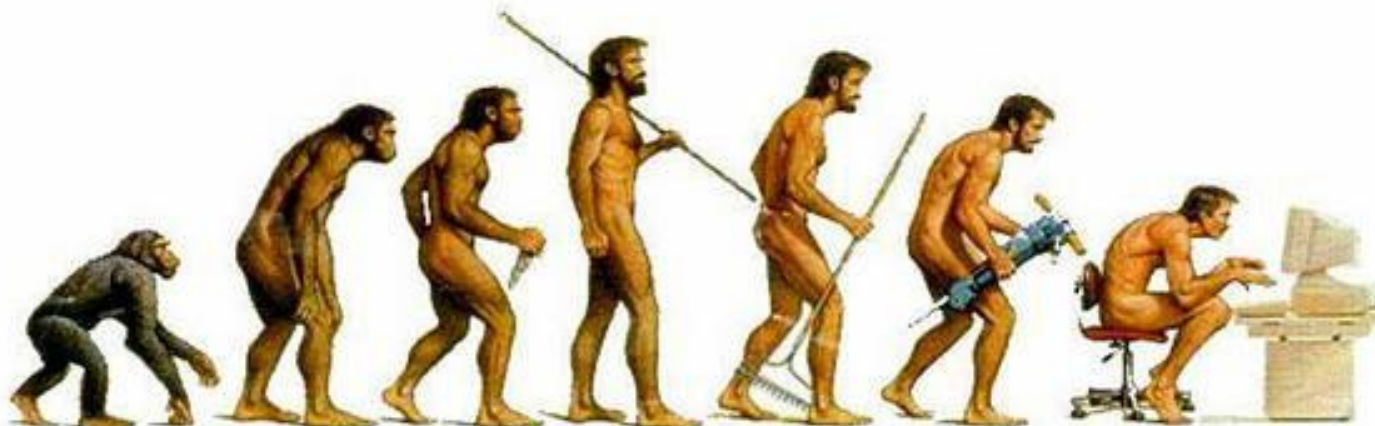
Wu JF, Bi HS. Refractive error, visual acuity and causes of vision loss in children in Shandong, china. The Shandong children eye study. **PLoS One**. 2013 Dec 23;8(12):e82763. doi: 10.1371/journal.pone.0082763. eCollection 2013.



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The Main Problem Mankind Facing



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Difficulties in China

- **Exam-oriented education system could be altered in near future**
- **The college entrance examination is still a fair talents selection system in China**
- **The system can not be substituted.**
- **Results:**
 - **Heavy study burden**
 - **No enough outdoor activities**
 - **Extracurricular lessons**
 - **Rarely care about the visual health of school children**



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Shandong Model:

Bring Children Eye Care into Blindness Prevention

- **Fellowship: government, various circles of society , NGO and ophthalmologists**
- **Plan for blindness prevention in Shandong 2011-2015**
- **7 bureaus made an alliance to print and distribute “Prevention and Treatment Scheme of Children Visual Impairment of Shandong Province”**
 - Establishing standard flow and model of screen, early warning, training, rehabilitation, treatment and evaluation
 - Supervision group consisted of several competent departments is responsible for inspecting quality of optometry products in Shandong
 - Translating optometry into medical activity of treating refractive eye diseases

山东省卫生厅
山东省教育厅
山东省科学技术厅
山东省人力资源和社会保障厅
山东省工商行政管理局
山东省质量技术监督局
山东省食品药品监督管理局

鲁卫医字〔2013〕75号

关于印发《山东省青少年视力低下 综合防治方案》的通知

各市卫生局、教育局、科技局、人力资源和社会保障局、
工商行政管理局、质量技术监督局、食品药品监督管理局、
省（部）属医疗机构、大企业卫生处：

为推动全省青少年视力低下防治和视觉健康促进工作
系统化、规范化、专业化开展，进一步降低青少年视力低
下的发病率，根据《中共中央国务院关于加强青少年体育

增强青少年体质的意见》和省委、省政府关于近视眼防控
工作的有关要求，省卫生厅、教育厅、科技厅、人力资源
和社会保障厅、省工商行政管理局、省质量技术监督局、
省食品药品监督管理局制定了《山东省青少年视力低下综
合防治方案》，现印发给你们，请各有关部门单位结合实际，
认真贯彻执行。



山东省食品药品监督管理局
2013年6月29日



Shandong Model: Constructing Prevention and Treatment System of Children Visual Impairment

- Establishment of Prevention and Treatment Center for Children Visual Impairment of Shandong Province
- Constructing branches in all 17 cities, 137 counties/districts



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Shandong Model: Establishment of Expert Committee



Consists of:

- Education official
- Expert of
 - Ophthalmology
 - Optometry
 - Epidemiology
 - Statistics
 - Children development
 - Psychology
 - Nutriology

Work together to conduct
scientific research



Shandong Model: Ophthalmology and Optometry Education

- **Establish Ophthalmology and Optometry Medical School of Shandong University of TCM to train professionals**
- **Education of undergraduate optometry course: 4 years program**
- **450 graduates**





Shandong Model: Training of Various Pattern

- **Vocational school for training staff without normal education.**
- **Verification of professional qualification**
- **Training 2000 man times of ophthalmologists, optometrist & opticians, rural doctors and school medical officers each year**





Shandong Model: Epidemiological Study

- Grasp the prevalence of refractive errors and other eye diseases of children
- By 3 years follow-up, incidence and occurrence regularity should be more learned.
- 18000 students' examination has been done.
- Research findings would be valuable for government decision-making.

Wu JF, Bi HS, Wang SM, et al. Refractive error, visual acuity and causes of vision loss in children in Shandong, China. The Shandong Children Eye Study. PLoS One 2013;8:e82763.





Shandong Model:

Normative screen, file and early warning

- Normative screen of visual impairment
- More than 6 million students have received free optometric and ophthalmological examination and been filed.
- Technical guideline of 3-level monitor of children vision



- 调节功能检测
- 聚散功能检测
- 立体视检测

- 裂隙灯
- 眼底镜检查
- 眼轴长度
- 角膜曲率
- 眼压
- 眼位眼球运动检查
- 散瞳后屈光度

- 裸眼视力
- 散瞳前屈光度
- 矫正视力





Shandong Model : Popularizing the normalized technique

- **Establish normative institution of technique**
 - Screen and early warning
 - Prevention plan
 - Standardizing ophthalmic and optometric examination
- **Formulate technical standard, construct public platform**

山东省青少年视力
低下防治标准

山东省青少年视力低下防治中心

二〇一三年一月



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Shandong Model: Popularization of eye-care knowledge

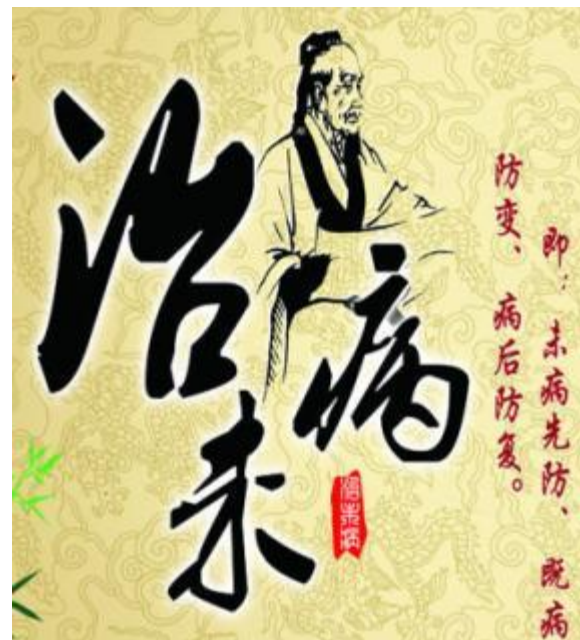
- Devote to popularizing the knowledge of Eye-care
 - Compile popular science books to make students, teachers and parents learn about common sense of protecting eyes.
 - Distributing more than 10000 posters
 - Deliver 200 lectures in schools and communities for students,





Strategic Change for Coping with Myopia

- **The upper grade doctors focus on prevention of disease**
 - Prevention
 - Control
 - Preventing complications
- **Principle of prevention and control**
 - Rely mainly on prevention
 - Integrating prevention and control





Exploration of the Combination of Chinese and Western Medicine in Treating Children Visual Impairment

- **Measures adopted by western medicine**

- **Atropine:** Effective in controlling the increase of myopia
- **Orthokeratology:** several clinical trials confirmed the effect on myopia
- **Other:** spectacle for Decreasing Peripheral Defocus, multifocal contact lens

- **TCM makes significant progress in treating myopia and amblyopia**

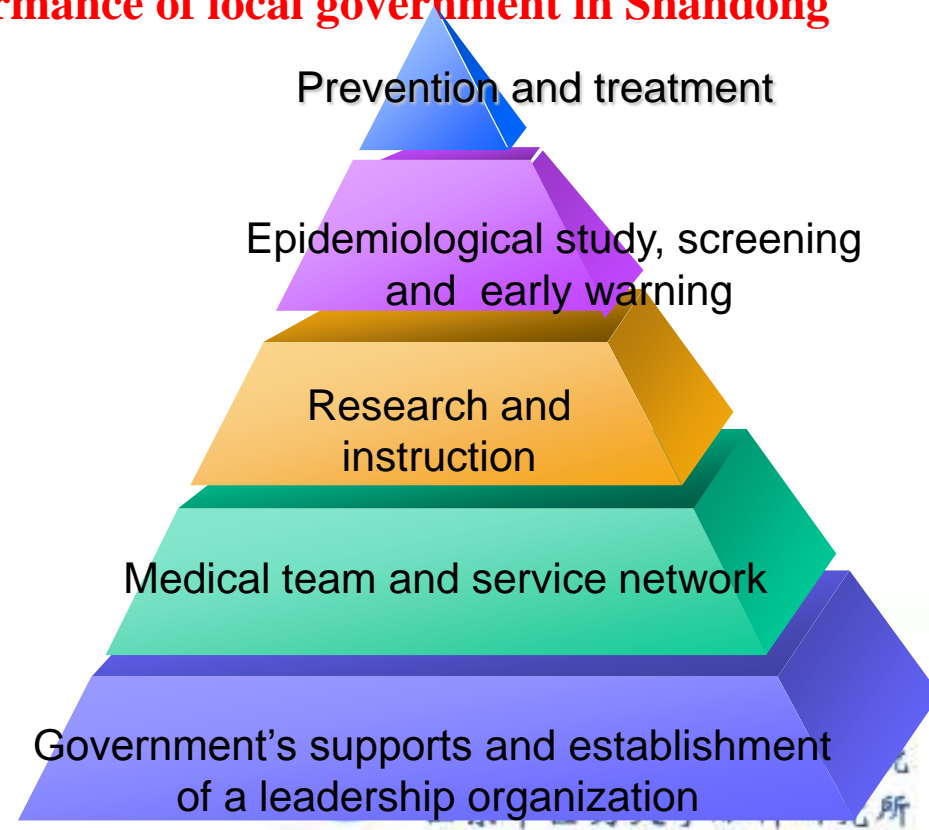
- **Myopia:** increasing visual acuity and alleviating visual fatigue and Improving the accommodation and vergence of eyes, which has underlying power in controlling the progression of myopia
- **Amblyopia:** improving visual acuity and effective rate and cure rate, contributing to the recovery of binocular vision and contributing to vision development and improve neurovision





Shandong Model of Prevention and Treatment of Visual Impairment for Children

- Obtaining policy support and institutional guarantee
 - The reduction of prevalence of visual impairment in school children has been included in the assessment of the performance of local government in Shandong Province
- Implementation of working policy

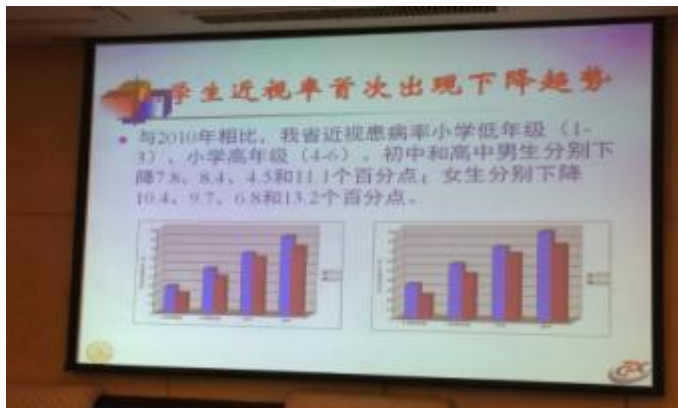


Progress in Preventing and Treating Children Visual Impairment

After 5 years of struggle, we have made an great progress in preventing and treating children visual impairment.

- 13,000,000 school children
- According to the survey completed by Shandong Education Department in 2014, the prevalence of visual impairment of Shandong school children was on a declining curve comparing with that of 2010.

| 年级 | 男 | 女 |
|-------|-------|-------|
| 小学低年级 | 7.8% | 10.4% |
| 小学高年级 | 8.4% | 9.7% |
| 初中 | 4.5% | 6.8% |
| 高中 | 11.1% | 13.2% |



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China Dream:

Every child has a pair of bright eyes



Thank you!

