

2015 Annual Report of Shanghai Eye Disease Prevention and Treatment Center

Vision

To improve the eye health of the people at all ages in Shanghai, and to eliminate the avoidable blindness in Shanghai.

Mission

1. Organize and coordinate the eye disease prevention and treatment system of Shanghai, mobilize all kinds of resources to promote "Vision 2020".
2. Provide safe and suitable clinical diagnosis and treatment of eyes.
3. Establish ophthalmic public health services and eye health management system covering the entire population.
4. Enhance the level of ophthalmic public health research and clinical treatment techniques .

Overview

Shanghai Eye Disease Prevention and treatment Center is the only municipal medical institution in Shanghai which integrates clinical diagnosis and treatment of eyes and public health services, and is the key organization of comprehensive prevention and treatment system of eye diseases of Shanghai. A mature nationwide unique three-level network of municipality-district -community eye disease prevention and treatment services has been constructed to provide clinical and public health services including management of blindness and low vision, management of cataract surgery, prevention and treatment of common eye diseases of the old, prevention and treatment of common diseases of children, prevention and treatment of acute hemorrhagic conjunctivitis, health education and health promotion, etc. and provide comprehensive, professional, and continuous medical protection for the eye health of all ages of people in Shanghai.

The Center is responsible for development and planning, resource coordination and design and organization of eye disease prevention projects, guiding the implementation of the work of eye disease prevention institutions in

districts and counties and carrying out quality control. Besides, it shall work out work plans to deploy specific tasks each year, and carry out performance evaluation according to the previously established performance appraisal standards of eye disease prevention and treatment. At the district level, there are eye disease prevention and treatment institutions in each of the 17 districts and counties of Shanghai and the institutions are responsible for eye disease prevention planning and organization and implementation of related projects, and carrying out operation guidance training, quality control and performance evaluation on community health service centers. At the community level, more than 240 community health service institutions are responsible for the specific implementation of the prevention and treatment of eye diseases. At least one public health doctor for the prevention and treatment of eye diseases and one oculist or ENT doctor for eye disease diagnosis and treatment of community residents are equipped in each community.

In addition, the Center is committed to continuously strengthen the combination of ophthalmic clinical diagnosis and treatment, public health services and scientific research and teaching, expand the technology influence and external eradiating capacity of the Center by exploring the appropriate technologies for the prevention and treatment of eye diseases. In recent years, the Center has further strengthened the exchanges and cooperation in the field of ophthalmology at home and abroad, and established a close strategic partnership with a nationwide top ophthalmic medical institution, department of ophthalmology of Shanghai Central Hospital since 2012. The Center constantly improves the influence in clinical ophthalmology, public health and scientific research through introducing advanced technologies and concepts, improve the capacity in medical treatment, scientific research and public health services, and providing mature technologies and services of the Center to other institutions and regions.

Shanghai Eye Disease Prevention and treatment Center fully cooperates with various types of organizations, institutions at all levels to powerfully promote "Vision 2020". At present, our partners include national and local administrative agencies, scientific societies, international research institutions, foundations, non-profit organizations, universities and research institutes, all levels of medical institutions and so on. In the process of cooperation with these partners, we are highly concerned about their visions and work styles,

winning the trust and long-term support of these organizations and institutions for promoting "Vision 2020" in the regions.

Partner profiles

In addition to the conventional national and local administrative agencies, Ophthalmology Society of Chinese Medical Association, nationwide blindness prevention technical guidance group, Disabled Persons Federation of Shanghai, Shanghai Charity Foundation, SCHF, School of Public Health of Fudan University, Department of Ophthalmology of Shanghai City Health Faculty and 355 all types of medical institutions at all levels which are in long-term cooperation with us, international cooperation partners further expanded by the Center include:

1. Conduct cooperation in children myopia intervention project with Brien Holden Vision Institute since 2014, and further plan to carry out prevention and treatment project of eye diseases in the elderly, clinical myopia intervention project, etc.

2. Relying on the "Eye-care Day" and "World Sight Day", increase cooperation with Fred Hollows Foundation, ORBIS International and other non-governmental organizations, and carry out eye health promotion activities of new forms and high public participation to enhance the awareness and ability of the public in eye caring and protection.

Overview of the work

- I. Comprehensively promote the construction of comprehensive service system of Shanghai which integrates medical prevention and clinical treatment of eye diseases, gradually improve the city's comprehensive ability in prevention and treatment of eye diseases and the influence in related fields at home and abroad. Focusing on key population and key diseases, to improve the level of eye health of all ages of people, the Center has established two fourth round public health three-year action plan projects of Shanghai City, and carried out eye diseases prevention and treatment together with School of Public Health of Fudan University and Shanghai Municipal Center for Disease Treatment & Prevention and other public health organizations with integrated service management mode, including cataract blindness prevention, children myopia intervention, refractive error correction of the elderly and prevention and treatment of eye disease in diabetes as the main task. At the same time, to further enhance comprehensive ability of prevention and treatment of eye

diseases and the influence in the relevant fields at home and abroad, the Center proposed to establish the Public Health Ophthalmology and Eye Disease Prevention and Treatment Pathogenic Microorganism Laboratory, actively declare discipline talents, and construct key disciplines and public health pathogenic microorganism laboratory network system platform construction project.

II. Cataract Blindness Prevention

Based on the stable control of cataract blindness rate, the Center constantly improves the whole course service mechanism of cataract in the administrative region, and strengthens surgical mobilization and referral of cataract blindness and patients with visual impairment; integrates regional resources, and improves the persistent surgery effect mechanism of poor cataract patients to exert to eliminate the accumulated cataract blindness. In addition, it actively carries out cataract blindness prevention, and implements community follow-up after operation. In 2015, 113,540 cases of cataract surgeries were conducted by different levels of medical institutions in Shanghai , including 3,139 cases from poor families who get reduced or waived fee. The CSR of a million cataract population of Shanghai is 4,681 (calculated based on the resident population of 24.2568 million), and the CSR in the central city area is 6,588, realizing steady rise in CSR each year (Fig.1). By comprehensively implementing community follow-up after cataract surgery, the rate of follow-up was 99.33%. In 2016, all levels of medical institutions in Shanghai has conducted and reported 79,970 cases of cataract surgery (data as of the end of August 2016) with 11,674 cases increased compared with the same period in 2015 (68,296 cases) with an increase of 17.09%.

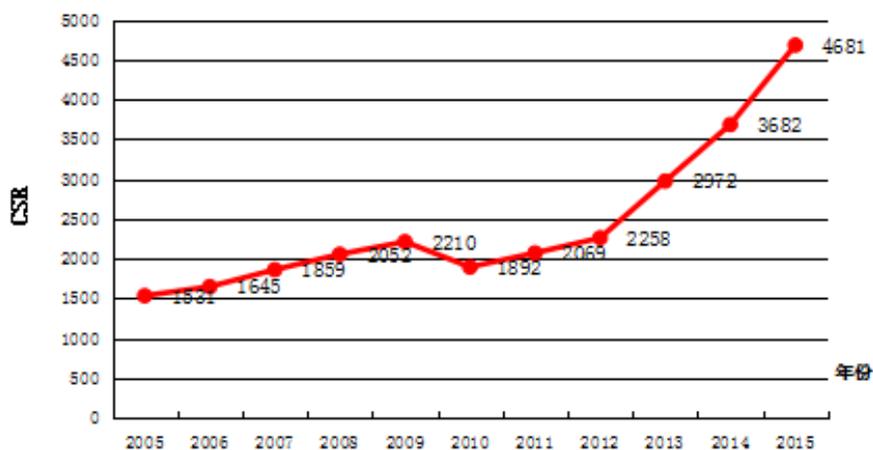


Fig. 1: CSRs of a million cataract population from 2005 to 2015

III. Children and Myopia prevention and treatment

1. Actively promote combination of children refraction development filing management and conventional vision screening, gradually expand inspection services (uncorrected visual acuity, visual acuity, computer optometry) and service coverage, and focus on referral and intervention to realize whole course service for children's eye health management. Vision screening rate of children and adolescents is $\geq 98\%$, the refraction development filing coverage rate is $\geq 30\%$, and it is required that the filing service objects evenly covered the different learning stages (kindergarten, primary school, middle school, high school) with the actual referral rate of kindergarten children $\geq 50\%$ and the actual referral rate of pupils $\geq 30\%$. Have set up files for 376,012 people in the school year of 2014-2015, including 173,646 people of poor vision (46.2%). Among 301,520 primary and middle school students aged from 7-18, there were 112,180 students with the uncorrected visual acuity (poor eyes) ≤ 0.5 , including 55% of glasses wearing rate and 63.5% of glass wearing pass rate. Since 2011, the Center has screened and set up files for a total of 1,443,888 people accumulatively. On the basis of children refraction development files set up in Shanghai, the Center further strengthens standardized management of filing and following up, tries electronic collection and transmission of monitoring data, enhances the file informatization management level, and carries out personalized referral suggestion service. It continues to carry out children mydriasis refraction tracking investigation, and work out the range of children refraction physiological value at the refine refraction development file monitoring points in Shanghai.

Focus on intervention of children with myopia. It actively strives for support and cooperation of relevant organizations and institutions, actively contacts well-known research institutions at home and abroad, carries out intervention pilots with increasing the time for outdoor activities as the measure, and makes efforts to explore the effective myopia prevention intervention techniques and methods combined with clinical intervention projects.

2. Carry out large-scale propaganda activities at the city level with advocating myopia prevention through outdoor activities as the theme. The project team carries out a series of outdoor eye caring actions for adolescents with "Enjoying Sunlight, Preventing Myopia" as the theme, aims to make

children and parents understand the benefits of outdoor sunlight in preventing myopia of juvenile and importance of caring eyes from childhood through the method of learning through playing combined with many interesting outdoor activities, including propaganda and education of eye caring health knowledge, parent-child healthy running, eye-caring orientated task carnival, outing, mountaineering, kite competition, interesting science of nature, advocates diversified and effective happy outdoor activities to make eyes bathed in the sun as far as possible so as to help prevent the occurrence of myopia, and lead the good atmosphere of scientific eye caring in the whole society.

3. Together with eye disease prevention organizations in Yunnan, Anhui and other regions, based on the complete pre-survey, the Center further details the investigation scheme, provides children and adolescents disease burden survey techniques for Yunnan, Anhui and other regions to carry out investigation synchronously in many areas in China. It is planned to clarify the burden of the myopia disease burden of children and adolescents in China for the first time to provide basis for clarifying the same and further mining the key points in prevention and treatment and improvement.

IV. Intervention of Refractive error correction of the Elderly

1. Continue to carry out the management of eye caring filing of the elderly. Carry out management of eye caring filing and vision sub-files for the service objects aged at 65 years old and above in Shanghai, gradually improve the filing and service coverage rate for the objects aged between 60 and 64, and strengthen file management and eye health screening quality. The filing rate of the service objects at the age of 65 and above is $\geq 70\%$, and the standardized management rate is $\geq 80\%$.

2. In 2015 and the first half of 2016, in the premise of full retrieval of literature, survey in districts and counties and expert consultation, the Center worked out correction of refractive errors of the elderly project implementation scheme, held expert demonstration meeting on May 31, 2016, where about a dozen of nationwide authoritative experts in public health, optometry and ophthalmology fields for demonstration of the implementation scheme, and the implementation scheme was approved by all the experts.

In order to improve the understanding of the meaning of the masses of Shanghai on the correction of refractive errors of the elderly, the Center produced and disseminated health propaganda and education videos in the form of elderly refraction thematic lecture and discussion of typical cases, and

put them on IPTV health column to impart eye health knowledge to the general public, raise public awareness and enthusiasm of participation on the project so as to promote the implementation effect of the project. At the same time, the Center plays the videos on the primary health networks for propaganda of the project and popular science knowledge of the diabetic retinopathy.

V. Diabetic Eye Disease Comprehensive Prevention and Treatment Service Mode Project

On the basis of pilot of the project operation process and informatization pilot in recent years, the Center has organized the experts to carry out two rounds of research and demonstration to form and release project implementation scheme to the cooperation agencies. On this basis, the Center further refines the scheme, fully considers the difficulties and key points to for the implementation by cooperation agencies (health service centers in communities, designated medical institutions and eye disease prevention institutions in districts and counties) of the project, has prepared a series of teaching materials, including Project Work Manual, Information System Operation Manual, Remote Radiograph Reading and Clinical Diagnosis and Treatment Specification for Diabetic Retinopathy, and has shot and produced Project Instruction Videos for learning. Since then, the project office has successively organized to carry out trainings for project management in districts and counties, eye health management staff in communities and designated medical institutions.

VI. Prevention and Treatment of Trachoma

In 2014, 1,124,819 primary and middle school students in Shanghai received the trachoma survey, and 1366 students suffered trachoma with the prevalence of trachoma of 0.12%, and the rate of treatment of 89.60%. 113,961 students from schools for children living with the rural migrant workers in Shanghai, and 714 students suffered trachoma with the prevalence of trachoma of 0.63%, and the rate of treatment of 89.08%. Since 2012, the trachoma survey and treatment work for students from schools for children living with the rural migrant workers in Shanghai has been the focus of the work of the Center, the prevalence of trachoma of such population has been effectively controlled over 3 years of survey and treatment, which has been far lower than the index of local trachoma epidemic area defined by WHO (5%).

After that, we continue to improve the prevention and treatment of trachoma in children and adolescents, continue to carry out the survey and treatment of trachoma of students, and carry out trachoma student referral treatment and reexamination in a timely manner. The trachoma survey rate is $\geq 98\%$, the prevalence of trachoma is $< 3\%$, the reexamination rate is $\geq 98\%$, and the treatment rate is $\geq 98\%$.

On the " National Eye Health Day " in 2015, we organized eye disease prevention and treatment institutions in Shanghai to carry out propaganda activity in communities focusing on the activity theme, "Say Goodbye to Trachoma Blindness". 172 free clinic consultations and 100 trainings have been carried out in communities, 801 propaganda spaces, 2,801 pieces of blackboard newspaper and 155 streamers have been displayed, 110,000 copies of promotional materials have been distributed, and 1.6 million residents are benefited, which greatly improves the public awareness rate, and enhance public awareness in concerning eye health initiatives.

VII. Continuing to Promote Multi-level Eye Disease Prevention and Treatment Human Resources Reserves

1. Initiating high-end overseas research team training plan

Initiate Three-year Action Plan for Strengthening the Public Health-High-end Overseas Research Team Training Plan in Shanghai in the year. There is already one person who has went to Brien Holden Vision Institute for learning for cooperation in children myopia intervention project.

2. Plan and initiate the Third Round Excellent Eye Disease Prevention and treatment Talent Training Program in districts, counties and communities of Shanghai

In order to further promote the construction of Shanghai disease prevention and treatment system, improve the overall level of community eye disease prevention work, based on the Three-year Action Plan for Strengthening the Construction of Public Health System-Eye Hygienic Key Discipline Construction Project, the Shanghai Eye Disease Prevention and treatment Center carries out and initiates the Third Round Excellent Eye Disease Prevention and treatment Talent Training Program with the aim of planning to subsidize and cultivate 60-100 community level eye disease prevention and treatment personnel and 20-30 district and county level eye

disease prevention and treatment personnel during the Program with the cultivation period of 1-2 year(s).

3. Holding the Second-round First Primary Eye Care Training Class in Shanghai

On July 10-11th, 2016, the Center organized and held Second-round First Primary Eye Care Training Class and "Eye Disease Prevention and Treatment and Primary Eye Care Practical Technique Training Class" in Health Personnel Training Center in Jing 'an District, Shanghai, and 106 community eye disease prevention and treatment staff from 10 districts and counties of Shanghai participated in the training.

VIII. Vigorously Promoting the Informatization Construction in Eye Disease Prevention and Treatment

On the basis of field researches in some districts and counties, communities and medical institutions, the Center determines to establish a framework for the informatization construction of eye disease prevention and treatment. The Center has initiated a Shanghai Health Cloud based residents' eye health information service system in 2015. Taking the lead in taking integrated management of diabetic eye disease, children refraction development files and refractive error correction of the elderly as the starting point, it has constructed a business management platform for eye disease prevention and treatment and business management modules for community eye disease prevention and treatment, realizing collection, entry, analysis and management of data such as eye health screening, referral, intervention and follow-up and automatic pushing based on the electronic medical records of hospitals as well as data pushing of urban two-level data exchange platform to grasp the main data and change trend in blindness and visual impairment eye diseases. It has established the fundus image data remote photograph reading platform, and formed the eye disease prevention and treatment expert remote consultation system in Shanghai so that the experts can exchange the diagnosis results through the platform.