The information contained in this section, unless otherwise indicated, have been derived from various official government publications and other publications generally believed to be reliable and the market research report prepared by Frost & Sullivan which we commissioned. We believe that the sources of such information are appropriate sources for such information and have taken reasonable care in extracting and reproducing such information. We have no reason to believe that such information is false or misleading in any material respect or that any fact has been omitted that would render such information false or misleading in any material respect. None of our Company, the Sole Sponsor, the [REDACTED], the [REDACTED] and the [REDACTED] or any of our or their respective directors, officers or representatives or any other person involved in the [REDACTED], except for Frost & Sullivan, has independently verified such information nor give any representation as to the accuracy or completeness of such information. As such, you should not unduly rely upon such information in making, or refraining from making, any [REDACTED].

SOURCE OF INFORMATION

We have commissioned Frost & Sullivan, an independent market research and consulting company, to conduct an analysis of, and to prepare a report on the private ophthalmic healthcare service market in Hong Kong and the PRC. The report prepared by Frost & Sullivan for us is referred to in this document as the Frost & Sullivan Report. We agreed to pay Frost & Sullivan a fee of HK$380,000 which we believe reflects market rates for reports of this type.

Founded in 1961, Frost & Sullivan has 40 offices with more than 2,000 industry consultants, market research analysts, technology analysts and economists globally. Frost & Sullivan's services include technology research, independent market research, economic research, corporate best practices advising, training, client research, competitive intelligence and corporate strategy.

We have included certain information from the Frost & Sullivan Report in this document because we believe this information facilitates an understanding of the private ophthalmic healthcare service market in Hong Kong and the PRC for the [REDACTED]. The Frost & Sullivan Report includes information of the private ophthalmic healthcare service market in Hong Kong and the PRC as well as other economic data, which have been quoted in the document. Frost & Sullivan's independent research consists of both primary and secondary research obtained from various sources in respect of the private ophthalmic healthcare service market in Hong Kong and the PRC. Primary research involved in-depth interviews with leading industry participants and industry experts. Secondary research involved reviewing company reports, independent research reports and data based on Frost & Sullivan's own research database. Projected data were obtained from historical data analysis plotted against macroeconomic data with reference to specific industry-related factors. Except as otherwise noted, all of the data and forecasts contained in this section are derived from the Frost & Sullivan Report, various official government publications and other publications available from, for example, Department of Health, Hospital Authority, Hong Kong Medical Council, Census and Statistics Department of Hong Kong and National Health Commission of the PRC, as well as financial reports of companies.

In compiling and preparing the research, Frost & Sullivan assumed that the social, economic and political environments in the relevant markets are likely to remain stable in the forecast period, which ensures the steady development of the private ophthalmic healthcare service market in Hong Kong and the PRC, and there is no significant material change in government policies in regard to the private ophthalmic healthcare service market.

EPIDEMIOLOGY ANALYSIS OF MAJOR EYE DISEASES IN HONG KONG

A person's eye is a complicated structure where around 40 individual subsystems function collectively to provide clear vision. Among all eye disorders and diseases, myopia and presbyopia are the most common eye problems in Hong Kong.

- **Myopia**, or nearsightedness, is a refractive error that causes the eye to not bend or refract light properly. Myopia patients at the age from 18 to 44 account for approximately 50% of patients with myopia at all ages. As a common eye condition, Myopia represents a total population of 3.6 million in 2020. Due to the increasing social pressure and prevalence of digital products, myopia is projected to affect 4.0 million Hong Kong residents in 2025.

- **Presbyopia** is a vision defect causing difficulty to read or focus on close objects. It is caused by the degeneration of the natural lens in the eye, as it loses elasticity with age. Presbyopia typically presents in individuals aged 45 years and above. The presbyopia population in Hong Kong reached 3.3.million in 2020 and is expected to reach 3.6 million in 2025.

- **Cataract** is an eye disease that develops due to a buildup of protein in the eye's lens. Clouded vision caused by cataract can impair a person's ability to read, drive (especially at night) or see. Most cataracts develop slowly and do not affect eyesight in its early stage. But with time, cataracts will eventually interfere with the vision. The number of cataract patients in Hong Kong amounted to 0.6 million in 2020 and is expected to reach 0.9 million in 2025 at a CAGR of 6.9% during this period.

OVERVIEW OF MAIN SURGERIES FOR OPHTHALMIC MEDICAL SERVICES

1. **Refractive laser surgery:** A laser reshapes the anterior surface of the eye (the cornea) to enable focussed vision by changing the refraction of the eye. The laser procedures used can be categorised into Photorefractive Keratectomy (PRK)/Laser Sub-Epithelial Keratomileusis (LASEK), Laser-Assisted in situ Keratomileusis (LASIK) and Small Incision Lenticule Extraction (SMILE). Laser surgery of the cornea targets younger populations with low and moderate myopia (up to –10.00D).

   - **PRK/LASEK:** The first generation of refractive laser surgery for vision correction that ranges from +5.00D to –6.00D and the predecessor to the popular LASIK procedure. PRK/LASEK procedures can remove a thin cell layer from the top of the eye so the laser can reshape the underlying cornea to correct myopia, hyperopia, and astigmatism. Generally, PRK/LASEK recovery takes longer and causes more discomfort after surgery due to its large incision and long recovery time.

   - **LASIK:** LASIK is a type of laser refractive surgery for the correction of myopia, hyperopia and astigmatism. It is suitable for treating myopia, up to 15 dioptres, hyperopia, up to 5 dioptres and astigmatism up to 6 dioptres. LASIK involves creating a flap in the cornea using a microkeratome or femtosecond laser and then raising it up before reshaping the cornea with an excimer laser. With each pulse of the laser beam, a tiny amount of corneal tissue is removed, allowing the surgeon to flatten the curve of the cornea or to make it steeper. The corneal flap is then returned to its original position. LASIK is not suitable for people whose cornea is too thin for reshaping or suffer from conditions that might result in complications or poor outcomes of surgery, e.g. keratoconus, dry eye disease and glaucoma.

- **SMILE:** The latest generation of corneal laser refractive surgery. It is also the most advanced method to correct myopia, up to –10 dioptres and astigmatism up to –5 dioptres. SMILE surgeries have been conducted worldwide since its availability in 2011. One of the main differences between SMILE and its predecessors is that SMILE does not involve the use of an excimer laser and does not need to create a flap. SMILE uses femtosecond laser to cut a lenticule from the corneal stroma, which is later removed from the eye through a small incision of 2–4mm. It is a minimally invasive procedure with fast visual recovery. Many of those who had received the procedure were able to resume work the following day. SMILE surgery is expected to become increasingly popular among those who want spectacle independence in the future.

2. **IOL replacement:** Intraocular lenses (IOLs) are medical devices that are implanted inside the eye to replace the eye's natural lens, which is removed during the cataract surgery. IOLs are also used for refractive lens exchange, a type of vision correction surgery. IOLs can be further divided into monofocal and multifocal IOLs.

   - **Monofocal:** Monofocal IOLs are intraocular lenses with a fixed focus for one distance, which requires patients to wear glasses when they want to look at a close distance. Monofocal IOLs are usually covered by public health insurance. Thus, it's affordable to most patients.

   - **Multifocal:** Multifocal IOLs have two or three focal points. These lenses can focus the light at near, far and intermediate distances, which reduce the need for glasses. Due to its advantages compared to monofocal lens, patients who demand for the clear vision are increasingly opting for multifocal IOLs.

     For applications of IOLs, monofocal IOLs are normally used for the treatment of cataract while multifocal IOLs are widely used for both cataract treatment and refractive lens exchange.

   - **Cataract surgery:** In old age, human lens loses its transparency and becomes opaque, which causes vision deterioration and requires the lens to be replaced with IOLs.

   - **Refractive lens exchange:** Ageing causes the human lens to become stiff. When the eye loses its ability to focus, it results in the need for wearing reading glasses. During refractive lens exchange, the ageing lens inside the eye is replaced with IOLs.

3. **ICL implantation:** A custom-made artificial lens is placed behind the iris and in front of the natural lens to correct myopia, hyperopia and astigmatism, similar to a contact lens. This lens is therefore called "intraocular contact lens" or "ICL", also known as phakic intraocular lenses. ICL implantation targets younger populations suffering high myopia as it can correct refractions that range up to –20.00D. For those who are not suitable for refractive laser surgery due to their high levels of myopia, or who do not like the idea of permanently removing corneal tissue, ICL implantation is an option which provides superb visual quality without dry eye syndrome through a minimally invasive and reversible surgery.

HONG KONG OPHTHALMIC MEDICAL SERVICE MARKET

Based on the nature of ownership, the healthcare service system in Hong Kong is characterised by its public and private healthcare sectors. The public sectors are subsidised under regulation of Department of Health and Hospital Authority, and provide healthcare services at affordable cost. According to Department of Health and Hospital Authority and Frost & Sullivan's analysis, in 2020, there were 43 public hospitals, 49 public Specialist outpatient clinics and 73 public general outpatient clinics. The private healthcare institutions in Hong Kong dominate the primary medical care and high-end medical service markets for local residents. In 2020, there were 12 private hospitals, around 2,500 private medical centers and around 500 other healthcare institutions, including maternity home and nursing home in Hong Kong.

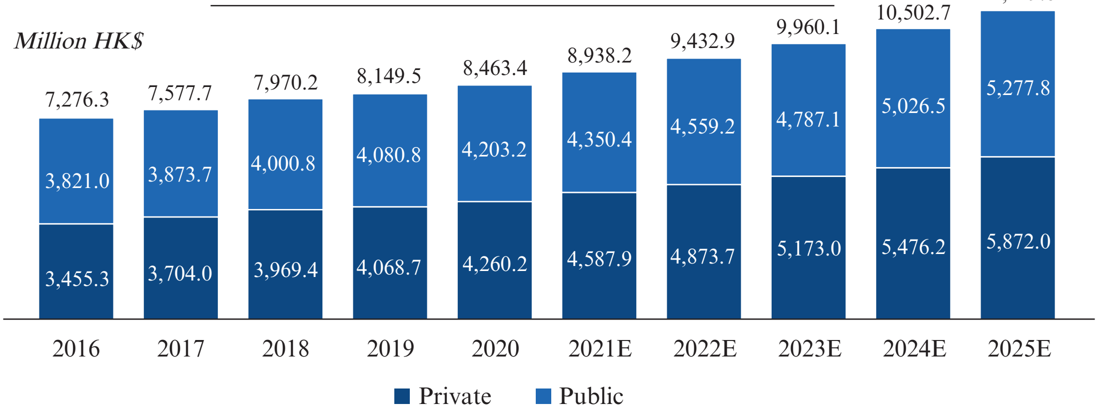
According to Department of Health and Frost & Sullivan's analysis, the healthcare expenditure in Hong Kong has grown steadily in recent years due to the growth of ageing population and the prevalence of various chronic diseases. From 2015 to 2019, the per capita healthcare expenditure in Hong Kong has grown from HK$19.0 thousand to HK$23.8 thousand, at a CAGR of 5.8%. By 2024, the per capita healthcare expenditure is forecasted to increase to HK$32.5 thousand, at a CAGR of 6.7% from 2020 to 2024.

The ophthalmic healthcare service in Hong Kong consists of refractive treatment service and other treatment service. Refractive treatment services include IOL replacement surgery, ICL implantation surgery and refractive laser surgery. According to Frost & Sullivan's analysis, in 2020, the total ophthalmic healthcare service market size in Hong Kong is approximately HK$8,463.4 million, the market size is expected to grow at a CAGR of 5.7% from 2021 to 2025, reaching approximately HK$11,149.8 million by 2025.

In Hong Kong, the private segment of the ophthalmic healthcare service market outgrows pubic segment in 2020, owing to the high growth rate during 2016 and 2020. According to Frost & Sullivan's analysis, the market size of private ophthalmic service market in Hong Kong in terms of revenue has increased from HK$3.5 billion in 2016 to HK$4.3 billion in 2020, at a CAGR of 5.4%. According to Frost & Sullivan's analysis, the market size of public ophthalmic service market in Hong Kong in terms of revenue has increased from HK$3.8 billion in 2016 to HK$4.2 billion in 2020, representing a CAGR of 2.4%. Due to the long waiting time for medical service in public sector and the increase in Hong Kong residents' abilities to afford private ophthalmic services, it is estimated that the market size of private ophthalmic service market will reach HK$5.9 billion in 2025, representing a CAGR of 6.4% during 2021 and 2025. According to Frost & Sullivan's analysis, the market size of public ophthalmic service market is expected to reach HK$5.3 billion in 2025, representing a CAGR of 4.9%. The following diagram sets forth the historical and projected revenue of the ophthalmic service market in Hong Kong for the periods indicated.

Breakdown of Market Size of Ophthalmic Healthcare Service Market in Hong Kong, 2016–2025E

Period	CAGR (Private)	CAGR (Public)
2016–2020	5.4%	2.4%
2021E–2025E	6.4%	4.9%

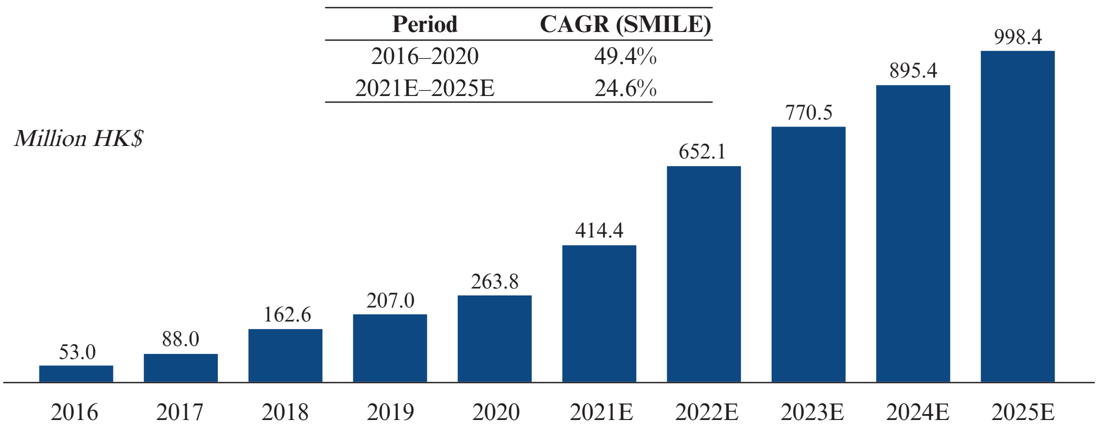


Source: Frost & Sullivan analysis

Market Analysis of SMILE Surgery in Hong Kong

SMILE is the latest advancement in laser vision correction and has become commercially available since the launch of ReLEx SMILE in 2011. Due to significantly improved clinical benefits compared to LASIK, such as less dry eye syndrome and smaller incision, etc., the market size of SMILE surgery increased significantly to HK$263.8 million in 2020 due to strong patient growth. As affected by the social unrest in 2019 and COVID-19 outbreak in 2020, the market demand for SMILE surgery has been temporarily affected and therefore the growth of market size of SMILE surgery slowed down during 2019 to 2020. In particular, the containment and social distancing measures imposed by the Hong Kong Government affected the patient visit to healthcare facilities. In addition, certain private hospitals experienced a slump in patient visit due to the travel restriction imposed on visitors who seek ophthalmic healthcare services, especially surgical procedures, in hospitals in Hong Kong, as well as postponement of scheduled non-urgent ophthalmic surgery. On the other hand, the impact of COVID-19 outbreak on eye centers in Hong Kong is considered minimum as the clinic operation and patient visit has not seen a material adverse restriction or impact. In view of the recovery of overall market demand for ophthalmic healthcare service in Hong Kong since the second half of 2020 as supported by the fact that (i) there is no sign that the social unrest in Hong Kong will continue and (ii) the COVID-19 outbreak has seen alleviation with gradual normalisation of social and economic activities as compared to the first half of 2020, there is no foreseeable adverse impact on the growth of ophthalmic healthcare service market in Hong Kong during the forecast period. In the next five years, the market is projected to be further driven to HK$998.4 million by 2025 as patients' education and awareness improve.

Market Size of SMILE in Hong Kong Private Healthcare Institutions, 2016–2025E

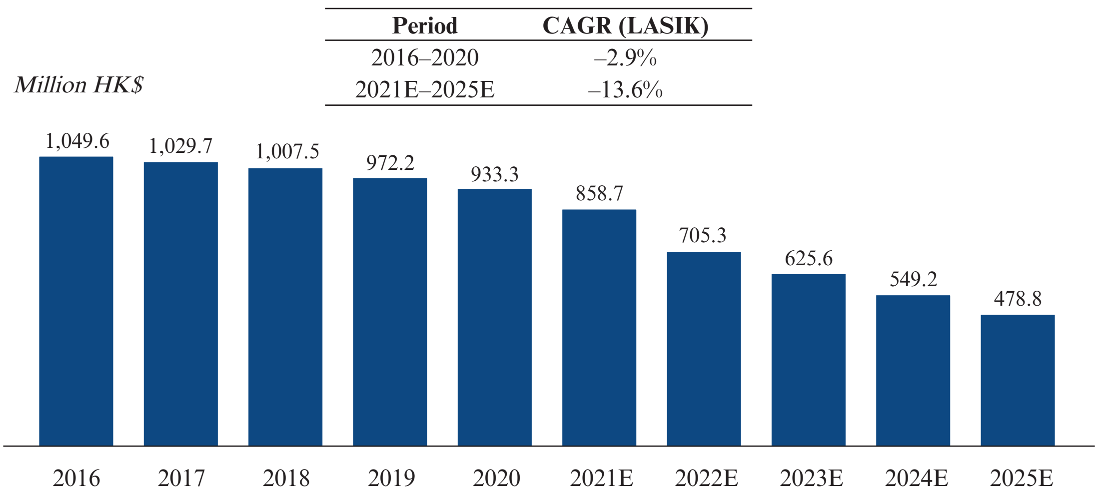


Source: Frost & Sullivan analysis

Market Analysis of LASIK Surgery in Hong Kong

LASIK (laser-assisted in situ keratomileusis) is a traditional refractive surgery for the correction of myopia, hyperopia, and astigmatism and the technology has been developed for years. According to Frost & Sullivan's analysis, the market size of LASIK surgery experienced a drop from HK$1,049.6 million in 2016 to HK$933.3 million with a CAGR of –2.9% predominantly due to the decrease in surgery volume because of market competition from new generation refractive surgery (i.e. SMILE). The market size of LASIK is anticipated to decrease more rapidly from 2021 to 2025 at a CAGR of –13.6%.

Market Size of LASIK in Hong Kong Private Healthcare Institutions, 2016–2025E



Source: Frost & Sullivan analysis

Market Analysis of IOL Replacement Surgery in Hong Kong

Intraocular lenses (IOLs) are medical devices that are implanted inside the eye to replace the eye's natural lens when it is removed during cataract surgery. IOLs also are used for a type of vision correction surgery called refractive lens exchange. Normally, monofocal IOLs with only one focal point are the most commonly used intraocular lenses in cataract treatment. They have one focal point and can improve vision at one distance: far or near. For the remaining distances, the patient may still need to use glasses. Multifocal IOLs, on the other hand, have two or three focal points and can restore vision at more than one distance, allowing the patient to be independent of glasses.

IOL replacement surgery is a relatively mature market and is primarily driven by the increasing patients with cataract as well as vision correction demand. Except for higher prices, multifocal IOLs have clear advantages in terms of vision improvement over monofocal ones.

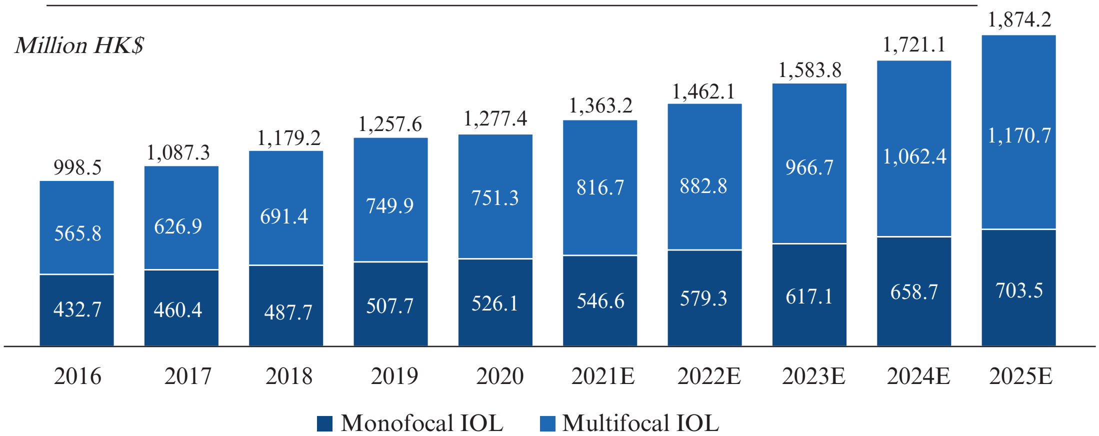
Monofocal IOL with only one focal point provides an economical treatment option for many patients with limited ability to afford such treatment. According to Frost & Sullivan's analysis, the increasing prevalence of cataract has driven the steady growth of monofocal IOL replacement surgery market, reaching HK$526.1 million in 2020, at a CAGR of 5.0% from 2016 to 2020. In the next five years, the market is projected to further increase to HK$703.5 million in 2025 with a CAGR of 6.5% from 2021 to 2025.

With the increasing affordability of the multifocal IOLs and raising public healthcare awareness, it is believed that the number of patients adopting multifocal IOLs will grow faster. According to Frost & Sullivan's analysis, multifocal IOL replacement surgery market in terms of revenue is expected to increase from HK$751.3 million in 2020 to HK$1,170.7 million in 2025, representing a CAGR of 9.4%, which outpaces the CAGR of the monofocal IOL replacement during the same period.

The share of multifocal IOL replacement surgery market in private ophthalmic medical service market has kept increasing as well, rising to 17.6% in 2020. With the further expansion of multifocal IOL usage, the proportion of multifocal market in private ophthalmic medical service market will achieve 19.9% in 2025.

Market Size IOL Replacement in Hong Kong Private Healthcare Institutions, 2016–2025E

Period	CAGR (Monofocal IOL)	CAGR (Multifocal IOL)	CAGR (Total)
2016–2020	5.0%	7.3%	6.4%
2021E–2025E	6.5%	9.4%	8.3%



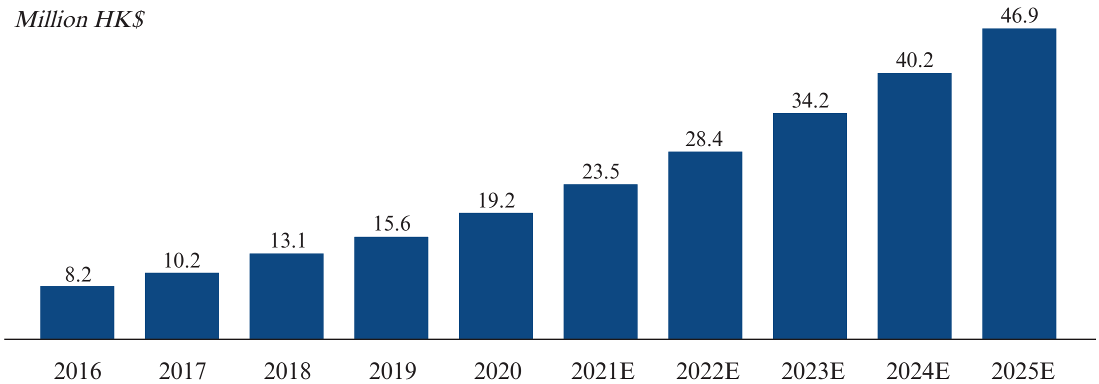
Source: Frost & Sullivan analysis

Market Analysis of ICL Implantation Surgery in Hong Kong

The increasing prevalence of the high myopia stimulates the growth trend in the market size of ICL implantation. Moreover, ICL implantation is also suitable for myopia patients with thin corneal. According to Frost & Sullivan's analysis, from 2016 to 2020, the market size of ICL implantation surgery in terms of revenue grew from HK$8.2 million in 2016 to HK$19.2 million in 2020, representing a CAGR of 23.6% during the period. This market size is forecasted to increase further to HK$46.9 million in 2025 with a CAGR of 18.8% from 2021.

Market Size of ICL Implantation Surgery in Hong Kong Private Healthcare Institutions, 2016–2025E

Period	CAGR (ICL Implantation)
2016–2020	23.6%
2021E–2025E	18.8%



Source: Frost & Sullivan analysis

Market Drivers of Private Ophthalmic Healthcare Service in Hong Kong

1. Ageing Population and Increasing Prevalence of Eye Diseases

Hong Kong's population is ageing rapidly at an unprecedented level. According to Census and Statistics Department of Hong Kong, people aged above 65 amounted to about 1,381.8 thousand, accounted for 18.4% of total population in 2020 and will grow at a CAGR of 5.1% from 2021 to 2025. The underlying demographic shift toward older residents boosts the prevalence of age-related eye diseases, including refractive errors, cataract and macular degeneration, and leads to increasing demand for ophthalmic services in Hong Kong and provides vast opportunities for the growth in the private ophthalmic services industry in Hong Kong. Furthermore, among younger generation, there is also an increase in the prevalence of eye disorders and diseases, especially myopia.

2. Technology Innovation and Advancement

With the development of technology innovation, more advanced surgical options become available to treat eye problems, providing an impetus for the market growth. Emerging technology such as SMILE only creates minimal incision of the corneal tissue during refractive surgeries, providing operations with lower risks and faster recovery for patients than conventional techniques, such as LASIK and LASEK. Advancement in materials used in IOL replacements offers lenses with multifocal or hydrophobic properties, which allow for more effective treatment for presbyopia and cataract.

3. Increasing Affordability

With the growing level of personal disposable income, people having higher purchasing power become more willing to pay for the health of their eyes, which stimulates the growth of ophthalmic healthcare service industry in Hong Kong. In addition, people in Hong Kong are health-conscious and are willing to purchase health insurance, which makes private ophthalmic services more affordable. Furthermore, the Government has implemented the Elderly Health Care Voucher Scheme (HCVS), which aims to subsidize elders' use of the private primary healthcare services. With the continuous improvement of the eligibility and voucher amount of HCVS, there is an increasing tendency among Hong Kong's public to opt for private ophthalmic services.

4. Long Waiting Time for Ophthalmic Services in Public Sector

Due to the scarce medical resources in public sector, the waiting time for a medical service has continued to increase. For example, the waiting time for cataract surgery has been over 20 months in certain areas. To avoid the long waiting time, the private sector is becoming more acceptable for patients seeking prompt medical attention as well as the convenient and humanistic medical environment.

Entry Barriers of Private Ophthalmic Healthcare Service in Hong Kong

1. Reputation of institutions and Medical Practitioners

The brand reputation of private ophthalmic healthcare institutions and the personal reputation of private ophthalmologists are two of the most critical factors to attract potential patients, as Hong Kong residents usually prefer big brands in the ophthalmic service industry and take references from their relatives or friends to choose their doctors. In Hong Kong, it usually takes years for a private ophthalmic healthcare institution to become known for its ophthalmic services and for new ophthalmologists to build up strong personal reputation and accumulate substantial customer base. Therefore, the time and resources required to the build brand reputation of the private ophthalmic healthcare institutions and ophthalmologists create substantial entry barriers for new entrants.

2. Qualification of Ophthalmologists and Optometrists

Becoming a qualified ophthalmologist requires not only passing the exit-examination or assessment but also long-term training. The Specialist training is only offered at hospitals by HA with 15 trainee quotas each year. A trainee usually has to undergo one year of pre-registration internship and at least six years of supervised Specialist training to become a qualified ophthalmologist. In clinical practise, experience and rich knowledge about medical device could greatly reduce the surgery risk and contribute to better recovery for patients after surgeries. In particular, for SMILE surgeries, ophthalmologists are expected to have abundant knowledge of refractive errors and need to be well trained with VisuMax® before conducting SMILE surgeries on patients. In order to become a qualified optometrist, one is required to receive certification from Optometrists Board. The scarcity of professionals limits the new entrants' ability to start their businesses in the private ophthalmic healthcare service market.

3. Adequate Funds

For ophthalmic clinics, ophthalmic diagnosis and treatment need advanced and high-precision instruments, which require adequate funds to purchase initial equipment and continuously upgrade facilities and equipments in order to catch up with the latest technological innovation. New entrants need adequate funds to purchase cutting-edge equipment.

4. Increasing by Stringent Regulations

The legislative council and department of health set out a series of regulations about the quality of services, registration requirements of private sectors, and the rights of patients. The private ophthalmic service market under those restrictions is becoming less accessible for new entrants.

Consultancy Fees in the Ophthalmic Service Industry in Hong Kong

The consultancy fees generally charged by Registered Medical Practitioners consist of a fixed fee and/or a variable amount based on a certain percentage of revenue generated by the respective ophthalmologists, net of the relevant costs. The fixed fees and/or variable amount charged by Registered Medical Practitioners may vary due to the market rates, the experience and seniority of the Registered Medical Practitioners, the type of surgery performed and whether the clients are referred by the Registered Medical Practitioners. According to Frost & Sullivan's analysis, normally, consultancy fees account for approximately 20% to 40% of the total revenue of a private ophthalmic medical centre in Hong Kong. It is also not uncommon in the ophthalmic service industry in Hong Kong for Registered Medical Practitioners who are also shareholders of the relevant company to receive a fixed monthly remuneration.

The underlying demographic shift towards older residents boosts the prevalence of age-related eye diseases, including refractive errors, cataract and macular degeneration, which leads to increasing demand for ophthalmic services in Hong Kong. Combined with technology innovations for unmet clinical needs to treat eye diseases as well as the long waiting time for ophthalmic services in public sector, according to Frost & Sullivan's analysis, the market size of private ophthalmic healthcare service market has reached HK$4.3 billion in 2020, representing a CAGR of 5.4% from 2016. Despite the number of ophthalmologists registered in Hong Kong has witnessed a relatively slower growth, which increased from 279 in 2016 to 311 in 2020, representing a CAGR of 2.8%, the relatively narrow supply/demand gap still provided ophthalmic service providers with relatively strong bargaining power, and thus, the consultancy fee charged by Medical Practitioner is expected to experience an incremental increase in the near future.

Cost of Key Medical Consumables in Ophthalmic Healthcare Service Industry

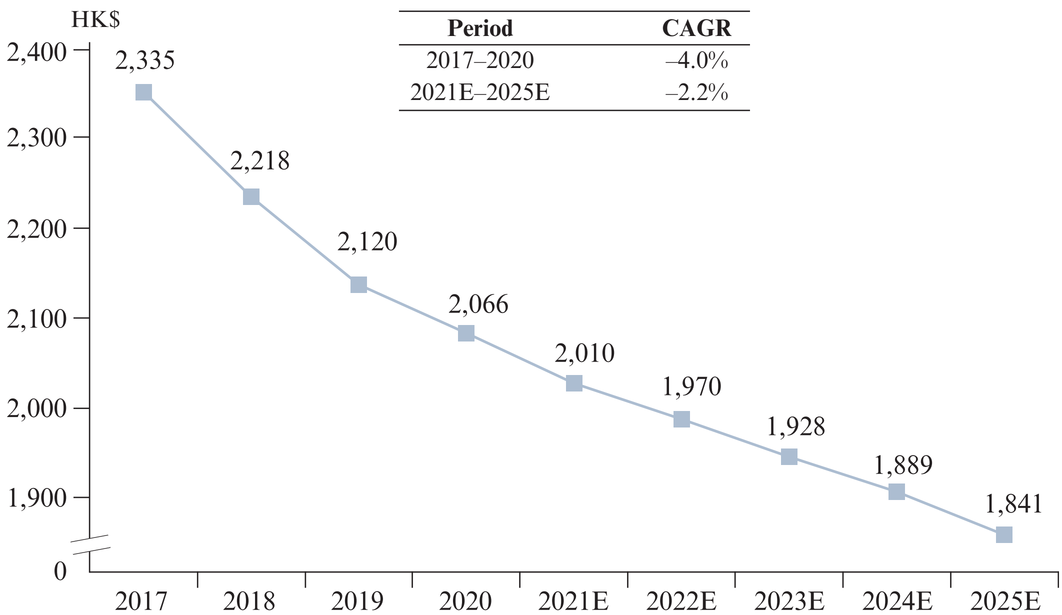
The following table set forth the costs of key medical consumables ophthalmic healthcare service providers in Hong Kong.

	Price Range (HKD)
SMILE Treatment License (per eye)	2,000 to 2,500
Consumables of IOL Treatment (per eye)	500 to 15,000
Consumables of ICL Treatment (per eye)	7,500 to 10,000

Source: Frost & Sullivan analysis

In general, SMILE treatment license fee and the price of consumables for IOL treatment recorded a moderate decline trend from 2017 to 2020 while the price of consumable for ICL treatment remained relatively stable. Driven by the growing popularity and penetration of SMILE surgery in Hong Kong, the SMILE treatment license fee in Hong Kong recorded a declining trend at a CAGR of approximately –4.0% from 2017 to 2020, which is expected to decrease from 2021 to 2025 at a CAGR of –2.2% along with the continued growth of SMILE surgery as compared to LASIK in Hong Kong.

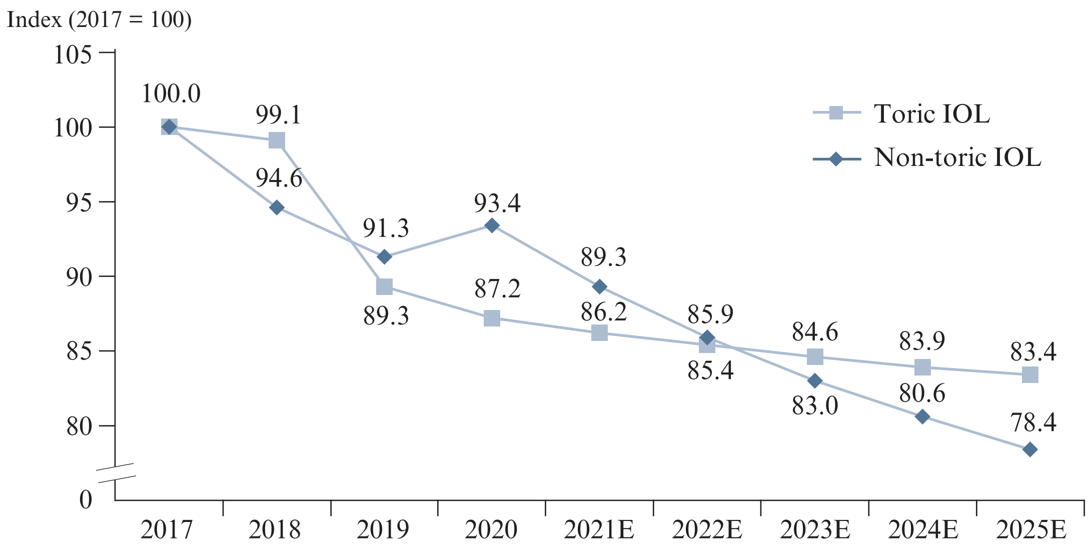
SMILE treatment license fee in Hong Kong, 2017–2025E



Source: Frost & Sullivan analysis

Similarly, the price of consumables for IOL treatment decreased moderately at a CAGR of approximately –3.8%. Such decline was primarily attributable to the increasing availability of consumables with more diverse options/specifications at different price and country of origins such as the United States, Europe and Japan in the market driven by the growing penetration of IOL treatment in Hong Kong. The cost of major consumables in IOL treatment such as toric IOL (astigmatism correcting intraocular lens) and non-toric IOL recorded a declining trend at a CAGR of –4.5% and –2.3%, respectively, from 2017 to 2020. Going forward, the cost of toric IOL and non-toric IOL implants in Hong Kong is expected to decrease at a CAGR of –0.8% and –3.2%, respectively, from 2021 to 2025. The decrease in consumable price is expected to make IOL treatment more affordable for residents in Hong Kong.

Price index of major implants of IOL treatment in Hong Kong, 2017–2025E



Note: detailed historical price of consumable of ICL treatment is not available due to limited market information.

Source: Frost & Sullivan analysis

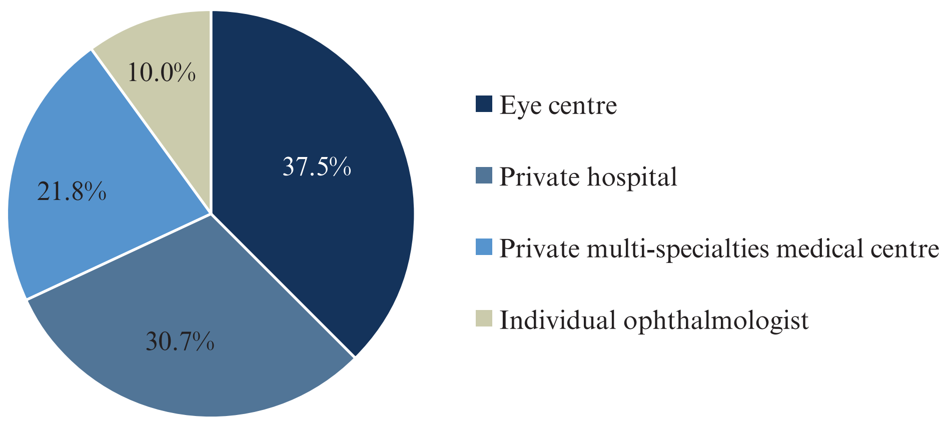
Impact of COVID-19 Outbreak

The COVID-19 outbreak since early 2020 has temporarily affected the business performance of ophthalmic healthcare service providers in Hong Kong during the first half of 2020 mainly due to implementation of various containment measures, social distancing measures and travel restriction that caused disruption of patient visit to healthcare facilities. In particular, certain private hospitals experienced a slump in patient visit due to the travel restriction imposed on the PRC visitors who seek ophthalmic healthcare services, especially surgical procedures, in hospitals in Hong Kong, as well as postponement of appointment for non-urgent surgery. On the other hand, the impact of COVID-19 outbreak on eye centres in Hong Kong is considered minimum as the clinic operation and patient visit has not seen a material adverse restriction or impact. The overall market demand for ophthalmic healthcare service in Hong Kong has seen a significant recovery since the second half of 2020 given that (i) the COVID-19 outbreak has seen an alleviation and (ii) general public and patients are well-adapted to containment measures towards COVID-19 outbreak with normalisation of social activities gradually as compared to the first half of 2020. For example, according to Frost & Sullivan's analysis based on information available from financial reports of Market Player C, the largest private ophthalmic healthcare service provider in Hong Kong in terms of revenue in 2020, the revenue of Market Player C generated from provision of ophthalmic services in Hong Kong still record a moderate year-on-year growth of approximately 0.5% in the first half of 2020 amid the COVID-19 outbreak, followed by a significant year-on-year growth of approximately 19.3% in the second half of 2020. Similarly, the financial performance of our Group has also seen a significant improvement in the second half of 2020 as compared to the same period in 2019, which reflected that the impact of COVID-19 outbreak on the industry is temporary. In view of the rebound of market demand since the second half of 2020, the COVID-19 outbreak does not have material impact on the overall market size of ophthalmic healthcare service in Hong Kong, which has recorded a moderate growth in 2020.

COMPETITIVE LANDSCAPE OF HONG KONG PRIVATE OPHTHALMIC HEALTHCARE SERVICE MARKET

The private ophthalmic medical services market comprises market participants with different background, including eye centres, private hospitals, multi-specialties medical centres and individual ophthalmologists in solo practice. Eye centre and private hospital accounted for an aggregate market share of approximately 68.2% in terms of revenue generated from provision of ophthalmic medical service in Hong Kong in 2020. In general, refractive treatment are mainly undertaken by eye centre and private hospital in Hong Kong while ophthalmologists from private multi-specialties medical centre focuses more on provision of other treatment services.

Market share of private ophthalmic medical service providers in Hong Kong by revenue, 2020



Source: Frost & Sullivan analysis

The competition of private ophthalmic medical services market in Hong Kong becomes more intense in recent years and the increased competition was attributable to adoption of a more competitive pricing and marketing strategy by other market players. For example, the price of SMILE surgeries of Market Player C and Market Player E were approximately 10% to 20% lower than the Group during the COVID-19 outbreak in 2020. In addition, Market Player C and other market players further promoted their services by offering discount for two persons, 1-year unlimited check-up and referral discount.

Our Group ranked the fourth in 2020 in terms of revenue from ophthalmic healthcare services among all private healthcare institutions in Hong Kong, with a market share of 5.0%, according to Frost & Sullivan. The table below sets forth the top five private ophthalmic service institutions in Hong Kong in terms of revenue and market share in 2020.

Rank	Market Participants	Institution Type	Ophthalmic Healthcare Services Revenue *(Million HK$)*	Market Share by Revenue *(%)*
1	Market Player C	Eye Center	339.9	8.0%
2	Market Player A	Hospital	325.4	7.6%
3	Market Player B	Eye Center	298.9	7.0%
4	Our Group	Eye Center	212.4	5.0%
5	Market Player D	Eye Center	191.7	4.5%

Source: Annual reports and websites of the above companies, Frost & Sullivan analysis

We were one of the first batch of private healthcare institutions in Hong Kong to introduce the advanced VisuMax Femtosecond Laser System 90° device to conduct SMILE surgery in Hong Kong. In 2020, we ranked the first in terms of SMILE surgery revenue among private ophthalmic service institutions in Hong Kong, representing a market share of 38.0%. The table below sets forth the top five private ophthalmic service institutions in Hong Kong in terms of SMILE surgery revenue and market share in 2020.

Rank	Market Participants	Institution Type	SMILE Surgery Revenue *(Million HK$)*	Market Share by Revenue *(%)*
1	Our Group	Eye Center	100.3	38.0%
2	Market Player C	Eye Center	48.6	18.4%
3	Market Player E	Eye Center	34.3	13.0%
4	Market Player A	Hospital	28.2	10.7%
5	Market Player F	Eye Center	18.6	7.1%

Source: Annual reports and websites of the above companies, Frost & Sullivan analysis

We ranked the second in terms of multifocal IOL replacement surgery revenue among private ophthalmic service institutions in Hong Kong, representing a market share of 6.0% in 2020. The table below sets forth the top five private ophthalmic service institutions in Hong Kong in terms of multifocal IOL replacement surgery revenue and market share in 2020.

Rank	Market Participants	Institution Type	Multifocal IOL Replacement Surgery Revenue *(Million HK$)*	Market Share by Revenue *(%)*
1	Market Player A	Hospital	58.6	7.8%
2	Our Group	Eye Center	44.8	6.0%
3	Market Player C	Eye Center	43.1	5.7%
4	Market Player B	Eye Center	36.9	4.9%
5	Market Player D	Eye Center	28.9	3.8%

Source: Annual reports and websites of the above companies, Frost & Sullivan analysis

We ranked the first in terms of ICL implantation surgery revenue among private ophthalmic service institutions in Hong Kong in 2020, with a market share of 46.4%. The table below sets forth the top five private ophthalmic service institutions in terms of ICL implantation surgery revenue and market share in 2020.

Rank	Market Participants	Institution Type	ICL Implementation Surgery Revenue *(Million HK$)*	Market Share by Revenue *(%)*
1	Our Group	Eye Center	8.9	46.4%
2	Market Player E	Eye Center	1.7	8.8%
3	Market Player C	Eye Center	1.5	7.8%
4	Market Player B	Eye Center	1.3	6.9%
5	Market Player D	Eye Center	1.0	5.3%

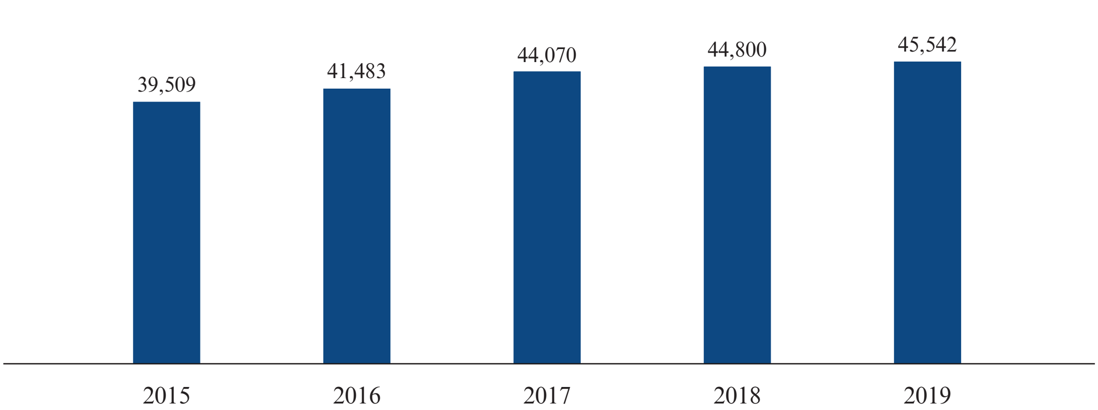
Source: Annual reports and websites of the above companies, Frost & Sullivan analysis

OPHTHALMIC MEDICAL SERVICE MARKET IN THE PRC AND THE GREATER BAY AREA

The aging population in the PRC, increasing diagnosis and treatment rates of the ophthalmic diseases as well as the rising unmet needs from ophthalmic number of cases, leads to a rise in the demand of ophthalmic healthcare service in the PRC. According to National Health Commission of the PRC and Frost & Sullivan's analysis, while the number of public ophthalmic hospitals in the PRC has decreased from 58 in 2015 to 55 in 2019, representing a CAGR of –1.3% during the indicated period, the number of private ophthalmic hospitals has experience rapid growth, increasing from 397 in 2015 to 890 in 2019, representing a CAGR of 22.4% during the period from 2015 to 2019 to cater the rising demand for ophthalmic healthcare services from Chinese citizens. Moreover, the increasing focus on the medical education leads to the rise in the number of medical professionals, including ophthalmic medical professionals in the past few years. The number of ophthalmic medical professionals in the PRC has increased from 39,509 in 2015 to 45,542 in 2019, representing a CAGR of 3.6% during the indicated period.

Number of Ophthalmologists in the PRC, 2015–2019

Period	CAGR (Opthalmologists)
2015–2019	3.6%

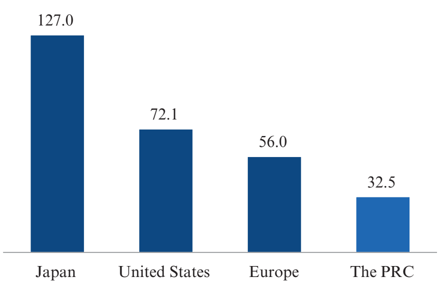


Note: 2019 is the latest available figure.

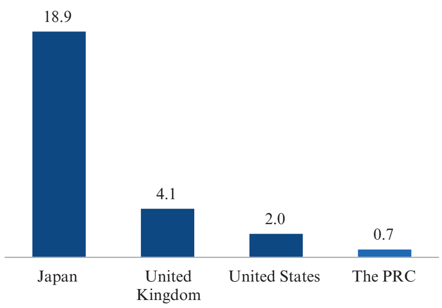
Source: National Health Commission of the PRC, Frost & Sullivan analysis

According to Frost & Sullivan's estimation based on the statistics of International Council of Ophthalmology, the number of ophthalmologists per million population in the PRC was approximately 32.5 in 2019, which was much lower as compared to developed countries such as Japan (127.0), the United States (72.1) and Europe (56.0). In addition, the number of ophthalmic hospitals per million population in the PRC was only 0.7 in 2019, which was also lower as compared to developed countries such as Japan (18.9), the United States (2.0) and the United Kingdom (4.1). As such, the relatively low ratio of population to ophthalmologists and ophthalmic hospitals in the PRC reflects the strong growth potential in the future.

Number of Ophthalmologists per Million Population in Selected Countries/ Regions, 2019



Number of Ophthalmic Hospitals per Million Population in Selected Countries, 2019



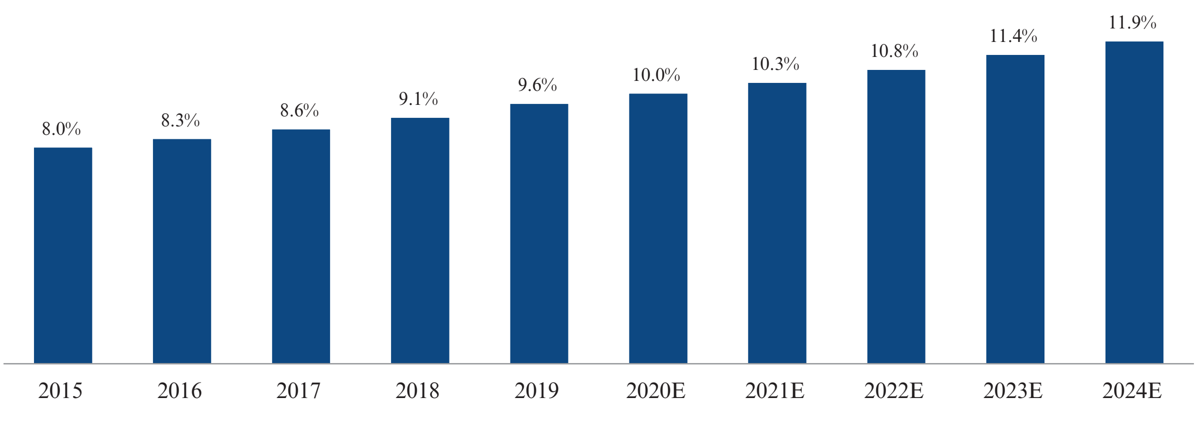
Note: 2019 is the latest available figure.

Source: International Council of Ophthalmology, Frost & Sullivan analysis

Penetration Rate of Ophthalmic Healthcare Services in the PRC

Penetration rate of ophthalmic healthcare services refers to the patient volume in ophthalmic healthcare institutions out of the total population. The penetration rate of ophthalmic healthcare service in PRC has historically been lower than that in developed countries, but it has been growing gradually in recent years. The penetration rate of ophthalmic healthcare services in the PRC has seen a steady growth from 8.0% in 2015 to 9.6% in 2019, and is expected to reach 11.9% by 2024.

Penetration Rate of Ophthalmic Healthcare Services in the PRC, 2015–2024E



Note: 2019 is the latest available figure.

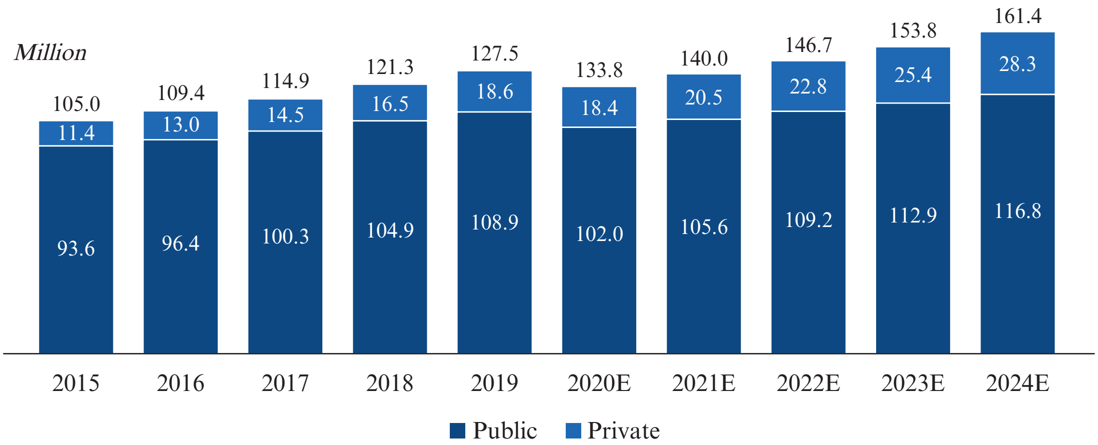
Source: National Health Commission of the PRC, Frost & Sullivan analysis

Outpatient Volume of Ophthalmic Healthcare Service in the PRC

According to National Health Commission of the PRC and Frost & Sullivan's analysis, from 2015 to 2019, the CAGR of outpatient volume in public medical institutions is 3.9% while the CAGR of outpatient volume in private medical institutions is 13.0%. Due to COVID-19 pandemic in 2020, the outpatient volume was impacted by obligated shutdown of healthcare service institutions. Patients delayed unurgent consultancy until pandemic and lockdown was alleviated. Most healthcare services re-opened in mid-2020, and outpatient volume resumed to usual setting. During 2020 to 2024, outpatient volume in private medical institutions is forecasted to grow faster than those of public medical institutions, with CAGR of 11.3%.

Outpatient Volume of Ophthalmic Healthcare Service in the PRC, 2015–2024E

Period	CAGR (Private)	CAGR (Public)	CAGR (Total)
2015–2019	13.0%	3.9%	5.0%
2020E–2024E	11.3%	3.4%	4.8%



Note: 2019 is the latest available figure.

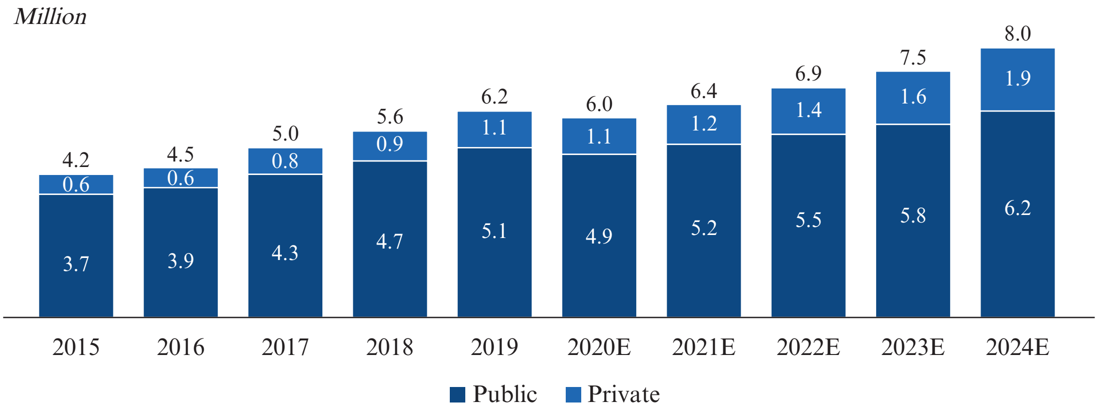
Source: National Health Commission of the PRC, Frost & Sullivan analysis

Inpatient Volume of Ophthalmic Healthcare Service in the PRC

Apart from the rising outpatient volume in ophthalmic healthcare services, the inpatient service also showed expanding demand. According to National Health Commission of the PRC and Frost & Sullivan's analysis, from 2015 to 2019, the CAGR of inpatient volume in public medical institutions is 8.6% while the CAGR of inpatient volume in private medical institutions is 18.5%. Due to COVID-19 pandemic, the inpatient volume of ophthalmic healthcare service has decreased due to lockdown of human activities and limitation to healthcare resources. Patients delayed unurgent consultation and surgeries for ophthalmic services. As lockdown and pandemic alleviates in mid-2020, the inpatient volume resumed to usual. During 2020 to 2024, inpatient volume in private medical institutions is forecasted to grow faster than those of public medical institutions, with CAGR of 14.6%.

Inpatient Volume of Ophthalmic Healthcare Service in the PRC, 2015–2024E

Period	CAGR (Private)	CAGR (Public)	CAGR (Total)
2015–2019	18.5%	8.6%	10.1%
2020E–2024E	14.6%	6.1%	7.9%



Note: 2019 is the latest available figure.

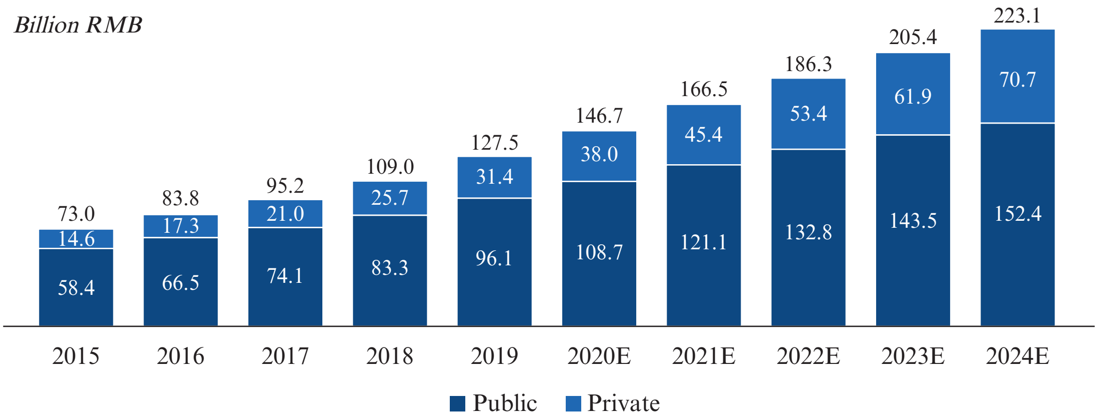
Source: National Health Commission of the PRC, Frost & Sullivan analysis

Market Size of Ophthalmic Healthcare Service in the PRC, Breakdown by Private and Public Sectors

According to National Health Commission of the PRC and Frost & Sullivan's analysis, the market size of private ophthalmic medical institutions has increased from RMB14.6 billion in 2015 to RMB31.4 billion in 2019, with a CAGR of 21.1%. In the same period, the market size of public ophthalmic medical institutions increased from RMB58.4 billion to RMB96.1 billion, with a CAGR of 13.3%. It is estimated that market size of private ophthalmic medical institutions will reach RMB70.7 billion in 2024, representing a CAGR of 16.8% during 2020 to 2024, while the market size of public ophthalmic medical institutions will increase to RMB152.4 billion, representing a CAGR of 8.8% during 2020 to 2024.

Breakdown of Market Size of Ophthalmic Healthcare Service Market in the PRC by Private and Public Sectors, 2015–2024E

Period	CAGR (Private)	CAGR (Public)
2015–2019	21.1%	13.3%
2020E–2024E	16.8%	8.8%



Note: 2019 is the latest available figure.

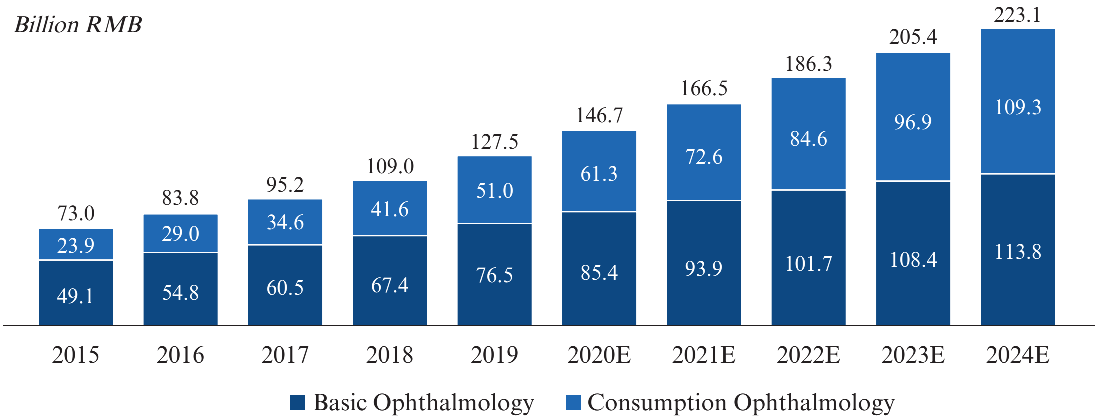
Source: National Health Commission of the PRC, Frost & Sullivan analysis

Market Size of Ophthalmic Healthcare Service in the PRC, Breakdown by Types of Service

Ophthalmic healthcare services can be divided into two segments, namely consumption ophthalmology and Common Ophthalmology. Consumption ophthalmology mainly refers to ophthalmic medical services with consumer attributes, including two major segments: Myopia Prevention and Control, and Refractive Errors. Basic ophthalmology mainly refers to the diagnosis and treatment of basic eye diseases, including Cataract, Ocular Surface Disease, Ocular Fundus Disease and others. The market size of consumption ophthalmology has increased from RMB23.9 billion in 2015 to RMB51.0 billion in 2019, with a CAGR of 20.8%. In the same period, the market size of basic ophthalmology increased from RMB49.1 billion to RMB76.5 billion, with a CAGR of 11.8%. It is estimated that market size of consumption ophthalmology will reach RMB109.3 billion in 2024, representing a CAGR of 15.6% during 2020 to 2024, while the market size of basic ophthalmology will increase to RMB113.8 billion, representing a CAGR of 7.4% during 2020 to 2024.

Breakdown of Market Size of Ophthalmic Healthcare Service Market in the PRC by Types of Services, 2015–2024E

Period	CAGR (Basic Ophthalmology)	CAGR (Consumption Ophthalmology)
2015–2019	11.8%	20.8%
2020E–2024E	7.4%	15.6%



Note: 2019 is the latest available figure.

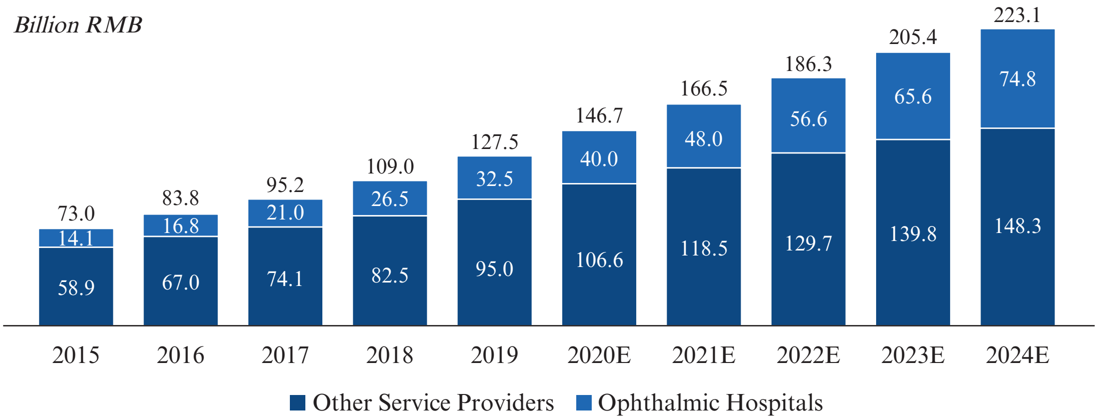
Source: National Health Commission of the PRC, Frost & Sullivan analysis

Market Size of Ophthalmic Healthcare Service in the PRC, Breakdown by Types of Institution

On the other hand, ophthalmic healthcare services can be categorized in terms of the institution of service provision. There are two 2 different medical institutions in the PRC which can offer ophthalmic services, namely Ophthalmic hospitals and other service providers including the ophthalmology department in general hospitals, ophthalmic clinics, and others. The market size of ophthalmic hospital has increased from RMB14.1 billion in 2015 to RMB32.5 billion in 2019, with a CAGR of 23.2%. In the same period, the market size of other service providers increased from RMB58.9 billion to RMB95.0 billion, with a CAGR of 12.7%. It is estimated that market size of ophthalmic hospital will reach RMB74.8 billion in 2024, representing a CAGR of 16.9% during 2020 to 2024, while the market size of other service providers will increase to RMB148.3 billion, representing a CAGR of 8.6% during 2020 to 2024.

Breakdown of Market Size of Ophthalmic Healthcare Service Market in the PRC by Types of Institutions, 2015–2024E

Period	CAGR Other Service Providers	CAGR Opthalmic Hospitals
2015–2019	12.7%	23.2%
2020E–2024E	8.6%	16.9%



Note: 2019 is the latest available figure.

Source: National Health Commission of the PRC, Frost & Sullivan analysis

Market Size of Refractive Errors and Cataract Medical Services in the PRC

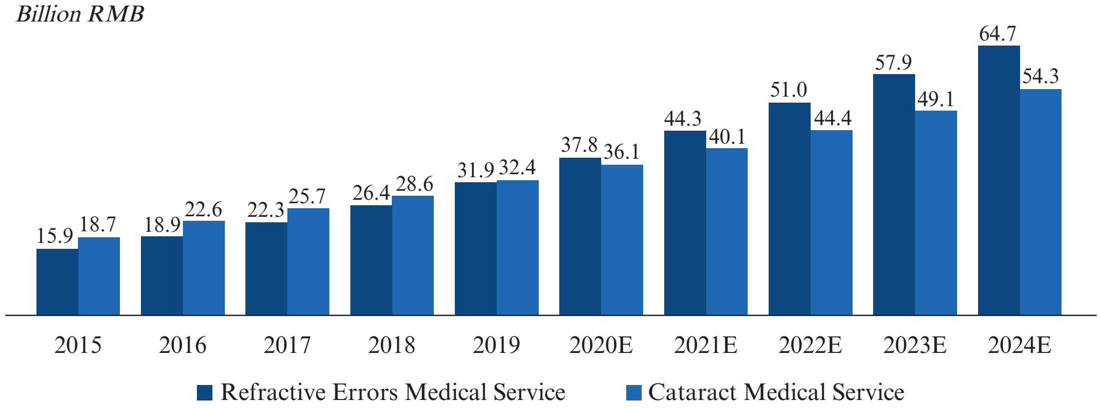
The Group principally provides ophthalmic healthcare services to patients of all age groups who suffer from various eye conditions, including refractive errors such as myopia, hyperopia, astigmatism, cataract and/or presbyopia, and other eye problems, such as retinal and macular diseases, glaucoma and amblyopia, and intends to (i) expand the presence into the PRC market under the brand of "Clarity" through acquisition of equity interests in eye-related medical centres, clinics or hospitals in the PRC or (ii) collaborate with suitable collaboration partners to set up a medical centre for the provision of ophthalmic medical services in the PRC.

From 2015 to 2019, market size of the refractive errors medical service in the PRC has grown from RMB15.9 billion to RMB31.9 billion, representing a CAGR of 19.0%. It is forecasted to grow at a CAGR of 14.4% from 2020 to 2024 and reaching RMB64.7 billion by 2024.

From 2015 to 2019, the market size of cataract medical service in the PRC increased from RMB18.7 billion to RMB32.4 billion, representing a CAGR of 14.7% in this period, and is expected to grow at a CAGR of 10.7% from 2020 to 2024.

Market Size of Refractive Errors and Cataract Medical Service in the PRC, 2015–2024E

CAGR	Refractive Errors Medical Service	Cataract Medical Service
2015–2019	19.0%	14.7%
2020E–2024E	14.4%	10.7%



Note: 2019 is the latest available figure.

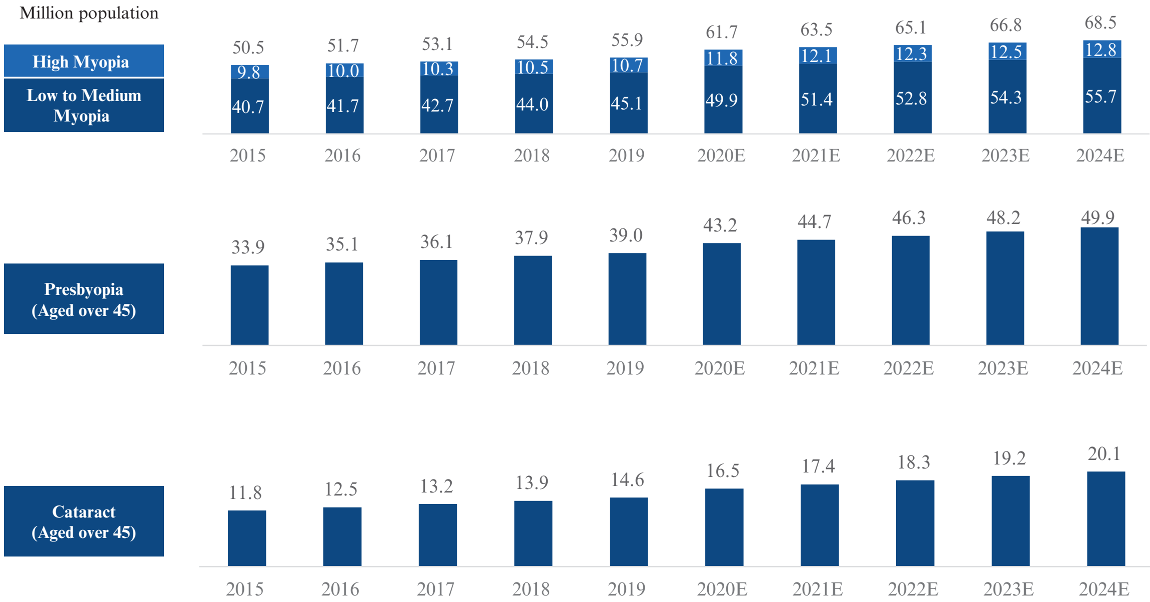
Source: National Health Commission of the PRC, Frost & Sullivan analysis

Market Analysis of Ophthalmic Healthcare Service in the Greater Bay Area

Greater bay area comprises of two Special Administrative Regions of Hong Kong and Macao, and 9 municipalities of Guangzhou, Shenzhen, Zhuhai, Foshan, Huizhou, Dongguan, Zhongshan, Jiangmen and Zhaoqing in Guangdong Province.

Prevalence of ophthalmic diseases in Guangdong Province

The following charts set out the prevalence of selected ophthalmic diseases in Guangdong for the period indicated.



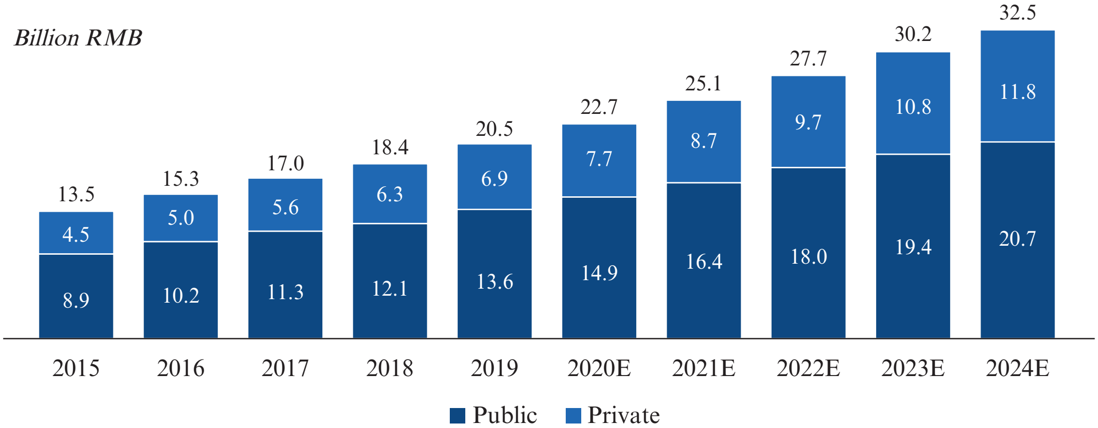
Note: 2019 is the latest available figure.

Sources: Literature research, National Health Commission of the PRC, Frost & Sullivan analysis

The total market size of ophthalmic healthcare service in Greater Bay area grew from RMB13.5 billion in 2015 to RMB20.5 billion in 2019, representing a CAGR of 11.0%. The market size is expected to reach RMB32.5 billion by 2024 with a CAGR of 9.5% from 2020 to 2024 with the continual growth of ophthalmic healthcare service demand. The public segment is sharing a larger portion of the total market size while private segment of the ophthalmic healthcare service market will be growing at a higher rate.

Breakdown of Market Size of Ophthalmic Healthcare Service Market in the Greater Bay Area by Public and Private Sectors, 2015–2024E

Period	CAGR (Public)	CAGR (Private)	CAGR (Total)
2015–2019	11.0%	11.1%	11.0%
2020E–2024E	8.5%	11.3%	9.5%



Note: 2019 is the latest available figure.

Source: National Health Commission of the PRC, Frost & Sullivan analysis

Competitive Landscape of Ophthalmic Healthcare Service Market in the Greater Bay Area

The ophthalmic healthcare service market in the PRC region under Greater Bay Area (i.e. excluding Hong Kong and Macau) is highly fragmented. According to Frost & Sullivan's analysis, there were approximately over 5,000 ophthalmic medical institutions, comprising mainly ophthalmic hospitals and clinics in the PRC region under Greater Bay Area in 2020, with approximately 40 private ophthalmic hospitals. Among such private ophthalmic hospitals, they are primarily located in Guangzhou (9), Shenzhen (7), Foshan (6), Dongguan (5) and Zhongzhan (4), respectively.

Market Drivers of Private Ophthalmic Healthcare Service in the PRC

1. *Higher Demands by Aging Population and Increasing Prevalence of Eye Diseases*

The prevalence of Chinese eye diseases has gradually increased due to various factors, including population ageing and increased accessibility of digital products. The growing number of patients has increased demand for eye care services. Private eye care providers have advantages in service portfolio, management team and business model, which will help them to expand their market share.

2. *Technology Stimulates Demands: Innovation and Advancement*

Technological advancement in ophthalmic surgery in the last century has improved the quality of life of patients with eye diseases and given them more options for treatment. For example, for cataract treatment, PHACO technology is currently the mainstream of clinical surgery, and patients can choose from a variety of intraocular lenses at different prices. In addition, compared with previous surgery, SMILE has the advantages of accurate cutting, measurable results and high safety.

3. *Rising Affordability: Improvement of Living Standards*

The living standards of Chinese residents have continuously improved, with per capita disposable income has rising from RMB33,616 in 2016 to RMB43,834 in 2020. Along with the improvement of living standards, the residents' awareness of health care and the requirements for eye health will also increase, thus driving the growth of the private eye care service market in the PRC and the Greater Bay Area.

4. *Favorable Government Policies*

In the new round of medical reform, the government strongly supports the development of medical services of some major eye diseases, such as cataracts. The Health and Family Planning Commission has developed a series of preferential policies to help cataract patients recover their eyesight through surgery. For example, more eye diseases are covered by medical insurance and hospitals are encouraged to build better ophthalmology infrastructure, making eye care more affordable and accessible to the vast majority of people. Private eye care providers will benefit from government support policies.

Entry Barriers of Private Ophthalmic Healthcare Service Market in the PRC

1. *Insufficient Qualified Medical Staff*

In the PRC, to establish a private ophthalmic clinic requires that at least one employee holds the doctor certification and has five years ophthalmology experience. The pass rate of doctor certification examination is approximately 20% to 25% per year, and it is a long periodicity of cultivating medical professionals, which makes ophthalmologists still scarce resources in the PRC. In addition, a large number of experienced ophthalmologists prefer to work in the public hospitals because they worry about the clinic team structure and operation in private medical institutions. Therefore, the serious shortage of Chinese ophthalmology professionals and long-periodic cultivating process for professionals lead to insufficient qualified ophthalmologists available for the private ophthalmic healthcare service market.

2. *Capital-intensive Nature of the Industry*

Better eye care services rely heavily on advanced ophthalmic equipment and professionals. High-tech equipment not only makes faster and more accurate eye surgery possible, but also helps earlier and more accurate diagnosis. New entrants usually need abundant initial capital to purchase essential medical devices and medical products. Because in the PRC, patients prefer to go to medical institutions with famous doctors for treatment, it is necessary to hire high-priced ophthalmologists for their reputations. However, due to lack of funds, many ophthalmic medical services in the PRC do not have enough advanced equipment and professionals to in the early stage.

3. *Complexity of Application for Medical Licenses*

In the PRC, there are few detailed regulations on private ophthalmic healthcare service market, which makes the approval process for medical licenses more complex. Because of the lack of standard for reference, local government may reject or postpone the new application of private ophthalmic institutions due to the regional protectionism. Without the governmental resources as endorsement, it is difficult for the private ophthalmic institutions to apply for the medical license.