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SETTING OUR SIGHTS ON THE FUTURE
VISIONSAVE GIVING REPORT 2019

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VISION WITH A PURPOSE



**PROFESSOR
WONG TIEN YIN**

*Medical Director, Singapore National Eye Centre
Chairman, Singapore Eye Research Institute
Deputy GCEO (Research and Education), SingHealth
Chair, EYE ACP
Vice Dean, Duke-NUS Medical School*

Having the “fastest aging society” and the “highest myopia rates in the world” suggest profound implications for Singapore and her people. In fact, recent Ministry of Health data showed a 125% rise in sensory organ diseases such as vision loss. It implies a rise in age-related chronic eye diseases, resulting in a need for long-term patient care and possible assistance.

SNEC and SERI set up VisionSave to actively support philanthropic investment initiatives that deliver cost-effective and optimal outcomes for our eye patients. These include upskilling of nurses, equipping them to provide eye injections for treating chronic eye diseases – a domain once solely under the care of eye doctors. We have also reached out to help visually impaired individuals lead more healthy lifestyles through sports. On the research front, we are seeking new ways to diagnose diseases through state-of the art Artificial Intelligence (AI) and new ways of treatment for glaucoma. We continue to invest in our young eye doctors, scientists, nurses, allied health professionals and students – the future of eyecare. We're happy to share some of these key highlights in this year's report.

However, with the impending challenges that come with a greying society, we cannot rest on our laurels. More needs to be done and, together with your support, we look forward to achieving cost-effective and optimal outcomes for every patient and saving sight.



**ADJ. ASSOCIATE PROFESSOR
HO CHING LIN**

*Director, Strategic Development and Philanthropy,
Ophthalmology & Visual Sciences Academic Clinical
Programme, EYE ACP
Senior Consultant, Glaucoma Department, Singapore
National Eye Centre*

Mother Theresa once said that one person alone cannot change the world, but he or she can cast a stone across the water to create many ripples. Winston Churchill also said, “We make a living by what we get, but we make a life by what we give.” Indeed, at SNEC and SERI, it is the collective contributions of many individuals that have made our efforts to save sight possible today.

The eye doctors, nurses and allied health professionals providing first-hand care; educators who give their time and knowledge to nurture the next cohort of eyecare leaders; the research community who strives relentlessly to break new barriers while discovering more effective ways to diagnose, prevent and treat increasingly complex eye diseases – it is thanks to them that we are able to touch and light up the lives of our patients. Underpinning all these are the many big-hearted donors who have unstintingly provided the financial means and resources to help save sight.

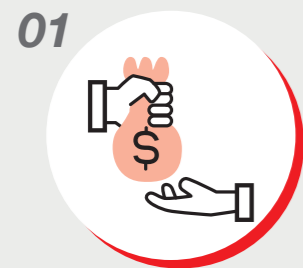
The loss of sight often has devastating consequences not only for the patient's life but also that of the immediate and extended family and ultimately society. Let us not squander this precious opportunity to save sight and gift it to those who need it.

SAVING SIGHT. TRANSFORMING LIVES



The VisionSave campaign, a joint initiative by the Singapore National Eye Centre (SNEC) and the Singapore Eye Research Institute (SERI), was formed to improve the lives of our patients.

Every gift we receive empowers VisionSave to holistically improve ophthalmology care with the ultimate goal of saving sight and transforming the lives of our patients. The funds donated will go towards the five causes that serve as integral drivers in our commitment to initiate positive life-changing outcomes for patients.



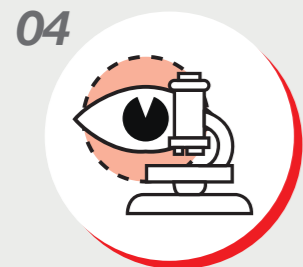
01
Providing financial assistance for needy patients with sight-threatening diseases



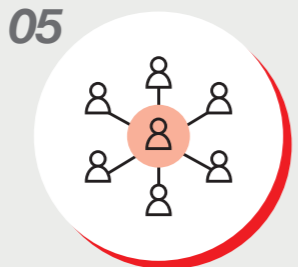
02
Nurturing future leaders in eyecare through scholarships and training



03
Driving awareness through public education and community outreach



04
Supporting research and innovation to better diagnose and treat eye diseases



05
Building a strong infrastructure and investing in capacity building

ADVANCING EYE & VISION RESEARCH

SNEC's research arm SERI has invested considerable resources in its research infrastructure and in training the next generation of clinician-scientists, clinician-researchers and scientists.



Data from 2018

“Best in Asia, next best worldwide”

Singapore has been ranked the top in Asia Pacific, and second globally, for both the scope and quality of eye research.

LANDMARK EYE RESEARCH PROJECTS



Partnering with Johnson & Johnson Vision to combat Myopia

Johnson & Johnson Vision, the Singapore Eye Research Institute (SERI) and the Singapore National Eye Centre (SNEC) announced a US\$24.6 million research collaboration to tackle myopia, or near-sightedness, the largest threat to eye health this century. The condition occurs when the eye grows too long from front to back. Associated with increased retinal degeneration and detachment, cataracts and glaucoma, it can ultimately lead to blindness.

“The incidence of myopia is increasing at an alarming rate around the world and if left unchecked, the human and financial toll will skyrocket in the coming decades, especially in Asia.” said Paul Stoffels, M.D.,

Vice Chairman of the Executive Committee and Chief Scientific Officer, Johnson & Johnson. Professor Aung Tin, Executive Director of the Singapore Eye Research Institute, added, “We are excited to be embarking on this research collaboration with Johnson & Johnson Vision, and look forward to working alongside them to break new ground against the epidemic.”

Professor Wong Tien Yin, Medical Director, SNEC, stated that the partnership would bring together the right mix of resources and intellect to create a Centre of Excellence that would contribute to regional and global efforts for fighting the disease.

Eye-opening facts about myopia

- 5 billion globally (estimated to be half the world’s population) are expected to have myopia by 2050
- Prevalence rates are currently highest in East Asia and Singapore expected to be as high as 80 to 97 percent among young people in primarily urban areas
- In China, among children aged six to 18, myopia prevalence rises from less than 10 to 80 percent³. Children developing high myopia are at a high risk of severe eye disease for life leading to permanent vision loss
- Global healthcare costs, as a result of myopia, are already estimated at US\$202 billion annually¹ and this cost will rise exponentially with increased prevalence and severity of myopia in coming decades
- In Singapore alone, the annual direct cost of optical correction of myopia for Singaporeans has been estimated at US\$755 million

Due to the complexity and scale of myopia, halting the epidemic will require a multidisciplinary approach that encompasses novel clinical research as well as innovations in education and the point of care. Johnson & Johnson Vision intends to build on these efforts and convene other stakeholders to support broad-based strategies.



Translational Asian Age-related Macular Degeneration (AMD) programme

A 5-year multi-centre translational research grant further cemented Singapore as a global leader in the research and development of Age-related Macular Degeneration treatment (AMD). It was awarded to a consortium comprising SERI, local hospitals, academic institutions and international eye research centres for a deeper and better understanding of this disease – not only in Asia, but worldwide. Led by Professor Gemmy Cheung, senior consultant of the Medical Retina department of SNEC, this collaborative research applies basic scientific aspects to clinical translation with a focus on eventual personalised medicine as a key research theme. The programme aims to enhance effectiveness of treatment and reduce vision loss due to AMD. It has implications not only for polypoidal choroidopathy but for other variants of age-related macular degeneration that predominately affect those in Western countries.

A.I. for an eye Self-learning retinal screening for diabetic eye disease prevention

A sight-saving retinal scan that can provide results in minutes instead of an hour? It could be a possibility in the near future, thanks to SELENA. It could even give people in remote, rural communities access to early screenings for preventing diabetic blindness.

An artificial intelligence learning system, SELENA stands for Singapore Eye Lesion Analyser Plus. SNEC, SERI and NUS jointly developed SELENA for detecting the three symptoms of diabetic eye disease by scanning retinal photographs. These are namely, yellow and red lesions in the retina, a sign of diabetic retinopathy; an abnormal cup-to-disc ratio, a sign of glaucoma; and yellow lesions in the macular, a sign of age-related macular degradation. Detecting diabetic retinopathy is particularly vital. As a major consequence of diabetes, it is the leading cause of vision loss in working-age adults worldwide.

SELENA was conceptualised in the 2000s by Professor Wong Tien Yin, current medical director of SNEC, and two professors at NUS' School of Computing: Professor Wynne Hsu, who is now deputy head at the department of computer science, and Professor Lee Mong Li, now a professor of computer science. The three of them are also founding members of local startup EyRis to whom SELENA is licensed.

Mr Lai Teik Kin, CEO of EyRis who is also chief executive of healthcare company Novahealth, said SELENA is pending regulatory approval from the Health Sciences Authority before being rolled out across Singapore. When that happens, it will be the world’s first AI product to be used by a national healthcare system for screening.

ReLEx and SMILE

“Stromal lenticule implantation is an exciting new area that potentially offers the opportunity to treat patients with hyperopia, presbyopia and corneal ectasia through a minimal invasive procedure”
- Professor Jod Mehta, Senior Consultant, Head of Corneal and External Eye Disease Service

Pioneered by SERI/SNEC, Refractive Lenticule Extraction (ReLEx-SMILE) is an evolution of laser refractive surgery that allows keyhole LASIK without creating a full corneal flap. It results in a stronger eye, less postoperative discomfort and tearing as well as the potential for less dry eye problems, side effects and complications normally associated with LASIK. What makes it potentially even safer is the ability to cryo-preserve the lenticule by freezing in liquid nitrogen – a process patented by the SERI team, led by Prof Jod Mehta. In addition, the team has now been able to partner with a local company to allow storage of the discarded lenticules for future applications. These include their use as presbyopic implants for which a clinical trial is currently underway at SNEC.

The SEED Studies: Landmark trilogy of large-scale population-based eye studies

Professors Cheng Ching-Yu Cheng, Charumathi Sabayanagam, and Wong Tien Yin led the Singapore Epidemiology of Eye Disease (SEED) Program, which conducts a series of studies on the frequency, causes and impact of low vision and major eye diseases among the Malays, Indians and Chinese. The baseline examination comprised:

- The Singapore Malay Eye Study (SiMES, 2004-2006): 3,280 Singaporean Malays
- The Singapore Indian Eye Study (SINDI, 2007-2009): 3,400 Singaporean Indians
- The Singapore Chinese Eye Study (SCES, 2009-2011): 3,352 Singaporean Chinese

The team is currently conducting the 12-year SEED follow-up study. The SEED studies form the largest, most comprehensive population-based cohort studies of over 10,000 people on vision-threatening eye diseases affecting the three major ethnic groups in Asia, representing half of the world’s population.

Over the past decade, data collected from SEED studies has been widely used by national and international agencies (e.g., MOH, WHO) and for clinical guidelines (MOH Diabetes Guidelines, Asia Pacific Glaucoma Guidelines, International Council of Ophthalmology Diabetic Eye Care Guidelines). The studies have assisted in providing estimates regarding the burden of both setting up national diabetic retinopathy screening in Singapore and assisting MOH’s planning for healthcare manpower. Publications from SEED are the second most cited studies globally, after the U.S.

THE EYE BALL 2018 PHILANTHROPY GALA

'All things candylicious' was the setting for The Eye Ball 2018: Eye Candy held at Ritz Carlton Hotel on 17 November 2018. Organised by SNEC and SERI in partnership with Singapore Tatler, this annual gala raised \$1.25 million for SNEC and SERI's VisionSave.

Guests entered the Grand Ballroom bathed in a gentle magenta-pink glow and bedecked with candy coloured balloons. Over the course of the evening, they savoured gastronomic fare around the theme of 'eye candy' while taking delight in a lively taiko drum performance as well as songs by local duo Jack and Rai.

The live auction was a key highlight of the evening as guests vied to outbid each other for many of the coveted items, all in the name of VisionSave. The event also witnessed Professor Soo Khee Chee being conferred with the Visionary Award 2018 in recognition of his stellar achievement in healthcare and education that left a lasting impact on creating a better Singapore. The evening ended with guests taking to the dance floor to the tunes of the retro eighties.



COMMUNITY OUTREACH

Sports Awareness Carnival for the Visually Impaired

The Singapore National Eye Centre organised a Sports Awareness Carnival for the Visually Impaired from 19 to 26 June 2019. The primary aim was to raise awareness about the types of sports for the visually impaired that are available in Singapore.

Dr Anna Tan, Clinical Director of Low Vision Service at SNEC, shared that the carnival has helped them embark on a more active lifestyle through the introduction of these sports.

The carnival kicked off with an official launch on Saturday, 15 June 2019, at the Singapore Association of Visually Handicapped. It was hosted in collaboration with the Singapore Disability Sport Council and Siglap South Youth Executive Committee volunteers, the eye departments of Tan Tock Seng Hospital, National University Hospital and Changi General Hospital. The event saw over 80 visually-impaired participants try their hand at various sports including sports including tandem cycling, bowling, guided running, goal ball. Laser shooting for the visually impaired was also introduced for the first time, thanks to valuable support from VisionSave.



BETTER SIGHT THROUGH RESEARCH



Can you share what you do as a clinician scientist?

I attend to my patients and identify research areas for better patient care. These may be related to improving my diagnostic capabilities or treating and managing patients' diseases.

How do you juggle your research and treating patients?

I was fortunate to receive the Transition award, followed by the Clinician Scientist award. It allowed me protected research time without having to sacrifice time in the clinics.

What are some of the challenges you face as a clinician scientist?

One is research funding. The research landscape is getting more competitive with limited number of grants available to a growing researcher pool. Sometimes, results take time with insufficient data for the next grant yet you have to find a way to maintain your laboratory. This was especially difficult during the initial stages of my career.

Can you tell us about your biggest achievements in research work and treatment of patients?

Frustrated at how hard it was to diagnose eye lymphoma (intraocular lymphoma), my team and I came up with a research plan. We recently published our data in one of the top Haematology journals demonstrating a novel

technique that not only aids in early diagnosis of intraocular lymphomas but also enables us to identify each individual's medical prognosis and provide an individualised chemotherapy approach. With international recognition, we hope that this method can one day be universally accepted as a method for better patient care not only in Singapore but internationally.

What motivates you on a daily basis?

Being able to help patients see better and thus live happier is a great motivation.

“Being able to help patients see better and thus live happier is a great motivation”

– Dr Anita Chan, Clinician Scientist,
Head, Ocular Inflammation & Immunology
Head, Translational Ophthalmic Pathology

How has the grant from VisionSave transformed your research?

Three years ago, I approached the head of research with my grand idea of personalising medicine in eyecare. He directed me to the VisionSave Grant. Without it, it would have taken me longer to start my lab and achieve success.

What do you look forward to seeing as a result of the grant and the research?

In the next few years, I hope that our findings funded by VisionSave can be rolled out as a diagnostic test accessible to patients. My work would have then come full circle – from a real clinical problem to the scientific bench and back to patient.

ENHANCING EYECARE THROUGH NURSE UPSKILLING



“It is rewarding to see patients expressing joy after receiving treatment.”

– Mr Adam Lim, Senior Nurse

What made you choose a career as a nurse?

Dealing with various aspects of patient care provides a sense of satisfaction. Based on their interests, nurses can also choose to work in specialties ranging from gerontology to ophthalmology.

What made you take the upskilling course (IVT Nurse Injector) and how has it made you feel?

I am thankful to VisionSave for their support, which enabled me to take up this upskilling course that has enabled me to learn and do more for patients with eye diseases. I still feel amazed at overcoming worry about injecting a patient's eye.

What happens during your typical working day as an IVT nurse?

A typical workday involves doing our best to assure patients that the injection is being administered properly. We also educate patients on dos and don'ts prior to receiving the IVT injection.

Tell me about the new skills that you have learned – how different is this from 'regular' nursing?

As an IVT nurse injector, I have developed the skill of controlling the timing of anesthetic eye drops. I have also learnt to calm and comfort patients prior to treatment through small talk with them.

How has the training helped you personally?

The first thing I was taught during my IVT training was to inject a pig's eye. Professor Ian Yeo guided us extensively through the training, educating us on the proper steps. This, in turn, has given me more confidence when it comes to injecting a human eye.

What do you find is the hardest part about being a nurse?

Encountering patients or even patients' next of kin who are unreasonable (Chuckles)

What do you find most rewarding about your job?

It is rewarding to see patients expressing joy after receiving treatment. It also warms our heart to witness a simple 'thank you' gesture from the patient.



A VISION FOR CHANGE

Can you share how you started your giving journey?

I have always been concerned about children and youth "At Risk" of early life failure. I had a personal experience of a child "At Risk" of school failure with my own daughter, who failed in Primary School. We were saved by a horse and EQUAL - Equine-Assisted Learning. It is a programme that comprises horse-assisted exercises to restore a child's self-esteem and confidence. Seeing my daughter transformed by EQUAL, I made a vow that I would bring EQUAL to every child "At Risk" of early life failure. I soon founded EQUAL-ARK (Equine-Assisted Learning for At-Risk Kids), starting my giving journey.

Why would you like to help the Singapore National Eye Centre (SNEC)?

There are many reasons why children do poorly at school. Poor eyesight is, often, one of them. Almost 80% of Singapore's children have poor eyesight. So for me, it is very important to support healthy eyesight for children in Singapore through the Singapore National Eye Centre.

“For me, it is very important to support healthy eyesight for children in Singapore through the Singapore National Eye Centre.”

– Mrs Melanie Chew, SNEC Benefactor

What motivates you to give?

On my own, I can't do much. But I know that every dollar I give to SNEC will be multiplied, many times. Out of my small donation, will come a much larger benefit to the public and to people in need. That motivates me to give.



How did you meet up with Jason Chee, the para athlete and how did it inspire you?

I met Jason after he lost his eye to cancer. I was shocked that on top of losing 3 out of 4 limbs, he would lose an eye. And when I spoke to his doctors at the SNEC, I realized the importance of eye screening. If Jason had been screened early, he may still have his eye today. We must all learn from Jason's sad experience. Eye health and early screening is critical.

Tell me more about Sports Vision 2020.

Jason is a national asset whose eyesight is critical to a sporting career. Secondly, he is a role model for Singaporeans, especially the youth. Can he be an Eye-Health Ambassador, promoting eye-health for all Singaporeans? In addition, as a para athlete, he can inspire the vision-impaired community to take up sports for an active, healthy lifestyle. So that started Sports Vision 2020.

2020 is the year the next Olympic Games and Paralympic Games will be held in Tokyo. Secondly, 2020 also stands for good eyesight. Team Singapore athletes can become "Eye-Health Ambassadors" for SNEC, to encourage all Singaporeans to look after their eyes.

So the first priority for Sports Vision 2020 is to ensure regular and complete eye screening for the athletes themselves. After all, 80% of all eye disease is preventable.

BRINGING LIGHT INTO MR CHEE'S LIFE

Retired 'weatherman' Mr Chee Huck Jee recently celebrated his 90th birthday. Having lost his wife a few years back, he has been living by himself in a small one-room rental flat in the Old Airport Road area.

Mr Chee seeks solace in keeping his late wife's memory alive by preparing the various dishes she taught him rather than partaking in his favourite Hokkien Mee at the Old Airport Road Hawker Centre – a pastime he can ill afford these days. It is also the only way he can stretch his meagre savings. Apart from cooking for himself, he depends on volunteers from the Lion's befriender and donors from the Food Bank with their donations of tin food. In addition, he enjoys simple pleasures like a 3-hour cycling trip from his home to East Coast Park, usually up to 3 times a week, as well as occasional mahjong sessions at the Senior Activity Centre.



His wife's passing has left Mr Chee all alone in his 1-bedroom flat

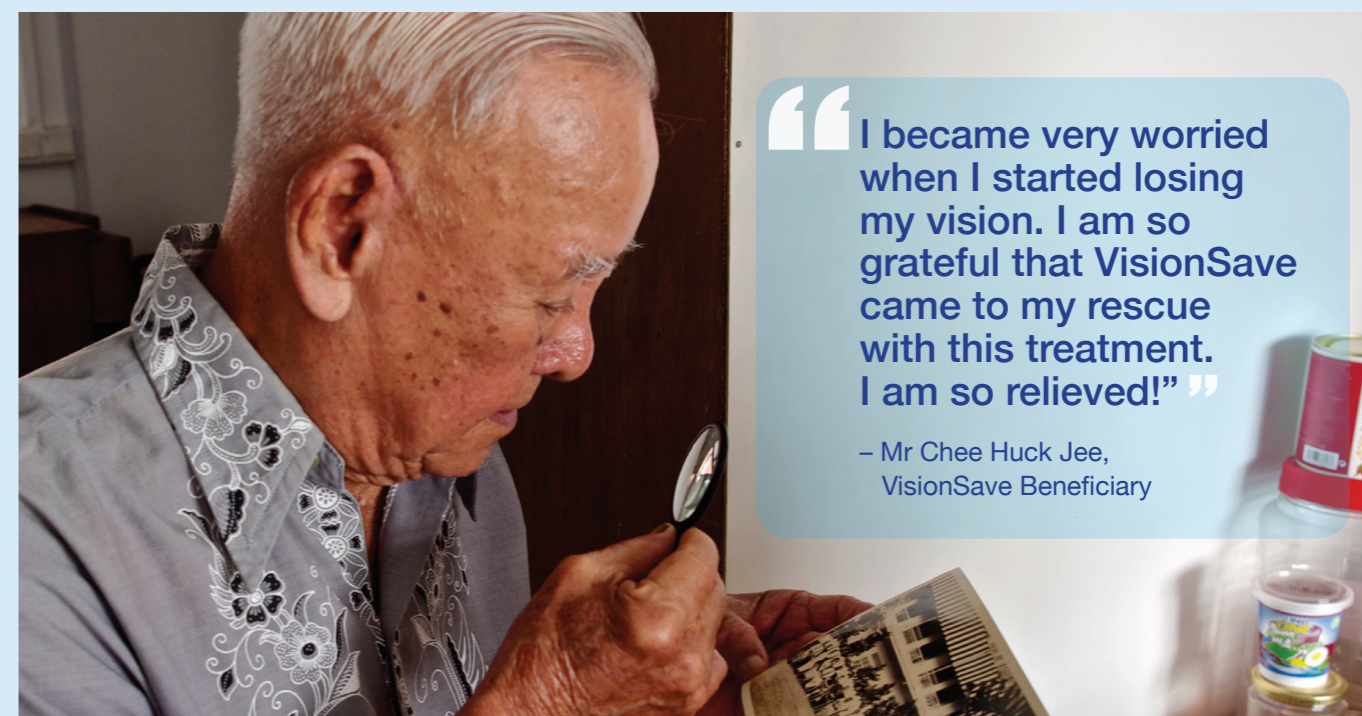


Mr and Mrs Chee



Mr Chee's weatherman days

Sadly, Mr Chee started experiencing blurred vision in his eyes as a result of Aged-related Macular Degeneration (AMD), one of the top 4 causes of blindness in Singapore affecting 1 in 4 Singaporeans, aged 60 and above. To make matters worse, he was not responding to the first line drugs, covered by MediSave. It could have affected his independence, rendering him unable to cook his late wife's favourite recipes and cycle to East Coast Park every week. Fortunately, VisionSave stepped in with the second line treatment, a monthly injection for a year that would have otherwise cost more than \$5,000 annually. This long-term solution will save Mr Chee from permanent blindness and allow him to continue enjoying a fulfilling life.



“I became very worried when I started losing my vision. I am so grateful that VisionSave came to my rescue with this treatment. I am so relieved!”

– Mr Chee Huck Jee, VisionSave Beneficiary

A GIFT THAT MAKES A DIFFERENCE YOU CAN SEE



\$1,000 will help us protect 10 children against progressive myopia with appropriate prescriptions as they start school.



\$5,000 will help fund a patient's sight-saving injection treatment for a year to prevent chronic retinal disease and irreversible blindness.



\$10,000 will help a nurse upskill to a clinical specialist in ophthalmic nursing, equipping him or her to conduct sight saving injection treatment.



\$20,000 will fund a preliminary preclinical safety study on oral eye cancer drugs, which can potentially save patients from severe eye infections.



\$50,000 will help fund a scholarship for an Occupational Therapy Professional who can train visually-impaired individuals to be independent and mobile.



\$75,000 will help fund an endowed academic award to encourage and recognise rising medical stars.



\$200,000 will fund highly specialised equipment to help analyse single cancer cells in the eye. This will help the clinician scientist to make personalised medicine for more effective treatment.



\$625,000 will help fund an endowed Fellowship to boost the number of budding researchers seeking to push the frontiers of Ophthalmology



\$1 million will fund a SMART Visual rehabilitation centre to provide integrated care and improved living to visually impaired patients and caregivers with new technology solutions.



\$2.5 million will endow a Professorship to attract world-leading talent to SNEC and support research, innovation and medical education.

Increase the value of your gift

Gifts for eye research or medical education are eligible for a 250% tax deduction and will be matched 1-for-1, doubling its value.

Care To Share In Our Vision?

To Donate or Enquire About VisionSave, contact us at:

6322-4505/6322-4541

www.visionsave.sg

visionsave@sneec.com.sg

SNEC.SERI

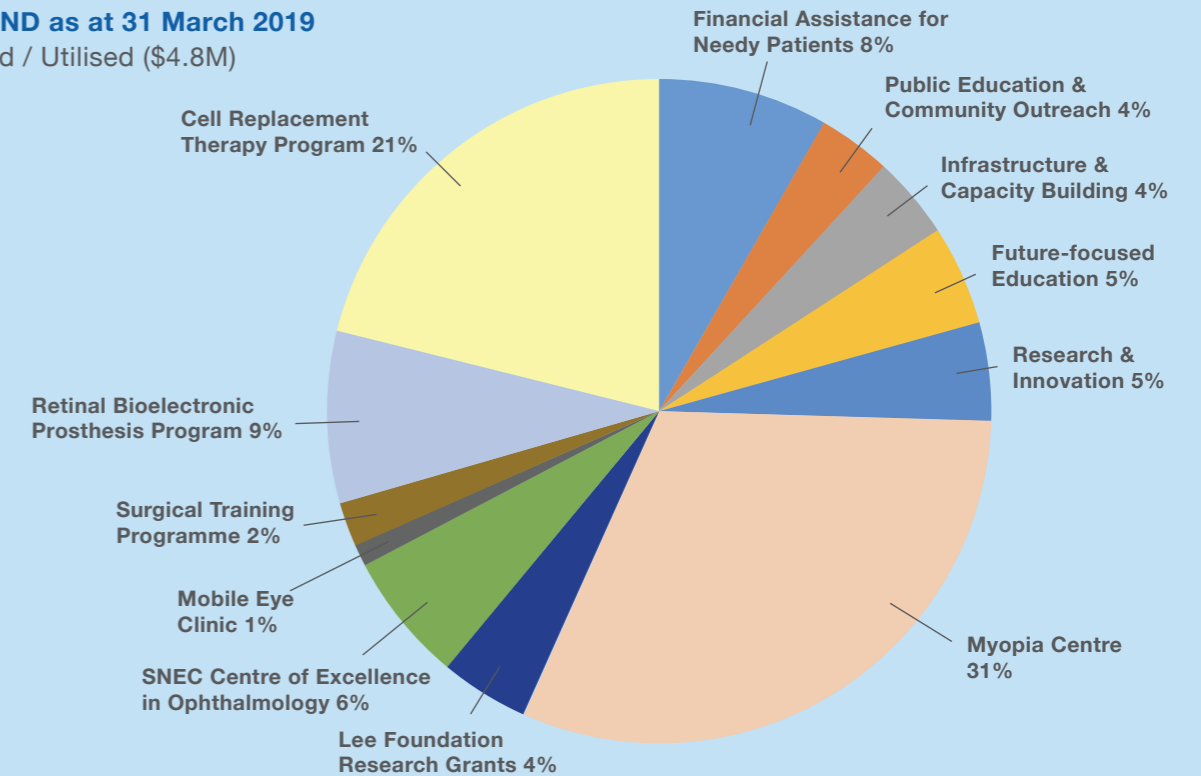


Alternatively scan the QR Code with PAYNOW to donate

RAISING FUNDS. RAISING HOPE

SHF-SNEC FUND as at 31 March 2019

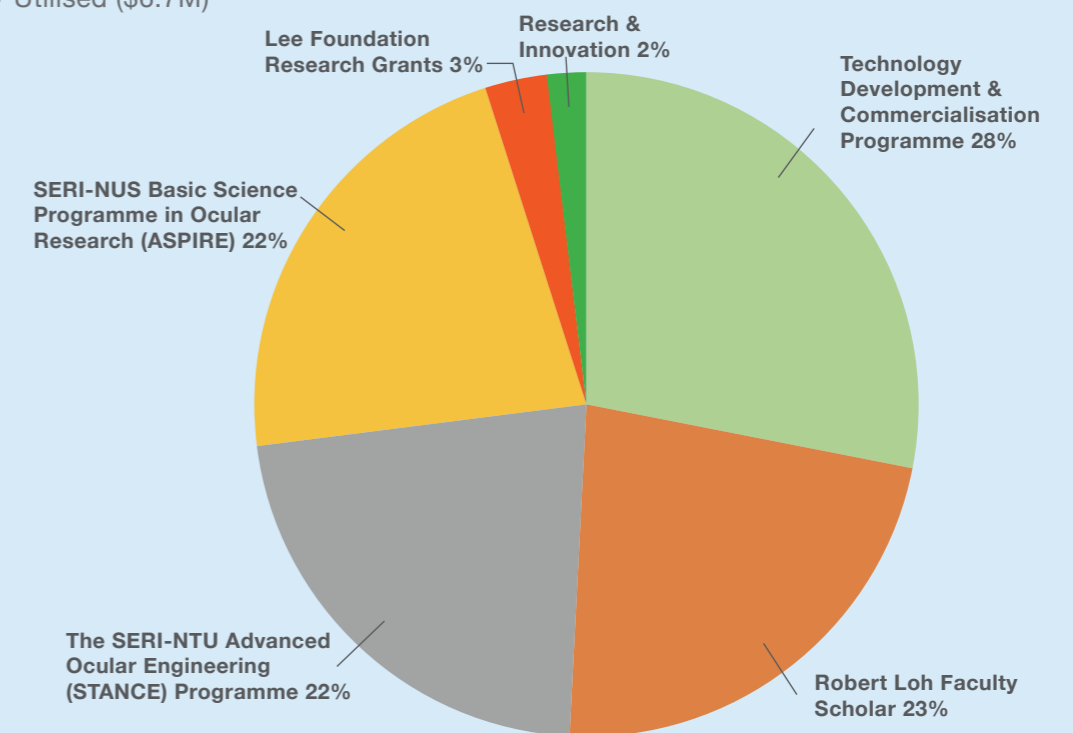
Funds Allocated / Utilised (\$4.8M)



Funds pending allocation (\$1.6M)

SNEC HREF as at 31 March 2019

Funds Allocated / Utilised (\$6.7M)



Funds pending allocation (\$1.6M)

SEEN IN THE NEWS

MOH awards \$60m to 3 research projects

Grants and Clinician Innovator Award aim to support research in health and biomedical fields

By Ida Chua

The Health Ministry has awarded \$60 million to three new research projects in the health and biomedical fields.

In addition, close to \$18 million had been set aside for a new award recognising medical innovation among clinicians.

The pilot Clinician Innovator Award, which will provide seed funding of approximately \$100,000 for up to eight projects, will open for applications next month.

These initiatives come in a move to support research efforts in the health and biomedical fields. Permanent Secretary for Health Chan Hong Kee said the National Medical Research Council (NMRC) Awards in Clarke Quay yesterday.

The three new research projects – each of which were awarded grants of between \$10 million and \$25 million – target the areas of lung cancer, virus-induced cancer and age-related macular degeneration (AMD), a medical condition that causes potential vision loss.

All three projects address concerns of particular importance to Singapore and South-east Asia.

For instance, virus-induced cancers make up nearly 40 per cent of all cancers in Asia, making it a key target for research efforts.

"There's an unmet need for research in this area," said Associate Professor Toh Han Chong, the principal investigator for the project, which received a grant of \$25 million. "Since the 1980s, we've started



From left: Associate Professor Toh Han Chong, Associate Professor Daniel Tan and Associate Professor Gemmy Cheung, whose research projects were each awarded grants of between \$10 million and \$25 million. ST PHOTO ALPHONSO CHEUNG

to develop better treatments for virus-induced cancers. But we hope to take these efforts even further, and potentially even go into developing preventative vaccines."

AMD, which generally affects patients aged 70 and above, also has a special relevance to Singapore in the light of its ageing population.

"In our clinics, we've been seeing more and more patients with this condition," said Associate Professor Gemmy Cheung, the principal

investigator for the project. "While treatment has really improved over the past 10, 15 years, there is still plenty of room for improvement. We're looking for ways to treat patients in a manner that is cheaper, easier, faster, and with better outcomes."

Current treatments for AMD – "Essentially, we want to move from an idea, to finding a product, to delivering it to our patients," he said. ckajinj@sph.com.sg

流动眼科巴士开入邻里 为低收入年长者免费验眼

流动眼科巴士首次开入邻里，为低收入年长者免费验眼。

《联合早报》报道，人民协会昨天在凤山民众俱乐部推出第六期体检计划“SPECTacular Experience”，免费为200名低收入年长者检查眼睛。张贵顺是受惠者之一，他昨天通过流动眼科巴士做了眼睛检查后，确诊患有轻度白内障，但他无需动手术，并且能马上配戴一副新眼镜。

人协也与新加坡全国眼科中心合作，首次将流动眼科巴士带入邻里。年长者在民众俱乐部检查眼睛时，若查出有白内障的症状，眼科医生会将他们转介至流动眼科巴士做进一步的检查。

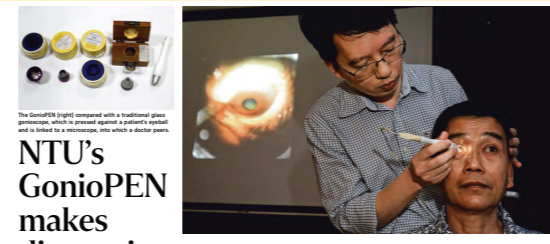
巴士上具备检查视网膜及视网膜等的先进器材，让眼科医生能马上为年长者确诊是否白内障及是否须动手术等。年长者若需动手术，眼科医生会与他们约好手术日期，医生也能帮他们写转介信，以及预定到眼科中心复诊的日期。

下一期的体检计划，将于9月在巴耶利峇民众俱乐部及丹戎巴葛民众俱乐部举行，流动眼科巴士也会开到现场为居民服务。



▲流动眼科巴士具备最先进的器材，能让眼科医生马上为年长者确诊是否患上白内障。（陈福瑞摄）

The SPECTacular Experience, a special eyecare bus, drove around the neighbourhood providing free eye screening for the low-income elderly



NTU's GonioPEN makes diagnosing glaucoma a snap

Pen-sized camera takes images of patient's eye quickly and without causing discomfort

NTU researchers have developed a pen-sized camera that can take images of a patient's eye quickly and without causing discomfort. The device, called GonioPEN, is a small, handheld camera that can be used to take images of the eye. It is designed to be used by ophthalmologists to diagnose glaucoma, a common eye condition that can lead to blindness if not treated early.

The device is small and portable, making it easy to use in a clinical setting. It is also designed to be used by patients themselves, which could make it a valuable tool for home care. The researchers hope that GonioPEN will help to make the diagnosis of glaucoma easier and more accurate.

New system cuts waiting time for patients at SNEC

Patients with no glaucoma or a mild case to get results at home, instead of seeing doctor

The new system, developed by SNEC, allows patients to get their eye exams done at home. This is a significant improvement for patients who live in remote areas or have difficulty getting to the clinic. The system uses a tele-ophthalmology platform to connect patients with eye care professionals. Patients can have their eyes examined by a specialist at home, and the results are sent back to the clinic. This helps to reduce waiting times and makes it easier for patients to get the care they need.

人协流动眼科巴士首次走入邻里

200名低收入年长者今在凤山民众俱乐部接受免费眼科检查

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为低收入年长者提供免费的眼科检查，人民协会昨天在凤山民众俱乐部推出第六期体检计划“SPECTacular Experience”。受惠者之一，张贵顺在流动眼科巴士上接受了眼科检查，确诊患有轻度白内障，但他无需动手术，并且能马上配戴一副新眼镜。

人协也与新加坡全国眼科中心合作，首次将流动眼科巴士带入邻里。年长者在民众俱乐部检查眼睛时，若查出有白内障的症状，眼科医生会将他们转介至流动眼科巴士做进一步的检查。

巴士上具备检查视网膜及视网膜等的先进器材，让眼科医生能马上为年长者确诊是否白内障及是否须动手术等。年长者若需动手术，眼科医生会与他们约好手术日期，医生也能帮他们写转介信，以及预定到眼科中心复诊的日期。

下一期的体检计划，将于9月在巴耶利峇民众俱乐部及丹戎巴葛民众俱乐部举行，流动眼科巴士也会开到现场为居民服务。

\$36M COLLABORATION TO TACKLE MYOPIA

DEVELOPING PREDICTIVE TOOLS FOR HIGH MYOPIA

GRAB TIES UP WITH UOB FOR FINANCIAL SERVICES IN REGION

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New centre to focus more efforts on countering myopia

Cheryl Teh

The fight against myopia, or short-sightedness, is set to receive a boost with a new centre that will focus on initiatives to prevent, control and treat the condition.

The Singapore National Eye Centre (SNEC) Myopia Centre, opening in the first quarter of next year, will be located at the former Bedok polyclinic. It will offer services including myopia eye screenings and specialist consultations, and conduct clinical and product trials.

Announcing this yesterday, Senior Minister of State for Health and Transport Dr Lam Pin Min said: "The prevalence of myopia in Singapore is among the highest in the world. It is crucial that we take active steps in raising awareness, improving service delivery, and continue research to reduce the disease burden caused by myopia."

Myopia is an irreversible condition that is projected to affect almost half of the world's population by 2050. One billion people are also expected to have high myopia by 2050, a condition which can lead to retinal disease, with increased risk of blindness.

The Health Promotion Board had previously said the number of people here affected by the condition has remained constant over the past 10 years – 65 per cent among Primary 6 pupils and 28 per cent among those in Primary 1.

Professor Wong Tien Yin, medical director of SNEC, said the new centre will focus on the prevention and control of myopia, and provide enhanced patient counselling too.

Dr Lam said the centre will also work to create greater public awareness of the condition.

While myopia is in part genetic, experts say Singapore has one of the highest rates in the world because children here spend less time outdoors and more time reading and writing.

Singapore has taken measures to combat myopia in recent years. There has been an increased prescription of eye drops with the chemical atropine, which helps to control childhood myopia even at 0.01 per cent concentration.

For instance, HPEB has a Spectacle Voucher Fund which gives aid to underprivileged students who need glasses, and facilitates vision screening in pre-schools, primary and secondary schools.

The Myopia Centre announcement was made at the joint Meeting on Myopia, organised by the Singapore Eye Research Institute, a subsidiary of the SNEC, the World Health Organisation, the International Agency for the Prevention of Blindness, and the Brien Holden Vision Institute.

The two-day meeting ends today. tienli@sph.com.sg

A LOOK AT WHAT'S MAKING HEADLINES

S10 Friday, August 9, 2019

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South China Morning Post

Sponsored section in cooperation with Discovery Reports

SNEC TAKES EYE CARE INTO RAPID TRAJECTORY OF BREAKTHROUGHS

Counting patients and beneficiaries in the millions as it approaches its 30th anniversary, the Singapore National Eye Centre (SNEC) has exceeded expectations of restoring vision to hundreds of thousands in Asia. It has become a global leader in specialised ophthalmological services, thrusting Singapore to international prominence in ophthalmology and helping carve out the nation's fourth economic pillar in biomedical sciences.

"We provide what we hope is the best-in-class eye care for children all the way to adults and covering all major sub-specialties for 50 per cent of patients in Singapore's public health care system," says Professor Wong Tien Yin, medical director of SNEC. "We have three inter-linked missions, and we place emphasis on each of these missions interchangeably."

The primary mission is clinical care. Focusing on 10 sub-specialties, this covers cataract and comprehensive ophthalmology; corneal and external eye disease; strabismus or squint; refractive surgery; and medical and surgical retina treatment.

Every year, SNEC attends to nearly 400,000 outpatient visits and performs 40,000 surgeries – including close to 17,000 cataract surgeries – and more than 20,000 laser procedures and intravitreal injections. In 2009, SNEC became the first eye institution in Singapore to acquire Joint Commission International accreditation.

The first in Asia-Pacific to perform excimer laser refractive surgery procedures in 1992, SNEC also launched the minimally invasive PLEX SMILE laser eye surgery in 2013 ahead of other centres globally.

As a national referral centre, about 80 per cent of corneal transplants in Singapore are performed at SNEC. Complex retinal surgeries are performed daily for patients seeking tertiary-level care in Singapore and from across the region. For glaucoma, SNEC pioneered cutting-edge, minimally invasive glaucoma surgeries in Asia.

Such credentials in clinical care help support SNEC's second and third missions, which are education and research, respectively.

"We train almost one in two of all eye doctors in Singapore, along with a significant number more in the region and internationally at various stages of their careers," Wong says. SNEC functions as Singapore's teaching centre for complex surgeries, such as tooth-in-eye surgery for those who are not suitable for conventional corneal or stem cell transplants. With its teaching courses and annual international meetings attracting thousands of ophthalmologists across Asia and beyond, SNEC spearheads professional interactions and collaboration leveraged upon strategic links with leading eye institutions globally.

SNEC conducts its third mission of high-impact, patient-oriented eye research through the Singapore Eye Research Institute (SERI), a national-level research organisation set up in 1996. SERI seeks to discover causes of eye diseases, develop new treatments, advance clinical studies and clinical trials of new drugs or surgical innovations, generate population studies on disease burdens, and create business opportunities for industry.

"We have numerous partnerships all over the world where we collaborate with academia and industries so that we can help address clinical gaps. Often, we plan and lead major studies, but sometimes it's as simple as being a drug in a clinical trial or being part of a multicentred trial and the co-development of compounds," says Wong, who is also the chairman of SERI and previously its executive director.

SERI is already one of the largest research institutes locally and the largest focused on eye research across Asia-Pacific. SERI is responsible for about 95 per cent of ophthalmic research done in Singapore and has competitively

secured more than US\$308 million in grant funds.

Groundbreaking research

Last year was especially fruitful in the fields of retinal diseases and myopia. Collaborating with the National University of Singapore's School of Computing, SNEC and SERI co-developed an artificial intelligence (AI) system to screen some of the rapidly rising disorders causing vision impairment and loss in Asia. SERI's research team started exploring automation to improve the labourious and time-consuming process involved in retinal photography. Using the largest data set of Asian eyes in the world, the team developed superior AI-based algorithms that detect major retinal diseases. The technology, called Singapore Eye Lesion Analyser (SELENA), is undergoing a phased clinical validation and has been licensed to a multinational firm in a deal covering major global markets.

"The initial set of clinical studies of the AI system has been very positive," Wong says. "If we are able to implement this in our clinical care pathway within two years, we'd be the first in the world to have an AI-based tele-ophthalmology screening."

SELENA is now being incorporated into the Singapore Integrated Diabetic Retinopathy Programme (SIDRP), a showcase of SNEC's regional eye care plan where satellite clinics handle common ailments in order to free the main facility to manage complex conditions.

"SIDRP is based on a telemedicine concept," Wong says. "Patients have their photos taken in primary care settings across Singapore and these photographs are sent using a tele-ophthalmology framework into a reading centre managed by trained technicians. Every year, around 100,000 diabetes patients are screened without having to come into an eye clinic."

A similar strategic alliance with Santen Pharmaceutical seeks to commercialise internally developed technologies. SNEC has succeeded in

We see ourselves as needing to provide eye care for the wider community irrespective of where they are

Professor Wong Tien Yin, medical director



Professor Wong Tien Yin, medical director

commercialising Myopine, a breakthrough atropine eye drop treatment for childhood myopia. It has also set up PLANO, a digital health care company with a mobile application enabling better parental management of children's smart device usage.

Referral centre in Asia

As the region's most advanced in specialised ophthalmological services, SNEC has evolved as the referral centre in Asia for complex conditions. These include displaced cataracts and intraocular lenses; secondary and tertiary management of glaucoma, complex inherited and acquired paediatric eye conditions, and complicated and difficult laser refractive surgeries across Singapore and the rest of Asia.

"For age-related macular degeneration (AMD), which is a growing problem with ageing populations requiring frequent anti-vascular endothelial growth factor (VEGF) injections, SNEC introduced a major health care innovation last year that allowed nurses to give the shots.

"We are the first in Asia to do this widely and on a routine basis," Wong says. "It's been quite a major enhancement for us because it frees up a lot of doctors to do more of the difficult work of diagnosis and counselling patients, and allows the nurses to be upskilled to perform this treatment."

Anti-VEGF injections have replaced cataract surgery as the single most common procedure required in the entire public health

Rapid trajectory

"We see ourselves as needing to provide eye care for the wider community irrespective of where they are, and I think Southeast Asia is where we have the best value to add," Wong says.

Although prioritising the local population, SNEC regularly sends teams on medical missions to perform screenings and surgeries across disadvantaged countries in Asia. In 2017, SNEC and SERI launched the VisionSave Mobile Eye Bus that brings eye screenings to underprivileged communities. Over the past five years, the institution has

been raising funds through gala events where companies, foundations and high-net-worth individuals pledge their support.

"There is a cultural shift across the region, which has become more developed and richer over the past 30 years. Individuals who have benefited from this development are keen to give back to communities that are still underserved," Wong says. "We offer that opportunity to foundations, corporations and individuals if they're passionate about our cause: the prevention of blindness."

SNEC funds scholarships for nurses and young doctors to learn new techniques and provides seed money for innovative research and community initiatives such as local and regional screening programmes.

"SNEC has developed in parallel with Singapore," Wong says. "SNEC is almost 30 years; Singapore is just past 50 years. Both have had that rapid trajectory of development – contributing at the highest global level, moving towards the cutting edge, pushing the boundaries and challenging paradigms. SNEC, like Singapore, is in this space because we do not compete on market size, but rather on speed, quality and innovation."

We see ourselves as needing to provide eyecare for the wider community irrespective of where they are.

– Professor Wong Tien Yin, Medical Director



The SPECTacular Experience, an eyecare bus, visits the neighbourhood for the first time

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